Political Stability and Financial Crisis: What the data say for the European Union’s countries.

Evangelos Vasileiou

Department of Business Administration, University of the Aegean, Chios, Greece

Abstract

This paper tries to examine in detail political stability in the European Union’s (EU) countries during the period 2002-12. Firstly, it examines the causality relationship between political stability and economic growth, which is an issue that has puzzled scholars for decades. Using the Granger causality test the empirical findings suggest that in the case of the EU’s countries, causality is one directional, moving from political stability to economic growth. Secondly, it examines the factors that affect political stability. Using the fixed effects panel data model, we may suggest that the long term recession, the increased unemployment ratios and the high levels of inflation significantly threaten political stability. However, there are other factors that are not exclusively due to economics, such as transparency, public health care, education etc., which may significantly reduce the previously mentioned consequences. Finally, this study suggests some reforms of the EU’s regulation according to the migration policy that may smooth social and humanitarian disparities.

Keywords: Political Stability; Financial Crisis; European Union; Inequalities; Immigration Policy; Economic Growth; Health And Education

JEL: A13; H60; I00

© 2014 Published by SSBFNET

1. Introduction

On September 15, 2008 Lehman Brothers officially files for bankruptcy. The firm’s total assets are more than $600 billion. The consequences of the largest filing for bankruptcy in US history led to a financial crisis, which could not be limited only to the US economy. In the globalized economic environment the impact of the crisis in the world’s largest economy sooner or later spreads all over the world. In the European Union’s (EU) countries the first crisis signs emerged after 2008. However, during the following years, the crisis reveals not only economic structural

1 Department of Business Administration, University of the Aegean, 8 Michalon Str., Chios 82100, Greece, Tel: +302271035158, Fax: +302271035099
problems (e.g. GDP Debt and the public deficit threshold violation in the Eurozone’s countries), but also governance issues (Vasileiou, 2014 a,b). These problems lead to several demonstrations and government changes in the EU (such as in Greece, Italy and Spain). Political stability in the EU is threatened and this kind of atmosphere may lead to recession or/and to deeper crisis. In this way the politico-economic environment may start spiraling into a cycle of negative results.

The relationship between economic growth (EG) and political stability (PS) has puzzled economists for decades; therefore there is a vast amount of literature on the subject. Most studies suggest that they have a negative relationship (Alesina et al, 1996; Perotti, 1996). There are several theoretical explanations which establish this relationship. Blanco and Grier (2009) state that political instability influences investors’ decisions for new capital projects until stability is restored, because investments in physical capital are not easily reversed. Alesina et al (1996) assume that political instability may reduce investment and the speed of economic development. However, this relationship may be bidirectional because poor economic performance may lead to government collapse and political unrest.

This study tries to reach useful conclusions regarding the EU’s political environment using data for the period 2002-12. According to the methodology, several panel data models (pooled, fixed and random) are applied. The results are similar in all cases, but the econometric analysis suggests that the fixed effects model is the most appropriate for the specific sample. Based on these empirical findings, this study suggests some policy implications that may smooth the financial crisis’ consequences.

At this point, we deem that it is necessary to present some data that may prove useful to the rest of the analysis. In particular, Table 1 presents: (i) the sample’s countries, (ii) the year of each country's entry into the EU, (iii) the year of the Euro's circulation as the official currency (if the specific country is a member of the European Monetary Union (EMU)), (iv) the constant GDP growth indicators, and (v) the public debt ratios. This data shows us that until 2008 most countries record economic growth, but in 2008 the first signs of recession appear and in 2009 all the EU’s countries (except Poland) fall into a recession. Moreover, in some EU countries the public debt ratios increase significantly. The increased public debt and the shrinking GDP increase the sovereign risk in the EU. The case of the well-known PIIGS (Portugal, Ireland, Italy, Greece, and Spain) emerges in 2010 and it worries the EU authorities for a possible contagion effectii.

This study contributes to international literature by: (i) examining the causality between political stability and economic growth for EU countries, (ii) indicating factors that are not exclusively financial, but influence political stability in EU countries, and (iii) suggesting some policy implications that could reduce the financial crisis’ consequences. Moreover, this is the first study for political stability in the EU during the Euro era and after the global crisis, to the best of our knowledge.

The rest of this paper is as follows: in section 2 we examine the causality test between economic growth and political stability, in section 3 we present the data we used in our sample and the literature background. In section 4 we analyze the methodology, in section 5 we present the descriptive statistics and the empirical results. Finally, in section 6 we conclude our analysis.

\*\*\*Vasileiou 2014 b, analytically presents the socio-economic environment in the specific period.\*\*\*
2. Economic Growth and Political Stability: what is the causality in the EU?

The political stability - economic growth causality relationship is a long term debate, for which results have not suggested a specific direction (Gurgul and Lach, 2012). There are studies which support that: (i) political stability influences economic growth, but the economic growth does not influence political stability (Alesina et al., 1996), (ii) there is only a one way causality that directs from economic growth to political stability (Borner and Paldam, 1998), (iii) causality is bi-directional (Gyinmah–Brempong and Traynor, 1999), and (iv) there is no causality between economic growth and political stability (Campos and Nugent, 2000).

In order to run the causality test we should define the political stability and the economic growth indicators. Regarding the political stability variable, most of the studies use component indexes. Alonso and Garcimartin (2013) analytically present the reasons why the study of institutions faces the limited reliability of the available institutional quality indicators. Following their approach we use the Kaufman et al (2010) political stability indicator (PSI) in order to quantitatively measure the political environment (the higher the PSI values are, the more stable the political environment is (and vice versa)). The PSI adequately measures the stability of the political environment, since it is calculated by an official-independent organization, with many years of experience, thus we may safely assume that it has the necessary expertise. Moreover, this indicator includes all countries in our sample and it is updated yearly, making it suitable for this study. According to the economic growth indicator several growth variables are used in the literature, but we choose the constant value of GDP like Heo and Tan (2001), because the constant GDP values better present the real economic growth rather than the current GDP prices.

Regarding the following methodology, we use the Granger causality test, which is usually used in these studies, in order to draw empirical support if there is a specific direction between political stability and economic growth. According to Granger (1969) the variable $y$ is said to cause $x$, if $x$ can be predicted with greater accuracy by using past values of the $y$ variable rather than not using such past values, all other terms remaining unchanged.

This procedure can be expressed as following

$$
y_t = \alpha_0 + \alpha_1 y_{t-1} + \ldots + \alpha_p y_{t-p} + \beta_1 x_{t-1} + \ldots + \beta_q x_{t-q} + \epsilon_t
$$

$$
x_t = \alpha_0 + \alpha_1 x_{t-1} + \ldots + \alpha_p x_{t-p} + \beta_1 y_{t-1} + \ldots + \beta_q y_{t-q} + u_t
$$

where $y$ is the economic growth, $x$ is the political stability term. $\epsilon_t$ and $u_t$ are uncorrelated error terms.

The null hypothesis in this case is that $x$ does not Granger cause $y$ in the first regression and that $y$ does not Granger-cause $x$ in the second regression. Table 2 presents the F-statistics are the Wald statistics for the joint hypothesis

\[\text{In the Appendix A we present the definitions and the sources of all the indicators we examine in this study.}\]

\[\text{We test our results' accuracy by using as the economic growth variables the GDP current prices growth and constant GDP per capita growth, and the results are similar to those we mention below (Table 2). These results are available upon request.}\]
Another very important variable in the aforementioned procedure is the lag (l) length. Generally, there is a trade-off in the Granger causality procedure: if we include increased lag length, we can draw better and safer conclusions for the causality relationship, but the increased lag length reduces the power of this test (Kirchgässner et al., 2013). In order to decide the optimal lag order, a number of econometric criteria are suggested (Schwarz, Akaike, LR test and Final Prediction Error). For the specific sample the optimal lag length is 6, because: (i) when we increase the number of lags by one order the causality remains the same, and (ii) most econometric criteria agree that the optimal number of lag length order is 6.

Table 2 presents the causality relationship between the Economic Growth and Political Stability. The results suggest that within the EU countries the Granger causality runs one way from political stability to GDP Growth. Therefore, the examination of the factors that influence the political environment is very significant, since its findings may suggest the right policies, which may strengthen political stability. Successively, the strengthening of political stability may be the first step for the EU’s authorities to smooth out the recent financial crisis’ consequences and lead the EU to economic growth.

3. Data and literature background

In this section we present the independent variables used in our study. In order to establish our model we bring together a significant volume of literature and we examine if the factors below influence political stability in EU countries. Moreover, we include additional variables that are highly related to the recent economic crisis and the sovereign risk, but have never before been mentioned in the literature. We divide our variables into homogeneous categories in order to increase the legibility of this study.

(i) Political regime and governance variables

A relationship that is usually examined in such studies is the political regime (democracy or autocracy) and political stability relationship. International literature generally suggests that democratic regimes and political stability are positively related, since democracy allows its citizens to participate in the political process and this reduces the probability of conflicts (e.g. Rummel, 1995; Parsa, 2003 etc.).

Since most EU countries are democratic, we should search for some other variables that quantitatively differentiate the quality of democracy. In order to achieve this we include in our models variables from Marshall et al (2010) that are used in the international literature (e.g. in Goldstone et al, 2010; Blanco and Grier, 2009 etc.) and enable us to examine the quality of democracy. In particular, we include the following indicators: (i) democracy, which is a 0 to +10 scaled measure of political openness and competitiveness (ii) polity2, which is computed by subtracting the autocracy score from the democracy score and it ranges from -10 to +10 (the higher the value the more democratic the regime is, and vice versa), (iii) regime durability, which is the number of years since the last substantive change in

Only the Schwartz criterion suggests that the optimal length number is 4. All the other criteria suggest that the optimal lag order is 6. Whether we choose 4, 5 or 6 lag order, the results remain the same (Table 2). Moreover, the causality results and the order remain the same whether we use the constant GDP growth, the current GDP growth or the constant GDP per capita growth. These results are available upon request.
authority characteristics (defined as a 3-point change in the polity score), and (iv) political competition, which measures the degree of institutionalization, or regulation, of political competition, and the extent of government restriction on political competition.

In theory, the higher these values are the more stable the political environment should be. At this point we ought to mention that the specific dataset does not include data information for Malta and this does not allow us to use the specific variables in all the models of our study. In order to overlook this specific deficiency, we worked out an alternative (indirect) way to include the quality of democracy in our models. Rivera-Batiz (2002) presents evidence that strong democratic institutions influence governance by constraining the officials’ corrupt behavior. Therefore, we may assume that the strong anti-corruption performance is linked to strong democratic regimes (or in other words high democratic quality). The positive relationship between democratic quality and anti-corruption performance is confirmed in our sample, while the Granger causality test suggests that the corruption causes political stability and not the opposite\textsuperscript{vi}. This consequence of previous empirical findings and our sample’s results lead to the assumption that the increased transparency should strengthen the political stability. We include the corruption perception index (CPI) in order to test examine if this assumption can be confirmed. We collect our data from the transparency international database. The higher the CPI value is, the clearer this country is. Therefore, the CPI’s influence on the political stability must be positively correlated.

Finally, according to the political variables, we try to find empirical evidence of whether participating in the EMU influences political stability. For this reason we include the Euro dummy variable, which takes the value 1 if the country is an EMU member during the examined year and the value 0 if it is not. There are no recent studies on the Euro's influence on political stability (to the best of our knowledge), which suggest a particular influence and cover the pre- and post crisis period\textsuperscript{vii}.

(ii) Macroeconomic and crisis variables

In section 2 we point out that in the EU the relationship between political stability and economic growth is one way and runs from the political stability to economic growth. This study’s objective is the financial crisis influence on the political stability and whether there is a way to avoid political instability. Therefore, as a part of our study we include the long term recession, rather than economic growth in order to examine its influence on political stability. Our assumption is that a short term recession is part of an economic cycle, so citizens may tolerate it for one or two years without influencing the political environment. But what happens when the recession lasts for more than two years? Theoretically, the long term recession may cause political instability for several reasons, such as increased poverty ratios, doubts about the political leadership abilities, a public desire for change etc. For this reason we do not use a GDP growth indicator, but we include in our regressions a long term recession dummy variable, which sums the

\textsuperscript{vi}Correlation and Granger test results are available upon request.

\textsuperscript{vii}Fratzscher and Stracca (2009) in a very interesting (pre-crisis) paper conclude that EMU reduces the impact of the political shocks in each member’s political environment, but transfers these influences into the Eurozone. Moreover, EMU may reduce the political market discipline. These conclusions are similar to those noted in Vasileiou, 2014a,b. Below we define the pre- and the post crisis years.
consecutive negative GDP growth years (for example, if we have one negative GDP growth year X we use 1, if the year after is also negative that year’s X+1 dummy is 2 etc.).

Another crucial macroeconomic variable that is linked to economic performance is income. When income is high and/or increased, the opportunity cost for an individual to protest or revolt is high, too. In this case his (or her) decision to take part in protests and insurrections is a high cost, therefore the incentives to cease their participation in productive activities are reduced (Collier and Hoeffler, 2004). In our analysis we include the GDP per capita in US dollars in order to: (i) examine how the average income influences political stability, and (ii) avoid the currency differences across/amongst the EU countries.

The unemployment ratio is a macroeconomic variable that is often included in political stability studies and it is positively correlated to political stability. This may be indirectly linked to the significant lower opportunity cost that the unemployed population has. The unemployment issue greatly puzzles the EU since the crisis peaked. There is a common opinion that Europe is being tested not only by the sovereign debt, but also whether it can avoid issues rooted in unemployment (Friedman, 2013). The unemployment crisis leads to a political crisis, and this political crisis may undermine all of the institutions Europe has worked so hard to create. In order to examine in detail the unemployment’s influence on the political stability from different points of view, apart from the general unemployment ratio we further examine: (i) long term unemployment, (ii) youth unemployment, and (iii) the ratio of the population aged 18-59 who are living in households where no-one works to the total population (jobless households).

Inflation is another macroeconomic variable that is usually included in political instability studies. Inflation and political stability are negatively correlated, because the fear of replacement or change may influence the new cabinet’s decisions regarding the levels of inflation and unemployment (Aisen and Veiga, 2013). Generally, the frequent cabinet changes may indicate not only that the political environment is unstable, but also that the economic policy varies through the years.

Other parts of the economic policy are the decisions made according to the public budget deficit/surplus and public debt. Empirical studies suggest that higher government consumption reduces the risk of losing office, therefore reducing political instability (Annet, 2001). Politicians fearing cabinet changes may increase government consumption (or lower the taxes) by increasing the public debt in their attempt to curry favor with the voter and to remain in power. During “normal times” these policies may not significantly influence the country’s sovereign risk, but during a crisis the consequences of these policies should be resolved by the next governments. The European Financial Aid implies fiscal adjustment and austerity measures, which may lead to political instability (e.g. the Greek case). For these reasons in our analysis we use specific interactions of the aforementioned indexes and the EU’s crisis years. Particularly, the global economic crisis bursts in 2007, the consequences are obviously seen in Europe during 2008; however in 2010 the sovereign risk crisis starts (Portugal, Ireland, Italy, Greece, Spain and Hungary are some

---

\( ^{\text{viii}}\) By normal times we mean a period period of smooth economic growth, when the financing is possible and the lack of the contagion effect.
of the countries which face such issues during this period\(^{9}\)). Therefore, in our models: (i) we assume that the crisis begins in 2010, and (ii) we include the deficit and the public debt ratios, for which we examine their influence depending on the time period. We divide the time in pre- and post crisis period, because in economics the same ratios in growth times may be characterized as normal ratios, but during the crisis period may be characterized as an indicator which is extremely dangerous for economic stability.

(iii) Income Inequality, Socioeconomic and Demographic influences

There are several socioeconomic factors that may influence the political environment, regardless of the country’s economic performance. A factor that significantly influences political stability is the distribution of income. In international literature the negative relationship between income inequalities and political stability is well-established (Alesina and Perotti, 1994; Perotti, 1996). In order to include the income inequality we use the Gini coefficient, which is the measure that is generally used in the respective literature. Theoretically, increased income inequalities (Gini coefficient) should reduce political stability. Furthermore, we include the poverty risk and the poverty threshold indexes as supplementary inequality indicators, because these indexes may present how severe the social conditions may be in some countries. Moreover, people that are in poverty do not have much to lose; therefore their participation in protests has an extremely low opportunity risk.

Another variable we include in our model is the urban to the total population indicator (urban). In contrast to the income inequality’s variable, the urban’s influence on political stability is not well established in the literature. Collier and Hoeffler (2004) suggest that the more urbanized a country is, the operational capability of a government to suppress possible protests is increased; therefore the more stable the political environment should be. In contrast, Auvinen (1997) and Annett (2000) suggest that this relationship is negative, because the more populated the cities are, the more difficult it is for a government to provide good quality and adequate public services. The low quality of public services causes public discontent, which may lead to political instability. Therefore, this study may add further empirical evidence in the doubtful relationship between political stability and urbanization.

Empirical literature suggests that education significantly influences the political environment in at least two ways: (i) public education tends to produce a more even income distribution (Saint-Paul and Verdier, 1993), and (ii) the more educated the people are, the more productive they should be and in this (indirect) way education contributes to economic growth and the economic growth to political stability (Miljkovic and Rimbal, 2008). However, by examining the literature we see that there is a disagreement on which level of education should be used as an indicator. In particular, Alesina and Perotti (1996) use the primary school enrollment and Miljkovic and Rimbal (2008) use the secondary school enrollment. The latter suggest that the initial primary school-enrollment may be appropriate in undeveloped nations, but for developed countries, as most of the EU countries are, the threshold should be raised, because in these countries people with primary education do not contribute significantly to economic growth and to political stability. That is the main reason why in our study we use secondary school enrollment as an education indicator.

\(^{9}\)A point of reference may be the official request of the Greek authorities for entrance in the European Stability Mechanism in 2010. For an extensive report see European Commission (2009) and Vasileiou (2014 a,b).
Other than education, health is another significant factor of the social policy that may influence the political environment. Health is the most significant asset in peoples’ lives and the poor quality health services may lead to political instability. Public health, like public education, may be a way of income redistribution. That is why we choose to include the public health expenditures index in our models.

Health sector issues may be linked to many other economic and demographic factors. Aging is a factor that is usually included in political studies. Older people present a higher turnout to the elections; therefore the increased average age of a society should lead to increased participation in the election procedures (Goerres, 2007). As we mention above, the increased participation in the political process reduces the possibility for conflicts; therefore the population aging may tend to produce more political stability. Furthermore, aging may influence political stability not only directly, but also indirectly. As we mention before, high quality public health care tends to produce a more even income distribution in aging countries. Cecchetti et al (2011) provides a very interesting view of how the sovereign risk and the public budget deficits link to the public health expenditures and the population aging in EU countries (Spain, Italy, Greece etc.). Therefore, we include the age group 0-19 to the total population ratio and the median population in order to examine their influence in political stability.

(iv) Neighborhood Instability

“Bad neighboring” could be a crucial factor for the political stability. Blanco and Grier (2009) briefly and clearly summarize the respective literature according to which countries in “bad neighborhoods” might “import” a part of the neighboring instability, when a flood of refugees enters the country. Most EU countries, especially northern and central European countries, do not suffer from “bad neighboring” problems. However, in the past years in Europe there has been a significant flood of refugees from African and Asian countries (Afghanistan, Egypt, Pakistan, Syria etc.), which have recently suffered from wars and rebellions. For these people, the Southern European countries are the first countries on their way to Europe.

However, even if the refugees’ desired destination is not South Europe, in most cases they are forced to stay in these countries due to the EU’s legislation. In particular, the European Council Regulation (2003), or widely known as “Dublin II”, establishes the criteria and mechanisms for determining the EU’s Member State responsible for examining an asylum application lodged in one of the Member States by a third-country national. In the 10th article it mentions that “Where it is established, on the basis of proof or circumstantial evidence, that an asylum seeker has irregularly crossed the border into a Member State by land, sea or air having come from a third country, the Member State thus entered shall be responsible for examining the application for asylum. This responsibility shall cease 12 months after the date on which the irregular border crossing took place”. This regulation automatically increases the possibility of the countries that are on the EU’s south borders to examine the asylum application, even if the refugees’ final destination it not one of them. In order to study the specific issue we include two variables in our regressions: (i) the Euroborder variable, which is a dummy variable that takes the value 1 if a country is an EU border in general (and 0 otherwise), and (ii) the South Europe variable, which is a dummy variable that takes the value 1 if the specific country is on the south border of the EU (and 0 otherwise). If only the second variable is statistically significant this

---

*In this point we should mention that in the last years the some of the Southern EU’s countries suffer from the financial crisis and the increased refugees’ number makes the politico-economic environment in these countries even harder. Such an environment may be ideal for the rise of the far right parties, which is an issue that concerns the EU’s authorities (Palmer, 2013).*
may be an indication that the EU's southern borders are influenced by “neighborhood instability” and that the “Dublin II” legislation should be revised.

4. Methodological Issues

There are several panel data methodologies (pooled, fixed or random effects) we may use in order to empirically examine the determinants of the political stability in the EU. Many researchers (Blanco and Grier, 2009; Saidem et al., 2002 etc.) apply the pooled regression panel data, which implies that the sample is a priori homogenous, therefore the cross section estimations are the same. The alternative to the pooled regression methodology may be either the fixed effect or the random effect modeling. The fixed effects method allows us for different constants in each country, which means that in our case each country starts from a different point-level of political stability. This “starting point” is influenced from variables that do not vary over time, therefore in the fixed effects model we cannot include variables that are constant (Appendix B). On the other hand, the random effect model handles the “starting point” for each country not as fixed, but as a random variable.

Apart from the theoretical implications and the possible suggestions of which of these models may be more appropriate in a sample, econometrics enables us to choose the most appropriate model using quantitative methods. The standard F-test can be used to check fixed effects against the pooled regression. In this case the null hypothesis is that all the constants are the same, therefore we must use the pooled regression.

In our study we reject the null hypothesis because $F>F_{N-1,NT-N-K}$.

$$F = \frac{(R^2_{Fixed} - R^2_{Pooled})/(N-1)}{(1 - R^2_{Fixed})/(NT - N - K)}$$

$R^2$ the coefficient of determination of the fixed and the random effect respectively, $N$= cross section dimension, $T$=time period and $K$=independent variables, therefore we should use the Fixed effects method.

The other test we should run is the Hausman test, which helps us to choose the most appropriate approach between the fixed and random effects. The null hypothesis is that the random effects are consistent and efficient; under the null hypothesis that random effects are inconsistent (the fixed effects will be always consistent). The Hausman test uses the following test statistic:

$$H = (\hat{\beta}_{FE} - \hat{\beta}_{RE})' [\hat{V}(\hat{\beta}_{FE}) - \hat{V}(\hat{\beta}_{RE})]^{-1} (\hat{\beta}_{FE} - \hat{\beta}_{RE}) \sim \chi^2(K)$$

If $H>\chi^2(k)$ we should use the fixed effects model, otherwise we should use the random effects.

In our study the aforementioned tests, which are available upon request, suggest that the fixed effect is the most appropriate methodological approach for our sample. We assume that $\mu_i$ as encapsulates all of the variables that affect $y_{it}$ cross-sectionally, but does not vary over time, therefore our model is

$$y_{it} = \beta x_{it} + \mu_1 D1_i + \mu_2 D2_i + \mu_3 D3_i + \cdots + \mu_N DN_i + \nu_{it}$$
where $x_i$ is the vector of the independent variables we include in our model, $D_{1i}$ is a dummy variable that takes the value 1 for all observations on the first country (Austria) in the sample and zero otherwise, $D_{2i}$ is a dummy variable that takes the value 1 for all observations on the second entity (Belgium) and zero otherwise, and so on (the countries in the dataset are inserted in alphabetical order).

5. Descriptive statistics, empirical results presentation and analysis

This study includes a significant number of variables, which cannot be included in a single regression, because either the data does not cover each variable in the whole panel or in some cases multicolinearity issues emerge. These issues force us to use several regressions in order to reach useful conclusions (in each case under the specific assumptions we present below). Tables 3 and 4 respectively present the mean values and the correlation matrix of the variables we mainly use in our study. We do not present the descriptive statistics for the whole set of the variables in order to save space. In any case the data which is not included in Tables 3 and 4 are available upon request.

Table 5 presents the empirical results of our “core” model. The results suggest the following. Firstly, countries that adequately fight corruption increase their political stability performance (as expected). Secondly, the increased income level does not ensure political stability, because even if the coefficient is positive (as expected) it is not statistically significant. Thirdly, the findings for all the unemployment ratios we examine (unemployment, long term unemployment, youth unemployment and jobless households) suggest that increased unemployment reduces in a statistically significant way the political stability. Fourthly, inflation has the same influence to political stability as unemployment; therefore increased inflation may contribute to political instability.

Fifthly, according to the public budget variable the results suggest that during the pre-crisis period (before 2010) the public budget surplus countries are politically more stable than the deficit ones. However, post-crisis (after 2010) even the positive public budgets do not contribute to the strengthening of political stability. This means that during the growth years the political stability in rationally budgeted countries is increased; however during the recession years even correct handling of public finance may not be adequate. An alternative explanation may be that when there is increased international liquidity (before 2010), politicians in politically unstable countries, in order to gain governance, may implement a pro-people policy by increasing the public debt, which may be a problem for the future generations/governments. Regarding the public debt ratio, the empirical findings do not indicate that public debt influences in a statistically significant way the political stability (model 3). If we combine these results we may assume that the increased public debt does not influence political stability in a country, if this country is capable of meeting its obligations without asking for external financing (e.g. countries under memorandum).

Sixthly, the population aging strengthens the political stability. We draw the same conclusions if we replace the median population with the age group 0-19 population’s ratio. Possible explanations may be either that older people...

---

APPENDIX A presents all the indicators that are examined in this study, their definitions and their sources. An additional model which examines the fractionalization’s influence on the political stability is presented in the Appendix B. The reason why this model is presented in the Appendix is that the fractionalization variables are usually included in political stability studies, but the lack of time series data and the fixed effects modelling do not allows to examine it in all the regressions.
tend to participate in the election process more than younger people and this participation reduces the political conflicts or that political instability actions arise from younger people\textsuperscript{xii}.

Seventhly, the long term dummy recession negatively influences political stability within the EU. In the EU most countries had at least one recession year in our sample’s period. If the recession years are consecutively more than one, this reduces the population’s tolerance against potential austerity measures. The Greek case may be a representative example.

Eighthly, regarding the “bad neighboring”, the empirical findings confirm our assumptions that the “Dublin II” may increase political instability in the southern EU counties via immigrants which want to reach Europe and in most cases pass through these countries, but the “Dublin II” legislation forces them to stay in there. That is why the EU border variable does not have increased statistical significance, but the south border variable does.

Ninthly, we try to include in our study another view of political stability in EU countries. The Euro coefficient is negative, but statistically not significant; therefore we do not have sufficient evidence that EMU membership reduces political stability\textsuperscript{xiii}. However, we may certainly assume that the EMU does not increase the political stability.

The aforementioned results are the core empirical findings which almost fully cover the dataset. We examine several other models in order to draw conclusions for other factors that may influence political stability and they do not cover the whole data set. In model 5 we include the health expenditure and the secondary school enrollment (the 2012 data for each country are not included in the dataset). In order to avoid multicolinearity problems we remove the median population from the regression. The results suggest that both variables may contribute to the stabilization of the political environment, because: (i) increased public participation in health expenditures tends to produce a more even income distribution, and (ii) secondary school enrollment is an indicator for better educated people, which tend to be more productive and promote economic growth that may lead to a more stable political environment.

In most of the models we do not include the Gini coefficient due to the lack of a complete dataset. However, most political stability studies include the specific variable and this fact “forces” us to try to find a way to present the income inequality’s influence on political stability. We assume that the Gini coefficient values for the unavailable data are the same as the last mentioned. The results are presented in model 2 and they suggest (as expected), that increased inequalities in income distribution lead to a political instability\textsuperscript{xiv}.

Finally, we examine how the political regime influences political stability. The political stability’s dataset does not include Malta. The results suggest that democracy, polity2, regime durability and political competition do not strongly influence political stability. These results are available upon request.

\textsuperscript{xii}The population ageing ratio apart from the demographic interpretation is linked to the public health policy, as we present below.

\textsuperscript{xiii}In models 1-3 we present the Euro variable, but in the models 3-6 we exclude it in order to avoid multicolinearity issues due to the South Europe dummy variable.

\textsuperscript{xiv}The lack of the complete Gini dataset does not enable us to take as granted that our assumption is correct. Among the variables we use and may be closer to the Gini coefficient are the poverty risk and the poverty risk threshold, but the empirical findings did not show a statistically significant influence of these indicators to the political instability, therefore we do not present these results.
6. Conclusions and policy implications

The main objective of our research is to examine in detail the determinants of political stability in the EU’s countries during the 2002-12 period. We test the political stability-economic growth Granger causality and the results suggest that political stability causes economic growth, whilst the opposite does not hold for the EU’s case. We try to gather as many variables that are usually used in the international empirical literature and to include some other variables that may fit to the EU’s case. As in the most studies, our results suggest that economic growth is positively related to political stability. The recent economic crisis threatens the economic stability in EU economies especially in those countries that suffer from long term recession. The public budget surplus increases political stability for the pre-crisis period (before 2010), but during the post-crisis period these results are not confirmed. The enforcement of austerity measures by the governments in order to achieve balanced (or positive) public budgets may explain this change. During normal times the governments in countries which suffer from political instability may increase the public debt in order to curry favor with the voters, but during the crisis years (after 2010) the difficulties for external financing do not enable them to continue these policies.

Furthermore, the empirical findings show that there are several factors that may enhance political stability and are not related exclusively to economic performance. Political decisions, either from each country’s government or the EU’s officials may be taken in order to enhance political stability amongst EU countries in the following ways: as the results suggest the effective anti-corruption policy may strengthen political stability in a country. Transparency is a crucial factor because it spreads the sense of justice in a society. The increased quality public health services may secure political stability. Therefore, a government, even during severe economic crisis, should ensure that the qualities of public health services are not reduced. Possible explanations for the specific results may be that health is the most important asset in human life and that the public health expenditures may be a way for a fairer income distribution. Education may be a crucial factor for the future economic development consequently it should be “protected” in order for society to create conditions for a long term growth and for long term political stability. All the unemployment ratios strongly threaten political stability and this is a major issue that the EU has to resolve if the authorities’ are concerned for the common European visionxv. The EU authorities should take initiatives to increase the transparency level, and to protect the education and the health sector in member countries in order to consolidate the political stability and to avoid a possible contagion effect within the EU. According to the Euro adoption the empirical findings suggest that it does not significantly influence the domestic political environment.

Finally, another factor which threatens political stability, and for which the EU is capable of taking the initiative in order to resolve it, is border protection and immigration policy. Countries in the southern EU’s borders are strongly influenced probably from the increased immigration population. The long term regression and the flood of immigration may be an explanation for the rise of the far right parties in Europe (Palmer, 2013). The EU’s authorities should seriously consider these results and revise the austerity measures and the immigration policy in order to protect the vision for a United Europe.

xvThere are several recent reports that agree with our comments (Terzi, 2013 ; Cechetti et al., 2011; Economist, 2013 etc.)
Acknowledgment

I would like to thank Dr. Andreas Andrikopoulos (Assistant Professor of finance at the Department of Business Administrator of the University of the Aegean) for his useful comments

References

Aisen A. and Veiga, F. (2006). Does Political Instability Lead to Higher Inflation? A Panel Data Analysis. Journal of Money, Credit and Banking, 38(5), 1379-1389.

Alesina, A. and Perotti, R. (1994). The Political Economy of Growth: A Critical Survey of the Recent Literature. The World Bank Economic Review, 8(3), 351-371.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S. and Wacziarg, R. (2003). Fractionalization. Journal of Economic Growth, 8(2), 155-194.

Alesina, A., Ozler S., Roubini N., and Swagel, P. (1996). Political instability and economic growth. Journal of Economic Growth, 1(2), 189-211.

Alonso, J.A. and Garcimartin, C. (2013). The Determinants of Institutional Quality. More on the Debate. Journal of International Development, 25(2), 206–226.

Annett, A. (2001). Social Fractionalization, Political Instability, and the Size of Government. IMF Staff Papers, 48(3), 561-592.

Auvinen, J. (1997). Political conflict in less developed countries. Journal of Peace Research, 34(2), pp. 177–195.

Blanco, L. and Grier, R. (2009). Long Live Democracy: The Determinants of Political Instability in Latin America. The Journal of Development Studies, 45(1), 76-95.

Borner, S. and Paldam, M. (1998). The Political Dimension of Economic Growth. New York, Palgrave Macmillan.

Campos, N. and Nugent, J. (2000). Who is Afraid of Political Instability. Journal of Development Economics, 67(1), 157–172.

Cecchetti, S, Mohanty, M. and Zampolli F. (2011). The future of public debt. in Gokarn, S. (ed), Challenges to central banking in the context of the financial crisis, New Delhi: Academic Foundation, 183–217.

Collier, P. and Hoeffler, A. (2004). Greed and grievance in civil war. Oxford Economic Papers, 56(4), 563–595.

Economist (2013). Political risk in southern Europe Nothing peripheral about it. http://www.economist.com/blogs/freeexchange/2013/07/political-risk-southern-europe.

European Commission (2009). Economic Crisis in Europe: Causes, Consequences and Responses. Directorate-General for Economic and Financial Affairs from http://ec.europa.eu/economy_finance/publications/publication15887_en.pdf.
Fratzscher, M. and Stracca, L. (2009). The political economy under monetary union: has the euro made a difference? *Economic Policy* 24(58), 307-348.

Friedman, G. (2013). Europe, Unemployment and Instability. *Stratfor Global Intelligence*, March 5, 2013 from http://www.stratfor.com/weekly/europe-unemployment-and-instability.

Goerres, A. (2007). Why are Older People More Likely to Vote? The Impact of Ageing on Electoral Turnout in Europe. *The British Journal of Politics & International Relations*, 9(1), 90-121.

Goldstone, J., Bates, R., Epstein, D., Gurr, T., Lustik, M., Marshall, M., Ulfelder, J. and Woodward, M. (2010). A Global Model for Forecasting Political Instability. *American Journal of Political Science*, 54(1), 190–208.

Granger, C. (1969). Investigating Causal Relations by Econometric Models and Cross-Spectral Methods. *Econometrica*, 37(3), 424–438.

Gurgul, H. and Lukasz, L. (2012). Political instability and economic growth: Evidence from two decades of transition in CEE. *Communist and Post-Communist Studies*, 46(2), 189-202.

Gyimah-Brempong, K. and Traynor, T. (1999). Political Instability, Investment, and Economic Growth in Sub Saharan Africa. *Journal of African Economies*, 8(1), 52–86.

Heo, U. and Tan, A. (2001). Democracy and Economic Growth: A Causal Analysis. *Comparative Politics*, 33(4), 463-473.

Kaufman, D., Kraay, A. and Mastruzzi, M. (2010) The Worldwide Governance Indicators Methodology and Analytical Issues. *The World Bank Development Research Group Policy Research Working Paper 5430.*

Kirchgässner, G., Wolters, J. and Hassler, U. (2013) Introduction to Modern Time Series Analysis. *Springer Texts in Business and Economics.*

Marshall, M., Gurr, T. and Jaggers K. (2013). Polity IV Project: Political Regime Characteristics and Transitions, 1800-2012 Dataset. from http://www.systemicpeace.org/inscr/p4v2012.xls.

Miljkovic, D. and Rimal, A. (2008). The impact of socio-economic factors on political instability: A cross-country analysis. *The Journal of Socio-Economics*, 37(6), 2454-2463.

Palmer, J. (2013). The rise of far right parties across Europe is a chilling echo of the 1930s. *The Guardian*, from http://www.theguardian.com/commentisfree/2013/nov/15/far-right-threat-europe-integration.

Parsa, M. (2003). Will democratization and globalization make revolutions obsolete? *in Foran, J. (ed.) The Future of Revolutions, Rethinking Radical Change in the Age of Globalization, 73–82*, New York, Zed Books.

Perroti, R. (1996). Growth, Income Distribution, and Democracy: What the Data Say. *Journal of Economic Growth* 1(2), 149-187.
Rivera-Batiz, F. (2002). Democracy, Governance, and Economic Growth: Theory and Evidence. *Review of Development Economics, 6*(2), 225–247.

Rummel, R. (1995). Democracy, power, genocide, and mass murder. *Journal of Conflict Resolution, 39*(1), 3–26.

Saideman, S., Lanoue, D., Campenni, M. and Stanton, S. (2002). Democratization, Political Institutions, and Ethnic Conflict: A Pooled Time-Series Analysis, 1985-1998. *Comparative Political Studies, 35*(1), 103-129.

Saint-Paul, G. and Verdier, T. (1993). Education, democracy and growth. *Journal of Development Economics, 42*(2), 399-407.

Terzi, A. (2013). How Austerity Broke European Stability. http://www.social-europe.eu/2013/07/how-austerity-broke-european-stability/.

Vasileiou, E. (2014 a). The New 'Bail-In' Regime and the Need for Stronger Market Discipline. What Can We Learn from the Greek Case? *International Journal of Finance & Banking Studies, 3*(1), 85-113.

Vasileiou, E. (2014 b). Do the Governance Performance and the Sovereign Debt Influence Market Discipline? The EMU's Case Under the New European Bail in Regime. *forthcoming in the Journal of Money, Investment and Banking.*
Table 1: Data regarding each country’s entrance year in European Union, the year of the Euro-adoption, the economic performance and the public debt ratios during the period 2002-12.

| Country         | EU  | EMU  | Gross domestic product, constant prices (Percent change) |
|-----------------|-----|------|----------------------------------------------------------|
|                 |     |      | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Austria         | 1995| 2002 | 1.694| 0.866| 2.590| 2.401| 3.670| 3.706| 1.436| -3.822| 1.769| 2.834| 0.871|
| Belgium         | 1952| 2002 | 1.359| 0.807| 3.274| 1.752| 2.666| 2.883| 0.985| -2.787| 2.416| 1.840| -0.281|
| Bulgaria        | 2007| -    | 4.650| 5.505| 6.748| 6.358| 6.511| 6.448| 6.191| -5.476| 0.393| 1.841| 0.775|
| Cyprus          | 2004| 2008 | 2.129| 1.865| 4.233| 3.862| 4.128| 5.093| 3.587| -1.857| 1.309| 0.533| -2.425|
| Czech Republic  | 2004| -    | 2.149| 3.766| 4.743| 6.752| 7.020| 5.735| 3.099| -4.507| 2.469| 1.819| -1.235|
| Denmark         | 1973| -    | 0.466| 0.384| 2.296| 2.445| 3.395| 1.583| -0.784| -5.666| 1.577| 1.104| -0.377|
| Estonia         | 2004| 2011 | 7.940| 7.765| 6.343| 8.853| 10.097| 7.492| -4.151| -14.098| 2.565| 9.558| 3.939|
| Finland         | 1995| -    | 1.834| 2.012| 4.126| 2.915| 4.411| 5.335| 0.294| -8.539| 3.363| 2.726| -0.827|
| France          | 1952| 2002 | 0.929| 0.899| 2.545| 1.826| 2.467| 2.285| -0.081| -3.147| 1.725| 2.027| 0.014|
| Germany         | 1952| 2002 | 0.030| -0.387| 0.694| 0.846| 3.886| 3.389| 0.807| -5.855| 3.857| 3.399| 0.896|
| Greece          | 1981| 2002 | 3.440| 5.944| 4.368| 2.280| 5.511| 3.536| -0.214| -3.136| -4.943| -7.105| -6.389|
| Hungary         | 2004| -    | 4.506| 3.850| 4.797| 3.964| 3.894| 0.110| 0.893| -6.767| 1.317| 1.646| -1.730|
| Ireland         | 1973| 2002 | 5.417| 3.730| 4.200| 6.080| 5.505| 4.970| -2.160| -6.384| -1.063| 2.169| 0.157|
| Italy           | 1952| 2002 | 0.451| -0.047| 1.731| 0.931| 2.199| 1.683| -1.156| -5.494| 1.723| 0.374| -2.369|
| Latvia          | 2004| -    | 7.224| 7.600| 8.857| 10.123| 11.154| 9.600| -3.275| -17.729| -0.942| 5.477| 5.578|
| Lithuania       | 2004| -    | 6.838| 10.276| 7.369| 7.791| 7.809| 9.796| 2.912| -14.847| 1.521| 5.866| 3.617|
| Luxembourg      | 1952| 2002 | 4.088| 1.669| 4.376| 5.253| 4.933| 6.588| -0.735| -4.073| 2.891| 1.656| 0.336|
| Malta           | 2004| 2008 | 2.434| 0.716| -0.289| 3.585| 2.580| 4.073| 3.881| -2.812| 3.189| 1.819| 1.039|
| Netherlands     | 1952| 2002 | 0.076| 0.336| 2.237| 2.046| 3.394| 3.921| 1.804| -3.668| 1.528| 0.945| -1.247|
| Poland          | 2004| -    | 1.443| 3.867| 5.345| 3.617| 6.227| 6.785| 5.127| 1.628| 3.875| 4.521| 1.865|
| Portugal        | 1986| 2002 | 0.764| -0.911| 1.560| 0.775| 1.448| 2.365| -0.009| -2.908| 1.936| -1.288| -3.238|
| Romania         | 2007| -    | 5.077| 5.237| 8.490| 4.154| 7.875| 6.317| 7.349| -6.576| -1.149| 2.158| 0.689|
| Slovakia        | 2004| 2009 | 4.583| 4.775| 5.058| 6.655| 8.346| 10.494| 5.751| -4.936| 4.382| 3.226| 2.027|
| Slovenia        | 2004| 2007 | 3.827| 2.930| 4.402| 4.007| 5.850| 6.960| 3.383| -7.943| 1.258| 0.709| -2.543|
| Spain           | 1986| 2002 | 2.707| 3.088| 3.257| 3.588| 4.075| 3.479| 0.893| -3.832| -0.203| 0.052| -1.643|
| Sweden          | 1995| -    | 2.483| 2.336| 4.235| 3.161| 4.297| 3.314| -0.613| -5.028| 6.557| 2.933| 0.954|
| United Kingdom  | 1973| -    | 2.295| 3.949| 3.173| 3.235| 2.755| 3.427| -0.769| -5.170| 1.660| 1.117| 0.170|

Continued
| Country         | EU   | EMU | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  |
|-----------------|------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Austria         | 1995 | 2002 | 66,2  | 65,3  | 64,7  | 64,2  | 62,3  | 60,2  | 63,8  | 69,2  | 72,3  | 72,8  | 74    |
| Belgium         | 1952 | 2002 | 103,4 | 98,4  | 94    | 92    | 87,9  | 84    | 89,2  | 95,7  | 95,7  | 98    | 99,8  |
| Bulgaria        | 2007 | -    | 52,4  | 44,4  | 37    | 27,5  | 21,6  | 17,2  | 13,7  | 14,6  | 16,2  | 16,3  | 18,5  |
| Cyprus          | 2004 | 2008 | 65,1  | 69,7  | 70,9  | 69,4  | 64,7  | 58,8  | 48,9  | 58,5  | 61,3  | 71,5  | 86,6  |
| Czech Republic  | 2004 | -    | 27,1  | 28,6  | 28,9  | 28,4  | 28,3  | 27,9  | 28,7  | 34,6  | 38,4  | 41,4  | 46,2  |
| Denmark         | 1973 | -    | 49,5  | 47,2  | 45,1  | 37,8  | 32,1  | 27,1  | 33,4  | 40,7  | 42,7  | 46,4  | 45,4  |
| Estonia         | 2004 | 2011 | 5,7   | 5,6   | 5     | 4,6   | 4,4   | 3,7   | 4,5   | 7,1   | 6,7   | 6,1   | 9,8   |
| Finland         | 1995 | -    | 41,5  | 44,5  | 44,4  | 41,7  | 39,6  | 35,2  | 33,9  | 43,5  | 48,7  | 49,2  | 53,6  |
| France          | 1952 | 2002 | 58,8  | 62,9  | 64,9  | 66,4  | 63,7  | 64,2  | 68,2  | 79,2  | 82,4  | 85,8  | 90,2  |
| Germany         | 1952 | 2002 | 60,7  | 64,4  | 66,2  | 68,6  | 68    | 65,2  | 66,8  | 74,5  | 82,5  | 80    | 81    |
| Greece          | 1981 | 2002 | 101,7 | 97,4  | 98,6  | 100   | 106,1 | 107,4 | 112,9 | 129,7 | 148,3 | 170,3 | 156,9 |
| Hungary         | 2004 | -    | 55,9  | 58,6  | 59,5  | 61,7  | 65,9  | 67    | 73    | 79,8  | 82,2  | 82,1  | 79,8  |
| Ireland         | 1973 | 2002 | 31,8  | 31    | 29,4  | 27,2  | 24,6  | 24,9  | 44,2  | 64,4  | 91,2  | 104,1 | 117,4 |
| Italy           | 1952 | 2002 | 105,4 | 104,1 | 103,7 | 105,7 | 106,3 | 103,3 | 106,1 | 116,4 | 119,3 | 120,7 | 127   |
| Latvia          | 2004 | -    | 13,6  | 14,7  | 15    | 12,5  | 10,7  | 9     | 19,8  | 36,9  | 44,4  | 41,9  | 40,6  |
| Lithuania       | 2004 | -    | 22,2  | 21    | 19,3  | 18,3  | 17,9  | 16,8  | 15,5  | 29,2  | 37,8  | 38,3  | 40,5  |
| Luxembourg      | 1952 | 2002 | 6,3   | 6,2   | 6,3   | 6,1   | 6,7   | 6,7   | 14,4  | 15,5  | 19,5  | 18,7  | 21,7  |
| Malta           | 2004 | 2008 | 57,9  | 66    | 69,8  | 68    | 62,5  | 60,7  | 60,9  | 66,5  | 66,8  | 69,5  | 71,3  |
| Netherlands     | 1952 | 2002 | 50,5  | 52    | 52,4  | 51,8  | 47,4  | 45,3  | 58,5  | 60,8  | 63,4  | 65,7  | 71,3  |
| Poland          | 2004 | -    | 42,2  | 47,1  | 45,7  | 47,1  | 47,7  | 45    | 47,1  | 50,9  | 54,9  | 56,2  | 55,6  |
| Portugal        | 1986 | 2002 | 56,8  | 59,4  | 61,9  | 67,7  | 69,4  | 68,4  | 71,7  | 83,7  | 94    | 108,2 | 124,1 |
| Romania         | 2007 | -    | 24,9  | 21,5  | 18,7  | 15,8  | 12,4  | 12,8  | 13,4  | 23,6  | 30,5  | 34,7  | 37,9  |
| Slovakia        | 2004 | 2009 | 43,4  | 42,4  | 41,5  | 34,2  | 30,5  | 29,6  | 27,9  | 35,6  | 41    | 43,4  | 52,4  |
| Slovenia        | 2004 | 2007 | 27,8  | 27,2  | 27,3  | 26,7  | 26,4  | 23,1  | 22    | 35,2  | 38,7  | 47,1  | 54,4  |
| Spain           | 1986 | 2002 | 52,6  | 48,8  | 46,3  | 43,2  | 39,7  | 36,3  | 40,2  | 54    | 61,7  | 70,5  | 86    |
| Sweden          | 1995 | -    | 52,5  | 51,7  | 50,3  | 50,4  | 45,3  | 40,2  | 38,8  | 42,6  | 39,4  | 38,6  | 38,2  |
| United Kingdom  | 1973 | -    | 37,1  | 38,7  | 40,3  | 41,7  | 42,7  | 43,7  | 51,9  | 67,1  | 78,4  | 84,3  | 88,7  |

Sources: Sources: ECB web site, IMF World Economic Outlook Database (October 2013) and Eurostat.
**Table 2:** Political Stability and Economic Growth’s stability test

| Null Hypothesis                                                                 | Results          |          |          |
|--------------------------------------------------------------------------------|------------------|----------|----------|
| Political Stability does not Granger cause GDP Growth (constant prices)        | 2.26405          | 4.63160  | 7.84449  |
|                                                                                  | (0.0641)         | (0.0006) | (4.E-07) |
| GDP Growth does not Granger cause Political Stability                           | 0.29051          | 0.54009  | 0.69810  |
|                                                                                  | (0.8839)         | (0.7457) | (0.6516) |
| Observations                                                                    | 189              | 162      | 135      |
| Lag length                                                                      | 4                | 5        | 6        |

Note: In the results we present the F-statistic value and in the parentheses we include the statistical significance.
| Name                  | Political Stabilty | Corruption | GDP per cap $ | Gini | Unemployment | Inflation | Urban | Public budget | Public debt | Median population | Public Health expenditure to GDP | School enrollment secondary |
|-----------------------|--------------------|------------|---------------|------|--------------|-----------|-------|---------------|-------------|------------------|-------------------------------|-------------------------------|
| Austria               | 1,17               | 8,02       | 41.061,43     | 25,95| 4,51         | 2,04      | 66,93 | -2,29         | 66,82       | 40,54            | 7,93                          | 99,15                          |
| Belgium               | 0,83               | 7,32       | 39.388,93     | 27,05| 7,87         | 2,22      | 97,36 | -1,86         | 94,37       | 40,35            | 7,46                          | 121,00                         |
| Bulgaria              | 0,27               | 3,87       | 5.049,19      | 30,78| 10,65        | 5,32      | 71,26 | -0,37         | 25,40       | 41,13            | 4,25                          | 89,53                          |
| Cyprus                | 0,47               | 6,03       | 24.782,26     | 28,92| 5,67         | 2,62      | 69,81 | -3,49         | 65,95       | 35,28            | 2,89                          | 96,36                          |
| Czech Republic        | 0,94               | 4,55       | 15.600,13     | 25,13| 6,96         | 2,37      | 73,62 | -3,87         | 32,59       | 38,99            | 6,09                          | 92,95                          |
| Denmark               | 1,08               | 9,38       | 51.338,79     | 25,30| 5,54         | 2,12      | 86,24 | 0,90          | 40,67       | 39,82            | 8,65                          | 121,01                         |
| Estonia               | 0,65               | 6,29       | 12.813,78     | 33,18| 9,98         | 4,14      | 69,45 | 0,57          | 5,75        | 39,10            | 4,26                          | 100,62                         |
| Finland               | 1,50               | 9,38       | 41.046,24     | 25,90| 8,12         | 1,89      | 83,16 | 1,69          | 43,25       | 41,20            | 6,29                          | 113,76                         |
| France                | 0,52               | 7,02       | 37.834,79     | 28,60| 8,81         | 1,94      | 82,86 | -4,25         | 71,52       | 39,08            | 8,73                          | 111,44                         |
| Germany               | 0,84               | 7,90       | 37.069,03     | 27,65| 8,55         | 1,72      | 73,57 | -2,24         | 70,72       | 42,77            | 8,41                          | 51,75                          |
| Greece                | 0,27               | 4,10       | 23.425,26     | 33,61| 11,90        | 3,15      | 60,73 | -8,18         | 120,85      | 40,65            | 6,08                          | 101,68                         |
| Hungary               | 0,82               | 5,00       | 11.615,74     | 26,56| 8,28         | 5,16      | 67,48 | -5,05         | 69,59       | 39,33            | 5,41                          | 98,36                          |
| Ireland               | 1,14               | 7,49       | 48.114,06     | 30,47| 8,17         | 1,97      | 61,06 | -6,07         | 53,65       | 33,70            | 6,10                          | 112,53                         |
| Italy                 | 0,47               | 4,68       | 32.200,81     | 31,45| 8,14         | 2,39      | 67,88 | -3,55         | 110,73      | 42,21            | 6,83                          | 99,09                          |
| Latvia                | 0,58               | 4,37       | 10.002,93     | 35,93| 11,98        | 5,31      | 67,88 | -3,02         | 23,55       | 39,73            | 3,83                          | 96,33                          |
| Lithuania             | 0,75               | 4,83       | 9.893,87      | 33,59| 11,23        | 3,31      | 66,87 | -3,20         | 25,17       | 38,55            | 4,65                          | 99,94                          |
| Luxembourg            | 1,42               | 8,46       | 91.429,72     | 27,53| 4,49         | 2,79      | 84,54 | 0,71          | 11,65       | 38,38            | 6,59                          | 97,23                          |
| Malta                 | 1,27               | 5,94       | 17.625,99     | 28,03| 6,88         | 2,49      | 94,01 | -4,10         | 65,45       | 38,63            | 5,70                          | 96,67                          |
| Netherlands           | 0,99               | 8,80       | 42.798,63     | 26,67| 3,93         | 1,97      | 81,08 | -2,28         | 56,28       | 39,58            | 8,22                          | 120,44                         |
| Poland                | 0,68               | 4,42       | 9.923,61      | 31,60| 13,32        | 2,79      | 61,24 | -4,93         | 49,05       | 36,99            | 4,61                          | 99,27                          |
| Portugal              | 0,93               | 6,28       | 19.548,59     | 36,18| 9,36         | 2,41      | 58,71 | -5,42         | 78,66       | 39,96            | 6,79                          | 103,20                         |
| Romania               | 0,19               | 3,40       | 6.164,40      | 33,04| 7,53         | 8,98      | 52,81 | -3,74         | 22,38       | 37,15            | 4,35                          | 89,17                          |
| Slovak Republic       | 0,90               | 4,33       | 12.411,27     | 25,71| 14,45        | 3,79      | 55,29 | -4,42         | 38,35       | 35,96            | 5,37                          | 89,72                          |
| Slovenia              | 1,03               | 6,24       | 20.480,58     | 23,10| 6,60         | 3,45      | 50,26 | -3,14         | 32,35       | 40,45            | 6,23                          | 98,80                          |
| Spain                 | -0,10              | 6,64       | 27.801,01     | 32,53| 14,26        | 2,81      | 76,96 | -3,67         | 52,66       | 39,16            | 6,26                          | 118,75                         |
| Sweden                | 1,23               | 9,21       | 44.991,95     | 23,82| 7,10         | 1,49      | 84,66 | 0,75          | 44,36       | 40,34            | 7,54                          | 109,31                         |
| United Kingdom        | 0,37               | 8,16       | 37.988,18     | 33,45| 6,19         | 2,46      | 79,23 | -5,31         | 55,87       | 39,01            | 7,02                          | 102,28                         |
Table 4: Descriptive Statistics II: Correlation matrix

|                     | Political Stability | Corruption | GDP per cap USD | Gini | Unemployment | Inflation | Urban | Public Budget | Public Debt | Public Health | Median Population | Secondary School Enrolment |
|---------------------|---------------------|------------|-----------------|------|--------------|-----------|-------|---------------|-------------|---------------|------------------------|-----------------------------|
| Political Stability | 1                   |            |                 |      |              |           |       |               |             |               |                        |                             |
| Corruption          | 0.5302              | 1          |                 |      |              |           |       |               |             |               |                        |                             |
| GDP per cap USD     | 0.4045              | 0.7412     | 1               |      |              |           |       |               |             |               |                        |                             |
| Gini                | -0.4956             | -0.4032    | -0.2898         | 1    |              |           |       |               |             |               |                        |                             |
| Unemployment        | -0.4119             | -0.4637    | -0.4197         | 0.2516| 1            |           |       |               |             |               |                        |                             |
| Inflation           | -0.2493             | -0.4204    | -0.3244         | 0.1991| -0.0442      | 1         |       |               |             |               |                        |                             |
| Urban               | 0.2390              | 0.5870     | 0.5035          | 0.2832| -0.2473      | -0.3115   | 1     |               |             |               |                        |                             |
| Public Budget       | 0.3155              | 0.3311     | 0.2045          | 0.2458| -0.3720      | 0.1196    | 0.3101| 1             |             |               |                        |                             |
| Public Debt         | -0.1738             | 0.0059     | 0.0794          | 0.0011| 0.1083       | -0.2768  | 0.1195| -0.4375       | 1           |               |                        |                             |
| Public Health       | 0.2597              | 0.6501     | 0.5906          | 0.3788| -0.2536      | -0.4083  | 0.4356| -0.0427       | 0.3863      | 1             |                        |                             |
| Expenditure to      | 0.0174              | 0.1953     | 0.1470          | 0.0760| -0.0608      | -0.1474  | 0.2954| 0.0902        | 0.3230      | 0.4478        | 1                      |                             |
| Median Population   | 0.0976              | 0.3388     | 0.2198          | 0.0492| -0.0878      | -0.1820  | 0.3464| 0.0520        | 0.1241      | 0.1955        | -0.1195               | 1                           |
| Secondary School    |                     |            |                 |      |              |           |       |               |             |               |                        |                             |
| Enrolment           |                     |            |                 |      |              |           |       |               |             |               |                        |                             |
**Table 5: The core political stability findings**

| Variables                  | Model 1                      | Model 2                      | Model 3                      |
|----------------------------|------------------------------|------------------------------|------------------------------|
| Constant                   | -0.400689 (0.0000)*          | -0.408890 (0.0000)*          | -0.391684 (0.0000)*          |
| Corruption                 | 0.046626 (0.0055)*           | 0.048438 (0.0031)*           | 0.054140 (0.0017)*           |
| GDP per cap $              | 2.70E-06 (0.4039)            | 3.06E-06 (0.3438)            | 2.10E-06 (0.5022)            |
| Gini                       | -0.008376 (0.0500)**         |                              |                              |
| Unemployment               | -0.018188 (0.0060)*          | -0.018157 (0.0060)*          | -0.019664 (0.0089)*          |
| Inflation                  | -0.013289 (0.0022)*          | -0.013353 (0.0019)*          | -0.013014 (0.0091)*          |
| Urban                      | -0.003634 (0.5829)           | -0.004598 (0.4168)           | -0.001285 (0.8556)           |
| Public Budget before 2010  | 0.007024 (0.0661)**          | 0.007095 (0.0627)**          |                              |
| Public budget after 2010   | -0.010159 (0.1319)           | -0.010226 (0.1314)           | -0.000967 (0.4884)           |
| Public Debt before 2010    |                              |                              | 0.000647 (0.5771)            |
| Public Debt after 2010     |                              |                              |                              |
| Median population          | 0.043060 (0.0017)*           | 0.038484 (0.0053)*           | 0.038655 (0.0056)*           |
| Long term recession        | -0.041052 (0.0034)*          | -0.039325 (0.0032)*          | -0.041391 (0.0018)*          |
| EU border                  | -0.039153 (0.4674)           | -0.045179 (0.4241)           | -0.044159 (0.4062)           |
| Euro                       | -0.018219 (0.4101)           | -0.016872 (0.4575)           | -0.025027 (0.3352)           |
| $R^2$                      | 0.827279                     | 0.828973                     | 0.825552                     |
| Durbin Watson              | 1.9                          | 1.9                          | 1.9                          |
| Observations               | 294                          | 294                          | 294                          |

Notes: The signs *, **, *** indicate a level of statistical importance 1%, 5% and 10% respectively. Coefficients’ p-values are given in parentheses.

Fixed effects (white-cross section standard errors & covariance (d.f. corrected).
### Table 6: Further political stability findings

| Variables                  | Model 4                      | Model 5                      |
|----------------------------|------------------------------|------------------------------|
| constant                   | -0.415247 (0.0000)*          | -0.381879 (0.0000)*          |
| Corruption                 | 0.044308 (0.0549)***         | 0.037836 (0.0871)***         |
| GDP per cap $              | 2.35E-06 (0.4103)            | 4.48E-06 (0.1754)            |
| Jobless Households         | -0.026437 (0.0000)*          | -0.023085 (0.0002)*          |
| Inflation                  | -0.011343 (0.0159)**         | -0.010745 (0.0881)***        |
| Urban                      | -0.000615 (0.9391)           | 0.012889 (0.0009)*           |
| Public Budget before 2010 | 0.008114 (0.0236)**          | 0.009336 (0.0514)***         |
| Public budget after 2010   | -0.009029 (0.1176)           | -0.010001 (0.0965)***        |
| Median population          | 0.041264 (0.0054)*           |                              |
| Long term recession        | -0.046281 (0.0005)*          | -0.056090 (0.0000)*          |
| South Border               | -0.119499 (0.0764)***        | -0.133594 (0.0657)***        |
| Public health expenditure  |                              | 0.044565 (0.0099)*           |
| School secondary enrolment |                              | 0.002657 (0.0000)*           |
| $R^2$                      | 0.824246                     | 0.821165                     |
| Durbin Watson              | 1.93                         | 1.95                         |
| Observations               | 294                          | 266                          |

Notes: The signs *,**,*** indicate a level of statistical importance 1%, 5% and 10% respectively. Coefficients’ p-values are given in parentheses. Fixed effects (white-cross section standard errors & covariance (d.f. corrected).
Appendix

Appendix A: Variables’ Definitions and Sources.

| Variables                | Definition                                                                                                                                   | Source         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Age 0-19                 | Proportion of population aged 0-19 years                                                                                                     | Eurostat       |
| At poverty threshold     | At risk of poverty rate (cut-off point: 60% of median equivalised income after social transfers).                                             | Eurostat       |
| At poverty risk          | People at risk of poverty or social exclusion by age and sex.                                                                                 | Eurostat       |
| Public Budget            | The general government deficit/surplus is defined in the Maastricht Treaty as general government net borrowing/lending according to the European System of Accounts (ESA95). It is the difference between the revenue and the expenditure of the general government sector. The government deficit data related to the EDP (EDP B.9) differs from the deficit according ESA95 (B.9) for the treatment of interest relating to swaps and forward rate agreements. The general government sector comprises the sub-sectors of central government, state government, local government and social security funds. The series are presented as a percentage of GDP and in millions of euro. GDP used as a denominator is the gross domestic product at current market prices. | Eurostat       |
| Long Term Unemployment   | Long-term unemployment (12 months or more) as a percentage of the total unemployment(%) (Age 15-64 years)                                      | Eurostat       |
| Median population        | Median age of population                                                                                                                     | Eurostat       |
| Population in jobless    | People aged 18-59 living in jobless households: share of persons aged 18-59 who are living in households where no-one works                     | Eurostat       |
| households               |                                                                                                                                            | Source         |
| Public Debt              | The indicator is defined (in the Maastricht Treaty) as consolidated general government gross debt at nominal value, outstanding at the end of the year in the following categories of government liabilities (as defined in ESA95): currency and deposits, securities other than shares excluding financial derivatives, and loans. General government sector comprises the subsectors: central government, state government, local government and social security funds. Basic data are expressed in national currency, converted into euro using end-year exchange rates for the euro provided by the European Central Bank (ECB). | Eurostat       |
| Youth Unemployment       | Unemployment rates represent unemployed persons as a percentage of the labour force. The labour force is the total number of people employed and unemployed. Unemployed persons comprise persons aged 15 to 74 who were: a. without work during the reference week, b. currently available for work, i.e. were available for paid employment or self-employment before the end of the two weeks following the reference week, c. actively seeking work, i.e. had taken specific steps in the four weeks period ending with the reference week to seek paid employment or self-employment or who found a job to start later, i.e. within a period of, at most, three months. | Eurostat       |
| Variables         | Definition                                                                 | Source               |
|-------------------|---------------------------------------------------------------------------|----------------------|
| Unemployment      | Unemployment rates by sex, age and nationality (age 15-64)                | Eurostat             |
| Gini              | The Gini coefficient is defined as the relationship of cumulative shares of the population arranged according to the level of equivalised disposable income, to the cumulative share of the equivalised total disposable income received by them. | Eurostat             |
| Inflation         | Inflation, average consumer prices (Percent change). Annual percentages of average consumer prices are year-on-year changes. | IMF                  |
| GDP Growth constant | Annual percentages of constant price GDP are year-on-year changes; the base year is country-specific. Expenditure-based GDP is total final expenditures at purchasers’ prices (including the f.o.b. value of exports of goods and services), less the f.o.b. value of imports of goods and services. [SNA 1993] | IMF                  |
| Polity2           | Revised Combined Polity Score: This variable is a modified version of the POLITY variable added in order to facilitate the use of the POLITY regime measure in time-series analyses. It modifies the combined annual POLITY score by applying a simple treatment, or “fix,” to convert instances of “standardized authority scores” (i.e., -66, -77, and -88) to conventional polity scores (i.e., within the range, -10 to +10). | POLITY IV PROJECT    |
| Regime Durability | The number of years since the most recent regime change (defined by a threepoint change in the POLITY score over a period of three years or less) or the end of transition period defined by the lack of stable political institutions (denoted by a standardized authority score). | POLITY IV PROJECT    |
| Political Competition | The Polity dataset measures two dimensions of political competition: (1) the degree of institutionalization, or regulation, of political competition and (2) the extent of government restriction on political competition. | POLITY IV PROJECT    |
| Democracy         | Institutionalized Democracy: Democracy is conceived as three essential, interdependent elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second is the existence of institutionalized constraints on the exercise of power by the executive. Third is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. Other aspects of plural democracy, such as the rule of law, systems of checks and balances, freedom of the press, and so on are means to, or specific manifestations of, these general principles. We do not include coded data on civil liberties. The Democracy indicator is an additive eleven-point scale (0-10). | POLITY IV PROJECT    |
| Secondary Enrolment | School: Gross enrolment ratio. Secondary. All programmes. Total is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. GER can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition. | The World Bank        |
| Political Stability | Political Stability and Absence of Violence/Terrorism (PV) – capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. | The World Bank        |
| Variables                        | Definition                                                                                                                                                                                                 | Source            |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Urban                           | Urban population refers to people living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects. | The World Bank    |
| Public health expenditure       | Health expenditure, public (% of total health expenditure) Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds. Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. | The World Bank    |
| GDP per capita (current US$)    | GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. | The World Bank    |
| Corruption Perceptions Index    | The Corruption Perceptions Index ranks countries/territories based on how corrupt a country’s public sector is perceived to be. It is a composite index, drawing on corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions. The Corruption Perceptions Index ranges between 0 (highly corrupt) and 10 (very clean) for the years 1995 - 2011 and between 0 - 100 afterwards, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean. | Transparency International |
Appendix B: Fractionalization’s influence on the political stability

Among the other variables we examine in our study are the ethnic, religion and language discrimination. Like Blanco and Grier (2009) we use the fractionalization indexes from Alesina et al (2003). These data are stable in our sample’s period, therefore we cannot use them in our models, because we use the fixed effects approach. However, this could be an interesting (in our opinion) view of the fractionalisation’s influence of the political environment. Therefore, we choose to present it in this Appendix section. We employ the alternative to the fixed effects panel data models (random effects and pooled effects) which enable us to include the specific dataset in our model\textsuperscript{xvi}.

The ethnological, religious and language fractionalization indexes show that the more fractionalised a country is, the more political instability (Random I, II and III models, respectively). From the models I, II and III the only variable that is statistically slightly not significant is the language fractionalization, because in most of the EU’s countries people speak not only their mother tongues, therefore the language fractionalisation may not be a reason that crucially could threaten the political stability. In contrast ethnic and religious differences significantly influence the political environment. These results are similar to those mentioned in previous empirical studies (Annet, 2001; Blanco and Grier, 2009 etc.). Even if we use the pooled regression model the results are similar. These results are available upon request.

Finally, we may observe that the results in the rest of the variables we include in the following models are similar to the previous results of models 1-5. This may be an indication for the robustness of the empirical findings.

\textsuperscript{xvi}The fractionalisation dataset is available on http://www.nsd.uib.no/macrodataguide/set.html?id=16&sub=1
Random effects panel data including the fractionalization ratios in the analysis.

| Variables                      | Random I                     | Random II                    | Random III                   |
|--------------------------------|------------------------------|------------------------------|------------------------------|
| constant                       | -0.135105 (0.0623)***       | -0.081784 (0.3212)           | -0.166994 (0.0275)**         |
| Corruption                     | 0.028793 (0.0997)***        | 0.038999 (0.0151)**          | 0.035585 (0.0197)**          |
| GDP per cap $                  | 4.60E-06 (0.0737)***        | 2.83E-06 (0.0810)*           | 4.96E-06 (0.0584)***         |
| Jobless Households             | -0.022139 (0.0173)**        | -0.025794 (0.0069)*          | -0.023151 (0.0073)*          |
| Inflation                      | -0.012148 (0.0003)*         | -0.012677 (0.0002)*          | -0.012576 (0.0003)*          |
| Urban                          | 0.000462 (0.8891)           | -0.000105 (0.9747)           | 0.000390 (0.9103)            |
| Public Budget before 2010      | 0.010937 (0.0128)**         | 0.010563 (0.0155)**          | 0.010748 (0.0094)*           |
| Public budget after 2010       | -0.007634 (0.0011)*         | -0.007962 (0.0000)*          | -0.007913 (0.0002)*          |
| Median population              | 0.034625 (0.0000)*          | 0.035225 (0.0000)*           | 0.033805 (0.0001)*           |
| Long term recession            | -0.025334 (0.1000)***       | -0.028866 (0.0560)***        | -0.025576 (0.0887)***        |
| South Europe                   | -0.140161 (0.0058)*         | -0.141035 (0.0079)*          | -0.121989 (0.0080)*          |
| Ethnic fractionalisation       | -0.240672 (0.0069)*         | -0.248147 (0.0290)**         |                              |
| Religion fractionalisation     |                              |                              |                              |
| Language fractionalisation     |                              |                              |                              |
| $R^2$                          | 0.583995                     | 0.587164                     | 0.578622                     |
| Durbin Watson                  | 1.944510                     | 1.904824                     | 1.917952                     |
| Observations                   | 294                          | 294                          | 294                          |

Notes: The signs *,**,*** indicate a level of statistical importance 1%, 5% and 10% respectively. Coefficients’ p-values are given in parentheses.

Random effects (white-cross section standard errors & covariance (d.f. corrected).