INSTITUTIONS, GROWTH AND THE RECENT ECONOMIC CRISIS: THE EU CASE

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Abstract: *The recent global economic crisis and the associated recession in Europe that started in 2008, led to the rise of governmental debt and the reduction of credit rating in four Eurozone countries, namely Greece, Cyprus, Ireland and Portugal. As a result, all these countries were cut off from the international financial markets, and resorted to bailout request by the IMF, the European Commission and the ECB (known as troika). Seven years after the launch of the first economic adjustment program, Greece, unlike the rest of the Eurozone countries, is still deprived from the private capital markets. In this paper we argue that the length of the adjustment period in the EU-28 countries does not depend only on the severity of the adjustment measures, but also on the quality of institutions and governance mechanisms. A practical implication of our findings is that an improvement in the quality of governance mechanism improves the capability of a country to exit from a deep economic recession.*

1. INTRODUCTION

One of the most widely searched issues in economics relates to the role of institutions and good governance on economic growth. Seminal contributions to the institutions and growth literature link stronger institutions to higher levels of GDP per capita (Acemoglu et al., 2001, 2002) and others have shown that strong institutions, democracy and political stability bring about reduced output volatility (Acemoglu *et al.,* 2003; Mobarak, 2005; Klomp and de Haan, 2009). Aisen and Vega (2011) examine the relationship between political instability and GDP growth. Their findings suggest that the political instability can affect negatively the GDP growth rate as well as physical and human capital accumulation.

On the other hand, according to Acemoglu (2008), governance can be defined in various different ways. "*In the context of economic growth and development, governance refers to*

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essential parts of the broad cluster of institutions", whereas the Institute of Governance, defines the meaning as what determines who has power, who makes decisions, how other participants make their voice heard and how account is rendered. Dixit (2009) notes the characteristics of good governance, first of which is the security of property rights. Secondly, the enforcement of contracts, since any deviations would demotivate economic activity and thirdly the provision of public services and protection from public harm that creates a framework in which business can flourish.

In the approach of Dixit (2009), less-developed countries and transition economies often have weak formal governance. This fact can be explained by the limited transactions and property management that their state mechanism had to face compared with developed countries. Thus, there is a lack of skills and experience that would be expected by possible traders and investors and it could be of crucial importance when it comes to managing economic crises. Private institutions e.g social groups or industry associations can also play a supplementary role in the governance using their specific knowledge and experience. Among the many indicators of good governance, the most well -known are the Corruption Perceptions Index, produced by Transparency International and the Worldwide Governance Indicators produced by Kaufmann and his associates at the World Bank.

The fact that weak institutions precede crises and that strong institutions shorten the duration of crises is also supported in the research of Bluhm, De Crombrugghe and Szirmai (2013). According to Acemoglu and Robinson (2010), good quality of domestic institutions and governance contribute significantly not only to economic growth in general, but also to the successful implementation of adjustment programs. This issue is quite relevant for the EU countries that underwent a deep recession, due to the recent economic crisis. Greece, Cyprus, Ireland and Portugal were the first countries in the Eurozone to enter an economic slump after the 2008 crisis outbreak and asked for urgent bailout from the troika (ECB, EC, and IMF). But unlike the other three countries, the magnitude and the duration of GDP decline in Greece is much deeper and much longer. One explanation is that this may be due to weaker institutions and governance mechanisms in Greece that bring with them increased vulnerabilities to crises. This explanation lies in the hypothesis that the quality of institutions (e.g. political stability and absence of terrorism) and governance mechanisms (e.g. control of corruption, regulatory quality, governance effectiveness) in Greece is much lower compared to that in the other three countries and the EU average.

The purpose of this paper is to answer pertinent questions regarding the effect of governmental and institutional quality on growth and therefore the ability of Eurozone countries to exit from deep economic recessions. Although there has been a vast literature on the effects of institutions and governance mechanisms on growth, there is hardly any discussion linking institutions, growth and the recent economic crisis in the EU. The only one study we know is that of Rapanos and Kaplanoglou (2014). They made a comparative study on the Greek and the Cypriot adjustment programs. They showed that the prolonged economic crisis in Greece is due to the low quality of the domestic institutions and the bad governance. On the other hand, it is very likely that the good governance and the high quality institutions have helped the economy of Cyprus return to growth earlier than Greece. The authors believe that Greece had much worse institutions and governance both before and during the crisis. However, Rapanos and

Kaplanoglou (2014) did not discuss the experience of other countries (like Portugal and Ireland) as well. This paper seeks to cover this gap.

The following section of this paper presents some stylized facts of the four Eurozone countries that suffered a deep recession, due to the recent economic crisis. In section 2 we show the results of regressions between the institutional quality indicator and governance related indicators. Further, we present a model that combines macroeconomic, institutional and governance indicators. Finally, the last section offers some conclusions and makes suggestions for future research.

2. INSTITUTIONS AND GOVERNANCE: STYLIZED FACTS

The recent economic crisis affected gravely the EU (Figure 1). The effect was larger in the case of Greece, Cyprus, Ireland and Portugal. For example, in Greece the cumulative change in GDP was -26.2% during 2008-16. For Cyprus and Portugal, the corresponding figure was -6.4% and -4.27% respectively. Ireland and the EU as a whole managed to regain their output.
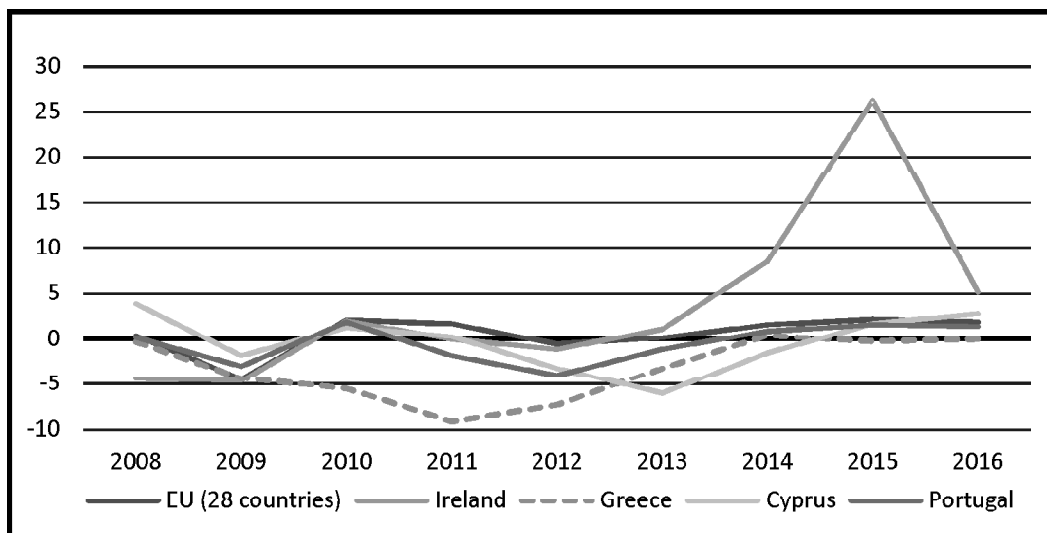

Figure 1: Real GDP growth rates (annual, %)

Source: Eurostat

Since May, 2010, Greece has been under economic adjustment programs. The first one, was agreed between Greece and the troika (European Commission, European Investment Bank and IMF) on May 2, 2010 and was accompanied with a 3-year €110 billion loan to Greece (which was deprived from the private capital markets) in order to avoid a sovereign default.

The loan was conditional on the implementation of austerity measures to restore the fiscal balance, privatization of government assets to keep the debt pile sustainable as well as implementation of structural reforms to improve competitiveness and growth prospects. In October 2011, Eurozone leaders consequently agreed to offer a second €130 billion loan for

Greece, conditional not only on the implementation of another austerity package (combined with the continued demands for privatization and structural reforms outlined in the first program), but also on a restructuring of all Greek public debt held by private creditors. In August 2015, a third program was agreed, offering Greece an additional € 86 billion loan. By 2017, Greece, unlike the other three countries, is still deprived from the private capital markets. Does Greece reflect the failure of economic adjustment program or this is due also to the low quality of institutions and the deficiencies of the governance structure?

One way to answer this question is to compare the institutional performance of Greece, Cyprus, Ireland and Portugal by using the indicators of the World Economic Forum (WEF). This report analyses the performance of 144 countries, with specific criteria, providing an extended evaluation of global competitiveness with the scope of creating the necessary knowledge platform for public dialogue on this issue.

According to the definition of WEF, '*Competitiveness is defined as the set of institutions, policies and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy.*'

The progress of the institutional quality indicator in Greece, Cyprus, Ireland, Portugal and EU-28 average is depicted in the following Figure 2.

We notice that Greece has systematically the worst performance among the 4 countries and the EU-28 average. This was true before the crisis and continued during the crisis. Since the crisis begun, all countries exhibited some deterioration, indicating that the crisis has affected negatively the quality of institutions. But the decrease was more pronounced in the case of Greece.
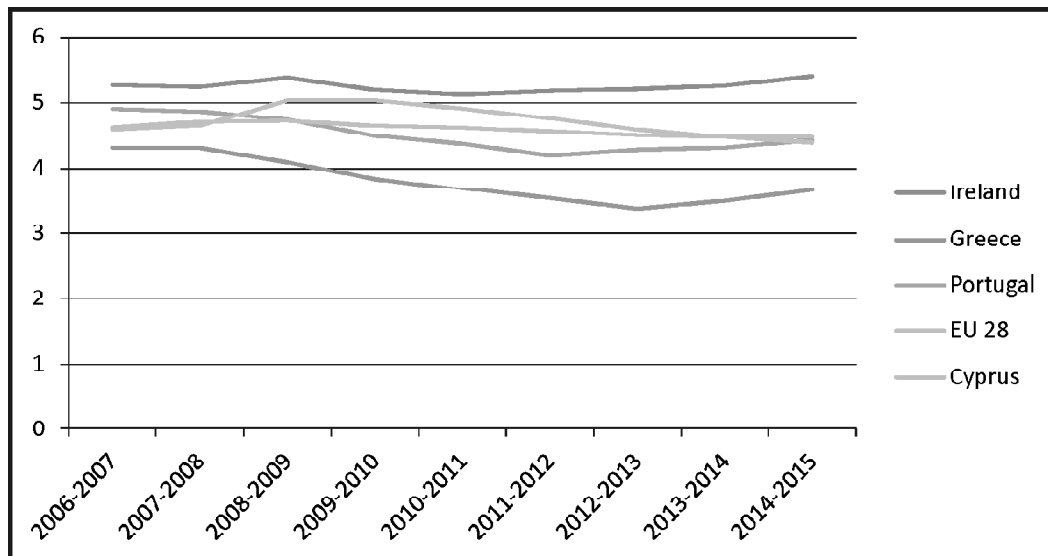

Figure 2: Institutional quality

Source: WEF

Another way to look at the institutional quality and government effectiveness is to use data from World Governance Indicators, by the World Bank Kaufmann et al. (2010). In the approach of Kaufmann ''*Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them* ''

Beginning with the governmental effectiveness indicator, it is clear that Greek citizens are not satisfied with their public administration mechanism, credibility and independence (Figure 3). On the other hand, the Portuguese, the Irish and the Cypriots have a better opinion of their governance's way of solving state problems.
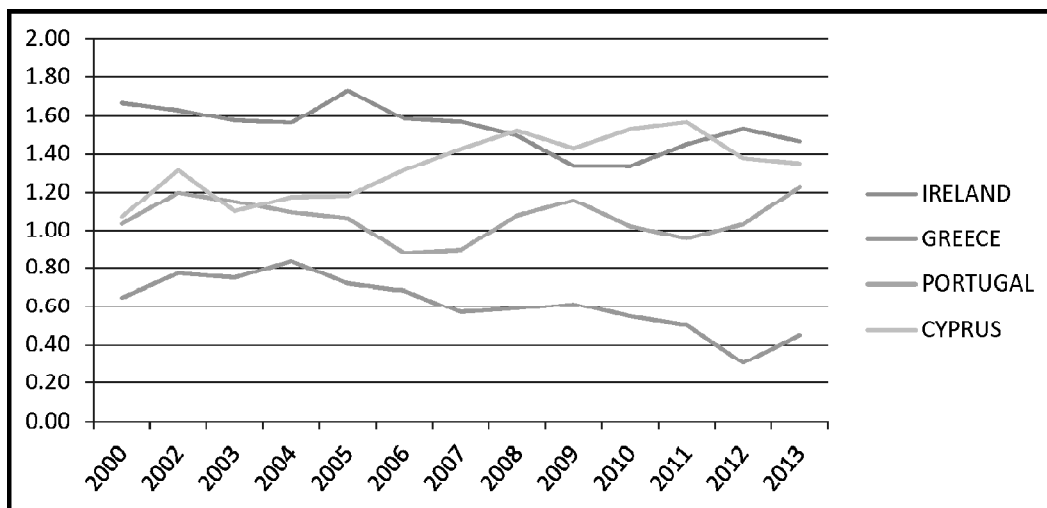

Figure 3: WGI Indicators-Governmental Effectiveness

Source: WGI

Governmental success in creation and implementation of policies that allow their businesses to flourish is depicted in the Regulatory Quality indicator (Figure 4). Ireland's growth was based on a business-friendly environment, whereas Greece and Portugal would have to face low competitiveness in their economies.

In the Control of Corruption index, we see that Greece reached negative values (Figure 5).

The Rule of Law indicator (Figure 6) exhibits a sudden decline in 2010 in all countries concerned, with the exception of Ireland. That year the reforming process and the austerity programs had already begun, accompanied with large-scale social reactions. Indicators include the perception of the citizens, leading us to conclude that the implementation of the rescue packages was considered a violation of national regulations, contrary to the citizens' opinion, especially in issues like labour market.
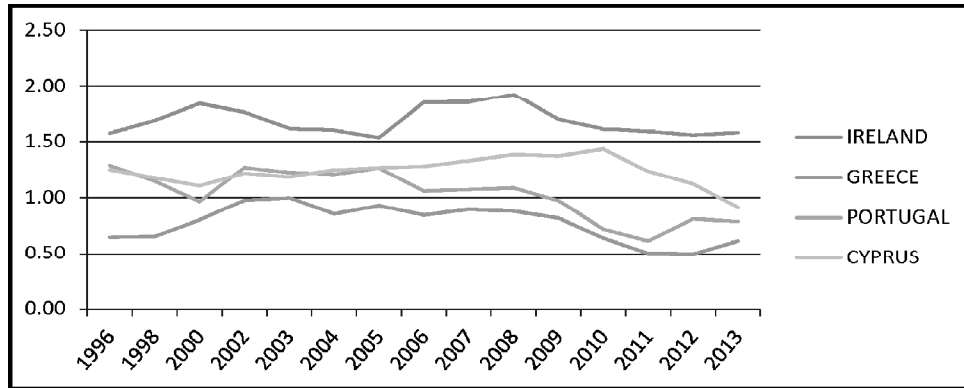
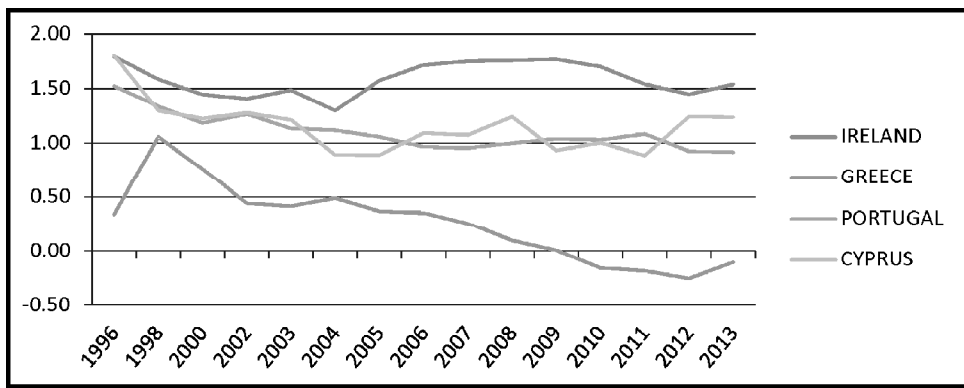**Figure 4: WGI Indicators-Regulatory Quality**

Source: WGI

Figure 5: WGI Indicators-Control of Corruption
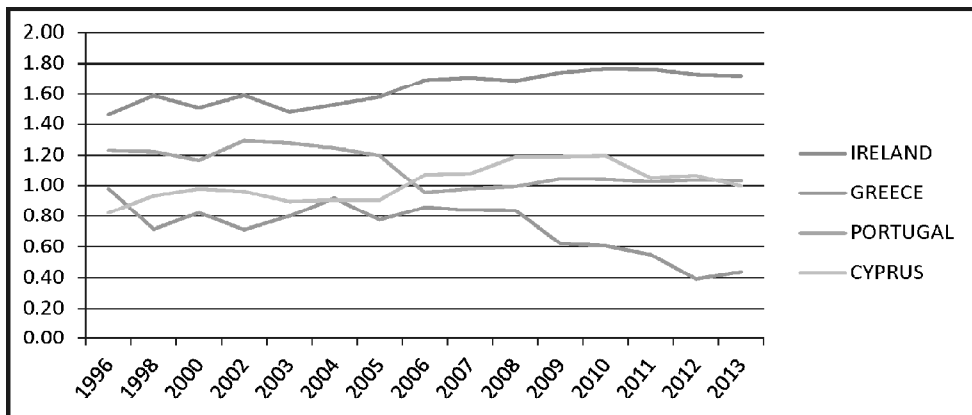
Source: WGI

Figure 6: WGI Indicators-Rule of Law

Source: WGI

The indicator for political stability depicts especially for Greece a 10 year period (2004-2013) that includes 5 election years on 2004, 2007, 2009, 2012, 2013. In Ireland elections were conducted in years 2002, 2007, 2011, in Portugal in years 2002, 2005, 2009 and 2011 and in Cyprus in years 2001, 2006, 2011.
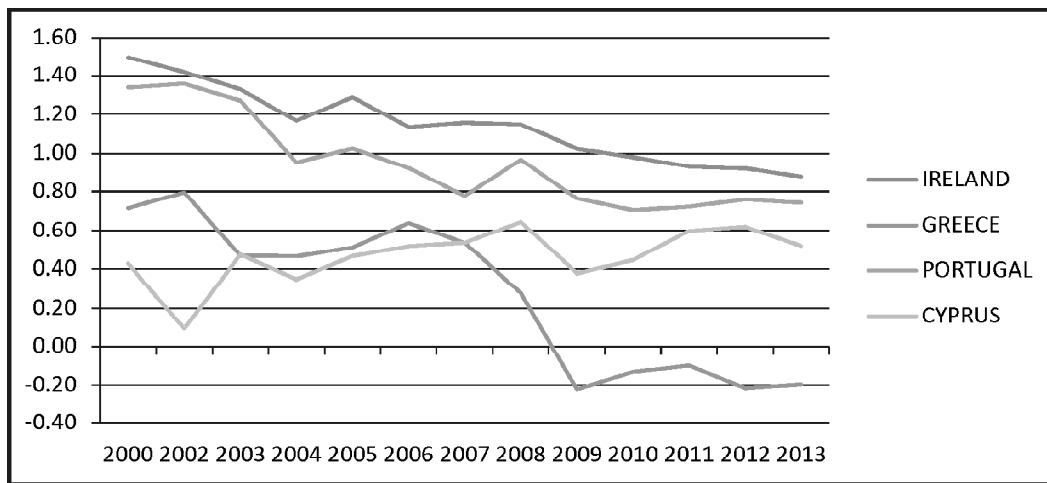

Figure 7: WGI Indicators – Political Stability and Absence of Violence/Terrorism

Source: WGI

3. EMPIRICAL ANALYSIS

(a) Qualitative indicators approach

In an attempt to measure the importance of the relationship and the influence level of quality characteristics that indirectly affect the crisis, we analyse and compare regressions between the institutional quality indicator (WEF) and governance related indicators (WGI), Control of corruption, Governance effectiveness, and Regulatory quality and Political Stability.

As mentioned by Kaufmann (2010) the dimensions of governance quality should not be considered as independent of one another. The indicators might appear strongly positively correlated across countries. In order to address the problem of multicollinearity in case we use all six indicators as independent variables, we picked the indicator combinations whose correlation is low.

Our sample consists of annual cross-section data from WEF and WGI, for EU-28 countries, in the year 2013.

We apply simple and multiple linear regressions and make estimations using the ordinary least square (OLS) method on each model's coefficients C(1,2,3,4). We selected three models where the correlation between their independent variables ranges between values 0.21-0.61 and present the findings below.

In the first regression, we use the following econometric model:

$$\textit{Model 1}: \text{INST} = c_1 + c_2\text{PS} + c_3\text{CC} + c_4\text{RQ} + u$$

where,

INST = Institutional Quality

PS = Political Stability and absence of terrorism

CC = Control of Corruption

RQ = Regulatory Quality

and u = error term

The estimation results are summarized in Table 1:

Table 1
Empirical results- Model 1

Variable	Coefficient		t-Statistic	Prob. Value
c_1	3.44		27.92	0.000***
PS	0.049		0.36	0.717***
CC	0.93		13.18	0.000***
RQ	0.06		0.72	0.473***
	R- Squarted:	0.93		
	Adjusted R-squared:	0.92		
	F stat. Prob:	0.00		

Note: * =10% statistical significance, ** =5% statistical significance and ***=1% statistical significance

In the second regression, we use the following econometric model:

$$\textit{Model 2}: \text{INST} = c_1 + c_2\text{GE} + c_3\text{PS} + c_4\text{RQ} + u$$

In this model, we have used Governance Effectiveness (GE) instead of Control of Corruption (CC) as an independent variable.

The estimation results are summarized in Table 2:

Table 2
Empirical results- Model 2

Variable	Coefficient		t-Statistic	Prob. Value
c_1	2.81		15.34	0.000***
GE	1.35		7.97	0.000***
PS	0.005		0.02	0.979***
RQ	0.10		0.76	0.449***
	R- Squarted:	0.84		
	Adjusted R-squared:	0.82		
	F stat. Prob:	0.00		

Note: * =10% statistical significance, ** =5% statistical significance and ***=1% statistical significance

In the third regression, we use the following econometric model:

$$\textit{Model 3}: \text{INST} = c_1 + c_2\text{PS} + c_3\text{RQ} + u$$

The estimation results are summarized in Table 3:

Table 3
Empirical results - Model 3

Variable	Coefficient		t-Statistic	Prob. Value
c_1	3.076934		9.103660	0.000***
PS	1.013593		3.126817	0.004***
RQ	0.558581		2.438494	0.022***
	R- Squarted:	0.44		
	Adjusted R-squared:	0.40		
	F stat. Prob:	0.00		

Note: * =10% statistical significance, ** =5% statistical significance and ***=1% statistical significance

Besides multicollinearity, we tested if the models meet more OLS assumptions and we tested heteroscedasticity, specification and residual distribution. The results are summarized in Table 4.

Table 4
Test Results ($\alpha = 1\%$)

Model	Heteroscadasticity White Cross-terms test	Ramsey RESET test	Residuals distribution Jaque Berra test
Model 1	No ($TR^2 = 15.65$)	Correct specification	Not normally Distributed ($JB = 6.14$ $P = 0.04$)
Model 2	No ($TR^2 = 9.8$)	Correct specification	Normally Distributed ($JB = 0.75$, $P = 0.68$)
Model 3	Yes ($TR^2 = 23.86$)	Correct specification	Normally Distributed ($JB = 2.68$, $P = 0.26$)

We note that the third model has a heteroscedastic error term and that in the first model residuals are not normally distributed for control level 1%.

Working with data from 28 countries, we find that the models have statistically significant variables and a high coefficient of determination. Ramsey-Reset test confirms the correct specification of all three models. The data analysis shows that there is a positive and statistically important effect of the governance quality on the institutional quality.

Previous research on WGI indicators and WEF Institutional Quality data from Rapanos and Kaplanoglou (2014) has also revealed a strong positive relationship between the control of corruption indicator and institutional quality. Aisen and Vega (2011) examine the relationship between political instability and GDP growth using as proxy of political instability the number of cabinet changes in a year. They show that GDP growth is significantly lower in countries and time periods with a high propensity of government collapse.

We conclude that the multi-variable model supports the existing facts in explaining the role of governmental indicators in institutional quality. Despite the fact that partially this result is due to multicollinearity, the indicators have a positive relationship, as would be expected. Therefore, if we increase the WGI indicators, the institutional quality indicator will also rise.

(b) Qualitative and quantitative indicators in the model

As a further step, we examine the effect of institutional quality in macroeconomic indicators, combining qualitative and quantitative data.

In this model the institutional quality indicator (WEF) is independent variable, whereas on the left-hand side of the model we use the Gross Domestic Product (GDP) based on purchasing-power-parity (PPP) per capita as a dependent variable. We apply multiple linear regression and make estimations using the OLS regression. The source of GDP data is IMF, annual cross-section data, for EU-28 countries, in year 2013. We have transformed the data into a logarithmic scale, labelling the new variable LGDP. We have also used a dummy variable for Luxembourg, DLUX.

For this regression, we use the following econometric model:

$$LGDP = c_1 + c_2 INST + c_3 DLUX + u$$

Our estimations give us the following results (Table 5):

Table 5
Empirical results – Model 4

Variable	Coefficient		t-Statistic	Prob. Value
c_1	9.04		48.91	0.000 ***
INST	0.29		7.21	0.000 ***
DLUX	0.74		4.06	0.000 ***
	R- Squared:	0.78		
	Adjusted R-squared:	0.76		
	F stat. Prob:	0.00		

Note: * =10% statistical significance, ** =5% statistical significance and ***=1% statistical significance

Table 6
Test Results ($\alpha = 1\%$)

Model	Heteroscadasticity White Cross-terms test	Ramsey RESET test	Residuals distribution Jaque Berra test
Model 4	No(TR^2=4.48)	Correct specification	Normally Distributed (JB = 0.37, P = 0.83)

The fourth model affirms the assumptions of linear regression. According to White test, there is no heteroskedasticity, the residuals graph and the Jarque-Bera statistic show that the residuals are normally distributed, after the use of DLUX dummy variable, for Luxembourg data. Furthermore, Ramsey-Reset test shows there is no specification error.

All variables are statistically significant and the determination coefficient is high. According to our data, an increase in Institutional Quality indicator per one unit can be associated with 2.9% approximate change in GDP on average, a result that is consistent with the analytical framework presented in the first part of the paper.

4. CONCLUSION

The recent international economic crisis had a significant effect in the EU countries. But the effect was not symmetric. Four Eurozone countries, Greece, Cyprus, Ireland and Portugal were seriously affected. The evolution of the crisis inside their borders is related to the countries' capability of reactivity and adaptation to unpredictable circumstances. Our group of studies has documented that indirectly, there is an effect of governmental and institutional quality in the duration of the crises. An enduring crisis results in a lower level of return-to-growth point for each economy. Comparing the performance of the economies using various indicators we find that Greece has lower institutional and governmental performance than Cyprus, Ireland, Portugal and EU-28.

In the empirical analysis, we attempt to give a structure to this indirect effect, modelling the effect of governmental performance indicators in institutional quality. We find that all four governmental indicators used have a distinguishing positive effect in institutional quality that can further affect the duration of the recession period. We also note that institutional quality has a positive effect on GDP, as an approximate indicator of economic growth.

While we support the effect of qualitative interventions, a broader range of causes should be considered. This is a limitation of our study. Another limitation is that we do not examine the reverse causality in the relationship between institutional quality and its effect on growth, through observing the institutional change process that could be expected along with the completion of the reforming process.

Further research on this subject e.g. Monastiriotis (2014) has highlighted that we should shift our attention from the question of whether to implement austerity that is required by the troika rescue program implementation to the question of how to implement it, given the structural differences of the economies. A recent study of Terzi (2015) showed that the reform implementation progress of Greece lags behind, compared to other "bail out" countries.

Indeed, Greece has a major institutional problem. It is associated with the pursuit of sustainable growth. Institutions could amplify the positive outcomes of the consolidation and not undermine them. For example, tax administration enhancement should have been prior to the large tax increases in 2011. This could lead to increased tax revenue. The institutional problem in Greece is probably associated with values such as trust, respect for the others, the sense that success depends on individual's effort etc. Hence, it is a rather hard task to change them, especially in a short period of time. Academic research suggests that beliefs affect the way that institutions work within the modern society. Politics, education, justice and Public Administration are major areas of testing this hypothesis. Therefore, the starting point should be the creation of stable institutional environment that provides the appropriate incentives and reduces decisions that favor the few at the expense of the many.

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