Financial Integration or Disintegration during the Financial Crisis

Otilia-Roxana Oprea[1]

Abstract

Both the causes and effects of the disintegration of the European Union, as well as the possible connections between the process of integration and disintegration were vaguely addressed in the specialized literature up to the present day. Often the crises were evaluated as catalysts for subsequent phases of the EU integration stages, without focusing on the possible impact disintegrator. The aim of this study is to show the impact of the financial crisis on the financial integration process, specifically to see if, during the crisis, financial integration had or not disintegrative tendencies. I chose this goal because the phenomenon of financial disintegration and the link between this phenomenon and the financial crisis have been treated so far in studies of literature, but more in news articles exposing the opinions of specialists. For our analysis, we retrieved data from the Eurostat for the period between 2000 and 2014, including the EU 28 member states.

Keywords: financial integration, Europe, crisis, disintegration.

Jel Classifications: F36, G01.

Introduction

Both the causes and effects of the disintegration of the European Union, as well as the possible connections between the process of integration and disintegration were vaguely addressed in the specialized literature up to the present day.

Having regard the crisis of 2008-2009 and its effects, it seems that market forces may be more powerful and direct more with regard to the European integration and disintegration.

Often the crises were evaluated as catalysts for subsequent phases of the EU integration stages, without focusing on the possible impact disintegrator.

Because of economic performance and competitiveness, some countries are no longer able to provide functional integration services to stabilize their domestic markets. Without external funding in recent years, especially Greece and

[1] Alexandru Ioan Cuza University of Iaşi, Faculty of Economics and Business Administration, Iaşi, Romania email: oty_roxy21@yahoo.com

Cyprus, but also Spain and Portugal would be unable to pay the public debt. They also failed to substantially reduce their public debt and current account deficits. (Meyer-Rix, 2013).

The aim of this study is to show the impact of the financial crisis on the financial integration process, specifically to see if, during the crisis, financial integration had or not disintegrative tendencies. I chose this goal because the phenomenon of financial disintegration and the link between this phenomenon and the financial crisis have been treated so far in studies of literature, but more in news articles exposing the opinions of specialists.

The analysis performed may be extended then a greater number of years, depending on the availability of data and research results will continue to be used both in purpose econometric improving the method used and the financial consideration, to notice that were the effects of the crisis on financial integration and whether or not caused the phenomenon of disintegration.

Review of the scientific literature

According to Scheller and Eppler (2014), still lingering effects of the 2008-2009 crisis constitutes a dilemma for scientific research on European integration policy. They argue that the phenomenon of disintegration broaden the discussion to understand the whole process of integration and its functional conditions. They noted that the integration and the disintegration taking place simultaneously in different sizes. They studied European integration theories and found that they classified only partially explains the peculiarities of the current integration crisis, although the theoretical debate on European disintegration is in its early stages.

According to a study by Deutsche Bank, financial disintegration is the result of both market forces and regulatory and political influences, and, ironically, is carried out as a discussion among policy makers about the creation of a European banking union.

Heimberger and Kapeller (2016) stated in their study that the disintegration is reinforced by policies shaped by defeating a macroeconomic model that mimics and enhances the differences between "winners" and "losers". Their research suggests that fiscal policy position required not only prevents economic growth, but also contribute to a structural divergence in the growth of European economies, thus favoring large-scale European disintegration. The results also suggest that the model used by the European Commission to coordinate national fiscal policies contribute to economic and structural disintegration between "core" and "periphery" countries of Europe.

According to Davies and Lund (2013) reform and integration are needed to determine the mobility of capital and currency wars have dominated political discussion when finance ministers of the Group of 20 nations gathered in

Moscow in February 2013. For 3 decades there was an increase unstoppable capital mobility and integration. But the 2008 crisis stopped this and led to the collapse of cross-border flows.

Using data from 15 economies of the European Union, Chakraborty and others (2016) quantified the real effects of supply-side frictions due to the financial disintegration of European countries during the financial crisis of 2008. They developed a multi-country general equilibrium model with heterogeneous countries and destination-specific financial frictions. According to the results obtained financial disintegration reduced cost access to capital for companies, which led to production cuts. Financial disintegration has led to the production decline by 0.54% to Europe during the crisis.

Using different versions of Feldstein-Horioka coefficient, Choudhry (2014) measured the temporal variability of capital mobility and economic integration in the European Union. Research has shown that there is a high correlation between domestic investment and savings which implies a low mobility of capital. The results showed that the coefficient was higher in the 1990-1995 period (0.52) in EU countries, and in 2003-2008 it was close to the minimum value of 0.02. This suggests that the coefficient varies in time and shows a deepening of economic integration in the European Union. With the advent of the financial crisis, this ratio grew to 0.26 leading to worrying signs of disintegration.

According Euromemorandum's 2017, European elites have engaged in various strategies in the face of multiple crises and disintegrative tendencies of today, such as:

- Strategy muddling through - considered the predominant way of interacting with multiple crises of the EU. This can be done with greater fiscal flexibility and more public investment and tightening or restricting Schengen area.
- "core Europe". The EU is already characterized by a differentiated integration. These concepts have to strengthen integration between the countries of neoliberal base.
- "Europe of nations". Some argue nationalist parties as the single market and regulations focus on economic ties.
- "Other Europe". This term was used by some prominent leftist forces, but with a different meaning. It seeks a democratic remake of the EU and open spaces for a better integration.

According to Schmitter and Lefkofridi (2015), the EU's future has been questioned, both in practice how and in theory. In a probabilistic sense that the EU is showing signs of disintegration it is not surprising, since many of our most regional integration efforts in World War II showed similar symptoms.

According to Turk (2011), the European debt crisis, which began in 2009, revealed structural problems underlying the European Monetary Union that threatens the viability of the common currency in its current form. A collapse of the monetary coordination in Europe would mark a significant event disintegrating in front of a long trend of integration, which was considered an inevitable and self-contained.

Zielonka (2012) stated in his study that the European Union is unable to stop the negative developments caused by the current crisis (enormous pressure on the common currency, high levels of debt, slow economic growth, the public confused). This begs the question whether European integration is about to end and how disintegration will progress in this case. To answer the second question, it needs to establish a theory of European disintegration. This article examined three scenarios in this respect: the abrupt disintegration, pointing to the federation and a new medievalism. According to him, the abrupt disintegration scenario would imply a kind of shock that would generate extremely anarchy beyond political control. Also, Angela Merkel said that an event like the fall of the euro would be fatal for the entire project of European integration.

According to Dabrowski (2010), limited fiscal capacity of the European Union has proved to be the most critical constraint in response to the global financial crisis in a coordinated manner. The European Union does not have enough resources to rescue financial institutions and Member States in difficulty. This leads to a nationalization rescue operations, which undermine the European single market and requires the involvement of the IMF in particular for countries in distress. The EU must also complete, single European market architecture elements missing (eg European financial supervision) and to help strengthen the global regulatory and policy coordination.

According to the European Financial Stability and Integration (2010) the crisis has not only undermined economic and financial stability, but also led to cross-border financial dissintermediation during the crisis and diverging trends unfolding in certain market segments.

Chen and others(2014) examined in their study the stock market integration between frontier and leading markets, focusing on the period of pre and post global financial crisis.Their result confirm that the global financial crisis impact the relationship between the frontier and leading markets and changes the determinants of stock market integration.

Babecky and others (2013) analysed the phenomenon of financial integration, focusing on assessing the impacts of the current financial crisis. They started their analysis with an ovierview of cost-benefit considerations associated with the process of financial integration. Their results for the Czech Republic revealed that a process of increasing financial integration has been going on

steadily since the end of the 1990s and also that the financial crisis caused only temporary price divergence of the Czech financial market from the euro area market.

Webber(2011) turned the existing theories of European integration on their head, exploring the conditions under which they would predict the European Union to *dis*integrate and assessing to what extent these conditions currently exist. He defined the concept of disintegration as a „decline in (1) the range of common or joint policies adopted and implemented in the EU, (2) the number of EU member states, and (3) the formal (i.e. treaty-rooted) and actual capacity of EU organs to make decisions if necessary against the will of individual members". He said that as serious as the EU's crisis seemed to be, there was no unequivocal empirical evidence that the integration process had begun to unwind and the EU to disintegrate.

Kunz (2013) said in her study that while theories on (European) regional integration abound, theories on disintegration are a much scarcer phenomenon. This may be due to the somewhat teleological character of many approaches to integration, but also to the fact that integration is commonly – and clearly not only in political science – viewed as desirable, while disintegration is the boggle to be avoided.

Vollard(2008) said that the mechanisms that link the various factors and actors at play in the processes of (dis)integration are: exit, voice and loyalty and their corresponding systemic counterparts of boundary maintenance, internal structuring and system-building.

Podkaminer (2016) argued that that European integration has not fulfi lled its chief economic promises.Output growth has been increasingly weak and unstable. Productivity growth has been following a decreasing trend. Income inequalities, both within and between the EU member states, have been rising. This sorry state of affairs is likely to continue – and likely to precipitate further exits, or eventually, the dissolution of the Union.

Firdmuc and Korhonen (2009) analyzed the transmission of the global financial crisis to business cycles in China and India. The Business Cycle Model in Asian emerging economies generally showed a low degree of coincidence with OECD countries, which was consistent with the decoupling assumption. Instead, however, the financial crisis has had a significant effect on economic developments in emerging Asian economies.

According to Visco (2013), the global financial crisis has been severe and has greatly affected various economies in different ways. Central and Eastern European transition countries have not been excluded: swift financial integration over the past twenty years has brought sustainable economic benefits but has left them more exposed to global financial turmoil through links with banks in

Western Europe, which have dominant market shares in the region. Financial stability has become a fundamental objective in policy making, and central banks are heavily involved in this effort.

According to Crotty (2009), the crisis has taken the form of cycles in which deregulation, coupled with rapid financial innovation, stimulates strong financial booms that lead to crises. This paper looked at the structural failings in the financial system that stimulated the crisis and also the prospects for financial reform.

Inklaar, Guevara and Maudos (2012) found in their study that, as a result of a financial crisis, investment is declining more in countries with a higher degree of risk aversion, which may be informative for assessing post-crisis economic performance.

Yang et al. (2016) showed in his study that in the case of Asia, both long-term co-integration and short-term causal links between these markets were strengthened during the crisis and that these markets were generally more integrated after the crisis before the crisis. They have noticed that the degree of integration has changed over time, especially during periods marked by the crisis.

Research methodology

Most studies conducted until the present on the subject are more theoretical, very few are made based on empirical studies.

The methodology used in this study are based on the proposed Feldstein-Horioka (1980) model equations, by which Cloudhry measured variability of capital mobility and economic integration in the European Union.

The data used for the empirical analysis focuses on the period 2000-2014, with an annual frequency. These were obtained from Eurostat indicators databases, and World Development Indicators (World Bank) databases for the EU 28.

The empirical analysis was performed based on simple and multiple linear regressions between dependent and independent variables set and as econometric software will be used the program Eviews Statistics, which will help me to create a clearer picture on the correlations between different variables.

Thus, the variables used in this study was the total investments, gross domestic savings, the openness defined as the sum of exports and imports, the country's size measured as the natural logarithm of GDP, the population growth rate, foreign direct investments, and portfolio investments.

Also to capture the financial crisis, we used the countries deficits expressed by general government deficit or surplus, the debts relative to GDP and a dummy variable (crisis) that take the value 0 in 2008 and 1 after 2008. All variables, except dummy variable are expressed as percentage of gross domestic product in the European Union.

So the equations that make up the model are the following:

$\sum_{j=1}^{T} INV_{ij} = \alpha + \beta \sum_{j=1}^{T} SAV_{ij} + \varepsilon_i$,

where INV - investments, SAV - gross domestic savings,

α, β – constants, ε_i – error term, ij – the time from country i to country j (1)

$\sum_{j=1}^{T} INV_{ij} = \alpha + \beta_0 \sum_{j=1}^{T} SAV_{ij} + \beta_1 \sum_{j=1}^{T} SAV_{ij} * \sum_{j=1}^{T} OPEN_{ij} + \varepsilon_i$,

where OPEN - the openness measured by the sum of imports and exports (2)

$$INV_{it} = \alpha + \beta_0 SAV_{it} + \gamma_0 OPEN_{it} + \gamma_1 SIZE_{it} + \varepsilon_{it} \quad (3)$$

$$INV_{it} = \delta_0 + \delta_1 FDI_{it} + \delta_2 PORT_{it} + \mu_{it} \quad (4)$$

$$SAV_{it} = \theta_0 + \theta_1 POP_{it} + \theta_2 DEF_{it} + \theta_3 DEBT_{it} + w_{it} \quad (5)$$

where SIZE – country size measured as the natural logarithm of GDP;

FDI – foreign direct investments;

PORT – portofolio investments;

POP –population growth rate;

DEF – general government deficit or surplus;

DEBT – debts;

it – country i at time t.

In these equations we introduced crisis dummy variable to see if its impact was positive or negative.

Results and discussion

In table 1 are representes the results of the first equation of the model. As it can be seen on the left side, according to the indicator R-squared value, the variation in the dependent variable (investments) is explained in a proportion of 25% by the variation of the independent variable (gross domestic savings) of simple linear regression model.

Durbin-Watson test has a value of less than 2, which indicates that there isn't a serial correlation of errors (there are independent).

The probability attached to T-test statistic for the dependent variable is 0.562, which means that this ratio is considered statistically significant for a risk of 10%. Also, the coefficient attached to this variable positively influence model, having a positive value (1.34), so we can say that the dependent variable (investments) increase on average by 1.34% when the independent variable increase by 1%.

On the other side, where we introduced the crisis variable in the equation, we see that it has a significant influence on the model (sig <0.05), and it have a negative influence, the coefficient attached being -89.97, so we can say that investments decline on average by -89.97% when the crisis grows by 1% and gross domestic savings remain constant. In this way the reduction of investments leads to appearance of the disintegration of the European Union economies.

Table 1

The results of the regression of the investments and the gross domestic savings for the EU 28

Variables	Model 1	Model 2
C	-267.7781(430.0241)	360.4325(271.6828)
SUM_GDS	1.343087*(0.640812)	0.460154(0.400593)
CRISIS		-89.97830***(16.94642)
R-squared	0.252567	0.776839
Adjusted R-squared	0.195072	0.739645
Total panel (balanced) observations	15	15
Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Source : Own Eviews Estimations Statistics.

In Table 2 are represented the results of the second equation. As it can be seen on the left side, according to the indicator R-squared value, the variation in the dependent variable (investments) is explained in a proportion of 72% by the variation of independent variables (gross domestic savings and the openness) of multiple linear regression model.

The probability attached to T-test statistic for the variable openness, measured by the sum of exports and imports is less than 0.05 (0.0007) which means that the coefficient is considered statistically significant.

On the other side, where we introduced the crisis variable in the equation, we see that although it hasn't a significant influence on the model (sig> 0.1), but it have a negative influence, the coefficient attached being -91.09, so we can say that investments decrease on average by 91.09% when the crisis grows and gross domestic savings and the openness remain constant. In this way the reduction of investments leads to appearance of the disintegration of the European Union economies.

Table 2

The results of the regression of the investments, gross domestic savings and the openness for the EU 28

Variables	Model 1	Model 2
C	-632.1468**(283.9979)	373.2724(673.9381)
SUM_GDS	2.474075***(0.476770)	0.433556(1.333601)
CRISIS		-91.09624(56.08923)
SUM_GDS*SUM_EXP_AND_IMP	-0.000186***(4.12E-05)	
R-squared	0.723336	0.776848
Adjusted R-squared	0.677225	0.715988
Total panel (balanced) observations	15	15
Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Source : Own Eviews Estimations Statistics.

Table 3 shows the results of the third and the fifth equation. Concerning the third equation, as it can be seen, according to the indicator R-squared value, the variation in the dependent variable (gross domestic savings) is explained in a proportion of 60% by the variation of the independent variables (investment, the openness, the crisis and the size of the country expressed by the natural logarithm of GDP) of multiple linear regression model.

The probability attached to test statistic for the variable size of the country, measured by the sum of exports and imports is less than 0.05 (0.000) which means that the coefficient is considered statistically significant. Also, the coefficient attached to this variable positively influences the model, having a positive value (2.28), so we can say that gross domestic savings increase on average by 2.28% when the size of the country increase by 1% and all other variables remain constant. Regarding the variable crisis, we see that it has a significant influence on the model (sig <0.05), and it have a negative influence, the coefficient attached being -1.44, so we can say that gross domestic savings fall by an average of 1.44% when when the crisis grows by 1% and all other variables remain constant. In this way the reduction of gross domestic savings leads to appearance of the disintegration of the European Union economies.

Concerning the fifth equation, as it can be seen, according to the indicator R-squared value, the variation in the dependent variable (gross domestic savings) is explained in a proportion of 20% by the variation of the independent variables (general government deficit or surplus, debt and crisis) of the linear regression model.

The probability attached to T-test statistic for the variable general government deficit or surplus is less than 0.05 (0.000) which means that the coefficient is considered statistically significant. Regarding the variable crisis, we see that it has a significant influence on the model (sig <0.05), but in this case, does not influence negatively because during crisis the deficits and debts grow. The increasing of deficits and debts leads to appearance of the disintegration of the European Union economies. Population growth also has a significant influence, sig <0.05, and positive, so we can say that gross domestic savings grow by an average of 0.0002% when the population increases by 1% and all other variables remain constant. Variable debt also has a significant influence, but negative, its growth causing the decrease of gross domestic savings.

Table 3

The results of the regression equations 3 and 5

Variables	Equation 3	Equation 5
C	-13.63981***(2.210048)	27.45335***(0.696465)
CRISIS	-1.440227***(0.540898)	2.386614***(0.761325)
INV	0.602711***(0.67237)	
EXP_AND_IMP	0.114812***(0.004615)	
LNGDP	2.282529***(0.170306)	
DEF		0.692120***(0.112071)
DEBT		-0.050368***(0.012438)
POP		0.000236***(7.33E-05)
R-squared	0.607550	0.206252
Adjusted R-squared	0.603767	0.198583
Total panel (balanced) observations	420	420
Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Source : Own Eviews Estimations Statistics.

Table 4

The results of the regression of the investments, foreign direct investments, portofolio investments and the crisis for the EU 28

Dependent Variable: INV				
Method: Panel Least Squares				
Date: 05/02/17 Time: 10:57				
Sample: 2000 2014				
Periods included: 15				
Cross-sections included: 28				
Total panel (balanced) observations: 420				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-0.009428	0.004523	-2.084336	0.0377
PORT	1.37E-12	3.49E-12	0.391726	0.6955
CRISIS	-3.542320	0.358464	-9.881941	0.0000
C	24.14020	0.234810	102.8074	0.0000
R-squared	0.193958	Mean dependent var		22.61019
Adjusted R-squared	0.188146	S.D. dependent var		3.988460
S.E. of regression	3.593720	Akaike info criterion		5.405731
Sum squared resid	5372.568	Schwarz criterion		5.444210
Log likelihood	-1131.204	Hannan-Quinn criter.		5.420940
F-statistic	33.36747	Durbin-Watson stat		0.251293
Prob(F-statistic)	0.000000			

Source : Own Eviews Estimations Statistics.

In table 4 are represented the results of the fourth equation. As it can be seen, according to the indicator R-squared value, the variation in the dependent variable (investments) is explained in a proportion 19% by the variation of the independent variables (foreign direct investment, portfolio investment and crisis) of the linear regression model.

The probability attached to T-test statistic for the variable foreign direct investments is less than 0.05 (0.037) which means that the coefficient is considered statistically significant. However, the coefficient attached to this variable have a negative influence, (-0.00), so we can say that investments decrease in average 0.009% when foreign direct investments increase by 1% and all other variables remain constant. Regarding the variable crisis, we see that it has a significant influence on the model (sig <0.05), and it have a negative influence, the coefficient attached being -3.54, so we can say that investments fall by an average of 3.54% when the crisis increase by 1% and all other variables remain constant. In this way the reduction of investments leads to appearance of the disintegration of the European Union economies. Portfolio investments have significant influence sig> 0.05, but this influence is positive, so we can say that investments grow on average by 1.37% when portfolio investments increase by 1% and all other variables remain constant.

Conclusions

Following the analysis we noticed that between the majority of economic variables included in the model, divided into two categories, those aimed at financial integration (total investments, gross domestic savings, the openness defined as the sum of exports and imports, the country's size measured by the logarithm natural of GDP, the population growth rate, foreign direct investments, and portfolio investments) and those aimed at the financial crisis (countries deficits, expressed by general government deficit or surplus, the debts and a dummy variable, crisis which take the value 0 before 2008 and 1 after 2008), there are relationships of dependence, this is demonstrated by the significant influences of one on the other. Aproximately in all regressions, I noticed the fact that by inserting the dummy variable crisis, it had a significant and negative effect on the dependent variables, which leads us to conclude that the phenomenon crisis has significantly affected the process of financial integration, leading to disintegrating tendencies. The results obtained are in accordance with the opinions of various authors from the specialized literature, who also said that the crisis has hit financial integration. Finally, to answer the research question, we can say that during the financial crisis there was financial disintegration and no integration.

References

Babecký, J., Komárek, L. and Komárková, Z.,(2013). *Financial integration at times of financial instability*. Finance a Uver - Czech Journal of Economics and Finance, 63(1), pp. 25-45.

Chakraborty, I., Hai, R. and Holter, H. A. (2016). *The Real E ff ects of Financial (Dis) integration: A Multi-Country Equilibrium Analysis of Europe,* (4).

Chen, M.-P., Chen, P.-F. and Lee, C.-C., (2014). *Frontier stock market integration and the global financial crisis*. The North American Journal of Economics and Finance, 29, pp. 84-103.

Crotty, J. (2009). *Structural causes of the global financial crisis : a critical assessment of the " new financial architecture* ," 563–580

Dabrowski, M. (2010). *The global financial crisis: Lessons for European integration.* §. Economic Systems, *34*(1), 38-54.

European Comission, (April 2010) *European Financial Stability and Integration,* European Comission Staff Working Document.

Fidrmuc, J., and Korhonen, I. (2010). *The impact of the global financial crisis on business cycles in Asian emerging economies.* Journal of Asian Economics, 21(3), 293-303.

Howard D. and Susan Lund (2013). *Three steps to stop global finance disintegrating.*, McKinsey Global Institute.

Inklaar R., Guevara J.F. and and Maudos J. (2009). *The impact of the financial crisis on financial integration , growth and investment*, (244709), 29-35.

Kunz, B., (2013). *Integration, Disintegration and the International System. A Realist Perspective on Push and Pull Factors in European Integration.* Zur Konzeptionalisierung europäischer Desintegration*,* (January 2013), pp. 71-86.

Markets, F. (2014). *The Global Financial Crisis and the European Single Market: The end of integration?,* Journal of International Money 49, 191-196.

Podkaminer, L., (2016) *Economic disintegration of the European Union: Not unavoidable, but probable*. Acta Oeconomica, 66(s1), pp. 49-60.

Scheller, H., and Eppler, A. (2014)*., European Disintegration – non-existing Phenomenon or a Blind Spot of European Integration Research?* Working Paper Series, 1-46.

Schmitter, P. C. (2015). *Neo-Functionalism as a Theory of Disintegration*, 1-39.

Turk, M. C. (2010*). Implications of european disintegration for international law*, 1-51.

Visco, I. (2013). *The impact of the crisis on financial integration in Central and Eastern Europe.*

Vollaard, H., (2008*) A theory of European disintegration.* Fourth Pan-European Conference on EU Politics, pp. 1-27.

Webber, D., (2011) *How Likely Is It That The European Union Will Dis integrate? A Critical Analysis of Competing Theoretical Perspectives*, ANU Centre for European Studies Briefing Paper Series 2(3).

Yang, J., Kolari, J. W., and Min, I. (2016). *Stock market integration and financial crises: the case of Asia Stock market integration and financial crises: the case of Asia*, 3107(November).

Zielonka, J. (2012). *Disintegration Theory International Implications of Europe's Crisis* Politics & Diplomacy, 51-59.

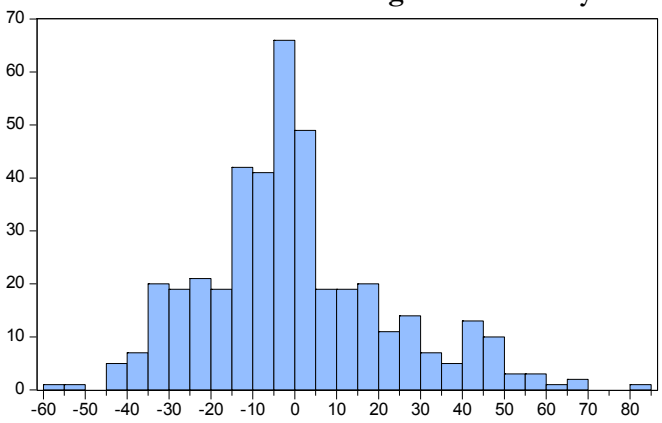
Webography

http://www.europa.eu
http://www.worldbank.org
https://www.dbresearch.com
http://www.ineteconomics.org
http://www.eviews.com

Appendix

Appendix 1

Histogram Normality Test



Series: Standardized Residuals	
Sample 2000 2014	
Observations 419	
Mean	3.21e-14
Median	-2.704776
Maximum	83.56803
Minimum	-55.65581
Std. Dev.	22.37577
Skewness	0.642822
Kurtosis	3.544243
Jarque-Bera	34.02769
Probability	0.000000

Source : Author calculation

Appendix 2

One-Sample Test ANOVA

	Test Value = 0.05					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Investments	115,921	419	,000	22,560	22,18	22,94
Gross_domestic_savings	63,704	419	,000	23,905	23,17	24,64
Primary_deficits	-15,954	419	,000	-2,820	-3,17	-2,47
Exports_and_imports	37,418	419	,000	112,632	106,72	118,55
Debt	35,424	419	,000	54,350	51,33	57,37
FDI	5,959	419	,000	11,362	7,61	15,11
Portofolio_investments	-1,628	419	,104	-4,018E9	-8,87E9	8,33E8
GDP	12,924	419	,000	539,561	457,50	621,62
Population_growth_rate	3,858	418	,000	877,135	430,19	1,32E3

Source : Author calculation

Appendix 3

Pearson's Correlations

Correlations

		Investments	Gross_domestic_savings	Primary_deficits	Exports and imports	Debit	FDI	Portofolio investments	GDP	Population_growth_rate
Investments	Pearson Correlation	1	,147	,298	-,134	-,537**	-,057	,008	-,189	,238
	Sig. (2-tailed)		,003	,000	,006	,000	,159	,857	,000	,000
	N	420	420	420	420	420	420	420	420	419
Gross_domestic_savings	Pearson Correlation	,147**	1	,353**	,319**	-,335**	,081	-,481**	-,135**	,175**
	Sig. (2-tailed)	,003		,000	,000	,000	,098	,000	,005	,000
	N	420	420	420	420	420	420	420	420	419
Primary_deficits	Pearson Correlation	,298**	,353**	1	,140**	-,480**	,035	-,084	-,088	,005
	Sig. (2-tailed)	,000	,000		,004	,000	,472	,084	,070	,898
	N	420	420	420	420	420	420	420	420	419
Exports and imports	Pearson Correlation	-,134**	,319**	,140**	1	-,231**	,378**	-,252**	-,389**	,042
	Sig. (2-tailed)	,006	,000	,004		,000	,000	,000	,000	,394
	N	420	420	420	420	420	420	420	420	419
Debit	Pearson Correlation	-,537**	-,335**	-,480**	-,231**	1	-,007	,194**	,327**	-,127**
	Sig. (2-tailed)	,000	,000	,000	,000		,882	,000	,000	,009
	N	420	420	420	420	420	420	420	420	419
FDI	Pearson Correlation	-,057	,081	,035	,378**	-,007	1	,103*	-,109*	-,032
	Sig. (2-tailed)	,159	,098	,472	,000	,882		,035	,025	,509
	N	420	420	420	420	420	420	420	420	419
Portofolio investments	Pearson Correlation	,008	-,481**	-,084	-,252**	,194**	,103*	1	,031	,014
	Sig. (2-tailed)	,857	,000	,084	,000	,000	,035		,529	,777
	N	420	420	420	420	420	420	420	420	419
GDP	Pearson Correlation	-,189**	-,135**	-,088	-,389**	,327**	-,109*	,031	1	-,081
	Sig. (2-tailed)	,000	,005	,070	,000	,000	,025	,529		,097
	N	420	420	420	420	420	420	420	420	419
Population_growth_rate	Pearson Correlation	,238**	,175**	,005	,042	-,127**	-,032	,014	-,081	1
	Sig. (2-tailed)	,000	,000	,898	,394	,009	,509	,777	,097	
	N	419	419	419	419	419	419	419	419	419

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source : Author calculation