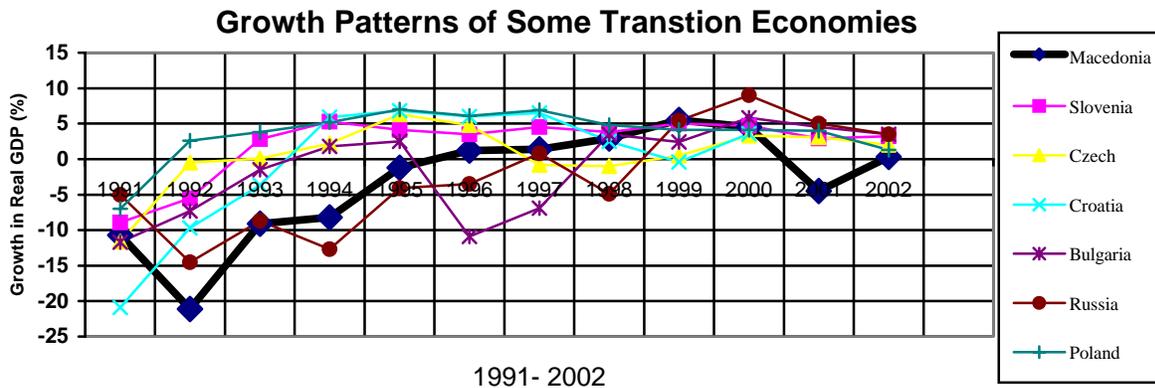


## Factors of Economic Growth in the Transition Economies of Eastern Europe: The Case of Macedonia

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After the demise of the socialist order in the countries of Eastern Europe, there was a difference in the extent to which the countries were able to raise real income and the standard of living. Some countries, like Slovenia, the Czech Republic and Poland, were experiencing higher than average economic growth and were converging rapidly with the countries in the European Union. Other countries, on the other hand, like Macedonia and the Commonwealth of Independent States, were experiencing the direct opposite: low growth and deteriorating living standards.

Once part of the prosperous Republic of Yugoslavia, Macedonia has been among the countries experiencing very turbulent and unstable economic growth. Graph 1, which compares the growth rates in real GDP of some transition economies of Eastern Europe, illustrates the low economic growth of Macedonia as compared to several other formerly socialistic economies. Unlike most of the countries in the graph, Macedonia's compound growth has been negative, with a current income per capita that is approximately five percent lower than its pre-transition level.



In general, in the period from 1991 to 2002, Macedonia has been stuck at performing below its potential level. Since the beginning of the transition period for Macedonia in 1991, the country has accumulated foreign outstanding debt of 43.5 percent of the country's GDP. Macedonia's government has not been able to decrease the unemployment rate, which averages 35.5 percent over the period from 1990-2003. Furthermore, poverty rates, which are estimated at 30 percent of the total population for 2003, continue to grow.

The negative average economic growth of Macedonia in the period since the country's independence raises questions about which specific factors have impeded the economic growth of the country. This paper is an attempt to answer those questions; it examines which factors are significant in explaining the economic growth of transition economies in general. Then, these results are applied to the case of Macedonia. I will look at the deviation of Macedonian economic indicators from the average in order to evaluate which aspects of the Macedonian policies and institutions hinder its economic growth.

This paper is organized as follows. I begin by presenting an overview of the literature written about the economic and social problems that economists believe to be most significant in

explaining different economic growth of countries in transition. Next, I draft a simple model that tests the correlations between growth and macro- and microeconomic factors, as well as human and capital endowments. I do this by regressing the data on growth rates on other economic and social indicators of twenty-five Eastern European economies in transition in the period from 1991 to 2000. Then, I present the results of the regression, and I compare the predicted growth of Macedonia to the “average” transition economy. I also multiply the difference between Macedonian and average actual values, with the coefficients estimated by the regression in order to see which factors are most impeding to the growth of the country. I finish this paper with concluding remarks on what could be the basis for future research and by giving suggestions about possible solutions to the Macedonian problem.

## **I. Literature Overview**

What lays behind the low economic growth of some transition economies? Is it the degree of liberalization, income inequality, low investment in human and physical capital, or black markets? While many economists have agreed that all of the above factors have some influence on economic growth, there has been a divergence of opinion as to which factors are most important to growth. Because of this diversity of opinion, I will present different theories as to which reform should be a priority of the governments of transition countries in order to spur growth.

The “Washington Consensus” economists believe there is a positive correlation between monetary stability and economic growth in transition economies, and because of such relationship, the governments should focus on macroeconomic stabilization policies [Fisher et al (1998) and Gelb and Gray (1991)]. Fisher, Sahay and Vegh, for example, argue that output declines have stopped and growth has resumed in all countries that have stabilized. The regression they present seeks to account for the differences in performance among countries; they find a positive relationship between growth and stabilization by studying the behavior of growth and inflation in twenty-six transition economies during the 1992-1995 period. They conclude stabilization policies “will make all the difference” in future growth of the countries. Gelb and Gray, on the other hand, analyze country-specific indicators over the transition period in order to find which of them are mostly correlated to growth and which reforms should be undertaken in a transition economy. They conclude that although the exact reforms would differ by country, macroeconomic stabilization is a prerequisite for any kind of subsequent structural reforms in each country.

The arguments that point to stabilization policies as a reform priority have been challenged by economists like Winkler (2000) and Roland (2000), who argue that stabilization can be discounted as a likely cause of the difference in economic performance of transition economies. These economists offer another explanation for the low growth by hypothesizing that adequate corporate governance solutions and stable privatization policies might be the key to increasing growth. Winkler, for example, analyzes indicators of the stabilization policies, private sector and financial system in Macedonia specifically. He concludes that although the government has implemented conventional stabilization policies, the growth performance has not improved because of inadequate corporate governance. He claims his model is applicable to all transition economies.

Roland, on the other side, discusses the relation between corporate governance and economic efficiency in transition economies. His model examines the consequences of various privatization policies on corporate governance and enterprise restructuring. Roland concludes

from the point of view of corporate governance, privatization policies play a crucial role not only in determining restructuring outcomes, but also in determining economy-wide performance. Both Winkler and Roland suggest that governments should focus on gradual and strong privatization policies accompanied with adequate corporate governance in order to spur economic growth in transition economies.

Yet another approach to understanding growth in transition economies comes from neoclassical theory. Neoclassical economists focus on the importance of human and physical capital, as well as foreign and domestic investment. Rizov and Swinnen (2003), for instance, analyze the importance of the establishment of new enterprises in improving the human and physical in the transition economies. They stress that a lack of resources imposes limits to achieving higher efficiency of human and physical capital.

In their paper, Rizov and Swinnen draw their model from an overview of the development of individual farming in Romania, but apply it to the development of the industrial sector as well. They determine the factors that influence a person's decision to start a business, and conclude that those decisions will be mostly influenced by human and capital factor endowments, as well as access to monetary resources. They further argue that due to capital market imperfections, potential entrepreneurs might find it hard to obtain the resources to start a business, and access to physical capital goods and external financing is imperative to economic growth. Consequently, Rizov and Swinnen suggest foreign direct investment is imperative to the economic growth of a transition economy.

Further studies support the idea that increasing foreign direct investment (FDI) will ultimately help transition economies grow. Such studies have shown that foreign investors have been more successful than domestic owners in restructuring former state-owned enterprises (EBRD, 1999). In general, economists who argue that transition economies' lack of resources is impeding growth believe it is imperative that governments prioritize selling public enterprises to foreign investors, because domestic firms are otherwise unable to raise the required amount of capital to modernize and increase productivity.

While macroeconomic policies are positively correlated with economic growth, the arguments that prioritize such policies do not seem to explain the more direct reasons behind the low economic growth of some transition countries. In terms of stabilization policies, empirical data on inflation and growth rates for Eastern European transition economies inspire some doubt regarding the arguments in favor of stabilization policies. Namely, in the last five years, the countries with growth rate averages of above four percent are also the countries that have had relatively high levels of inflation, around eight to ten percent (USAID 2002, 23).<sup>1</sup> In terms of the private sector, there is not a trend that illustrates that a higher degree of privatization causes higher growth (World Bank online databases). These empirical observations suggest while macroeconomic policies are important for the growth of transition economies, they might not be the key.

With respect to the arguments on the essentiality of increased domestic and foreign investment there are two important questions: what causes low investment, and what should governments do to spur it? Altomonte and Guagliano (2003) find that in general, the Mediterranean region, to which Macedonia belongs, displays lower potential in attracting foreign direct investment compared to Central and Eastern Europe because of the presence of social unrest. If we believe social unrest/conflict generates economic uncertainty and increases the redistributing activities [Rodrik (1999)], then attempting to solve each ethnic and social

conflict should be of the utmost importance to the governments of countries in the Mediterranean region.

This is where neo-institutional economists come to the forefront. According to neo-institutional theories, institutions that are capable of taming social conflict and defining property laws are crucial to the economic prosperity of countries in transition. The IMF, for example, suggests strengthening the judiciary system should be a priority for transition economies. In their 2003 country report on Macedonia, IMF economists analyze the correlation among sectors and indicators in the country, and conclude there is a high rate of rent seeking activity, which in turn is a result of a weak judiciary system. For that reason, the report suggests creating a well-defined judiciary system with enforcement ability should be a priority for the executive branch of the government of Macedonia (IMF 2003).

A study done by Murphy et. al (1993) adds “further substance to [the] recently renewed concern about the effect of poor property rights on economic development” (Murphy et. al 1993, 415).<sup>2</sup> Namely, they argue rent-seeking activities, enabled by the poor protection of property rights, are in various ways harmful to growth. They present a mathematical model which shows that rent-seeking activities attack innovation and cause people to shift from cash crop production to rent seeking activities or subsistence production.

In yet another study done on the importance of institutions, Cheikbossian (2003) analyzes the macroeconomic consequences of rent seeking activities in transition economies. He concludes the distribution of property rights is critical to macroeconomic outcomes. He warns rent seeking can be harmful to the modernization of enterprises in transition economies, and it may also affect the relative benefits and outcomes of different privatization programs.

An additional reason why institutions are extremely important to growth has to do with the informal sector of an economy. Whereas Winkler (Winkler 2000, 265) believes the existence of an informal sector in the transition countries is good for the economy in the longer run because “it more often than not cushions the output decline and provides outlet for entrepreneurial talent.” Other economists have argued the informal sector is a symptom of malfunction in different sectors of the economy, and are warning governments to implement policy that would help decrease the informal sector. Rosser, Rosser and Ahmed (2000) believe that income inequality is positively (and possibly causally) correlated with the size of the informal sector of the economies of countries in transition. To prove this hypothesis, they use empirical data from 16 countries in transition for the periods from 1987 to 1989, 1993 and 1994. They point out that a significant informal sector causes a decrease in tax revenue, which would result in a decrease in official safety nets and a decrease in long run growth of the countries.

As one can see, economists do not agree on which factor is most significantly related to economic growth. To find which factors are crucial for growth, in the next section I test the significance of all hypotheses mentioned as being “responsible” for economic growth of transition economies.

## **II. The Model**

In this section, I test the empirical validity and the relative importance of different explanations given for the difference in economic growth of the transition economies. My empirical analysis focuses on the differences in economic growth rates of twenty-five Eastern European transition countries in the period from 1991 to 2000. I start with 1991 because this is the year when almost all of the countries in the sample were independent. Since my primary

objective in this paper is to find explanations for the low growth of Macedonia, I exclude data for 2001 (and after) because this is the year of ethnic tensions and conflict in Macedonia and the year of nine percent net decline of real GDP;<sup>3</sup> by doing this, I exclude the lagged effect of the adverse shock to the economy and to avoid possible high collinearity between the civil conflict and the other variables during and after the that conflict. In addition, I exclude the countries with war conflicts longer than six months from the regression because my purpose is to examine the factors affecting economic growth other than warfare.<sup>4</sup>

The dependent variable in the regression is the average compound growth of the observed transition economies. The independent variables in the regression and their definitions are presented in Table 1.<sup>5</sup> All of them are proxies for the arguments presented in the literature review, and are included in the regression in order to test the significance of the arguments that explain growth in transition economies.

More specifically, initial income, enrollment and domestic investment are all variables from the Solow growth model. All of the three variables are also included to test the arguments of economists like Rizov and Swinnen, who stress the importance of human and physical capital accumulation to the development and growth. I include the initial real GDP per capita in order to control for the conditional convergence in income levels of the countries in the time before the transition to capitalist market economies. Although all of the socialistic countries were thought to be at a similar level of development before they abandoned the socialistic order, they were very specialized as to which country produces what. Such specialization brought by divergence in regional GDP among the republics.

**Table 1: List of the independent variables used in the regression and their definitions**

<b>Independent Variable</b>	<b>Definition</b>
EXPORTS	Exports as share of Real GDP (UN, World Bank, EBRD and USAID online databases).
FDI	Foreign direct investment as share of Real GDP (UN, World Bank, EBRD and USAID online databases)
INFLATION	Log of the average rate of inflation. (World Bank and USAID online databases)
INCOME	Per capita GDP in 1991 [IMF, ( <a href="http://www.imf.com">www.imf.com</a> )]
LONGITUDE	Longitude of the capital city of each transition economy. <sup>6</sup>
ENROLL	Net secondary enrollment ratio as percent of enrolled children of the official age for the education level indicated to the total population of that age. [UNDP (2003)]
CORRUPT	Assessment of the level at which corruption is perceived by businessmen as impacting the commercial life (1-least corrupt; 10-most corrupt) (Transparency International, <a href="http://www.transparency.org">www.transparency.org</a> )
PUB_COR	A product of the public sector as share of GDP and the Corruption Perception Index. World Bank ( <a href="http://www.worldbank.org/ecspf">www.worldbank.org/ecspf</a> )
INVEST	Domestic Investment as a share of Real GDP [World Bank (1996, 1999, <a href="http://www.worldbank.org">www.worldbank.org</a> )] <sup>7</sup>
INFORMAL	Estimates of the Informal Sector as a share of Real GDP. Rosser et. al (2000, 2003); several official government sites. <sup>8</sup>

I use enrollment as a proxy for investment in human capital. Namely, higher number of literate and educated people in one country means that the country could develop more specialized areas and could industrialize faster. According to the Solow growth model, higher human capital means higher income and bigger prospects for high future economic growth.

Domestic investment, on the other hand, is included to test the significance of investment in generating economic growth.<sup>9</sup> Investment is especially important because it facilitates knowledge spillovers. In addition, higher investment might lead to higher employment in the future, as well as higher productivity.

Exports and FDI are proxies for openness to capital flows, and are used to test the arguments that favor liberalization.<sup>10</sup> The more liberalized a country is, the more open it is to trade and capital flows. The share of exports as percent of GDP would indicate the degree of openness of one country to its trading partners. Additionally, the ratio of FDI to GDP indicates the volume of investment from abroad. The higher this ratio is, the higher the degree of job creation, knowledge spillover and industrialization in the country. The size of FDI also serves as a proxy for the risk of investing in a country, thereby capturing other political and economic aspects that could affect growth.

Inflation is included as a measure for the arguments about stabilization and privatization respectively. Inflation affects growth in various ways. Price level affects the amount of exports and imports. Moreover, fluctuating, i.e. unstable, prices make investment riskier because inflation affects the real interest rate in a country and creates uncertainty about future prices. Debtors and creditors are affected by too high or too low of inflation and their risk of investing is higher. High inflation also obscures movements in the relative prices that allocate resources across sectors and industries.

Furthermore, the corrupted public sector is an interaction term included as measure for privatization. The efficiency and optimization of privatization depend to great extent on the institutions in one country. Less optimal privatization contracts might hinder the future growth because formerly public firms are not sold in the best interest of the future development of the country.

Longitude is included in the regression as a proxy for cultural and geographical variables that might influence the growth of transition economies: the proximity to the West, the memory of capitalism, and cultural influence of the West. For a country to be closer to the West, it means that it would have lower transportation costs, and it might be easier for the country to trade with Western trading partners. Additionally, longitude might pick up the influence of the institutions of the western economies. It also might capture expectations regarding future European Union membership that may influence political behavior.

Finally, corruption and the informal sector are used as proxies for quality of institutions and are used to test the arguments favoring institution reforms, whereas the corrupted public sector is used as an interaction term to test if corruption matters in the non-privatized economy. High levels of corruption indicate weak institutions because there is no system that would increase the opportunity cost of engaging in acts of corruption. More specifically, if the legislative, executive, and judicial branches of a government are not strong and stable, the country has a weaker mechanism to eradicate corruption in the government sector.

### **III. Results**

Table 2 displays the results of the regression, which indicate this model explains 90.9 percent of the variation in growth among this group of transition economies. All but three of the independent variables used in the regression are statistically significant at five or ten percent significance level. The three variables that are not statistically significant are the measures for domestic investment, informal sector and the interaction term, and corruption in the public sector.

**Table 2. Explaining the low growth in some transition economies**

Dependent Variable: Average Compound growth of Real GDP Per Capita Growth 1990-2000

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.007	1.583		2.531	0.024
<b>EXPORTS *</b>	<b>-0.017</b>	<b>0.007</b>	<b>-0.339</b>	<b>-2.360*</b>	<b>0.033</b>
<b>FDI *</b>	<b>0.186</b>	<b>0.086</b>	<b>0.237</b>	<b>2.148*</b>	<b>0.050</b>
<b>INFLATION *</b>	<b>-0.189</b>	<b>0.108</b>	<b>-0.298</b>	<b>-1.746*</b>	<b>0.103</b>
<b>INCOME *</b>	<b>0.000</b>	<b>0.000</b>	<b>-0.473</b>	<b>-3.363*</b>	<b>0.005</b>
<b>LONGITUDE*</b>	<b>-0.009</b>	<b>0.005</b>	<b>-0.198</b>	<b>-1.659*</b>	<b>0.119</b>
<b>ENROLL *</b>	<b>0.020</b>	<b>0.010</b>	<b>0.359</b>	<b>2.023*</b>	<b>0.063</b>
<b>CORRUPT *</b>	<b>-0.415</b>	<b>0.209</b>	<b>-0.536</b>	<b>-1.989*</b>	<b>0.067</b>
PUB_COR	0.066	0.168	0.100	0.390	0.702
INVEST	-0.021	0.016	-0.183	-1.259	0.229
INFORMAL	0.002	0.007	0.033	0.262	0.797

R Square 0.909

This regression suggests there is support for two of the three neoclassical variables. Initial income and the secondary enrollment rate are both statistically significant. Income is negatively correlated with the growth of transition economies. This means the higher the initial income per capita of a country, the lower the subsequent growth. In addition, the regression suggests a there is a positive partial relationship between growth and secondary enrollment rate. Namely, holding everything else fixed, one percent increase of the secondary enrollment rate is associated with 0.02 percent in growth. These results are not surprising because initial income is a proxy for the initial socio-economic conditions in the country, which are important for subsequent growth, whereas human capital determines productivity growth in a country at any point after the transition.

The results on liberalization are mixed. The variables used as measurements for the liberalization of trade and capital flows, exports and foreign direct investment, are both statistically significant. The results on FDI support the validity of theories asserting that liberalization is of prime importance in explaining the difference in growth rates among the transition countries. FDI is positively correlated to growth, thereby supporting Rizov and Swinnen's argument that foreign direct investment increases human and physical capital in transition economies. More specifically, controlling for all other variables, one percent increase in FDI is associated with 0.186 percent increase in growth. However, EXPORTS come out to be negatively correlated with growth in this regression, which means that the more countries trade, the less they grow. The regression's results suggest that a one percent increase in exports causes 0.017 percent decrease in growth. This negative correlation between exports and growth was a surprising result at first. I discuss this further below.

In addition to the fact that the regression supports the theory that liberalization is important for economic growth, it supports the theories arguing that stabilization is also important for economic growth. The inflation variable in the regression is both inversely

related to growth and statistically significant, which means stabilization is also important in explaining the growth of transition economies. Specifically, a one percent increase in inflation decreases the growth by about 0.189 percent.

Furthermore, the regression also supports the neo-institutional hypotheses, which assert the difference in the nature and strength of institutions is the most important factor of economic growth in transition economies. Both variables included in the regression as proxies for institutions (longitude and corruption) are statistically significant and negatively related to growth. With respect to longitude, the regression supports the assumption that the further away countries are from the West, the lower growth they will experience. This provides support that there is some correlation between growth of countries and western influence. The coefficient for longitude indicates if a country is one longitudinal degree closer to the West, the growth of the country is predicted to be 0.009 percent higher. With respect to corruption, the regression results indicate corruption is most detrimental to growth. To be exact, holding everything else fixed, one unit decrease in corruption as measured by Transparency International is associated with 0.415 percent increase in growth. In conclusion, the regression supports the hypothesis that institutions which are market oriented and decrease rent-seeking activities significantly influence growth in these countries.

In order to find an explanation of why exports turn out to be negatively correlated to growth in the regression, I reviewed the export commodities of the observed countries. I found that the Commonwealth of Independent States (CIS) countries, which exhibit the lowest growth rates from the observed twenty-five countries, have very high export ratios.<sup>11</sup> I concluded that it is possible the export components in addition to export volume might have an effect on the sign of the export variable.

Table 3 presents the main export components of several CIS countries. It is evident that these countries mainly export natural resources, which might explain the negative correlation of exports and growth, and in turn influence the sign of the export variable. A theory presented by Sachs and Warner (2001) provides support for this idea. According to Sachs and Warner (2001), natural resource abundance is correlated with slow growth and inefficient industrialization. Since the exports of many transition economies of Central and Eastern Europe consist of natural resources, Sachs and Warner's theory might explain the negative correlation between exports and growth as depicted by the regression.

**Table 3: Major export components of some CIS countries**

<u>Country</u>	<u>Export components</u>
Kazakhstan	Oil and oil products (58 %), ferrous metals (24 %), chemicals and coal
Russia	Oil and oil products, natural gas, wood, metals
Tajikistan	Aluminum, electricity, oil
Turkmenistan	Natural gas (57 %), oil (26 %)
Uzbekistan	Natural gas, gold, energy products, ferrous metals, mineral fertilizers

Source: CIA (2003)

In conclusion, the regression presented in this section has very high explanatory power in explaining the different growth experience of transition economies. It shows that stabilization, liberalization, human capital, FDI, and institutions are all significant in explaining the growth of transition economies, and are therefore necessary ingredients for stimulating growth.

#### IV. Applying the Regression

In this section, I perform some calculations to see what the regression would tell us about the growth of Macedonia as compared to the average economy. Table 4 presents the results of the calculations of the predicted growth of Macedonia, the “average” transition economy and the difference of the two.

**Table 4: Predicted values and residual for Macedonia**

Hypothesis	Independent Variables	Observed Values		Residual for Macedonia		
		Macedonia	"Average" economy	$V_{mac}-V_{avg}^{12}$	Beta	$(V_{mac}-V_{avg}) * \text{Beta}$
Solow variables						
	Initial income	0	0	-706.12	0	0
	Enrollment	1.214	1.28	-3.3	0.02	-0.066
	Investment	-0.399	0.425	-1.24	-0.021	0.026
Liberalization						
	Exports	-0.688	-0.813	-7.37	-0.017	0.125
	FDI	0.186	0.290	-0.56	0.186	<b>-0.104</b>
Stabilization						
	Inflation	-1.056	-1.013	0.23	-0.189	-0.043
Western influence						
	Longitude	-0.19	-0.310	-13.2	-0.009	0.118
Institutions						
	Corruption	-3.615	-3.196	1	-0.415	<b>-0.415</b>
	Corruption in private sector	0.374	0.333	0.62	0.066	0.04
	Informal Sector	0.07	-0.059	5.5	0.002	0.011
	<b>Predicted growth</b>	<b>-4.100</b>	<b>-3.063</b>			

In the third column of Table 4, titled “Observed values,” I compare the predicted value for the growth of Macedonia to the predicted value for the growth of the “average” transition economy, in order to compare the performance of the country relative to the “average” performance of the observed transition economies. I do the above in order to examine whether the actual growth of Macedonia is above or below the predicted growth by the regression. This process includes multiplying the beta coefficients with the values of the independent variables both for Macedonia and the average value for all economies. The results indicate that the predicted growth of Macedonia is negative 4.1 percent, whereas the predicted growth for the “average” transition economy is approximately negative 3.06 percent. This means that Macedonia is expected to perform worse than the average transition economy in Eastern Europe.

Furthermore, in the fourth column of Table 4, titled “Residual for Macedonia,” I multiply the difference between the Macedonian and the average actual values, with the coefficients estimated by the regression in order to see which factors are most impeding to the growth of the country (the multiplication results are included in the third sub-column of the fourth column).

These calculations show the variables mostly responsible for the lower growth of Macedonia are corruption and FDI. In fact, according to the results in the regression, if the

country manages to lower the corruption by one point on a ten-point scale, its growth should increase by 0.41 percent per year. In addition, every 1 percent increase of FDI in the country would result in a 0.104 percent increase in the annual growth rate. Enrollment also lowers growth, although its impact is not as much (one percent increase in the net secondary enrollment rate should result in a 0.06 increase in the annual growth rate of the country).

These results are not surprising for those familiar with the Macedonian economy. Macedonia ranks as the fifth most corrupt country from the twenty-five countries in the observation group. Its Corruption Perception Index (on a scale from 1 to 10, 1 being least corrupt) is 8.7 (Transparency International, 2003). Also, the fact that the property rights in Macedonia are not well defined nor enforced might be a partial explanation of the low rate of FDI in the country.

The above results of the predicted growth of Macedonia and the variables that affect its growth the most suggest the country needs to undergo reforms of the legal system that would decrease expropriatory activities in the country. Since corruption, as a form of rent seeking activity, is a result of inefficient legal system, the regression supports the idea that institutional reforms in Macedonia should be a priority of the government.

#### **IV. Concluding Remarks**

Macedonia has been experiencing a decline in the public trust of the government as well as continuous social unrest. Bankruptcies of major public enterprises have been caused by corrupt managers, who launder company money and steal significant amounts of corporate inventory ([www.a1.com.mk](http://www.a1.com.mk)). In the last incident, for example, Macedonia's Secretary for Defense was arrested after asking for and receiving \$60,000 in bribes for choosing one offer for purchase of army property over another (Lupevska 2004). To put this in perspective, the GDP per capita for 2001 in the country is \$1,586 (UNDP 2001). Needless to say, the courts have ruled in favor of the people, but have been unable to expropriate the stolen funding back to the stockholders and employers.

Since property rights and their enforcement have a big impact on economic outcomes (Yeager 1999, 33), and since formal institutions are the "written rules of the game," then formal institutions have a big impact on economic outcomes. If property rights are not clear, and not easy to enforce, which is the case in Macedonia, the effect on growth will be detrimental. According to Yeager (Yeager 1999, 33), the institutional framework of a nation ultimately determines the transaction costs, and therefore the degree to which an economy reaches its production and income potential.

According to an IMF evaluation of Macedonia's legal system (IMF 2003), the existing institution is not adequate to enforce contracts. Due to the state of the legal system, many of the rent-seekers are not prosecuted. The opportunity cost for getting involved in a rent-seeking activity is very low, and therefore, the number of corruption cases is increasing rather than decreasing. The legal system is not effective and therefore it does not rebuke acts of improper and corrupt privatization and limited liberalization. Consequently, such state of the legislative branch is one reason for the economic decline in Macedonia.

As we can see from the regression, corruption plays a big role in explaining the economic growth of the transition economies, and as observed in the data on Macedonia during the transition period, the country has the biggest problems with corruption. As a rent seeking activity, corruption arises out of poorly defined property rights and ineffective legal systems.<sup>13</sup> The primary reforms made in Macedonia should be in the institution sector. Macedonia needs a

well-defined constitution, and better enforcement ability. However, given the fact that the government itself is the most corrupt sector of the Macedonian economy, it remains to be seen if this is achievable at all.

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## VI. Endnotes

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<sup>1</sup> Here I am more specifically referring to Slovenia, Slovakia, Poland, Bulgaria and Hungary.

<sup>2</sup> Arye Hillmann (2003) conducts another study on the importance of institutions, in which he associates rent seeking with a government that is responsive to private rent seeking behavior, and whose administrative officers themselves engage in such behavior. He suggests that the

reforms should be primarily made in the government itself, so it will be more conducive to working ethics, and less prone to indulging in corruption activities.

<sup>3</sup> More specifically, the growth rate of Macedonia dropped down from 4.5% in 2000 to -4.5% in 2001 (UNECE).

<sup>4</sup> The countries excluded are Bosnia and Serbia and Montenegro.

<sup>5</sup> In my earlier versions of the regression, I included the variable bank credit (bank credit to private investors as a share of GDP) as a proxy for domestic investment, savings and financial supply in the formal sector. I was initially including it as a proxy for the stability of the financial sector in order to test the Winkle's argument (mentioned in the previous section) that inadequate corporate governance is a problem for economies in transition. In Macedonia, poor corporate governance caused past incidents in the financial sector, such as bankruptcy of private and public banks (which decreased public saving in the financial institutions) and high number of non-performing loans (which decreased the willingness of the banks to give credit to private investors). Bank credit was supposed to control for these kind of occurrences. Nevertheless, since it was very statistically insignificant, I used the share of domestic investment instead.

<sup>6</sup> The longitude for each country's capital was found from the various sources (mostly encyclopedias) on the internet.

<sup>7</sup> The values for this variable are taken from several World Bank databases.

<sup>8</sup> The measure on the size of the informal sector is the only data from several official government sites of the transition economies. The standard deviation of the data on the informal sector data is very high, which indicates that these variables might be a subject to some measurement error. In terms of the data for the other variables, it is taken from measurements done by reliable international organizations; however, it still might be subject to some measurement error.

<sup>9</sup> Primarily, I intended to use the share of private investment as a percent of GDP. However, since I could not find a uniform measure of the data, I used domestic investment instead.

<sup>10</sup> Initially, I used total trade as a share of GDP as a proxy for the degree of liberalization of the transition economies. This variable showed as being negatively related to growth and statistically insignificant at standard in the regression. Initially, this was a rather shocking finding, but after examining the data on export and import separately for each country, it was evident that for the countries experiencing low economic growth, the share of imports to GDP was significantly higher than the share of exports. In addition, the imports were mainly in manufactured products, whereas the exports were primarily in agricultural products and natural resources. Since the high level of imports in the stagnant transition economies are driving up the percentage of total trade to GDP, I use exports as a share of GDP to control for liberalization instead.

<sup>11</sup> The CIS countries are most of the countries that were part of the Soviet Union before 1989. The CIS group consists of: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

<sup>12</sup> This is the value of the independent variable of Macedonia minus the value of the same variable of the "average" economy.

<sup>13</sup> In Macedonia, the judiciary branch is not separated from the executive branch of the government.