

THE MACEDONIAN MOMENT: A CURRENT FOCUS
ON MACEDONIANS' ECONOMIC STAGE AND
ENTREPRENEURIAL OPPORTUNITY

THESIS

Presented to the Graduate Council of
Texas State University-San Marcos
in Partial Fulfillment
of the Requirements

for the Degree

Master of BUSINESS ADMINISTRATION

by

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San Marcos, Texas
December 2012

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ACKNOWLEDGEMENTS

It must be said here, that this creative work is inspired and empowered by the Author of the most magnificent of all creative works, The LORD Jesus Christ. This effort is for Him. With gratitude for His most selfless sacrifice of Self, I present this as, perhaps, something that will aid the Macedonian people whom He loves dearly.

With heartfelt appreciation I offer a rowdy, “Thank you!” to the committee. Dr. Mogab, who chaired this effort, was positive and helpful, always offering ideas but without stifling my own. Dr. Hill would have it no other way if I were not spending most of my brainstorming efforts “outside the box.” Dr. Mendez was tireless, encouraging, and thorough from beginning to end on this project. Again, I am grateful and enriched by the educational and interpersonal experiences with these true gentlemen.

Biljana McNamma of *Welcome to Macedonia* provided exemplary connections and interpretation for part two of this research effort. Without the work of Biljana and her company, I am confident that this study would have faced significant challenges in obtaining interviews. Additionally, I would like to thank Mr. Ryan Stoner, Deputy Political and Economic Section Chief for the U.S. Embassy in Skopje, Macedonia. Despite his busy schedule, Mr. Stoner was kind enough to grant an extended interview for this study.

Ben Kiowski gave of his time and energy to travel with me for Part II of this study. His business savvy and intellectual insight were significant for this project. I am deeply appreciative to him for the friendship that he put into action in this effort.

Finally, to my beautiful wife, I give an honorary degree. Debi has persevered as I have persevered, but beyond that, she has blessed me to “go.” When I have been at class, on a research trip, or in a study group, Debi has given me the “go.” Because of her teamwork and support, I went. This honor belongs to her. May her reward for this effort be waiting in Heaven.

This manuscript was submitted on July 26th, 2012.

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INTRODUCTION AND EXECUTIVE SUMMARIES

INTRODUCTION

Since independence from Yugoslavia in 1991, the Balkan nation of Macedonia has experienced significantly varying dynamics associated with progress in its developing economy. Much has occurred in the small nation and within its young economy, and the Macedonian entrepreneurs of today may perceive that they work in an economic structure that is less developed than are their aspirations. Regardless, as business-pioneers for their developing economy, these entrepreneurs bear a burden of potential in Macedonia for economic progress. In light of Macedonia's current economic situation and its entrepreneurial environment, this study sought to contribute to two knowledge-gaps regarding Macedonia:

1. First, by evaluating the macroeconomic issues that trend with Macedonia's economy, and
2. Second, by exploring how those issues are affecting its base, the Macedonian entrepreneur.

Part I of this study employed an exploratory data analysis to evaluate the factors that show association with Macedonia's gross domestic product. Work was initially focused on answering this study's primary question: *"What primary contributing or prohibitive factors are currently associated with Macedonians' capacity for economic*

progress?” World Bank data (along with data from other sources) was analyzed with statistical methods to determine the factors that 1) indicated a statistically significant association with GDP, and 2) have precedence in traditional economic theory as factors that trend (either positively or negatively) with economic growth in developing economies. The myriad of factors available was eventually distilled down to four primary factors that this study considers to be of significant importance for Macedonia and its entrepreneurs:

1. Availability of domestic credit,
2. Tertiary education enrollment,
3. Urbanization, and
4. Size of the shadow economy.

Part II of this study pursued a deeper understanding of these four factors, but through the lens of their impact on today’s Macedonian entrepreneur. The secondary question for study was, *“How are these factors affecting entrepreneurship within the country and among its citizens?”* Whereas the analysis in Part I was primarily quantitative in nature, the analysis conducted in Part II was predominantly qualitative. Nineteen Macedonian entrepreneurs provided in-country interviews and offered their perspectives on the macroeconomic factors identified. Because of the open-ended nature of some of the questions employed, information unrelated to the primary economic factors was obtained, and much of this “peripheral” data proved to be helpful in trying to paint Macedonia’s economic and entrepreneurial picture.

It is with a profound sense of appreciation for Macedonia, for Macedonians, and for the entrepreneurs who granted interviews that this study was conducted. Today’s

“Macedonian moment” is one, in the view of this study, which is of critical importance. Perhaps the data and ideas offered here will contribute to the forward motion of the forward-looking people of Macedonia.

EXECUTIVE SUMMARIES

Executive Summary of Part I

Results from Part I indicate that statistical associations between several macroeconomic factors and Macedonia’s GDP do exist. More specifically, each of the four factors chosen for further evaluation seems to align with theoretical expectations (Commission on Growth 2008, Koreshkova 2003). The factors, *Availability of domestic credit*, *Enrollment in tertiary education* (sometimes referred to here as *Enrollment in upper-level education*), and *Urbanization* all indicated positive relationships with Macedonia’s GDP per capita. The factor, *Size of Macedonia’s shadow economy*, produced the expected negative correlation to GDP.

1. *Availability of domestic credit*, aside from being listed as the largest barrier to business in the Global Competitiveness Report’s 2012 publication (GCR 2012), showed a statistically significant positive association that mathematically accounts for 65% of the variability of GDP per capita over the past 18 years.¹
2. *Enrollment in upper-level education* (as a percentage of eligible males enrolled) also trends well with GDP per capita, indicating a statistically significant positive relationship that predicts 82% of its variability in ordinary least squares models

¹ These calculations were derived by using “Net Domestic Credit” as an isolated variable.

(no claims of causation here).

3. *Urbanization*, in an isolated model, produced a model that accounted for 60% of GDP per capita variability, with a statistically significant and positive relationship between the two variables.
4. *Size of Macedonia's shadow economy* (as a percentage compared to the official GDP) can be used in isolation to account for 46% of variability in GDP per capita. In contrast to the other factors under scrutiny here, a negative correlation is indicated between the size of the shadow economy in Macedonia and its GDP.

Executive Summary of Part II

Despite the expected results in Part I of this study, the interviews conducted with Macedonian entrepreneurs in Part II revealed some unexpected discrepancies between the trends of the macroeconomic data and the experience of common Macedonian entrepreneurs.

1. *Availability of domestic credit* appears to be a significant and tangible obstacle for small to medium sized entrepreneurs in Macedonia. Only two of the nineteen respondents interviewed indicated that they had made use of credit from a formal bank. Cultural aversions to debt, the competition for loans created by an international banking industry in Macedonia, a comparatively less viscous economy, and a lack of socio-political instability all appear to combine to create financing issue for Macedonian entrepreneurs. In contrast, availability of net domestic credit in Macedonia has increased by a factor of four over the past ten years. This study offers that this discrepancy can be reconciled by considering the

widening income gap in Macedonia. Whereas macroeconomic data indicates an increase of availability of credit, that data may be based on credit usage by larger firms and at the common exclusion of Macedonia's small and medium enterprises (SME's).

2. For the Macedonian entrepreneur *Enrollment in upper-level education* appears to be a factor that produces mixed results. Seven of thirteen entrepreneurs with university or higher education perceived that they had stable or growing enterprises. The other six were those who indicated that their firms were declining. Whereas Macedonians appear to aspire to entrepreneurial ventures to a degree that is greater than their international peers (Uunk 2011), further study would be needed to evaluate whether or not the education system there is preparing its citizens for the market-based system. Open-ended questions in this study's interviews proved to be enlightening. In one of these, respondents indicated a notable commonality by communicating that Macedonia's educational system was overly theoretical. Efforts should be made to ensure that Macedonia's upper level education system transitions with its economy into the free market system. The Global Competitiveness Report's 2012 release elaborates on some of these dynamics. Among the "most problematic issues for doing business" in Macedonia, "inadequately educated workforce," and "poor work ethic in national labor force" came in among the top four factors.² Among the respondents for this study's interviews seven of sixteen claimed that they learned "nothing" in the

² In the Global Competitiveness Report's results, the top four responses were: 1) Access to financing, and 2) Inefficient government bureaucracy, 3) Inadequately educated workforce, 4) Poor ethic in national labor force

Macedonian educational system that helps them as an entrepreneur.³

3. *Urbanization* proved to be a factor of considerable import for this study.

Macroeconomic trends between economic growth and urbanization produce no unexpected results, but interviews revealed, in subtle form, that the urbanization trend in Macedonia is tied to other issues in the country. In interviews for this study, half of the entrepreneurs responded that the urbanization trend has been good for their business. Half responded that it hasn't. Notably, though, entrepreneurs showed solidarity in their opinion about the *impact of the urbanization trend on the Macedonian economy as a whole*. All 16 who responded to that particular question indicated that, in their opinions, urbanization was not good for Macedonia's economy. Open-ended questions revealed that entrepreneurs intuitively perceive what may be deficiencies in the areas of economic agglomeration and capacity utilization, two issues that should arguably be addressed in order for Macedonians to benefit from the potential benefits of urbanization. Furthermore, there appears to be interplay between the issue of urbanization and the activities of the shadow economy.

4. *Shadow Economy* activities in Macedonia appear to have a negative impact, not only on national official GDP figures (for example, -\$325m U.S. dollars in 2006)⁴, but also on entrepreneurial efforts in Macedonia. Formal sector entrepreneurs 1) sell their products at a premium to their informal counterparts due to Macedonia's value added tax (VAT) and other costs 2) carry the

³ Interviewees were asked, in open-ended format, "What skills that you learned at school help you the most as an entrepreneur in Macedonia?"

⁴ Author's Calculations

predominance of Macedonia's national tax revenue requirements 3) perceive that they are burdened by punitive regulatory structures, and 4) pay an "inflation tax" due to the devaluation-effect from the informal sector. Alternative theories suggest that operations within the informal sector actually serve to initially provide the needed structures, relationships, and rules of conduct in a transitional economy. Approximately 73% of the entrepreneurs who were interviewed for this study picked either (or some combination of) "corruption," "tax rates," and/or "permitting" as the reason why people operate in the shadow economy. These factors point to the regulatory structures (which include taxation) in which Macedonian businesses operate.

BACKGROUND OF ISSUE AND BASIS FOR STUDY

BACKGROUND OF ISSUE

Winston Churchill once said that the Balkans “produce more history than they can consume.” (Charlemagne 2011) The former British Prime Minister’s comment was insightful for his time, and it appears to hold true today. Since the early 1990’s, the Balkan region (specifically, the nations which comprised the former Yugoslavian Republic) has experienced upheaval, war, leadership-change, inter-cultural conflicts, economic implosion, and a societal shift from pseudo-socialism to a form of neo-pseudo-capitalism.

The Republic of Macedonia is a land-locked nation with borders that place it at the geographic heart of the Balkan region. In 1991, Macedonia claimed independence from the disestablished Yugoslavian State. The decade that followed was an economically and culturally tumultuous time for the transitioning young nation. During the Yugoslavian conflicts of the late 1990’s, Macedonia observed and experienced the tensions of war.

Since conflict has subsided, Macedonians have been faced with the realities of living in a transitioning economy, an economy that is making the dramatic shift from socialism to capitalism. During his tenure as head of the former Yugoslavian nation, President Josef Tito led the country to relative prosperity in the 1960’s and 1970’s, a time when Yugoslavian GDP per capita soared to over \$6000 U.S. dollars per year. For

comparison, by 1992, per capita output had dipped below \$1200. In the wake of recent history in the Balkans, Macedonian's are in the process of rebuilding their social, economic, and cultural systems. This work points to a knowledge-gap in the economic and entrepreneurial aspects of the recovery in Macedonia. Because of the implications that Macedonia's recovery has, the prohibitive and contributing factors associated with business growth there should be determined. Furthermore, the implications that those macroeconomic factors in Macedonia have on its entrepreneurs are worthy of study.

PRIMARY LITERARY PRECEDENTS

Numerous sources were leaned upon in this effort (see citations and bibliography), but a few functioned as specific precedents for this study. *The Commission on Growth and Development* 2008 report served as a precedent for the factors that were evaluated in Part I of this study (Table 1). This study looked to *The Commission on Growth and Development* publication as a baseline from which to begin the exploratory data analysis of factors that typically correspond to economic growth (Commission on Growth 2008, pgs. 33 - 69).

Table 1: Examples of Factors Associated with Economic Growth

From: The Commission on Economic Growth and Development's *The Growth Report* 2008 pgs. 33 - 69

1. Investment Level as a percent of GDP in Infrastructure, Education, Human Capital, and Health
2. Technology Transfer through Foreign Direct investment, and Foreign Education
3. Competition and Creative Destruction
4. Labor Markets and Caste Restraints
5. Export Promotion and Industrial Policy
6. Exchange Rates and Exchange Rate Policy
7. Capital Flows and Market Openness
8. Macroeconomic Stability

Table 1 - Continued

-
- 9. Foreign and National Investment
 - 10. Financial Sector Development and Trust (Barker 2009)
 - 11. Urbanization and Rural Investment
 - 12. Equity and Equality of Opportunity
 - 13. Regional Development Patterns
 - 14. The Environment and Energy Usage
 - 15. Effective Governance
 - 16. Quality and Freedom of Policy Debate
-

Additionally, Tatyana Koreshkova's work on the impacts of the informal sector provided a precedent for the interplay between Macedonia's shadow economy and its GDP output (Koreshkova 2003). Hristijan Resteski and Freidrich Schneider were relied upon for their work in shadow economy size estimation (Resteski 2009, Schneider 2009). The Global Competitiveness Report of 2012 reinforced this study's focus on availability of credit and upper level education (GCR 2012), and the Organization for Economic Co-Operation and Development served as a useful reference in the issue of credit (OECD 2009). J. Van der Sluis' 2008 work on entrepreneurship and education was instrumental in backing discussion on upper level education (Van der Sluis et al. 2008). Nicoleta Sirghi's work on "Economic Growth in the European Model" opened the doors for discussion of the impacts and importance of agglomeration and capacity maximization for an urbanizing culture (Sirghi 2010), and Misha Glenny's perspectives were helpful in understanding the shadow economy and its implications (Glenny 2008).

CONSIDERATIONS FOR STUDY OF MACROECONOMICS AND ENTREPRENEURSHIP

Although some may imply (Ondracek 2011) that entrepreneurship and small to medium enterprises (Beck et al 2005) are catalysts for economic growth, this study does

not strive to substantiate that assumption (nor did it argue against it). Instead, the topics of entrepreneurship and economics are linked here, because they are invariably linked in the normal consideration for the Macedonian business situation.

For example, an economist could say, “Let’s talk about the economic growth situation in Macedonia.” Her entrepreneurial acquaintance could reply, “I don’t see any individuals that are repurposing capacity or spearheading innovation in country.” Without dissent, the economist could add, “And, it’s a classic Keynesian liquidity issue that has never been adequately addressed.” (Rich 1994). The entrepreneur may say, “Yes, and, to compound things further, its a cultural issue of risk aversion within that liquidity deficiency.” Then, without any argument, they agree that, “The civil law system there is not as pro-business as our common-law structure here in the U.S.” (Xu 2011).

Regardless of the validity or accuracy of this fictitious conversation, it illustrates that, almost unnoticeably, discussion vacillates between the issues of economics and entrepreneurship. Indeed, they are *not* one and the same issue, but, for the purposes of this study of Macedonia, they can be viewed together. This study took economics and entrepreneurship as left and right eyes that provide a triangulated view of Macedonia’s current status. Again, this study doesn’t seek to establish causality between entrepreneurship and economic growth, but instead to evaluate the factors that are affecting both issues as well as their interaction with one another in the country.

Measuring Growth

For this study (specifically Part I), Gross Domestic Product (GDP) and Gross

Domestic Product per Capita (GDP per Capita) were considered adequate measurements of economic growth. International Monetary Fund time-series data shows the GDP in Macedonia growing from just over 180 billion Macedonian denars in 1995 to over 260 Billion (\$5.5 Billion U.S. dollars) in 2010, and it projects growth to 320 billion denars by 2015. This study does admit that the GDP indicator has its detractors (Gadrey 2006). Nevertheless, for the purposes of measuring overall output in Macedonia (where other data is not readily available) GDP paints an adequate picture.

Defining Entrepreneurship

Prior study has evaluated the entrepreneurial attitudes and behaviors of Macedonians. Research has established that, among their peers in other countries, Macedonians show a higher level of involvement in entrepreneurial activities. Furthermore, a cross section of the Macedonian entrepreneurial population is split between necessity-driven and opportunity-driven motives (Uunk 2011). Based on this evidence, an evaluation of the factors affecting this largely entrepreneurial population seemed appropriate.

Unlike concrete metrics like economic growth, foreign investment, and other more solid concepts, “entrepreneurship” is a term open for interpretation. Intuitively, the reader is likely able to offer a valid definition for “the entrepreneur” and, therefore, entrepreneurship. Indeed, entrepreneurship is probably what we think it is: Making business happen, starting efforts that require creativity, making something new, seeing a need and meeting it, etc. Arguably, these are all legitimate definitions (or, at least aspects) of entrepreneurship. Nonetheless, for study of Macedonian entrepreneurship, a

definition was needed in order to identify and categorize entrepreneurship. Sander Wennekers and Roy Thurik offer a usable definition for this work (giving credit of their inspiration to other writings by Hébert and Link, Bull and Willard, and Lumpkin and Dess). Wennekers and Thurik define entrepreneurship:

“Entrepreneurship is the manifest ability and willingness of individuals, on their own, in teams, within and outside existing organizations, to:

- *perceive and create new economic opportunities (new products, new production methods, new organizational schemes and new product-market combinations) and to*
- *introduce their ideas in the market, in the face of uncertainty and other obstacles, by making decisions on location, form and the use of resources and institutions.”* (Wennekers and Thurik 1999, pgs. 46 - 47)

According to this definition, entrepreneurs are those with capacity, will, perception, and follow-through to bring to market concepts that meet their markets' known or unknown needs in an effective way. In this study, research relies, in part, on entrepreneurs to help tell the story of what is happening in the Macedonian economy and among its business people.

RESEARCH METHODOLOGY

METHODOLOGY FOR PART I – PRIMARY FACTORS ASSOCIATED WITH MACEDONIAN ECONOMIC GROWTH

Primary Question: *What primary contributing or prohibitive factors are currently associated with Macedonians' capacity for economic progress?*

A quantitative analysis of variables provided insight regarding the first of the thesis questions. These variables provided indications as to which factors show primary association with Macedonian economic growth.

An exploratory data analysis was undertaken to evaluate data from different sources. The predominance of usable data came from World Bank databases. General and generalized linear models were considered to assess associations of multiple factors with GDP growth. Time series analysis techniques were used to provide perspectives on variables over time. This exploratory analysis required the reduction of over a thousand data fields to the remaining few that are eventually listed here.

Michael Spence's writings in the 2008 version of the *Commission on Economic Growth and Development* (Commission on Growth 2008) provided some initial anchor-points of variables that tend to show importance in their relationship to economic growth. With knowledge gained from Spence's publication, the author of this work sought to distill available data that could then be classified under Spence's broad variable categories.

Ordinary least squares (OLS) regressions were run on these data sets for the purpose of identifying either of two indicators:

1. Variables that showed statistically significant association with Macedonian economic growth.
2. Variables that would have been expected to show significant association with Macedonian economic growth, but surprisingly, did not.

Linear regression models provided a number of usable outputs, but special attention was given to two of these:

1. P-Values – This study takes on an alpha assumption of 0.05. Since sample sizes are comparatively small, an alpha of 0.10 is considered too lax. Therefore OLS regression outputs that gave p-values at or below 0.05 indicated non-zero slope associations between the dependent and independent variables. Variables with non-zero slopes and p-values at or below 0.05 are considered to have a statistically significant linear relationship with the dependent variable.
2. R-Squared Values – To determine the degree of variable's associations with Macedonian economic growth, the R-Squared output was used to initially evaluate the goodness of fit of each model. These R-Squared outputs give a rough indication as to the degree of variability in the dependent variable that is explained by the predictors.

It should be noted that, even as factors affecting economic growth are evaluated, this analysis does not necessarily translate to clear and actionable policy decisions. Dani Rodrik addresses the difficulties in linking theory to policy in his recent article titled,

“The Future of Economic Convergence.” Speaking of the regressions evaluating factors affecting economic convergence, he says:

“The trouble with such regressions is that they do not tell the policy maker what they are really after, which is the set of policies that guarantee convergence. Investment, schooling, or trade levels are not policy levers that one can directly set or adjust. They are the outcomes of many different things going on simultaneously, including external and exogenous circumstances as well as policies of unknown effectiveness and unclear direction of impact.” (Rodrik 2011, pg. 19)

Although, this quote relates to the issue of economic convergence directly, it speaks to the greater quandary of linking economic factors to evasive “policy levers” which can exact positive change in an economy. Like the elusive unified “theory of everything” in physics, an economic theory that considers all the factors affecting economic growth is difficult to develop. Macedonia is relegated to what is currently happening, and this study sought to identify what that is, regardless of its adherence to theory. This study seeks to evaluate those primary factors that appear to have a prohibitive or contributing association with Macedonian economic progress.

Hypotheses for Statistical Analysis

As stated above, this study sought to find macroeconomic factors that show a statistically significant relationship with Macedonia’s GDP or GDP per capita. For the purpose of identifying these factors, the null hypothesis assumed was that none of the factors under study express a linear relationship with Macedonia’s GDP (or GDP per capita). OLS regressions were created for numerous individual and combined factors⁵ in

⁵ The World Bank Database provides 1074 variables (beside GDP and GDP per capita) on Macedonia in time-series format for dates ranging from 1962 to 2010

order to find support for these factors to be considered in modeling the behavior of the Macedonian GDP. In these alternative cases, the variable or variables returned a non-zero ($\beta \neq 0$) slope (see Figure 1) relationship to Macedonian GDP (or GDP per capita). Those variables that did show this linear association were of particular interest for this study.

$$\text{Macedonian GDP (or GDP per capita)} = \text{Intercept} + \beta_1(X_{\text{Factor1}}) + \beta_2(X_{\text{Factor2}}) + \dots$$

Figure 1: Linear equation for exploratory data analysis of factors associated with Macedonian GDP (or GDP per capita)

The following section discusses the initial selection of the factors for evaluation in this study.

Exploratory Data Analysis and Factor Identification

Of the 1070+ factors pertaining to Macedonia in the World Bank database, this study eventually focused on four that appear to be of particular importance to the country's economy. Getting to these four involved a two-step process. First, in order to distill the expansive database into a reduced list that would be pertinent, effort was aimed at identifying variables that *categorically* fit into *The Commission on Economic Growth and Development's* precedent categories of factors that affect economic growth. If a variable appeared to be categorically significant, it was included for evaluation (see Table 2). Approximately 50 variables populated the "reduced list" and included data on the various issues (and their derivatives):

Table 2: Condensed list of variable categories used for OLS regressions⁶

Bilateral aid
Domestic credit
Domestic savings
Employment rates
Energy consumption
Exchange rates
Export/Import taxes and volumes
Foreign investment
Government consumption
Health spending and mortality rates
Inflation rates
Internet capacity and usage
Lending rates
Population and urbanization
Population of researchers and technicians
School enrollment and spending
Shadow economy size estimates
Tourism
Value addition per sector

From this reduced list, OLS regressions were created to evaluate goodness of fit and statistical significance with Macedonian GDP (and/or GDP per capita). In this second step of the screening process, certain variables tended to resurface (see Figure 2).

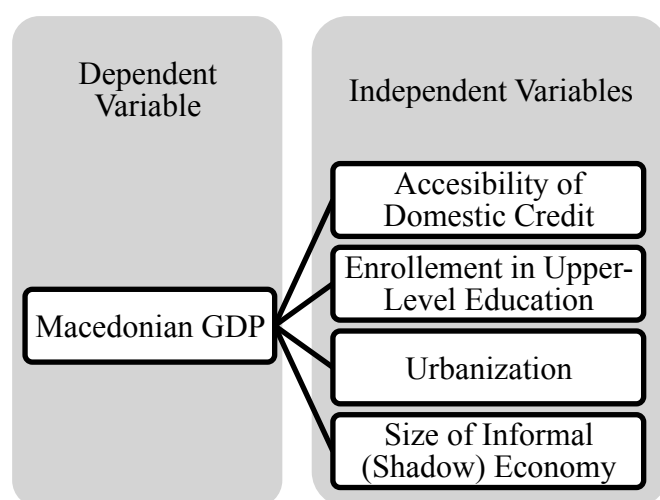


Figure 2: Independent and dependent variables for detailed study

⁶ This is not an exhaustive list of the individual variables that were utilized for OLS regressions in this study. For example, "Employment rates" is a category that was itself populated by 15 sub-variables. This is a list of the general variable categories that were utilized in OLS regressions.

Although this study places specific importance on these variables (because they correlate to Macedonian economic growth), it does not claim that these variables tell the whole story of the Macedonian economy. Even so, because they 1) fit into traditional economic theory, and because they 2) show statistically significant association with Macedonian growth, they deserve focused attention. The factors chosen for detailed study in Part I and Part II are 1) Accessibility of domestic credit 2) Enrollment in upper level education 3) Urbanization and 4) Size of the informal economy.

Data Dictionary

The following data dictionary (see Tables 3 and 4) provides the specific variable descriptions and symbols utilized for the OLS regressions in Part I of this study. Commonly, GDP per capita was used as the dependent variable, because it absorbs changes in GDP associated with population changes.

Table 3: Dependent Variables

Name	Description	Units	Scale	Model Symbol	Equation Symbol
Gross Domestic Product	Total market value of all final goods products and services produced in Macedonian economy.	U.S. Dollars	0 – Inf.	GDPUSDO	$X_{GDPUSDO}$
Gross Domestic Product per Capita	Total market value of all final goods products and services produced in Macedonian economy divided by population.	U.S. Dollars	0 – Inf.	GDPPCAP	$X_{GDPPCAP}$

Table 4: Independent Variables

Name	Description	Units	Scale	Model Symbol	Equation Symbol
Lending Rate	Interest rate charged by Macedonian banks to prime customers	Percentage	0–100	R_LEND	X _{R_LEND}
Net Domestic Credit Available per capita	Sum of net credit to the nonfinancial public sector, credit to the private sector, and other accounts per capita	Macedonian denar	0 – Inf.	CR_DOM_N	X _{CR_DOMPCAP}
Size of Shadow Economy in Macedonia	Estimated size of the shadow economy as a percentage compared to total formal GDP.	Percentage	0–100	SH_5SZAV	X _{SH_5SZAV}
Tertiary Education Enrollment	Percentage of eligible Macedonian students enrolled in tertiary education	Percentage	0–100	SCH_TER	X _{SCH_TER}
Tertiary Education Enrollment for Males	Percentage of eligible Macedonian male students enrolled in tertiary education	Percentage	0–100	SCH_TERM	X _{SCH_TERM}
Urban Population	Percentage of Macedonian population living in urban environment	Percentage	0–100	POP_URB	X _{POP_URB}

METHODOLOGY FOR PART II – IMPACT OF PRIMARY ECONOMIC FACTORS ON MACEDONIAN ENTREPRENEURSHIP

Secondary Question: *“How are these factors affecting entrepreneurship within the country and among its citizens?”*

Today’s Macedonian entrepreneur seems to possess a unique perspective about his or her country’s current economic condition. Whereas macroeconomic data is certainly important in helping us understand what is happening in the entirety of

Macedonia's economy, this study offers the perspective that the stories of business-pioneers there aid in understand the condition of the entrepreneurs within that economy.

Part II of this study involved a series of on-site interviews in Macedonia.

Nineteen Macedonian entrepreneurs agreed to give interviews to the author of this work from April 27 to April 30, 2012. These interviews were arranged and facilitated by a liaison company (*Welcome to Macedonia*) that operates in Bulgaria and Macedonia. The liaison company provided introductions and also interpretation between the Macedonian and English languages, when necessary. Respondents were chosen by *Welcome to Macedonia* primarily because of relational connection to the company. A randomized selection of entrepreneurs was not feasible for this study. *Welcome to Macedonia* was paid for its services, but interview respondents were not monetarily compensated for their interviews.

In addition to the nineteen entrepreneur interviews, the Deputy Director of Foreign Affairs at the U.S. Embassy in Skopje, Macedonia agreed to an informal interview regarding Macedonian economics and entrepreneurship. His insight was helpful for complementing the economic story of Macedonia.

Respondents for the entrepreneurial interviews create a range of demographics, and they represent a variety of businesses. Entrepreneurs were interviewed (see Appendix B for copy of questionnaire) in multiple industries, including: construction, food products, retail, accounting, tourism, consulting, art, health, and shipping. Eleven of nineteen respondents were able or willing to offer yearly revenue figures (averaging €117,000/year), but those figures varied widely from €768/year to €531,000/year. The mean age of the businesses represented in the interviews was 15.46 years (ranging from

eight months to 43 years). Thirteen interviewees were native to Macedonia's capital city, Skopje, and five were non-native to the capital city. Respondents also represented businesses of different "health" or progress. Six indicated that their businesses were growing. Five indicated that they had a stable business, and seven expressed that their enterprises were on the decline.⁷

Despite these diversities, the reader is encouraged to keep in mind that the study was constrained by some limitations. First, all but one of the interviews were performed in Macedonia's capital city of Skopje. Perhaps the results would have been different if the interviews had been conducted with entrepreneurs from different regions in Macedonia. Second, twelve of the nineteen respondents had attained a university degree (or attended a university), and fifteen of the nineteen had at least a high school education. In Macedonia, less than 30% of eligible students are typically enrolled in upper-level education. In contrast, for this study, over 68% of respondents had at least attended a university. Data for the percentage of Macedonian entrepreneurs that typically is enrolled in upper level education is unavailable. Finally, this study included an interview with one Albanian respondent and one Serbian respondent. In a country like Macedonia where ethnic tensions are visible and where populous is diverse, this could be viewed as an underrepresentation of Macedonia's minority populations: Macedonian 64.2%, Albanian 25.2%, Turkish 3.9%, Roma 2.7%, Serb 1.8%, other 2.2% (CIA World Factbook 2012).

Each interview (see Appendix B for a copy of the interview) lasted from 30 to 100 minutes. Interviews began with general questions regarding the respondents' history, business status, and regarding the general state of affairs in country. From there,

⁷ No indication of business "health" was recorded for Respondent "19."

questions focused on the entrepreneurs' view of Macedonia's current economic strengths and weakness. After these open-ended questions, interviews were aimed at examining the effects that the statistically identified macroeconomic factors may be having on the individual entrepreneurs. Issues of:

- 1) Availability of domestic credit
- 2) Upper-level education
- 3) Urbanization
- 4) The informal sector (shadow economy)

were individually addressed by each entrepreneur.⁸ Multiple choice and open-ended questions were employed to understand the entrepreneurs' perception on each issue.

Several of the respondents required no interpretation between the interviewer's questions asked in English and the entrepreneurs' responses in their native Macedonian tongue. For situations where interpretation was necessary or helpful, an employee of *Welcome to Macedonia* provided translation. During all but one interview,⁹ the *Welcome to Macedonia* employee was present for the purposes of clarifying any communication issues. All the interviews were recorded with the respondents' permission except for the Embassy interview.¹⁰

⁸ Respondent "12" chose not to answer questions regarding the informal sector of Macedonia's economy.

⁹ Interview "19" occurred in Ohrid, Macedonia sans *Welcome to Macedonia's* services.

¹⁰ The U.S. Embassy does not allow recording devices to enter the Embassy premises.

PART I – PRIMARY FACTORS ASSOCIATED WITH MACEDONIAN ECONOMIC GROWTH

Primary Question:

What primary contributing or prohibitive factors are currently associated with Macedonians' capacity for economic progress?

In order to identify the primary contributing or prohibitive factors that currently exhibit association with Macedonia's GDP, this study engaged in an exploratory data analysis. World Bank data (along with other sources) were combed to find factors of special interest to Macedonia's economy (and to this study). What follows are outputs from linear regression models that delivered outstanding and notable results pertaining to macroeconomic factors, their association to economic growth, and that, in light of literary precedent (Commission on Growth 2008), were deemed to be pertinent to Macedonia's transitional economy. As stated before, this study makes no claim that these factors are capable, by themselves, of guiding (or necessarily predicting) economic growth trends for Macedonia. They were chosen for further study, though, because they appear to carry importance for Macedonia and its entrepreneurs. Not included here are the regressions that were run in this study and either showed no statistical significance, or were perceived to possess no economic significance for this study. The World Bank online database

provided the majority of data used here, and the following variables were chosen for this study from among the 1000+ available in the database.

FACTOR 1 – THE FACTOR OF ACCESSIBILITY OF DOMESTIC CREDIT IN MACEDONIA

Table 5: Regression 1 – Relationship between GDP per capita and net domestic credit per capita in Macedonia

Regression 1: OLS, using observations 1993-2010 (T = 18)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	1317.61	290.888	4.5296	0.00034	***
CR_DOMPCAP	0.0332651	0.00614564	5.4128	0.00006	***
Mean dependent var	2633.061	S.D. dependent var	1107.100		
Sum squared resid	7359699	S.E. of regression	678.2192		
R-squared	0.646786	Adjusted R-squared	0.624710		
F(1, 16)	29.29834	P-value(F)	0.000057		
Log-likelihood	-141.8313	Akaike criterion	287.6626		
Schwarz criterion	289.4434	Hannan-Quinn	287.9082		
rho	0.573559	Durbin-Watson	0.543802		

Analysis of Regression 1: Relationship between GDP per capita and net domestic credit per capita in Macedonia

$$\text{GDP_PCAP} = 1317.61 + .03327(X_{\text{CR_DOMPCAP}})$$
Where GDP_PCAP stands for the predicted GDP per capita and $X_{\text{CR_DOMPCAP}}$ is net domestic credit available per Macedonian capita. There is evidence of a positive linear relationship between the net domestic credit available per Macedonian capita and the predicted GDP per capita (p-value = 0.00006). This model explains just under 65% of the variability in GDP per capita in Macedonia. For every additional Macedonian denar (local currency) available in the form of net domestic credit, Macedonia's GDP per capita can be expected to

increase by over \$0.03 (U.S. dollars). Figure 3 demonstrates the positive relationship between the GDP per capita and net domestic credit per capita.

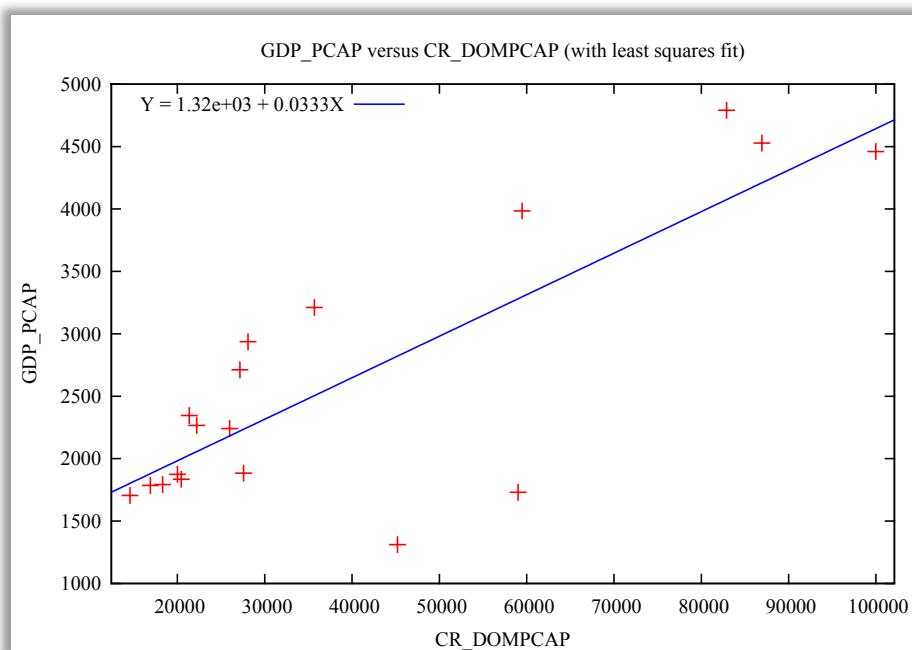


Figure 3: Regression 1, Scatterplot graph: Scatter plot of GDP per capita and net domestic credit per capita

In recent history, 40 to 50 Macedonian denars typically exchanges for one U.S. dollar. According to this study's regression, an increase of one (1) denar of credit available per capita equates to a 1.485 denar increase in GDP per capita (at 45 denar to 1 U.S. dollar).

This is a sizable return, and Part II of this work will attempt to further illuminate some of the implications of the domestic credit trend in Macedonia. Among the more startling findings from Part II was the nearly unanimous non-use of formal credit channels among the entrepreneurs interviewed. The availability of credit per capita is rising in Macedonia (see Figure 4), but the entrepreneurs interviewed did not generally make use of leverage for their companies.

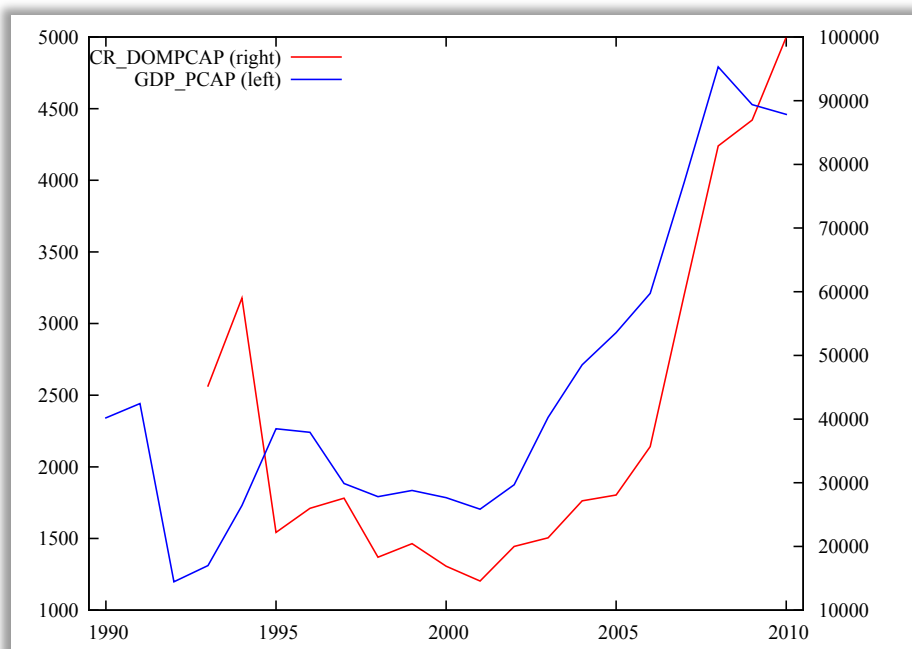


Figure 4: Regression 1, Time Series Graph: Time series graph of GDP per capita and net domestic credit per capita

FACTOR 2 – THE FACTOR OF ENROLLMENT IN TERTIARY EDUCATION IN MACEDONIA

Table 6: Regression 2.1 – Relationship between GDP per capita and percentage of eligible students (both men and women) enrolled in tertiary education

Regression 2.1: OLS, using observations 1990-2009 (T = 20)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	-439.293	371.155	-1.1836	0.25197	
SCH_TER	117.758	14.5131	8.1139	<0.00001	***
Mean dependent var	2445.838	S.D. dependent var	999.4873		
Sum squared resid	4075226	S.E. of regression	475.8166		
R-squared	0.785294	Adjusted R-squared	0.773366		
F(1, 18)	65.83569	P-value(F)	2.00e-07		
Log-likelihood	-150.6258	Akaike criterion	305.2516		
Schwarz criterion	307.2431	Hannan-Quinn	305.6404		
Rho	0.597215	Durbin-Watson	0.720940		

Analysis of Regression 2.1: Relationship of GDP per capita to percentage of eligible students (male and female) enrolled in tertiary education

$GDP_PCAP = -439.293 + 117.758(X_{SHC_TER})$: Where GDP_PCAP stands for the predicted GDP per capita and X_{SHC_TER} is the percentage of eligible Macedonian students enrolled in tertiary education.¹¹ There is evidence of a positive linear relationship between the percentage of eligible Macedonian students enrolled in tertiary education and the predicted GDP per capita (p-value = 2.00e-07) This model explains over 78% of the variability in GDP per capita in Macedonia. According to this model, for each additional percentage point of enrollment in tertiary education of eligible Macedonian students, the national average GDP per capita increases by over \$118 USD. It is overreaching (or inaccurate) to claim here that enrollment in tertiary education causes GDP growth (or vice versa), but this regression does indicate a positive relationship. Regression 2.2 (see below), which considers enrollment of males only, returns a stronger correlation to GDP per capita than Regression 2.1 (which includes enrollment of men *and* women).

¹¹ “Eligible students enrolled” refers to World Bank data described as: “Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Tertiary education, whether or not to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level (World Bank 2011).”

Table 7: Regression 2.2 – Relationship between GDP per capita and percentage of eligible males enrolled in tertiary education

Regression 2.2 : OLS, using observations 1990-2009 (T = 20)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	-613.566	346.774	-1.7694	0.09377	*
SCH_TERM	140.125	15.258	9.1837	<0.00001	***
Mean dependent var	2445.838	S.D. dependent var		999.4873	
Sum squared resid	3338375	S.E. of regression		430.6568	
R-squared	0.824116	Adjusted R-squared		0.814344	
F(1, 18)	84.34002	P-value(F)		3.26e-08	
Log-likelihood	-148.6314	Akaike criterion		301.2628	
Schwarz criterion	303.2543	Hannan-Quinn		301.6515	
rho	0.475803	Durbin-Watson		1.012177	

Analysis of Regression 2.2: Relationship of GDP per capita and percentage of eligible males enrolled in tertiary education

$GDP_PCAP = -613.566 + 140.125(X_{SCH_TERM})$: Where GDP_PCAP stands for predicted GDP per capita and X_{SCH_TERM} is the percentage of eligible Macedonian males enrolled in tertiary education. There is evidence of a positive linear relationship between the percentage of eligible Macedonian males enrolled in tertiary education and the predicted GDP per capita (p-value = 3.26e-08). This model explains over 82% of the variability in GDP per capita in Macedonia. According to this model, for each additional percentage point of enrollment in tertiary education of eligible Macedonian males, the national average GDP per capita increases by over \$140 USD. Figures 5 and 6 demonstrate this positive relationship.

Findings in Part II of this study reveal a divide in Macedonian entrepreneurs' perceptions of the impact of their upper-level education system. Some view it as effective. Some see it as highly ineffective. Whereas the macroeconomic data here is fairly convincing regarding the strongly positive relationship between the two factors,

anecdotal evidence will suggest that the relationship is far from causal (this study makes no claim of causality). Further study would be merited in order to establish if there exist any lagging effects of upper level education in Macedonia on its GDP.

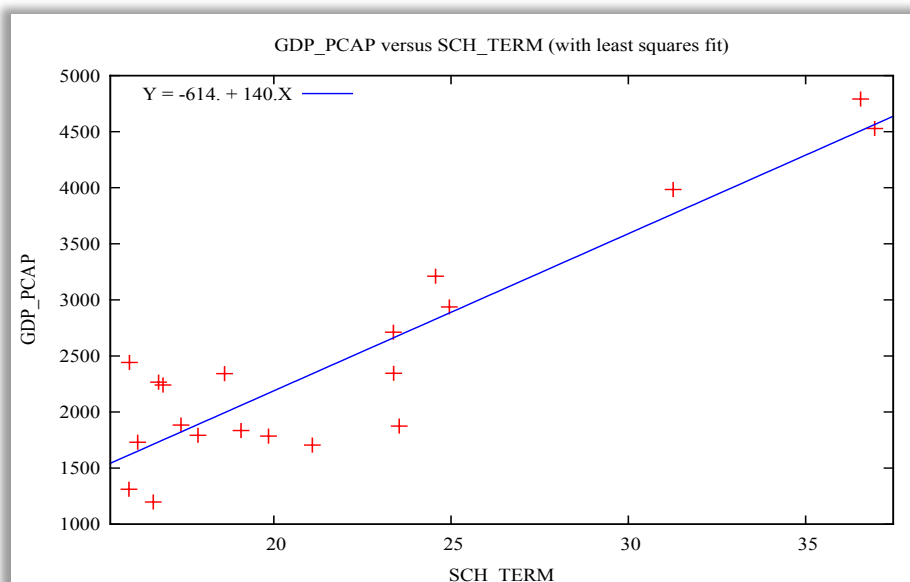


Figure 5: Regression 2.2, Scatterplot graph: Scatterplot of GDP per capita and percentage of eligible males enrolled in tertiary education

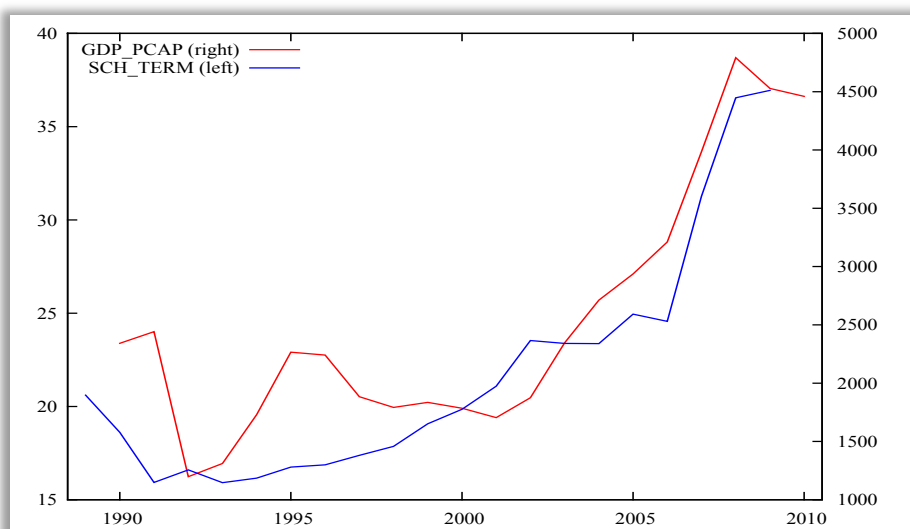


Figure 6: Regression 2.2, Time series graph: GDP per capita and percentage of eligible males enrolled in tertiary education

FACTOR 3 – THE FACTOR OF URBANIZATION IN MACEDONIA

Table 8: Regression 3 – Relationship between GDP per capita and percentage of Macedonians living in an urban environment

Regression 3: OLS, using observations 1990-2010 (T = 21)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	-13991.7	3110.28	-4.4985	0.00025	***
POP_PURB	263.011	49.4192	5.3221	0.00004	***
Mean dependent var	2541.735	S.D. dependent var		1068.713	
Sum squared resid	9171120	S.E. of regression		694.7593	
R-squared	0.598514	Adjusted R-squared		0.577384	
F(1, 19)	28.32425	P-value(F)		0.000039	
Log-likelihood	-166.1617	Akaike criterion		336.3234	
Schwarz criterion	338.4125	Hannan-Quinn		336.7768	
rho	0.731070	Durbin-Watson		0.415934	

Analysis of Regression 3: Relationship of GDP per capita and percentage of Macedonians living in an urban environment

$GDP_PCAP = -13991.7 + 263.011(X_{POP_URB})$: Where GDP_PCAP stands for the predicted GDP per capita and X_{POP_URB} is the percentage of Macedonian population living in an urban environment. There is evidence of a positive linear relationship between the percentage of Macedonian population living in an urban environment and the predicted GDP per capita (p-value = 0.000039). This model explains nearly 60% of the variability in GDP per capita in Macedonia. For each additional percentage of the total Macedonian population that lives in an urban environment, GDP per capita is expected to increase by over \$236 U.S. dollars. Figures 7 and 8 reveal, based on the straight-line trend of urbanization, that the figures used in this study are based on a projection. The World Bank database employed here creates its urban population estimates “using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects (World Bank Database 2012, Macedonia Database, Sheet 2, Line 978).”

Part II reveals that Macedonian entrepreneurs are unanimous in their opinion that the urbanization trend is bad for Macedonia. This opinion is in contradiction to classic theory (Commission on Growth 2008). Many of firms represented by the respondents in Part II are individually benefitting from their fellow citizens' exodus from rural life, but they appear to intuitively perceive that the country is leaving much of its capacity underutilized. Additionally, the entrepreneurs interviewed hinted at lacking progress in areas connected to economic agglomeration. Capacity utilization and economic agglomeration may be necessary before Macedonians can holistically benefit from the usual positives associated with urbanization trends (Sirghi 2010).

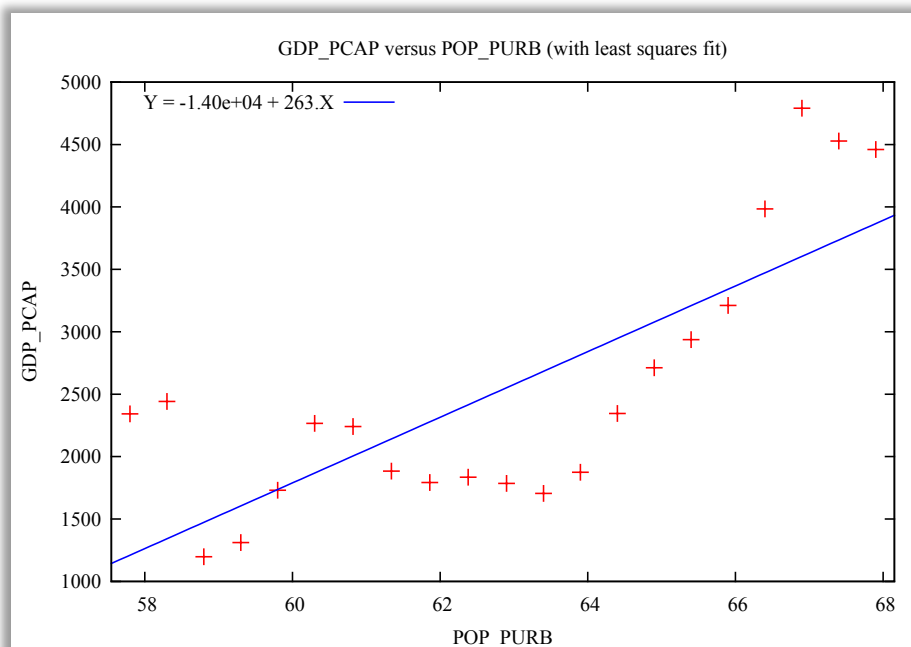


Figure 7: Regression 3, Scatterplot graph: Scatterplot of GDP per capita and percentage of population living in urban environment

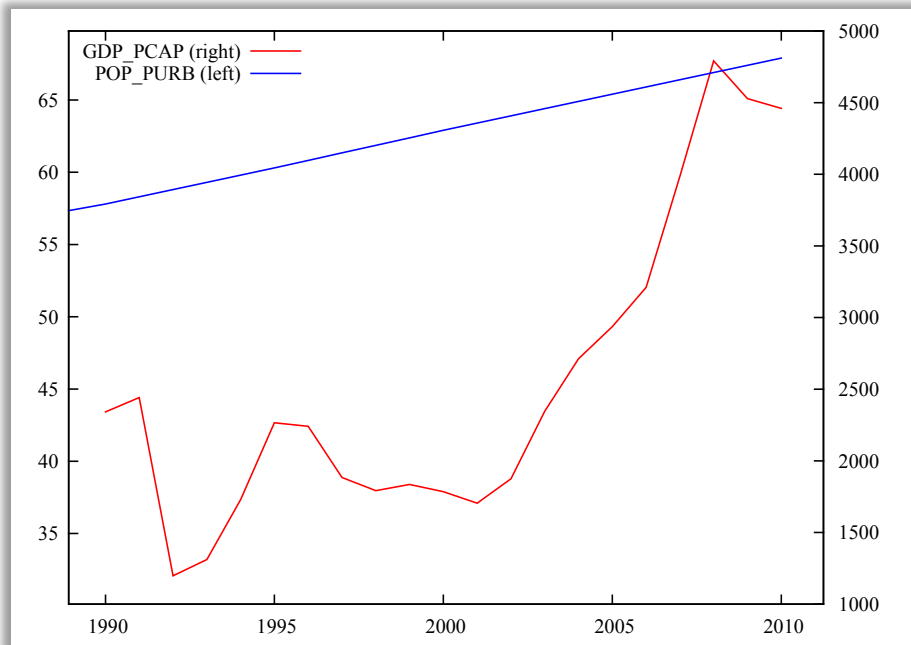


Figure 8: Regression 3, Time series graph: GDP per capita and percentage of population living in urban environment

FACTOR 4 – THE FACTOR OF THE SIZE OF THE SHADOW ECONOMY IN MACEDONIA

Disclaimer on Data

For the purposes of establishing a time series of data inputs that is long enough to study correlating trends, this study combined the calculations of previous works.

Hristijan Risteka used electricity consumption data calculate shadow economy size in Macedonia from 1996 to 2005 (Risteski 2009). A separate study was conducted by Freidrich Schneider in which he made us of the MIMIC/Model approach of shadow economy size estimation for the years 1999 through 2007 (Schneider 2009). For years in which the two scholars' data points overlap, the average of the two was used. For years when only one study's data is available, half the average difference of the overlapping years was added to the lower trending lone study, and, similarly, half the average

difference of the overlapping years was subtracted from the higher trending study. See

Table 9 for this study's hybrid calculations.

Table 9: Author's hybrid calculation of Macedonian shadow economy size between 1996 and 2007 as a percentage compared to national GDP

<i>Year</i>	<i>Schneider</i>	<i>Risteski</i>	<i>Adjustment</i>	<i>Study Hybrid</i>
1996	n/a	40.30	-2.61 ¹²	37.69
1997	n/a	45.70	-2.61	43.09
1998	n/a	51.40	-2.61	48.79
1999	39.00	47.80	Average	43.40
2000	38.20	50.50	Average	44.35
2001	39.10	42.60	Average	40.85
2002	38.90	42.60	Average	40.75
2003	38.40	42.80	Average	40.60
2004	37.40	42.90	Average	40.15
2005	36.90	35.30	Average	36.10
2006	36.00	n/a	+2.61	38.61
2007	34.90	n/a	+2.61	37.51

Table 10: Regression 4 – relationship between GDP per capita and percentage of Macedonians living in an urban environment

Regression 4.1: OLS, using observations 1996-2007 (T = 12)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	8034.63	1949.8	4.1207	0.00207	***
SH_5SZAV	-138.463	47.4078	-2.9207	0.01528	**
Mean dependent var	2358.980	S.D. dependent var		716.9173	
Sum squared resid	3051038	S.E. of regression		552.3621	
R-squared	0.460344	Adjusted R-squared		0.406379	
F(1, 10)	8.530328	P-value(F)		0.015283	
Log-likelihood	-91.70378	Akaike criterion		187.4076	
Schwarz criterion	188.3774	Hannan-Quinn		187.0485	
rho	0.515889	Durbin-Watson		0.873284	

¹² One half of the average difference between to the two study's overlapping years (1999-2005) was subtracted from the higher-trending study's non-overlapping years, and it was added to the lower-trending study's non-overlapping years.

Analysis of Regression 4.1: Relationship of GDP per capita to the size of the shadow economy as a percentage compared to Macedonia's formal economy

$GDP_PCAP = 8034.63 - 138.463(X_{SH_5SZAV})$: Where GDP_PCAP stands for the predicted GDP per Capita and SH_5SZAV is the size of the shadow economy as it compares to the formal GDP of Macedonia. There is evidence of a negative linear relationship to the size of the shadow economy as it compares to the formal GDP of Macedonia and the predicted GDP per capita (p-value = 0.015283). This model explains 46% of the variability in GDP per capita in Macedonia. For every percentage point increase in the size of Macedonia's shadow economy as it compares to the GDP, Macedonia's GDP per capita output decreases by over \$138 U.S. dollars.

For the sake of illustration, consider the 2.5% growth in the size of the shadow economy in Macedonia that is estimated to have occurred between 2005 and 2006. If that growth is applied to Regression 4 (above), Macedonians experienced an additional loss of at least 4.7%¹³ of their formal per capita output that year do to growth in the shadow economy (for expanded explanation, see Part II, Shadow Economy). This translates to a deleterious affect on the Macedonian economy. For every percentage increase in the size of the shadow economy, GDP per capita can be expected to go down by nearly 1.9%. Figures 9 and 10 illustrate this negative relationship between the estimated size of the shadow economy in Macedonia and its official GDP per capita.

The entrepreneurs interviewed in Part II of this study generally shared a negative view of the shadow economy. For a number of reasons, they perceive that their firm and the Macedonian economy are negatively impacted by operations in the shadow economy.

¹³ Inserting the 2.5% estimated growth of the shadow economy between 2005 and 2006 into Regression 4 results a in loss of GDP per capita of approximately 10.3% YoY. Regression 4 results in an R-squared value 0.460. To find the least negative impact that the growth of the shadow economy had in 2006, the R-squared value is multiplied by the 10.3% loss indicated by the regression for a least negative loss of approximately 4.7%.

This shared opinion aligns with the macroeconomic data here that suggests that the formal Macedonian economy is negatively trending with the shadow economy.

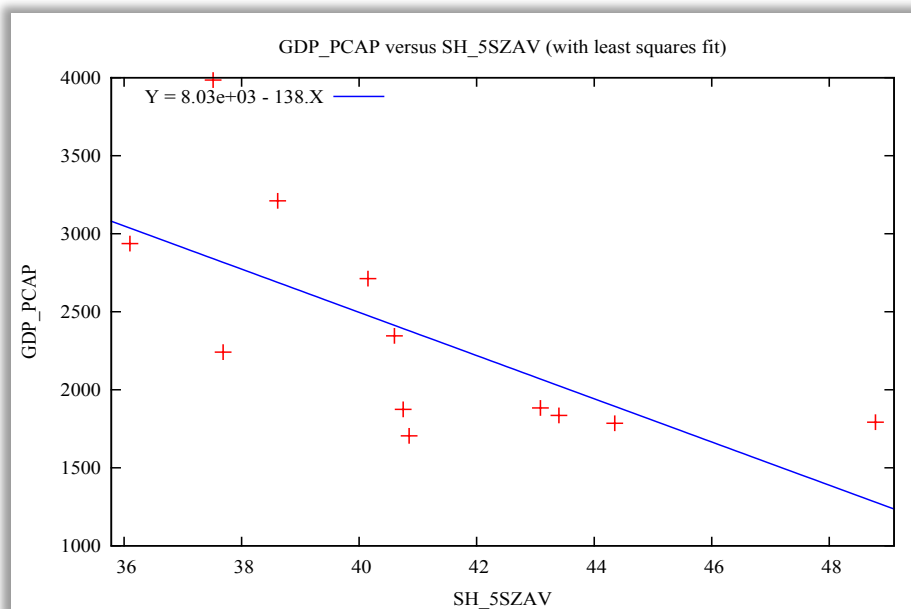


Figure 9: Regression 4, Scatterplot graph: Scatterplot of GDP per capita and size of shadow economy (as a percentage of GDP)



Figure 10: Regression 4, Time series graph: GDP per capita and size of shadow economy

MULTIPLE VARIABLE REGRESSION MODELS

Table 11: Multiple Regression 1 – Relationship of GDP per capita to net domestic credit and real lending rate

Multiple Regression 1: OLS, using observations 1996-2010 (T = 15)
 Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	3440.71	397.599	8.6537	<0.00001	***
CR_DOM_N	1.1591e-08	1.53618e-09	7.5454	<0.00001	***
R_LEND	-100.433	18.8171	-5.3373	0.00018	***
Mean dependent var	2805.792	S.D. dependent var		1124.194	
Sum squared resid	562423.8	S.E. of regression		216.4917	
R-squared	0.968213	Adjusted R-squared		0.962915	
F(2, 12)	182.7549	P-value(F)		1.03e-09	
Log-likelihood	-100.2738	Akaike criterion		206.5476	
Schwarz criterion	208.6717	Hannan-Quinn		206.5249	
rho	0.228260	Durbin-Watson		1.127737	

Analysis of Multiple Regression 1: Relationship of GDP per capita to net domestic credit and real lending rate

$GDP_PCAP = 3440.71 + 1.1591e-08(X_{CR_DOM_N}) - 100.433(X_{R_LEND})$: Where

GDP_PCAP stands for the predicted GDP per Capita, CR_DOM_N is the net domestic credit available (in Macedonian denars), and R_LEND is the real lending rate. There is evidence of a positive linear relationship between the net domestic credit available in Macedonia and the predicted GDP per capita (p-value = <0.00001). There is also evidence of a positive linear relationship between the real lending rate and the predicted GDP per capita (p-value = <0.0001). This model can be used to explain nearly 97% of the variability GDP per capita in Macedonia. For every additional denar available as net credit, Macedonian GDP per capita can be expected to increase by \$1.1591e-08 U.S. dollars. For each additional percentage point added to the real lending rate, Macedonian GDP per capita can be expected to decrease by over \$100.

Part II of this study reveals that Macedonian entrepreneurs are sensitive to lending rates (anecdotal evidence). This regression reinforces the importance of deliberate lending policy in Macedonia, a country where the entrepreneurial population appears to be avoidant of formal debt leverage. Part II elaborates on the availability of credit issue for the Macedonian entrepreneur.

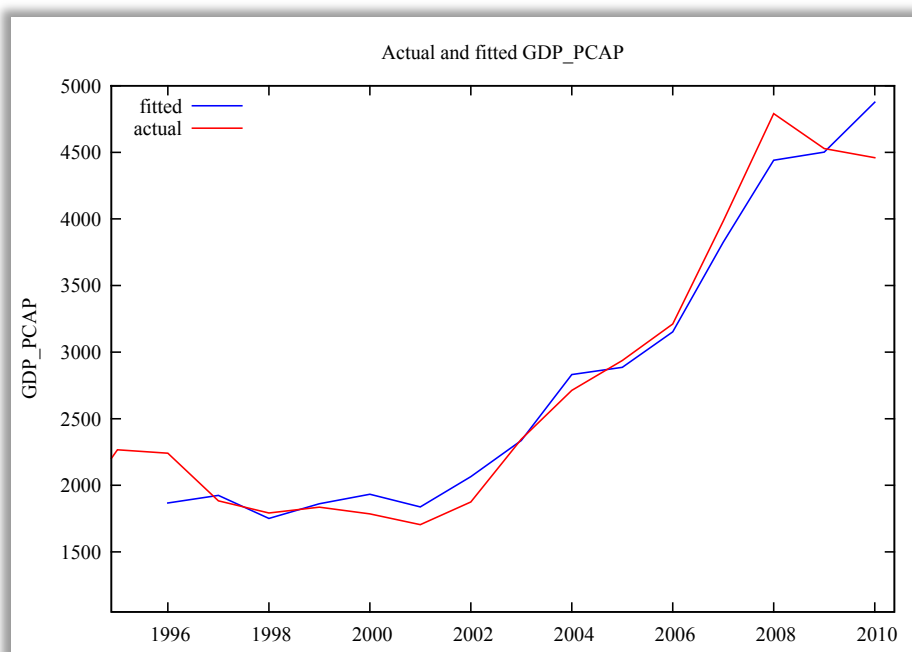


Figure 11: Multiple Regression 1, Time Series Graph: Relationship between GDP per capita and net domestic credit and real lending rate

Table 12: Multiple Regression 2 – Relationship of GDP per capita to net domestic credit and size of the shadow economy as it compares to Macedonian GDP

Multiple Regression 2: OLS, using observations 1996-2007 (T = 12)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	3346.73	1187.34	2.8187	0.02009	**
CR_DOM_N	2.25759e-08	3.69575e-09	6.1086	0.00018	***
SH_5SZAV	-53.3609	26.0643	-2.0473	0.07093	*
Mean dependent var	2358.980	S.D. dependent var		716.9168	
Sum squared resid	592881.3	S.E. of regression		256.6626	
R-squared	0.895133	Adjusted R-squared		0.871830	
F(2, 9)	38.41163	P-value(F)		0.000039	
Log-likelihood	-81.87432	Akaike criterion		169.7486	
Schwarz criterion	171.2034	Hannan-Quinn		169.2101	
rho	0.173925	Durbin-Watson		1.531224	

Analysis of Multiple Regression 2: Relationship of GDP per capita to net domestic credit and size of the shadow economy as it compares to Macedonian GDP

$$\text{GDP_PCAP} = 3346.73 + 2.25759\text{e-}08(X_{\text{CR_DOM_N}}) - 53.3609(X_{\text{SH_5SZAV}}): \text{Where}$$

GDP_PCAP stands for the predicted GDP per Capita, CR_DOM_N is the net domestic credit available (in Macedonian denars), and SH_5SZAV is the size of the shadow economy as a percentage compared to Macedonia's overall GDP. There is no evidence to support that there is an association between shadow economy (p-value = 0.071) and GDP once the model takes into account the net domestic credit available. This model can be used to explain nearly 90% of the variation of GDP per capita in Macedonia. For every additional denar available as net credit, Macedonian GDP per capita can be expected to increase by \$2.25759e-08 U.S. dollars. Figure 12 depicts the positive relationship between net domestic credit and GDP per capita in this Multiple Regression 2.

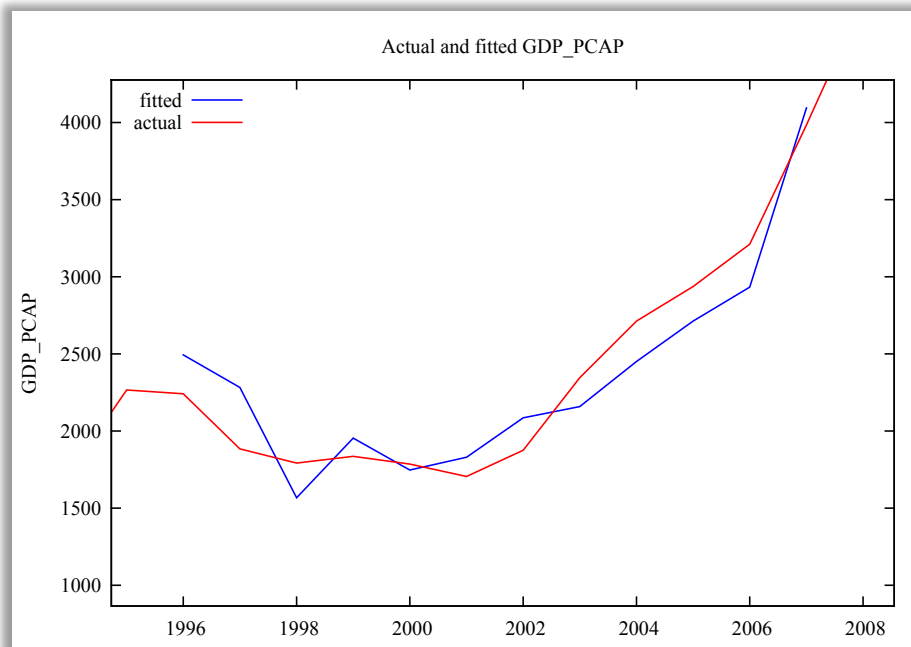


Figure 12: Multiple Regression 2, GDP per capita to net domestic credit and shadow economy size (actual and fitted)

PART II – “DATA: DOORWAYS TO UNEXPECTED STORIES”

INTRODUCTION

With data from Part I of this study regarding the primary factors that show association with Macedonia’s economic growth, research was refocused on answering this effort’s secondary question

“How are these factors affecting entrepreneurship within the country and among its citizens?”

Interview-based, Part II of this effort hints that the experience of the Macedonian entrepreneur is not always reflective of macroeconomic trends in the country. Deeper evaluation (to follow in “Availability of Domestic Credit,” “Urbanization,” “Upper-Level Education”) offers perspectives as to why certain discrepancies seem to exist. On a generalized level, it is notable that 17 of the 18 entrepreneurs who answered the question regarding how the Macedonian economy was doing since its cessation from Yugoslavia in 1991 answered either “it depends” or “worse.” Only one person indicated that the economy is doing “better” since independence. These responses came despite a 90% increase in GDP per capita during that time period since independence (1991 and 2010).

At the business level, general responses appeared to show greater variance. Seven of 18 respondents indicated that their particular business were on the decline. Six responses indicated business growth, and five indicated currently stable ventures. This

study will seek, not only to address the data-discrepancies that research has unearthed, but to discover what, if any, factors are contributing or hurting the individual businesses represented in the interviews.

In the general and open-ended portions of the interview used for this study, each entrepreneur was given the opportunity to offer his or her perspectives on the overall condition of Macedonia and its economy. This portion of the interviews proved to be interesting, because, despite the fact that none of the respondents were interviewed in proximity to another, many of them presented similar or identical answers to certain questions. Such similarities, in the view of this study, are worthy of consideration, and they will be discussed in length.

HISTORICAL CONSIDERATIONS FOR EVALUATION OF THE MACEDONIAN ENTREPRENEUR

Before delving into the specifics of the respondents' answers, this study will briefly discuss the modern history of Macedonian economics. To understand the mindset of the Macedonian entrepreneurs who gave interviews for this study, it is beneficial to establish an understanding of the environment in which they developed their business-perspective.

To begin, several interview respondents spoke of "glory days" under President Tito. Josef Broz Tito led former Yugoslavia from 1945 (the end of World War II) until his death in 1980. Under Tito's control, Macedonia found its place in Yugoslavia as an agrarian and industrial production center. In 1960, the economy was growing at 6.2% per year, literacy was over 90% and Yugoslavs enjoyed a life expectancy of over 70 years.

Former Yugoslavia's economy grew at an average rate of 4.9% between 1952 and 1982, and it was one of only 27 nations that grew at an average rate over 4.5% during that same time. (Rodrik 2011). Unlike many of their other socialist peers, Yugoslavians grew accustomed to a system that invited foreign investment and interaction. These investments came after the country adopted a new constitution in 1963 that introduced "market socialism" (US UK Interventions). Then, in the 1980's, western counterparts who were not keen on Yugoslavia's growth sought to impose trade obstacles that reduced the export capacity of the momentum-laden economy. In response, Yugoslavia took on International Monetary Fund loans. When these loans proved unserviceable, the Yugoslavian economy began its decline.

In addition to promoting deliberate economic policy, Tito's governance required inter-ethnic cooperation within Yugoslavia. Several interview respondents spoke of President Tito's ability to promote (even if, by force) peace among the various ethnic groups in Yugoslavia. It could be argued that few things, if any, have been more damaging to the former Yugoslav states in the past 20 years (since Tito's rule) than the effects of militant nationalism. The wars, which involved Slovenians, Bosnians, Serbs, Croates, Kosovars, Macedonians, and Albanians (1991-2001), have produced substantial human loss and atrocities as well as severe financial loss. During his tenure, Tito was generally successful at holding the multiple ethnic groups together. As one ethnic-Macedonian respondent told us, under Tito's governance "We were all Yugoslavians."

Like any people, Macedonians, view their current situation through the lens of the history they have experienced. Today's Macedonian entrepreneur has seen Macedonia in multiple conditions. Macedonians between 40 and 70 years old remember Yugoslavia's

economic glasnost of the 1960's, the GDP peak of the late 1980's (over \$6000 USD per capita in the former Yugoslavian state of Bulgaria, for instance), and the crash that came with the fall of communism (Maddison 2007). By 1991, newly independent Macedonians were outputting just over \$1300 per capita (World Bank 2011). After the demise of communism, the relative prosperity and predictability of the previous 50 years was a part of Macedonians' history but it was no longer part of their reality.

When Macedonia declared its independence from Yugoslavia, it was also declaring an independence from the greater Yugoslavian economy. Under Yugoslavia, Macedonians had unfettered commerce with 23 million Yugoslavians. As an independent nation, Macedonia's direct market is now limited to its 2 million citizens. Furthermore, unlike some its former Yugoslavian peers (Bulgaria and Slovenia), Macedonia has not been admitted to the EU.

When Macedonia's history is considered, the data taken from this study's respondents takes on a new light. Although this study is not a historical review of the Macedonian situation, recent Macedonian history is part of the story behind the data collected from the entrepreneurs. We submit that this history serves as a backdrop for a detailed view of the interview data.

IMPACTS OF MACROECONOMIC FACTORS ON MACEDONIAN ENTREPRENEURS

Because of the interwoven nature of the impact of macroeconomic factors on entrepreneurs in Macedonia, it would be difficult or overly simplistic to isolate discussion of them to a one-at-a-time analysis. Individual macroeconomic factors under study here

are, indeed, *not* “policy levers” that, when pulled, can exact consistently predictable outcomes in the Macedonian economy or within its population of entrepreneurs (Commission on Growth 2008). Thus, this work will present a narrative in which the macroeconomic factors are sometimes (but not always) discussed simultaneously.

FACTOR 1: AVAILABILITY OF DOMESTIC CREDIT AND MACEDONIAN ENTREPRENEURSHIP

Among the factors in this study that showed association with GDP in Macedonia, the availability of credit (and lending interest rates) showed the best statistical fit. Remarkably though, of the nineteen respondents who indicated where they obtained their start up funds for their entrepreneurial venture, only one made use of a formal bank. Macroeconomic data shows an increase in the availability of domestic credit in Macedonia, but the entrepreneurs who provided the cross-sectional view for this study have not realized that trend. The 2012 version of the Global Competitiveness Report indicates that Macedonians view limited availability of credit as the most prolific barrier to business in their country (GCR 2012). In that study, limited credit availability was chosen nearly twice as much as any other factor they perceive to limit business in their country.

The statistical portion of this study revealed that 65% of the variability in Macedonia’s GDP per Capita can be explained by a model that evaluates the association between that GDP figure and the domestic credit available per person. According that model, for every 1000 Macedonian denars available to the Macedonian individual through net domestic credit, the economy can expect a return of \$33.27 in the form of

gross domestic output. This figure, of course, is on a per capita basis that averages GDP per capita association with availability of domestic credit, but it does give an indication of the economic return associated with the usage of domestic credit. Figure 3 illustrates the association between the availability of credit per capita in Macedonia and its GDP per capita.

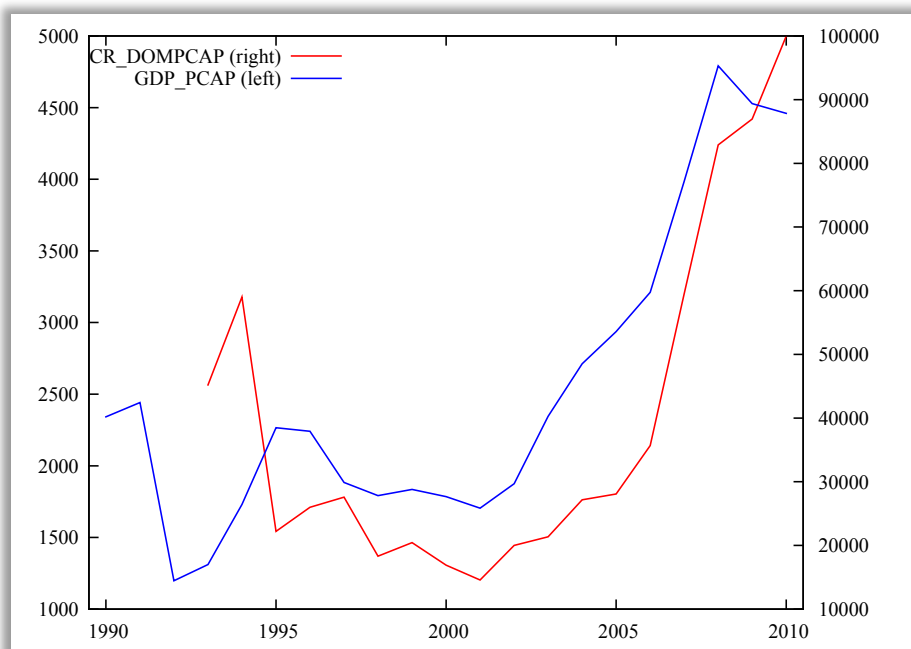


Figure 4: Regression 1, Time Series Graph: Time series graph of GDP per capita and net domestic credit per capita

Geo-cultural and socio-political issues and their relationships to credit for Macedonian entrepreneurs

As stated before, twenty percent¹⁴ of the Global Competitiveness Report's respondents indicated that "access to financing" is the biggest challenge for Macedonian business (GCR 2012). If GCR's findings are accurate, and if this study's interviewees' solidarity on bank-debt aversion holds true for the greater population, then the usage of

¹⁴ Global Competitiveness Report 2012, pg. 242
Actual figure: 19.7%

leverage for business in Macedonia is an issue that deserves focused attention. This study will evaluate several facets of the debt-usage issue in Macedonia.

Geo-cultural issues and credit for Macedonian entrepreneurs

Culture and history may be among the components that affect Macedonians' perspective on debt. One respondent for this study, when asked about the usage of debt in Macedonia, replied, "We do things the Pakistani way." Interestingly, his firm showed the largest of the revenue figures for entrepreneurs studied in this effort, but he was among the respondents in our sample who made no use of debt (from banks). Upon further inspection, we discovered that, although most entrepreneurs avoided debt from banks like most avoid the plague, many had, in fact, taken on loans from family and friends.

In the course of the interview-portion of this study, what surfaced was a cultural form of leverage that involved the use of business, family, and friendship networks for capital acquisition. Although only one of the nineteen entrepreneurs began their business with a loan from a formal bank, six (32%) began operations with a loan from an individual with whom they had a relationship. 41% of those who were asked if they pursued additional loans after start-up said they had. Again, the predominance of these responses pointed to the use of business, family, and friendship relationships for financing.

Historically, Macedonia rests in the middle of the "Balkan Route." The Balkans have served as a geographic, trade, and cultural bridge between the West and East for centuries. Trade, people, contraband, religious perspectives, and cultural norms have

made their way through the Balkans over time, and each has left its mark on the region. Additionally, the Balkans (which include Macedonia) have been the focus of several empires, in part, because of its strategic geographical importance. Notably, Macedonia was part of the Ottoman Empire from the mid-14th century until early in the 20th century. Although casual observers may view Macedonia from the perspective of the past 20 to 100 years (World War II, the fall of communism, the Yugoslavian Wars), Macedonian's may view themselves through a cultural lens that reaches back much further. Under the control of the Ottoman Empire, Macedonia was exposed to Islamic practices. Among these is the prohibition of paying or receiving interest on loans. In this study's interviews, several respondents indicated that they had received loans from business associates, family members, and / or friends, but at no interest. None professed that they were Muslim adherents. Even so, the giving of loans without interest and the aversion to paying interest on loans seem to be among the cultural norms that have taken root in Macedonia. Of the thirteen interviewees who answered a questions regarding their opinion of how Macedonians generally finance the start-up of their own business, seven (54%) said "personal savings," two (15%) said "family loan," two (15%) said "bank," and one (8%) said, "another business person." The implication was that these start up (and other additional loans) were granted at zero interest.

Socio-political issues and credit for Macedonian entrepreneurs

Aside from the geo-cultural influences on the use of debt in Macedonia, the socio-political variability there may be having an instability affect that makes leverage less appealing to the average Macedonian entrepreneur (OECD 2011). Ari Aisen's release of a 2011 International Monetary Fund report emphasizes the impacts of political instability

on economic growth. In it they remind readers that, “Since political instability is associated with greater uncertainty regarding future economic policy, it is likely to adversely affect investment and, consequently, physical capital accumulation (Aisen 2011).” For investor and borrower, the greater the perception of instability in an economy, the greater the associated risk of debt. Macedonian entrepreneurs’ perceptions on debt seem to take into account the impact of the dysfunction the Balkans have seen.

The past 20 years have not been a predictable season for Macedonia. Several intrusions to stability have rocked the economic boat, and have arguably not done anything to help the issue of financing availability. First, Macedonia’s statement of independence in 1991 reduced the market size for the country. Second, the Yugoslavian wars of the 1990’s (and into 2001) were fought without assurance of a specific outcome. Finally, the implementation of a new Macedonian constitution (under new governance) in 2006 may have further created a perception of instability.

Additionally, Macedonia faces the issue of EU admittance. Although most Macedonians look to EU admittance for their economic future (Carausan 2011), EU admittance does not necessarily correlate to economic improvement (Uunk 2011). In recent days, Macedonia has been relatively sheltered from the debt obligations associated with the EU’s debt issues. Even so, instability associated with them may serve to further destabilize the investment environment for Macedonia’s small economy.

Regardless of the impact of the EU admittance and debt issues on Macedonian entrepreneurs, there does not appear to be a trend of significant, outstanding and sustained progress regarding the availability of credit to the “normal” entrepreneur there.

The OECD¹⁵ policy index on SME's report of 2009 actually indicates that the availability of credit had decreased in Macedonia since 2007. A similar report echoes what this study heard from entrepreneurs regarding the woes of collateral requirements and high interest rates in the greater region (OECD 2011).

Economic Viscosity and its Relationship To Credit For Macedonian Entrepreneurs

More tangible issues appear to limit Macedonian entrepreneurs' access to financing. One of these matters is the increasingly international nature of the banking industry. It appears that, among the top ten banks operating in Macedonia, there are three that are Macedonian-owned (#3 Eurostandard Banka, #6 Komercijalna Banka, #8 Macedonian Bank for Development Promotion).¹⁶ Whereas, in years past, localized banks served small nations, today's global financial institutions are competing in less developed regions like Macedonia. Although Macedonian entrepreneurs may not compete directly with firms within their specific market from other nations, they do, through access to international banks, have to compete for loans (via interest rates). All seven of the remaining (not Macedonian-owned) top-ten Macedonian banks are based in the EU (either Bulgaria, France, Greece, Slovenia, or Turkey), and approximately 48% of total bank assets in Macedonia are foreign owned (Giustiniani 2008). For an entrepreneur operating within an economy like Macedonia, where cash flows are slower and less predictable than their EU peers, internationally competitive interest rates can appear more daunting than they would to an entrepreneur operating in a stronger economy. In other words, banks operate with the aim to loan to those who can offer the

¹⁵ Organization for Economic Co-Operation and Development

¹⁶ Unconfirmed source.

lowest risk to cash payoff ratio. Macedonian entrepreneurs operate at relatively high risk in an environment with a relatively low cash flow capacity. Respondents for this study's interviews balked at interest rates on loans at banks that, to a borrower in a more developed economy, may appear reasonable and serviceable.

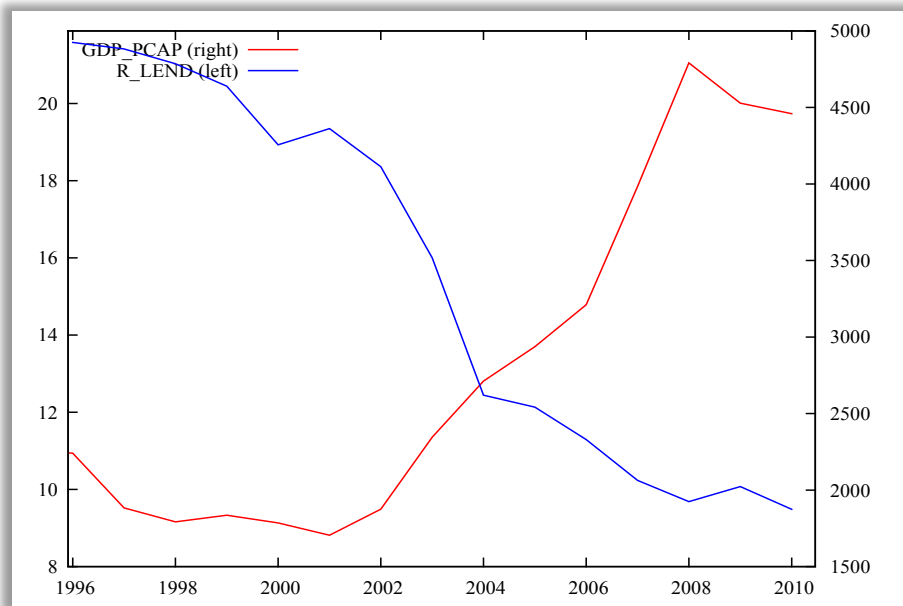


Figure 13: GDP per Capita and Lending Interest Rate

For the Macedonian entrepreneur, the issues of credit history and collateral are worth mentioning in brief here. Banks' lending decisions are based, in part on borrowers' history, and Macedonia's entrepreneur will generally lack a traceable credit history (again, a disadvantage when competing for loans in a global field). Much of the country's structured record keeping came online in the mid-1990's. One respondent in this study's interviews alluded to her firm's revolving credit limit that was only secured through a sizeable cash collateral deposit. Collateral requirements in a loan structure lacking history can be also be higher than requirements within a structure showing credit history. For Macedonia, which operates at a more sluggish economic viscosity when

compared to its global peers, the international banks that have come in may actually serve to reduce the availability of credit to SME's. More study is warranted to determine if this is true.

Reconciling the discrepancy between the economic data and the entrepreneurial experience regarding availability of credit

For a number of reasons, it appears that small-to-medium-sized Macedonian ventures are limited in their access to financing. This study's interviews and other study's outcomes point to availability of financing as a key issue for Macedonia's business people. This apparent boots-on-the-ground reality is not reflected, though, in macroeconomic data. Macroeconomic data show an availability of net credit per capita today that is more than four times what it was at the beginning of the millennia. It is obvious that this credit capacity is being used, but if Macedonia's small-to-medium-sized businesses are not mobilizing it, who is?

Anecdotal evidence from interviews points to widening income gap in Macedonia. World Bank data shows that the latest Gini coefficient figure for Macedonia was 43.17 in 2009, up from 28.13 in 1998 (World Bank Database 2012). Although Gini coefficient figures do not necessarily give an indication of overall standard of living or quality of life, they do offer insight as to whether or not incomes within a country are similar and as whether or not incomes are divergent or convergent within a population.

In Macedonia, where gross national income per capita increased by 82% from 2004 and 2009, Gini coefficient figures went up by 11%. When that same correspondence is observed back to 1998 (when Gini coefficient figures came on line), GNI increased by 135% while the Gini index figures went up by 53%. Here we find a

potential path for reconciliation of the macroeconomic data that averages the increasing availability of credit across the country and anecdotal and interview-based information that points to limited access for Macedonian entrepreneurs.

It appears that credit and financing availability are gaining in Macedonia, but it also appears that the usage of credit is on the same trajectory as the Gini coefficient. As briefly visited earlier in this discussion, financiers for Macedonian business heavily favor those who can show cash or other collateral, and for those without it, access to financing remains a barrier to progress.

Offering another perspective, prior study indicates that 1) Macedonian banks are still limited in their ability to loan because of remaining burdens of non-paying-loans (NPL's), and 2) many of the foreign-owned banks place special emphasis on financing the business ventures of their expatriate national peers in Macedonia (Giustiniani 2008). Further study would be needed to determine if this is true or if another factor or series of factors accounts for the apparent disconnect between macro- and microeconomic data regarding availability of credit.

Recommendations on further study regarding availability of financing for macedonian entrepreneurs

Overall, it appears that availability of financing is a real obstacle to business for today's Macedonian entrepreneur. This view aligns with the Global Competitiveness Report's findings, and it is reinforced by the interviews from this study. Even so, further study is warranted on the issue. This particular study was limited by the nature of the questions in the questionnaire utilized and in the relatively small cross-section of entrepreneurs interviewed. If the study were to be expanded, factors such as company

asset structure, intent for growth, legal description, and size of the firm could be emphasized (Cassar 2004) to show correspondence with availability and usage of leverage in Macedonia's entrepreneurial population. These factors have been shown to impact capital structure for new firms, but evaluation of them was beyond the scope of this study.

Additionally, macroeconomic data does not appear to tell the story of Macedonia's entrepreneur in the context of business finance. As mentioned above, it is worth evaluating whether or not Macedonia's SME's are adequately represented among the country's firms making use of debt to pioneer or expand operations. Furthermore, small, cash-light firms in Macedonia's sluggish economy may be operating at an inherent disadvantage in the competition for international bank loans when compared to firms with operations in more viscous economies.

FACTOR 2: TERTIARY EDUCATION AND ENTREPRENEURSHIP

Like the country's economy, the educational system in Macedonia appears to be in flux. This study sought to examine the impact upper level education has on entrepreneurs in Macedonia. This examination is based on the premise that a nation's GDP and its education levels run in a positive relationship to each other (at least in the developing stages of an economy). In the *Commission on Growth and Economic Development's* list of primary factors for economic growth,¹⁷ the authors assert that countries that maintained long-term economic growth were also those who sustained

¹⁷ The Commission on Growth and Development 2008 served as the base point for this study's exploratory data analysis.

substantial spending on education (Commission on Growth 2008). Furthermore, they remind readers that 1) public spending on education is more than offset by the social return brought about through that educated section of the population¹⁸, and 2) public spending on behalf of the education of individuals who don't have the creditworthiness to obtain an education partially compensates for a market's inadequate investment in education.

Education trends in Macedonia

A surface level analysis of Macedonia's spending on education indicates a flat-line approach to resource allocation in the area of education. World Bank data hints that policy makers' have chosen a static approach to education spending during the dynamic time between 1996 and 2010 (see Figure 13). Furthermore, during that same time enrollment of eligible students in primary education has dropped more than 10%, and preschool enrollment (see Figure 14) has observed a dramatic and negative trend-reversal since 2007. These trends may be reflective of factors unidentified by this study, but they serve as points of interest for anyone looking at Macedonia's education future.

¹⁸ The Commission on Growth and Development admits that dissention exists on this first claim.

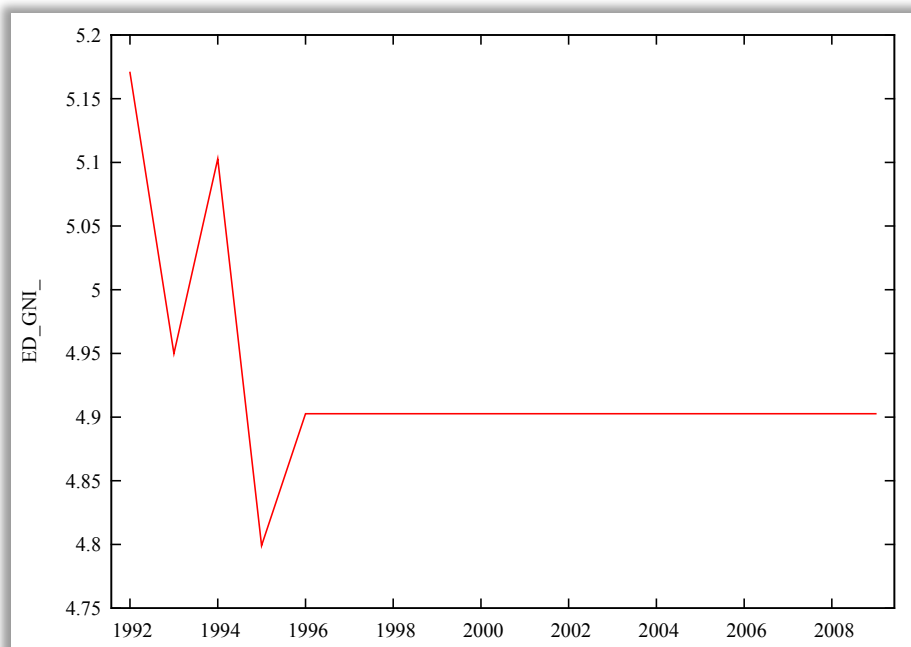


Figure 14: Macedonian spending on education as a percentage of GNI over time

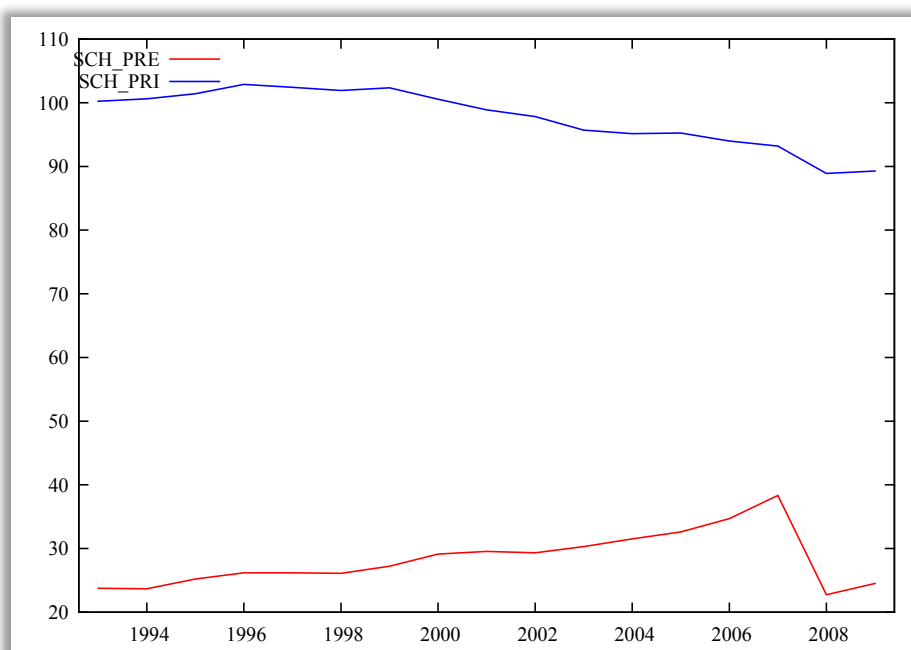


Figure 15: Enrollment in preschool and primary level education in Macedonia over time

Spending on education is not necessarily associated, though, with perceived or actual benefit from it, and this study has focused exclusively on the impacts of tertiary

education on entrepreneurship in Macedonia. In interviews, this study's entrepreneurs expressed mixed but somewhat positive opinions regarding the impact of Macedonia's educational system. In a question regarding their education system's effectiveness at preparing Macedonians for post-independence¹⁹ contribution to the economy, 33.3% indicated "not very effective," 22.2% responded "somewhat effective," and 44.4% carried the opinion that it was "very effective." Obviously, those who responded either "somewhat effective" or "very effective" (2/3 of the question's respondents) believe that their education system is doing an adequate job of getting the population ready for contribution to today's Macedonian economy. Those with a college or greater education (thirteen of eighteen respondents in this study) expressed mixed feelings regarding the Macedonian education system as well. Four responded it was "not very effective," four expressed that it was "somewhat effective," and five said "very effective."

A separate cross-tabulation gave mixed results regarding the entrepreneurs' personal experience between education and business success. Seven of thirteen entrepreneurs with university or higher education perceived that they had stable or growing enterprises. The other six were those who indicated that their firms were declining.²⁰ A larger sample of entrepreneurs would be needed to examine this ratio of success-rates for those with an upper level education and to compare how it relates to success rates of those without that education. Recent studies do point to a positive relationship between education and entrepreneurial performance, so it is reasonable to loosely infer that such a correlation may exist in Macedonia (Van der Sluis et al. 2008).

¹⁹ Since 1991.

²⁰ Toward the beginning of each interview, entrepreneurs were asked, "Before I ask more specific questions, how would you say the business is going?" The author of this work then inputted each respondent's answer into "growing," "stable," or "declining" categories.

Macroeconomic data (as depicted in Figure 6) does point to an average increase in GDP output per capita as enrollment in upper level education increases.

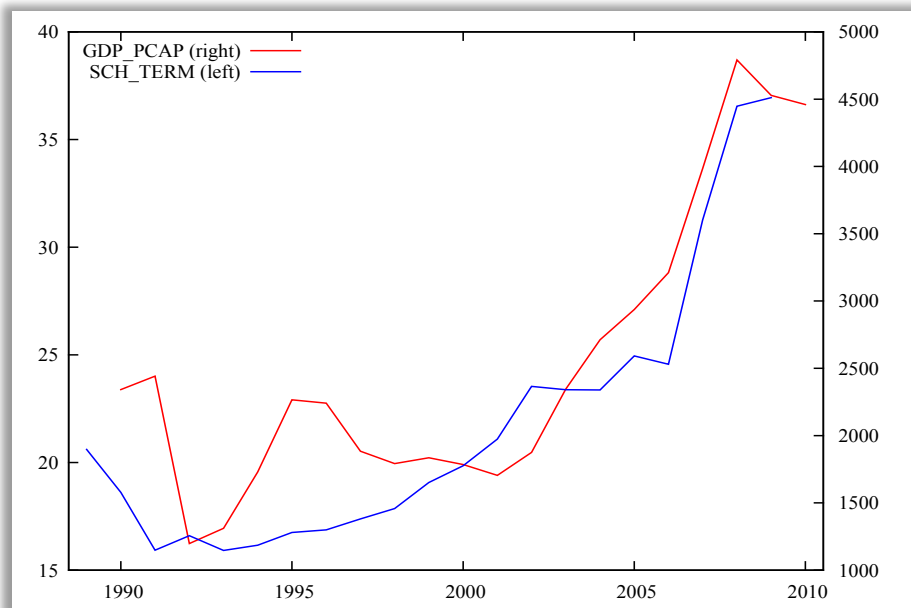


Figure 6: Regression 2.2, Time series graph: GDP per capita and percentage of eligible males enrolled in tertiary education

Education and entrepreneurial application in Macedonia

Whereas tabulated and cross-tabulated results from this study's interviews were less than revealing (aside from their general agreements with macroeconomic trend data), answers to open-ended questions carried enough similarity to deserve inspection. Five of the interviewees volunteered (again, in open-ended format) that the education system was either (or both) overly theoretical or lacking in practical knowledge in its equipping of the Macedonian worker. This leads us to examine the implications around the question regarding the effectiveness of the Macedonian school system at "preparing Macedonians

to contribute to the Macedonian economy *since independence from Yugoslavia*²¹,” as the entrepreneurs claim.

Van der Sluit’s 2008 study claims that Europeans enjoy a less-pronounced positive association between schooling and returns from it than do entrepreneurs in the U.S. Additionally, all the returns from the study’s metadata sources found entrepreneurs in Europe gain less positive returns than do their employees for their education investments. This finding, along with interviewees’ assertion that Macedonia’s education system is not preparing students for the practicalities associated with entrepreneurship, point to the possibility that education is not entrepreneur-focused. In the opinion of this study, further research is needed to compare the requirements on educational systems designed to equip a workforce for a socialist structure and on systems designed to equip a populous for a market-driven structure.

Conclusions regarding the implications of upper level education and entrepreneurship in Macedonia

Ewout Uunk’s (Uunk 2011) work highlights that recent data (GEM 2008) shows Macedonians exhibiting an entrepreneurial tendency greater than some of their regional peers. In 2008, 47% of Macedonians perceived that there would be good opportunities, in the next half-year, for starting a business. Nearly 40% expected to start their own business in the next three years, and 80% saw self-employment as desirable. The Global Competitiveness Report’s 2012 release compounds some of these dynamics. Among the “most problematic issues for doing business” in Macedonia, 3) “inadequately educated

²¹ Upper education question 3.2 from this study’s questionnaire asks, “In your opinion, how effective is the Macedonian School System at preparing Macedonians to contribute to the Macedonian economy since independence from Yugoslavia?” Italics added in main text.

workforce,” and 4) “poor work ethic in national labor force” came in the top four factors.²² Among the respondents for this study’s interviews seven of sixteen claimed that they learned “nothing” in the Macedonian educational system that helps them as an entrepreneur.²³ If all these study’s results are loosely synthesized, some surface level inferences can be made. It appears that Macedonians aspire toward entrepreneurship, but that they may be wrongly-educated to pursue it, and perhaps under-motivated (or under-informed about the intensity required) to operate in the aggressive arena of market driven entrepreneurship. Further study is needed to test these assumptions, and the results of such a study would likely benefit policy and education decisions for Macedonia.

When one interviewee was asked what subjects or curriculum the Macedonian education system needs to emphasis, that respondent pointedly stated, “Survival.” History may view her response as an accurate assessment of Macedonia’s current situation. In a socialist system, citizens contribute to an economy by contributing to the system. In a capitalist system, citizens contribute to an economy by competing, surviving, and maximizing within the system. In socialist structures, cooperation is promoted to build centralized benefits. In capitalist structures, strategic alliance is required to build competitive networks. Although these discussions touch a broad range of issues, the education system in Macedonia may need to adapt to the market system for which it equips its citizens. As Macedonia’s market transitions, its educational system should transition as well. This transition may need to include a shift from educating the

²² In the Global Competitiveness Report’s results, the top two responses were: 1) access to financing, and 2) inefficient government bureaucracy.

²³ Interviewees were asked, in open-ended format, “What skills that you learned at school help you the most as a an entrepreneur in Macedonia?”

populous to work when given tasks to educating its citizens to innovate and compete in order to create work.

FACTOR 3: URBANIZATION AND THE MACEDONIAN ENTREPRENEUR

Macedonia has seen a consistent reallocation of its population from rural to urban environments during the past 50 years (see Figure 15). In 1960, 34% of Macedonia's people lived in cities. By 2010, two thirds of the total populous was in urban environments. The most significant urbanization trend occurred during the time-period between 1960 and 1970.

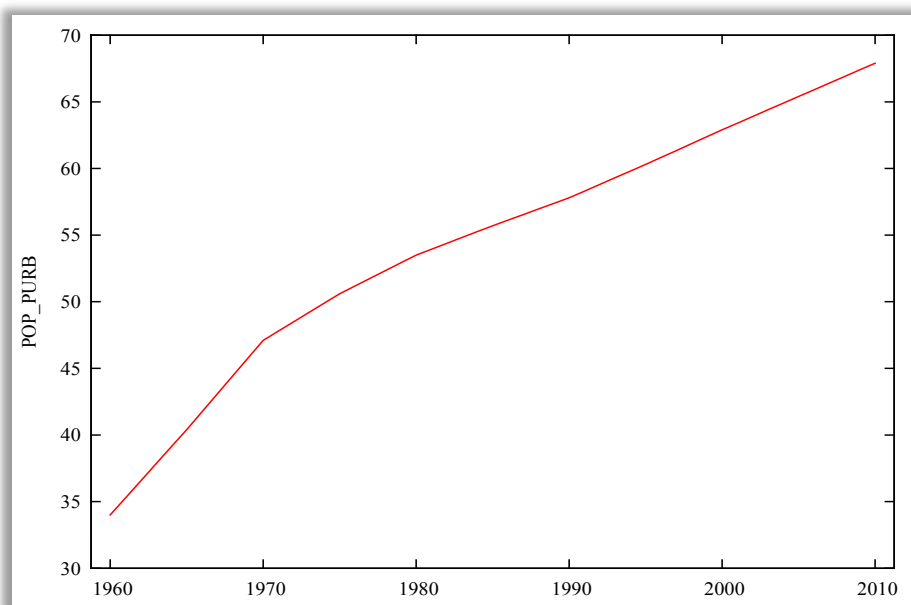


Figure 16: Percentage of Macedonian population in urban environment since 1960

A look at the issue of urbanization reveals another divide between our statistical study of macroeconomic data and entrepreneurial perception. Opinions regarding the perceived *impact of urbanization on individual entrepreneurs' enterprises* were evenly split. In interviews, half responded that the urbanization trend has been good for their

business. Half responded that it hasn't. Notably, though, entrepreneurs showed solidarity in their opinion about the *impact of the urbanization trend on the Macedonian economy as a whole*. All 16 who responded to that particular question indicated that urbanization was not good for Macedonia's economy. This is in apparent contradiction to the predictable and generally positive relationship between urbanization and GDP per capita in Macedonia since 1990 (Figure 8).

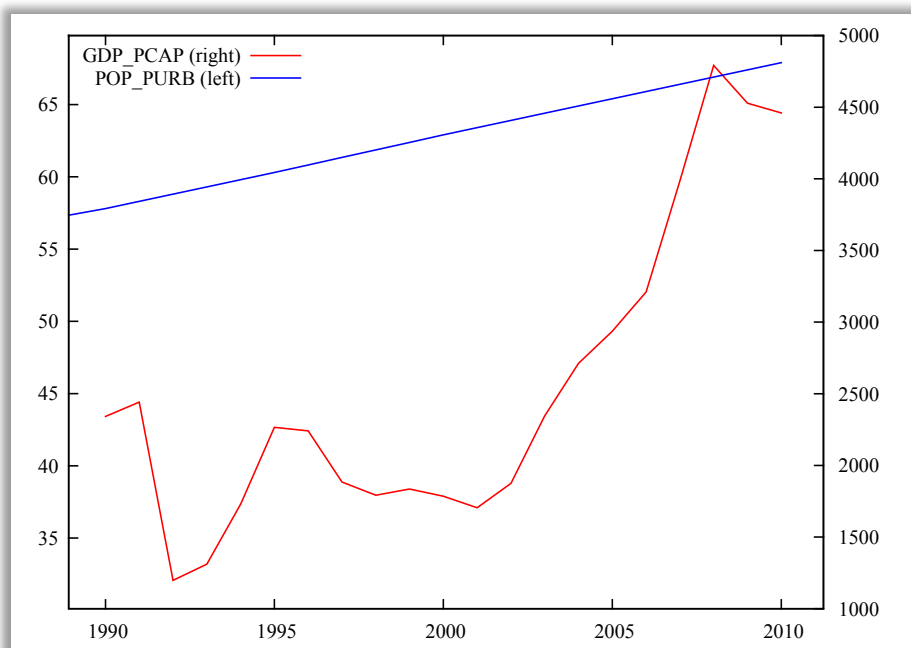


Figure 8: Regression 3, Time series graph: GDP per capita and percentage of population living in urban environment

Ordinary least squares models provide a fairly convincing argument that urbanization at least trends with GDP growth (no statement of causation here). As previously stated, Macedonia's entrepreneurs appear to view the urbanization as negative for Macedonia's economic progress. The reasons for this difference are many, but a few deserve discussion in the context of this work.

Under certain conditions, urbanization is generally accepted as a positive move in economic growth (Commission on Growth 2008). As economies progress, scale increases, and cities become manufacturing, educational, and transactional hubs. Such progress is seen, again, contingent on certain conditions. Capacity utilization and economic agglomeration stand out as among the more important of these conditions to be met in order for Macedonia to reap from the expected economic benefits of urbanization. In Nicoleta Sirghi's work, "Economic Growth in the European Model," she alludes to the difficult balance between economic efficiency and equity in Europe as a whole (Sirghi 2010). Furthermore, whereas less affluent individual economies may benefit from the efficiency of capacity utilization, more affluent countries tend to see progress from synergy created by agglomeration. Economic agglomeration can occur when mutually positive relationships and strategic partnerships develop and exist between various firms that enjoy geographic proximity.

Urbanization and perceptions of underutilized capacity in Macedonia

Six of fifteen entrepreneurs in this study volunteered (in open-ended questions) that the country was not currently making use of its capacity to produce output for the regional and global economies. In another open-ended question 2/3 of respondents volunteered, in notable similarity, that Macedonia's room for growth existed in the agricultural sector. These questions pointed to an overarching *perception* that Macedonians' rural-to-urban migration to its capital was leaving much of the country's resources underutilized. Macedonia has a developing, efficiency-driven, economy (GCR

2012), and its entrepreneurs seem to be, quite intuitively, heralding the need for efficiency through capacity maximization.

Whether or not the entrepreneurs' claim that the agriculture sector holds the future is honestly debatable. Among the other sectors in country, agriculture presently builds the least value (as share of GDP) at 11%. For comparison, Macedonia's service industry accounts for 53% of its GDP (GCR 2012). This is not to say that agriculture is insignificant to a developing economy like Macedonia. GDP share does not always paint the entire growth picture. An economy's agricultural sector would not typically be expected to "scale-up" to the degree and at the pace of other sectors during economic development. For instance, if service sector output increases by 50%, we would not expect that increase to correlate with a 50% increase in food consumption by the labor force (Stringer 2001).

Where agriculture has been shown to help build an economy is in its capacity to stimulate industrialization and build a tax-base. Today's Macedonian entrepreneur may see the export potential of Macedonia's high-end produce and wine, for example, but what they may be surprised to discover are the positive bi-directional build-up of industry, the fostering of infrastructure build up to support the agriculture sector (Stringer 2001), and the "organic" emergence of another issue to be addressed for Macedonia: agglomeration.

Urbanization and perceptions of lacking agglomeration in Macedonia

Today's Macedonian entrepreneurs appear to have nurtured a form of "micro-agglomeration," where strategic partnerships are formed around trust and connection, but

where a larger agglomerated economy of scale has not yet been allowed. In their context of political and societal history, Macedonian business people are practicing a culturally relevant form of agglomeration that serves, in this study's view, as a bright spot for an expanded future role of agglomeration among firms. Even so, this culturally relevant form of micro-agglomeration should not be viewed as an end-game and may not be a globally competitive form of mutually-benefiting synergy. In the absence of other efficiency-building progresses, agglomeration needs to mature.

This study's entrepreneurs lamented the need for "connections" to make business happen. Furthermore, in order to work for or with Macedonia's largest employer, (its government) the entrepreneurs claim the need for relational or political connection. A Western reader, may, at first, draw a parallel to political enmeshment in business in his or her country's system. Even so, the impact of relational and political alignment and alliances in Macedonia, appear to affect to a larger degree. One Macedonian worker explained that, until very recently, individuals were required to carry "party cards" (in effect: a statement of political alignment) in order to move toward procurement of government contracts. Furthermore, although most government contracts are available to private bidders, anecdotal evidence in interviews points to the need for connections to obtain a job. As the above-mentioned worker, stated, "People would rather work with those they know." A sociological study would serve to determine if this mindset is a carry-over from the former socialist society, where trust is paramount. Perhaps, in the absence of a strong sense of judicial fairness, a population may tend to be more relationally risk-adverse. In Macedonia's arguably "sealed" business environment,

agglomeration appears to be built around smaller, trust-based networks instead of larger strategy-based alliances.

Economic agglomeration should be a positive overflow from urbanization.

Macedonian entrepreneurs' generally negative view of urbanization is a view that has been held by decision makers from other nations in the past. Zhou Xiaochuan's writings on urbanization in China point out that the Chinese government had, at first, an adverse response to the rapid urbanization of the country. He argues that an anti-urbanization stance is bad policy (in Xiaochuan's words), "because it ignores the importance of agglomeration efficiencies. The Chinese government has since reversed policy. It now understands the key role of urbanization is structural change (Commission on Growth 2008, pg. 59)." This work submits that, for the purposes of fostering business clustering and agglomeration in Macedonia, structural changes (to which Xiaochuan alluded) should include:

1. *An increasingly "open" bidding and procurement process:*

For Macedonian entrepreneurs to develop synergistic relationships among each other and with public entities, they should be unencumbered by a perception of unfairness in processes associated with the award of contracts. On a level playing field, unexpected firms and ideas can surface in Macedonia's labor force.

2. *A policy-making protocol that views urbanization as a business opportunity, not just a population issue:*

Employed populations pay for cities. Macedonia's urbanization trend should be viewed as a prospect for synergistic business-relationships. For governments where urbanization is viewed as a business opportunity, infrastructure, contract

law, anti-corruption efforts, and value chain encouragement and development become priorities.

The interdependence of capacity utilization and economic agglomeration should be mentioned in order to close discussion of the conditions to be met in order for Macedonia to benefit from urbanization. In their 2010 publication on agglomeration and entrepreneurship Mercedes Delgado, Michael Porter, and Scott Stern offered empirical evidence for a relationship between specific industry growth and their geographic relationship to supportive “clusters” of businesses. Similarly, inputs from their work, in the authors’ own words, “support the idea that clusters of related and complementary industries facilitate the growth in the formation of new businesses and the medium-term performance of start-ups in regional industries (Delgado et al. 2010).” If these interdependencies between industrial capacity and economic agglomeration hold true for Macedonia, where, according to interview respondents, industrial capacity is underutilized, and where capacity has, at times, been maliciously brought off-line,²⁴ the beneficial efficiencies of capacity and agglomeration are arguably being restricted.

Conclusions on implications of urbanization in Macedonia

Urbanization in Macedonia is more than simply a redistribution of its population. Entrepreneurs in Skopje may or may not benefit from the convergence of people, but they seem to intuitively agree that their nation is not fully benefiting from the potential positive effects that are usually associated with urbanization. Today’s urban entrepreneur enjoys a larger market, but with it, they face a compensatory regulatory and taxation

²⁴ More than one responded offered anecdotal evidence of malevolent actions of the new owners after privatization of factories in Skopje.

structure, immature free market collaboration networks, and competition from and enticement to an extensive shadow market system.

The challenges Macedonian entrepreneurs face regarding urbanization are real, but the opportunities associated with it remain. Anyone who visited Skopje five years ago, and then again today would notice that Skopje appears to, at least, view itself as a city on the move. The aesthetic improvements to the city, its surroundings, and its airport are immediately noticeable. €400 billion was recently invested in a government-sponsored renovation of Skopje's city center (the designer and operator of the central fountain was one of the interviewees for this study). Whether or not these improvements are surface level only will be determined by the cities ability to foster underutilized capacity and business-agglomeration potential while avoiding the pitfalls associated with an unaddressed or expanded shadow economy.

FACTOR 4: THE SHADOW ECONOMY AND THE MACEDONIAN ENTREPRENEUR

Evaluation of Macedonia's shadow economy is, because of the nature of the subject, more nebulous than evaluation of factors for which individuals are willing and ready to volunteer information. Respondents are not forthcoming with the specifics of their illegal ventures, and those involved in shadow commerce are less likely to be accessed for study. For this study, calculations of the size of the shadow economy were derived by combining two different (and overlapping) time series calculations (Risteski 2009, Scheider 2009). The scholars who constructed those estimates were, themselves, limited by the lack of direct data, and were relegated to constructing estimates based on

peripheral associates to shadow economy size (electricity consumption, MIMIC approach among others). It is true that current calculations of the size of the shadow economy are best guesses. Even so, the imprecise data on this issue should not, in the view of this study, cause us to overlook the issue. The impacts of the shadow economy are less nebulous than the data on it, and they deserve exploration to understand the conditions in which the Macedonian entrepreneur operates.

Table 9: Author's hybrid calculation of Macedonian shadow economy size between 1996 and 2007 as a percentage compared to national GDP

<i>Year</i>	<i>Schneider</i>	<i>Risteski</i>	<i>Adjustment</i>	<i>Author's Hybrid</i>
1996	n/a	40.30	-2.61 ²⁵	37.69
1997	n/a	45.70	-2.61	43.09
1998	n/a	51.40	-2.61	48.79
1999	39.00	47.80	Average	43.40
2000	38.20	50.50	Average	44.35
2001	39.10	42.60	Average	40.85
2002	38.90	42.60	Average	40.75
2003	38.40	42.80	Average	40.60
2004	37.40	42.90	Average	40.15
2005	36.90	35.30	Average	36.10
2006	36.00	n/a	+2.61	38.61
2007	34.90	n/a	+2.61	37.51

The activities of individuals in the shadow economy have a significant perceived impact on the Macedonian entrepreneur. Of the entrepreneurs interviewed in this study, sixteen of seventeen responded that the activities of the shadow economy were having a negative effect on the overall economy of Macedonia. In similar fashion, 73% who responded indicated that the shadow economy was having a negative impact on their particular business.

²⁵ One half of the average difference between to the two study's overlapping years (1999-2005) was subtracted from the higher-trending study's non-overlapping years and was added to the lower-trending study's non-overlapping years.

Macedonia's shadow economy compares to approximately 35% to 40% of the total GDP of its formal businesses. Entrepreneurs studied in this process seem to be in alignment with the macroeconomic data that suggests a negative correlation between the size of operations in the shadow economy and the overall output of the recorded formal economy. This study's calculations returned ordinary least squares outputs that employed the estimated size of Macedonia's shadow economy to explain 46% of the variability in GDP per capita. According to Regression 4 in Part I, for each additional percentage increase of the size of the shadow economy as it compares to the Macedonia's formal sector, the average output per capita decreases by \$138 U.S. dollars ($GDP_PCAP = 8034.63 - 138.463(X_{SH_5SZAV})$).

For the sake of example, consider the year 2006. The shadow economy appears to have increased by 2.5% compared to 2005. In this case, per capita output would be negatively impacted, according to our model, by \$346 U.S. dollars. In 2006, GDP per capita was \$3211 U.S. Dollars (World Bank Data), equating to a loss due to changes in the shadow economy of:

$$(3211 + 346) / -346 = -10.3\% \text{ per capita}$$

When that \$346 loss per capita is totaled across the population of over two million individuals, Macedonia's loss due to a 2.5% growth in the shadow economy that year comes to:

$$(2,043,091 \times -346) = -\$706,909,486$$

Since Regression 4 only explains 46% ($R\text{-squared} = 0.460$) of the variability in GDP per capita, we can calculate the least negative impact in Macedonia that is attributable to growth in the shadow economy that year at:

$$(-\$706,909,486 \times 46\%) = -\$325,178,364$$

If these loss figures are truly representative of the impacts of Macedonia's shadow economy (see Figure 10), then they are worth further evaluation. This study will examine multiple issues connected to Macedonia's shadow economy.

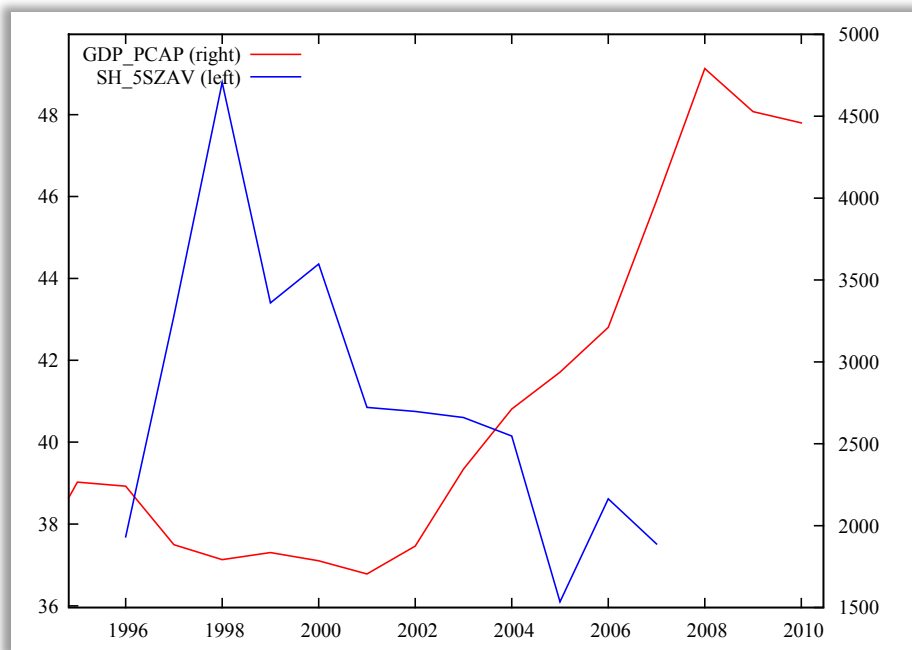


Figure 10: Regression 4, Time series graph: GDP per capita and size of shadow economy

A blended evaluation of the factors of urbanization and the shadow economy in Macedonia

It appears that two of the factors evaluated in this study are interwoven by their nature. Here we examine the factor of urbanization and its implications on the factor of the shadow economy in Macedonia. Entrepreneurs were questioned about their perceptions of any changes in permitting and regulation in Skopje. The issues of permitting and regulation were considered, for this study, to be applicable to the issues of urbanization in Macedonia (although, we will see that these issues impact a broader

scale). The reader may view it as a logic-leap to link urbanization, permitting and regulation, the shadow economy, and Macedonia's entrepreneur. Consider, though, that permitting and regulation are responses to growth which is occurring predominantly in Skopje (urbanization), and that these factors help to define the business environment where the majority of Macedonian entrepreneurs are making business ethics decisions (shadow economy).

Whereas tabulated data revealed no dramatic trends among entrepreneurs in their response to the "permitting/regulation change" question, individual responses proved insightful. The two entrepreneurs who indicated that Macedonians were benefiting from a better business regulation structure and who were in the construction industry also indicated that Macedonia was positively moving toward EU standards. Both entrepreneurs, though, represented sizable and established firms. On the other hand, the entrepreneurs who tended to bemoan the new regulations represented smaller enterprises, and, nearly invariably, could cite code restrictions that they claimed were a hindrance to their small businesses.

Again, the lens of business history in Macedonia may offer clarity on regulation issues for businesses. Under Tito's "Market Socialism" Macedonians grew accustomed to notable business cultural norms. Historically, Macedonians that represent much of today's population enjoyed relatively stable workers' rights (under socialism). In those days, if the average Macedonian participated in the government-owned businesses of socialist Yugoslavia, they also enjoyed free health care, low-cost housing, and enough predictable income to live in relative comfort.

At the demise of Yugoslavia, Macedonia's industry and businesses were privatized, and ownership was transferred to shareholders and individuals. With that transfer, though, came expectations of the status quo among the labor force. Those expectations, in Macedonia's new representative government, may have evolved into regulatory code. In this author's opinion, this is an issue deserving of further study.

A discussion on Macedonia's regulatory structure is a rabbit hole too deep for this study, but the discussions of urbanization with the interviewed entrepreneurs led to some illuminating examples. In conducting the interviews, we discovered that employers are liable for employee's income taxes. Unlike the U.S. structure where employers withhold, but where employees ultimately are responsible for state or federal taxes, Macedonian firms bear the liability at tax time. Additionally, in order to legally employ a worker, companies are required to pick up the employee's health care cost burden. Working hours are legally limited (in the name of worker's rights), but, according to one anecdotal report, to the detriment of productivity.²⁶

When all this is taken into consideration, Macedonia appears to have created a new regulation system that does support its vital large enterprise, but at the possible exclusion of small and medium businesses. The former socialist structure focused on dialing up economies of scale, and SME's were not central to that master plan. This oversight of SME's role seems to have carried into the new Macedonian regulation mindset. Overarching regulatory structures may stifle SME's creation, and these structures may actually encourage shadow economy participation. Regulative barriers to

²⁶ One employee explained that, when meetings occurred after hours at her office (even non-business meetings), she was careful about using the lights. According to her, if she were to attract regulators the firm could face, a €2000 fine.

formality and punitive regulatory codes appear to have four compounding and enmeshed effects:

Effect 1: Businesses migrating to or staying in the informal sector (shadow economy)

The first of these effects is an apparent migration to and settlement in the informal sector. Estimates put the size of Macedonia's shadow economy at between 35% and 40% of the size of the formal economy. Surely individuals enter into illegal activities in the informal sector (shadow economies) for a number of reasons. Interviews with Macedonian entrepreneurs, revealed some of these reasons. In a multiple-choice question regarding the reasons Macedonians participate in the shadow economy, eight of nineteen volunteered an identical answer, "unemployment" in the "other" category. This 42% response similarity would be less notable if appeared in any but the "other" category, but "unemployment" was volunteered eight of the ten times among those who answered "other."

Even so, if unemployment drives individuals to operate in the informal sector, what motivates them to remain there? According to the entrepreneurs under study, the answer is multi-faceted. 73% who responded picked either (or some combination of) "corruption," "tax rates," and/or "permitting" as the reason people operate in the shadow economy. These factors point to the regulatory structures (which include taxation) in which Macedonian businesses operate.

Anecdotal-level information may provide additional insight on the interplay between the regulation issues in Macedonian and the prevalence of the shadow economy. One entrepreneur, a painter, who was interviewed for this study, had taken in less than €800 in revenues in the previous year. This particular respondent's story highlights two aspects of the issue.

The first is at the corporate level. The individual began the painting venture after quitting a job held at a Macedonian corporation (involved in the digitization of hard-copy documents). According to him, his long shifts would be followed by non-payment of his wage (a complaint echoed by more than one entrepreneur). When we inquired about legal recourse, he explained that, after incorporation, the company reallocated its assets to new ownership; a move that makes recourse through liquidation extremely difficult.

The second aspect of the regulation / shadow economy issue is seen in the start-up of the individual's painting business. In order to legally export his paintings, the individual would have to: 1) register as a painter (€110), and 2) have each painting approved by an official museum prior to export. The individual has chosen, instead of limiting his ability to provide for his family (a member of his family recently faced malnourishment), to operate in the shadow economy.

This example may be reflective of similar stories in Macedonia where small ventures like this face barriers to entry imposed by permitting and regulation requirements. In cases like this, where regulatory obstacles appear too great for Macedonia's SME's, individuals often choose to operate in the shadow economy.

Effect 2: Reduction in tax revenues

The second effect of the regulatory structure is connected to the first. When Macedonian small businesses operate in the shadow economy, they do so at the detriment of national tax revenues. Calculations vary, but if national output is correlated to national tax revenues, a 35% loss of tax revenue from the off-grid operations of the shadow economy is occurring.

Those firms who do operate within the legal boundaries in Macedonia are looked to for tax revenues. Macedonia's tax code employs an 18% VAT on products and

services. In effect, the VAT requires formal business to sell at an 18% premium when compared to their shadow economy counterparts. In an analysis of the VAT issue, scholars Edward Christie and Mario Holzer, found that the VAT was the most effectual of variables in their sensitivity analysis of factors affecting the shadow economy size in Central and Southeaster Europe (Christie and Holzer 2004). Although their study offers no sensitivity analysis of traditional sales tax, it does show shadow economy size sensitivity to personal income tax and social security tax as well.

Discussion of the shadow economy/taxation issues in Macedonia leads this study to two considerations. First of all, it is no surprise that operations in Macedonia's shadow economy lead to a reduction of tax revenues. What would be worthy of further study, though, is an analysis of the VAT percentage that would maximize tax revenues for Macedonia. Perhaps the VAT is the most clarifying tax method for a nation to delineate between on- and off-grid business (a company's prices either reflect it or they don't). Even so, and secondly, Christie and Holzer's, sensitivity analysis hints at the importance of how the VAT is applied. Further study would be complex, but important in determining what VAT pressure should be applied to maximize tax revenues without compelling firms toward illegal operations. Perhaps a prominent shadow economy requires employment of the VAT, but use of the VAT has been shown to affect the size of the shadow economy. A maximizing balance appears to be important in Macedonia. (Knack and Keefer 2004)

Effect 3: Employment of punitive regulatory structure as a revenue generator

The data from this study implies that regulatory structures lead individuals to operate in the shadow economy because of unemployment. It indicates that they stay

there to the detriment of tax revenues.²⁷ Thirdly, entrepreneurs perceive that punitive regulations are enforced on firms operating within legal boundaries.

Proponents of the tighter regulations, again, point to the need for greater structure and accountability for Macedonia for the purposes of EU compliance. From the interviews of this study, though, those who perceived that increase in regulatory structure as being negative also viewed it as a “backdoor” way for the Macedonian government to take in revenues.

Effect 4: “Inflation tax” caused by operations in the shadow economy.

Tatyana Koreshkova’s 2003 work on the relationship between shadow economies and inflation highlights the perspective that governments typically finance operations through a combination of income taxes and inflation rates via monetary policy (Koreshkova 2003). In countries like Macedonia, where the shadow economy is substantial (compared with the formal economy), inflation is arguably relied upon for governmental financing. In addition to showing strongly negative correlation between the size of the shadow economy and GDP (similar to the findings in this study), Koreshkova found a positive relationship between shadow economies and inflation rates. Although operators within Macedonia’s shadow economy evade formal taxation, they impose another form of “taxation” on themselves (and the rest of the population) through the diminished purchasing power of their currency.

In summary, the shadow economy in Macedonia appears to negatively impact Macedonia’s legally operating entrepreneurs in less tangible ways than this study initially perceived. Legally operating businesses in Macedonia:

²⁷ This study does not argue that Macedonia’s current regulatory structures are “good” or “bad,” only that they are impactful on Macedonian entrepreneurs.

1. Sell their products at a premium compared to their off-grid competitors (18% VAT + employee federal income tax + employee health benefits + regulatory / permitting costs).
2. Carry the predominance of the business tax revenue requirements for the whole of Macedonia.
3. Perceive that punitive regulatory structures are in place to augment lacking tax revenues.
4. Pay taxes through inflation. Other research on the informal sector and its connection to inflation, points to data that indicates that an economy will pay tax as a byproduct of inflation due to operations in the shadow economy.

The interplay of the shadow economy and urbanization in Macedonia appears to be rooted in the regulatory structures created to manage both factors. That said, urbanization is not the cause of the shadow economy, and a wider view of the issue is necessary to adequately examine the shadow economy in Macedonia.

Conclusions on Macedonia's shadow markets and their role in entrepreneurship in transitional times

Because of the limitations of this study and its interviews, results are limited to only two arguably conclusive outputs the shadow economy.

1. Macedonia's GDP per capita appears to have a statistically significant negative relationship to the shadow economy (For other examples, see Koreshkova 2003).
As the shadow economy grows, Macedonia's GDP per capita is stalled.
2. Macedonian entrepreneurs (at least the ones interviewed here) almost unanimously share the view that the shadow economy as detrimental to

Macedonia's economic health. Nearly no one likes it, but few offered any actionable solutions for dealing with its prevalence.

Despite the negative perceptions associated with Macedonia's shadow economy, there is literature that indicates that it has a role. Misha Glenny, an author of numerous publications on the Balkan region, offers the perspective that the black market (a subset of the shadow economy) has provided a needed (if not a moral) role in the transition of the former Yugoslavia to a market based system. His view is that the black market serves as a "midwife to capitalism (Glenny 2008)," an organizational mechanism that provides certain structures and rules of conduct for entrepreneurs in the unstable business environment of transition from socialism to capitalism. Although the negative and immoral aspects of the black market are unquestionably wrong, the structures corresponding to them may be necessary in the absence of official mechanisms that protect commerce.

One entrepreneur interviewed²⁸ in the initial portion of this study provided an example that may reinforce Mr. Glenny's perspective. During the period before he decided to pay for "protection" for his business, his apartment was broken into three separate times. Once he employed the protection of the local racket, the intrusions stopped. Burglary prevention and prosecution are both roles of the police, but, in the absence of developed structures, organized crime met that need.

Macedonia's shadow economy, as deleterious as it may be, may be serving as a midwife that delivers some of the necessary functions currently unavailable to the entrepreneurs in the developing economy. Value chains, agglomeration, human

²⁸ The entrepreneur maintained operations in Macedonia's neighbor, Bulgaria. His responses were not included in the tabulated interview data for this study.

knowledge capital, shipping capacity, and import/export relationships may all be developing, but invisibly in Macedonia's shadow economy. History will tell whether or not this is happening and whether or not it eventually benefitted the Macedonian entrepreneur.

SUMMARY CONCLUSIONS

This study of the current Macedonian moment has illuminated several notable findings regarding the transitioning country's economic and entrepreneurial environment. As expected, macroeconomic data alone seem to tell only part of the story, and isolated variables (including the ones dissected in this study) act as windows to explanations, not explanations themselves. Even so, the variables are telling us something about Macedonia, and the entrepreneurs there are telling us something about the variables. A cumulative look at the macroeconomic findings here along with the entrepreneur interviews in this study leads to several inferences.

REGARDING THE AVAILABILITY OF CREDIT IN MACEDONIA

The availability of credit appears to be a very real issue for entrepreneurs in Macedonia. It appears to be limited, but we can, at this point, only speculate as to why. The entrepreneurs in this study made almost no use of formal credit channels. Regardless, the availability of credit in Macedonia is trending upward, and it strongly and positively correlates to GDP per capita growth. The following are specific conclusions regarding the current issue of availability of domestic credit in the country of Macedonia and among its entrepreneurs.

1. Credit is becoming generally more available in Macedonia. The country's SME's apparently aren't accessing it, though, and there may be several reasons why this is the case.

- a. Macedonian entrepreneurs appear to have a cultural aversion to interest on loans.
 - b. They compete for loans from international banks but within an economically sluggish environment.
 - c. They have other lending mechanisms in place that bypass formal channels.
2. Policy makers may do well to consider the implications of their non-EU nation competing in the global economy.
- a. Formal credit is generally unavailable for Macedonian SME's. Lack of leverage (in the absence of cash) can generally limit growth potential.
 - b. Government instability can exacerbate the difficulty in obtaining leverage for entrepreneurial growth.

Perhaps, as the Macedonian banking industry matures and adapts to the unique situation in Macedonia, and as Macedonians grow less adverse to debt in their accelerating economy, credit will be more utilized by the nation's entrepreneurs. This may result in more rapid economic growth and in expanded global competitiveness compared to what the nation is currently experiencing.

REGARDING ENROLLMENT IN UPPER-LEVEL EDUCATION IN MACEDONIA

Macedonia's upper-level education system appears to have a solid foundation, but this study raises the question of whether or not it is preparing the population for entrepreneurial ventures in today's market. Respondents' perspective of their school system is mixed but slightly positive (two-thirds expressing that it is either "very" or

“somewhat” effective at preparing Macedonians to contribute to their nation’s economy. Even so, they share the opinion that their schooling has offered little to help in the realm of entrepreneurship. The following are specific conclusions from this study regarding impacts of the issue of enrollment in tertiary education in Macedonia.

1. Macedonian entrepreneurs may generally view their education system as adequate. It may not be adequate, though, in the subjects related to preparing students for entrepreneurial success.
 - a. The education system does not appear to be adequately contributing to students’ capacity to face the new challenges and opportunities associated with entrepreneurship and market-capitalism.
 - b. There does not appear to be a strong association between upper level education and entrepreneurial success.
2. Business-related curriculum should focus on motivation, strategic alliance, ethics, and long-term business planning.
 - a. Macedonians need to be equipped in value chain development.
 - b. An increasingly global economy requires participants to compete through innovation and within the confines of standard practices.

The Macedonian education system has a solid base, and that foundation is one on which the country can build. As curriculum and educational emphases adapt to the current market environment, Macedonia will likely build a workforce better equipped to succeed in the open-format arena of entrepreneurship.

REGARDING THE URBANIZATION TREND IN MACEDONIA

Urbanization is happening in full force in Macedonia, and much of that rural exodus is directed the capital city of Skopje. Skopjans seem uncomfortable with the underutilized capacity in both rural and urban environments, and they hint at lacking agglomeration for enterprises in the urban environment. Macroeconomic data points to the co-trending variables of GDP per capita and urbanization, but entrepreneurs appear to be struggling (along with their government) to manage the regulatory requirements that have come with their urbanizing nation. The following are specific conclusions from this study regarding the issue of urbanization in Macedonia.

1. Although macroeconomics predict that output grows with urbanization, Macedonia's entrepreneurs have identified two areas in urgent need of attention.
 - a. Capacity is being underutilized in both the urban and rural environments in Macedonia.
 - b. Benevolent strategic alliances and agglomeration are necessary for Macedonians to fully benefit from the urbanization trend.
2. The developing nation is struggling to manage the population inflow into its capital, Skopje. This has resulted in two compounding issues for Macedonia.
 - a. An immature or punitive regulatory stance toward entrepreneurial efforts seems to have been created.
 - b. An unaddressed shadow economy continues to undermine Macedonian economic order and progress.
3. Government strategists and policy-makers should give special attention to two efforts as they lead the urbanizing country.

- a. As Macedonia transitions its economy toward more economies of scale, focus should be given to initially maximizing agricultural and industrial output nationwide. This may aid in the creation of various value chains that can serve the economy as it matures in the future.
- b. Policy-makers should avoid arbitrary regulatory and tax decisions that may promote shadow economy continuance and/or growth and which can cause unnecessary obstacles for Macedonia's entrepreneurial economic base.

The way in which Macedonia chooses to urbanize will reflect how it progresses as a nation. As people move closer and closer together in Macedonia, deliberate efforts should be made to build mutually beneficial and cooperative relationships within its working population.

REGARDING THE SHADOW ECONOMY IN MACEDONIA

Macedonia's shadow economy is alive and well (when compared to the official GDP output, probably over 35%). Although macroeconomic data on Macedonia's shadow economy shows a less pronounced association with GDP per capita (compared to the other factors in this study), the distinctly negative relationship that is statistically depicted is nearly unanimously reinforced by the interviewees in this study. According to the regression in this study, for every 1% growth in the shadow economy, the official economy loses just under 2%. Entrepreneurs in Macedonia who chose to operate outside of the shadow economy 1) bear the predominance of the nation's tax burden 2) sell at premiums (due to Macedonia's VAT) 3) pay for employee benefits and 4) realize (along with the rest of the nation) the effects of inflation due to the shadow economy. The

following are more specific conclusions from this study regarding the shadow economy in Macedonia.

1. For Macedonia's young government, the shadow economy appears to be a confounding obstacle. It is a multi-faceted issue.
 - a. It partially solves the unemployment issue in Macedonia, while impeding the progress of formal business
 - b. It lowers tax revenues, but it is highly sensitive to taxation.
2. For Macedonia's legally operating entrepreneurs, the shadow economy is deleterious.
 - a. It steals market share by selling goods, products, and services within a cost-structure that is lower when compared to legally operating enterprises.
 - b. It rests the predominance of Macedonia's tax burden on those who are operating legally.
 - c. It may result in a loss of purchasing power of Macedonia's currency through inflation.

The shadow economy in Macedonia is an issue that will be addressed only through long-term policy and market approaches that incentivize legal business operations. If the openness and stability of Macedonia's economy continue to grow in such an environment that rewards legal activities, the shadow economy will become less prominent and influential in Macedonia.

Albert Einstein once said, "As our circle of knowledge expands, so does the circumference of darkness surrounding it." In as much as this work has discovered

usable and actionable information regarding Macedonian economics and entrepreneurship, it has also exposed a larger circle of what still needs to be known. Macedonia appears to hold economic and entrepreneurial potential. In the view of this study, it possesses the human capital and natural resources to thrive. The next “Macedonian moment” will likely be formed by the decisions and actions of the nation’s citizens and policy makers who must decide how to capitalize on that inherent potential.

APPENDIX A

TABLES

Table 1: Examples of Factors Associated with Economic Growth

From: The Commission on Economic Growth and Development's *The Growth Report* 2008 pgs. 33 - 69

1. Investment Level as a percent of GDP in Infrastructure, Education, Human Capital, and Health
2. Technology Transfer through Foreign Direct investment, and Foreign Education
3. Competition and Creative Destruction
4. Labor Markets and Caste Restraints
5. Export Promotion and Industrial Policy
6. Exchange Rates and Exchange Rate Policy
7. Capital Flows and Market Openness
8. Macroeconomic Stability
9. Foreign and National Investment
10. Financial Sector Development and Trust (Barker 2009)
11. Urbanization and Rural Investment
12. Equity and Equality of Opportunity
13. Regional Development Patterns
14. The Environment and Energy Usage
15. Effective Governance
16. Quality and Freedom of Policy Debate

Table 2: Condensed list of variable categories used for OLS regressions

Bilateral aid
Domestic credit
Domestic savings
Employment rates
Energy consumption
Exchange rates
Export/Import taxes and volumes
Foreign investment
Government consumption
Health spending and mortality rates
Inflation rates
Internet capacity and usage
Lending rates
Population and urbanization
Population of researchers and technicians
School enrollment and spending
Shadow economy size estimates
Tourism
Value addition per sector

Table 3: Dependent Variables

Name	Description	Units	Scale	Model Symbol	Equation Symbol
Gross Domestic Product	Total market value of all final goods products and services produced in Macedonian economy.	U.S. Dollars	0 – Inf.	GDPUSDO	$X_{GDPUSDO}$
Gross Domestic Product per Capita	Total market value of all final goods products and services produced in Macedonian economy divided by population.	U.S. Dollars	0 – Inf.	GDPPCAP	$X_{GDPPCAP}$

Table 4: Independent Variables

Name	Description	Units	Scale	Model Symbol	Equation Symbol
Lending Rate	Interest rate charged by Macedonian banks to prime customers	Percentage	0–100	R_LEND	X_{R_LEND}
Net Domestic Credit Available per capita	Sum of net credit to the nonfinancial public sector, credit to the private sector, and other accounts per capita	Macedonian Denar	0 – Inf.	CR_DOM_N	$X_{CR_DOMPCAP}$
Size of Shadow Economy in Macedonia	Estimated size of the shadow economy as a percentage compared to total formal GDP.	Percentage	0–100	SH_5SZAV	X_{SH_5SZAV}
Tertiary Education Enrollment	Percentage of eligible Macedonian students enrolled in tertiary education	Percentage	0–100	SCH_TER	X_{SCH_TER}
Tertiary Education Enrollment for Males	Percentage of eligible Macedonian male students enrolled in tertiary education	Percentage	0–100	SCH_TERM	X_{SCH_TERM}
Urban Population	Percentage of Macedonian population living in urban environment	Percentage	0–100	POP_URB	X_{POP_URB}

Table 5: Regression 1 – Relationship between GDP per capita and net domestic credit per capita in Macedonia

Regression 1: OLS, using observations 1993-2010 (T = 18)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	1317.61	290.888	4.5296	0.00034	***
CR_DOMPCAP	0.0332651	0.00614564	5.4128	0.00006	***
Mean dependent var	2633.061	S.D. dependent var		1107.100	
Sum squared resid	7359699	S.E. of regression		678.2192	
R-squared	0.646786	Adjusted R-squared		0.624710	
F(1, 16)	29.29834	P-value(F)		0.000057	
Log-likelihood	-141.8313	Akaike criterion		287.6626	
Schwarz criterion	289.4434	Hannan-Quinn		287.9082	
rho	0.573559	Durbin-Watson		0.543802	

Table 6: Regression 2.1 – Relationship between GDP per capita and percentage of eligible students (male and female) enrolled in tertiary education

Regression 2.1: OLS, using observations 1990-2009 (T = 20)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	-439.293	371.155	-1.1836	0.25197	
SCH_TER	117.758	14.5131	8.1139	<0.00001	***
Mean dependent var	2445.838	S.D. dependent var		999.4873	
Sum squared resid	4075226	S.E. of regression		475.8166	
R-squared	0.785294	Adjusted R-squared		0.773366	
F(1, 18)	65.83569	P-value(F)		2.00e-07	
Log-likelihood	-150.6258	Akaike criterion		305.2516	
Schwarz criterion	307.2431	Hannan-Quinn		305.6404	
Rho	0.597215	Durbin-Watson		0.720940	

Table 7: Regression 2.2 – Relationship between GDP per capita and percentage of eligible males enrolled in tertiary education

Regression 2.2 : OLS, using observations 1990-2009 (T = 20)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	-613.566	346.774	-1.7694	0.09377	*
SCH_TERM	140.125	15.258	9.1837	<0.00001	***
Mean dependent var	2445.838	S.D. dependent var		999.4873	
Sum squared resid	3338375	S.E. of regression		430.6568	
R-squared	0.824116	Adjusted R-squared		0.814344	
F(1, 18)	84.34002	P-value(F)		3.26e-08	
Log-likelihood	-148.6314	Akaike criterion		301.2628	
Schwarz criterion	303.2543	Hannan-Quinn		301.6515	
rho	0.475803	Durbin-Watson		1.012177	

Table 8: Regression 3 – Relationship between GDP per capita and percentage of Macedonians living in an urban environment

Regression 3: OLS, using observations 1990-2010 (T = 21)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	-13991.7	3110.28	-4.4985	0.00025	***
POP_PURB	263.011	49.4192	5.3221	0.00004	***
Mean dependent var	2541.735	S.D. dependent var		1068.713	
Sum squared resid	9171120	S.E. of regression		694.7593	
R-squared	0.598514	Adjusted R-squared		0.577384	
F(1, 19)	28.32425	P-value(F)		0.000039	
Log-likelihood	-166.1617	Akaike criterion		336.3234	
Schwarz criterion	338.4125	Hannan-Quinn		336.7768	
rho	0.731070	Durbin-Watson		0.415934	

Table 9: Author's hybrid calculation of Macedonian shadow economy size between 1996 and 2007 as a percentage compared to national GDP

<i>Year</i>	<i>Schneider</i>	<i>Risteski</i>	<i>Adjustment</i>	<i>Study Hybrid</i>
1996	n/a	40.30	-2.61 ²⁹	37.69
1997	n/a	45.70	-2.61	43.09
1998	n/a	51.40	-2.61	48.79
1999	39.00	47.80	Average	43.40
2000	38.20	50.50	Average	44.35
2001	39.10	42.60	Average	40.85
2002	38.90	42.60	Average	40.75
2003	38.40	42.80	Average	40.60
2004	37.40	42.90	Average	40.15
2005	36.90	35.30	Average	36.10
2006	36.00	n/a	+2.61	38.61
2007	34.90	n/a	+2.61	37.51

Table 10: Regression 4 – relationship between gdp per capita and percentage of Macedonians living in an urban environment

Regression 4.1: OLS, using observations 1996-2007 (T = 12)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	8034.63	1949.8	4.1207	0.00207	***
SH_5SZAV	-138.463	47.4078	-2.9207	0.01528	**
Mean dependent var	2358.980	S.D. dependent var		716.9173	
Sum squared resid	3051038	S.E. of regression		552.3621	
R-squared	0.460344	Adjusted R-squared		0.406379	
F(1, 10)	8.530328	P-value(F)		0.015283	
Log-likelihood	-91.70378	Akaike criterion		187.4076	
Schwarz criterion	188.3774	Hannan-Quinn		187.0485	
rho	0.515889	Durbin-Watson		0.873284	

²⁹ One half of the average difference between to the two study's overlapping years (1999-2005) was subtracted from the higher-trending study's non-overlapping years and was added to the lower-trending study's non-overlapping years.

Table 11: Multiple Regression 1 – Relationship of GDP per capita to net domestic credit and real lending rate

Multiple Regression 1: OLS, using observations 1996-2010 (T = 15)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	3440.71	397.599	8.6537	<0.00001	***
CR_DOM_N	1.1591e-08	1.53618e-09	7.5454	<0.00001	***
R_LEND	-100.433	18.8171	-5.3373	0.00018	***
Mean dependent var	2805.792	S.D. dependent var		1124.194	
Sum squared resid	562423.8	S.E. of regression		216.4917	
R-squared	0.968213	Adjusted R-squared		0.962915	
F(2, 12)	182.7549	P-value(F)		1.03e-09	
Log-likelihood	-100.2738	Akaike criterion		206.5476	
Schwarz criterion	208.6717	Hannan-Quinn		206.5249	
rho	0.228260	Durbin-Watson		1.127737	

Table 12: Multiple Regression 2 – Relationship of GDP per capita to net domestic credit and size of the shadow economy as it compares to Macedonian GDP

Multiple Regression 2: OLS, using observations 1996-2007 (T = 12)

Dependent variable: GDP_PCAP

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	3346.73	1187.34	2.8187	0.02009	**
CR_DOM_N	2.25759e-08	3.69575e-09	6.1086	0.00018	***
SH_5SZA \bar{V}	-53.3609	26.0643	-2.0473	0.07093	*
Mean dependent var	2358.980	S.D. dependent var		716.9168	
Sum squared resid	592881.3	S.E. of regression		256.6626	
R-squared	0.895133	Adjusted R-squared		0.871830	
F(2, 9)	38.41163	P-value(F)		0.000039	
Log-likelihood	-81.87432	Akaike criterion		169.7486	
Schwarz criterion	171.2034	Hannan-Quinn		169.2101	
rho	0.173925	Durbin-Watson		1.531224	

FIGURES

Macedonian GDP (or GDP per capita) = Intercept + $\beta_1(X_{\text{Factor1}})$ + $\beta_2(X_{\text{Factor2}})$ + ...

Figure 1: Linear equation for exploratory data analysis of factors associated with Macedonian GDP (or GDP per capita)

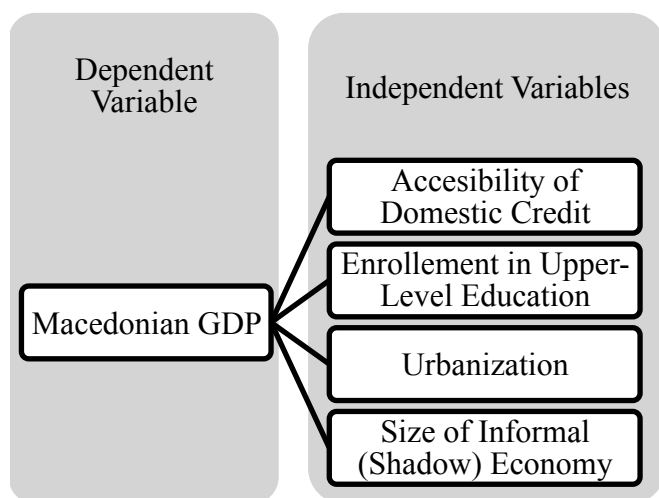


Figure 2: Independent and Dependent Variables for Detailed Study

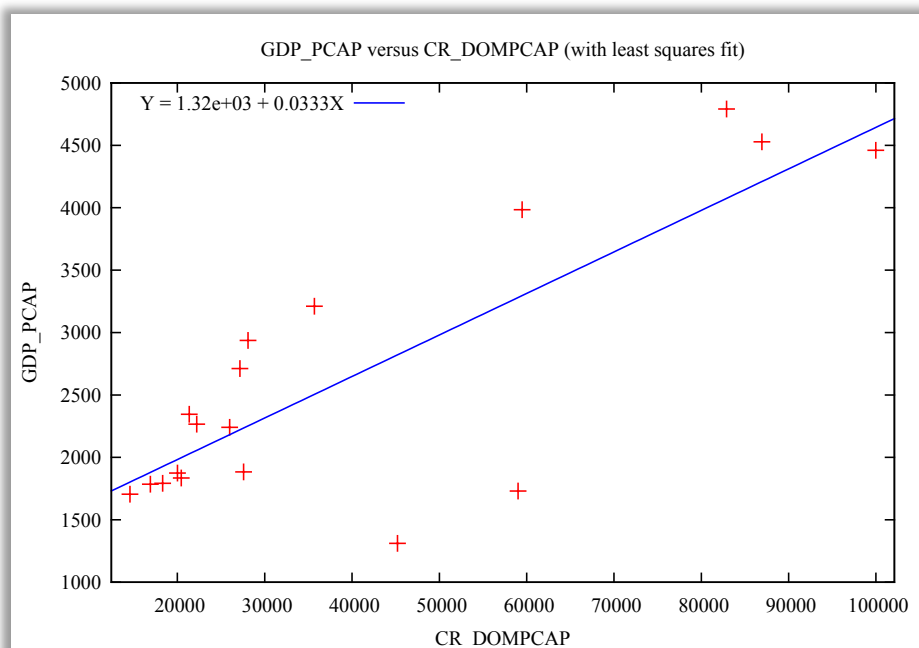


Figure 3: Regression 1, Scatterplot Graph: Scatter plot of GDP per capita and net domestic credit per capita

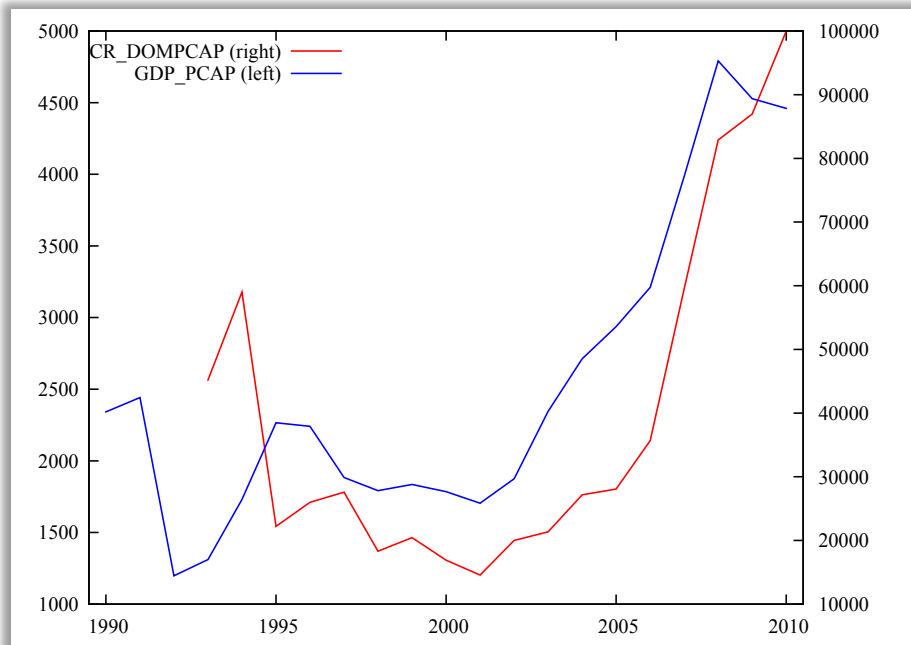


Figure 4: Regression 1, Time Series Graph: Time series graph of GDP per capita and net domestic credit per capita

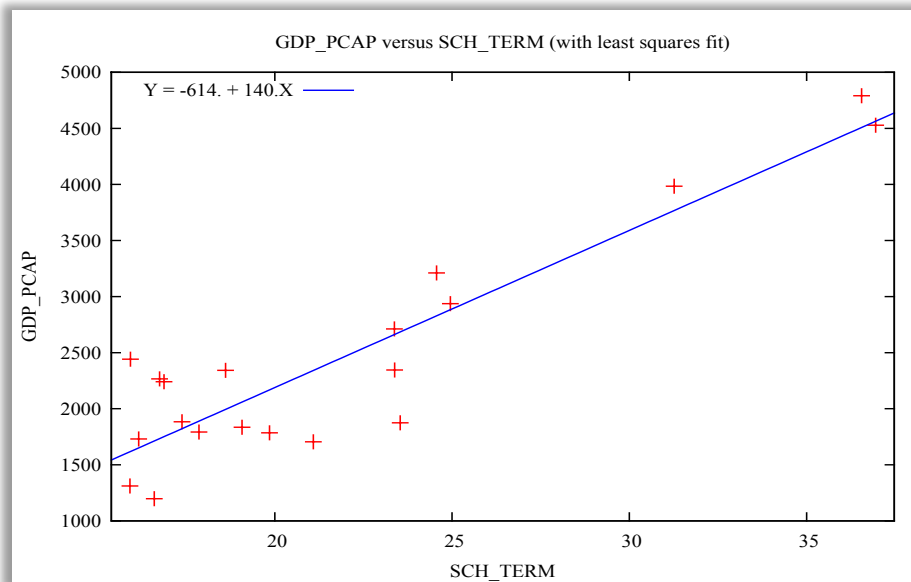


Figure 5: Regression 2.2, Scatterplot graph: Scatterplot of GDP per capita and percentage of eligible males enrolled in tertiary education

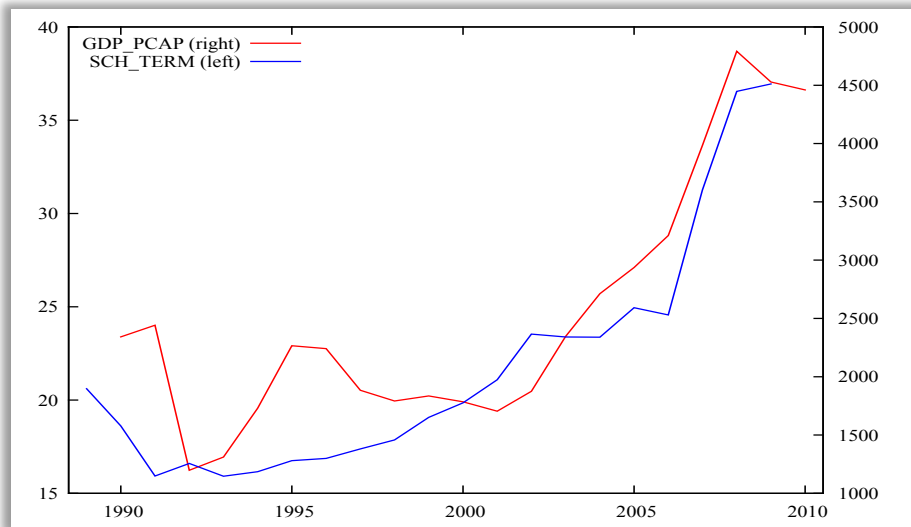


Figure 6: Regression 2.2, Time Series Graph: GDP per capita & percentage of eligible male enrolled in tertiary education

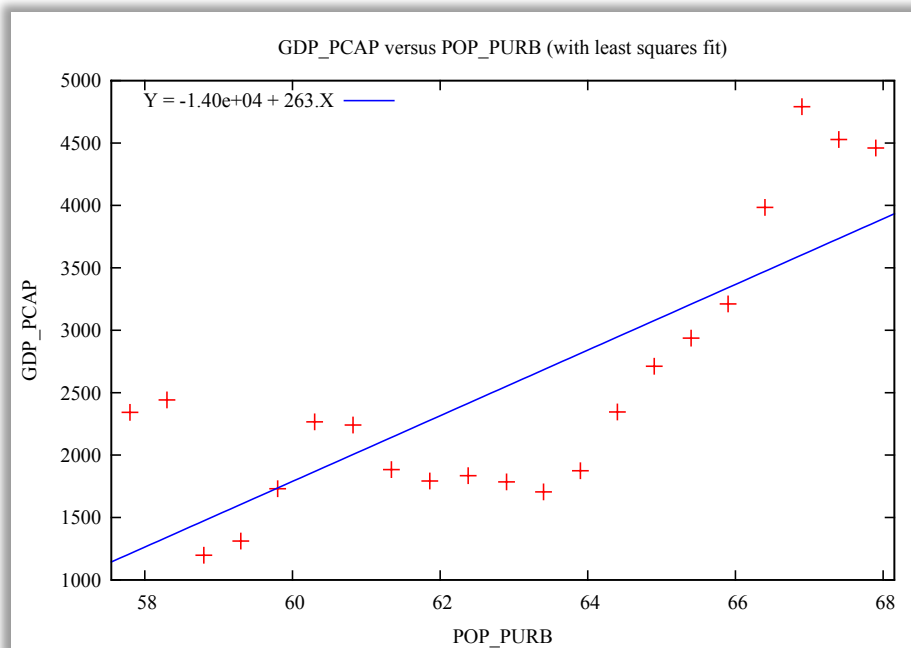


Figure 7: Regression 3, Scatterplot graph: Scatterplot of GDP per capita and percentage of population living in urban environment

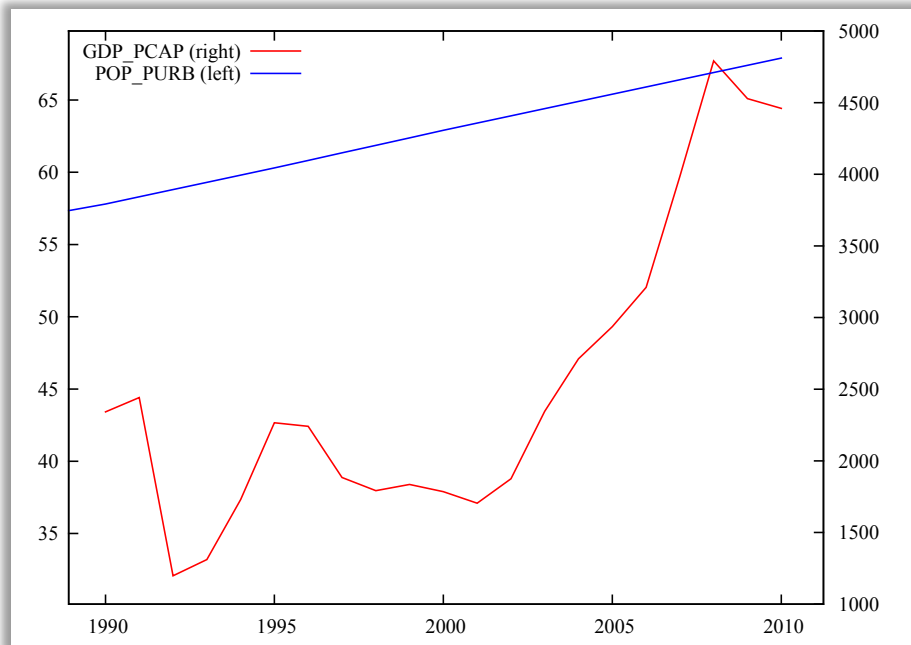


Figure 8: Regression 3, Time series graph: GDP per capita and percentage of population living in urban environment

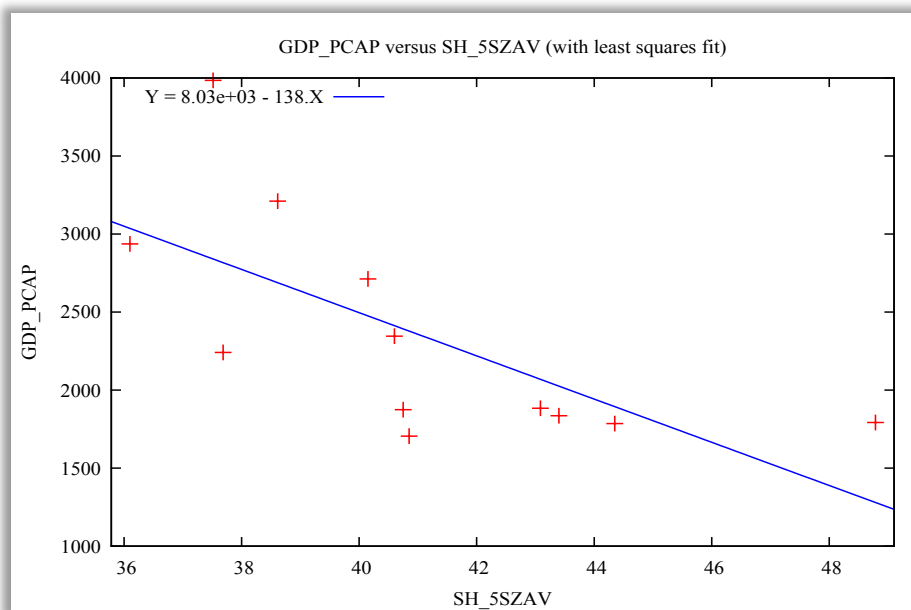


Figure 9: Regression 4, Scatterplot graph: Scatterplot of GDP per capita and size of shadow economy (as a percentage of GDP)

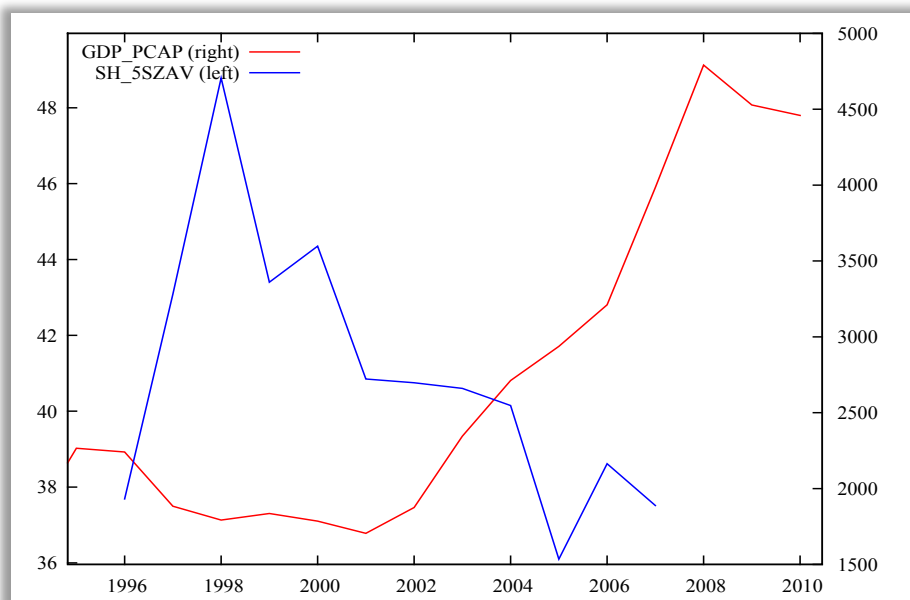


Figure 10: Regression 4, Time series graph: GDP per capita and size of shadow economy

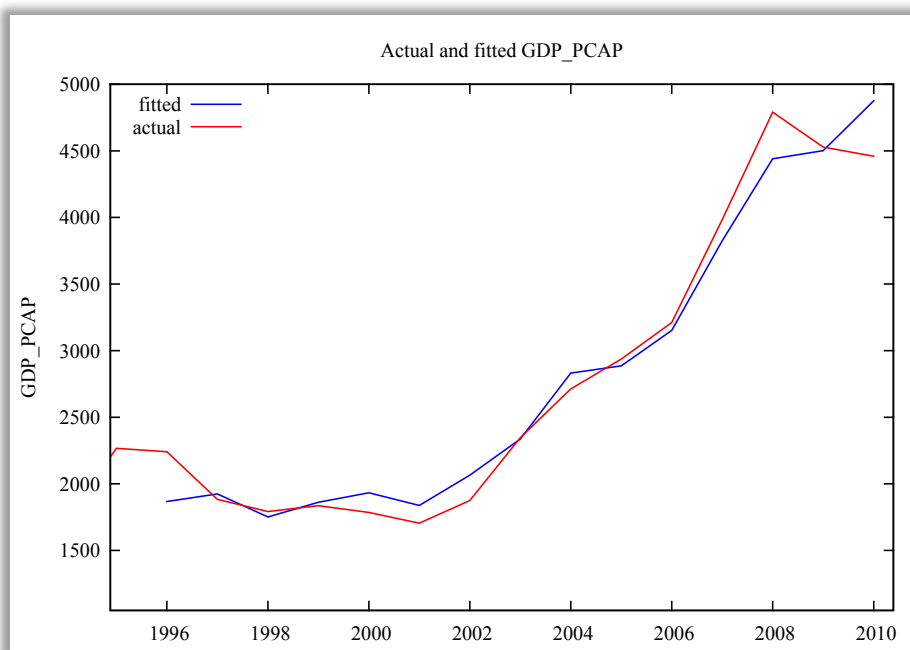


Figure 11: Multiple Regression 1, Time series graph: Relationship between GDP per capita and net domestic credit and real lending rate

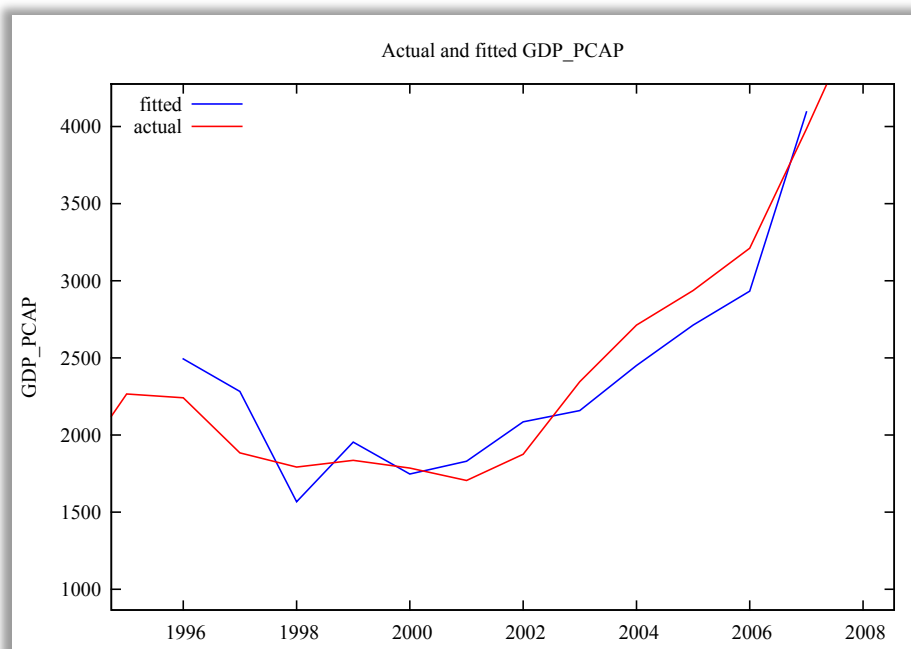


Figure 12: Multiple Regression 2, GDP per capita to net domestic credit and shadow economy size (actual and fitted)

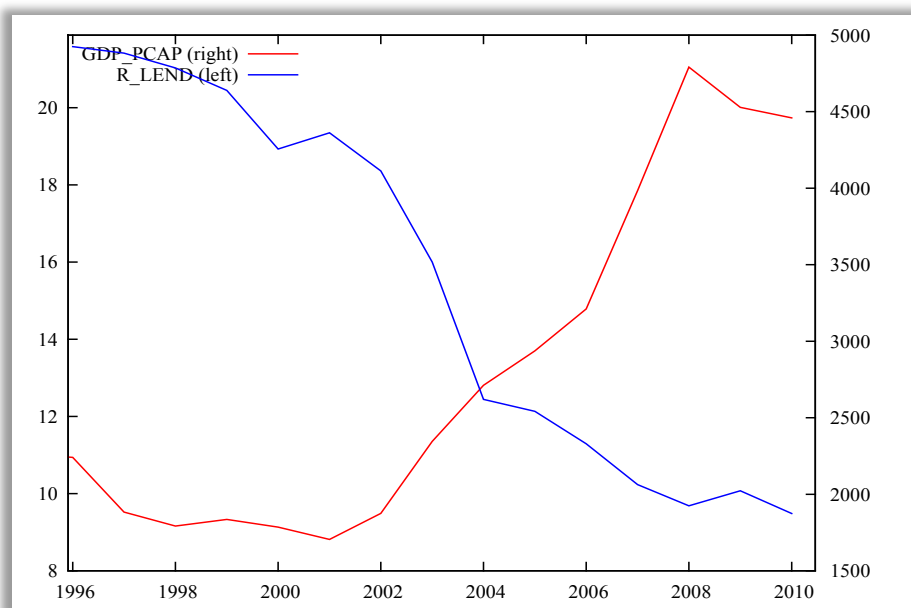


Figure 13: GDP per capita and lending interest rate

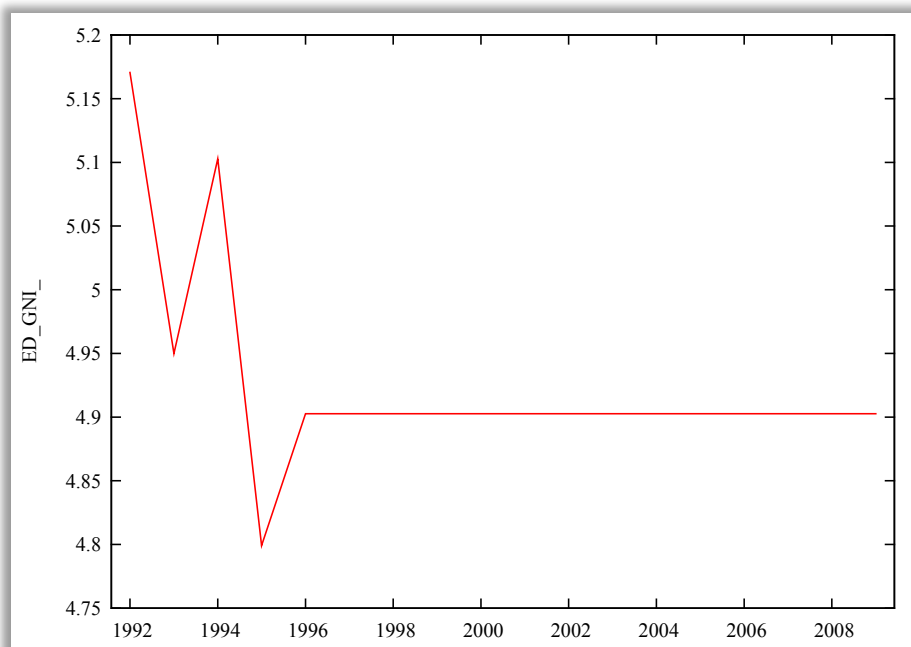


Figure 14: Macedonian spending on education as a percentage of GNI over time

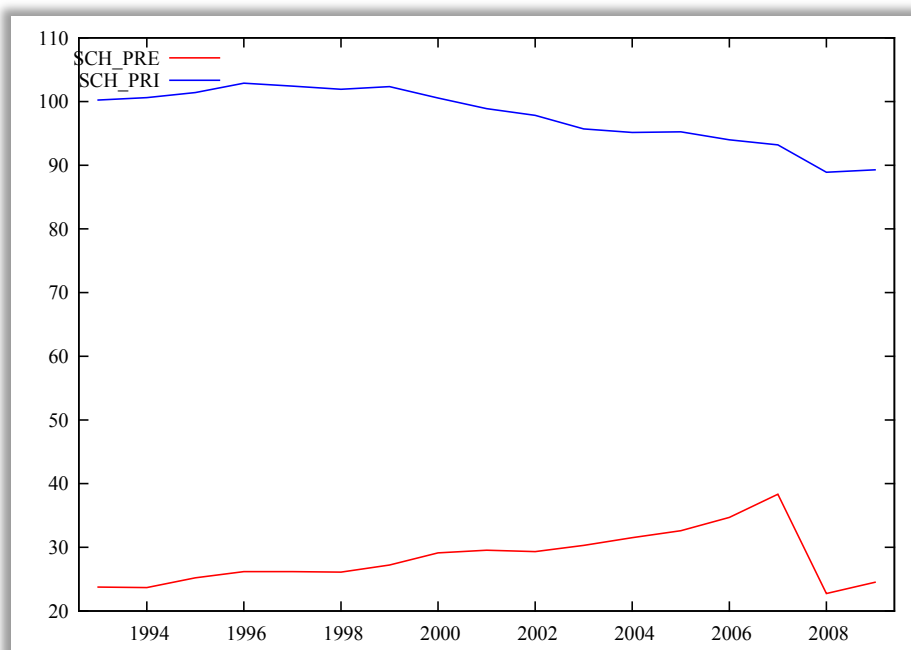


Figure 15: Enrollment in preschool and primary level education in Macedonia over time

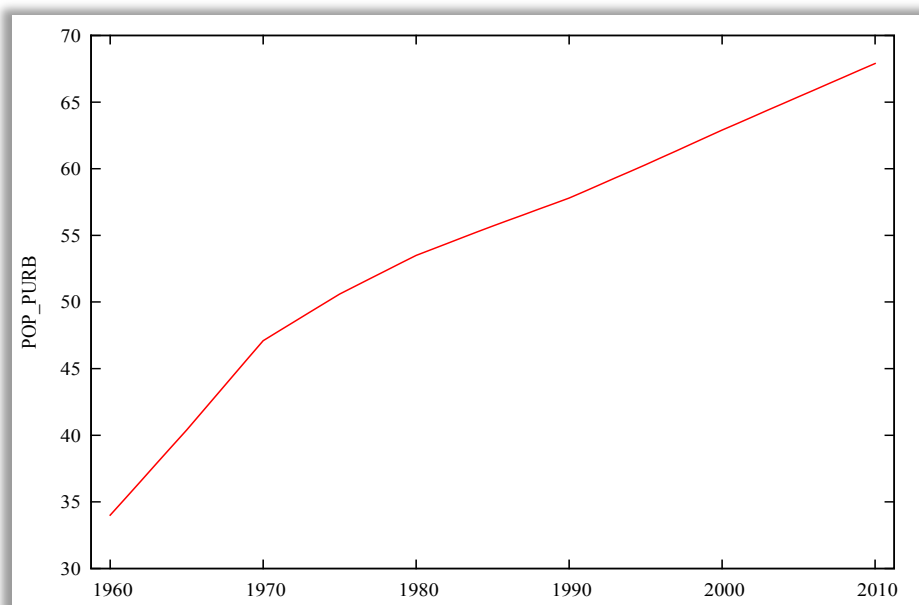


Figure 16: Percentage of Macedonian population in urban environment since 1960

APPENDIX B

QUESTIONNAIRE FOR PART II INTERVIEWS

The Macedonian Moment:*A Current Focus on Macedonians' Economic Stage and Entrepreneurial Opportunity*

Date / Location of Interview:

Entrepreneur Information

Entrepreneur Name:

Entrepreneur Contact Information:

- Email

- Phone

- Address

- Skype/Other

Business Name / Sector / Description / Location:

Introduction:

Thank you for taking the time to talk to me. I know you have very important things to do with your time. I'm here because I'm doing research on the Macedonian economy to determine two things: 1) What macro-economic factors are associated with growth in the Macedonian economy? 2) What do those large factors look like through the eyes of Macedonian entrepreneurs?

I'd like to ask you some questions (based on those factors) about your business. I hope that the answers you give will help me make sense of Macedonia's economy. If there are any questions that I ask that you do not want to answer, we can move to the next question. Please know that we will work to hold this information in confidence. One of my goals is to contribute to Macedonia's people, and I hope this research will be beneficial to the people living here.

Are you comfortable with me recording this interview? (Y/N) _____

Do you have any questions before I begin?

Part 1. Personal Questions:

Please tell me how long you have lived here?

Why did you decide to start your business?

Before I ask more specific questions, how would you say the business going?

Part 2. General Questions:

1. Primary Products:
2. Number of Employees:
3. Majority of Sales to Whom?:
4. Yearly Revenues (Sales):
5. Yearly Profits:

Part 3. Open Questions:

1. Do you think that the overall Macedonian economy is doing...

☐ better ☐ the same ☐ worse

...than it was before independence from Yugoslavia?

2. Since that independence, has the business environment become...

☐ better ☐ the same ☐ worse

...for entrepreneurship?

3. In what areas do you perceive that Macedonia has good potential for economic growth? In other words, what are Macedonia's primary economic strengths?

4. What negative issues does Macedonia need to solve as a whole for economic growth? In other words, what issues are holding Macedonia economy back?

5. You may be repeating yourself, but, looking at your business, what three outside factors or issues presents the biggest challenge for you as an entrepreneur?

i. —

ii. —

iii. -

Part 4. Macro-Economic Questions:

1. Availability of Credit

1a. When you started your business, did you start it with money from your own savings, or did you pursue a loan?

- ☐ Personal savings
 ☐ From an individual (not bank)
☐ From a bank
 ☐ Other:

1b. Name of financing source: _____

1c. How much money were you seeking in the loan? (If # is given _____)

- ☐ ≤ €200
 ☐ from an informal bank.
☐ €201 – 1000
☐ €1001 – 10000
☐ €10001 – 25000
☐ €25001 – 50000
☐ ≥ €50001

1i. In your opinion, at start-up, do Macedonian entrepreneurs usually:

- ☐ over-leverage (indebt) their business?
☐ under-leverage their business?

1d. Were you successful in obtaining the desired loan?

- ☐ No ☐ Yes

Explanation:

1e. Duration and interested rate of the loan: _____

1f. Have you tried to obtain additional loans since you first began your business?

1g. Can you tell me if you have had any “working capital” issues since you started?

- ☐ No ☐ Yes

Please explain:

1h. In your opinion, do Macedonians who want to start a business generally finance:

- ☐ from their own savings.
☐ from a family loan.
☐ from a bank.
☐ from another businessperson.

1j. What question or questions should I have asked you regarding the availability of capital for Macedonian entrepreneurs?

2. Urbanization

2a. More and more Macedonians are moving toward cities (away from rural environments). In what ways (if any) has your business been impacted by this urbanization trend in Macedonia?

2b. Has infrastructure in cities in Macedonia (roads, water, mass-transit, electricity, communications, police, etc.) kept up with the population move toward urban environments? Please explain how this has impacted your company.

2c. Do you view this population move toward cities as being good for the your business in particular.

☐ No ☐ Yes

Please explain:

2d. Do you view this population move toward cities as being good for the Macedonian economy?

☐ No ☐ Yes

Please explain:

2e. Have you seen any changes over the past 10 years regarding business permitting and regulation? Please explain.

2f. As more people move to cities, what tensions (if any) are created among business people?

2g. Macedonia cities consist of people from different ethnic backgrounds. What dynamics does this create for you as entrepreneur?

3. Upper-Level Education

3a. What is your schooling history?

- ☐ Primary / Elementary
- ☐ Secondary / High School
- ☐ Trade School
- ☐ Tertiary / University
- ☐ Masters Level University
- ☐ Doctorate Level University

3b. In your opinion, how effective is the Macedonian School System at preparing Macedonians to contribute to the Macedonian economy since independence from Yugoslavia?

- ☐ Very effective
- ☐ Somewhat effective
- ☐ Not very effective

3c. What skills that you learned at school help you the most as a an entrepreneur in Macedonia?

3d. What subjects or curriculum does the Macedonian education system need to emphasize?

3d. The university level education (or lack thereof) of your Macedonian employees contributes to your business:

- ☐ in an insignificant way.
- ☐ in a somewhat significant way.
- ☐ in a very significant way.

3e. Statistically, Macedonian economic growth correlates with enrollment in upper-level education. In your opinion, does this correlation mean that:

- ☐ when people make more money they send their children to school?
- ☐ the people who attend upper-level education become contributing members of the Macedonian economy?

3f. What question should I have asked you regarding upper level education in Macedonia?

4. Informal Sector

4a. Since Macedonia's transition to capitalism in the 1990's, the informal economy (black, grey markets, shadow economy) seems to have had a significant role in Macedonian economics. Do you think this shadow economy has had influence in Macedonia? Please explain.

4b. Estimates put the size of Macedonia's shadow economy at level just below 40% of official economy.

4b.1. Do you think that the activities of businesses in the shadow economy:

- ☐ have a positive impact Macedonian economic growth.
- ☐ have neither a positive nor a negative impact on the Macedonian economy.
- ☐ have a negative impact on Macedonian economic growth.

4b.2. Do you think that the activities of businesses in the shadow economy:

- ☐ have a positive impact on your business.
- ☐ have neither a positive nor a negative impact on your business.
- ☐ have a negative impact on your business.

4c. What factor or factors cause individuals and business to operate in the shadow economy?

- ☐ Corruption in government
- ☐ Tax rates
- ☐ Organized (Mob) control of business
- ☐ Difficulty in obtaining permits for business
- ☐ Need for rules and order in addition to the judicial system (protection)
- ☐ Other:

4d. How much (if any) of your purchases come from the shadow economy?

- ☐ 0%
- ☐ 0% - 25%
- ☐ 25% - 50%
- ☐ 50% - 75%
- ☐ 75% - 100%

4e. How much (if any) of your revenues come from the shadow economy?

- ☐ 0%
- ☐ 0% - 25%
- ☐ 25% - 50%
- ☐ 50% - 75%
- ☐ 75% - 100%

4f. In what other ways are entrepreneurs impacted by the shadow economy?

Other Notes:

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