The University of Sheffield International Faculty

DEPARTMENT
MSc. in Banking and Finance

Financial System Development and its association with the State Governance aspects for all transition economies

Mila Mitreva

October 2018

The University of Sheffield International Faculty

MSc in Banking and Finance

Financial system development and its association with the State Governance variables for all transition economies

This report is submitted in partial fulfillment for the degree of Master of Science
(Finance track)

Mila Mitreva

October 2018

Dr. Sotirios Bellos

Financial system development and its association with the State Governance aspects for all transition economies

Mila Mitreva

Abstract

The current thesis examined the association among the financial system development and the State Governance aspects for all transition economies. Domestic credit to private sector over GDP was taken as dependent variable, while, Gross fixed capital formation, inflation, Foreign Direct Investment, GDP per capita growth as the main control variables. Furthermore, the State Governance indicators, Voice & Accountability, Political Stability and Absence of Violence, Government Effectiveness, Rule of law, Regulatory quality and Control of Corruption were taken as the institutional variables. Secondary data was collected from the World Bank Database and the sample period was chosen from 2000 until 2016. Moreover, the countries were divided in four groups, South-Eastern, Ex-Soviet and Central Europe, as well as a group consisting of all twenty nine transition economies. For each group six models were build composed of all of the control variables and one institutional variable in each of them. Hence, for obtaining more specific results, the analysis was based on the period before (2000-2008), after the crisis (2008-2016) and for the whole sample period (2000-2016). Additionally, dummy variable was added in order to see the effect from the recent financial crisis. Regarding the tests applied, the first step involved application of the Panel Unit Root test in order to determine the stationarity of the variables. The second step was the application of the Hausman test in order to determine whether the regressions should be run with fixed or random effects. In the third step the regressions were run and in the final step, Granger-causality test was applied, through which the causality between the dependent variable and the significant variable from each model was determined.

Key words: financial system development, State Governance, transition countries

DECLARATION

All sentences or passages quoted in this dissertation from other people's work have been specifically acknowledgement by clear cross-referencing to author, work and ages(s).I understand that failure to do this amounts to plagiarism and will be considered grounds for failure in this dissertation and the degree examination as a whole.

Name Mila Mitreva

Signed …… Date 31.10.2018

Financial system development and its association with the State Governance aspects for all transition economies OCTOBER 2018

List of abbreviations:

AR-Accounts Receivable

CC-Control of corruption

CEE-Central and Eastern European countries

CESEE-Central, Eastern, South-Eastern European

DCPS/GDP-Domestic credit to private sector/GDP

DW-Durbin Watson

FD-financial development

FDI-Foreign direct investment

FSAP-Financial Sector Assessment Program

FS-Financial system

GDPCG-GDP per capita growth

GE-Government effectiveness

GFCF-Gross fixed capital formation

GMM-Generalized method of moments

LCA-Latent Class Analysis

List of abbreviations:

PSAV-Political stability and absence of violence

RL-Rule of law

RQM-Ratio of quasi money

RQ-Regulatory quality

VA-Voice and Accountability

WDI- World Development Indicators

Table of Contents

Chapter 1: Introduction

The existence of well-organized financial system is essential for having economic development. Therefore, with its core function to mobilize the savings and allocate the resources in an uncertain environment makes it to be the main mechanism that promotes investments, boosts the liquidity and reduces risk. Nevertheless, these functions are same for all economies and deep understanding of the financial system and its performance can contribute to better market integrity and can promote competition (Merton, 1990). Therefore, for a longer time it has been recognized that the financial system development is the main determinant of growth and improves the efficiency in allocating the resources (Stiglitz, 1998). Undoubtedly, there are many papers, such as the paper of Wasilewski et al. (2015), Mandiefe (2015), Nkoro and Uko (2013) etc. that show the relationship between the FS development and economic growth, but limited number of empirical studies were conducted for testing the association between the FS and the State Government aspects. Various policy discussions have risen among economics experts and academicians for understandings the stimulants of financial stability and its main building blocks. Growing emphasis was being placed on the elements of good governance and their impact. Hence, from historical point of view, the first approach in understanding the role of good governance for the financial system stability was undertaken by Daniel Kaufmann, Aart Kray and Zoido-Lobaton in 1999, followed by Massimo Mastruzzi and Quintyn in 2002, which opened space for further researches in analyzing the governance-financial stability interrelationship (Quintyn, et al, 2004).

1.1. Statement of the problem

Notwithstanding, the consensus is that good governance is essential for economic development and it is especially crucial for the developing countries. Therefore, many policymakers and researchers have tried to measure the quality of governance in order to establish good policies. However, as the most reliable are the Worldwide Governance Indicators that rank the countries on six aspects of ‘good governance’ (Thomas, 2010). Aysan et al. (2011) suggests that better governance improves the bureaucratic performances, the investment climate and reduces the

uncertainty. According to Kaufmann et al. (2000) in many countries, weak governance and slow FS development go hand in hand, while good governance is correlated with good development. Hence, what is the causal link between the financial system development and the state governance aspects, Voice & Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory quality, Rule of law and Control of Cosrruption? Empirical studies, such as the paper of Ayaydin and Baltaci (2013) in which they use panel data of 42 emerging economies over the period 1996-2011, have provided the view that there is negative relation between the level of corruption and the FS improvement. Cooray (2011) claims that improved level of governance positively affects both the size and the efficiency of the financial sector and it is one of the main stimulators for FS development in the transition economies. Additionally, Harper and McNulty (2008) stated that positive correlation between the private sector and the rule of law exists and good legal system positively affects the financial development and the corporate finance. Outreville (1999) studied the relationship between FS development and political stability through cross-sectional analysis for 57 developing, from which he found positive results. Udaibir et al. (2004) through their multivariate cross-sectional analysis concluded that regulatory quality is essential for sound financial system. Finally, Bird et al. (2008) argued that the extent to which corruption negatively affects the economy is contrary of how much voice and accountability matter for having democratic, growing and prospective country. In overall, in the study of Han et al. (2014) who used GMM panel model for a sample of 215 countries, it was estimated that good governance performance, measured by the World Bank's governance indicators positively affected the GDP of the country and led to economic prosperity.

Furthermore, the concept of governance is of great interest to many policymakers and scholars, however, all of them producing variety of definitions, without a common consensus. The six dimensions of governance include the VA, PSAV, GE, RQ and RL, which cover more than 200 countries since 1996. Nevertheless, many academicians, such as Kray and Mastruzzi (2010) state that the six dimensions of governance are positively correlated and do not function independently. Thus, better accountability decreases the corruption, good government effectiveness improves the regulatory environment and stabile rule of law decreases the abuse of public positions. However, the state is a complex institution that no single theory can fully grasp and explain its intricacies. It can be analyzed from different standpoints, but the one conclusion

is that all factors that affect its functioning are integrated with one another (Kraay and Mastruzzi, 2010).

Furthermore, the former communist countries represent a unique case for studying the association between the FS development and its association with the state governance aspects. One reason is the fact that at the end of the previous century, they did not perform most of their economic functions and in the years that passed since then, the process of reforming their financial systems is still fragile (Hoffman, et al, 2011). Moreover, various questions regarding the concept of governance have risen among different policymakers and scholars. Rose and Shin (2001) define the good governance as an interrelated composition of rule of law, openness, accountability and political rights, which are essential for genuine economic development. Furthermore, the literature supports the argument that countries with well-developed financial systems have lower levels of poverty and income inequality, but the main question is why some countries promote financial system growth while others do not. The challenge lies in balancing the levels of private or public interests, which is typical for the transition countries that underwent various financial transformation and experienced difficulties in stimulating the private sector and the progress was uneven across regions (Demirguc-Kunt, 2008).

1.2. Objectives of the study

Thus, understanding the relationship between the FS and the level of corruption, the political stability, the rule of law, the regulatory quality and the voice of the people may give the answers why these countries are far behind the western developed nations. Moreover, the transition economies are the central focus, because the political and the economic system transformations that they have experienced in the late 1990s were underestimated and created questionable policymaking choices (Svejnar, 2002). As a result, their financial system stagnated, the corruption, unemployment and inflation level increased, which opened a space to partially fill this under researched gap.

It must be emphasized that the examining the association among the FS development and the State governance aspects could not provide complete objective assessment due to the fact that these two categories are complicated and complex in nature. Another concerning point is that there are generally accepted objective criteria for the State Governance aspects, which is not the

case for the financial system. Therefore, for avoiding the creation of subjective assessments through over-simplified models, in this thesis the methodological assessment is based on using publicly available statistical data, sufficient for conducting the regression analysis and indicators that provide objective evaluation.

1.3. Scope of the study

In the thesis, the interaction among the stated matter is examined for all of the 29 transition economies over the period 2000-2016 with panel regression analysis. Moreover, the countries were divided in four groups: South-Eastern, Ex-Soviet, Central Europe and a group representing all transition economies. Moreover, six log linear models were built for estimating the relationship between FS development and the state Governance aspects. Furthermore, the E-views program was used in order to apply the Unit root test to test for stationarity, the Hausman test for determining whether with FE or RE should be applied when running the regressions and the Granger causality test for observing the causality among the significant variables. Furthermore, the empirical analysis was divided in three parts, for the period before and after the crisis, as well as for the whole time span. Additionally, dummy variable was incorporated for testing the effect of the recent financial crisis.

1.4. Organization of the study

Thus, the overall structure of the thesis takes the form of five chapters, including the introductory Chapter 1. In Chapter 2 a selective literature review of the recent theoretical and empirical findings regarding the FS development and the State Governance aspects are presented. Moreover, several papers are incorporated, which represent different situations regarding the stated topic during the transition process. In Section 3, the dataset for the quantitative analysis is presented, while in Chapter 4 the main econometrics models. In this part are also elaborated the tests that will be applied through the E-views program, the obtained results and their interpretation. Chapter 5 summarizes the empirical findings and suggestions for further examination are provided.

Last but not least, the author believes that this thesis will contribute to enrich the existing literature in several aspects. Firstly, to the best knowledge of the author, this is first empirical

study that examines the relationship between the FS development and the State governance aspects for all of the transition economies. Secondly, the thesis provides deep analysis for a long time span, covering the period from 2000-2016 and derives conclusion for the relationship between the stated matters in the period before, after the crisis and during the crisis.

Chapter 2: Literature review

2.1. Introductory statement

The 1990's was the period when many countries from Central and Eastern Europe changed into democratic and capitalist nations, which drastically transformed their institutional framework and had an impact on their socioeconomic position, as well as on their economic development (Dragos, et al, 2009). Therefore, modern economies in the last decade have put a lot of attention on the significance of the well-functioning financial system of the transition countries. Since the main financial institutions in the pre-transition economies were the banks, with main role to serve as recordkeepers and payment agents, the transition process required greater attention to the market-oriented financial sector institutions for the FS development. Nevertheless, the transition process left many of the countries with institutional and legislative holes, which were the main factor that caused many analysts to focus on the importance of these missing pieces and the overall functioning and the development of the financial system (Bonin and Wachtel, 2002). Hence, understanding the factors that have affected the financial system of the transition countries and have contributed to their further development is an interesting unsearched field. Recent case reported by Adsera, et al, 2003, supported the hypothesis that financial development is associated with better government, in other words, governments that work according to the law, whose policy makers are not affected by corruption and whose activities are conducted in an efficient manner. However, understanding the factors that affect good governance and the consequences from it still remains unsearched field. Undoubtedly, there are many researches regarding the FD for both developed and developing countries, but very few emphasize the association between the FD and State Governance aspect concerning the transition economies. Therefore, this chapter aims do demonstrate the most relevant empirical and theoretical findings regarding the FS development and the State Governance aspects, which will contribute to build the thesis and fill the gap of the lack of findings regarding the stated matters.

2.2. Empirical findings in regards to the financial system development

The studies examining the financial system development and the factors that are associated to it are plenty, such as the paper of Hauner (2006) which shows that bank credit to the public sector to GDP is positively associated with FD, whereas the public sector credit to total bank credit impacts the FD negatively. Ahmad and Malik (2009) investigated the association between FD development and domestic and foreign accumulation using panel data for 35 developing countries during 1970-2003. The main finding was that the domestic capital accumulation is significantly important in boosting the output and stimulating the growth in long run.

According to Vilma and Lina (2014) who used time series (ARDL) model in order to analyze the short and long-run causality between the financial system and economic development found that the shift of financial system from bank-based to market-based has significantly weak effect on GDP per capita.

Fenghua and Anjan (2013) in their paper examined how the political intervention affects the credit availability in a country. They determined U-shaped pattern among these two and increased financial system risk due to political involvement, which therefore permits the banking evolution.

Demirguc-Kunt and Maksimovic (1998) showed that well developed financial institutions are a necessity for industrial expansion. Hence, the literature proves that financial development has direct impact on economic growth, but the debatable question of why some countries protect and enhance their financial institutions and markets and the others do not, still remains. Thus, why some countries managed to develop investor protection laws and contract-enforcement mechanisms and become super economies, while others did not implement the right measures and remained in a process of development. When discussing about the developing countries, specifically those that went under the process of transition, the problems under which they went were widely underestimated. During that period, the policymakers made questionable choices that deeply affected the financial system of those countries (Beck and Levine, 2004).

Iwanicz-Drozdowska and Witkowski (2016) in their study analyzed the FS development for 19 post-communist countries and 21 non-communist countries during 1995-2014 through factor analysis technique. They identified that banking sector is essential for development for both groups, with higher homogeneity in the financial system development patterns in post-communist countries and heterogeneity for the advanced economies.

Geyfman (2014) in his paper analyzed what impacts the development of the transition economies and he used a sample of 208 banks, from which he found that GDP per capita growth and maturity of capital markets increase the probability of banks being listed, which positively affects the growth and development of these countries.

Although many of the transition economies changed their legal and financial structures and boosted their GDP per capita, some of the CEE and CIS countries experienced fluctuations in the FD. Therefore, Cojocaru et al. (2012) in his paper examined the factors that influenced the FD for the CEE and CIS countries using panel data for the period 1990-2008 through GMM estimation. It was estimated that GDP and inflation have negative effect, while credit to the private sector positive effect on the FD.

Moreover, Alfaro (2003) used cross-country data for the period 1981-1999, from which he found that FDI positively affects the market growth for all transition economies. From 2000 until 2010 FDI increased 33%, which contributed to creation of new jobs and investment opportunities.

Bongini et al. (2017) in their paper used panel data for the CESSEE countries, GMM estimator to analyze the role of the financial development in these countries in the post-communist era for the period 1997-2014. They estimated that DCPS/GDP has increased and the involvement of the foreign-owned banks contributed to bigger evolvement of their FSs.

2.3. State Governance

The concept of governance dates back to at least 400 B.C, when it was explained as a synonym for justice, ethics and anti-autocratic tendencies. However, the empirical studies related to the governance indicators are relatively new phenomena, but their importance for a country's formal and informal institutions became unavoidable. Hence, the imposed questions that increased the debate regarding this topic is understanding what is the actual use of the governance indicators, what is their purpose and their consequences and whether they contribute to development (Arndt, 2009). By way of illustration, Kaufmann (2010) measured the governance across 212 countries and found statistical significance in at least one of the indicators: Voice and Accountability, Political Stability and Absence of violence, Regulatory quality, Rule of Law and Control of corruption. He also concluded that governance changes, but those changes can be stimulating

factor for better reforms. Nevertheless, the concept of governance has been a subject to criticism by Grindle (2010) who claims that it is an 'inflated idea'.

Other scholars, such as La Porta et al. (1999), measured the governance performance in 152 countries and he found that cultural differences, political background and ethnic diversity are factors that affect the governance. Brunetti and Weder (1999) found that open countries are more likely to have better governments, while Brewer and Choi (2007) conducted a panel regression analysis for 213 countries during 1996-2005 and found that the more democratic countries are more likely to have better political structure and do better job in controlling corruption. Kaufmann and Zoido-Lobaton (2002) claimed that good performance on some of the six Governance dimensions does not imply good performance on the others. For instance, some countries in Latin America do better in regards to the voice and accountability, but not so well in regards to government effectiveness, rule of law and corruption, however, showing both positive and negative effect from political stability and regulatory quality.

However, most of the empirical studies are cross-country studies focusing on the developed countries. Empirical studies for transition economies are extremely rare, which shows a need for further empirical investigation in this line of research.

2.4. Financial system development and its association with state governance aspects

Most of the empirical research (Huang, 2010, Bongini et al, 2017) employed several variables as proxies for financial system development, such as DCPS/GDP, GFCF, FDI, inflation, aggregate investment, GDPCG, trade openness etc. Notwithstanding, when it comes to measuring the performance of the governments, VA, PSAV, GE, RQ, RL, CC are used as main proxies (The World Bank, 2018). In order to determine what are the effects from each of the mentioned variables in the paragraphs below are presented some empirical findings for each of them.

- **Domestic credit to private sector/GDP**

Financial development is possible if in an economy there is enough capital that will secure efficient business conditions. Credits are essential for smooth economic activity. Nowadays the level of credit provided from different financial institutions have risen relative to the GDP, but

the borrowings vary among countries (Dembiermont, et al. 2013). Emilian and Pop (2015) used regression analysis, covering the period 1990-2014 to show that credit expansion helps consumers and business entities to borrow and spent more, which consequently increases the consumption and creates new job.

Sarkar (2009) used a sample of 65 developing countries during 1980-2006 to analyze the relationship between DCPS/GDP through dynamic panel data models (mean, pooled mean group and dynamic fixed effect). The first group showed no relationship, while the other two showed negative credit-to growth relationship and positive growth-to-credit link. Furthermore, Reichstul and Lima (2006) examined the relationship between the bank credits and the economic activity of Sao Paulo during 1992-2003 and found bi-directional causality. Akujuobi and Nwezeaku (2015) analyzed the impact of bank lending on economic development in Nigeria during 1980-2013. They used stationarity tests with the OLS and Cointegration procedures and found significant positive relationship. Petkovski and Kjosevski (2014) used GMM dynamic panel method to analyze the banking sector development as a result of bank credit, interest rates and RQM for 16 CEE countries. The results showed that bank credit and interest rates are negatively related to economic growth, while RQM is related positively.

Vaithilingam et al. (2008) used VECUM model through which he analyzed the impact of bank lending on economic growth in Malaysia. They concluded that the growth in developing countries, like Malaysia are highly dependent on the credit provided to the private sector.

Koivu (2002) used fixed-effects and unbalanced panel data from twenty-five transition economies over the period 1993-2000, in order to measure the development in the banking sector, for which the margin between the lending and deposit interest rates and the amount of the bank credit provided were taken as main variables. The results indicated that the both variables are negatively related to the development and the reason may be the recent banking crises or the budget constraints.

Erzen (2008) through panel cross-sectional fixed effects covering the period 1980-2006 for 85 developing countries determined that an increase in public sector credits and government debt reduces the private sector credits for low and middle-income countries.

- **GDP per capita growth**

Venancio (2013) used two panel of seventeen and nineteen developed countries for the period 1980-2011 and for 2000-2011 and modified ordinary least squares, fixed and random effect estimations from which he found that GDP per capita growth, as a measurement of financial development, is negatively correlated with economic prosperity. Ana (2004) used VAR model to show the relationship between FD and the GDP growth. The empirical findings proved existence of causality among them and even if there is as change in the interest rates in the sensitivity test, the results do not change.

According to De (2009) who analyzed the six Governance indicators through running regressions, concluded that all of them are closely related to the log of GDP per capita and countries with better governance have higher per capita income.

Another empirical analysis conducted by Egert et al. (2006) in which they used FE ordinary least squares, panel dynamic OLS and the mean group estimator for 43 countries, estimated that GDP per capita growth positively affects the private credit to GDP ratio.

- **Inflation**

A growing theoretical and empirical literature refers to the interrelationship between FS development and inflation, due to its importance for the monetary authorities. Although the theoretical approaches may diversify, the majority of empirical works support the position that price stability is key factor for financial development (Abbey, 2012). Hence, Abbey (2012) in his research used Cointegration Approach the Granger Causality testing procedure and the Conditional Least Squares technique to address the impact of inflation on FS development in Ghana from 1990-2008. The correlation analysis showed negative association, while with the regression analysis, positive relationship in short-run was determined and no relationship in long run.

Alimi (2014) investigated the long and short-run relationship between inflation and FS development in Nigeria during 1970-2012, using panel data. The results indicated that inflation has deleterious effect on financial development, which consequently transfers the effect on the economic growth.

Zermeno et al. (2018) employed empirical strategy of standard and fixed-effect quantile regressions, with data from 84 countries in the period 1980-2010. The findings showed statistically significant negative and nonlinear effect of inflation on the FS development.

Boyd et al. (2001) indicated that nonlinear, significant and negative relationship exists between inflation and banking sector development. Hence, as the level of inflation rises, especially if the rates exceed 15 percent, the financial sector performance drops significantly.

Dhunhana (2017) through correlation and regression analysis using panel data of twenty four commercial banks over the period 1996-2015 examined the effect of bank lending on inflation in Nigeria, from which she found positive effect.

- **FDI**

According to Bayar and Dan Gavriletea (2018), FDI is an important source of development and modernization, and stimulator for environmental and social innovations. Nevertheless, they claim that there is a limited number of papers that analyze the FDI-financial development interaction and as a result, they investigated the interaction between FDI and FS development in CEE countries during 1996-2015 through panel data analysis. The results showed no cointegrating relationship, but one-way causality from FD development to FDI in short-run.

Abzari et al. (2011) used VAR model and analyzed the causality between FS development and FDI in eight developing countries during 1976-2005, from which they concluded one-way causality from FDI to FS development. On the other hand, Gebrehiwot et al. (2016) analyzed eight African countries from 1991-2013, through Granger causality test and panel regression, from which they estimated two-way causality.

According to Chee and Nair (2010) used panel data methods to analyze the relationship between FDI and financial sector development on a sample of 44 Asia and Oceania countries during 1996-2005. They concluded that FDI is especially crucial component for the FS development for the countries in that region.

- **Gross fixed capital formation**

GFCF had received a great amount of attention in the academic literature, due to its importance in affecting the productive capacity of the economy (Adekunle and Aderemi, 2012).

Eugene (2017) studied the role of financial development on GFCF, economic growth and savings in Nigeria during 1981-2014, through Solow Growth Model. He found positive effect from GFCF in long and short run and negative impact of financial development on real per capita

income in long run. Moreover, Ayemere et al. (2014) through cointegration technique determined that GFCF strongly influences the development of the Nigerian economy.

- **Voice and accountability**

Fereidouni et al. (2011) who used panel models (fixed-effects and dynamic) for 19 African countries from 2000-2008, analyzed the effect of FDI on VA. They found that FDI inflows do not increase the level of VA in this region.

Furthermore, Kock and Gaskins (2014) examined the association between VA, government corruption and internet diffusion using the method of robust path analysis through the WarpPLS software, based on data from 24 Latin American and 23 sub-Saharan African countries from 2006-2010. They found that these factors are interrelated and greater level of Internet diffusion increase the level of VA, which consequently decreases the level of government corruption. This is especially important finding for the developing countries that want to improve the citizens' involvement in country's governance.

- **Political stability and absence of violence**

The law and finance theory states that the legal system that adapts to the changing commercial and financial conditions it is a precondition for a powerful state. Therefore, the legal tradition is essential in explaining financial development (Levine, 2001). However, Rajan and Zingales (2003) in their paper emphasized that financial development has changed in the past decades, but factors like legal tradition have remained fixed, while the political factors have varied. According to them, those in power are eager to support their interest, thus they create laws and institutions that support their interests. According to Roe and Siegel (2011) through application of country fixed effect regressions and robustness test, concluded that the differences in financial development across countries is due to the political instability. Outreville (1999) through cross-sectional analysis for 57 developing countries found that PSAV positively affects the FS development.

Aisen and Veiga (2011) empirically analyzed the effects of political stability on the economic development through GMM estimator for linear dynamic panel data model for 169 countries over the period 1960-2004. The findings showed that political instability lowers the level of GDPCG.

- **Government effectiveness**

Das et al. (2004) in his paper collected country data from FSAP and empirically proved that the quality of regulatory governance along with the variables that reflect macroeconomic conditions and the political institutions quality have significant and positive impact on financial system development.

According to Quintyn and Chenard (2004), their multivariate cross-sectional analysis showed that the regulatory governance is crucial for having sound banking system.

Han et al. (2014) used a sample from 215 countries and through GMM panel model estimated that good governance performance boosts the GDP growth and the economic conditions of a country. The same finding was concluded from Bayar (2017) who used panel regression for 15 CEE countries from 2002-2015 and found positive interaction among good governance and FS development.

Garcia-Sanchez et al. (2013) through GMM estimator model and CHAID algorithm using a sample of 202 countries during 2002-2008 estimated that GE is positively associated to economic development. Furthermore, the government quality is positively affected from the income distribution and the political constrains.

Pastor and Veronesi (2012) examined how the government policy changes affect stock prices through general equilibrium model and found that the policy decisions significantly affect the stock prices.

- **Regulatory quality**

Good regulation policies and sound control mechanisms are necessary for proper economic function. The role of effective regulation in promoting development has attracted a lot of interest between academicians and practitioners around the world (Jalilian, et al. 2007).

Sound regulatory quality system and promoting good governance is crucial in detecting inaccurate market practices, the occurrence of moral hazard and assists in boosting the effectiveness of the financial system. Moreover, financial stability and good regulatory governance are desirable for implementation of sound policies and regulations, for achieving the broader goals and maintaining the stability of the system. It is also useful in keeping the integrity

of the supervisory function and preventing an abuse of the state power (Chenard, et al, 2005). Good RQ contributes to better performance of the GDPCG, however, with differentiations among regions and it is very notable when comparing EU countries with non-EU, with the EU members having less variability in the RQ and supervision (Cihak and Tieman, 2008).

According to Quintyn and Chenard (2004), their multivariate cross-sectional analysis showed that the regulatory governance is crucial for having sound banking system.

According to Dan and Ferreira (2011) who analyzed data from 2869 firms in 26 CEE transition economies, an ineffective regulatory system, underdeveloped financial system and government corruption increased the vulnerability of the firms and the effectiveness of the regulatory institutions.

Law and Azman-Saini (2012) examined the effect of institutional quality on financial development in both developed and developing economies. They used GMM model and found that good RQ is essential for banking sector development.

Klomp and De Haan (2013) analyzed the impact of an effective RQ over the banking risk. They used data for more than 400 banks from 70 non-industrial countries over the period 2002-2008 and found that stricter regulation is predetermining factor in reducing bank risk.

Ozkan, et al, 2014 examined the effect of regulation on banking sector performance in the emerging economies. The results showed that stricter regulatory actions positively affect the bank lending, asset quality and the profitability of the banks.

- **Rule of law**

Rule of law as multidimensional concept that encompasses different components, from security to property rights, effectiveness of government operations and control of corruption, is essential for growth in an economy. Nevertheless, the correlation among these components are not very strong for the developing countries (Haggard and Tiede, 2011).

Gomez (2016) in his paper used panel data regressions and year fixed effects for 22 European countries during the period 2005-2014. He estimated positive relation between the RL and a country's economic development and he found that RL tends to raise the sales growth for firms in both Eastern and Weastern countries.

According to Haggard and Tiede (2011) RL is the stimulating factor for economic growth when governments create and implement stable laws. Kaufmann et al. (2000) stated that rule of law is intercorrelated with and dependent on the corruption dimension (Jeremic et al, 2017).

Contrary to the findings above is the empirical research of Lu and Yao (2009) who run regression analysis for China and concluded that better RL does not increase the FS, instead, it contributes to decrease of the private investment in the economy. Arslan (2010) through coinegration analysis and a monthly period between 1984-2008 estimated no long-run relationship between RL and investment, but short-run effect from investment on RL.

Levine (1998) investigated the relationship between the legal system and banking development and found that countries that have legal environment which emphasizes creditors rights and rigorously enforces contracts have financial systems that are well-developed, compared to the countries that lack law enforcement.

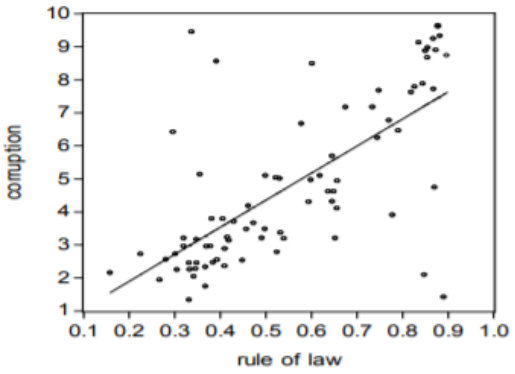
La Porta, et al. (1998) examined whether the legal rules have impact over the corporate shareholders and their performance activities in 49 countries. The results indicated that better law systems positively affect the overall performance of both private and the public sector.

- **Control of corruption**

Transition economies experienced wide reduction in the size of the public sector and the shift from central planning to capital markets had both positive and negative effect on the authoritarian regimes. Most transition economies were exposed to different levels of corruption, but the Bribe Payers Report from the Transparency International have shown that people in transition economies are more tolerant to corrupt behaviors compared to the developed countries. Nevertheless, corruption creates uncertainty in the economic environment, which consequently affects the operations of the private businesses (Hua, 2013). Therefore, corruption and finance are mutually reinforcing. Corruption on both state and firm level negatively affects the governments' actions towards better regulation, it decreases the competition of the banks and leaves inescapable negative effects on the economy. Moreover, Acemoglu and Verdier (2000) stated that corruption and illegality are connected to secrecy, whose assessment represents a challenging and expensive task.

Mendonca and Fonseca (2012) in their empirical analysis used cross-country data for 80 countries during 1995-2004. The results highlighted the negative impact from corruption on economic development and an increase in institutional weakness. The results also showed that higher level of RL contributes to lower level of corruption (Table 1).

Table 1: Rule of law and corruption



(Mendonca and Fonseca, 2012)

Mouselli et al. (2016), examined the impact of corruption on stock market development through panel regression models for six GCC countries in the period from 2003-2011 and found positive effect. Mo (2001) estimated that higher corruption leads to lower growth and it reduces investment in human and private capital. Broadman, et al. (2002) analyzed the transition economies in regards to corruption and found that the strict regulatory barriers on firms and the soft budget constraints lead to higher level of corruption in these countries.

2.5. Recent financial crisis and financial system development of the transition economies

A large and growing body of literature has examined the effect from a crisis on the overall functioning of an economy. Hence, to determine the effect of the recent financial crisis, Shostya (2014) conducted cross-regional comparison for twenty-eight transition countries and concluded that the degree of economic freedom, the trade liberalization, FS sophistication and the service sector were highly affected from the crisis. Nuti (2009) claimed that the recent crisis affected the capital inflows and it contributed to the collapse of the exports. However, when comparing the 2007 crisis with the transition recession in the 1990s, the transition countries gained greater assistance from the international community and faced more enlightened fiscal and monetary policies during the recent crisis. In another major study of Filipovic and Miljkovic (2014), when the crisis started to intensify, the transition economies experienced large current account deficits, because of their high dependence on FDI and bank loans. Hence, the CEE and CIS countries had a deficit of more than 10% of GDP. Other researchers, such as Furceri and Zdzienicka (2010) found that the effect from the crisis was significant and permanent, it lowered the output by 12-17 percent. Thus, overcoming the negative effect from the crisis was technically and politically challenging, which undoubtedly left consequences for each transition country. Therefore, the literature review provided here aims to show the effect of the crisis and to help in elaborating the results and whether during the crisis the countries had problems in their FS development.

2.6. Research Objectives

Considering the literature presented above, the central question in this dissertation is to empirically analyze the association between the Domestic credit to private sector/GDP and the State governance aspects for all transition economies during the period 2000-2016, 2000-2008 and 2008-2016. Therefore, for obtaining detailed conclusion, four objectives were set, which are presented below:

RO1: To analyze how each of the institutional State Governance variables (Voice and Accountability, Political stability and absence of violence, Government effectiveness, Regulatory quality, Rule of law and Control of corruption) affect the Domestic credit to private sector/GDP.

RO2: To investigate how the control variables (GDP per capita growth, Inflation, Gross fixed capital formation and FDI) are associated with the dependent variable (DCPS/GDP).

RO3: To examine how the institutional and the control variables affect the Domestic credit to private sector/GDP according to the examined regions (Ex-Soviet, Southeastern Europe and Central Europe).

RO4: To determine if the State Governance and the control variables differ among the different geographical groups in the period before, after the crisis, the whole time span and during the crisis.

Chapter 3: Methodology

3.1. Data description

3.1.1. The sample

For analyzing the stated research objectives and in order to determine the association between FS development and the six State Governance aspects, data sets consisting of panel data observations for 29 countries during the period 2000-2016 were used. The period of the data is annual and the data for all of the variables that measure the FS development and the State Governance aspects were retrieved from the World Bank's WDI database. Due to the large data set and the number of countries, for simplicity reasons and for obtaining more accurate results, the countries were classified in four groups: Ex-Soviet, Southeastern Europe, Central Europe and group representing all transition countries. The transition countries can be seen in Table 2.
Furthermore, in conducting the empirical analysis the period was divided in three intervals, the period before the crisis (2000-2008), after the crisis (2008-2016) and the whole time span (2000-2016). Additionally, dummy variable was introduced in order to see what was the effect from the crisis for the stated matters.

Table 2: Transition economies

Ex Soviet	**Southeastern Europe**	**Central Europe**
Armenia	Albania	Czech Republic
Azerbaijan	Bulgaria	Hungary
Belarus	Bosna and Herzegovina	Poland
Georgia	Croatia	The Slovak Republic
Kazahstan	FYROM	Slovenia
Kyrgyzstan	Kosovo	Estonia
Moldova	Montenegro	Latvia

Russian Federation	Romania	Lithuania
Tajikistan	Serbia	
Turkmenistan		
Ukraine		
Uzbekistan		

Source: Nam, G. (2009)

3.1.2. Variable definition

It is worth mentioning that effectively choosing financial development proxies for a broad range of countries is very sensitive and challenging task. According to the existing literature, such as the papers of Zermeno et al. (2018), Ayaydin and Baltaci (2013), Karaki (2015), as a dependent variable in their papers was chosen domestic credit to private sector/GDP, which refers to the financial resources provided to the private sector. According to Shijaku and Kalluci (2013), credit to the private sector is especially important stimulus for development for the CESEE countries, because of the different stages of development they were exposed to during and after the transition process. This variable measures the level of development of the financial institutions and the higher its value is, the higher the level of economic growth (Venancio, 2013). Since the banking system is a channel through which the FS can play its role, the author of the thesis believes that the DCPS/GDP is the right variable that captures and measures the FS development in the transition economies. Additionally, the independent variables were classified in two groups: control and institutional variables. The control variables which were chosen for this thesis and according to the stated literature are considered to have impact over the FS development are GDPCG, INFLATION, GFCF, FDI, while the variables highlighting the institutional characteristics of a country are the State Governance variables: VA, PSAV, GE, RQ, RL, CC (The World Bank, 2018). The variables and their abbreviations are presented in Table 3.

Table 3: Variables in the thesis with their abbreviations

DOMESTIC CREDIT TO PRIVATE SECTOR (% OF GDP)	DCPS/GDP
GDP PER CAPITA GROWTH	GDPCG
INFLATION	INFL
GROSS FIXED CAPITAL FORMATION	GFCF
FOREIGN DIRECT INVESTMENT	FDI
VOICE & ACCOUNTABILITY	VA
POLITICAL STABILITY AND ABSENCE OF VIOLENCE	PSAV
GOVERNMENT EFFECTIVENESS	GE
REGULATORY QUALITY	RQ
RULE OF LAW	RL
CONTROL OF CORRUPTION	CC

Furthermore, throughout the dissertation the natural log of all the variables was used, since it is useful in 'linearizing the exponential trend (if any) and prevents cumbersomeness in the modelling' (Alimi, 2014). Moreover, taking the log of the variables helps in making the distribution of the variables be more symmetric and it may eliminate heteroscedasticity (Bayers and Pearson, 2017).

Lastly, as the data employed in this thesis refers to publicly available secondary data, there is no need to fill in the Ethics Consent Form.

Considering everything that was mentioned above, below is the brief explanation of each variable:

- **Domestic credit to private sector/GDP**

DCPS/GDP encompasses the financial support offered to the private sector and in some countries to the public enterprises, which has a claim for repayment. It is usually in form of loans, purchases of nonequity securities and other AR provided by different financial corporations, such as banks, leasing and insurance companies, pension funds etc. Moreover, credit is essential for boosting the production and consumption, in general, it positively affects the economic condition of the country (Indexmundi website, 2015).

- **GDP per capita growth**

GDPCG is an indicator of a country standard of living, its economic performance, wellbeing, and the higher it is the better. However, it does not measure the personal income distribution in the country. Despite this weakness, it is useful for cross-country comparisons, because it represents their relative performance. It is calculated by dividing the GDP with the number of people in the country (Focuseconomics, 2017).

- **Inflation**

Inflation refers to the ongoing rise in the prices, or in other words, it is a decrease in the purchasing power of the consumers. The mostly used measure of inflation is CPI (consumer price inflation) that shows how expensive particular good or services have become and controlling its level is the priority for every government economic policy. Therefore, managing the inflation to an acceptable level represents a challenge for all governments around the world and if not curbed can undermine years of economic growth (Basu, 2011).

- **FDI**

FDI refers to the international capital transfer, which is defined as the major form of net international borrowing and it is crucial for an effective international economic system development. Hence, this boosts the management capability, the consumer allegiance, the use of technology and the complementarities in production on domestic level. This also explains why domestic-based production or licensing foreign-based production are less desirable compared to direct control of foreign-based operations (Froot, 1993). FDI is of great importance to developing and emerging economies, as well as countries in transition, since it assists in human capital formation, international trade integration and increases the competitiveness of the business environment (OECD, 2002).

- **Gross fixed capital formation**

GFCF refers to the expenditures made by the government, the private and public corporations on new fixed assets, as well as on the second-hand fixed assets. It does not include the depreciation component and the land purchases. Hence, it is the expenditure factor in measuring GDP or the net investment. The decrease of GFCF can be a trigger for a crisis, which was the case for the latest UK recession (Pettinger, 2016).

- **Voice and accountability**

VA refers to the freedom that a country's citizens have in selecting their governments, the freedom of expression through formal or informal channels, the right to speak up and the free media. It is an essential component of good governance and crucial for genuine economic development (Takashi, 2002).

- **Political stability and absence of violence**

PSAV is a part of the State Governance indicators, which measures the possibility of occurrence of political instability or motivated violence, as well as terrorism. The performance score is from 0-100 and the higher it is the better is the situation in the country, since it is correlated with the economic development (Margolis, 2010).

- **Government effectiveness**

GE refers to the quality of public and civil service, the independence from political pressure, as well as if the policy formulation and implementation are of good quality and whether the governments are committed to those policies. Hence, the competence of the civil service, the vulnerability to political pressure, the flexibility and the innovation within the political leadership, the quality of transportation infrastructure and policy consistency are some of the factors through which the GE is evaluated. Notwithstanding, countries that have better governments improve their growth level and contribute to better performance of the financial system (MCC, 2018).

- **Regulatory quality**

Rules are contributing factor for growth, social welfare and environmental protection and it is a way through which governments can ensure that the money are well allocated. Hence, RE indicator measures the governments' abilities to implement policies that stimulate the private sector development. Therefore, prevalence of regulations, labor market policies, employment

laws, the tax system efficiency, trade policy, investment attractiveness, and the banking system quality are some of the factors through which RE is measured (MCC (1), 2017).

- **Rule of law**

RL is a State Governance indicator which captures whether citizens and governments obey the law. Nevertheless, it includes other concepts, such as the use of government power, the independence of the judiciary system and the presumption of innocence until proven otherwise. RL is a benchmark for the quality of the laws and how well people rights are protected (Bartole et al, 2016).

- **Control of corruption**

CC captures if the public power is abused for achieving private gains, including the petty and grand forms of corruption, as well as the effectiveness of a country's legal framework created for preventing and combating corruption. Hence, the frequency of irregular payments, nepotism and cronyism in the civil service, level of bribery and the strength of the anti-corruption laws are some of the factors that measure this governance indicator. The control of the corruption is very important because its effects can have disastrous effects on the economy, such as less productivity and investments, decreased institutional confidence and limited development (MCC(2), 2017).

- **Crisis Dummy**

Dummy variable is used in regression analysis, which represents subgroups of the sample. It is a way to present multiple groups in a single regression. Specifically, crisis dummy is used in order to see what the effect from the latest crisis was (Schnatter, 2013). For this paper in the period 2000-2007 the dummy variable will have value of 0, while for the period 2008-2016 it will be 1.

3.2. Models

For the thesis, log-linear model was used, with macroeconomic series composed of yearly observations between 2000-2016. For the purpose of analysis, six models were built for each

group of the countries and for all of the 29 transition economies, which can be seen below. The countries serve as cross-section units, which in the regressions are denoted with the subscript '*I*', while the involved years serve as time period, denoted with '*t*' and ε as the error term (Kupolusi, et al, 2015).

$$\textit{Model 1: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + VA_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$
$$\textit{Model 2: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + PSAV_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$
$$\textit{Model 3: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + GE_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$
$$\textit{Model 4: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + RQ_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$
$$\textit{Model 5: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + RL_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$
$$\textit{Model 6: } DCPS/GDP_{it} = constant + GDPCG_{it} + INFL_{it} + GFCF_{it} + FDI_{it} + CC_{it} + Crisis\ Dummy_{t} + \varepsilon_{it}$$

All six models presented were used for achieving the R01 and R02, thus, to determine what is the causal relationship between all of the control and institutional variables with the dependent variable. Moreover, all of these models were classified in four geographical groups and with obtaining the results for each group the R03 will be achieved. Despite the fact that the models were classified in regional groups, they were also classified in time periods: before, after the crisis and during the whole time span. Furthermore, the dummy variable was added in order to determine the effect from the crisis. Hence, this was used for achieving R04.

3.3. Methodology

For accomplishing the stated objectives and for obtaining the conclusion of the thesis, theoretical and empirical assessments were used. Firstly, the already existing theoretical and empirical literature was presented, which later assisted in the discussion of the thesis. Secondly, the tests for the already established models were conducted through the E-views software package, and the obtained empirical findings were further elaborated and supported by the existing literature.

The empirical investigation is composed of four steps. Firstly, the stationarity of the variables was examined in order to avoid spurious regression. This is highly important because non-stationary time series has different mean at different time periods and its variance escalates with the sample size. Hence, the linear combination of these time-series contributes to spurious regression, which has highly significant t-values of the coefficients, R^2 close to one, low DW

statistic value, which therefore leads to Type 1 error and biased result. Thus, testing for stationarity or non-stationarity is compulsory (Alimi, 2014). Additionally, the value of the variables may be volatile and the reason why the stationarity test is important is to see if the effect of the shock is permanent or transitory (Louangrath, 2015).

Secondly, when using panel data analysis, individual-specific effects are present, which can be random or fixed. Thus, the next step involved application of the Hausman test in order to determine whether the regressions will be run with fixed or random effects. If the probability is less than the level of significance (1%, 5%, 10%), then the fixed effect is applied. If the probability is more than the level of significance (1%, 5%, 10%), the regressions are run with random effects. It is worth mentioning that FE are constant, while RE vary across individuals (Stoudt, 2017). On one hand, FE analyzes the relationship between predictor and outcome variables and it controls for the effects of time-invariant variables with time-invariant effects, thus, the estimated coefficients of the FE models cannot be biased, because of omitted time-invariant characteristics (Torres-Reyna, 2007). On the other hand, RE are more flexible than the FE and some of its advantages refer to the fact that even if the sample size increases the number of parameters remain constant. The RE also help in estimating the influence of the time-invariant variables (Clarke, et al, 2010). Moreover, the dummy coefficients in the FE model are measured unreliably; while RE models explain the differences between higher-level entities. Furthermore, well-developed models with RE can achieve what the FE models do, even more than that (Bell and Jones).

Thirdly, Panel regression analysis was used, since the data consists of time-series and cross-sectional elements. The benefits of using Panel data is the fact that it gives more data variation, it offers data sets with more variability and less collinearity between the variables. It also takes into account the individual-specific heterogeneity and it is capable of controlling it, it minimizes the effect of aggregation bias and finally it is useful in studying the dynamics of change (Fitrianto and Musakkal, 2015). Moreover, Panel LSM has better capacity in controlling the effects of the unobserved variables; it simplifies the statistical inference and the computations (Hsiao, 2000). Nevertheless, some of the problems involved relate to the design, data collection and data management of panel surveys (Fitrianto and Musakkal, 2015).

After finding the panel regression results, in the thesis Granger causality test was applied in order to determine the direction of causality between the dependent and the significant independent

institutional or control variables. Granger causality is a statistical concept based on prediction, whose formulation is based on linear regression modeling of stochastic processes. The logic behind this method is to show that if X_1 Granger causes X_2, then the past values of X_1 could help in predicting X_2, but not the other way around. Hence, the past can predict the future, but the future cannot cause or predict the past (Seth, 2007).

3.4. Limitations of the data

It is worth mentioning that for some of the countries there were some missing observations. Although this is an exemplary problem when conducting an empirical analysis research, in this particular case only some data was missing for some variables, which later on did not cause problems in finalizing the empirical tests. Therefore, from Central Europe the missing data was for the domestic credit to private sector/GDP for Slovenia and the Slovak Republic. For Ex-Soviet countries, no significant missing data was detected, while for the South-Eastern Europe the missing data was for inflation in Bosna and Herzegovina and almost for all variables for Kosovo and Montenegro.

Chapter 4: Data Analysis and Findings

4.1 Correlation

This part aims to show if the variables are highly correlated, hence, if there is multicollinearity between them. Mulicollinearity represents a problem because if it is present, the OLS estimators are not adequately estimated (Paul, 2004). Therefore, before conducting the empirical analysis, the first approach is to detect if multicollinearity exists between the independent variables and it is worth mentioning that in this case the maximum limit which is accepted is 0.8 and everything above that is problematic.

From Table 4 the variables with strong relationship are LNGE and LNRQ; LNRL and LNGE; LNRQ and LNGE. Hence, for the Ex-Soviet countries, including these variables will not cause problem in achieving statistical significance, since they are not part of the same model (Paul, 2004).

Table 4: Multicolllinearity for the Ex-Soviet countries

	LNDCPS_GDP	LNFDI	LNGDPCG	LNGE	LNGFCF	LNINFL	LNPSAV	LNRL	LNRQ	LNV_A	LNCC
LNDCPS_GDP	1	0.06612	-0.306681	0.34298	0.0448	-0.1135	0.08921	0.44508	0.39093	0.32731	0.25152
LNFDI	0.066116597	1	0.1423855	0.15449	0.44751	-0.1936	0.05894	0.2472	0.30213	0.17752	0.08997
LNGDPCG	-0.306681184	0.14239	1	-0.1208	0.0718	-0.0004	0.02728	-0.1186	-0.0776	-0.0856	-0.0403
LNGE	0.342980811	0.15449	-0.120843	1	0.19033	-0.3382	0.18208	0.81401	0.80015	0.51178	0.68865
LNGFCF	0.044799224	0.44751	0.0717957	0.19033	1	-0.0565	0.47003	0.2033	0.15313	-0.0011	0.31266
LNINFL	-0.113518452	-0.1936	-0.00035	-0.3382	-0.0565	1	0.02738	-0.386	-0.4846	-0.2897	-0.081
LNPSAV	0.089206558	0.05894	0.0272757	0.18208	0.47003	0.02738	1	0.28254	0.07353	-0.1038	0.37835
LNRL	0.44507613	0.2472	-0.118603	0.81401	0.2033	-0.386	0.28254	1	0.79188	0.61212	0.73119
LNRQ	0.390928338	0.30213	-0.077593	0.80015	0.15313	-0.4846	0.07353	0.79188	1	0.65679	0.41041
LNV_A	0.327305521	0.17752	-0.085623	0.51178	-0.0011	-0.2897	-0.10383	0.61212	0.65679	1	0.36311
LNCC	0.251521357	0.08997	-0.040332	0.68865	0.31266	-0.081	0.37835	0.73119	0.41041	0.36311	1

In Table 5, the multicollinearity table for the Central European countries is presented. In this case strong linear relationship exists again between the explanatory variables that are not part of the same model. Since none of the variables that belong in the same model have the multicollinearity problem, all of them can be used for running the regessions for this group of countries.

Table 5: Multicolllinearity for the Central European countries

	LNDCPS_GDP	LNGDPCG	LNINFL	LNGFCF	LNFDI	LNV_A	LNPSAV	LNGE	LNRQ	LNRL	LNCC
LNDCPS_GDP	1	-0.104731	0.0259	0.21404	-0.0199	0.31346	0.3403	0.36044	0.32132	0.35889	0.33154
LNGDPCG	-0.104730858	1	0.16228	0.2753	0.10641	0.35234	0.35469	0.31436	0.3479	0.29881	0.29563
LNINFL	0.025899198	0.1622802	1	0.39178	0.14098	0.26105	0.23026	0.20503	0.27363	0.23472	0.25076
LNGFCF	0.214044515	0.2752994	0.39178	1	0.16504	0.68206	0.73204	0.72568	0.73374	0.69977	0.63826
LNFDI	-0.019920939	0.1064074	0.14098	0.16504	1	0.05837	0.0692	0.06161	0.08783	0.07704	0.07117
LNV_A	0.313464839	0.3523392	0.26105	0.68206	0.05837	1	0.95217	0.97244	0.97799	0.97279	0.95406
LNPSAV	0.340304268	0.3546906	0.23026	0.73204	0.0692	0.95217	1	0.9684	0.94685	0.95192	0.919
LNGE	0.360437794	0.3143631	0.20503	0.72568	0.06161	0.97244	0.9684	1	0.95995	0.9811	0.94431
LNRQ	0.321318974	0.3479029	0.27363	0.73374	0.08783	0.97799	0.94685	0.95995	1	0.95618	0.91149
LNRL	0.358891632	0.2988115	0.23472	0.69977	0.07704	0.97279	0.95192	0.9811	0.95618	1	0.96246
LNCC	0.331543536	0.2956251	0.25076	0.63826	0.07117	0.95406	0.919	0.94431	0.91149	0.96246	1

In the Table 6 below, the correlation coefficients for the South-Eastern European countries are presented. Hence, the same conclusion can be taken here, because the multicollinearity exists only among the independent variables that do not belong in the same model.

Table 6: Multicolllinearity for the South-Eastern countries

	LNDCPS_GDP	LNFDI	LNGDPCG	LNGFCF	LNINFL	LNV_A	LNRQ	LNRL	LNPSAV	LNGE	LNCC
LNDCPS_GDP	1	0.11662	-0.3311722	-0.1668	-0.2867	0.22999	0.3704	0.51296	0.31809	0.50586	0.54377
LNFDI	0.116616753	1	0.0605055	0.32696	0.11134	0.17085	0.02729	0.05208	0.22959	0.10496	0.07038
LNGDPCG	-0.331172182	0.06051	1	0.07068	0.15289	-0.0462	-0.1869	-0.2491	-0.15579	-0.178	-0.1482
LNGFCF	-0.166816707	0.32696	0.0706842	1	-0.1975	0.19348	0.33204	0.12093	0.30784	0.01989	0.07945
LNINFL	-0.286719004	0.11134	0.1528897	-0.1975	1	-0.0354	-0.3876	-0.3995	-0.28527	-0.2732	-0.3519
LNV_A	0.229988488	0.17085	-0.0461697	0.19348	-0.0354	1	0.69386	0.73786	0.75177	0.70963	0.71689
LNRQ	0.370402849	0.02729	-0.1869192	0.33204	-0.3876	0.69386	1	0.80194	0.70179	0.69016	0.7307
LNRL	0.512962323	0.05208	-0.2490904	0.12093	-0.3995	0.63786	0.80194	1	0.76095	0.77845	0.90836
LNPSAV	0.318092559	0.22959	-0.1557926	0.30784	-0.2853	0.75177	0.70179	0.76095	1	0.72746	0.70129
LNGE	0.505863334	0.10496	-0.1779821	0.01989	-0.2732	0.70963	0.69016	0.77845	0.72746	1	0.80248
LNCC	0.543765241	0.07038	-0.148221	0.07945	-0.3519	0.71689	0.7307	0.90836	0.70129	0.80248	1

At first sight from Table 7 it seems that there is a big degree of multicollinearity among the variables for all transition economies. However, in the fields marked with red, it is apparent that mullticollinearity is present again for variables that are not part of the same model.

Table 7: Multicolllinearity for all transition countries

	LNDCPS_GDP	LNFDI	LNGDPCG	LNPSAV	LNINFL	LNGFCF	LNGE	LNRL	LNRQ	LNV_A	LNCC
LNDCPS_GDP	1	-0.0259	-0.3218896	0.37038	-0.336	0.01254	0.5341	0.57035	0.53842	0.509	0.51636
LNFDI	-0.025878891	1	0.1167211	-0.0414	0.04966	0.30038	-0.0627	-0.046	-0.0136	-0.0428	-0.0634
LNGDPCG	-0.321889575	0.11672	1	-0.0914	0.12126	0.07975	-0.1795	-0.1892	-0.1614	-0.1497	-0.1514
LNPSAV	0.370380419	-0.0414	-0.0914243	1	-0.3344	0.30938	0.69734	0.72881	0.61241	0.56349	0.7314
LNINFL	-0.336047952	0.04966	0.1212581	-0.3344	1	-0.0534	-0.4897	-0.5289	-0.5566	-0.47	-0.4291
LNGFCF	0.012542101	0.30038	0.0797466	0.30938	-0.0534	1	0.10807	0.11977	0.15558	0.06523	0.16536
LNGE	0.534102509	-0.0627	-0.1794808	0.69734	-0.4897	0.10807	1	0.93609	0.90075	0.82115	0.89854
LNRL	0.570350283	-0.046	-0.1892222	0.72881	-0.5289	0.11977	0.93609	1	0.91305	0.86467	0.9278
LNRQ	0.538423704	-0.0136	-0.1613707	0.61241	-0.5566	0.15558	0.90075	0.91305	1	0.8563	0.80129
LNV_A	0.50900056	-0.0428	-0.1496774	0.56349	-0.47	0.06523	0.82115	0.86467	0.8563	1	0.80679
LNCC	0.516363942	-0.0634	-0.1514231	0.7314	-0.4291	0.16536	0.89854	0.9278	0.80129	0.80679	1

4.2 Descriptive statistics

The basis for conducting quantitative analysis of the data is to present the descriptive statistics tables, which shows the basic features of the data taken for the study. Therefore, taken generally, the standard deviation results for all of the variables in each group of countires, show that there is no big spread between the data points from the mean. This means that most of the data is clustered about the mean (Brooks, 2008). Furtehrmore, from the tables below it can be seen that each variable that has positive sign in the skewness results has data that is skewed to the right and those that have negative sign, have data that is skewed to the left (Brown, 2011). Moreover, for all of the variables in the tables presented below, the kurtosis is more than zero, which indicates that the distribution is not normal. However, the best value is if it is greater than three (Jaggi, 2010). From the Table 8, it can be seen that only VA is something below three, which indicates that the data may be abnormal (Tahir, et al, 2015). For Central European countries only LNDCPS_GDP, LNGDPCG and LNFDI have kurtosis above three, while the rest of the variables are below that. In the South-Eastern group of countries all of the variables have kurtosis value above three, while for the overall sample of countries, the abnormal data was detected for LNVA, LNGE, LNRL and LNCC. Last but not least, the Jarque-Bera for all of the variables is more than zero, which again supports the conclusion that the data is not normally distributed (Damanski, 2010).

Table 8: Descriptive statistics for the Ex-Soviet countries

	LNDCPS_GDP	LNGDPCG	LNINFL	LNGFCF	LNFDI	LNV_A	LNPSAV	LNGE	LNRQ	LNRL	LNCC
Mean	3.092806	2.983165	2.29145	2.76476	1.786	1.02753	0.94254	0.87161	1.20601	0.7622	0.68653
Median	3.189103	3.044211	2.29275	2.79207	1.7648	1.01992	0.98259	0.86807	1.232	0.77682	0.66832
Maximum	4.517124	3.880562	5.14103	3.93745	4.02977	1.372	1.36537	1.28274	1.57417	1.20956	1.30187
Minimum	0	0	0	1.05736	0	0.48254	0	0.1755	0.30241	0	0
Std. Dev.	0.785571	0.399249	0.73113	0.42852	0.68119	0.19231	0.24443	0.16483	0.17081	0.18402	0.19699
Skewness	-1.122739	-3.950351	0.07717	-0.5645	0.29438	-0.2344	-0.976	-0.1422	-1.1914	-0.6547	0.15484
Kurtosis	5.573202	27.74807	4.82776	4.34742	3.6841	2.30001	4.5111	4.52027	7.2584	4.59096	5.21635
Jarque-Bera	80.67281	4667.974	23.2712	21.3746	5.63445	4.90913	42.1493	16.5456	164.698	29.3646	34.6393
Probability	0	0	9E-06	2.3E-05	0.05977	0.0859	0	0.00026	0	0	0
Sum	513.4057	495.2054	380.381	458.951	296.475	170.569	156.462	144.687	200.198	126.526	113.965
Sum Sq. Dev.	101.8251	26.30097	88.2012	30.2992	76.5629	6.10208	9.85774	4.48271	4.81412	5.5874	6.40255
Observations	166	166	166	166	166	166	166	166	166	166	166

Table 9: Descriptive statistics for the Central European countries

	LNDCPS_GDP	LNGDPCG	LNINFL	LNGFCF	LNFDI	LNV_A	LNPSAV	LNGE	LNRQ	LNRL	LNCC
Mean	3.864859	2.565103	1.45777	2.02026	3.0439	0.7715	0.76163	0.64092	0.68896	0.6577	0.63973
Median	3.923469	2.605703	1.49651	2.13808	3.02173	0.50851	0.62293	0.44156	0.40706	0.48999	0.49579
Maximum	4.62778	3.276537	2.62352	3.41175	4.27115	1.59729	1.41218	1.43171	1.71598	1.47197	1.43359
Minimum	0	0	0	0	0	0	0	0	0.03592	0.07952	0.08428
Std. Dev.	0.535065	0.508968	0.51295	0.7415	0.40884	0.49027	0.36821	0.47146	0.59387	0.46629	0.42635
Skewness	-4.006874	-2.895987	-0.3969	-0.4107	-3.4692	0.89082	0.65828	0.77299	0.88168	0.75426	0.7024
Kurtosis	29.009	14.70918	2.81349	2.58236	33.9472	2.01847	2.08839	1.97037	1.98595	1.96204	1.98543
Jarque-Bera	3055.339	703.9389	2.74224	3.50203	4149.21	17.0676	10.578	14.232	17.068	13.831	12.3866
Probability	0	0	0.25382	0.1736	0	0.0002	0.00505	0.00081	0.0002	0.00099	0.00204
Sum	382.6211	253.9452	144.319	200.006	301.346	76.3785	75.4018	63.4508	68.2072	65.1126	63.333
Sum Sq. Dev.	28.05683	25.38673	25.7856	53.8832	16.3807	23.5559	13.2865	21.7828	34.5625	21.3077	17.8138
Observations	99	99	99	99	99	99	99	99	99	99	99

Table 10: Descriptive statistics for the South-Eastern countries

	LNDCPS_GDP	LNGDPCG	LNINFL	LNGFCF	LNFDI	LNV_A	LNPSAV	LNGE	LNRQ	LNRL	LNCC
Mean	3.594215	2.406778	1.89773	2.3878	1.75713	0.74381	1.01712	0.76392	0.81914	0.87904	0.81699
Median	3.677448	2.46914	1.84737	2.38008	1.75441	0.76156	1.07334	0.78399	0.83564	0.91373	0.84064
Maximum	4.461381	2.932548	4.58928	3.35284	3.63559	1.00164	1.36266	1.10679	1.05165	1.14395	1.06542
Minimum	1.574214	0	0	0	0	0.25927	0	0.1984	0	0	0
Std. Dev.	0.574526	0.397603	0.683	0.48608	0.66556	0.14691	0.21761	0.18119	0.17461	0.16028	0.15295
Skewness	-1.394072	-2.960858	0.85503	-0.8912	0.25602	-0.6865	-1.3636	-0.4609	-1.1515	-2.0336	-1.7851
Kurtosis	4.858001	15.84175	5.46902	6.93497	3.19626	3.2895	6.33429	3.35042	5.80229	10.3916	9.20125
Jarque-Bera	61.27478	1091.543	49.2362	101.859	1.64134	10.7478	101.283	5.30877	71.8116	388.51	279.473
Probability	0	0	0	0	0.44014	0.00464	0	0.07034	0	0	0
Sum	470.8421	315.2879	248.603	312.802	230.184	97.439	133.243	100.074	107.308	115.154	107.026
Sum Sq. Dev.	42.91035	20.55146	60.6441	30.7154	57.5859	2.80555	6.1558	4.26785	3.9633	3.33954	3.04097
Observations	131	131	131	131	131	131	131	131	131	131	131

Table 11: Descriptive statistics for all transition countries

	LNDCPS_GDP	LNGDPCG	LNINFL	LNGFCF	LNFDI	LNV_A	LNPSAV	LNGE	LNRQ	LNRL	LNCC
Mean	3.462927	2.943231	2.06973	2.79298	3.10988	1.28283	1.10405	1.04825	1.36644	0.98362	0.90626
Median	3.646841	2.977878	2.02514	2.78985	3.06462	1.32558	1.15778	1.02808	1.35995	0.97174	0.92393
Maximum	4.62778	3.883425	5.14772	3.93745	4.27757	1.69586	1.54503	1.50598	1.72471	1.47672	1.43359
Minimum	0	0	0	1.05736	0	0.53044	0	0.1755	0.3357	0	0
Std. Dev.	0.729738	0.330862	0.67866	0.3488	0.28	0.24306	0.26114	0.23296	0.19306	0.27369	0.26838
Skewness	-1.523228	-4.383372	0.66822	-0.4524	-2.2489	-0.6699	-0.9679	-0.1066	-0.7846	-0.2146	-0.2244
Kurtosis	6.69308	36.28631	4.59498	5.07857	43.3787	2.55629	4.16321	2.36651	4.61506	2.67895	2.64216
Jarque-Bera	378.1756	19549.76	71.4453	84.7943	27236	32.8709	84.1568	7.37096	83.6634	4.7403	5.43696
Probability	0	0	0	0	0	0	0	0.02509	0	0.09347	0.06598
Sum	1371.319	1165.52	819.612	1106.02	1231.51	508.001	437.203	415.106	541.111	389.513	358.878
Sum Sq. Dev.	210.3442	43.24062	181.93	48.0556	30.9672	23.336	26.9375	21.436	14.7229	29.5882	28.45
Observations	396	396	396	396	396	396	396	396	396	396	396

4.3 Unit root

The use of the panel data unit root tests became significantly popular in the field of academic researches since the papers of Levin and Lin were published in 1992 and 1993 (Maddala and Wu, 1999). Unit root is a stochastic trend in time series, which if it is present, the time series show unpredictable systematic pattern. Therefore, a reasons why unit root is applied to a panel of cross section units is to obtain statistical power (Arltova and Fedorova, 2016). Regarding the panel unit test, the first generation of tests included Levin, Lin and Chu's tets (2002), Im, Pesaran and Shin (2003) and the Fisher type which was created by Choi (2001). Levin, Lin and Chu's tets (2002) assume that the number of observations (N) and the time period (T) tend to infinity, however with T increasing at a faster rate, while Im, Pesaran and Shin (2003) test allows

for residual serial correlation and heterogeneity of the dynamics and error variances across groups. The Fisher's type test is based on a combination of the probability values of the test-statistics for a unit root in each cross-sectional unit (Barbieri, 2006).

Since all these tests can be used for the null of a unit root, in this thesis the detection of the stationary variables is based on the probability from each of these tests. Hence, if the probability in any of them is less than the level of significance at 1%, 5% or 10%, the null hypothesis is rejected and it is concluded that the variable does not have unit root; it is stationary. However if the probability is more than the level of significance, the null hypothesis is accepted, thus, the variable has unit root; it is stationary. The tables for the panel unit root tests for each variable and each group of countries are presented in Appendix A. Nevertheless, in the Table 12 the initial rsults from the tests are presented. Ex-Soviet, South-Eastern and all transition countries groups were stationary at level. However, in Central Europe LNGFCF and LNCC were not stationary at level, thus, the first difference had to be taken for this group.

Table 12: Unit root test results for each group of countries

UNIT ROOT RESULTS	Ex-Soviet	Central Europe	South-Eastern Europe	All transition countries
LNDCPS/GDP	~I(0)	~I(0)	~I(0)	~I(0)
LNGDPCG	~I(0)	~I(0)	~I(0)	~I(0)
LNINFLATION	~I(0)	~I(0)	~I(0)	~I(0)
LNGFCF	~I(0)	**~I(1)**	~I(0)	~I(0)
LNFDI	~I(0)	~I(0)	~I(0)	~I(0)
LNVA	~I(0)	~I(0)	~I(0)	~I(0)
LNPSAV	~I(0)	~I(0)	~I(0)	~I(0)
LNGE	~I(0)	~I(0)	~I(0)	~I(0)
LNRQ	~I(0)	~I(0)	~I(0)	~I(0)
LNRL	~I(0)	~I(0)	~I(0)	~I(0)
LNCC	~I(0)	**~I(1)**	~I(0)	~I(0)

*~I(0):stationary in level **~I(1): stationary in first difference

4.4 Hausman test

The Hausman test is a standard procedure used in panel data analysis for examining the presence of endogeneity in the panel model. It is of great importance because it specifies an appropriate model, in other words, whether to use random or fixed effects (O'Brien and Patacchini, 2006). In the Tables 13, 14, 15 below it can be seen for which group of countries and during which period random or fixed effect were used. Hence, during the period 2000-2016, the regression in each group was run with FE, except for the Central Europe where RE was used. Moreover, the same scenario was for the period 2000-2008. Lastly, for the period 2008-2016 the regressions for the Ex-Soviet and south-Eastern countries were run with RE, for Central Europe and the overall countries it varied across the models.

Table 13: Hausman results for the period 2000-2016

2000-2016	Hausman results
Ex-Soviet countries	FE
Central European countries	RE
South-Eastern countries	FE
All transition economies	FE

Table 14: Hausman results for the period 2000-2008

2000-2008	Hausman results
Ex-Soviet countries	FE
Central European countries	RE
South-Eastern countries	FE
All transition economies	FE

Table 15: Hausman results for the period 2008-2016

2008-2016	Hausman results
Ex-Soviet countries	FE
Central European countries	RE+FE
South-Eastern countries	FE
All transition economies	FE+RE

4.5 Panel regression

Panel data consists of time series and cross-sectional data and it is considerably used in social sciences. Because it requires less assumptions and is less problematic compared to the simplier methods, panel data provides estimations that are more accurate (Sheytanova, 2004). In the sections that follow, the panel regression results and their interpretations are presented.

4.5.1 For the whole period 2000-2016 and the effect of the crisis

4.5.1.1 All transition economies

Table 16: Panel regression results for the period 2000-2016 for all transition countries

ALL COUNTRIES:2000-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	3.36 (0.00)***	4.05 (0.00)***	2.33 (0.00)***	-0.26 (0.68)	2.12 (0.00)***	3.22 (0.00)***
LNGDPCG	-0.49 (0.00)***	-0.48 (0.00)***	-0.43 (0.00)***	-0.38 (0.00)***	-0.38 (0.00)***	-0.46 (0.00)***
LNINFLATION	-0.16 (0.00)***	-0.16 (0.00)***	-0.12 (0.02)**	-0.07 (0.14)	-0.06 (0.26)	-0.12 (0.02)**
LNGFCF	0.35 (0.00)***	0.34 (0.00)***	0.36 (0.00)***	0.23 (0.02)**	0.31 (0.00)***	0.30 (0.00)***
LNFDI	-0.05 (0.63)	-0.03 (0.78)	-0.05 (0.68)	-0.05 (0.64)	-0.08 (0.42)	-0.08 (0.49)
LNVA	0.83 (0.07)					
LNPSAV		0.30 (0.15)				
LNGE			1.65 (0.00)***			
LNRQ				3.29 (0.00)***		
LNRL					2.00 (0.00)***	
LNCC						1.36 (0.00)***
DUMMY	0.74 (0.00)***	0.76 (0.00)***	0.71 (0.00)***	0.63 (0.00)***	0.66 (0.00)***	0.70 (0.00)***
R-2	0.53	0.86	0.56	0.62	0.59	0.56
N	399	396	398	397	399	399
HAUSMAN	62.75 (0.00)	26.59 (0.00)	41.39 (0.00)	60.35 (0.00)	29.50 (0.00)	23.63 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

In Table 16, the panel regression results show that all of the variables except LNFDI, LNVA and LNPSAV are significant. Therefore, LNGDPCG in all of the models is negative and significant at 1% threshold, while the LNINFLATION is negative and significant in Models 1, 2, 3 and 6 at

1%, 1%, 5% and 5% level of significance respectively. The LNGFCF is positive and significant at 1% threshold in all models, except in Model 4 where it is significant at 5% threshold. Moreover, the State Governance variables such as LNGE, LNRQ, LNRL and LNCC are all positive and significant at 1% level of significance. What is more, the Haumsan probability results were all less than the level of significance, which resulted in rejecting the null hypothesis and running all of the regressions with FE. The R^2 results indicate that all the models have high explanatory power since all of the R^2 values are more than 53%. Hence, 53%, 86%, 56%, 62%, 59% and 56% of the variability of the dependent variable is explained by the variability of the independent for Models 1-6 respectively.

From the Granger-causality table it is apparent that LNDCPS/GDP Granger caused LNGDPCG. Since the coefficient is negative, this suggests that the effect was negative. This finding does not support the view of many researchers such as Ndlovu (2013), Liang, et al. (2015) that bank lending promotes the development. This can be explained by the fact that the transition countries have their own socioeconomic, political and institutional history which makes them different from the western economies. Furthermore, it also depends whether the credit provided was directed towards productive investment activities (Karaki, 2015).

Moroever, LNDCPS/GDP Granger caused LNINFL and since the effect was negative, probably this was due to the contractionary monetary policy the banks have used during the sample period. It may suggest that banks reduced their money supply by decreasing the bond prices and increasing the interest rates. Hence, with less available credit, the spending was reduced, which consequently impacted the level of inflation (Akosah, 2013). What is more, the causality with the LNGFCF runs in both directons. Hence, increase in bank credt leads to increase in Captal formation, however with the same effect from Gross fixed capital formation over the bank credit provided. This fidning may be due to the fact that increased money supply can contribute to higher accumulation of savings (Dingela and Khobai, 2017). Since capital formation derives from savings accumulation, those money can be used for investment projects and if this was the case for the transition countries, this was the reason for the positivie relationship.

Morever, the WGI are very useful in creating the perception about the country's quality of governance. Thus, good governance improves the reputation of a country and plays a role in attracting investments. The studies of Kaufmann and Kraay (2002), Burnside and Dollar (1997) Knack and Keefet (1995) are some of the papers that try to present the relationship between good

governance and economic development (Arndt, 2009). In this finding, the GE affects positively the FS development. This is consistent with the view of Cooray (2011) who found that LNGE helps in overcoming the market failures and it is the main stimulating factor for development in the developing economies, through lower costs and increased access to finance. Furthermore, the causality between the LNRQ and LNDCPS_GDP runs in both directions. Hence, during this period, these countries managed to provide proper protectin and good regulatory mechanism which positively affected the FS development, as well as the level of credit provided positively affected the RQ. This finding is consistent with the study of La Porta, et al. (1997), who obtained the same conclusion. The causality between the LNRL and LNDCPS_GDP runs in both directions. This finding is consistent with the law and finance theory which states that countries who have good legal system are more likely to make the financial markets flourish and are able to provide finance to the firms (Beck and Levine, 2003). Nevertheless, it was also the FS development that contributed to better protection and enforcement of the legal rights of the companies and the people as individuals (Dima, et al. 2017).

The results showed that LNCC Granger Caused LNDCPS/GFP, and since the coefficient is positive this means that corruption positively affected the FS development Considering that these countries had politically unstable situation, this finding support the statement of many researchers who found potive effect, such as Chene (2014) who argued that coruption can be useful in countries that have institutional weakness and political problems. Bardhan (1997) in his paper claimed that corruption positively affects the stock market development by expediting transactions and permiting frims to overcome the ineffective governmental institutions.

In this case, the scenario regarding the effect of the crisis provided interesting results. It shows that countries that provided too much credit caused the crisis, as well as the crisis had negative effect on the FS development. Thus, the causality between these two variables runs in both directions. On one hand, Davidson (2008) claims that the roots of the financial crisis are due to the amoun of credit provided by the banks to people who cannot afford it. On the other hand, Firtescu (2012) through panel regression analysis for twenty nine transition countries over the period 1989-2010 found that the crisis which occurred in the developed countries negatively affected the transition economies. However, the negative effect depended on the the level of their financial development.

For better understanding about the effect from the crisis for each group of countries, deeper explanation is provided in the sections that follow.

Table 17: Granger-Causality for all transition countries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	363	0.66090	0.517
LNDCPS_GDP does not Granger Cause LNGDPCG		20.0495	**6.00E-09**
LNINFL does not Granger Cause LNDCPS_GDP	350	0.53709	0.5849
LNDCPS_GDP does not Granger Cause LNINFL		4.68723	**0.0098**
LNGFCF does not Granger Cause LNDCPS_GDP	356	4.18839	**0.0159**
LNDCPS_GDP does not Granger Cause LNGFCF		8.90691	**0.0002**
LNGE does not Granger Cause LNDCPS_GDP	355	7.94928	**0.0004**
LNDCPS_GDP does not Granger Cause LNGE		0.79582	0.452
LNRQ does not Granger Cause LNDCPS_GDP	354	5.99293	**0.0028**
LNDCPS_GDP does not Granger Cause LNRQ		11.4272	**2.00E-05**
LNRL does not Granger Cause LNDCPS_GDP	363	10.8186	**3.00E-05**
LNDCPS_GDP does not Granger Cause LNRL		3.50419	**0.0311**
LNCC does not Granger Cause LNDCPS_GDP	363	18.6530	**2.00E-08**
LNDCPS_GDP does not Granger Cause LNCC		0.83739	0.4337
CRISIS does not Granger Cause LNDCPS_GDP	363	5.00698	**0.0072**
LNDCPS_GDP does not Granger Cause CRISIS		15.1917	**5.00E-07**

4.5.1.2 Ex-Soviet

Table 18: Panel regression results for the period 2000-2016 for the Ex-Soviet countries

EX-SOVIET:2000-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	3.28 (0.00)***	3.89 (0.00)***	2.38 (0.00)***	-0.07 (0.92)	2.01 (0.00)***	2.97 (0.00)***
LNGDPCG	-0.54 (0.00)***	-0.54 (0.00)***	-0.45 (0.00)***	-0.42 (0.00)***	-0.41 (0.00)***	-0.48 (0.00)***
LNINFLATION	-0.19 (0.02)**	-0.19 (0.01)***	-0.17 (0.02)**	-0.11 (0.10)*	-0.11 (0.15)	-0.17 (0.02)**
LNGFCF	0.355 (0.04)**	0.322 (0.08)*	0.35 (0.04)**	0.26 (0.09)*	0.34 (0.03)**	0.32 (0.05)**
LNFDI	0.06 (0.56)	0.1 (0.36)	0.09 (0.38)	0.05 (0.55)	0.03 (0.71)	0.03 (0.71)
LNVA	0.73 (0.25)					
LNPSAV		0.19 (0.52)				
LNGE			1.52 (0.00)***			
LNRQ				3.22 (0.00)***		
LNRL					2.00 (0.00)***	
LNCC						1.43 (0.00)***
DUMMY	0.89 (0.00)***	0.89 (0.00)***	0.89 (0.00)***	0.74 (0.00)***	0.79 (0.00)***	0.83 (0.00)***
R-2	0.44	0.43	0.47	0.57	0.52	0.49
N	166	166	166	166	166	166
HAUSMAN	35.56 (0.00)	32.95 (0.00)	29.97 (0.00)	34.08 (0.00)	22.16 (0.00)	27.92 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

Table 18 displays the results of the panel regression for the period 2000-2016 for the Ex-Soviet countries. For this group of countries, for each model it can be seen that, the LNGDPCG is negatively and significantly associated at 1% threshold with the FS development measured by

the LNDCPS/GDP. The same scenario stands for inflation, which is negative and significant at 5%, 1%, 5%, 10% and 5% in Models 1, 2, 3, 4 and 6 respectively, except for Model 5 where it is negative but insignificant. Moreover, LNGFCF is positive and significant at 5% threshold in Model 1, 3, 5 and 6, while in Model 2 and 4 at 10% level of significance. Regarding the State Governance variables, LNGE, LNRQ, LNRL and LNCC are positive and significant at 1% level of significance. Lastly, it was estimated that LNFDI, LNVA and LNPSAV are all positive but insignificant.

Furthermore, the probability from the Hausman test is less than the level of significance (1%, 5%, 10%), which indicates rejection of the null hypothesis. Thus, for each model the regressions were run with FE. What is more, the R^2 or the coefficient for determination for each model is above 43%, which suggests that the models explain all the variability of the response data around its mean (Cameron and Windmeijer, 1995). On avrege, 48.6 % of the variability of the dependent variable is explained by the variability of the independent variables present in all six models.

Table 19 gives a summary of the Granger Causaliy test result over the entire period of the study for the Ex-Soviet group of countries. The findings indicate unidirectional Granger causal relationship from the LNDCPS/GDP to LNGDPCG. Hence, the past values of the dependent variable can be used to predict the LNGDPCG. Since the relationship is negative, the countries that provided too much credit negatively affected their economic performance, which have contributed to a decreased level of economic development. The possible explanation for this result is that the credit which is usually borrowed for investments may show the positive effect in the future time period. For instance if it is a matter of innovation, the development cannot be affected instantaneously, since it is a long-term process. Another possible scenario is that the money channeled to the private sector were not used for feasible investments, which consequently did not contribute to increase in the capita growth (Nilsson, 2014). This finding is contrary to the study of Beck et al. (2012) who found that the credit provided to the private sector positiviely affected the GDPCG rate. Regarding inflaton, the results show that inflation has negative and significant effect on the credit lending. This leades to a decrease in the lending volume due to the assumption of having credt risk, as well as higher lending rates which contribute to a decrease in the purchasing power of money from the borrowers (Omondi, 2014). The third significant control variable was LNGFCF and the results show that LNDCPS/ GDP Granger causes LNGFCF, and since the coefficient results in panel regression table are positive,

this may suggest that countries that provided credits increased their level of net investments, which consequently increased the level of GDP and boosted he performance of the financial systems of these countries.

In regards to the institutional variables only LNGE, LNRQ, LNRL and LNCC are positively and significantly associated with DCPS/GDP. According to the Granger causality results, LNGE Granger caused the LNDCPS_GDP, therefore, the effectiveness of the governments of the Ex-Soviet countries had a positive impact on the credit flow to the private sector. This finding supports the paper of Cooray (2011), who found that governments are essential instrument in overcoming market falures and increasing the level of access to finance. Furthermore, regarding the LNRQ, the causality runs from the dependent variable. Hence, it is the FS developments that contributed to formulation and implementation of policies that positively affect the private sector development. Despite this, Rule of law Granger caused the FS development measured by LNDCPS/GDP. Therefore good legal environment contributed to an increase in the scope of the capital markets, protected the financiers from exproporation by enterpreneurs, increased the willingness of the financial institutions to provide funds and taken overally positively affected the FS development of these countries. This finding is identical to the finding in the paper of Levine (1998) who found that fair legal environment contributes to FS development (Hook and Azman-Saini, 2008). Lastly, the LNCC Granger caused LNDCPS/GDP, which indicates that the extent to which the public power was exercised for private gain positively affected the financial development. This finding was also obtained in the paper of Lau et al. (2013) who found that corporate corruption reduces the market volatility, decreases the government uncertainty and positively affects the financial system development.

Another important point is that the crisis is significant at 1% threshold, but positively associated with the dependent variable. Considering that the causality runs from the dependent to the independent variable, it can be said that the countries that provided too much credit caused the crisis. The similar finding was obtained in the paper of Allen and Carletti (2009) who found that the combination of cheap credit together with the easy availability of funds were factors that led to the occurance of the crisis.

Table 19: Granger-Causality for the Ex-Soviet countries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	150	0.16927	0.8444
LNDCPS_GDP does not Granger Cause LNGDPCG		7.10546	0.0011
LNINFL does not Granger Cause LNDCPS_GDP	79	1.76996	0.0931
LNDCPS_GDP does not Granger Cause LNINFL		1.11787	0.3645
LNGFCF does not Granger Cause LNDCPS_GDP	147	1.99388	0.14
LNDCPS_GDP does not Granger Cause LNGFCF		2.74774	0.0675
LNGE does not Granger Cause LNDCPS_GDP	150	3.23961	0.042
LNDCPS_GDP does not Granger Cause LNGE		0.34663	0.7077
LNRQ does not Granger Cause LNDCPS_GDP	150	1.61346	0.2028
LNDCPS_GDP does not Granger Cause LNRQ		11.9617	2.00E-05
LNRL does not Granger Cause LNDCPS_GDP	150	3.22097	0.0428
LNDCPS_GDP does not Granger Cause LNRL		0.28051	0.7558
LNCC does not Granger Cause LNDCPS_GDP	150	6.18253	0.0027
LNDCPS_GDP does not Granger Cause LNCC		0.75034	0.474
Crisis does not Granger Cause LNDCPS_GDP	150	0.31055	0.7335
LNDCPS GDP does not Granger Cause Crisis		4.57283	0.0119

4.5.1.3 Central Europe

Table 20: Panel regression results for the period 2000-2016 for the Central European countries

CENTRAL EUROPE:2000-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	0.08 (0.10)	0.07 (0.15)	0.08 (0.13)	0.09 (0.09)*	0.08 (0.13)	0.07 (0.14)
DLNGDPCG	-0.05 (0.79)	-0.05 (0.58)	-0.05 (0.52)	-0.03 (0.72)	-0.05 (0.52)	-0.06 (0.46)
DLNINFLATION	0.03 (0.79)	0.04 (0.75)	0.05 (0.70)	0.02 (0.84)	0.05 (0.71)	0.05 (0.65)
DLNGFCF	0.12 (0.52)	0.18 (0.33)	0.16 (0.37)	0.14 (0.45)	0.16 (0.38)	0.19 (0.30)
DLNFDI	0.02 (0.84)	0.00 (0.99)	0.00 (0.95)	0.01 (0.93)	-0.00 (0.99)	0.00 (0.96)
DLNVA	0.79 (0.39)					
DLNPSAV		-0.32 (0.59)				
DLNGE			0.18 (0.82)			
DLNRQ				1.05 (0.19)		
DLNRL					0.33 (0.69)	
DLNCC						-0.53 (0.46)
DUMMY	-0.28 (0.05)**	-0.24 (0.02)**	-0.29 (0.01)***	-0.29 (0.01)***	-0.28 (0.01)***	-0.24 (0.03)**
R-2	0.02	0.02	0.01	0.03	0.01	0.02
N	90	90	90	90	90	90
HAUSMAN	0.68 (0.98)	3.88 (0.56)	1.26 (0.93)	1.41 (0.92)	2.31 (0.80)	3.91 (0.56)
METHOD	RE	RE	RE	RE	RE	RE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

For this group, the initial results from the stationarity tests indicated non-stationary character of the variables at level, hence they became stationary after processing the first difference. However, a major problem with this kind of application is that at first difference none of the control variables were significant, thus no association could be established bwteen the dependent

and the independent varables. It can be said that in none of the models the independent variables explained the variability of the dependent. This is supported by the results from the R^2, which are not more than 3%, which shows that the independent variables cannot explain the variability of the dependent. Moreover, the probability in the Hausman test is more than the level of significance, thus, the RE were used in each model. It is obvious that the standard errors in Table 20 are lower compared to the models in the other groups, when the FE were used. Advantageous this from applying RE is that the both time varying and time invariant variables can be estimated, but the RE models are more vulnerable to omitted variable bias (Williams, 2015). Another explanation for the insignificant variables may be the multi-collinearity effect, but, from Table 21 it can be seen that there is no multicolinearity between the regressors used in the analysis, since the results are not above 0.7 in most of the cases (Jianu, 2017).

Table 21: Multicollinearity for Central Europe for the period 2000-2016

	DLNDCPS_GDP	DLNFDI	DLNGDPCG	DLNGE	DLNGFCF	DLNINFL	DLNPSAV	DLNRQ	DLNRL	DLNV_A	DLNCC
DLNDCPS_GDP	1.000000	0.006239	-0.044686	0.043163	0.094099	0.032028	-0.060847	0.164318	0.057399	0.120919	-0.053652
DLNFDI	0.006239	1.000000	0.003985	-0.062828	0.006459	0.054440	-0.067969	-0.025580	0.106789	-0.169336	0.016582
DLNGDPCG	-0.044686	0.003985	1.000000	-0.000649	0.154219	0.378342	0.168704	-0.163437	-0.022378	-0.000179	-0.070077
DLNGE	0.043163	-0.062828	-0.000649	1.000000	0.096864	0.179056	0.235958	0.627477	0.676498	0.594906	0.568871
DLNGFCF	0.094099	0.006459	0.154219	0.096864	1.000000	0.110004	0.149053	0.094302	0.065358	0.268352	0.179049
DLNINFL	0.032028	0.054440	0.378342	0.179056	0.110004	1.000000	-0.112102	0.103239	0.122842	0.174184	0.004024
DLNPSAV	-0.060847	-0.067969	0.168704	0.235958	0.149053	-0.112102	1.000000	0.032229	0.245373	0.165188	0.200828
DLNRQ	0.164318	-0.025580	-0.163437	0.627477	0.094302	0.103239	0.032229	1.000000	0.565991	0.625741	0.454512
DLNRL	0.057399	0.106789	-0.022378	0.676498	0.065358	0.122842	0.245373	0.565991	1.000000	0.565324	0.661559
DLNV_A	0.120919	-0.169336	-0.000179	0.594906	0.268352	0.174184	0.165188	0.625741	0.565324	1.000000	0.567955
DLNCC	-0.053652	0.016582	-0.070077	0.568871	0.179049	0.004024	0.200828	0.454512	0.661559	0.567955	1.000000

Regarding the impact from the crisis, for Central European countries, significant but negative association with the FS development was detected. Hence, Table 22 shows that the causality runs from the crisis to the LNDCPS/GDP. Thus, when the crisis occurred in 2007, the FS development stagnated due to the limited credit provided to the private sector, finding which is contrary to the results obtained for the Ex-Soviet group. Hence, when the crisis occurred Central European countries showed how vulnerable they were due to their dependence on bank loans. As a result of the limited funds provided to these countries, they had to seek help from the IMF, but until the results provided some positive outcomes, the level of financial development had stagnated (Filipovic and Miljkovic, 2014). Similar finding was obtained by Almarzoqi et al.

(2015) who used panel GMM model, data set for 180 countries for the period 1984-2011 and found that bankinc crises negatively affected the financial system development.

Table 22: Granger causality for the Central European countries

Null Hypothesis	Obs	F-Statistic	Prob.
CRISIS does not Granger Cause DLNDCPS_GDP	75	10.0956	0.0001
DLNDCPS_GDP does not Granger Cause CRISIS		0.21121	0.8101

4.5.1.4 South-Eastern Europe

Table 23: Panel regression results for the period 2000-2016 for the South-Eastern countries

SOUTH-EASTERN:2000-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	3.82 (0.00)***	3.85 (0.00)***	2.72 (0.00)***	1.93 (0.00)***	2.35 (0.00)***	3.10 (0.00)***
LNGDPCG	-0.31 (0.00)***	-0.28 (0.00)***	-0.28 (0.00)***	-0.14 (0.10)*	-0.21 (0.02)**	-0.31 (0.00)***
LNINFLATION	-0.14 (0.04)**	-0.13 (0.07)*	-0.02 (0.73)	0.07 (0.33)	0.02 (0.76)	-0.02 (0.81)
LNGFCF	0.06 (0.61)	0.05 (0.68)	0.11 (0.31)	-0.06 (0.57)	0.01 (0.92)	-0.03 (0.81)
LNFDI	0.03 (0.71)	0.05 (0.56)	0.01 (0.84)	-0.03 (0.72)	0.004 (0.94)	0.01 (0.94)
LNVA	0.77 (0.14)					
LNPSAV		0.46 (0.11)				
LNGE			1.69 (0.00)***			
LNRQ				2.51 (0.00)***		
LNRL					1.91 (0.00)***	
LNCC						1.63 (0.00)***
DUMMY	0.75 (0.00)***	0.80 (0.00)***	0.71 (0.00)***	0.65 (0.00)***	0.73 (0.00)***	0.72 (0.00)***
R-2	0.50	0.51	0.58	0.64	0.57	0.55
N	134	131	133	132	134	134
HAUSMAN	16.85 (0.00)	19.96 (0.00)	20.94 (0.00)***	74.08 (0.00)	52.00 (0.00)	28.84 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

The regression coefficients of the study for South-Eastern countries denoted that the significant control variables for this period are LNGDPCG in all of the six models and LNINFLATION only in Models 1 and 2. LNGDPCG is negative and significant at 1%, 1%, 1%, 10%, 5% and 1% threshold respectively, while LNINFLATION is negative and significant at 5% and 10% in Models 1 and 2 respectively. The other two control variables, LNGFCF and LNFDI show no

association with the LNDCPS/GDP in none of the models. Regarding the institutional variables, LVA and LNPSAV are both positive but insignificant, while LNGE, LNRQ, LNRL and LNCC are positive and significant at 1% level of significance.

Regarding the Hasuman test results, the null hypothsis was rejected for all six models and the regressions were run with FE. It can be also be said that the R^2 in all of the cases is more than 50%, which indicated that all of the models have high explanatory power. Thus, one average 55.83% of the variability of the dependent is explained by the variability of the independent variables (Brooks, 2008).

From the Granger-causlaity Table 24 below it can be seen that LNDCPS_GDP Granger caused LNGDPCG. This indicates that the increased credit flow of these countries negatively affected the total output of the country. This result may be due to the socialist legacy, the failure to establish robustly functioning economic envrionemnt, the soft budget constraint or the banking crises they were exposed to. Similar finding was obtained by Koivu (2002), who used panel data for 25 transition countries over the period 1993-2000 and concluded that the bank credit provided to the private sector does not affect the GDP positively. An overall weak relationship between these two variables was likewise proven by Dawson (2003) and Fink et al. (2008). Furthermore, the LNDCPS/GDP Granger caused LNINFLATION and since the relationship is negative the domestic credit provided to the private sector negatively affected inflation. According to the literature the level of inflation is higly correlated to the lending interest rates (Omondi, 2014). The finding in this thesis is contrary to the finding of Abbey (2012) who found that monetary policy such as bank lending can be used to stabilize inflation and the output in the economy.

Regarding the institutional variables the Granger-Causality results presented in the Table x indicate the following: LNDCPS/GDP Granger Caused the LNGE. Hence, countries that provided credit to the private sector improved the level of Government effectiveness. Similar finding was obtained by Chan and Karim (2014), who used two stage estimation technique for the period 2001-2008 and found that government effectiveness is positively related to the bank efficiency. Moreover, the causality between the LNRQ and the LNDCPS/GDP runs from the independent variable and since the coefficient is positive, the regulatory quality systems boosed the process of providing credit to the private sector. Thus, for these countries the effective regulatory quality mechanisms contributed to the creation of sound financial system and

promoted better banking operations towards the private sector. Similar finding was obtained in the paper of Mamatzakis and Hu (2014) who found that better regulatory supervison and monitoring activities has positive effect on the bank performance. Furthermore, the papers of Beck et al. (2006) and Pasiouras et al. (2009) also found that appropriate financial regulation enhances the banking performance and ensures a stable financial system. The interesting Granger causality was determined in the case of LNRL and LNCC. In both of the cases, the causality was running in two directions. This suggests that these countries managed through the credit provided to the private sector to positively affect their overall legal framework and the level of corruption, as well as the other way around. Nevertheless, the link between law and finance is inextricable and it is not possible to have sound financial system without an effective supporting legal system. Simillar fidning was obtained in the paper of Dima et al. (2017) who found positive correlation between the Rule of Law and the capital market development. Notwithstanding, the finding about corruption supports the already existing literature of Leff (1964) and Chene (2014) who found that corruption does not necessarily has bad effects, but contrary, it can stimulate the development of the countries.

Furthermore, the coefficients of the dummy variable representing the crisis revealed that the crisis is significantly, but positively associated with the FS development. Hence, from the table below it can be concluded that the countries that provided too much credit caused the crisis. This may be due to the low interest rates which were very attractive for the consumers and the high demand of cheap credits, which were accessible for almost everyone have caused the bubble which have bursted in he peak od 2007 (Gal, 2011).

Table 24: Granger-Causality for the South-Eastern countries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	130	0.13933	0.8701
LNDCPS_GDP does not Granger Cause LNGDPCG		8.72090	0.0003
LNINFL does not Granger Cause LNGDPCG	118	1.05406	0.3519
LNGDPCG does not Granger Cause LNINFL		5.30266	0.0063
LNGE does not Granger Cause LNDCPS_GDP	122	1.81243	0.1678
LNDCPS_GDP does not Granger Cause LNGE		2.71270	0.0705
LNRQ does not Granger Cause LNDCPS_GDP	121	7.28880	0.001
LNDCPS_GDP does not Granger Cause LNRQ		0.11169	0.8944
LNRL does not Granger Cause LNDCPS_GDP	130	12.6351	1.00E-05
LNDCPS_GDP does not Granger Cause LNRL		28.6117	6.00E-11
LNCC does not Granger Cause LNDCPS_GDP	130	15.3370	1.00E-06
LNDCPS_GDP does not Granger Cause LNCC		13.4472	5.00E-06
CRISIS does not Granger Cause LNDCPS_GDP	130	2.22384	0.1125
LNDCPS_GDP does not Granger Cause CRISIS		14.8918	2.00E-06

4.5.2 Before the crisis

4.5.2.1 All transition economies

Table 25: Panel regression results for the period 2000-2008 for all transition countries

ALL COUNTRIES:2000-2008						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	-0.57 (0.72)	-0.58 (0.67)	-0.76 (0.57)	-2.46 (0.07)*	-1.27 (0.33)	-0.75 (0.56)
LNGDPCG	0.29 (0.37)	0.29 (0.36)	0.29 (0.38)	0.18 (0.57)	0.31 (0.32)	0.27 (0.39)
LNINFLATION	0.07 (0.45)	0.06 (0.53)	0.06 (0.50)	0.09 (0.34)	0.11 (0.25)	0.08 (0.39)
LNGFCF	0.66 (0.00)***	0.68 (0.00)***	0.65 (0.00)***	0.51 (0.00)***	0.58 (0.00)***	0.61 (0.00)***
LNFDI	0.27 (0.29)	0.25 (0.35)	0.25 (0.33)	0.18 (0.49)	0.21 (0.41)	0.24 (0.36)
LNVA	-0.11 (0.87)					
LNPSAV		-0.11 (0.77)				
LNGE			0.16 (0.76)			
LNRQ				2.10 (0.00)***		
LNRL					0.91 (0.03)**	
LNCC						0.37 (0.32)
R-2	0.59	0.59	0.59	0.62	0.61	0.60
N	188	185	187	186	188	188
HAUSMAN	75.23 (0.00)	63.21 (0.00)	65.58 (0.00)	66.71 (0.00)	66.97 (0.00)	55.41 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

The results from the Table 25 above indicate that the only significant variables in the sample period 2000-2008, covering all the transition countires are LNGFCF, LNRQ and LNRL. LNGFCF is positive and significant at 1% threshold in all six models, LNRQ is also positive and significant at 1% threshold, while LNRL is positive and significant at 5% level of significance.

Furthemore, the R^2 in Models 1, 2 and 3 is 59%, in Model 4 is 62%, in Model 5 is 61% and in Model 6 is 60%. Taken averagely for all six models, 60% of the variability of the dependent variable is explained by the variability of the independent variables (Brooks, 2008). Hence, all of the models demonstrate adequate explanatory power. Moreover, the Hausman results in all six cases is less than the level of significance (1%, 5%, 10%) which means that all of the regressions were run with FE.

From the Granger-causality Table 26 it can be seen that regarding the control variable LNGFCF, the causality with the dependent variable runs in both directions. Since the coefficents have positive sign, one unit increase in GFCF increases the LNDCPS/GDP by 0.66; 0.68; 0.65; 0.51; 0.58 and 0.61 for Models 1-6 respectively. The results also indicate that the domestic credit to private sector positively affected the GFCF. Similar result was obtained by Emecheta and Ibe (2014) who used VAR for the period 1960-2011 and found a positive relationship between bank credit and the capital formation in Nigeria.

Regarding the institutional variables, the causality for both LNRQ and LNRL and the dependent variable was running in two directions. Since the coefficients signs were positive, the domestic credit to private sector positively affected both the RL and RQ, while the well structured legal and regulatory framework also showed positive impact on the FS development. According to Dima et al. (2017) countries that have sound political institutions and judicial system, clear rules and people who act according to the established rules are very likely to boost the level of their financial stability. According to Pasiouras et al. (2009), appropriate regulation and supervision enhances the banking performance and enables the creation of a stable financial system.

Table 26: Granger causality for all transition economies

Null Hypothesis	Obs	F-Statistic	Prob.
LNGFCF does not Granger Cause LNDCPS_GDP	356	4.18839	0.0159
LNDCPS_GDP does not Granger Cause LNGFCF		8.90691	0.0002

LNRQ does not Granger Cause LNDCPS_GDP	354	5.99293	0.0028
LNDCPS_GDP does not Granger Cause LNRQ		11.4272	2.00E-05
LNRL does not Granger Cause LNDCPS_GDP	363	10.8186	3.00E-05
LNDCPS_GDP does not Granger Cause LNRL		3.50419	0.0311

4.5.2.2 Ex-Soviet

Table 27: Panel regression results for the period 2000-2008 for the Ex-Soviet countries

EX-SOVIET:2000-2008						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	0.33 (0.86)	0.06 (0.96)	0.22 (0.89)	-1.24 (0.43)	-0.43 (0.77)	0.10 (0.94)
LNGDPCG	0.31 (0.51)	0.322 (0.48)	0.322 (0.48)	0.14 (0.75)	0.32 (0.46)	0.30 (0.51)
LNINFLATION	-0.01 (0.89)	-0.02 (0.83)	-0.01 (0.90)	-0.01 (0.91)	0.003 (0.97)	-0.03 (0.80)
LNGFCF	0.43 (0.07)*	0.39 (0.11)	0.43 (0.07)*	0.34 (0.13)	0.41 (0.07)*	0.41 (0.08)*
LNFDI	0.19 (0.21)	0.19 (0.19)	0.19 (0.21)	0.13 (0.34)	0.12 (0.41)	0.15 (0.33)
LNVA	-0.11 (0.89)					
LNPSAV		0.26 (0.61)				
LNGE			-0.05 (0.94)			
LNRQ				1.99 (0.00)***		
LNRL					1.05 (0.03)**	
LNCC						0.50 (0.29)
R-2	0.50	0.50	0.50	0.55	0.53	0.51
N	89	89	89	89	89	89
HAUSMAN	32.51 (0.00)	24.95 (0.00)	24.28 (0.00)	21.19 (0.00)	23.47 (0.00)	25.21 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

The evidence presented in this section suggests that the financial system development measured by the domestic credit to private sector/GDP is not significantly associated with the control variables, except from the LNGFCF. In Models 1, 3, 5 and 6, the LNGFCF is positively and significantly associated with the FS development at 10% level of significance with coefficients 0.43, 0.43, 0.41, 0.41 respectively. From the institutional variables the significant ones are only LNRQ and LNRL. The LNRQ is positive and significant at 1% threshold, while LNRL is positive and significant at 5% level of significance. Although the regresson results showed very

few significant variables and no association between the dependent and the rest of the independent variables, the models have high explanatory power. This is supported by the R^2 which is 50% in Models 1, 2, 3; 55% in Model 4; 53% in Model 5 and 51% in Model 6. Taken averagely 52% of the variability of the LNDCPS/GDP is explained by the vairiability of the independent variables. The remaining 48% are explained by the variability of other factors (Brooks, 2008). Moreover, from the Hausman results, it can be seen that the null hypothesis was rejected in all six models and all the regressions were run with FE.

From the Granger causality rsults in Table 28, it can be seen that LNDCPS_GDP Granger caused LNGFCF, and from the coefficient results it is apparent that the impact was positive. This finding supports the finding of the Omankhanlen (2012) who concluded that commercial bank credits have positive impact on GFCF. Similar finding was obtained by Anthony (2012) who concluded positive relationship between the lagged values of total private sector credit and the economic growth which was measurd by GFCF. Regarding the institutional variables, it can be seen that LNDCPS_GDP Granger caused LNRQ and the positive impact suggests that the credit provited to the private sector increased the effectiveness of the regulatory framework in these countries. Similar finding was obtained by Klomp and Haan (2015) who used data for 1238 banks and found that the effectiveness of regulation and supervison is higly dependent on the financial and the organizational activities of the banks. Furthemore, LNRL Granger caused LNDCPS_GDP, thus, the results show that better law performance in this group of countries contributed to increased level of credit flows. Similar fidnig was obtained by Hausmann et al. (2005) who found that rule of law is a factor that strongly affects the creation of a stable financial system.

Table 28: Granger causality for the Ex-Soviet countries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGFCF does not Granger Cause LNDCPS_GDP	147	1.99388	0.14
LNDCPS_GDP does not Granger Cause LNGFCF		2.74774	0.0675
LNRQ does not Granger Cause LNDCPS_GDP	150	1.61346	0.2028
LNDCPS_GDP does not Granger Cause LNRQ		11.9617	2.00E-05
LNRL does not Granger Cause LNDCPS_GDP	150	3.22097	0.0428
LNDCPS_GDP does not Granger Cause LNRL		0.28051	0.7558

4.5.2.3 Central Europe

Table 29: Panel regression results for the period 2000-2008 for the Central European countries

CENTRAL EUROPE:2000-2008						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	0.28 (0.09)*	0.20 (0.15)	0.23 (0.14)	0.28 (0.07)*	0.22 (0.17)	0.17 (0.26)
DLNGDPCG	0.02 (0.97)	-0.23 (0.79)	-0.01 (0.99)	0.15 (0.85)	-0.02 (0.97)	-0.23 (0.78)
DLNINFLATION	-0.23 (0.62)	-0.17 (0.71)	-0.11 (0.82)	-0.28 (0.54)	-0.05 (0.91)	-0.06 (0.89)
DLNGFCF	0.42 (0.59)	0.89 (0.26)	0.63 (0.42)	0.33 (0.67)	0.66 (0.43)	1.00 (0.24)
DLNFDI	0.22 (0.75)	0.03 (0.96)	0.19 (0.79)	0.17 (0.80)	0.10 (0.87)	0.06 (0.94)
DLNVA	2.18 (0.37)					
DLNPSAV		-0.90 (0.51)				
DLNGE			0.74 (0.69)			
DLNRQ				2.82 (0.21)		
DLNRL					0.33 (0.88)	
DLNCC						-1.19 (0.49)
R-2	0.07	0.05	0.05	0.09	0.04	0.05
N	31	31	31	31	31	31
HAUSMAN	1.05 (0.96)	4.61 (0.46)	5.56 (0.35)	3.45 (0.63)	4.29 (0.51)	3.30 (0.65)
METHOD	RE	RE	RE	RE	RE	RE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

From the Table 29 above it can be seen that the interaction terms are not significant on any level and the values of the R squared are very low. Considering the insignificance of the variables, the standard errors and R^2 for each model, the null hypothesis is accepted. This means that for this group in the period before the crisis, there is no evidence that the State Governance aspects are associated with the FS development in any way, neither correlation exists with the other control variables. However, it is worth mentioning that these countries during the sample period, were exposed to excessive credit growth, which created disequilibria and increased their financial vulnerability. This is a reason why the credit development was a matter of growing concern (Zdzienicka, 2009). Looking closely at their credit development in the period before the crisis justifies the finding in this thesis that none of the control and the institutional variables had effect over the FS development.

4.5.2.4 South-Eastern Europe

Table 30: Panel regression results for the period 2000-2008 for the South-Eastern countries

SOUTH-EASTERN:2000-2008						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	-0.79 (0.50)	-0.71 (0.56)	-0.97 (0.42)	-1.29 (0.28)	-1.01 (0.41)	-0.94 (0.43)
LNGDPCG	0.76 (0.03)**	0.89 (0.01)***	0.67 (0.07)*	0.54 (0.13)	0.74 (0.03)**	0.71 (0.05)**
LNINFLATION	0.30 (0.02)**	0.28 (0.04)**	0.34 (0.02)**	0.40 (0.01)***	0.32 (0.02)**	0.33 (0.02)**
LNGFCF	0.38 (0.05)**	0.59 (0.01)***	0.29 (0.13)	0.03 (0.88)	0.29 (0.18)	0.31 (0.15)
LNFDI	0.32 (0.04)**	0.35 (0.02)**	0.34 (0.03)**	0.26 (0.10)	0.32 (0.04)**	0.31 (0.04)**
LNVA	-0.27 (0.69)					
LNPSAV		-1.22 (0.02)**				
LNGE			0.39 (0.51)			
LNRQ				2.16 (0.03)**		
LNRL					0.33 (0.61)	
LNCC						0.28 (0.67)
R-2	0.70	0.73	0.70	0.73	0.70	0.70
N	62	59	61	60	62	62
HAUSMAN	50.29 (0.00)	57.15 (0.00)	44.48 (0.00)	46.56 (0.00)	43.99 (0.00)	44.85 (0.00)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

The results of the empirical findings in Table 30 show that all the coefficients of the explanatory variables in Model 1, except the LNVA are positively and significantly associated with the LNDCPS/GDP at 5% level of significance. For Model 2, all the variables are positive and significant at 1% or 5% threshold, except LNPSAV who is significant, but negatively associated with the dependent variable. In Model 3, only LNGFCF and LNGE do not have any kind of

relationship with the LNDCPS/GDP for the sample period, while in Model 4 only LNINFL and LNRQ are significant and positive at 1% and 5% level of significance. In Model 5, the only insignificant control vriables are LNGFCF and LNRL, while in Model 6 the insignificant variables are LNGFCF and LNCC. Moreover, the R^2 in all the models is 70%, which means that 70% of the variability of the dependent variable is explained by the variability of the independent ones, while the ramaning 30% are explained by the variability of other factors (Brooks, 2008). Lastly, the Hausman results for all of the models were less than the level of significance (1%, 5%, 10%), thus, the null hypothesis was rejected. Therefore, all regressions were run with FE.

From the Granger causality Table 31 below, it can be seen that the LNDCPS_GDP Granger causes LNGDPCG and since in the regression result the sign is positive, the flow of credit to the private sector increased the LNGDPCG. Similar finding was obtained in the paper of Cappielo et al. (2010) who found that the credit supply in terms of volume and the credit standards applied, significantly and positively impacts the economic development of a country. Nevertheless, Goldsmith's paper (1969) was the first to empirically prove the positive relationship between FS development and GDPCG. The finding in this thesis is consistent with the already existing literature that in the period before the crisis the stated transition countries increased their credit availability, technology transfers and competition. This credit expansion was helped as a result of many mergers and acquisitions with other foreign banks, which in turn, during that time positively affected the GDP and the development of these countries (Caporale et al, 2014). Furthemore, LNDCPS_GDP Granger Caused the LNINFL. The coeffcients of inflation are positive and significant and the possible explanation is that inflation has higher costs of holding money, hence people tend to invest more. In order to finance their investments, borrowers ask financial assistance from the banks. Hence, as the level of money supply increases (usually in this case the lending interest rates are low), the level of inflation also increases. Moreover, LNDCPS/GDP Granger Caused LNGFCF, with the coefficient from the regression result having positive sign. Hence, the bank lending positively affected the net increase in physical assets. Were et al. (2012) found similar result, that bank credit positively impacts the sectoral gross domestic product measured as real value added. What is more, bidirectional causality was detected between the LNDCPS/GDP and LNFDI. Hence, in these countries, FDI on its own positively affected the FS development. However, it ia also the FS development that had important role in increasing the speed of innovation and technological spillovers from FDI. This

findind is consistent with the paer of Alfaro et al. (2004) who found that FDI has positive impact only when the FS is developed. Therefore, the countries from this group should formulate FDI promotion policies, such as the development of basic infrastructure, technology transfers, various educating and training programs in order to boost the FS development (Chee and Nair, 2010).

In regards to the institutional variables, it was found that LNPSAV Granger caused LNDCPS_GDP. However, the coefficient in the regression results table has a negative sign, which means that the LNPSAV negatively affected the credit provided to the private sector. When it is refered to the political stability in context of growth, what is taken under consideration is having strong institutions rather that powerful individuals, an efficient bureaucracy, economic climate that attracts investments and stable political structure (Haussain, 2014). Although these countries in the examined period are considered to have stable political structure, it turned out that stable governments do not necessarily contribute to development.

Furthermore, Granger causality results in Table 31 show that LNRQ Granger caused LNDCPS_GDP. The coefficient result is positivie, hence, the impact from the ability of the governments to implement sound regulation policies positively affected the level of domestic credit provided to the private sector. This finding is consistent with the finding of Demirgüç-Kunt, et al (2008) who concluded that better institutional quality at the country level decreases the probability for a country to experience banking crise. Mamatzakis and Hu (2014) also claimed that advanced regulation is a component of the financial sector that has strong impact on bank performance.

Table 31: Granger causality for the South-Eastern countires

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	130	0.13933	0.8701
LNDCPS_GDP does not Granger Cause LNGDPCG		8.72090	0.0003
LNINFL does not Granger Cause LNDCPS_GDP	118	1.05406	0.3519
LNDCPS_GDP does not Granger Cause LNINFL		5.30266	0.0063
LNGFCF does not Granger Cause LNDCPS_GDP	126	0.95832	0.3864
LNDCPS_GDP does not Granger Cause LNGFCF		17.3062	2.00E-07
LNFDI does not Granger Cause LNDCPS_GDP	127	3.75201	0.0262
LNDCPS_GDP does not Granger Cause LNFDI		2.63721	0.0756
LNPSAV does not Granger Cause LNDCPS_GDP	119	8.67862	0.0003
LNDCPS_GDP does not Granger Cause LNPSAV		1.34853	0.2637
LNRQ does not Granger Cause LNDCPS_GDP	121	7.28880	0.001
LNDCPS_GDP does not Granger Cause LNRQ		0.11169	0.8944

4.5.3 After the crisis

4.5.3.1 All transition economies

Table 32: Panel regression results for the period 2008-2016 for all transition countries

ALL COUNTRIES:2008-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	2.23 (0.00)***	3.46 (0.00)***	3.03 (0.00)***	2.65 (0.00)***	2.48 (0.00)***	2.84 (0.00)***
LNGDPCG	-0.08 (0.01)***	-0.07 (0.03)**	-0.07 (0.02)**	-0.07 (0.02)**	-0.07 (0.02)**	-0.08 (0.01)***
LNINFLATION	-0.02 (0.45)	-0.02 (0.52)	-0.02 (0.37)	-0.02 (0.30)	0.01 (0.78)	-0.01 (0.84)
LNGFCF	0.18 (0.00)***	0.19 (0.00)***	.020 (0.00)***	0.18 (0.00)***	0.17 (0.00)***	0.13 (0.02)**
LNFDI	-0.03 (0.41)	-0.05 (0.26)	-0.04 (0.36)	-0.04 (0.37)	-0.04 (0.38)	-0.03 (0.47)
LNVA	1.09 (0.00)***					
LNPSAV		0.14 (0.17)				
LNGE			0.51 (0.00)***			
LNRQ				0.72 (0.00)***		
LNRL					1.08 (0.00)***	
LNCC						0.94 (0.00)***
R-2	0.20	0.86	0.09	0.09	0.21	0.19
N	236	236	236	236	236	236
HAUSMAN	3.66 (0.59)	11.17 (0.05)	7.47 (0.18)	6.74 (0.24)	4.53 (0.48)	6.92 (0.22)
METHOD	RE	FE	RE	RE	RE	RE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

Regaridng the whole group of the transition economies for the period after the crisis, the significant variables are LNGDPCG, LNGFCF and all of the State Governance variables except LNPSAV. The LNGDPCG is negative in all of the models and significant at 1%, 5%, 5%, 5%, 5%, 1% respectively. The LNGFCF is positively associated with the dependent variable and it is significant at 1% for Models 1, 2, 3, 4, 5 and 5% level of significance in Model 6. The significant State Governance variables are all positive and significant at 1% threshold.

The Granger Cauaslaity table below shows that LNDCPS_GDP Granger caused LNGDPCG and since the relationship is negative during this period it had negative effect on the total output of goods and services pereach member of the workforce. Limited number of papers have obtained this result, such as the paper of Berglof and Bolton (2002) in which not very strong association was determined between these two variables. Moreover, the causality between the dependent variable and the LNGFCF runs in both directions and since the results are positive, the increase in one positively affects the other. Futhermore, bidirectional causality was detected between the dependent variable and the LNVA. Hence, if the LNVA increases by one unit, the LNDCPS/GPD increase by 1.09 ant the other way around. Nevertheless, it was the LNGE that affected the LNDCPS/GDP. Hence, better government operations and good quality government services positively affected the FS development in the transition economies. Bidirectional causality was also detected between the LNDCPS/GDP and the LNRL. Hence, one unit increase in LNRL, increases the LNDCPS/GDP by 1.08 and the other way around. Campos and Nuget (2000) have found that rule of law is crucial for ensuring clean systems and strong legal support, which are essential for having well-functioning financial systems. Lastly, the causality between the LNCC and DCPS/GDP run fom the independent, which again shows that corruption positively affected the FS development. This is consistent with the empirical finding of Huntington (1968) who found that corruption positively affects only when there is political vulnerability and fragile economic situation. Moreover, Ahlin and Pang (2008) found that corruption positively affects the financial system, because it increase the need for liquidity and create more potent financial improvement. Hence, the results imply that if people have rights to express themselves, governments are effective, regulatins are sound, rule of law works and corruption is controlled the FS of these countries will flourish.

Table 33: Granger causality for all transition coutnries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	363	0.66090	0.517
LNDCPS_GDP does not Granger Cause LNGDPCG		20.0495	6.00E-09
LNGFCF does not Granger Cause LNDCPS_GDP	356	4.18839	0.0159
LNDCPS_GDP does not Granger Cause LNGFCF		8.90691	0.0002
LNV_A does not Granger Cause LNDCPS_GDP	363	8.57959	0.0002
LNDCPS_GDP does not Granger Cause LNV_A		6.01586	0.0027
LNGE does not Granger Cause LNDCPS_GDP	355	7.94928	0.0004
LNDCPS_GDP does not Granger Cause LNGE		0.79582	0.452
LNRQ does not Granger Cause LNDCPS_GDP	354	5.99293	0.0028
LNDCPS_GDP does not Granger Cause LNRQ		11.4272	2.00E-05
LNRL does not Granger Cause LNDCPS_GDP	363	10.8186	3.00E-05
LNDCPS_GDP does not Granger Cause LNRL		3.50419	0.0311
LNCC does not Granger Cause LNDCPS_GDP	363	18.6530	2.00E-08
LNDCPS_GDP does not Granger Cause LNCC		0.83739	0.4337

4.5.3.2 Ex-Soviet

Table 34: Panel regression results for the period 2008-2016 for the Ex-Soviet countries

EX-SOVIET:2008-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	1.97 (0.00)***	3.04 (0.00)***	3.01 (0.00)***	2.95 (0.00)***	2.43 (0.00)***	2.58 (0.00)***
LNGDPCG	-0.01 (0.80)	-0.01 (0.82)	-0.02 (0.73)	-0.02 (0.64)	-0.04 (0.38)	-0.01 (0.86)
LNINFLATION	-0.07 (0.05)**	-0.07 (0.04)**	-0.08 (0.04)**	-0.08 (0.05)**	-0.01 (0.85)	-0.07 (0.06)*
LNGFCF	0.27 (0.02)**	0.21 (0.09)*	0.21 (0.05)**	0.20 (0.06)*	0.06 (0.51)	0.16 (0.16)
LNFDI	-0.03 (0.57)	-0.03 (0.63)	-0.03 (0.67)	-0.04 (0.57)	-0.09 (0.16)	-0.02 (0.73)
LNVA	1.00 (0.01)***					
LNPSAV		0.14 (0.37)				
LNGE			0.19 (0.50)			
LNRQ				0.24 (0.60)		
LNRL					1.48 (0.00)***	
LNCC						0.98 (0.00)***
R-2	0.18	0.12	0.08	0.08	0.22	0.17
N	87	87	87	87	87	87
HAUSMAN	1.66 (0.89)	5.90 (0.31)	1.366 (0.92)	2.18 (0.82)	1.12 (0.95)	2.63 (0.75)
METHOD	RE	RE	RE	RE	RE	RE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

Table 34 presents the regression results for the Ex-Soviet countries for the period after the crisis (2008-2016). In this scenario, the only significant control variables are LNINFL, at 5% level of significance in Models 1-4 and at 10% level of significance in Model 6, and LNGFCF, which is positive and significant at 5% threshold in Models 1 and 3, and at 10% threshold in Models 2 and 4. The rest of the control variables LNGDPCG and LNFDI are negative but show no significant association with the LNDCPS/GDP. From the institutional variables, positive and

significant are LNVA, LNRL and LNCC. The rest of them, LNPSAV, LNGE and LNRQ are also positive, but show no significant association with the dependent variable. The R^2 results are 18%, 12%, 8%, 8%, 22% and 17% for Models 1-6. Taken averagely 14.16% of the variability of the dependent variable is explained by the variability of the independent variables. This result suggests that the models have limited explanatory power (Brooks, 2008). The Hausman results were all more than the level of significance, thus, the null hypothesis was accepted and all six regressions wre run with RE.

From the Granger causality table it was estimated that LNINFL Granger caused LNDCPS_GDP. Hence, the findig supports the existing literature (Omondi, 2014) that inflation negatively affects the credit to the private sector or in other word the FS development. Hence, when inflation increases, the banks lending rates are also increasing, which leads to reduction in the lending volumes due to the reduction in the purchasing power of money. This creates difficulties for the customers to borrow money and when there are no investments the FS development is stagnated. Moreover it is the LNDCPS/GDP that Granger caused LNGFCF and since the coefficients have positive signs, the credit provided to the private sector positively affected the GFCF in these countries. This fidning is consistent with the paper of Omankhanlen (2012) who obtained the same results. During this period it is likely that the banks managed to sustain their lending capacity, which led to increased investment activities and positively affected the capital formation in these countries.

Furthermore, regarding the institutional variables in the case of VA, the causality run from the dependent variable. Since the relationship is positive, this means that the domestic credit provided to the private sector positively affected the right of the people to express their preferences, to secure their rights and to make demands. The paper of Adsera et al. (2003) proves this finding by claiming that economic development creates effective governments which incorporate ethical beliefs in their operations and care about its citizens and the protection of their rights.

Regarding RL, the causality run from the independent to the dependent variable. This means that in these countries in the period after the crisis, the people and the institutions were all accountable to the fairly applied law which contributed to FS development. Thus, the legal rules in these countries influenced the level of credit that will be provided and what type of firms will get financed. Since the coefficient result has positive sign, the efficiency of the legal institutions

in the Ex-Soviet countries, increased the availability of financing to private sector industries, which consequently boosted the corporate performance. This finding is consistent with the law and finance theory which claims that legal institutions are influential factor in the field of corporate finance and financial development (Beck and Levine, 2003).

The last significan institutional variable is LNCC, with causality rinning toward the DCPS/GDP. Since the value is positive, corruption level affected the FS development positively. This finding is consistent with the paper of Leff (1964), who proved that corruption is like an engine that positively affects the development in countries that have inefficient regulations. Nevertheless, considering that for these sample group and this period RQ had no association with the FS development, the corruption indeed have contributed to FS development.

Table 35: Granger causality for the Ex-Soviet countries

Null Hypothesis	Obs	F-Statistic	Prob.
LNINFL does not Granger Cause LNDCPS_GDP	79	1.76996	0.0931
LNDCPS_GDP does not Granger Cause LNINFL		1.11787	0.3645
LNGFCF does not Granger Cause LNDCPS_GDP	147	1.99388	0.14
LNDCPS_GDP does not Granger Cause LNGFCF		2.74774	0.0675
LNV_A does not Granger Cause LNDCPS_GDP	150	1.73839	0.1794
LNDCPS_GDP does not Granger Cause LNV_A		4.41700	0.0137
LNRL does not Granger Cause LNDCPS_GDP	150	3.22097	0.0428
LNDCPS_GDP does not Granger Cause LNRL		0.28051	0.7558
LNCC does not Granger Cause LNDCPS_GDP	150	6.18253	0.0027
LNDCPS_GDP does not Granger Cause LNCC		0.75034	0.474

4.5.3.3 Central Europe

Table 36: Panel regression results for the period 2008-2016 for the Central European countries

CENTRAL EUROPE:2008-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	-0.02 (0.29)	-0.02 (0.30)	-0.02 (0.13)	-0.02 (0.17)	-0.02 (0.09)*	-0.02 (0.16)
DLNGDPCG	-0.03 (0.09)*	-0.03 (0.07)*	-0.03 (0.11)	-0.03 (0.09)*	-0.03 (0.09)*	-0.03 (0.11)
DLNINFLATION	0.00 (0.89)	0.00 (0.87)	0.00 (0.99)	0.01 (0.85)	0.00 (0.96)	0.00 (0.87)
DLNGFCF	-0.09 (0.05)**	-0.07 (0.09)*	-0.08 (0.08)*	-0.07 (0.1)*	-0.07 (0.1)*	-0.07 (0.09)*
DLNFDI	-0.00 (0.90)	-0.01 (0.62)	-0.01 (0.63)	-0.01 (0.58)	-0.02 (0.34)	-0.01 (0.57)
DLNVA	0.43 (0.21)					
DLNPSAV		0.13 (0.49)				
DLNGE			0.22 (0.41)			
DLNRQ				-0.07 (0.77)		
DLNRL					0.54 (0.04)**	
DLNCC						0.12 (0.66)
R-2	0.14	0.12	0.31	0.3	0.36	0.3
N	65	65	65	65	65	65
HAUSMAN	7.47 (0.18)	7.85 (0.16)	11.61 (0.04)	18.15 (0.00)	23.23 (0.00)	22.66 (0.00)
METHOD	RE	RE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

In regards to the Central European countries, in the analysis for the period after the crisis the obtained significant variables are the following: DLNGDPCG, DLNGFCF and DLNRL. The first mentioned varable is significant and negative in Model 1, 2, 4 and 5 at 1% level of significance. The second mentioned variable is negative and significant in all of the models at 1% threshold, except for Model 1, where it is significant at 5% level. DLNRL is positive and significant at 5% level of significance. The rest of the control and institutional variables show no association with the dependent variable. Regarding the R^2 results, the explanatory variables explain the behavior of the dependent at 14%, 12%, 31%, 30%, 36%, 30% for Model 1, 2, 3, 4, 5 and 6 respectively, while the Hausman results indicated that the regressions in Models 3, 4, 5 and 6 should be run with FE, except for Model 1 and 2 where random effect was applied.

The Granger causality Table 37 shows that DLNDCPS_GDP Granger caused DLNGDPCG and since the coefficient is negative, the credit provided to the private sector negatively affected the total output in these countries. Similar finding was obtained by Koivu (2002) who found strong negative relationship between the bank loans and the annual GDPCG. Dudian and Popa (2013) used panel model for eight CEE countries over the period 1996-2011 and found that increased level of domestic credit to private sector negatively affects the GDPCG. Moreover, DLNGFCF Granger caused DLNDCPS_GDP and the obtained coefficient sign implies that it negatively affected the DLNDCPS/GDP. Similar finding was obtained by Kabir and Hoque (2007) who have estimated that GFCF has negative and significant effect on the development of a country.

The only significant institutional variable for this period and this group of countries is DLNRL. It can be seen that the causality run from DLNRL towards the DLNDCPS_GPDP, and the effect was positive. This finding is consistent with the already existing literature that the legal system is robustly linked with financial development. Considering that these countries were not subject to a rigid systems because of the transition, their legal system adapted efficiently to the new market based structure and managed to effectively foster the financial development. Similar finding was obtained in the paper of Merryman (1985).

Table 37: Granger causality for the Central Europen countries

Null Hypothesis	Obs	F-Statistic	Prob.
DLNGDPCG does not Granger Cause DLNDCPS_GDP	58	0.63591	0.6393
DLNDCPS_GDP does not Granger Cause DLNGDPCG		8.05973	4.00E-05
DLNGFCF does not Granger Cause DLNDCPS_GDP	66	2.75040	0.0506
DLNDCPS_GDP does not Granger Cause DLNGFCF		0.77629	0.5119
DLNRL does not Granger Cause DLNDCPS_GDP	74	3.01785	0.0554
DLNDCPS_GDP does not Granger Cause DLNRL		1.38830	0.2564

4.5.3.4 South-Eastern Europe

Table 38: Panel regression results for the period 2008-2016 for the South-Eastern countries

SOUTH-EASTERN:2008-2016						
Dependent variable	**Domestic credit to private sector/GDP**					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
CONSTANT	3.91 (0.00)***	3.49 (0.00)***	3.68 (0.00)***	3.93 (0.00)***	2.72 (0.00)**	3.96 (0.00)***
LNGDPCG	-0.06 (0.02)**	-0.05 (0.03)**	-0.06 (0.02)**	-0.06 (0.01)***	-0.06 (0.02)**	-0.05 (0.04)**
LNINFLATION	0.04 (0.11)	0.05 (0.04)**	0.04 (0.12)	0.03 (0.13)	0.06 (0.02)**	0.03 (0.14)
LNGFCF	0.14 (0.00)***	0.13 (0.01)***	0.13 (0.01)***	0.13 (0.01)***	0.18 (0.00)***	0.12 (0.01)***
LNFDI	-0.03 (0.26)	-0.04 (0.12)	-0.04 (0.18)	-0.04 (0.18)	-0.05 (0.08)*	-0.04 (0.17)
LNVA	-0.33 (0.21)					
LNPSAV		0.17 (0.06)*				
LNGE			0.01 (0.99)			
LNRQ				-0.26 (0.31)		
LNRL					0.88 (0.01)**	
LNCC						-0.32 (0.29)
R-2	0.91	0.91	0.9	0.9	0.92	0.91
N	81	81	81	81	81	81
HAUSMAN	17.21 (0.00)	14.52 (0.01)	23.02 (0.00)	17.40 (0.00)	18.01 (0.00)	14.97 (0.01)
METHOD	FE	FE	FE	FE	FE	FE
*** Significant at 0.01 level ** Significant at 0.05 level * Significant at 0. 1 level						

For the South-Eastern group of countries in the period after the crisis, the regression results show that the significant control variables are LNGDPCG, LNINFLATION and LNGFCF, while significant institutional variables are LNPSAV and LNRL. LNGDPCG is negative in all of the six models and significant at 5% threshold in Models 1, 2, 3, 5 and 6 and at 1% level of significance in Model 4. LNINFLATION is positive and significant at 5% level of significance

only in Models 2 and 5. LNGFCF is positive and significant in all six models at 1% level of significance. The last control variable, LNFDI is negative and significant only in Model 5. From the institutional variables, LNPSAV is positive and significant at 10% level of significance in Model 2, while LNRL at 1% threshold in Model 5. The other institutional variables: LNVA, LNGE, LNRQ and LNCC showed no significance, hence, no association can be established with the dependent variable. From the R^2 it can be seen that all of the models have adequate explanatory power, since around 90% of the dependent variable is explained by the variability of the independent variables (Brooks, 2008). Lastly, the Hausman results implied rejection of the null hypothesis and all of the regressions were run with FE.

The Granger causality Table 39 shows that LNDCPS_GDP Granger caused LNGDPCG having a negative effect. For these countries and this sample period the result is contrary to the finding about the period before the crisis where the effect was positive. This may be due to the varied access to financial services and the degree of banking competition, as well as the difference in the fiscal and monetary discipline and the low effectiveness of the governments which were highly committed on bailout policies during the sample time. Another reason for the negative effect may be the result of the soft budget constraints and the banking crises due to the increased level of non-performing loans. Furthermore, LNDCPS_GDP Granger caused LNINFL, thus, the credit provided to the private sector increased the level of inflation. Similar finding was obtained by Groen (2004) who found that increased level of bank loans increase the level of inflation. Similary, Keho (2009) thorugh applying the cointegration approach found that for four UEMOA countries, the financial development increases the inflation. Moreover, LNDCPS/GDP also Granger caused LNGFCF, having positive effect, and LNFDI, but in this case having negative effect. From the institutional variables, LNPSAV Granger caused LNDCPS/GDP, having a positive effect. Nevertheless, most of the papers focus on the political instability, such as the paper of Roe and Siegel (2011) who found that political instability impedes financial development. Tamadonnejad, et al. (2013) claimed that political stability have positive impact on bank outputs, its performance and efficiency. Moreover, bidirectional causality was determined between LNRL and the dependent variable. Hence, these countries managed to draft and implement laws which positively affected the FS development, however, with positive effect coming also from the credit provided to the private sector. According to Dima, et al. (2017), the effectiveness of legal institutions strongly affects the equity and credit market development.

Table 39: Granger causality for the South-Eastern coutnries

Null Hypothesis	Obs	F-Statistic	Prob.
LNGDPCG does not Granger Cause LNDCPS_GDP	130	0.13933	0.8701
LNDCPS_GDP does not Granger Cause LNGDPCG		8.72090	0.0003
LNFDI does not Granger Cause LNDCPS_GDP	127	3.75201	0.0262
LNDCPS_GDP does not Granger Cause LNFDI		2.63721	0.0756
LNINFL does not Granger Cause LNDCPS_GDP	118	1.05406	0.3519
LNDCPS_GDP does not Granger Cause LNINFL		5.30266	0.0063
LNGFCF does not Granger Cause LNDCPS_GDP	126	0.95832	0.3864
LNDCPS_GDP does not Granger Cause LNGFCF		17.3062	2.00E-07
LNPSAV does not Granger Cause LNDCPS_GDP	119	8.67862	0.0003
LNDCPS_GDP does not Granger Cause LNPSAV		1.34853	0.2637
LNRL does not Granger Cause LNDCPS_GDP	130	12.6351	1.00E-05
LNDCPS_GDP does not Granger Cause LNRL		28.6117	6.00E-11

4.6 Summarization of results

The central question in the dissertation asks how all of the control and the institutional variables are associated with the FS development and how the results differ across different regions and different time periods, hence, before, after the crisis and during the whole time span. In particular, in the sections above are presented the main fidnings and their interpretation, but for the purpose of obtaining more clear conclusion, in the subsections below the main findings regarding each variable separately are summarized.

4.6.1. GDP per capita growth

Regarding the group representing all twenty nine transition economies, GDPCG was negative and significant in the period 2000-2016 and 2008-2016 with causality running from the dependent. Hence, the credit provided to the private secor had negative impact over the GDPCG, which may be due to the limited access to financial services and the degree of banking competition. Regarding the Ex-Soviet countries GDPCG was neative and significant olny for the whole sample period (2000-2016), with causality running again from the dependent variable. In

the case of the Central European countries, GDPCG was negative and significant in the period after the crisis with causality running from DCPS/GDP. Lastly, in the case of South-Eastern countries, GDPCG was negative and signicant during the whole sample period and the period after the crisis, while during the period before the crisis it was positive and significant. The causality again was running from the DCPS/GDP, thus, the efect from the credit provided was positive only in the period 2000-2008, which supports the already existing literature od Arestis et al. (2015).

4.6.2. Inflation

This variable was negative and significant during the whole sample period in the group representing all transition economies, with causality running from the DCPS/GDP. Regarding the Ex-Soviet group it was negative and significant in all of the three periods with causality running from LNINFL. This means that inflation negatively affected the development of all Ex-soviet countries. Similar finding was conluded in the paper of Ozturk and Karagoz (2012) who used ARDL method and cointegration test over the period 1971-2009 and found that inflation negatively affected the FS development in Turkey. Regarding the Central European countires, this variable showed no significant aasociation with the dependent variable. Lastly, in regards to the South-Eastrn economies it was positive and significant in the period before and after the crisis, while during the whole sample period it was negative and significant only in Models 1 and 2. Moreover, it was the DCPS/GDP that had effect over the level of inflation. Hence, the association was both positive and negative and which variable was the causing factor depended on the countries and the time period. For instance, Kim et al. (2010) used Pooled Mean Group estimator for 87 countries during 1960-2005 and found negative long-run and positive shor-run relationship between FS development and inflation.

4.6.3. Gross fixed capital formation

Regarding the all transition economies, GFCF was positive during the whole sample period, the period before and after the crisis with causality running in both directions. Moroever, GFCF was also positive and significant during the three periods for the Ex-Soviet countries. The causality was running from the DCPS/GDP. Positive association between the bank credit and GFCF has

been also detected in the papers of Akpansung and Babalola (2012) and Oluitan (2012). Furthermore, for the Central Europe, this variable was negative and significant only for the period after the crisis, with causality running from GFCF towards the DCPS/GDP. Regarding the South-Eastrn countries it was positive and significant in the period before and after the crisis with causality running from the dependent variable. Hence, the credit provided to the private sector positively affected the GFCF, showing that the crisis did not affect its positive impact.

4.6.4. FDI

FDI showed no significance, thus, no correlation with the FS development in none of the cases, except for the South-Eastern countries in the period before and after the crisis. Nevertheless, the causality was running in two directions, having negative effect in the period after the crisis and positive in the period before the crisis. Thus, the more developed the financial systems, the more attractive it was for foreign firms to invest in the domestic market in the period before the crisis and the bigger the share of the FDI in a country the higher was the level of FS development for the South-Eastern countries. Morck et al. (2005) indicated that FDI is positively correlated with the FS development, socal and political modernization. However, it is apparent that the crisis affected the FDI flows, which may be the reason for the negative association in the period after the crisis. Dornean et al. (2012) used regression and panel data methodology through which he found that the recent crisis indeed affected the FDI flows.

4.6.5. Voice and Accountability

In regards to this variable, there was a significant positive correlation only for the whole sample of countries and for the Ex-Soviet in the period after the crisis (2008-2016), while for the South-Eastern and Central European countries VA was insignificant. Regarding the all transition economies the causality was running in two directions, which showed that the credit provided to the private sector increased the right of the people of express themselves, as well as the level of the people who got empowered to make choices about their own development positively affected the FS in these group of countries. Rgearding the Ex-Soviet countries it was the FS development that positively affected the right of the people to express themselves, to make demands and to have the right to speak up.

4.6.6. Political Stability and Absence of Violence

Strong evidence of insignificance was detected for this variable for the group representing all of the transition economies, the Central Europe and Ex-Soviet countries. Nevertheless, for the South-Eastern group, the LNPSAV was negative and significant in the period before the crisis with causality running towards the LNDCPS/GDP. This indicates that the political instability and the politically motivated violence had negative effect over the FS development during this period. However, this variable was also significant, but positive in the period after the crisis (2008-2016) again with causality running towards the dependent variable. This result shows that during this period it positively affected the FS development or in other words the level of credit provided to the private sector increased.

4.6.7. Government Effectiveness

This variable showed significance in all of the groups, except for the Central Europe. Regarding the group representing all of the 29 transition economies, it was positive and significant for the whole sample period and the period after the crisis, with causality running towards the dependent variable. Taken generally those countries that had well organized and efficiently operating governments positively affected the FS development. In regards to the South-Eastrn group, LNGE was positive and significant for the whole sample period (2000-2016), with causality running from the dependent towards the independent variable. Therefore, in ths group it was the level of domestic credit provided to the private sector that contributed to an increase in the government effectiveness. Lastly, for Ex-Soviet group, the LNGE was positive and significant for the whole sample period with causality running from the LNGEE. Hence, it was the quality of the public and civil service, the credibility of the governments and the good quality policy formulation and practical implication that contibited to an increase in the FS development.

4.6.8. Regulatory quality

The results from running the regressions showed that this variable was significant in all groups except for Central Europe where it was insignificant. Regarding the total sample of countries, it was positive and significant for the whole sample period (2000-2016), before (2000-2008) and after the crisis (2008-2016). The causality was running in two directions which means that for

the countires that formulated and implemented good policies and regulations, the financial systems showed progress. These findings are consistent with the view of Acemoglu, et al (2003) who found that weak and poor institutional quality negatively affects the financial system, while sound and well-formulated quality policies have positive effect. Nevertheless it was also the domestic credit to the private sector that positively affected the formulation of sound policies and regulations. Moreover, RQ was positive and significant for the South-Eastern group of countries for the whole sample period and the period before the crisis, with causality towards the dependent variable. Hence, good policy formulation and regulation positively affected the level of credit provided to the private sector. Lastly, this variable was also positive and significant for the Ex-Soviet group, during the whole sample period and the period 2000-2008, with causality towards the LNRQ. Hence, the amount of credit that these countries provided positively affected their regulatoy quality.

4.6.9. Rule of Law

RL showed positive effect during the three sample periods for the group representing all transition economies, having bidirectional causality. The same scenario stands for the Ex-Soviet countries with causality running from the RL. Regarding the Central European countries, it was positive and significant only in the period after the crisis with causality running form the independen variable. For the South-Eastern countries it was positive and significant during the whole sample period and the period after the crisis, with bidirectional causality. Schleifer and Vishny (1986**)** found that the effectiveness of the legal institutions strongly affects the equity and credit market development.

4.6.10. Control of Corruption

For the overall group of countires this variable was positive and significant in the period before the crisis and during the whole sample period, with causality running from the CC. The same scenario stands for the Ex-Soviet group wih CC again having positive effect on the domestic credit provided to the private sector. For the Central European countries it showed no significant association with the FS development, while for the South-Eastern Europe it was positive and significant during the whole period 2000-2016 with causality running in both directions. These

findings are very interesting because they contradict most of the existing literature, such as the paper of Ahmadm and Ali (2010**),** who used GMM technique for a sample of 38 countries over the period 1995-2005 and found that corruption negatively affects the financial system and that governments should focus more on controlling its level.

4.6.11. Crisis

According to Hua (2013), the impact of the recent financial crisis varies across transition economies because of the different levels of globalization they had at that time and the different degrees of capital inflows. Regarding the association with the dummy variable which represents the 2007 crisis, for all of the four groups it was found that the crisis is significant. Nevertheless, the positive association was detected for the three groups: Ex-Soviet, South-Eastern and All transition economies, with causality running from DCPS/GDP to CRISIS and negative only in Central Europe, with causality running from the CRISIS to DCPS/GDP. Therefore, this may suggest that th coutnries in Ex-Soviet and South-Eastern Europe prvided too much credit which caused the crisis, while in Central Europe it was the crisis that negatively affected the FS development.

Chapter 5: Conclusion

There is an emerging literature focusing on the aspect of good Governance and its importance for creating successful economies with well-developed financial systems. Having a good Governance became inevitable and very important on both macro and micro level (Veganzones et al, 2011). Notwithstanding, financial development is highly influenced by the credit availability and access to various financial instruments. However, the lack of research in regards to the association between the financial system development and the State governance aspects in regards to the transition economies contributed to the creation of thsis thesis because these countries are experiencing rapid growth rate and in the same time are exposed to unique challenges, which makes them to be very interesting area for study.

This thesis examined the association between the FS development and the State Governance aspects for all transition economies in the period 2000-2016. Due to the extensive data and for specifying the results, the countries were divided in four groups Ex-Soviet, Central and South-Eastern Europe, as well as a group representing all of the twenty nine transition countries. The analysis was based on the period before (2000-2008), after the crisis (2008-2016 and for the whole time span (2000-2016). Moreover, for each group six models were built, consisting of four control variables and one institutional variable, which were used to proxy financial system development. It is worth mentioning that all of the data was obtained from the World Bank database and all of the tests were run using the E-views program.

The preliminary step involved the panel unit root test for examining the stationary properties of the data. The results required rejection of the null hypothesis, thus, most of the variables were stationary at level, except for the group of Central Europe, where the variables were stationary at first difference. Furthemore, Hausman test was applied to detect if the regressions should be run with FE or RE. The next steps involved running the regressions and determining the Granger causality among the significant varables and the dependent one.

The main implication of the results indicated consistency with the predictions of the theoretical literature. Since the main focus is on determining the association of the financial system development with the State Governance aspects, the findings showed mixed results. For instance

VA showed significance in the overall group of countries and in the Ex-Soviet in the period after the crisis, with positive effect coming from the DCPS/GDP. This suggests that after the crisis the banks which served as a main provider of credit positively affected the right of the people to speak up and express themselved. For the rest of the countries, no association was detected with the financial system. Moreover, PSAV significant only for the South-Eastern countries and it was negative in the period before the crisis, while it was positive in the period after the crisis. In both cases it was the PSAV that affected the FS development. These findings show that the the crisis affected the political stability and that after 2008 these transition countries focused more on improving it, which later positively affected the amount of credit provided to the private sector. Furthermore, GE was positive and significant in the South-Eastern group during the whole sample and it was the credit provided that positively affected the GE. It was also positive and significant for the Ex-Soviet countries for the period 2000-2016 and it was the GE that positively affected the credit provided to the private sector. For the Overal group of countries it was positive and significant during the whole sample period and the period after the crisis, again with the GE having positive effect on the FS development. In regards to the Central European countries no significant association was detected. The RQ showed no effect in Central Europe, but in the overall group of countries, in the South-Eastern and Ex-Soviet the association was positive. However, the impact was coming from different directions, for instance in the overall group of countries the causality was bidirectional for the three time periods. For the Ex-Soviet countries, the credit to private sector affected the regulatory quality during the whole sample period and the period before the crisis, While for the South-Eastern countries it was the RQ that affected the FS development for the same period as Ex-Soviet group. Additonally, RL was positive and significant in all four groups of countries, with bidirectional causality in the overall group of countries and the South-Eastern Europe and causality running from the independent variable in Central and Ex-Soviet group. The last institutional variable showed no association with the FS development for the Central European countries, while positive asscociation was detected in the rest three groups. Bidirectionl causality was present in the oSouth-Eastern Europe, while positive effect from the CC on the credit provided was detected in the overall group of countries and the Ex-Soviet group in the whole sample period and the period after the crisis.

It can ne concluded that the all of the State Governance variables were positively associated with the FS development for the groups of countires (overall, South-Eastern, Ex-Soviet), except for the PSAV which had negative effect on the DCPS/GDP in South-Eastern Europe. However, in case of the Central Europe none of the variables seemed to have effect on the FS development, except for the RL which positively affected the FS development in the period fter the crisis. Finally in regards to the effect from the crisis only for the Central European countries the crisis had negative effect on the DCPS/GDP, while for the rest three groups, the credit provided created the crisis.

References

Abbey, E. N. (2012) Inflation and financial development: evidence. *American Journal of Economics and Business Administration.* Vol. 4, No. 4, p. 227-236. [Accessed 30th September 2018].

Abzari, M., et al. (2011) Analyzing the link between financial development and foreign direct investment among D-8 group of countries. *International Journal of Economics and Finance*. Vol. 3, p. 148–56. [Accessed 12th October 2018].

Acemoglu, D. and Verdier, T. (2000) The choice between market failures and corruption. *The American Economic Review.* Vol. 90, No. 1, p. 194-211. [Accessed 17th August 2018].

Acemoglu, D., et al. (2003) Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth. *Journal of Monetary Economics.* Vol. 50, p. 49–123. [Accessed 30th October 2018].

Adekunle, K. A. and Aderemi, K. A. (2012) Domestic investment, capital formation and population growth in Nigeria. *Developing Country Studies.* Vol. 2, No. 7, p. 37-46. [Accessed 13th October 2018].

Adsera, A., et al. (2003) Are you being served? Political Accountability and Quality of Government. [online]. *The Journal of Law, Economics & Organization.* Vol. 19, No. 2, p. 445-490. Available from: https://www.princeton.edu/~cboix/JLEO-paper.pdf [Accessed 27th September 2018].

Ahlin, C. and Pang, J. (2008) Are financial development and corruption control substitutes in promoting growth. *Journal of Development Economics.* Vol. 86, No. 2, p. 414-433. [Accessed 9th October 2018].

Ahmad, E. and Malik, A. (2009) Financial sector development and economic growth: an empirical analysis of developing countries. *Journal of Economic Cooperation and Development.* Vol. 30, No. 1, p.17-40. [Accessed 20th September 2018].

Ahmadm N. and Ali, S. (2010) Corruption and financial sector performance: A cross-country analysis. *Economics Bulletin.* Vol. 30, No. 1, p. 303-308. [Accessed 30th October 2018].

Aisen, A. and Veiga, J. (2011) *How does political instability affect economic growth.* [online]. International Monetary Fund. Available from:

https://www.imf.org/en/Publications/WP/Issues/2016/12/31/How-Does-Political-Instability-Affect-Economic-Growth-24570 [Accessed 27th September 2018].

Akosah, N. K. (2013) Dynamics of inflation and financial development: Empirical evidence from Ghana. *Journal of Economics and Sustainable Development.* Vol. 4, No. 15, p. 20-38. [Accessed 15th October 2018].

Akpansung, A. O. and Babalola, S. J. (2012) Banking Sector Credit and Economic Growth in Nigeria: An Empirical Investigation. *CBN Journal of Applied Statistics*. Vol. 2, No. 2, p. 51 -62. [Accessed 30th October 2018].

Akujuobi, A. B. C. and Nwezeaku, N. C. (2015) Bank Lending activities and economic development in Nigeria: an empirical investigation. *International Proceedings of Economics Development and Research.* Vol. 85, p. 57-64. [Accessed 10th September 2018].

Alfaro, L. (2003) *Foreign Direct Investment and Growth: Does the Sector Matter.* [online]. Harvard Business School. Available from: http://www.grips.ac.jp/teacher/oono/hp/docu01/paper14.pdf [Accessed 19th September 2018].

Alfaro, L., et al. (2004) FDI and Economic Growth: The Role of Local Financial Markets. *Journal of International Economics*. Vol. 64, p. 89-112. [Accessed 7th October 2018].

Alimi, R. S. (2014) *Inflaion and financial sector performance: the case of Nigeria.* [online]. Economics Department, Adekunle Ajasin University. Available from: https://mpra.ub.uni-muenchen.de/57180/1/MPRA_paper_57180.pdf [Accessed 30th August 2018].

Allen, F. and Carletti, E. (2009) *An overview of the crisis: causes, consequences and solutions.* [online]. University of Pennsylvania. Available from: http://apps.eui.eu/Personal/Carletti/IRF-Overview-Allen-Carletti-26Nov09-final.pdf [Accessed 1st September 2018].

Almarzoqi, R. M., et al. (2015) *What matters for financial development and stability.* [online]. International Monetary Fund. Available from: https://www.imf.org/external/pubs/ft/wp/2015/wp15173.pdf [Accessed 11th October 2018].

Anthony, O. (2012) Bank Savings and Bank Credits in Nigeria: Determinants and Impact on Economic Growth. *International Journal of Economics and Financial Issues*. Vol. 2, No. 3, p. 357-372. [Accessed 5th October 2018].

Arestis, P., et al. (2015) The financial development and growth nexus: A meta analysis. *Journal of Economic Survey.* Vol. 29, p. 549–565.

Arltova, M. and Fedorova, D. (2016) *Selection of unit root test on the basis of length of the time series and value of AR(1) Parameter.* [online]. Czech Statistical Office. Available from: https://www.czso.cz/documents/10180/32912822/32019716q3047.pdf/09710b90-e1d0-4bb1-816e-5b83faad686b?version=1.0 [Accessed 7th September 2018].

Arndt, C. E. (2009) *Governance Indicators.* [online]. Maastricht University. Available from: https://cris.maastrichtuniversity.nl/portal/files/1700462/guid-aab7a7d4-7c97-4299-941b-be8c692a58bb-ASSET1.0 [Accessed 30th September 2018].

Arslan, U. (2010) The relationship between the Rule of Law and Investment: The case of Turkey. *International research Journal of Finance and Economics.* No. 54, p. 40-52. [Accessed 27th August 2018].

Ayaydin, H. and Baltaci, N. (2013) Corruption, banking sector and stock market development: a panel data analysis. *European Journal of Research on Education.* P. 94-99. [Accessed 1st September 2018].

Ayemere, I. L., et al. (2014) Real sector, gross fixed capital formation and the Nigerian stock market. *European Journal of Business and Management.* Vol. 6, No. 33. [Accessed 21st September 2018].

Aysan, A. F., et al. (2011) *What types of perceived Governance Indicators matter the most for private investments in Middle East and North Africa.* [online]. HAL-SHS website. Available from: https://halshs.archives-ouvertes.fr/halshs-00556940/document [Accessed 21st August 2018].

Barbieri, L. (2006) *Panel Unit Root Tests: A Review.* [online]. Catholic University of Sacred Heart. Available from: https://www.researchgate.net/publication/252756953_Panel_Unit_Root_Tests_A_Review [Accessed 19th September 2018].

Bardhan, P. (1997) Corruption and development: a review of issue. *Journal of Economic literature.* Vol. 35, No. 3, p.1320-1346. [Accessed 28th October 2018].

Bartole, S., et al. (2016) *The Rule of Law checklist.* [online]. Council of Europe. Available from: https://www.venice.coe.int/images/SITE%20IMAGES/Publications/Rule_of_Law_Check_List.pdf [Accessed 11th October 2018].

Basu, K. (2011) *Understanding inflation and controlling it.* [online]. Cornell University. Available from: http://kaushikbasu.org/Inflation%20-%20Gautam%20Mathur%20lecture%2014.pdf[Accessed 13th October 2018].

Bayar, Y. (2016) *Public governance and financial development in Central and Eastern European countries.* [online]. Faculty of Economics and Administrative Sciences, Usak University. Available from: http://www.ekof.bg.ac.rs/wp-content/uploads/2014/10/Bajar.pdf [Accessed 22nd Augst 2018].

Bayar, Y. (2017) *Public Governance and financial development in Central and Eastern European countries*. [online]. Faculty of Economics and Administrative Sciences, Department of Economics, Usak University. Available from: http://www.ekof.bg.ac.rs/wp-content/uploads/2014/10/Bajar.pdf [Accessed 21st August 2018].

Bayar, Y. and Dan Gavriletea, M. (2018) Foreign direct investment inflows and financial development in Central and Eastern European Union countries: A Panel cointegration and causality. *International Journal of Financial Studies.* Vol. 6, No. 55. [Accessed 27th August 2018].

Bayers and Pearson (2017) *Why do we log variables in regression model.* [online]. Quora website. Available from: http544yyys://www.quora.com/Why-do-we-log-variables-in-regression-model [Accessed 23rd September 2018].

Beck, T. and Levine, R. (2003) *Legal Institutions and Financial Development.* [online]. The World Bank. Available from: http://siteresources.worldbank.org/DEC/Resources/bl.pdf [Accessed 17th September 2018].

Beck, T. and Levine, R. (2004) *Legal institutions and financial development.* [online]. National Bureau of Economic Research. Available from: https://www.nber.org/papers/w10417.pdf [Accessed 17th September 2018].

Beck, T., et al. (2006) Bank supervision and corruption in lending. *Journal of Monetary Economics*. Vol. 53, No. 8, p. 2131-2163. [Accessed 24th October 2018].

Beck, T., et al. (2012) Who gets the credit? And does it matter? Household vs. firm lending across countries. *The BE Journal of Macroeconomics*. Vol. 12. [Accessed 23rd September 2018].

Bell, A. and Jones, K. *Explaining fixed effects: random effects modelling of time-series cross-sectional and panel data.* [online]. School of Geographical Sciences, University of Bristol.

Available from: http://psych.colorado.edu/~westfaja/FixedvsRandom.pdf [Accessed 7th October 2018].

Berglof, E and Bolton, P. (2002) The great divide and beyond: financial architecture in transition. *The Journal of Economic Perspectives.* Vol. 16, No. 1, p. 77-100. [Accessed 4th October 2018].

Bird, R. M., et al. (2008) Tax effort in developing countries and high income countries : The impact of corruption, Voice and Accountability. *Economic analysis and Policy.* Vol. 38, No. 1, p. 55-71. [Accessed 1st August 2018].

Bongini, P., et al. (2017) Financial development and economic growth: the role of foreign-owned banks in CESEE countries. *Sustainability Journal.* Vol. 9, No. 335. [Accessed 24th October 2018].

Bonin, J. and Wachtel, P. (2002) *Financial sector development in transition economies: Lessons from the first decade.* [online]. Bank of Finland, Institute for Economies in Transition, BOFIT. No. 9. Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1015704 [Accessed 15th September 2018].

Boyd, J. H., et al. (2001) The impact of inflation on financial sector performance. *Journal of Monetary Economics.* Vol. 47, No. 2, p. 221-248. [Accessed 21st October 2018].

Brewer, G. and Choi, Y. (2007) Toward a Performing Public Sector: A Cross-Country Study of Democracy's Impact on Government Performance. International Research Society for Public Management, Potsdam, Germany. [Accessed 2nd October 2018].

Broadman, H., et al. (2002) Corruption and Policy: Back to the Roots. *Journal of Policy Reform*. Vol. 5, No. 1, p. 37-49 [Accessed 27th October 2018].

Brooks, C. (2008) *Introductory econometrics for finance*. 2nd Edition. New York: Cambridge University Press.

Brown, S. (2011) *Measure of shape: skewness and kurtosis.* [online]. Oak Road Systems. Available from: http://web.ipac.caltech.edu/staff/fmasci/home/astro_refs/SkewStatSignif.pdf [Accessed 6th September 2018].

Brunetti, A. and Weder, B. (1999) More Open Economies Have Better Governments. *Economic Series*. No. 9905. [Accessed 9th October 2018].

Cameron, A. C. and Windmeijer, F. A. G. (1995) An R-squared measure of goodness of fit for some common nonlinear regression models. [online]. University of California USA. Available from: http://old.econ.ucdavis.edu/faculty/cameron/research/je97preprint.pdf [Accessed 25th September 2018].

Campos, N. F. and Nugent, J. B. (2000) Who is afraid of political instability. *Journal of Development Economics.* Vol. 226, p. 1-29. [Accessed 4th October 2018].

Caporale, G. M., et al. (2014) Financial development and economic growth: evidence from ten new EU Members. [online]. IZA website. Available from: ftp://repec.iza.org/RePEc/Discussionpaper/dp8397.pdf [Accessed 18th September 2018].

Cappiello, L., et al. (2010) Do Bank Loans and Credit Standards have an Effect on Output? A Panel Approach for the Euro Area. ECB Working Paper Series, No. 1150. [Accessed 25th September 2018].

Chan, S. G. and Karim, M. Z. A. (2014) *Financial market regulation, country governance and bank efficiency: Evidence from East Asian countries.* [online]. Contemporary Economics. Available from: file:///C:/Users/Mila/Downloads/433.pdf [Accessed 15th October 2018].

Chee, Y. L. and Nair, M. (2010) The impact of FDI and financial sector development on economic growth: empirical evidence from Asia and Oceania. [online]. *International Journal of Economics and Finance.* Vol. 2, No. 2. [Accessed 21st September 2018].

Chenard, K., et al. (2005) *Does regulatory Governance matter for financial system stability. An empirical analysis.* [online]. Pennstate, College of Information Sciences and Technology. Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.182.1421&rep=rep1&type=pdf [Accessed 25th September 2018].

Chêne, M. (2014) *The impact of corruption on growth and inequality*. [online]. Transparency International. Available from: https://www.transparency.org/whatwedo/answer/the_impact_of_corruption_on_growth_and_inequality [Accessed 3rd October 2018].

Cihak, M. and Tieman, A. (2008) *Quality of financial sector regulation and supervision around the world.* [online]. Available from: https://www.imf.org/external/pubs/ft/wp/2008/wp08190.pdf [Accessed 25th September 2018].

Clarke, P., et al. (2010) *The choice between fixed and random effects models: some considerations for educational research.* [online]. University of London. Available from: http://ftp.iza.org/dp5287.pdf [Accessed 25th September 2018].

Cojocaru, L., et al. (2012) *Financial development and Economic Growth in Transition Economies: Empirical Evidence from the CEE and CIS countries.* [online]. Alfred Lerner College of Business & Economics. Available from: https://lerner.udel.edu/sites/default/files/ECON/PDFs/RePEc/dlw/WorkingPapers/2011/UDWP2011-22_0.pdf [Accessed 19th September 2018].

Cooray, A. (2011) *The role of government in financial sector development.* [online]. University of Wollongong. Available from: https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1963&context=commpapers [Accessed 8th September 2018].

Damanski, C. (2010) *Properties of Jarque-Bera test.* [online]. University of Lodz. Available from: http://dspace.uni.lodz.pl:8080/xmlui/bitstream/handle/11089/340/75-86.pdf?sequence=1 [Accessed 10th September 2018].

Dan, L. and Ferreira, M. P. (2011) Institutional environment and firms' sources of financial capital in Central and Eastern Europe. *Journal of Business Research.* Vol. 64, No. 4, p. 371-376. [Accessed 10th September 2018].

Das, U.S., et al. (2004) *Does Regulatory Governance matter for financial system stability? An empirical analysis.* [online]. International Monetary Fund. Available from: https://books.google.mk/books?hl=en&lr=&id=o6GQZggpi8cC&oi=fnd&pg=PA4&dq=financial+system+development+empirical+analysis+pdf&ots=9n-avQj_zk&sig=bJtP1tSbI0afwscf5ubz_C9C6z4&redir_esc=y#v=onepage&q&f=false [Accessed 6th October 2018].

Davidson, A. (2008) *Too much of a good thing.* [online]. The Guradian. Available from: https://www.theguardian.com/commentisfree/2008/sep/25/creditcrunch.wallstreet [Accessed 28th October 2018].

Dawson, P.J. (2003) Financial development and growth in economies in transition. *Applied Economic Letter.* Vol. 10, p. 833–836. [Accessed 23rd October 2018].

De, P. (2009) *Governance, Institutions and Regional infrastructure in Asia.* [online]. Asian Development Bank Institute. Available from:

https://www.adb.org/sites/default/files/publication/156038/adbi-wp183.pdf [Accessed 29th August 2018].

Dembiermont, C., et al. (2013) *How much does the private sector really borrow? A new database for total credit to the private non-financial sector.* [online]. BIS Quarterly Review. Available from: https://www.bis.org/publ/qtrpdf/r_qt1303h.pdf [Accessed 29th August 2018].

Demirguc-Kunt, A. (2008) *Finance and Economic Development: The Role of Government*. [online]. The World Bank. Available from: http://siteresources.worldbank.org/DEC/Resources/Finance_and_Economic_Development.pdf [Accessed 25th September 2018].

Demirguc-Kunt, A. and Maksimovic, V. (1998) Law, Finance, and Firm Growth. *Journal of Finance.* Vol. 53, p. 2107-2137. [Accessed 23rd October 2018].

Demirgüç-Kunt, A., et al. (2008) Banking on the principles: Compliance with Basel Core Principles and bank soundness. *Journal of Financial Intermediation.* Vol. 17, No. 4, p. 511–542. [Accessed 1st October 2018].

Dhungana, N. T. (2017) Effect of Bank lending on inflation in Nepal. *Journal of advanced academic research (JAAR).* Vol. 4, No. 2, p. 27-43. [Accessed 27th September 2018].

Dima, B., et al. (2017) Does rule of law support the capital market. *Journal of Economic Research.* Vol. 31, No. 1, p. 461-479. [Accessed 5th October 2018].

Dingela, S. and Khobai, H. (2017) *Dynamic impact of money aupply on economic growth in South Africa. An ARDL approach.* [online]. Nelson Mandela University. Available from: https://mpra.ub.uni-muenchen.de/82539/1/MPRA_paper_82539.pdf [Accessed 16th October 2018].

Dornean, A., et al. (2012) The impact of the recent global crisis on Foreign Direct Investment. Evidence from Central and Eastern European countries. *Procedia Economics and Finance.* Vol. 3, p. 1012-1017. [Accessed 16th October 2018].

Dragos, C., et al. (2009) *Public and Financial Institutions in Transition Economies: An Overview and Recent Evidences from Central and Eastern Europe.* [online]. University of Primorska. Available from: http://www.fm-kp.si/zalozba/ISSN/1581-6311/7_147-170.pdf [Accessed 16th September 2018].

Dudian, M. and Popa, R. A. (2013) Financial development and economic growth in Central and Eastern Europe. *Theoretical and Applied Economics.* Vol. 20, No. 8, p.59-68. [Accessed 29th September 2018].

Egert, B., et al. (2006) Credit growth in central and eastern Europe new (over)shooting stars. *ECB Working Paper Series.* No. 687 [Accessed 10th September 2018].

Emecheta, B. C. and Ibe, R. C. (2014) Impact of Bank Credit on Economic Growth in Nigeria: Application of Reduced Vector Autoregressive (VAR) Technique. *European Journal of Accounting Auditing and Finance Research.* Vol. 2, No. 9, p. 11-2. [Accessed 25th October 2018].

Emilian, C. and Pop, A. (2015) The influence of lending activity on economic growth in Romania. *Theoretical and Applied Economics.* Vol. 22, No. 4, p. 229-236. [Accessed 17th August 2018].

Erzen, S. (2008) *The determinants of financial system development and private sector credits: Evidence from Panel data.* [online]. Middle East Technical University. Available from: https://etd.lib.metu.edu.tr/upload/12610098/index.pdf [Accessed 19th September 2018].

Eugene, I. (2017) Long-run dynamics of economic growth, gross fixed capital formation and financial sector development: an ARDL analysis. *Journal of Finance, Banking and Investment.* Vol. 4, No. 1. [Accessed 21st September 2018].

Fenghua, S. and Thakor, A. (2013) Notes on financial system development and political intervention. [online]. *World Bank Economic Review.* Vol. 27, No. 3, p. 491-513. Business Source Complete, EBSCO*host.* [Accessed 10th October 2018].

Fereidouni, H. G., et al. (2011) The effects of FDI on Voice and Accountability in the MENA region. *International Journal of Social Economics.* Vol. 38, No. 9, p. 802-815. [Accessed 22th September 2018].

Filipovic, S. and Miljkovic, M. (2014) Transition economies during global economic crisis: A difference in differences approach. *Industrija.* Vol. 42, No. 3, p. 23-39. [Accessed 22th September 2018].

Fink, G., et al. (2008) Contribution of financial market segments at different stages of development: Transition, cohesion and mature economies compared. *Journal of Financial Stability.* Vol. 5, p. 431–455. [Accessed 10th September 2018].

Firtescu, B. (2012) Causes and effects of crises on financial system stability in emerging countries. *Journal of Economics and Finance.* Vol. 3, p. 489-495. [Accessed 29th October 2018].

Fitrianto, A. and Musakkal, N. F. K. (2015) Panel data analysis for sabah construction industries: choosing the best model. [online]. *Procedia Economics and Finance.* Vol. 35, p. 241-248. [Accessed 7th October 2018].

Focuseconomics (2017) *What is GDP per capita?* [online]. Focus economics website. Available from: https://www.focus-economics.com/economic-indicator/gdp-per-capita [Accessed 12th October 2018].

Froot, K. A. (1993) *Foreign Direct Investment.* [online]. The National Bureau of Economics Research. Available from: https://www.nber.org/chapters/c6531.pdf [Accessed 13th October 2018].

Furceri, D. and Zdzienicka, A. (2010) The real effect of financial crises in the European transition economies. *Economics of Transition.* Vol. 19, No. 1. [Accessed 21st September 2018].

Gal, Z. (2011) *The 2007-2009 financial crisis, What went wrong and what went different*. [online]. Comenius University in Bratislava. Available from: https://fphil.uniba.sk/fileadmin/fif/veda/centra_ex_akad_siete/cesiuk/politicka_dimenzia/Monografie_Gal.pdf [Accessed 4th October 2018].

Garcia-Sanchez, et al. (2013) Determinants of government effectiveness. *International Journal of Public Administration.* Vol. 36, No. 8. [Accessed 25th August 2018].

Gebrehiwot, A., et al. (2016) The relationship between FDI and financial sector development: The case of sub-Saharan African region. *International Journal of Regional Development.* Vol. 3, p. 64–80. [Accessed 13th October 2018].

Geyfman, V. (2014) The effect of economic and financial system development on banks' listing decisions: evidence from transition economies. [online]. *Emerging markets finance & trade.* Vol. 50, No. 6, p. 174-192. Business Source Complete. EBSCO*host.* [Accessed 19th September 2018].

Goldsmith, R.W. (1969) Financial Structure and Development. New Haven, CT, Yale University Press. [Accessed 12th September 2018].

Gomez, L. (2016) *How does rule of law affect firm performance? Comparing the effect of rule of law in companies located in countries with different level of development.* [online]. Tilburg

University. Available from: http://arno.uvt.nl/show.cgi?fid=142033 [Accessed 10th October 2018].

Grindle, M. S. (2010) *Good Governance: The inflation of an idea*. [online]. CID Working Papers. No. 202. Available from: https://www.hks.harvard.edu/sites/default/files/centers/cid/files/publications/faculty-working-papers/202.pdf [Accessed 3rd October 2018].

Groen, J. J. (2004) Corporate credit, stock price inflation and economic fluctuations. *Journal of Applied Economics.* Vol. 36, No. 18, p. 1995-2006. [Accessed 26th September 2018].

Haggard, S. and Tiede, L. (2011) The rule of law and economic growth: where are we. *Journal of World Development.* Vol. 39, No. 5, p. 673-685. [Accessed 22nd August 2018].

Han, X., et al. (2014) *Do Governance Indicators explain development performance? A cross-country analysis.* [online]. ADB Economics Working Paper Series. No. 417. Available from: https://www.adb.org/sites/default/files/publication/149397/ewp-417.pdf [Accessed 3rd August 2018].

Harper, J. and McNulty, J. (2008) Financial system size in transition economies: the effect of legal origin. [online]. *Journal of money, credit & banking.* Vol. 40, No. 6, p. 1263-1280. Business Source Complete, EBSCO*host.* [Accessed 7th September 2018].

Hauner, D. (2006) *Fiscal Policy and Financial development.* [online]. International Monetary Fund. Available from: https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Fiscal-Policy-and-Financial-Development-18776 [Accessed 18th September 2018].

Hausmann, R., et al. (2005) Growth accelerations. *Journal of Economic Growth,* Vol. 10, No. 4, p. 303-329. [Accessed 2nd October 2018].

Hoffman, S., et al. (2011) *Financial development and economic growth: Empirical evidence from the CEE and CIS countries.* [online]. University of Delaware. Available from: https://lerner.udel.edu/sites/default/files/ECON/PDFs/RePEc/dlw/WorkingPapers/2011/UDWP2011-22.pdf [Accessed 30th August 2018].

Hook, S. L. and Azman-Saini, W. N. W. (2008) *The quality of institutions and financial development.* [online]. University Putra Malaysia. Available from: https://mpra.ub.uni-muenchen.de/12107/1/MPRA_paper_12107.pdf [Accessed 19th October 2018].

Hsiao, C. (2000) Panel data analysis-advantages and challenges. [online]. *Sociedad de Estadistica e Investigacion Operativa.* P. 1-63. Available from: https://www.uio.no/studier/emner/sv/oekonomi/ECON5103/v10/undervisningsmateriale/PDAppl_14.pdf [Accessed 5th October 2018].

Hua, Q. (2013) *Corruption and economic growth in transition economies.* [online]. University of Missouri-Columbia. Available from: https://mospace.umsystem.edu/xmlui/bitstream/handle/10355/43141/research.pdf?sequence=2&isAllowed=y [Accessed 21st August 2018].

Huang, Y. (2010) *Determinants of financial development.* [online]. University of Cambridge. Available from: file:///C:/Users/Mila/Downloads/392749%20(1).pdf [Accessed 6th October 2018].

Huntington, S. P. (1968) *Political order in changing societies.* [online]. New Haven and London, Yale University Press. Available from: https://projects.iq.harvard.edu/gov2126/files/huntington_political_order_changing_soc.pdf [Accessed 3rd October 2018].

Indexmundi website (2015) *Domestic credit to private sector (% of GDP).* [online]. Indexmundi website. Available from: https://www.indexmundi.com/facts/indicators/FS.AST.PRVT.GD.ZS [Accessed 11th October 2018].

Inoguchi, T. (2002) *Voice and Accountability: The Media and the Internet in Democratic Development.* [online]. University of Tokyo. Available from: http://hdr.undp.org/sites/default/files/inoguchi_2002.pdf [Accessed 24th September 2018].

Iwanicz-Drozdowska, M. and Witkowski, B. (2016) Determinants of Banks Performance: the case of ROE of G-SIBs in Central, Eastern and South-Eastern Europe. *Journal of Management and Business Administration.* Vol. 24, No. 1, p. 46-63. [Accessed 25th October 2018].

Jaggi, S. (2010) *Descriptive statistics and exploratory data analysis.* [online]. Indian Agricultural Statistics Research Institute. Available from: http://iasri.res.in/design/ebook/EB_SMAR/e-book_pdf%20files/Manual%20II/1-Descriptive%20Statistics.pdf [Accessed 20th September 2018].

Jeremic, V., et al. (2012) *Emerging trends in the development and application of composite indicators.* [online]. IGI Global website. Available from: https://books.google.mk/books?id=GBwRDQAAQBAJ&pg=PA220&lpg=PA220&dq=Kaufmann,+D.,+Kraay,+A.,+%26+Mastruzzi,+M.+(2011).+The+Worldwide+Governance+Indicators:+M

ethodology+and+Analytical+Issues.+Hague+Journal+on+the+Rule+of+Law,+3(2),+220-246.+doi:10.1017/S1876404511200046&source=bl&ots=hU1vTMthxC&sig=cKHUv_rhgWVkHsl2HPVYQuUyM5Y&hl=en&sa=X&ved=2ahUKEwjCxcyLytTdAhWIBywKHczlDcYQ6AEwBHoECAYQAQ#v=onepage&q&f=false [Accessed 10th October 2018].

Jianu, I. (2017) The impact of private sector credit on income inequalities in European Union. *Theoretical and Applied Economics.* Vol. 24, No. 2, p. 61-74. [Accessed 23rd September 2018].

Julilian, H., et al. (2007) The impact of regulation on economic growth in developing countries: A cross-country analysis. *Journal of World Development.* Vol. 35, No. 1, p. 87-103. [Accessed 17th September 2018].

Kabir, S. H. and Hoque, H. A. A. B. (2007) Financial Liberalization, Financial Development and Economic Growth: Evidence from Bangladesh. *Savings and Development*. Vol. 31, No. 4, p. 431-448. [Accessed 7th October 2018].

Karaki, M. S. A. (2015) *The impact of bank lending on economic growth: empirical analysis from Palestine.* [online]. Hebron University. Available from: https://www.mobt3ath.com/uplode/book/book-18056.pdf [Accessed 7th October 2018].

Kaufmann and Zoído-Lobatón, P. (2002) Governance Matters II – Updated Indicators for 2000/01. *World Bank Policy Research Department Working Paper*. No. 2772. [Accessed 27th October 2018].

Kaufmann, D. (2010) *The Worldwide Governance indicators: Methodology and Analytical issues.* [online]. The World Bank. Available from: http://info.worldbank.org/governance/wgi/pdf/wgi.pdf[Accessed 29th September 2018].

Kaufmann, D., et al. (2000) Governance Matters from measurement to action. *Journal of Finance and Development.* P. 10-13. [Accessed 18th August 2018].

Keho, Y., (2009) Inflation and financial development: Cointegration and causality analysis for the UEMOA Countries. *International reseach Journal of Finance and Economics*. Vol. 1, p. 118-123. [Accessed 10th October 2018].

Kim, D., et al. (2010) Dynamic Relationship Between Inflation And Financial Development. *Macroeconomic Dynamics*. Vol. 14, No. 3, p. 343-364. [Accessed 30th October 2018].

Klomp, J. and Haan, J. (2015) Bank regulation and financial fragility in developing countries: Does bank structure matter. *Review of Development Finance.* Vol. 5, No. 2, p. 82-90. [Accessed 4th October 2018].

Kock, N. and Gaskins, L. (2014) The Mediating role of Voice and Accountability in the relationship between internet diffusion and Government Corruption in Latin America and Sub-Saharan Africa. *Information Technology for Development.* Vol. 20, No. 1, p. 23-43. [Accessed 12th September 2018].

Koivu, T. (2002) Do Efficient Banking Sectors Accelerate Economic Growth in Transition Countries. [online]. BOFIT Discussion Paper. Bank of Finland. Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1015710 [Accessed 1st September 2018].

Kraay, A. and Mastruzzi, M. (2010) *The Worldwide Governance indicators.* [online]. The World Bank. Available from: http://info.worldbank.org/governance/wgi/pdf/wgi.pdf [Accessed 10th August 2018].

Kupolusi, J. A., et al. (2015) Comparative Analysis of Least Square Regression and fixed effect panel data regression using road traffic accident in Nigeria. *International Journal of Scientific & Technology research.* Vol. 4, No. 1, p. 1-11. [Accessed 29th August 2018].

La Porta, L., et al. (1999) The Quality of Government. *The Journal of Law, Economics, and Organization*, Vol. 15, No. 1, p. 222-279. [Accessed 23rd October 2018].

La Porta, R. et al. (1998) Law and Finance. *Journal of Political Economy.* Vol. 106, No. 6. [Accessed 25th October 2018].

La Porta, R., et al. (1997) Legal Determinants of External Finance. *Journal of Finance*. Vol. 11, p. 1131-1150. [Accessed 12th September 2018].

Lau, C. K. M., et al. (2013) Experience-based corporate corruption and stock market volatility: evidence from emerging market. *Emerging Markets Review.* Vol. 17, p. 1-13. [Accessed 1st September 2018].

Law, S. H. and Azman-Saini, W. N. W. (2012) Institutional quality, governance and financial development. *Economics of Governance.* Vol. 13, No. 3, p. 217-236. [Accessed 1st October 2018].

Leff, N. H. (1964) Economic development through bureaucratic corruption. [online]. *American Behavioral Scientist.* Available from: http://journals.sagepub.com/doi/10.1177/000276426400800303 [Accessed 11th September 2018].

Levine, R. (1998) The Legal Environment, Banks and Long-run economic growth. *Journal of Money, Credit and Banking.* Vol. 30, No. 3. [Accessed 20th October 2018].

Levine, R. (2001) *Legal theories of financial development.* [online]. University of Minnesota. Available from: https://www.researchgate.net/publication/5216147_Legal_Theories_of_Financial_Development [Accessed 17th September 2018].

Levine, R. and Zervos, S. (1998) Stock Markets Banks and Economic Growth. *American Economic Review.* Vol. 88, p. 537-588. [Accessed 23rd October 2018].

Liang, H., et al. (2015) Bank market concentration, relationship banking and small business liquidity. [online]. *Sage Journals.* Available from: http://journals.sagepub.com/doi/pdf/10.1177/0266242615618733 [Accessed 5th October 2018].

Louangrath, P. (2015) *Is it important to run stationarity (Unit root) test for Panel data.* [online]. Bangkok University. Available from: https://www.researchgate.net/post/Is_it_important_to_run_Stationarity_Unit_root_test_for_Panel_data [Accessed 27th August 2018].

Lu, S. F. and Yao, Y. (2009) The effectiveness of law, financial development and economic growth in an economy of financial repression: evidence from China. *Journal of World Development.* Vol. 37, No. 4, p.763-777. [Accessed 20th August 2018].

Maddala, G. S. and Wu, S. (1999) *A comparative study of unit root tests with panel data and a new simple test.* [online]. Oxford Bulletin of Economics and Statistics. Available from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/1468-0084.0610s1631 [Accessed 19th September 2018].

Mamatzakis, E. and Hu, W. (2014) *Does regulation improve bank performance in South and East Asia.* [online]. University of Sussex. Available from: https://mpra.ub.uni-muenchen.de/60258/1/MPRA_paper_60193.pdf [Accessed 8th October 2018].

Mandiefe, P. S. (2015) *The impact of financial sector development on economic growth: analysis of the financial development gap between Cameroon and South Africa.* [online]. University of

Yaounde. Available from: https://mpra.ub.uni-muenchen.de/64694/1/MPRA_paper_64694.pdf [Accessed 23th August 2018].

Margolis, J. E. (2010) Understanding political stability and instability. *Civil Wars Journal.* Vol. 12, No. 3. [Accessed 19th October 2018].

MCC (2017) (1) *Regulatory quality indicator.* [online]. Millenium Challenge Corporation. Available from: https://www.mcc.gov/who-we-fund/indicator/regulatory-quality-indicator [Accessed 15th September 2018].

MCC (2017) (2) Control of Corruption Indicator. [online]. Millenium Challenge Corporation. Available from: https://www.mcc.gov/who-we-fund/indicator/control-of-corruption-indicator [Accessed 20th September 2018].

MCC (2018) *Government Effectiveness Indicator.* [online]. MCC website. Available from: https://www.mcc.gov/who-we-fund/indicator/government-effectiveness-indicator [Accessed 20th October 2018].

Mendonca, H. F. D. and Fonseca, A. O. D. (2012) Corruption, income and rule of law: empirical evidence from developing and developed economies. *Brazilian Journal of Political Economy.* Vol. 32, No. 2, p. 305-314. [Accessed 17th September 2018].

Merryman, J. H. (1985) The Civil Law Tradition: An Introduction to the Legal Systems of Western Europe and Latin America. *Stanford, CA: Stanford University Press*. [Accessed 17th September 2018].

Merton, R. C. (1990) The Financial system and Economic Performance. *Journal of Financial Services Research.* P.263-300. [Accessed 14th September 2018].

Mo, P. H. (2001) Corruption and Economic Growth. *Journal of Comparative Economics.* Vol. 29, No. 1, p. 66-79. [Accessed 17th October 2018].

Morck, R., et al. (2005) Corporate governance, economic entrenchment and growth. *Journal of Economic Literature.* Vol. 43, No. 3, p. 655-720. [Accessed 17th October 2018].

Mouselli, S., et al. (2016) Corruption and Stock market development: new evidence from GCC countries. [online]. *Business Theory and Practice.* Vol. 17, No. 2, p. 117-127. [Accessed 25th October 2018].

Nam G. (2009) Developing countries and countries in transition: gender inequality, corruption, inadequate conditions and suggested implementation for effective change in education. [online]. University of Utah. Available from: https://elp.utah.edu/_documents/programs/med/developing-countries-galina-nam-2.pdf [Accessed 28th August 2018].

Ndlovu, G. (2013) Financial sector development and economic growth: evidence from Zimbabwe. *International Journal of Economics and Financial Issues.* Vol. 3, No. 2, p. 435-446. [Accessed 5th October 2018].

Nilsson, L. (2014) *Borrow more and promote economic growth? A Granger causality analysis.* [online]. School of Economics and management Department of Economics, Lund University. Available from: http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=4611915&fileOId=4611923 [Accessed 9th September 2018].

Nkoro, E. and Uko, A. K. (2013) Financial sector development-economic growth nexus: empirical evidence from Nigeria. *American International Journal of Contemporary Research.* Vol. 3, No. 2, p. 87-94. [Accessed 30th August 2018].

Nuti, D. M. (2009) The impact of the global crisis on transition economies. *EconPapers.* Vol. 54, No. 181, p. 7-20. [Accessed 21st September 2018].

O'Brien, R. and Patacchini, E. (2006) *The Hausman test for correlated effects in Panel data models under misspecification.* [online]. Faculty of Statistics, University of Rome, La Sapienza. Available from: http://econwkshop.pbworks.com/f/obrienpatac1206.pdf [Accessed 17th September 2018].

OECD (2002) *Foreign Direct Investment for Development.* [online]. OECD website. Available from: https://www.oecd.org/investment/investmentfordevelopment/1959815.pdf [Accessed 14th October 2018].

Oluitan, R. O. (2012) Bank Credit and Economic Growth: Evidence from Nigeria. *International Business and Management.* Vol. 5, No. 2, p. 102-110. [Accessed 30th October 2018].

Omankhanlen, A. E. (2012) The role of banks in capital formation and economic growth: The case of Nigeria. *Economy Transdisciplinarity Cognition.* Vol. 15, No. 1, p. 103-111. [Accessed 19th October 2018].

Omondi, O. G. (2014) *Effects of inflation on commercial banks' lending: A case of Kenya commercial bank limited.* [online]. United States International University Africa. Available from:

http://erepo.usiu.ac.ke/bitstream/handle/11732/139/GEORGE%20OMONDI%20OPUODHO%20.pdf?sequence=1&isAllowed=y [Accessed 27th September 2018].

Outreville, J. F. (1999) *Financial development, human capital and political stability.* [online]. United Nations, Geneva. Available from: http://unctad.org/en/Docs/dp_142.en.pdf [Accessed 1st September 2018].

Ozkan, S., et al. (2014) Effect of banking regulation on performance: evidence from Turkey. *Journal* of *Emerging market Finance and Trade.* Vol. 50, No. 4, p.196-211. [Accessed 24th October 2018].

Ozturk, N. and Karagoz, K. (2012) Relationship Between Inflation and Financial Development: Evidence from Turkey. *Journal of Alanya Faculty of Business.* Vol. 4, No. 2, p. 81-87 [Accessed 30th October 2018].

Paisouras, F., et al. (2006) The impact of bank regulations, supervision, market structure and bank characteristics on individual bank ratings: A cross-country analysis. *Review of Quantitative Finance and Accounting.* Vol. 27, No. 4, p.403-438. [Accessed 25th October 2018].

Pasiouras, F., et al. (2009) The impact of banking regulations on Bank's cost and profit efficiency: Cross-country evidence. *International Review of Financial Analysis*. Vol. 18, No. 5, p. 294-302. [Accessed 27th October 2018].

Pastor, L. and Veronesi, P. (2012) Uncertainty about government policy and stock prices. *The Journal of Finance.* Vol. 67, No. 4. [Accessed 25th October 2018].

Paul, R. K. (2004) *Multicollinearity: causes, effects and remedies.* [online]. ICAR-Indian Agricultural Statistics Research Institute. Available from: http://www.iasri.res.in/seminar/AS-299/ebooks%5C2005-2006%5CMsc%5Ctrim2%5C3.%20Multicollinearity-%20Causes,Effects%20and%20Remedies-Ranjit.pdf [Accessed 14th September 2018].

Petkovski, M. and Kjosevski, J. (2014) Does banking sector development promote economic growth? An empirical analysis for selected countries in Central and South Eastern Europe. *Economic Research.* Vol. 27, No. 1, p. 55-66. [Accessed 25th October 2018].

Pettinger, T. (2016) *Gross Fixed capita formation.* [online]. Economicshelp website. Available from: https://www.economicshelp.org/blog/6536/economics/gross-fixed-capital-formation/ [Accessed 15th October 2018].

Quintyn, M., et al. (2004) *Does Regulatory Governance matter for financial system stability.* [online]. International Monetary Fund. Available from: https://books.google.mk/books?hl=en&lr=&id=o6GQZggpi8cC&oi=fnd&pg=PA4&dq=financial+system+development+and+state+governance+aspects&ots=9n-buUk-ui&sig=Tejw9wfMs0jdPeV2RBOvA9MStQQ&redir_esc=y#v=onepage&q&f=false [Accessed 14th August 2018].

Rajan, R. G. and Zingales, L. (2003) The Great Reversals: The Politics of Financial development in the twentieth century. *Journal of Financial Economics.* Vol. 69, p. 5-50. [Accessed 22nd September 2018].

Reichstul, D. and Lima, G. T. (2006) Causalidade entre crédito bancário e nível de atividade na Região Metropolitana de São Paulo: algumas evidências empíricas. *Estudos Econômicos*. Vol. 36, No. 4, p. 779-801. [Accessed 11th September 2018].

Roe, M. J. and Siegel, J. I. (2011) Political instability: effects on financial development, roots in the severity of economic inequality. *Journal of Comparative Economics.* Vol. 39, No. 3, p. 279-309. [Accessed 22nd September 2018].

Rose, R. and Shin, D. C. (2001) Democratization Backwards: The problem of Third-Wave democracies. *British Journal of Political Science.* Vol. 31, No. 2, p. 331-354. [Accessed 25th August 2018].

Ruohonen, K. (2011) *Statistics 1.* [online]. Department of Mathematics. Available from: http://math.tut.fi/~ruohonen/S_1.pdf [Accessed 5th September 2018].

Sarkar, P. (2009) *Does credit expansion matter for growth.* [online]. Jadavpur University. Available from: https://sas-space.sas.ac.uk/3423/1/Sarkar,Prabirjit-credit-growth.pdf [Accessed 25th September 2018].

Schleifer, A. and Vishny, R. W. (1986) Large shareholders and corporate control. *Journal of Political Economy.* Vol. 96, No. 3, p. 461-488.

Schnatter, S. F. (2013) *Dummy Variables.* [online]. University of Vienna. Available from: http://statmath.wu.ac.at/~fruehwirth/Oekonometrie_I/Folien_Econometrics_I_teil6.pdf [Accessed 12th October 2018].

Seth, A. (2007) *Granger causality.* [online]. University of Sussex. Available from: http://www.scholarpedia.org/article/Granger_causality [Accessed 21st August 2018].

Sheytanova, T. (2004) *The accuracy of the Hausman test in Panel data: a Monte Carlo study*. [online]. Orebro University School of Business. Available from: http://oru.diva-portal.org/smash/get/diva2:805823/FULLTEXT01.pdf [Accessed 17th September 2018].

Shijaku, G. and Kalluci, I. (2013) *Determinants of bank credit to the private sector: The case of Albania.* [online]. Research Department, Bank of Albania. Available from: https://www.researchgate.net/publication/317380525_Determinants_of_bank_credit_to_the_private_sector_The_case_of_Albania [Accessed 25th September 2018].

Shostya, A. (2014) The effect of the global financial crisis on transition economies. *Atlantic Economic Journal.* Vol. 42, No. 3, p. 317-332. [Accessed 11th August 2018].

Stiglitz, J. (1998) *The role of the financial system development.* [online]. The World Bank. Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.475.9471&rep=rep1&type=pdf [Accessed 14th September 2018].

Stoudt, S. (2017) *Fixed, mixed and random effects.* [online]. Rlbarter website. Available from: https://rlbarter.github.io/Practical-Statistics/2017/03/03/fixed-mixed-and-random-effects/ [Accessed 27th September 2018].

Svejnar, J. (2002) Transition Economies: Performance and challenges. *Journal of Economic Perspectives.* Vol. 16, No. 1, p. 3-28. [Accessed 18th September 2018].

Tahir, S. H., et al. (2015) Impact of Bank Lending on Economics Growth in Pakistan: An empirical study of lending to private sector. *American Journal of Industrial and Business Management.* Vol. 5, p. 565-576. [Accessed 17th September 2018].

Takashi, I. (2002) *Voice and Accountability.* [online]. United Nations Development Programme. Available from: http://hdr.undp.org/sites/default/files/inoguchi_2002.pdf [Accessed 17th October 2018].

Tamadonnejad, A., et al. (2013) *Political stability, country risk and bank efficiency in East Asian countries.* [online]. University Kebangsaan Malaysia. Available from: http://www.ukm.my/fep/perkem/pdf/perkemVIII/PKEM2013_3B1.pdf [Accessed 11th October 2018].

The World Bank (2018) *Worldwide Governance Indicators.* [online]. The World Bank website. Available from: http://info.worldbank.org/governance/wgi/#home [Accessed 7th October 2018].

Thomas, M. A. (2010) What do the Worldwide Governance indicators measure. *The European Journal of Development Research.* Vol. 22, No. 1, p. 31-54. [Accessed 18th August 2018].

Torres-Reyna, O. (2007) *Panel data analysis, fixed and random effects using Stata.* [online]. Princeton University. Available from: https://www.princeton.edu/~otorres/Panel101.pdf [Accessed 10th October 2018].

Udaibir, D., et al. (2004) *Sovereign risk and asset liability management-conceptual issues.* [online]. International Monetary Fund. Available from: https://www.researchgate.net/publication/256038677_Sovereign_Risk_and_Asset_and_Liability_Management-Conceptual_Issues [Accessed 5th August 2018].

Vaithilingam, S., et al. (2008) Bank Lending and Economic Growth in Malaysia. *Journal of Asia-Pacific Business.* Vol. 5, No. 1, p. 51-69. [Accessed 17th October 2018].

Veganzones, M. A., et al. (2011) *What types of perceived governance indicators matter the most for private investment in Middle East and North Africa.* [online]. CERDI, Etudes et Documents. Available from: https://halshs.archives-ouvertes.fr/halshs-00556940/document[Accessed 6th October 2018].

Venancio, S. F. M. (2013) *Does financial development promote economic growth.* [online]. University of Lisboa. Available from: https://www.iseg.ulisboa.pt/aquila/getFile.do?fileId=430264&method=getFile [Accessed 16th September 2018].

Vilma, D. and Lina, S. (2014) Short-run and Long-run causality between the structure of financial system and economic development. [online]. *Economics & Business.* Vol. 26, p.22-27. Business Source Complete, EBSCO*host.* [Accessed 8th October 2018].

Wasilewski, M., et al. (2015) *Financial system and Economic growth: evidence from Poland and Ukraine.* [online]. University Szczecinski. Available from: http://www.wneiz.pl/nauka_wneiz/frfu/74-2015/FRFU-74-t2-559.pdf [Accessed 13th August 2018].

Were, M., et al. (2012) Assessing the Impact of Private Sector Credit on Economic Performance: Evidence from Sectoral Panel Data for Kenya *International Journal of Economics and Finance.* Vol. 4, No. 3. [Accessed 19th October 2018].

Williams, R. (2015) *Panel data: very brief overview.* [online]. University of Notre Dame. Available from: https://www3.nd.edu/~rwilliam/stats2/panel.pdf [Accessed 9th September 2018].

Zdzienicka, A. (2009) *Vulnerabilities in Central and Eastern Europe: credit growth.* [online]. University of Lyon. Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.405.4114&rep=rep1&type=pdf[Accessed 7th September 2018].

Zermeno, M. A. T., et al. (2018) Effects of inflation on financial sector performance: new evidence from panel quantile regressions. *Investigacion Economica.* Vol. 27, No. 303, p. 94-129. [Accessed 19th August 2018].

Appendices

Appendix A: Unit Root tables

Appendix A-1: Ex-Soviet Group

Panel unit root test: Summary
Series: LNCC
Date: 09/26/18 Time: 23:35
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.7668	0.0000	12	180
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-9.85763	0.0000	12	180
ADF - Fisher Chi-square	132.695	0.0000	12	180
PP - Fisher Chi-square	69.8452	0.0000	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNDCPS_GDP
Date: 09/26/18 Time: 23:37
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.50329	0.0002	10	160
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.80969	0.2091	10	160
ADF - Fisher Chi-square	28.3100	0.1023	10	160
PP - Fisher Chi-square	25.2171	0.1933	10	160

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: LNFDI
Date: 09/26/18 Time: 23:37
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.50588	0.0061	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.09151	0.0182	12	192
ADF - Fisher Chi-square	35.6924	0.0588	12	192
PP - Fisher Chi-square	35.7652	0.0578	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGDPCG
Date: 09/26/18 Time: 23:38
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.63252	0.0000	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.13512	0.0000	12	192
ADF - Fisher Chi-square	62.4630	0.0000	12	192
PP - Fisher Chi-square	82.5532	0.0000	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGE
Date: 09/26/18 Time: 23:39
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.16937	0.0000	12	192

Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.32401	0.0101	12	192
ADF - Fisher Chi-square	39.5016	0.0242	12	192
PP - Fisher Chi-square	40.4958	0.0189	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGFCF
Date: 09/26/18 Time: 23:39
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.68590	0.0459	12	185
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.59125	0.2772	12	185
ADF - Fisher Chi-square	28.3721	0.2447	12	185
PP - Fisher Chi-square	45.3680	0.0053	12	185

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNINFL
Date: 09/26/18 Time: 23:40
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.28764	0.0000	10	159
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.98551	0.0000	10	159
ADF - Fisher Chi-square	58.6720	0.0000	10	159
PP - Fisher Chi-square	59.0918	0.0000	10	159

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNPSAV
Date: 09/26/18 Time: 23:40
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.06746	0.0193	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.68341	0.0461	12	192
ADF - Fisher Chi-square	34.6926	0.0731	12	192
PP - Fisher Chi-square	34.1348	0.0823	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRL
Date: 09/26/18 Time: 23:41
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.54696	0.0000	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.75632	0.0029	12	192
ADF - Fisher Chi-square	42.5700	0.0111	12	192
PP - Fisher Chi-square	39.8704	0.0221	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRQ
Date: 09/26/18 Time: 23:41
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.59684	0.0002	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.12046	0.0009	12	192
ADF - Fisher Chi-square	50.8787	0.0011	12	192
PP - Fisher Chi-square	57.3045	0.0002	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNV_A
Date: 09/26/18 Time: 23:42
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.83902	0.0000	12	192
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.79823	0.0000	12	192
ADF - Fisher Chi-square	72.9324	0.0000	12	192
PP - Fisher Chi-square	70.0855	0.0000	12	192

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix A-2: Central Europe Group

Panel unit root test: Summary
Series: D(LNCC)
Date: 09/26/18 Time: 23:59
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.28663	0.0005	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.14029	0.0000	8	111
ADF - Fisher Chi-square	56.2974	0.0000	8	111
PP - Fisher Chi-square	128.377	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNDCPS_GDP)
Date: 09/27/18 Time: 00:00
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	8.30423	1.0000	6	66
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.24393	0.1068	6	66
ADF - Fisher Chi-square	20.5404	0.0575	6	66
PP - Fisher Chi-square	59.1409	0.0000	6	72

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNFDI)
Date: 09/27/18 Time: 00:00
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.70798	0.0000	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.96462	0.0000	8	111
ADF - Fisher Chi-square	74.7594	0.0000	8	111
PP - Fisher Chi-square	151.138	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNGDPCG)
Date: 09/27/18 Time: 00:01
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.49572	0.0000	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.01949	0.0000	8	111
ADF - Fisher Chi-square	75.1133	0.0000	8	111
PP - Fisher Chi-square	193.899	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNGE)
Date: 09/27/18 Time: 00:02
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	2.43260	0.9925	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.71535	0.0000	8	111
ADF - Fisher Chi-square	51.7710	0.0000	8	111
PP - Fisher Chi-square	168.885	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNGFCF)
Date: 09/27/18 Time: 00:02
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.06461	0.0000	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.62922	0.0000	8	111
ADF - Fisher Chi-square	51.8661	0.0000	8	111
PP - Fisher Chi-square	55.6049	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNINFL)
Date: 09/27/18 Time: 00:02
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.81477	0.0000	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.43100	0.0000	8	111

ADF - Fisher Chi-square	68.9826	0.0000	8	111
PP - Fisher Chi-square	131.621	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNPSAV)
Date: 09/27/18 Time: 00:03
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.56626	0.2856	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.97610	0.0000	8	111
ADF - Fisher Chi-square	54.7771	0.0000	8	111
PP - Fisher Chi-square	166.096	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNRL)
Date: 09/27/18 Time: 00:04
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	4.40119	1.0000	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.83767	0.0001	8	111
ADF - Fisher Chi-square	43.2482	0.0003	8	111
PP - Fisher Chi-square	163.472	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNRQ)
Date: 09/27/18 Time: 00:04
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Cross-

Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	1.56235	0.9409	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.71106	0.0000	8	111
ADF - Fisher Chi-square	61.5136	0.0000	8	111
PP - Fisher Chi-square	188.615	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LNV_A)
Date: 09/27/18 Time: 00:05
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	3.65286	0.9999	8	111
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.93538	0.0000	8	111
ADF - Fisher Chi-square	73.8153	0.0000	8	111
PP - Fisher Chi-square	201.844	0.0000	8	119

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix A-3: South-Eastern Europe Group

Panel unit root test: Summary
Series: LNCC
Date: 09/26/18 Time: 23:45
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-22.4833	0.0000	9	135
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-12.5451	0.0000	9	135
ADF - Fisher Chi-square	83.0922	0.0000	9	135
PP - Fisher Chi-square	21.4317	0.2582	9	144

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNDCPS_GDP
Date: 09/26/18 Time: 23:46
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.54821	0.0000	9	130
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.29752	0.0005	9	130
ADF - Fisher Chi-square	42.3332	0.0010	9	130
PP - Fisher Chi-square	54.3549	0.0000	9	139

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNFDI
Date: 09/26/18 Time: 23:47
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.59324	0.0556	9	129
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.28181	0.1000	9	129
ADF - Fisher Chi-square	25.2128	0.1192	9	129
PP - Fisher Chi-square	34.2283	0.0118	9	138

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGDPCG
Date: 09/26/18 Time: 23:48
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.90740	0.0282	9	134

Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.26018	0.0119	9	134
ADF - Fisher Chi-square	30.7725	0.0306	9	134
PP - Fisher Chi-square	70.2778	0.0000	9	143

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGE
Date: 09/26/18 Time: 23:50
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.7966	0.0000	9	124
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.44958	0.0000	9	124
ADF - Fisher Chi-square	66.2825	0.0000	9	124
PP - Fisher Chi-square	26.7877	0.0831	9	133

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGFCF
Date: 09/26/18 Time: 23:50
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.50706	0.0061	9	130
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.54603	0.0610	9	130
ADF - Fisher Chi-square	29.6328	0.0412	9	130
PP - Fisher Chi-square	18.1471	0.4460	9	139

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNINFL
Date: 09/26/18 Time: 23:51
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.74079	0.0409	9	120
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.00800	0.1567	9	120
ADF - Fisher Chi-square	29.8098	0.0393	9	120
PP - Fisher Chi-square	35.8942	0.0073	9	129

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNPSAV
Date: 09/26/18 Time: 23:52
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.67298	0.0000	9	121
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.72878	0.0000	9	121
ADF - Fisher Chi-square	70.9073	0.0000	9	121
PP - Fisher Chi-square	86.0536	0.0000	9	130

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRL
Date: 09/26/18 Time: 23:53
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.50945	0.0000	9	135
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.56829	0.0000	9	135
ADF - Fisher Chi-square	71.3960	0.0000	9	135
PP - Fisher Chi-square	25.4934	0.1119	9	144

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRQ
Date: 09/26/18 Time: 23:53
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.42176	0.0000	9	123
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.76804	0.0385	9	123
ADF - Fisher Chi-square	32.6591	0.0183	9	123
PP - Fisher Chi-square	34.6007	0.0106	9	132

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNV_A
Date: 09/26/18 Time: 23:54
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-14.2810	0.0000	9	135
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-8.96282	0.0000	9	135
ADF - Fisher Chi-square	93.5106	0.0000	9	135
PP - Fisher Chi-square	61.2328	0.0000	9	144

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix A-4: Overall Group

Panel unit root test: Summary
Series: LNCC
Date: 09/28/18 Time: 00:56
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-24.4258	0.0000	29	435
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-12.8864	0.0000	29	435
ADF - Fisher Chi-square	226.507	0.0000	29	435
PP - Fisher Chi-square	113.777	0.0000	29	464

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNDCPS_GDP
Date: 09/28/18 Time: 00:57
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.76796	0.0000	27	363
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.55983	0.0052	27	363
ADF - Fisher Chi-square	93.1904	0.0007	27	363
PP - Fisher Chi-square	134.714	0.0000	27	390

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNFDI
Date: 09/28/18 Time: 00:58
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.09701	0.0000	29	429
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.67350	0.0038	29	429
ADF - Fisher Chi-square	84.5961	0.0129	29	429
PP - Fisher Chi-square	108.570	0.0001	29	458

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: LNGDPCG
Date: 09/28/18 Time: 00:58
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.83550	0.0000	29	434
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.00396	0.0000	29	434
ADF - Fisher Chi-square	103.323	0.0002	29	434
PP - Fisher Chi-square	193.521	0.0000	29	463

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGE
Date: 09/28/18 Time: 00:58
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.6403	0.0000	29	424
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.76775	0.0000	29	424
ADF - Fisher Chi-square	145.215	0.0000	29	424
PP - Fisher Chi-square	135.817	0.0000	29	453

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNGFCF
Date: 09/28/18 Time: 00:59
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.02317	0.0013	29	423
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.52770	0.0633	29	423
ADF - Fisher Chi-square	68.6421	0.1600	29	423

PP - Fisher Chi-square	70.9971	0.1175	29	452

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNINFL
Date: 09/28/18 Time: 00:59
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.28169	0.0000	27	389
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.79163	0.0026	27	389
ADF - Fisher Chi-square	87.1665	0.0028	27	389
PP - Fisher Chi-square	115.129	0.0000	27	416

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNPSAV
Date: 09/28/18 Time: 01:00
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.08649	0.0000	29	421
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.23756	0.0000	29	421
ADF - Fisher Chi-square	166.820	0.0000	29	421
PP - Fisher Chi-square	170.141	0.0000	29	450

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRL
Date: 09/28/18 Time: 01:00
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

			Cross-	

Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-16.0827	0.0000	29	435
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-12.6519	0.0000	29	435
ADF - Fisher Chi-square	233.126	0.0000	29	435
PP - Fisher Chi-square	96.1966	0.0012	29	464

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNRQ
Date: 09/28/18 Time: 01:01
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-15.7361	0.0000	29	423
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-10.3773	0.0000	29	423
ADF - Fisher Chi-square	184.359	0.0000	29	423
PP - Fisher Chi-square	155.098	0.0000	29	452

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LNV_A
Date: 09/28/18 Time: 00:55
Sample: 2000 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-15.3176	0.0000	29	435
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-11.4173	0.0000	29	435
ADF - Fisher Chi-square	247.465	0.0000	29	435
PP - Fisher Chi-square	198.055	0.0000	29	464

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix B: Panel regression analysis

Appendix B-1: Ex-Soviet Group

Model 1:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:14
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.536217	0.123765	-4.332552	0.0000
LNINFL	-0.191557	0.081955	-2.337347	0.0207
LNGFCF	0.355522	0.177732	2.000326	0.0473
LNFDI	0.064231	0.112254	0.572198	0.5680
LNV_A	0.731211	0.634974	1.151560	0.2513
C	3.282382	0.849621	3.863348	0.0002

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.440220	Mean dependent var	3.092806
Adjusted R-squared	0.388319	S.D. dependent var	0.785571
S.E. of regression	0.614395	Akaike info criterion	1.949658
Sum squared resid	56.99971	Schwarz criterion	2.230862
Log likelihood	-146.8216	Hannan-Quinn criter.	2.063801
F-statistic	8.482046	Durbin-Watson stat	0.703091
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:21
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.308925	0.471102	0.655750	0.5140
LNINFL	-0.016333	0.120075	-0.136020	0.8922
LNGFCF	0.430310	0.235728	1.825452	0.0720
LNFDI	0.194920	0.153534	1.269557	0.2082
LNV_A	-0.112595	0.882189	-0.127631	0.8988
C	0.339713	1.940363	0.175077	0.8615

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.505309	Mean dependent var	2.704353

Adjusted R-squared	0.411719	S.D. dependent var	0.805626
S.E. of regression	0.617911	Akaike info criterion	2.027563
Sum squared resid	28.25425	Schwarz criterion	2.446996
Log likelihood	-75.22657	Hannan-Quinn criter.	2.196625
F-statistic	5.399174	Durbin-Watson stat	0.763828
Prob(F-statistic)	0.000001		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 10/08/18 Time: 01:48
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.012776	0.051095	-0.250037	0.8032
LNINFL	-0.074665	0.037695	-1.980746	0.0510
LNGFCF	0.278255	0.113441	2.452854	0.0163
LNFDI	-0.039572	0.070238	-0.563397	0.5747
LNV_A	1.001046	0.387059	2.586290	0.0115
C	1.978144	0.546846	3.617371	0.0005

Effects Specification	S.D.	Rho
Cross-section random	0.415163	0.8034
Idiosyncratic random	0.205383	0.1966

Weighted Statistics

R-squared	0.179422	Mean dependent var	0.581919
Adjusted R-squared	0.128769	S.D. dependent var	0.217040
S.E. of regression	0.204564	Sum squared resid	3.389575
F-statistic	3.542185	Durbin-Watson stat	0.571760
Prob(F-statistic)	0.006020		

Unweighted Statistics

R-squared	0.128839	Mean dependent var	3.532288
Sum squared resid	16.07965	Durbin-Watson stat	0.120526

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	28.703121	5	0.0000

** WARNING: estimated period random effects variance is zero.

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LNGDPCG	-0.067056	-0.067458	0.007303	0.9962
LNINFL	0.042635	0.057364	0.001196	0.6702
LNGFCF	-0.186471	-0.065487	0.000776	0.0000
LNFDI	0.000229	0.074708	0.000859	0.0111
LNV_A	1.240746	1.217361	0.003978	0.7108

Model 2:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:41
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.540770	0.124126	-4.356633	0.0000
LNINFL	-0.194945	0.082185	-2.372029	0.0190
LNGFCF	0.322840	0.187634	1.720584	0.0874
LNFDI	0.101416	0.110835	0.915021	0.3616
LNPSAV	0.197783	0.307173	0.643881	0.5206
C	3.892598	0.604752	6.436685	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.436850	Mean dependent var	3.092806
Adjusted R-squared	0.384637	S.D. dependent var	0.785571
S.E. of regression	0.616242	Akaike info criterion	1.955660
Sum squared resid	57.34284	Schwarz criterion	2.236864
Log likelihood	-147.3198	Hannan-Quinn criter.	2.069803
F-statistic	8.366749	Durbin-Watson stat	0.708139
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:48
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.322532	0.460789	0.699955	0.4862
LNINFL	-0.025153	0.121181	-0.207569	0.8361
LNGFCF	0.391438	0.247030	1.584579	0.1173
LNFDI	0.197821	0.150643	1.313172	0.1932
LNPSAV	0.262199	0.515514	0.508616	0.6125

C	0.060830	1.598478	0.038055	0.9697

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.506924	Mean dependent var	2.704353
Adjusted R-squared	0.413640	S.D. dependent var	0.805626
S.E. of regression	0.616902	Akaike info criterion	2.024294
Sum squared resid	28.16202	Schwarz criterion	2.443727
Log likelihood	-75.08107	Hannan-Quinn criter.	2.193355
F-statistic	5.434166	Durbin-Watson stat	0.784002
Prob(F-statistic)	0.000001		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/27/18 Time: 00:49
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.011457	0.052416	-0.218588	0.8275
LNINFL	-0.079114	0.039059	-2.025474	0.0461
LNGFCF	0.214486	0.125552	1.708338	0.0914
LNFDI	-0.034705	0.072319	-0.479886	0.6326
LNPSAV	0.143009	0.159120	0.898750	0.3714
C	3.047540	0.361102	8.439546	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.444343	0.8170
Idiosyncratic random	0.210294	0.1830

Weighted Statistics

R-squared	0.121608	Mean dependent var	0.557353
Adjusted R-squared	0.067386	S.D. dependent var	0.216298
S.E. of regression	0.210770	Sum squared resid	3.598347
F-statistic	2.242795	Durbin-Watson stat	0.565296
Prob(F-statistic)	0.057803		

Unweighted Statistics

R-squared	-0.064275	Mean dependent var	3.532288
Sum squared resid	19.64410	Durbin-Watson stat	0.103549

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:13
Sample: 2000 2016
Periods included: 17

Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.018834	0.105988	-0.177696	0.8592
LNINFL	-0.114746	0.062678	-1.830728	0.0691
LNGFCF	0.108440	0.143480	0.755785	0.4510
LNFDI	0.181260	0.084249	2.151477	0.0330
LNPSAV	-0.017201	0.233440	-0.073685	0.9414
DUMMY	0.894136	0.083956	10.65001	0.0000
C	2.335983	0.480630	4.860255	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.679327	Mean dependent var	3.092806
Adjusted R-squared	0.647260	S.D. dependent var	0.785571
S.E. of regression	0.466566	Akaike info criterion	1.404584
Sum squared resid	32.65256	Schwarz criterion	1.704534
Log likelihood	-100.5804	Hannan-Quinn criter.	1.526336
F-statistic	21.18442	Durbin-Watson stat	0.805020
Prob(F-statistic)	0.000000		

Model 3:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:53
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.454096	0.122173	-3.716841	0.0003
LNINFL	-0.176046	0.079282	-2.220497	0.0279
LNGFCF	0.352617	0.171824	2.052194	0.0419
LNFDI	0.092377	0.105967	0.871747	0.3847
LNGE	1.521310	0.440843	3.450908	0.0007
C	2.384977	0.730694	3.263988	0.0014

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.476583	Mean dependent var	3.092806
Adjusted R-squared	0.428055	S.D. dependent var	0.785571
S.E. of regression	0.594104	Akaike info criterion	1.882492
Sum squared resid	53.29696	Schwarz criterion	2.163695
Log likelihood	-141.2468	Hannan-Quinn criter.	1.996634
F-statistic	9.820651	Durbin-Watson stat	0.707486
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 00:57
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.322053	0.461821	0.697354	0.4878
LNINFL	-0.014661	0.121792	-0.120379	0.9045
LNGFCF	0.429995	0.235735	1.824063	0.0722
LNFDI	0.193723	0.155581	1.245160	0.2170
LNGE	-0.050199	0.716317	-0.070079	0.9443
C	0.224198	1.630321	0.137518	0.8910

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.505233	Mean dependent var	2.704353
Adjusted R-squared	0.411629	S.D. dependent var	0.805626
S.E. of regression	0.617959	Akaike info criterion	2.027717
Sum squared resid	28.25859	Schwarz criterion	2.447150
Log likelihood	-75.23341	Hannan-Quinn criter.	2.196778
F-statistic	5.397531	Durbin-Watson stat	0.758891
Prob(F-statistic)	0.000001		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/27/18 Time: 01:00
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.018104	0.052601	-0.344169	0.7316
LNINFL	-0.078846	0.038076	-2.070745	0.0416
LNGFCF	0.213382	0.110251	1.935416	0.0564
LNFDI	-0.029088	0.069479	-0.418665	0.6766
LNGE	0.197161	0.291755	0.675777	0.5011
C	3.016851	0.450452	6.697390	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.245856	0.5760
Idiosyncratic random	0.210923	0.4240

Weighted Statistics

R-squared	0.084523	Mean dependent var	0.982556
Adjusted R-squared	0.028012	S.D. dependent var	0.233081

S.E. of regression	0.235203	Sum squared resid	4.480971
F-statistic	1.495696	Durbin-Watson stat	0.440457
Prob(F-statistic)	0.200383		

Unweighted Statistics

R-squared	-0.017110	Mean dependent var	3.532288
Sum squared resid	18.77355	Durbin-Watson stat	0.105131

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:14
Sample: 2000 2016
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.019293	0.105825	-0.182309	0.8556
LNINFL	-0.114287	0.062585	-1.826116	0.0698
LNGFCF	0.105928	0.137295	0.771533	0.4416
LNFDI	0.181736	0.083723	2.170676	0.0315
LNGE	0.027466	0.378668	0.072533	0.9423
DUMMY	0.890913	0.091485	9.738397	0.0000
C	2.303933	0.573894	4.014563	0.0001

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.679327	Mean dependent var	3.092806
Adjusted R-squared	0.647259	S.D. dependent var	0.785571
S.E. of regression	0.466566	Akaike info criterion	1.404585
Sum squared resid	32.65260	Schwarz criterion	1.704535
Log likelihood	-100.5805	Hannan-Quinn criter.	1.526337
F-statistic	21.18438	Durbin-Watson stat	0.805117
Prob(F-statistic)	0.000000		

Model 4:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 21:37
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.424959	0.109625	-3.876485	0.0002
LNINFL	-0.119776	0.072467	-1.652828	0.1004
LNGFCF	0.260921	0.156275	1.669629	0.0971
LNFDI	0.057350	0.096106	0.596734	0.5516
LNRQ	3.223670	0.467228	6.899562	0.0000

C	-0.076596	0.779492	-0.098265	0.9219

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.570657	Mean dependent var	3.092806
Adjusted R-squared	0.530851	S.D. dependent var	0.785571
S.E. of regression	0.538073	Akaike info criterion	1.684369
Sum squared resid	43.71787	Schwarz criterion	1.965573
Log likelihood	-124.8026	Hannan-Quinn criter.	1.798512
F-statistic	14.33574	Durbin-Watson stat	0.760880
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 21:45
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.141546	0.443842	0.318911	0.7507
LNINFL	-0.012275	0.114244	-0.107448	0.9147
LNGFCF	0.348401	0.226137	1.540664	0.1277
LNFDI	0.136496	0.144311	0.945843	0.3473
LNRQ	1.992789	0.715506	2.785146	0.0068
C	-1.242080	1.588516	-0.781912	0.4368

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.552147	Mean dependent var	2.704353
Adjusted R-squared	0.467418	S.D. dependent var	0.805626
S.E. of regression	0.587932	Akaike info criterion	1.928097
Sum squared resid	25.57914	Schwarz criterion	2.347530
Log likelihood	-70.80030	Hannan-Quinn criter.	2.097158
F-statistic	6.516618	Durbin-Watson stat	0.809428
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/27/18 Time: 21:54
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.024300	0.051769	-0.469396	0.6400
LNINFL	-0.077552	0.038055	-2.037859	0.0448

LNGFCF	0.203038	0.108178	1.876885	0.0641
LNFDI	-0.039515	0.069729	-0.566692	0.5725
LNRQ	0.245272	0.468936	0.523038	0.6024
C	2.953345	0.660100	4.474085	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.227821	0.5428
Idiosyncratic random	0.209075	0.4572

Weighted Statistics

R-squared	0.078159	Mean dependent var	1.045190
Adjusted R-squared	0.021255	S.D. dependent var	0.236209
S.E. of regression	0.239712	Sum squared resid	4.654419
F-statistic	1.373525	Durbin-Watson stat	0.422861
Prob(F-statistic)	0.242927		

Unweighted Statistics

R-squared	-0.025307	Mean dependent var	3.532288
Sum squared resid	18.92485	Durbin-Watson stat	0.103999

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:15
Sample: 2000 2016
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.051347	0.102283	-0.502014	0.6164
LNINFL	-0.090990	0.060585	-1.501855	0.1352
LNGFCF	0.100446	0.131899	0.761536	0.4475
LNFDI	0.150617	0.081020	1.859023	0.0650
LNRQ	1.525145	0.441895	3.451376	0.0007
DUMMY	0.745491	0.091231	8.171471	0.0000
C	0.677720	0.657091	1.031394	0.3040

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.702908	Mean dependent var	3.092806
Adjusted R-squared	0.673199	S.D. dependent var	0.785571
S.E. of regression	0.449083	Akaike info criterion	1.328202
Sum squared resid	30.25138	Schwarz criterion	1.628153
Log likelihood	-94.24079	Hannan-Quinn criter.	1.449954
F-statistic	23.65966	Durbin-Watson stat	0.781488
Prob(F-statistic)	0.000000		

Model 5:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 21:58
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.406975	0.115908	-3.511197	0.0006
LNINFL	-0.108640	0.076645	-1.417443	0.1584
LNGFCF	0.342392	0.162859	2.102388	0.0372
LNFDI	0.036413	0.100936	0.360759	0.7188
LNRL	2.000739	0.362985	5.511901	0.0000
C	2.019185	0.642210	3.144119	0.0020

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.529889	Mean dependent var	3.092806
Adjusted R-squared	0.486303	S.D. dependent var	0.785571
S.E. of regression	0.563040	Akaike info criterion	1.775082
Sum squared resid	47.86907	Schwarz criterion	2.056286
Log likelihood	-132.3318	Hannan-Quinn criter.	1.889224
F-statistic	12.15721	Durbin-Watson stat	0.766877
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 21:41
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.326497	0.448378	0.728174	0.4688
LNINFL	0.003825	0.117020	0.032688	0.9740
LNGFCF	0.409420	0.229161	1.786606	0.0781
LNFDI	0.123873	0.149424	0.829002	0.4098
LNRL	1.058563	0.503163	2.103817	0.0388
C	-0.438569	1.563212	-0.280556	0.7798

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.533125	Mean dependent var	2.704353
Adjusted R-squared	0.444797	S.D. dependent var	0.805626
S.E. of regression	0.600288	Akaike info criterion	1.969692
Sum squared resid	26.66557	Schwarz criterion	2.389125
Log likelihood	-72.65131	Hannan-Quinn criter.	2.138754
F-statistic	6.035760	Durbin-Watson stat	0.814201

Prob(F-statistic)	0.000000

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/27/18 Time: 22:03
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.044673	0.050387	-0.886602	0.3779
LNINFL	-0.006961	0.036968	-0.188310	0.8511
LNGFCF	0.062006	0.094491	0.656211	0.5135
LNFDI	-0.088055	0.061980	-1.420710	0.1592
LNRL	1.482517	0.261906	5.660505	0.0000
C	2.435843	0.352488	6.910431	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.125503	0.2720
Idiosyncratic random	0.205306	0.7280

Weighted Statistics

R-squared	0.228666	Mean dependent var	1.706693
Adjusted R-squared	0.181053	S.D. dependent var	0.277831
S.E. of regression	0.262687	Sum squared resid	5.589358
F-statistic	4.802574	Durbin-Watson stat	0.407958
Prob(F-statistic)	0.000678		

Unweighted Statistics

R-squared	0.301379	Mean dependent var	3.532288
Sum squared resid	12.89496	Durbin-Watson stat	0.176831

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:16
Sample: 2000 2016
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.018818	0.103531	-0.181758	0.8560
LNINFL	-0.085657	0.062189	-1.377372	0.1704
LNGFCF	0.124589	0.134262	0.927957	0.3549
LNFDI	0.149248	0.082798	1.802567	0.0735
LNRL	0.834923	0.321926	2.593528	0.0104
DUMMY	0.799455	0.089519	8.930541	0.0000
C	1.678832	0.522028	3.215979	0.0016

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.693079	Mean dependent var	3.092806
Adjusted R-squared	0.662386	S.D. dependent var	0.785571
S.E. of regression	0.456452	Akaike info criterion	1.360754
Sum squared resid	31.25231	Schwarz criterion	1.660704
Log likelihood	-96.94256	Hannan-Quinn criter.	1.482506
F-statistic	22.58163	Durbin-Watson stat	0.802948
Prob(F-statistic)	0.000000		

Model 6:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:06
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.480586	0.118650	-4.050445	0.0001
LNINFL	-0.176598	0.077968	-2.265005	0.0249
LNGFCF	0.328269	0.169328	1.938656	0.0544
LNFDI	0.038298	0.105139	0.364257	0.7162
LNCC	1.434447	0.347130	4.132307	0.0001
C	2.970355	0.606532	4.897280	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.492675	Mean dependent var	3.092806
Adjusted R-squared	0.445638	S.D. dependent var	0.785571
S.E. of regression	0.584901	Akaike info criterion	1.851266
Sum squared resid	51.65844	Schwarz criterion	2.132470
Log likelihood	-138.6551	Hannan-Quinn criter.	1.965408
F-statistic	10.47425	Durbin-Watson stat	0.801920
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:10
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 89

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.303955	0.458374	0.663115	0.5093
LNINFL	-0.030118	0.119893	-0.251206	0.8024

LNGFCF	0.405076	0.235067	1.723236	0.0890
LNFDI	0.150487	0.153917	0.977716	0.3314
LNCC	0.501140	0.471110	1.063742	0.2909
C	0.101243	1.569644	0.064501	0.9487

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.512653	Mean dependent var	2.704353
Adjusted R-squared	0.420452	S.D. dependent var	0.805626
S.E. of regression	0.613308	Akaike info criterion	2.012608
Sum squared resid	27.83484	Schwarz criterion	2.432041
Log likelihood	-74.56105	Hannan-Quinn criter.	2.181669
F-statistic	5.560171	Durbin-Watson stat	0.794397
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/27/18 Time: 22:13
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 10
Total panel (unbalanced) observations: 87
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.008636	0.049906	-0.173037	0.8631
LNINFL	-0.070013	0.036675	-1.908981	0.0598
LNGFCF	0.158113	0.111567	1.417197	0.1603
LNFDI	-0.023243	0.067640	-0.343624	0.7320
LNCC	0.989645	0.321810	3.075249	0.0029
C	2.581906	0.371966	6.941243	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.311639	0.7065
Idiosyncratic random	0.200842	0.2935

Weighted Statistics

R-squared	0.184836	Mean dependent var	0.750965
Adjusted R-squared	0.134517	S.D. dependent var	0.222932
S.E. of regression	0.210567	Sum squared resid	3.591432
F-statistic	3.673295	Durbin-Watson stat	0.549677
Prob(F-statistic)	0.004788		

Unweighted Statistics

R-squared	0.031401	Mean dependent var	3.532288
Sum squared resid	17.87815	Durbin-Watson stat	0.110421

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares

Date: 09/29/18 Time: 01:17
Sample: 2000 2016
Periods included: 17
Cross-sections included: 10
Total panel (unbalanced) observations: 166

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.024467	0.103958	-0.235353	0.8143
LNINFL	-0.109353	0.061467	-1.779052	0.0773
LNGFCF	0.106226	0.134579	0.789321	0.4312
LNFDI	0.151415	0.083175	1.820442	0.0707
LNCC	0.664546	0.283076	2.347585	0.0202
DUMMY	0.837886	0.085508	9.798964	0.0000
C	1.956889	0.486304	4.024003	0.0001

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.690680	Mean dependent var	3.092806
Adjusted R-squared	0.659748	S.D. dependent var	0.785571
S.E. of regression	0.458232	Akaike info criterion	1.368538
Sum squared resid	31.49653	Schwarz criterion	1.668488
Log likelihood	-97.58863	Hannan-Quinn criter.	1.490290
F-statistic	22.32900	Durbin-Watson stat	0.834009
Prob(F-statistic)	0.000000		

Appendix B-2: Central Europe Group

Model 1:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:05
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.046840	0.081627	-0.573837	0.5676
DLNINFL	0.032398	0.121426	0.266816	0.7903
DLNGFCF	0.121694	0.187647	0.648527	0.5184
DLNFDI	0.018094	0.090414	0.200126	0.8419
DLNV_A	0.792325	0.928836	0.853030	0.3961
C	0.083327	0.050791	1.640596	0.1046

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.452313	1.0000

Weighted Statistics

R-squared	0.023299	Mean dependent var	0.060421
Adjusted R-squared	-0.034838	S.D. dependent var	0.441805
S.E. of regression	0.449435	Sum squared resid	16.96733
F-statistic	0.400757	Durbin-Watson stat	1.060515
Prob(F-statistic)	0.847023		

Unweighted Statistics

R-squared	0.023299	Mean dependent var	0.060421
Sum squared resid	16.96733	Durbin-Watson stat	1.060515

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:07
Sample (adjusted): 2002 2008
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	0.024467	0.784576	0.031185	0.9754
DLNINFL	-0.228591	0.459843	-0.497106	0.6235
DLNGFCF	0.424330	0.788165	0.538377	0.5951
DLNFDI	0.215985	0.697862	0.309495	0.7595
DLNV_A	2.179134	2.372466	0.918510	0.3671

C	0.281298	0.160688	1.750583	0.0923

Effects Specification		
	S.D.	Rho
Cross-section random	3.99E-08	0.0000
Idiosyncratic random	0.754243	1.0000

Weighted Statistics			
R-squared	0.070326	Mean dependent var	0.217120
Adjusted R-squared	-0.115609	S.D. dependent var	0.724300
S.E. of regression	0.765023	Sum squared resid	14.63149
F-statistic	0.378228	Durbin-Watson stat	1.319150
Prob(F-statistic)	0.858834		

Unweighted Statistics			
R-squared	0.070326	Mean dependent var	0.217120
Sum squared resid	14.63149	Durbin-Watson stat	1.319150

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:08
Sample: 2008 2016
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 65
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.028525	0.016515	-1.727181	0.0894
DLNINFL	0.003627	0.027349	0.132621	0.8949
DLNGFCF	-0.085542	0.043564	-1.963615	0.0543
DLNFDI	-0.002279	0.018713	-0.121808	0.9035
DLNV_A	0.429771	0.339838	1.264636	0.2110
C	-0.016384	0.015600	-1.050250	0.2979

Effects Specification		
	S.D.	Rho
Cross-section random	0.027936	0.0908
Idiosyncratic random	0.088422	0.9092

Weighted Statistics			
R-squared	0.137457	Mean dependent var	-0.007621
Adjusted R-squared	0.064360	S.D. dependent var	0.091743
S.E. of regression	0.088691	Sum squared resid	0.464104
F-statistic	1.880470	Durbin-Watson stat	1.163709
Prob(F-statistic)	0.111431		

Unweighted Statistics			
R-squared	0.133312	Mean dependent var	-0.009531
Sum squared resid	0.512186	Durbin-Watson stat	1.054466

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Period random effects)
Date: 09/29/18 Time: 00:55
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.040013	0.093377	-0.428506	0.6694
DLNINFL	-0.002633	0.134315	-0.019605	0.9844
DLNGFCF	0.012715	0.200377	0.063455	0.9496
DLNFDI	0.014272	0.086891	0.164252	0.8699
DLNV_A	1.418266	0.997428	1.421924	0.1588
DUMMY	-0.279912	0.140657	-1.990032	0.0498
C	0.284682	0.116155	2.450892	0.0163

Effects Specification	S.D.	Rho
Period random	0.165933	0.1353
Idiosyncratic random	0.419479	0.8647

Weighted Statistics

R-squared	0.065235	Mean dependent var	0.045785
Adjusted R-squared	-0.001534	S.D. dependent var	0.412302
S.E. of regression	0.412216	Sum squared resid	14.27348
F-statistic	0.977022	Durbin-Watson stat	1.188677
Prob(F-statistic)	0.445993		

Unweighted Statistics

R-squared	0.103480	Mean dependent var	0.060064
Sum squared resid	15.57536	Durbin-Watson stat	1.185565

Model 2:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:11
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.045064	0.083025	-0.542781	0.5887
DLNINFL	0.038883	0.121678	0.319561	0.7501
DLNGFCF	0.179128	0.182380	0.982169	0.3288
DLNFDI	5.94E-05	0.088872	0.000669	0.9995

DLNPSAV	-0.317573	0.587104	-0.540915	0.5900
C	0.072931	0.050101	1.455682	0.1492

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.452243	1.0000

Weighted Statistics

R-squared	0.018174	Mean dependent var	0.060421
Adjusted R-squared	-0.040268	S.D. dependent var	0.441805
S.E. of regression	0.450613	Sum squared resid	17.05636
F-statistic	0.310975	Durbin-Watson stat	1.058807
Prob(F-statistic)	0.905099		

Unweighted Statistics

R-squared	0.018174	Mean dependent var	0.060421
Sum squared resid	17.05636	Durbin-Watson stat	1.058807

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:13
Sample (adjusted): **2002 2008**
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.225478	0.820250	-0.274889	0.7857
DLNINFL	-0.169005	0.456907	-0.369890	0.7146
DLNGFCF	0.895990	0.773387	1.158528	0.2576
DLNFDI	0.029190	0.693414	0.042096	0.9668
DLNPSAV	-0.902335	1.350248	-0.668274	0.5101
C	0.204692	0.139989	1.462198	0.1561

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.757951	1.0000

Weighted Statistics

R-squared	0.056132	Mean dependent var	0.217120
Adjusted R-squared	-0.132641	S.D. dependent var	0.724300
S.E. of regression	0.770840	Sum squared resid	14.85488
F-statistic	0.297352	Durbin-Watson stat	1.260363
Prob(F-statistic)	0.909751		

Unweighted Statistics

R-squared	0.056132	Mean dependent var	0.217120

Sum squared resid	14.85488	Durbin-Watson stat	1.260363

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:14
Sample: 2008 2016
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 65
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.031867	0.017141	-1.859111	0.0680
DLNINFL	0.004482	0.027459	0.163229	0.8709
DLNGFCF	-0.071913	0.041766	-1.721794	0.0903
DLNFDI	-0.008951	0.017828	-0.502100	0.6175
DLNPSAV	0.130339	0.191556	0.680425	0.4989
C	-0.017668	0.017009	-1.038749	0.3032

Effects Specification	S.D.	Rho
Cross-section random	0.033881	0.1276
Idiosyncratic random	0.088586	0.8724

Weighted Statistics

R-squared	0.123444	Mean dependent var	-0.007048
Adjusted R-squared	0.049160	S.D. dependent var	0.090799
S.E. of regression	0.088485	Sum squared resid	0.461948
F-statistic	1.661777	Durbin-Watson stat	1.056569
Prob(F-statistic)	0.158059		

Unweighted Statistics

R-squared	0.104939	Mean dependent var	-0.009531
Sum squared resid	0.528953	Durbin-Watson stat	0.922729

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:56
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.042040	0.080488	-0.522316	0.6028
DLNINFL	0.028212	0.117766	0.239562	0.8113
DLNGFCF	0.096495	0.180550	0.534452	0.5944
DLNFDI	-0.010333	0.086063	-0.120058	0.9047
DLNPSAV	-0.292113	0.568704	-0.513647	0.6088
DUMMY	-0.239959	0.105502	-2.274440	0.0255
C	0.240527	0.088233	2.726041	0.0078

Effects Specification			
		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		0.438562	1.0000
Weighted Statistics			
R-squared	0.075449	Mean dependent var	0.060064
Adjusted R-squared	0.009410	S.D. dependent var	0.439357
S.E. of regression	0.437285	Sum squared resid	16.06234
F-statistic	1.142484	Durbin-Watson stat	1.129765
Prob(F-statistic)	0.345153		
Unweighted Statistics			
R-squared	0.075449	Mean dependent var	0.060064
Sum squared resid	16.06234	Durbin-Watson stat	1.129765

Model 3:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:17
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.053044	0.081608	-0.649983	0.5175
DLNINFL	0.046712	0.121746	0.383685	0.7022
DLNGFCF	0.161408	0.181745	0.888104	0.3770
DLNFDI	0.004760	0.089180	0.053380	0.9576
DLNGE	0.178841	0.768029	0.232856	0.8164
C	0.075673	0.050057	1.511733	0.1344
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.453391	1.0000
Weighted Statistics				
R-squared	0.015371	Mean dependent var		0.060421
Adjusted R-squared	-0.043238	S.D. dependent var		0.441805
S.E. of regression	0.451256	Sum squared resid		17.10505
F-statistic	0.262262	Durbin-Watson stat		1.070585
Prob(F-statistic)	0.932419			
Unweighted Statistics				
R-squared	0.015371	Mean dependent var		0.060421

Sum squared resid	17.10505	Durbin-Watson stat	1.070585

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:18
Sample (adjusted): **2002 2008**
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.008900	0.804229	-0.011067	0.9913
DLNINFL	-0.105553	0.451321	-0.233875	0.8170
DLNGFCF	0.632421	0.763580	0.828231	0.4154
DLNFDI	0.189925	0.740203	0.256585	0.7996
DLNGE	0.738708	1.835741	0.402403	0.6908
C	0.225627	0.148720	1.517129	0.1418

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.768292	1.0000

Weighted Statistics

R-squared	0.045904	Mean dependent var	0.217120
Adjusted R-squared	-0.144916	S.D. dependent var	0.724300
S.E. of regression	0.775006	Sum squared resid	15.01586
F-statistic	0.240561	Durbin-Watson stat	1.316904
Prob(F-statistic)	0.940644		

Unweighted Statistics

R-squared	0.045904	Mean dependent var	0.217120
Sum squared resid	15.01586	Durbin-Watson stat	1.316904

Dependent Variable: DLNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 00:19
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.027033	0.016670	-1.621663	0.1109
DLNINFL	0.000370	0.028207	0.013110	0.9896
DLNGFCF	-0.075213	0.042802	-1.757260	0.0848
DLNFDI	-0.008722	0.017842	-0.488859	0.6270
DLNGE	0.223975	0.267838	0.836233	0.4069
C	-0.019533	0.012563	-1.554801	0.1261

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.309117	Mean dependent var	-0.009531
Adjusted R-squared	0.149683	S.D. dependent var	0.096093
S.E. of regression	0.088610	Akaike info criterion	-1.832287
Sum squared resid	0.408290	Schwarz criterion	-1.397409
Log likelihood	72.54932	Hannan-Quinn criter.	-1.660700
F-statistic	1.938835	Durbin-Watson stat	1.248010
Prob(F-statistic)	0.050631		

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:56
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.040419	0.078864	-0.512517	0.6096
DLNINFL	0.005955	0.118252	0.050358	0.9600
DLNGFCF	0.041636	0.181255	0.229711	0.8189
DLNFDI	-0.001153	0.085837	-0.013428	0.9893
DLNGE	1.026619	0.809171	1.268730	0.2080
DUMMY	-0.299785	0.114914	-2.608769	0.0108
C	0.286308	0.094115	3.042117	0.0031

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.437398	1.0000

Weighted Statistics			
R-squared	0.090254	Mean dependent var	0.060064
Adjusted R-squared	0.025272	S.D. dependent var	0.439357
S.E. of regression	0.433770	Sum squared resid	15.80512
F-statistic	1.388914	Durbin-Watson stat	1.203232
Prob(F-statistic)	0.228607		

Unweighted Statistics			
R-squared	0.090254	Mean dependent var	0.060064
Sum squared resid	15.80512	Durbin-Watson stat	1.203232

Model 4:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:26
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.029220	0.082643	-0.353567	0.7245
DLNINFL	0.024339	0.119968	0.202876	0.8397
DLNGFCF	0.137828	0.180130	0.765157	0.4463
DLNFDI	0.007650	0.087959	0.086976	0.9309
DLNRQ	1.051794	0.795281	1.322543	0.1896
C	0.086935	0.050234	1.730591	0.0872

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.448192	1.0000

Weighted Statistics

R-squared	0.034955	Mean dependent var	0.060421
Adjusted R-squared	-0.022489	S.D. dependent var	0.441805
S.E. of regression	0.446745	Sum squared resid	16.76484
F-statistic	0.608508	Durbin-Watson stat	1.036480
Prob(F-statistic)	0.693575		

Unweighted Statistics

R-squared	0.034955	Mean dependent var	0.060421
Sum squared resid	16.76484	Durbin-Watson stat	1.036480

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:28
Sample (adjusted): 2002 2008
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	0.145599	0.783273	0.185885	0.8540
DLNINFL	-0.278882	0.445345	-0.626216	0.5368
DLNGFCF	0.330894	0.771182	0.429073	0.6715
DLNFDI	0.171794	0.676051	0.254114	0.8015
DLNRQ	2.815759	2.208223	1.275124	0.2140
C	0.281377	0.148673	1.892588	0.0700

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.741916	1.0000

Weighted Statistics			
R-squared	0.096697	Mean dependent var	0.217120
Adjusted R-squared	-0.083964	S.D. dependent var	0.724300
S.E. of regression	0.754094	Sum squared resid	14.21645
F-statistic	0.535241	Durbin-Watson stat	1.242092
Prob(F-statistic)	0.747598		

Unweighted Statistics			
R-squared	0.096697	Mean dependent var	0.217120
Sum squared resid	14.21645	Durbin-Watson stat	1.242092

Dependent Variable: DLNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 00:29
Sample: 2008 2016
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.029455	0.017068	-1.725780	0.0903
DLNINFL	0.005193	0.027795	0.186826	0.8525
DLNGFCF	-0.070843	0.042699	-1.659135	0.1031
DLNFDI	-0.009980	0.017940	-0.556280	0.5804
DLNRQ	-0.073081	0.244093	-0.299398	0.7658
C	-0.017330	0.012333	-1.405144	0.1659

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.301031	Mean dependent var	-0.009531
Adjusted R-squared	0.139731	S.D. dependent var	0.096093
S.E. of regression	0.089127	Akaike info criterion	-1.820651
Sum squared resid	0.413069	Schwarz criterion	-1.385774
Log likelihood	72.17116	Hannan-Quinn criter.	-1.649064
F-statistic	1.866276	Durbin-Watson stat	1.193926
Prob(F-statistic)	0.061193		

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:58
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.011732	0.079417	-0.147724	0.8829
DLNINFL	-0.004422	0.115180	-0.038389	0.9695
DLNGFCF	0.024545	0.177406	0.138352	0.8903
DLNFDI	-0.003510	0.084135	-0.041716	0.9668
DLNRQ	1.578206	0.785446	2.009312	0.0477
DUMMY	-0.293451	0.106501	-2.755379	0.0072
C	0.297125	0.090264	3.291713	0.0015

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.429366	1.0000

Weighted Statistics			
R-squared	0.115370	Mean dependent var	0.060064
Adjusted R-squared	0.052183	S.D. dependent var	0.439357
S.E. of regression	0.427740	Sum squared resid	15.36878
F-statistic	1.825832	Durbin-Watson stat	1.137087
Prob(F-statistic)	0.103748		

Unweighted Statistics			
R-squared	0.115370	Mean dependent var	0.060064
Sum squared resid	15.36878	Durbin-Watson stat	1.137087

Model 5:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:32
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.052077	0.081552	-0.638570	0.5248
DLNINFL	0.045702	0.120575	0.379033	0.7056
DLNGFCF	0.160779	0.181320	0.886719	0.3778
DLNFDI	-0.000467	0.089368	-0.005223	0.9958
DLNRL	0.325857	0.828620	0.393253	0.6951
C	0.075925	0.050046	1.517100	0.1330

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.453285	1.0000

Weighted Statistics

R-squared	0.016558	Mean dependent var	0.060421
Adjusted R-squared	-0.041980	S.D. dependent var	0.441805
S.E. of regression	0.450983	Sum squared resid	17.08442
F-statistic	0.282865	Durbin-Watson stat	1.069854
Prob(F-statistic)	0.921294		

Unweighted Statistics

R-squared	0.016558	Mean dependent var	0.060421
Sum squared resid	17.08442	Durbin-Watson stat	1.069854

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:33
Sample (adjusted): 2002 2008
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.022023	0.836931	-0.026314	0.9792
DLNINFL	-0.050240	0.427769	-0.117447	0.9074
DLNGFCF	0.660321	0.824187	0.801179	0.4306
DLNFDI	0.101583	0.701590	0.144790	0.8860
DLNRL	0.334793	2.246315	0.149041	0.8827
C	0.215787	0.152047	1.419214	0.1682

Effects Specification

	S.D.	Rho
Cross-section random	1.01E-08	0.0000
Idiosyncratic random	0.768317	1.0000

Weighted Statistics

R-squared	0.040664	Mean dependent var	0.217120
Adjusted R-squared	-0.151204	S.D. dependent var	0.724300
S.E. of regression	0.777131	Sum squared resid	15.09832
F-statistic	0.211936	Durbin-Watson stat	1.284476
Prob(F-statistic)	0.954235		

Unweighted Statistics

R-squared	0.040664	Mean dependent var	0.217120
Sum squared resid	15.09832	Durbin-Watson stat	1.284476

Dependent Variable: DLNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 00:34
Sample: 2008 2016
Periods included: 9
Cross-sections included: 8

Total panel (unbalanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.027661	0.016030	-1.725603	0.0904
DLNINFL	0.001141	0.026757	0.042636	0.9662
DLNGFCF	-0.066886	0.041034	-1.630021	0.1091
DLNFDI	-0.016896	0.017535	-0.963562	0.3397
DLNRL	0.544933	0.257381	2.117221	0.0390
C	-0.020170	0.011819	-1.706610	0.0939

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.355394	Mean dependent var	-0.009531
Adjusted R-squared	0.206639	S.D. dependent var	0.096093
S.E. of regression	0.085591	Akaike info criterion	-1.901618
Sum squared resid	0.380942	Schwarz criterion	-1.466741
Log likelihood	74.80259	Hannan-Quinn criter.	-1.730031
F-statistic	2.389120	Durbin-Watson stat	1.261756
Prob(F-statistic)	0.015282		

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:59
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.042153	0.078796	-0.534968	0.5941
DLNINFL	0.018594	0.116572	0.159509	0.8737
DLNGFCF	0.055140	0.179855	0.306579	0.7599
DLNFDI	-0.020379	0.086362	-0.235976	0.8140
DLNRL	1.011264	0.842537	1.200262	0.2334
DUMMY	-0.283360	0.110967	-2.553558	0.0125
C	0.275126	0.091749	2.998675	0.0036

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.437555	1.0000

Weighted Statistics

R-squared	0.088404	Mean dependent var	0.060064
Adjusted R-squared	0.023290	S.D. dependent var	0.439357
S.E. of regression	0.434211	Sum squared resid	15.83727
F-statistic	1.357681	Durbin-Watson stat	1.184469
Prob(F-statistic)	0.241259		

Unweighted Statistics

R-squared	0.088404	Mean dependent var	0.060064
Sum squared resid	15.83727	Durbin-Watson stat	1.184469

Model 6:

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:37
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.060773	0.081418	-0.746432	0.4575
DLNINFL	0.054164	0.119064	0.454914	0.6503
DLNGFCF	0.190929	0.183717	1.039258	0.3017
DLNFDI	0.004204	0.088592	0.047448	0.9623
DLNCC	-0.533280	0.727454	-0.733077	0.4656
C	0.073086	0.049939	1.463506	0.1471

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.451693	1.0000

Weighted Statistics

R-squared	0.021041	Mean dependent var	0.060421
Adjusted R-squared	-0.037231	S.D. dependent var	0.441805
S.E. of regression	0.449954	Sum squared resid	17.00656
F-statistic	0.361083	Durbin-Watson stat	1.045503
Prob(F-statistic)	0.873723		

Unweighted Statistics

R-squared	0.021041	Mean dependent var	0.060421
Sum squared resid	17.00656	Durbin-Watson stat	1.045503

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 00:38
Sample (adjusted): 2002 2008
Periods included: 7
Cross-sections included: 6
Total panel (unbalanced) observations: 31
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.233291	0.820613	-0.284288	0.7785
DLNINFL	-0.059012	0.412641	-0.143010	0.8874

DLNGFCF	1.009695	0.838322	1.204424	0.2397
DLNFDI	0.056416	0.689287	0.081846	0.9354
DLNCC	-1.190011	1.704469	-0.698171	0.4915
C	0.172425	0.148753	1.159136	0.2574

Effects Specification

	S.D.	Rho
Cross-section random	1.98E-08	0.0000
Idiosyncratic random	0.758108	1.0000

Weighted Statistics

R-squared	0.057631	Mean dependent var	0.217120
Adjusted R-squared	-0.130843	S.D. dependent var	0.724300
S.E. of regression	0.770228	Sum squared resid	14.83129
F-statistic	0.305776	Durbin-Watson stat	1.226220
Prob(F-statistic)	0.904783		

Unweighted Statistics

R-squared	0.057631	Mean dependent var	0.217120
Sum squared resid	14.83129	Durbin-Watson stat	1.226220

Dependent Variable: DLNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 00:39
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.027377	0.016827	-1.627003	0.1098
DLNINFL	0.004495	0.027800	0.161701	0.8722
DLNGFCF	-0.072833	0.042950	-1.695775	0.0959
DLNFDI	-0.010220	0.017936	-0.569801	0.5713
DLNCC	0.123122	0.278976	0.441334	0.6608
C	-0.017200	0.012219	-1.407653	0.1652

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.302439	Mean dependent var	-0.009531
Adjusted R-squared	0.141464	S.D. dependent var	0.096093
S.E. of regression	0.089037	Akaike info criterion	-1.822667
Sum squared resid	0.412237	Schwarz criterion	-1.387790
Log likelihood	72.23669	Hannan-Quinn criter.	-1.651080
F-statistic	1.878789	Durbin-Watson stat	1.229407
Prob(F-statistic)	0.059232		

Dependent Variable: DLNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 01:00

Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 8
Total panel (unbalanced) observations: 91
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNGDPCG	-0.052255	0.079298	-0.658967	0.5117
DLNINFL	0.040806	0.115757	0.352516	0.7253
DLNGFCF	0.090613	0.184705	0.490584	0.6250
DLNFDI	-0.007288	0.086132	-0.084613	0.9328
DLNCC	-0.118177	0.733123	-0.161196	0.8723
DUMMY	-0.236503	0.109505	-2.159750	0.0336
C	0.239650	0.091237	2.626665	0.0102

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.439503	1.0000

Weighted Statistics			
R-squared	0.072817	Mean dependent var	0.060064
Adjusted R-squared	0.006590	S.D. dependent var	0.439357
S.E. of regression	0.437907	Sum squared resid	16.10806
F-statistic	1.099500	Durbin-Watson stat	1.129501
Prob(F-statistic)	0.369583		

Unweighted Statistics			
R-squared	0.072817	Mean dependent var	0.060064
Sum squared resid	16.10806	Durbin-Watson stat	1.129501

Appendix B-3: South-Eastern Europe Group

Model 1:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:21
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.307903	0.097359	-3.162566	0.0020
LNINFL	-0.142075	0.070487	-2.015617	0.0461
LNGFCF	0.061584	0.122995	0.500701	0.6175
LNFDI	0.031131	0.083627	0.372261	0.7104
LNV_A	0.773548	0.520838	1.485199	0.1401
C	3.821910	0.470160	8.128951	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.505629	Mean dependent var	3.583275
Adjusted R-squared	0.452072	S.D. dependent var	0.573096
S.E. of regression	0.424218	Akaike info criterion	1.221468
Sum squared resid	21.59530	Schwarz criterion	1.524228
Log likelihood	-67.83838	Hannan-Quinn criter.	1.344500
F-statistic	9.440970	Durbin-Watson stat	0.488099
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:26
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 9
Total panel (unbalanced) observations: 62

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.766670	0.348875	2.197547	0.0328
LNINFL	0.303327	0.130517	2.324043	0.0244
LNGFCF	0.379216	0.193750	1.957247	0.0561
LNFDI	0.321546	0.149133	2.156107	0.0361
LNV_A	-0.268706	0.669980	-0.401065	0.6902
C	-0.795863	1.176903	-0.676235	0.5021

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.696156	Mean dependent var	3.256234
Adjusted R-squared	0.613864	S.D. dependent var	0.665239
S.E. of regression	0.413378	Akaike info criterion	1.266773
Sum squared resid	8.202325	Schwarz criterion	1.747094

Log likelihood	-25.26997	Hannan-Quinn criter.	1.455359
F-statistic	8.459658	Durbin-Watson stat	0.524443
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:31
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.056882	0.023679	-2.402175	0.0191
LNINFL	0.035888	0.022297	1.609566	0.1122
LNGFCF	0.137826	0.046359	2.973032	0.0041
LNFDI	-0.030586	0.026981	-1.133636	0.2610
LNV_A	-0.338077	0.271053	-1.247275	0.2166
C	3.910109	0.210957	18.53510	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.910427	Mean dependent var	3.866165
Adjusted R-squared	0.893047	S.D. dependent var	0.256361
S.E. of regression	0.083839	Akaike info criterion	-1.963904
Sum squared resid	0.470946	Schwarz criterion	-1.550048
Log likelihood	93.53811	Hannan-Quinn criter.	-1.797860
F-statistic	52.38410	Durbin-Watson stat	0.631940
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:04
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.083965	0.078521	1.069323	0.2871
LNINFL	-0.001888	0.052030	-0.036278	0.9711
LNGFCF	0.084189	0.087926	0.957506	0.3403
LNFDI	0.192552	0.061617	3.124996	0.0022
LNV_A	-0.216848	0.383420	-0.565562	0.5728
DUMMY	0.754661	0.070084	10.76799	0.0000
C	2.547257	0.356249	7.150207	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.749605	Mean dependent var	3.583275

Adjusted R-squared	0.720147	S.D. dependent var	0.573096
S.E. of regression	0.303174	Akaike info criterion	0.556146
Sum squared resid	10.93784	Schwarz criterion	0.880531
Log likelihood	-22.26179	Hannan-Quinn criter.	0.687966
F-statistic	25.44639	Durbin-Watson stat	0.866100
Prob(F-statistic)	0.000000		

Model 2:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:37
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 131

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.280915	0.098398	-2.854891	0.0051
LNINFL	-0.137206	0.075467	-1.818090	0.0716
LNGFCF	0.050348	0.122863	0.409789	0.6827
LNFDI	0.048873	0.083415	0.585907	0.5591
LNPSAV	0.466189	0.294941	1.580617	0.1167
C	3.850425	0.472071	8.156447	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.510909	Mean dependent var	3.594215
Adjusted R-squared	0.456565	S.D. dependent var	0.574526
S.E. of regression	0.423529	Akaike info criterion	1.220327
Sum squared resid	20.98708	Schwarz criterion	1.527600
Log likelihood	-65.93142	Hannan-Quinn criter.	1.345186
F-statistic	9.401474	Durbin-Watson stat	0.476412
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 22:39
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 9
Total panel (unbalanced) observations: 59

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.892377	0.345071	2.586067	0.0130
LNINFL	0.289744	0.141498	2.047694	0.0465
LNGFCF	0.592724	0.214399	2.764585	0.0082
LNFDI	0.359624	0.154999	2.320171	0.0249
LNPSAV	-1.222561	0.525276	-2.327465	0.0245
C	-0.710004	1.197360	-0.592975	0.5562

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.728899	Mean dependent var	3.263896
Adjusted R-squared	0.650581	S.D. dependent var	0.680414
S.E. of regression	0.402204	Akaike info criterion	1.219989
Sum squared resid	7.279577	Schwarz criterion	1.712964
Log likelihood	-21.98967	Hannan-Quinn criter.	1.412426
F-statistic	9.306899	Durbin-Watson stat	0.519736
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:04
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.052388	0.023409	-2.237983	0.0286
LNINFL	0.046742	0.022510	2.076527	0.0417
LNGFCF	0.131258	0.045321	2.896187	0.0051
LNFDI	-0.042025	0.026355	-1.594547	0.1155
LNPSAV	0.166354	0.086185	1.930209	0.0578
C	3.489756	0.144067	24.22321	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.913175	Mean dependent var	3.866165
Adjusted R-squared	0.896329	S.D. dependent var	0.256361
S.E. of regression	0.082543	Akaike info criterion	-1.995066
Sum squared resid	0.456497	Schwarz criterion	-1.581211
Log likelihood	94.80019	Hannan-Quinn criter.	-1.829022
F-statistic	54.20537	Durbin-Watson stat	0.679801
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:05
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 131

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.089757	0.078442	1.144247	0.2549
LNINFL	-0.011830	0.055180	-0.214391	0.8306
LNGFCF	0.118506	0.087998	1.346691	0.1807
LNFDI	0.194033	0.061126	3.174318	0.0019
LNPSAV	-0.317812	0.223189	-1.423961	0.1571
DUMMY	0.804863	0.075617	10.64397	0.0000
C	2.602320	0.357019	7.289031	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.752568	Mean dependent var	3.594215
Adjusted R-squared	0.722706	S.D. dependent var	0.574526
S.E. of regression	0.302538	Akaike info criterion	0.554179
Sum squared resid	10.61738	Schwarz criterion	0.883400
Log likelihood	-21.29875	Hannan-Quinn criter.	0.687957
F-statistic	25.20117	Durbin-Watson stat	0.893869
Prob(F-statistic)	0.000000		

Model 3:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:16
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 133

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.279897	0.090031	-3.108883	0.0023
LNINFL	-0.023908	0.071017	-0.336657	0.7370
LNGFCF	0.110547	0.108396	1.019842	0.3099
LNFDI	0.014708	0.074413	0.197653	0.8437
LNGE	1.696457	0.356689	4.756116	0.0000
C	2.723309	0.467080	5.830497	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.579447	Mean dependent var	3.588115
Adjusted R-squared	0.533504	S.D. dependent var	0.572507
S.E. of regression	0.391025	Akaike info criterion	1.059211
Sum squared resid	18.19517	Schwarz criterion	1.363458
Log likelihood	-56.43751	Hannan-Quinn criter.	1.182845
F-statistic	12.61236	Durbin-Watson stat	0.580549
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:20
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 9
Total panel (unbalanced) observations: 61

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.671877	0.362648	1.852696	0.0702
LNINFL	0.345607	0.140813	2.454368	0.0179

LNGFCF	0.296530	0.195294	1.518373	0.1356
LNFDI	0.347942	0.158524	2.194885	0.0331
LNGE	0.388004	0.589093	0.658646	0.5133
C	-0.967768	1.193387	-0.810942	0.4215

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.697938	Mean dependent var	3.261426
Adjusted R-squared	0.614388	S.D. dependent var	0.669492
S.E. of regression	0.415739	Akaike info criterion	1.280772
Sum squared resid	8.123427	Schwarz criterion	1.765235
Log likelihood	-25.06354	Hannan-Quinn criter.	1.470637
F-statistic	8.353614	Durbin-Watson stat	0.593655
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:23
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.056520	0.024056	-2.349575	0.0218
LNINFL	0.037053	0.023665	1.565713	0.1221
LNGFCF	0.131123	0.049106	2.670231	0.0095
LNFDI	-0.036268	0.026980	-1.344241	0.1834
LNGE	0.002215	0.238316	0.009295	0.9926
C	3.680157	0.254865	14.43966	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.908347	Mean dependent var	3.866165
Adjusted R-squared	0.890564	S.D. dependent var	0.256361
S.E. of regression	0.084807	Akaike info criterion	-1.940951
Sum squared resid	0.481881	Schwarz criterion	-1.527096
Log likelihood	92.60853	Hannan-Quinn criter.	-1.774907
F-statistic	51.07850	Durbin-Watson stat	0.600179
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:07
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 133

Variable	Coefficient	Std. Error	t-Statistic	Prob.

LNGDPCG	0.064983	0.079685	0.815501	0.4164
LNINFL	0.031233	0.055372	0.564069	0.5738
LNGFCF	0.071561	0.084104	0.850862	0.3966
LNFDI	0.165930	0.060081	2.761761	0.0067
LNGE	0.357609	0.314226	1.138063	0.2574
DUMMY	0.708422	0.079105	8.955453	0.0000
C	2.204034	0.366536	6.013151	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.749620	Mean dependent var	3.588115
Adjusted R-squared	0.719914	S.D. dependent var	0.572507
S.E. of regression	0.302988	Akaike info criterion	0.555656
Sum squared resid	10.83264	Schwarz criterion	0.881635
Log likelihood	-21.95110	Hannan-Quinn criter.	0.688121
F-statistic	25.23461	Durbin-Watson stat	0.867405
Prob(F-statistic)	0.000000		

Model 4:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:26
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 132

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.142278	0.085950	-1.655349	0.1005
LNINFL	0.066852	0.068621	0.974234	0.3319
LNGFCF	-0.057770	0.103365	-0.558897	0.5773
LNFDI	-0.025488	0.069901	-0.364624	0.7160
LNRQ	2.516573	0.364864	6.897293	0.0000
C	1.929806	0.463451	4.163991	0.0001

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.644504	Mean dependent var	3.592075
Adjusted R-squared	0.605339	S.D. dependent var	0.572856
S.E. of regression	0.359880	Akaike info criterion	0.893912
Sum squared resid	15.28262	Schwarz criterion	1.199664
Log likelihood	-44.99822	Hannan-Quinn criter.	1.018156
F-statistic	16.45619	Durbin-Watson stat	0.508826
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:28
Sample: **2000 2008**
Periods included: 9

Cross-sections included: 9
Total panel (unbalanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.542029	0.347475	1.559907	0.1256
LNINFL	0.400755	0.141754	2.827122	0.0069
LNGFCF	0.033100	0.228081	0.145122	0.8852
LNFDI	0.259871	0.155820	1.667766	0.1022
LNRQ	2.162186	0.968428	2.232676	0.0305
C	-1.294127	1.186345	-1.090853	0.2810

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.725025	Mean dependent var	3.264694
Adjusted R-squared	0.647315	S.D. dependent var	0.674652
S.E. of regression	0.400657	Akaike info criterion	1.209542
Sum squared resid	7.384205	Schwarz criterion	1.698223
Log likelihood	-22.28627	Hannan-Quinn criter.	1.400692
F-statistic	9.329859	Durbin-Watson stat	0.857098
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:31
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.059977	0.024004	-2.498601	0.0149
LNINFL	0.034349	0.022508	1.526082	0.1317
LNGFCF	0.125147	0.046549	2.688530	0.0090
LNFDI	-0.035475	0.026704	-1.328455	0.1885
LNRQ	-0.262256	0.255243	-1.027474	0.3079
C	3.934339	0.267200	14.72434	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.909769	Mean dependent var	3.866165
Adjusted R-squared	0.892261	S.D. dependent var	0.256361
S.E. of regression	0.084147	Akaike info criterion	-1.956584
Sum squared resid	0.474406	Schwarz criterion	-1.542729
Log likelihood	93.24165	Hannan-Quinn criter.	-1.790540
F-statistic	51.96446	Durbin-Watson stat	0.649727
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:08

Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 132

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.076596	0.078282	0.978459	0.3299
LNINFL	0.056055	0.057529	0.974378	0.3319
LNGFCF	0.036274	0.087624	0.413971	0.6797
LNFDI	0.137931	0.062893	2.193092	0.0303
LNRQ	0.703375	0.397453	1.769704	0.0794
DUMMY	0.654323	0.091623	7.141437	0.0000
C	1.993791	0.388513	5.131851	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.752423	Mean dependent var	3.592075
Adjusted R-squared	0.722798	S.D. dependent var	0.572856
S.E. of regression	0.301609	Akaike info criterion	0.547273
Sum squared resid	10.64324	Schwarz criterion	0.874864
Log likelihood	-21.12003	Hannan-Quinn criter.	0.680391
F-statistic	25.39853	Durbin-Watson stat	0.807003
Prob(F-statistic)	0.000000		

Model 5:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:34
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.214805	0.092046	-2.333676	0.0213
LNINFL	0.021859	0.073976	0.295487	0.7681
LNGFCF	0.010611	0.110613	0.095932	0.9237
LNFDI	0.004832	0.074851	0.064552	0.9486
LNRL	1.909570	0.393472	4.853124	0.0000
C	2.357819	0.515279	4.575810	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.579144	Mean dependent var	3.583275
Adjusted R-squared	0.533551	S.D. dependent var	0.573096
S.E. of regression	0.391407	Akaike info criterion	1.060472
Sum squared resid	18.38398	Schwarz criterion	1.363231
Log likelihood	-57.05163	Hannan-Quinn criter.	1.183504
F-statistic	12.70256	Durbin-Watson stat	0.608418
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:41
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 9
Total panel (unbalanced) observations: 62

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.737285	0.342350	2.153601	0.0363
LNINFL	0.325025	0.133865	2.428007	0.0190
LNGFCF	0.290762	0.215319	1.350375	0.1832
LNFDI	0.320013	0.148388	2.156597	0.0361
LNRL	0.337015	0.664242	0.507368	0.6142
C	-1.014425	1.210751	-0.837848	0.4063

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.696764	Mean dependent var	3.256234
Adjusted R-squared	0.614637	S.D. dependent var	0.665239
S.E. of regression	0.412965	Akaike info criterion	1.264770
Sum squared resid	8.185911	Schwarz criterion	1.745091
Log likelihood	-25.20787	Hannan-Quinn criter.	1.453356
F-statistic	8.484024	Durbin-Watson stat	0.579698
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:44
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.056386	0.022825	-2.470306	0.0161
LNINFL	0.055875	0.022671	2.464564	0.0163
LNGFCF	0.182998	0.048672	3.759808	0.0004
LNFDI	-0.046212	0.025923	-1.782642	0.0792
LNRL	0.887233	0.341005	2.601817	0.0114
C	2.722207	0.382789	7.111506	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.916758	Mean dependent var	3.866165
Adjusted R-squared	0.900606	S.D. dependent var	0.256361
S.E. of regression	0.080822	Akaike info criterion	-2.037202
Sum squared resid	0.437662	Schwarz criterion	-1.623347
Log likelihood	96.50669	Hannan-Quinn criter.	-1.871158
F-statistic	56.75994	Durbin-Watson stat	0.780349

Prob(F-statistic)	0.000000

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:09
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.078856	0.078471	1.004911	0.3170
LNINFL	0.015328	0.057341	0.267307	0.7897
LNGFCF	0.062771	0.085930	0.730491	0.4665
LNFDI	0.173268	0.060968	2.841944	0.0053
LNRL	0.147384	0.362577	0.406489	0.6851
DUMMY	0.727358	0.080941	8.986228	0.0000
C	2.340219	0.399386	5.859547	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.749280	Mean dependent var	3.583275
Adjusted R-squared	0.719784	S.D. dependent var	0.573096
S.E. of regression	0.303371	Akaike info criterion	0.557443
Sum squared resid	10.95203	Schwarz criterion	0.881828
Log likelihood	-22.34867	Hannan-Quinn criter.	0.689262
F-statistic	25.40240	Durbin-Watson stat	0.856779
Prob(F-statistic)	0.000000		

Model 6:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:48
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.313967	0.092528	-3.393207	0.0009
LNINFL	-0.017809	0.075513	-0.235843	0.8140
LNGFCF	-0.028230	0.117797	-0.239648	0.8110
LNFDI	0.005915	0.077655	0.076167	0.9394
LNCC	1.627938	0.419476	3.880884	0.0002
C	3.104988	0.455275	6.820020	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.552684	Mean dependent var	3.583275

Adjusted R-squared	0.504225	S.D. dependent var	0.573096
S.E. of regression	0.403524	Akaike info criterion	1.121447
Sum squared resid	19.53981	Schwarz criterion	1.424206
Log likelihood	-61.13692	Hannan-Quinn criter.	1.244478
F-statistic	11.40514	Durbin-Watson stat	0.571442
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:36
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 9
Total panel (unbalanced) observations: 62

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.711753	0.348858	2.040236	0.0468
LNINFL	0.333358	0.142133	2.345389	0.0232
LNGFCF	0.306144	0.207507	1.475344	0.1466
LNFDI	0.311685	0.148313	2.101530	0.0409
LNCC	0.283517	0.655292	0.432658	0.6672
C	-0.935320	1.184221	-0.789818	0.4335

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.696322	Mean dependent var	3.256234
Adjusted R-squared	0.614075	S.D. dependent var	0.665239
S.E. of regression	0.413265	Akaike info criterion	1.266226
Sum squared resid	8.197841	Schwarz criterion	1.746547
Log likelihood	-25.25302	Hannan-Quinn criter.	1.454812
F-statistic	8.466304	Durbin-Watson stat	0.549808
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/27/18 Time: 23:51
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 9
Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.050989	0.024319	-2.096655	0.0398
LNINFL	0.033356	0.022613	1.475067	0.1449
LNGFCF	0.124161	0.046629	2.662738	0.0097
LNFDI	-0.037093	0.026694	-1.389606	0.1692
LNCC	-0.323229	0.305836	-1.056869	0.2944
C	3.967825	0.290174	13.67397	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.909850	Mean dependent var	3.866165
Adjusted R-squared	0.892358	S.D. dependent var	0.256361
S.E. of regression	0.084109	Akaike info criterion	-1.957484
Sum squared resid	0.473980	Schwarz criterion	-1.543628
Log likelihood	93.27809	Hannan-Quinn criter.	-1.791440
F-statistic	52.01589	Durbin-Watson stat	0.600991
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:09
Sample: 2000 2016
Periods included: 17
Cross-sections included: 9
Total panel (unbalanced) observations: 134

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.067243	0.079733	0.843352	0.4007
LNINFL	0.026369	0.056820	0.464075	0.6434
LNGFCF	0.045557	0.088679	0.513732	0.6084
LNFDI	0.165884	0.060529	2.740549	0.0071
LNCC	0.292232	0.343377	0.851052	0.3964
DUMMY	0.719882	0.074129	9.711186	0.0000
C	2.296776	0.351473	6.534716	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.750451	Mean dependent var	3.583275
Adjusted R-squared	0.721092	S.D. dependent var	0.573096
S.E. of regression	0.302662	Akaike info criterion	0.552762
Sum squared resid	10.90089	Schwarz criterion	0.877147
Log likelihood	-22.03508	Hannan-Quinn criter.	0.684582
F-statistic	25.56145	Durbin-Watson stat	0.859441
Prob(F-statistic)	0.000000		

Model 1:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:10
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.488469	0.082713	-5.905577	0.0000
LNINFL	-0.168338	0.052614	-3.199472	0.0015
LNGFCF	0.354723	0.110304	3.215885	0.0014
LNFDI	-0.055209	0.113059	-0.488320	0.6256
LNV_A	0.830392	0.468806	1.771291	0.0773
C	3.362475	0.686051	4.901202	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.531764	Mean dependent var	3.460545
Adjusted R-squared	0.492213	S.D. dependent var	0.727613
S.E. of regression	0.518491	Akaike info criterion	1.601012
Sum squared resid	98.66156	Schwarz criterion	1.920929
Log likelihood	-287.4019	Hannan-Quinn criter.	1.727716
F-statistic	13.44495	Durbin-Watson stat	0.705106
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:15
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25
Total panel (unbalanced) observations: 188

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.285979	0.323414	0.884249	0.3779
LNINFL	0.070609	0.094576	0.746585	0.4564
LNGFCF	0.657042	0.180185	3.646482	0.0004
LNFDI	0.273736	0.260976	1.048893	0.2958
LNV_A	-0.109032	0.705972	-0.154443	0.8775
C	-0.570412	1.578195	-0.361433	0.7183

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.594460	Mean dependent var	3.075935
Adjusted R-squared	0.520025	S.D. dependent var	0.819990

S.E. of regression	0.568091	Akaike info criterion	1.852230
Sum squared resid	50.99085	Schwarz criterion	2.368684
Log likelihood	-144.1096	Hannan-Quinn criter.	2.061478
F-statistic	7.986345	Durbin-Watson stat	0.822995
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 23:17
Sample: 2008 2016
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.075893	0.030301	-2.504610	0.0130
LNINFL	-0.017031	0.022565	-0.754749	0.4512
LNGFCF	0.179704	0.057906	3.103345	0.0022
LNFDI	-0.033962	0.041494	-0.818471	0.4139
LNV_A	1.088007	0.169385	6.423274	0.0000
C	2.226339	0.306143	7.272229	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.232242	0.6800
Idiosyncratic random	0.159323	0.3200

Weighted Statistics

R-squared	0.198090	Mean dependent var	0.857024
Adjusted R-squared	0.180658	S.D. dependent var	0.180022
S.E. of regression	0.162888	Sum squared resid	6.102440
F-statistic	11.36307	Durbin-Watson stat	0.461537
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.388207	Mean dependent var	3.798737
Sum squared resid	23.28591	Durbin-Watson stat	0.120953

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:20
Sample: 2000 2016
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.046585	0.072304	-0.644298	0.5198
LNINFL	-0.026518	0.042914	-0.617931	0.5370

LNGFCF	0.279847	0.087803	3.187226	0.0016
LNFDI	0.161953	0.091056	1.778613	0.0761
LNV_A	0.428244	0.373551	1.146416	0.2524
DUMMY	0.735933	0.050171	14.66853	0.0000
C	1.382731	0.561637	2.461966	0.0143

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.705120	Mean dependent var	3.460545
Adjusted R-squared	0.679338	S.D. dependent var	0.727613
S.E. of regression	0.412025	Akaike info criterion	1.143622
Sum squared resid	62.13397	Schwarz criterion	1.473536
Log likelihood	-195.1526	Hannan-Quinn criter.	1.274285
F-statistic	27.34945	Durbin-Watson stat	0.846476
Prob(F-statistic)	0.000000		

Model 2:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:21
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 396

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.487179	0.083028	-5.867629	0.0000
LNINFL	-0.163578	0.054164	-3.020048	0.0027
LNGFCF	0.338500	0.113702	2.977080	0.0031
LNFDI	-0.031990	0.113392	-0.282123	0.7780
LNPSAV	0.301412	0.207629	1.451689	0.1474
C	4.056661	0.470589	8.620391	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.531846	Mean dependent var	3.462927
Adjusted R-squared	0.491976	S.D. dependent var	0.729738
S.E. of regression	0.520126	Akaike info criterion	1.607866
Sum squared resid	98.47347	Schwarz criterion	1.929597
Log likelihood	-286.3575	Hannan-Quinn criter.	1.735326
F-statistic	13.33942	Durbin-Watson stat	0.702584
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:25
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25
Total panel (unbalanced) observations: 185

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.296107	0.325381	0.910032	0.3642
LNINFL	0.062163	0.097674	0.636437	0.5254
LNGFCF	0.675474	0.195275	3.459087	0.0007
LNFDI	0.250927	0.267929	0.936546	0.3504
LNPSAV	-0.112908	0.384882	-0.293357	0.7696
C	-0.581274	1.349464	-0.430744	0.6673

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.594795	Mean dependent var	3.074796
Adjusted R-squared	0.518983	S.D. dependent var	0.826380
S.E. of regression	0.573139	Akaike info criterion	1.872018
Sum squared resid	50.91577	Schwarz criterion	2.394238
Log likelihood	-143.1617	Hannan-Quinn criter.	2.083661
F-statistic	7.845603	Durbin-Watson stat	0.818474
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:27
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.066888	0.030984	-2.158774	0.0320
LNINFL	-0.015583	0.023939	-0.650947	0.5158
LNGFCF	0.197821	0.064898	3.048204	0.0026
LNFDI	-0.047680	0.042497	-1.121965	0.2632
LNPSAV	0.136370	0.097993	1.391631	0.1655
C	3.457409	0.218070	15.85458	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.858870	Mean dependent var	3.798737
Adjusted R-squared	0.837424	S.D. dependent var	0.402449
S.E. of regression	0.162270	Akaike info criterion	-0.673635
Sum squared resid	5.371641	Schwarz criterion	-0.203963
Log likelihood	111.4889	Hannan-Quinn criter.	-0.484306
F-statistic	40.04772	Durbin-Watson stat	0.524511
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:21
Sample: 2000 2016

Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 396

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.040651	0.072644	-0.559596	0.5761
LNINFL	-0.033143	0.043923	-0.754573	0.4510
LNGFCF	0.323822	0.090292	3.586386	0.0004
LNFDI	0.165035	0.091041	1.812761	0.0707
LNPSAV	-0.118888	0.167352	-0.710411	0.4779
DUMMY	0.755911	0.051638	14.63853	0.0000
C	1.914269	0.401315	4.769987	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.705623	Mean dependent var	3.462927
Adjusted R-squared	0.679672	S.D. dependent var	0.729738
S.E. of regression	0.413013	Akaike info criterion	1.148981
Sum squared resid	61.92050	Schwarz criterion	1.480765
Log likelihood	-194.4982	Hannan-Quinn criter.	1.280424
F-statistic	27.19102	Durbin-Watson stat	0.839640
Prob(F-statistic)	0.000000		

Model 3:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:30
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 398

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.425622	0.080797	-5.267801	0.0000
LNINFL	-0.124772	0.051895	-2.404305	0.0167
LNGFCF	0.375962	0.105100	3.577180	0.0004
LNFDI	-0.045262	0.108844	-0.415840	0.6778
LNGE	1.648365	0.305186	5.401181	0.0000
C	2.336042	0.555372	4.206265	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.563649	Mean dependent var	3.461735
Adjusted R-squared	0.526690	S.D. dependent var	0.728139
S.E. of regression	0.500942	Akaike info criterion	1.532331
Sum squared resid	91.84500	Schwarz criterion	1.852850
Log likelihood	-272.9340	Hannan-Quinn criter.	1.659286
F-statistic	15.25079	Durbin-Watson stat	0.718208
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:34
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25
Total panel (unbalanced) observations: 187

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.286229	0.323054	0.886009	0.3770
LNINFL	0.064888	0.096045	0.675601	0.5003
LNGFCF	0.646650	0.180826	3.576098	0.0005
LNFDI	0.255189	0.263831	0.967242	0.3349
LNGE	0.157436	0.516664	0.304717	0.7610
C	-0.761578	1.331047	-0.572164	0.5680

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.594983	Mean dependent var	3.076412
Adjusted R-squared	0.520170	S.D. dependent var	0.822165
S.E. of regression	0.569511	Akaike info criterion	1.857917
Sum squared resid	50.92190	Schwarz criterion	2.376277
Log likelihood	-143.7153	Hannan-Quinn criter.	2.067957
F-statistic	7.953023	Durbin-Watson stat	0.824777
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 23:37
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.070151	0.031001	-2.262866	0.0246
LNINFL	-0.020823	0.023350	-0.891778	0.3734
LNGFCF	0.200439	0.059040	3.394995	0.0008
LNFDI	-0.038657	0.042379	-0.912164	0.3626
LNGE	0.511531	0.159620	3.204684	0.0015
C	3.032978	0.293776	10.32411	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.229012	0.6645
Idiosyncratic random	0.162724	0.3355

Weighted Statistics

R-squared	0.094810	Mean dependent var	0.886014
Adjusted R-squared	0.075132	S.D. dependent var	0.181393
S.E. of regression	0.174386	Sum squared resid	6.994434
F-statistic	4.818050	Durbin-Watson stat	0.417105
Prob(F-statistic)	0.000329		

Unweighted Statistics

R-squared	0.220576	Mean dependent var	3.798737
Sum squared resid	29.66623	Durbin-Watson stat	0.098341

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:22
Sample: 2000 2016
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 398

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.047302	0.072327	-0.654002	0.5135
LNINFL	-0.020534	0.043406	-0.473070	0.6364
LNGFCF	0.296976	0.086660	3.426904	0.0007
LNFDI	0.163375	0.090906	1.797182	0.0731
LNGE	0.396613	0.268202	1.478784	0.1401
DUMMY	0.713275	0.053783	13.26217	0.0000
C	1.467289	0.461521	3.179248	0.0016

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.705542	Mean dependent var	3.461735
Adjusted R-squared	0.679726	S.D. dependent var	0.728139
S.E. of regression	0.412074	Akaike info criterion	1.144047
Sum squared resid	61.97884	Schwarz criterion	1.474582
Log likelihood	-194.6654	Hannan-Quinn criter.	1.274969
F-statistic	27.33013	Durbin-Watson stat	0.849390
Prob(F-statistic)	0.000000		

Model 4:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:40
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 397

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.380092	0.075837	-5.011968	0.0000
LNINFL	-0.072227	0.049139	-1.469869	0.1425

LNGFCF	0.226890	0.100140	2.265726	0.0241
LNFDI	-0.046826	0.102099	-0.458634	0.6468
LNRQ	3.292274	0.358347	9.187388	0.0000
C	-0.255710	0.633260	-0.403799	0.6866

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.617593	Mean dependent var	3.462629
Adjusted R-squared	0.585115	S.D. dependent var	0.728840
S.E. of regression	0.469457	Akaike info criterion	1.402691
Sum squared resid	80.44237	Schwarz criterion	1.723814
Log likelihood	-246.4341	Hannan-Quinn criter.	1.529898
F-statistic	19.01553	Durbin-Watson stat	0.751809
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:52
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25
Total panel (unbalanced) observations: 186

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.180325	0.314015	0.574255	0.5666
LNINFL	0.089882	0.094236	0.953798	0.3417
LNGFCF	0.507419	0.178632	2.840592	0.0051
LNFDI	0.177856	0.256472	0.693472	0.4890
LNRQ	2.101553	0.630890	3.331092	0.0011
C	-2.464805	1.374425	-1.793336	0.0749

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.621705	Mean dependent var	3.076247
Adjusted R-squared	0.551381	S.D. dependent var	0.824381
S.E. of regression	0.552162	Akaike info criterion	1.796740
Sum squared resid	47.56176	Schwarz criterion	2.317022
Log likelihood	-137.0968	Hannan-Quinn criter.	2.007578
F-statistic	8.840584	Durbin-Watson stat	0.876531
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/28/18 Time: 23:55
Sample: 2008 2016
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.070754	0.030912	-2.288908	0.0230
LNINFL	-0.023870	0.023162	-1.030540	0.3038
LNGFCF	0.178781	0.059448	3.007363	0.0029
LNFDI	-0.037813	0.042350	-0.892859	0.3729
LNRQ	0.717076	0.252596	2.838826	0.0049
C	2.650169	0.416735	6.359363	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.248497	0.7009
Idiosyncratic random	0.162314	0.2991

Weighted Statistics

R-squared	0.090119	Mean dependent var	0.817959
Adjusted R-squared	0.070339	S.D. dependent var	0.178228
S.E. of regression	0.171768	Sum squared resid	6.785993
F-statistic	4.556074	Durbin-Watson stat	0.417337
Prob(F-statistic)	0.000556		

Unweighted Statistics

R-squared	0.186923	Mean dependent var	3.798737
Sum squared resid	30.94715	Durbin-Watson stat	0.091512

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:23
Sample: 2000 2016
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 397

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.055782	0.070367	-0.792729	0.4285
LNINFL	0.004785	0.042435	0.112772	0.9103
LNGFCF	0.234008	0.085438	2.738907	0.0065
LNFDI	0.135179	0.088480	1.527786	0.1274
LNRQ	1.655164	0.336111	4.924463	0.0000
DUMMY	0.633817	0.054063	11.72375	0.0000
C	-0.095539	0.540449	-0.176777	0.8598

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.722411	Mean dependent var	3.462629
Adjusted R-squared	0.698008	S.D. dependent var	0.728840
S.E. of regression	0.400525	Akaike info criterion	1.087386
Sum squared resid	58.39312	Schwarz criterion	1.418544
Log likelihood	-182.8461	Hannan-Quinn criter.	1.218568
F-statistic	29.60285	Durbin-Watson stat	0.858822
Prob(F-statistic)	0.000000		

Model 5:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/28/18 Time: 23:58
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.381529	0.078333	-4.870632	0.0000
LNINFL	-0.056853	0.051209	-1.110201	0.2676
LNGFCF	0.313664	0.101739	3.083012	0.0022
LNFDI	-0.084287	0.105074	-0.802174	0.4230
LNRL	2.000845	0.258886	7.728665	0.0000
C	2.122400	0.491101	4.321717	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.593864	Mean dependent var	3.460545
Adjusted R-squared	0.559558	S.D. dependent var	0.727613
S.E. of regression	0.482886	Akaike info criterion	1.458730
Sum squared resid	85.57670	Schwarz criterion	1.778646
Log likelihood	-259.0166	Hannan-Quinn criter.	1.585433
F-statistic	17.31088	Durbin-Watson stat	0.781282
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 00:01
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25
Total panel (unbalanced) observations: 188

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.314789	0.316202	0.995532	0.3210
LNINFL	0.108824	0.094279	1.154274	0.2501
LNGFCF	0.575526	0.178133	3.230883	0.0015
LNFDI	0.211040	0.258162	0.817471	0.4149
LNRL	0.906143	0.403218	2.247276	0.0260
C	-1.274563	1.298189	-0.981801	0.3277

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.606962	Mean dependent var	3.075935

Adjusted R-squared	0.534822	S.D. dependent var	0.819990
S.E. of regression	0.559266	Akaike info criterion	1.820918
Sum squared resid	49.41894	Schwarz criterion	2.337371
Log likelihood	-141.1663	Hannan-Quinn criter.	2.030165
F-statistic	8.413671	Durbin-Watson stat	0.868322
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:03
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.069906	0.030099	-2.322508	0.0211
LNINFL	0.007717	0.023089	0.334205	0.7385
LNGFCF	0.169872	0.057244	2.967535	0.0033
LNFDI	-0.036043	0.041164	-0.875603	0.3822
LNRL	1.083422	0.155872	6.950717	0.0000
C	2.484793	0.268000	9.271632	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.216996	0.6528
Idiosyncratic random	0.158240	0.3472

Weighted Statistics

R-squared	0.213721	Mean dependent var	0.907990
Adjusted R-squared	0.196628	S.D. dependent var	0.182454
S.E. of regression	0.163487	Sum squared resid	6.147440
F-statistic	12.50340	Durbin-Watson stat	0.472287
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.391523	Mean dependent var	3.798737
Sum squared resid	23.15968	Durbin-Watson stat	0.125362

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:24
Sample: 2000 2016
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.043326	0.071090	-0.609453	0.5426

LNINFL	0.007833	0.043271	0.181030	0.8564
LNGFCF	0.273150	0.085411	3.198070	0.0015
LNFDI	0.130068	0.089807	1.448303	0.1484
LNRL	0.879355	0.235065	3.740898	0.0002
DUMMY	0.663945	0.053245	12.46960	0.0000
C	1.148212	0.419326	2.738232	0.0065

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.714960	Mean dependent var	3.460545
Adjusted R-squared	0.690038	S.D. dependent var	0.727613
S.E. of regression	0.405093	Akaike info criterion	1.109684
Sum squared resid	60.06062	Schwarz criterion	1.439598
Log likelihood	-188.3819	Hannan-Quinn criter.	1.240347
F-statistic	28.68841	Durbin-Watson stat	0.875238
Prob(F-statistic)	0.000000		

Model 6:

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 00:14
Sample: **2000 2016**
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.456351	0.080153	-5.693524	0.0000
LNINFL	-0.120142	0.051693	-2.324140	0.0207
LNGFCF	0.296684	0.106383	2.788825	0.0056
LNFDI	-0.075443	0.109034	-0.691922	0.4894
LNCC	1.361856	0.250352	5.439764	0.0000
C	3.224778	0.461645	6.985411	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.562997	Mean dependent var	3.460545
Adjusted R-squared	0.526084	S.D. dependent var	0.727613
S.E. of regression	0.500900	Akaike info criterion	1.531981
Sum squared resid	92.08060	Schwarz criterion	1.851898
Log likelihood	-273.6302	Hannan-Quinn criter.	1.658685
F-statistic	15.25197	Durbin-Watson stat	0.770252
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 00:17
Sample: **2000 2008**
Periods included: 9
Cross-sections included: 25

Total panel (unbalanced) observations: 188

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	0.272370	0.320652	0.849424	0.3969
LNINFL	0.079962	0.094361	0.847397	0.3981
LNGFCF	0.608508	0.182413	3.335886	0.0011
LNFDI	0.240375	0.261927	0.917717	0.3602
LNCC	0.366611	0.367675	0.997104	0.3202
C	-0.754391	1.290561	-0.584546	0.5597

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.596935	Mean dependent var	3.075935
Adjusted R-squared	0.522955	S.D. dependent var	0.819990
S.E. of regression	0.566354	Akaike info criterion	1.846108
Sum squared resid	50.67964	Schwarz criterion	2.362562
Log likelihood	-143.5342	Hannan-Quinn criter.	2.055356
F-statistic	8.068842	Durbin-Watson stat	0.838948
Prob(F-statistic)	0.000000		

Dependent Variable: LNDCPS_GDP
Method: Panel EGLS (Cross-section random effects)
Date: 09/29/18 Time: 00:19
Sample: **2008 2016**
Periods included: 9
Cross-sections included: 27
Total panel (unbalanced) observations: 236
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.075902	0.030373	-2.498976	0.0132
LNINFL	-0.004750	0.022924	-0.207194	0.8360
LNGFCF	0.134002	0.058027	2.309315	0.0218
LNFDI	-0.030306	0.041592	-0.728666	0.4669
LNCC	0.942883	0.144607	6.520322	0.0000
C	2.841335	0.244228	11.63393	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.209177	0.6314
Idiosyncratic random	0.159818	0.3686

Weighted Statistics

R-squared	0.193731	Mean dependent var	0.948665
Adjusted R-squared	0.176203	S.D. dependent var	0.184466
S.E. of regression	0.167394	Sum squared resid	6.444765
F-statistic	11.05290	Durbin-Watson stat	0.443842
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.358997	Mean dependent var	3.798737
Sum squared resid	24.39770	Durbin-Watson stat	0.117243

Dependent Variable: LNDCPS_GDP
Method: Panel Least Squares
Date: 09/29/18 Time: 01:25
Sample: 2000 2016
Periods included: 17
Cross-sections included: 27
Total panel (unbalanced) observations: 399

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDPCG	-0.051653	0.071434	-0.723086	0.4701
LNINFL	-0.009459	0.042759	-0.221221	0.8250
LNGFCF	0.255773	0.086483	2.957497	0.0033
LNFDI	0.142290	0.089984	1.581284	0.1147
LNCC	0.678729	0.209353	3.242039	0.0013
DUMMY	0.701114	0.050867	13.78335	0.0000
C	1.445812	0.396654	3.645016	0.0003

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.712323	Mean dependent var	3.460545
Adjusted R-squared	0.687170	S.D. dependent var	0.727613
S.E. of regression	0.406962	Akaike info criterion	1.118893
Sum squared resid	60.61631	Schwarz criterion	1.448807
Log likelihood	-190.2192	Hannan-Quinn criter.	1.249556
F-statistic	28.32056	Durbin-Watson stat	0.888073
Prob(F-statistic)	0.000000		