

The economy and public support for the European Union

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Abstract We investigate the determinants of public support for EU membership using a panel of 15 countries over the 1974 - 2008 period. The results indicate that increases in inflation and unemployment rate generate a decrease in support for EU membership, while growth of GDP increases support. There is evidence of erosion in citizens' support as time in the Union accumulates and when the country is under the excessive deficit procedure. Splitting the sample into different periods reveals that real economic variables were more influential in shaping citizens' support for the EU than nominal variables during the first years of the Community, but inflation became the most relevant variable after implementation of the Treaty of the European Union.

Keywords: European integration, public support, economic performance, panel-data

JEL Classification: H1, D7, F0

1. Introduction

This paper investigates the determinants of citizens' support for European Union (hereafter, EU) membership. Public support is vital for the European integration process since governments' abilities to proceed to higher levels of integration require the approval of citizens. In order for the EU to continue its integration process, it is important to understand what conditions citizens' satisfaction with it¹.

In little more than half a century of existence, the EU has become one of the most advanced systems of international economic and political integration in the world. The EU started as a common market for a few selected products, with only six member countries², aiming at guaranteeing peace in the years that followed World War II. It is currently a political and economic union that encompasses 27 countries and close to 500 million citizens, with its own directly elected parliament, budget and constitution. The European integration process evolved through a series of treaties that implemented higher levels of integration, starting with the Treaty of Rome (1957), continuing with the Single European Act (1986), the Treaty of the European Union (1991), and culminating in the recent Treaty of Lisbon (2009).³

Given the transfer of economic powers from national governments to the EU's supranational entities – with the adoption of a common currency as its most emblematic feature – the EU has increasingly influenced each member state's economic outcomes. Following the vote and popularity function literature, this paper assesses whether economic conditions in member states affect public support for the EU. That is, we ask whether citizens hold the EU accountable for their countries' economic conditions and if this accountability has increased as the process of integration

¹ See Vaubel (1994a) for a survey on public choice analysis of European integration.

² Belgium, France, Germany, Italy, Luxembourg and the Netherlands.

³ For a description of the European integration process see Artis and Nixon (2007).

deepened. In addition to economic variables, we also account for political and institutional issues that might influence individuals' attitudes towards EU membership. That is, we follow a public choice analysis of the European integration process by estimating a popularity function for the EU.

The paper is structured as follows: Section 2 surveys the literature on vote/popularity functions and support for the EU; section 3 presents the baseline empirical model; section 4 reports the empirical results; and finally, section 5 concludes the paper.

2. Literature Review

The literature on vote / popularity (VP) functions tries to explain vote support for incumbent politicians or their level of popularity with economic and political variables. The starting premise relies on Downs (1957)'s hypothesis that voters' behaviour is driven by the goal of utility maximization. That is, citizens calculate expected future utility under competing candidates and vote for the one that offers more promising returns. If current and recent economic conditions signal future performance, then public support for politicians will vary with economic variables.

The literature on VP-functions emerged in the 70s with the works of Mueller (1970), Goodhart and Bhansali (1970) and Kramer (1971). Many papers followed, testing new hypotheses regarding voters' behaviour on specific countries or using panels of data.⁴ A key issue in the debate is which economic indicators are important for voters, with inflation, unemployment and growth standing out as the most frequently used variables.⁵ Another question of interest involves the length of voters' backward time horizons as they make assessments of the state of the economy. Although most studies (Fair, 1978; Paldam and Nannestad, 2000; Veiga, 1998, among others) find voters to

⁴ See Paldam (2004), Hibbs (2006), and Lewis-Beck et al. (2008) for surveys on the topic.

⁵ For a discussion on the role of macroeconomic theories in developing measures of economic performance, and empirical tests on a panel of 13 democracies, refer to Chappell and Veiga (2000).

be myopic, some researchers argue that voters analyse economic performance during the entire term of office (Peltzman, 1990; and Hibbs, 2000). The question of how expectations are formed also generated debate in the VP-functions, with some authors (i.e. Key, 1966; Alesina et al., 1993; Hibbs, 2000; Nickelsburg and Norpoth, 2000; and Veiga and Veiga 2004) arguing that individuals look back when they form their opinion about politicians, and others suggesting that they look forward (Erikson et al., 2000).

The use of individual-level survey response data to estimate VP functions⁶ allowed for new hypothesis regarding voter's behaviour to be tested. An interesting question is whether voters are egotropic (care about their personal economic situation) or sociotropic (care about the macroeconomic situation of the country). Kinder and Kiewiet (1979) were the first to analyse this issue and concluded that US voters are sociotropic, but other studies have found evidence compatible with the hypothesis of egotropic voting.

Building on the main findings of the literature on VP-functions, this paper presents a popularity function for the EU. Given that the process of European integration has reduced the autonomy of national governments in economic policymaking, it is likely that EU citizens hold the Union accountable for the economic situation in their country. As Lindberg and Scheingold (1970) have pointed out, as the European integration process moved forward, public opinion about the EU departed from a "permissive consensus" to a more active and critical stance towards the EU, so we expect the economic situation of state members to have a larger influence on EU's popularity in more recent years of the Union.

Eichenberg and Dalton (1993) were the first to investigate the aggregate-level dynamics of public support for European Community membership with an approach similar to VP-functions. Using data from the Eurobarometer's questionnaires, they explained variations in the EU's

⁶ Refer to Dutch and Stevenson (2008) and Brug et al. (2007) for recent examples.

popularity with national macroeconomic outcomes. In their study, inflation has a strong negative effect on the support for the European Community; the ratio of the country's intra-European Community exports to its total exports has a positive impact, and net receipts of the country from the European Community budget seem to have no effect. Vaubel (1994b) reports similar results regarding trade integration and net budgetary contributions. However, Anderson and Kaltenthaler (1996) found that in addition to inflation, unemployment and GDP growth also exert a statistically significant impact on EU's popularity.

Following a different approach, Gabel and Palmer (1995), Gabel (1998) and Anderson and Reichert (1996) use micro-economic data to look for the costs and benefits associated with EU membership for each citizen as an individual. Their multivariate analyses confirm the influence of education, occupational skills, income, and proximity to EU borders on citizens' support for the European integration process. Others, including Ingleheart (1970), Hewstone (1986), Ingleheart *et al.* (1991) and Janseen (1991), analysed the influence of individual values in shaping attitudes towards the EU. These studies find that citizens' abilities to understand the full range of the European integration process, their political ideologies, and their support for the national government play a major role in shaping opinions about the EU. Also with survey data, Caplanova, Orviska and Hudson (2004) analysed the determinants of support for accession to the EU and Nato in 10 central and eastern European countries. Empirical results suggest that both socio-economic and attitudinal variables influence support for membership.

Mahler *et al.* (2000) explore the determinants of public attitudes towards the EU through national, regional and individual level analyses. On a national level, they found that net budgetary receipts from the EU, trade with fellow EU members, and inflation affect support for the union. Their findings at the regional level are similar, with the receipt of EU regional aid being the most important determinant of a region's support for the EU. On an individual level, their results indicate

that Eurobarometer respondents' self-reported personal incomes have a positive influence on their support for the EU.

As we have noted, the number of papers investigating the determinants of public support for EU membership is not large, and most were written in the 1990's, implying that the most recent years of the European integration history have not been analysed. This paper intends to fill this gap in the literature. In addition, because we have longer time series, we are able to investigate how support for the EU has changed as integration has become more complete.

3. The Empirical Model

Our proxy for citizens' support for the EU was constructed using data from the Eurobarometer surveys. Eurobarometers are public opinion surveys that have been conducted twice a year in all EU countries since 1973. These questionnaires are used to assess public opinion on a variety of topics, such as EU's policies and institutions, religion, and politics. Each survey is based on a different random sample, which makes the opinion of a specific individual impossible to analyze over time. Each survey is also followed by a Standard Report, presenting an analysis and summary the main results.

Answers to the following question were used to create an index of EU's popularity: "Generally speaking, do you think that your country's membership of the EU is: (a) a good thing; (b) a bad thing; (c) neither good nor bad." This question has been present in all Eurobarometers since 1974, allowing for consistent measurement of public support for the European integration process throughout the 1974 to 2008 sample period. Data was retrieved for the first 15 EU members, that is, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. The respondents who answered "Don't know" were discarded; and other responses were calculated as percentages of all

respondents with an opinion. The following three indexes were then computed, in order to obtain a single value for country i at time t : Index 1 = $a + 0,5c$; Index 2 = $a - b$; and Index 3 = $a - 0,5c - b$.

As an alternative to the estimation of a popularity function for the EU, a voting function for European Parliament elections might also be used to investigate the determinants of the support for the European integration process. However, Reif and Schmitt, 1980; Reif, 1984; Marsh, 1998; and Kousser, 2004 have shown that European Parliament elections are “second order elections,” since they are used by citizens to signal support (or the lack of it) for their national governments. Therefore, European Parliament elections are probably a poor indicator of support for the EU.

The baseline empirical model is specified as follows:

$$CS_{it} = \sum_{j=1}^p \alpha_j CS_{it-j} + \beta * EV_{i,t} + \theta * PIV_{i,t}' + v_i + \varepsilon_{it}$$

where CS_{it} stands for an index of citizens' support for EU membership in country i , at time t , p is the number of lags to be included in the model, EV_{it} and PIV_{it} represent matrices of economic, political and institutional variables that may have a significant impact on individuals' support for the EU. β and θ are vectors of parameters to be estimated, v_i is the individual effect of country i and ε_{it} is the error term. Since surveys are administered twice a year, each time period refers to a half-year interval.

Lags of the dependent variable are included as explanatory variables in order to account for the persistence of EU popularity over time. We expect increases in inflation and unemployment to have a negative impact on public support for the EU. Higher growth of GDP or private consumption and net budgetary receipts from the EU should have positive effects. We also test whether the degree of openness of the economy⁷ and trade with fellow EU members play a part in the formation of public

⁷ The degree of openness of the economy was calculated according to the following formula $DOE_{it} = (IMP_{it} + EXP_{it}) / GDP_{it}$, where IMP_{it} is the level of imports of country i in year t , EXP_{it} is the level of exports

attitudes toward the EU.

The economic explanatory variables represented in the equation (1) by matrix EV_{it} were retrieved from several sources. Inflation, unemployment rate and private consumption series were taken from the OECD Economic Outlook, except for the unemployment rate series for Belgium, Denmark, France, and the UK, which were obtained from Eurostat. Private and government consumption data was also collected from the Eurostat's statistics database. Quarterly data on exports, imports, and GDP was gathered from the International Monetary Fund's (IMF) International Financial Statistics (IFS). Data on the trade volume with other EU countries was extracted from the AMECO database. The EU's budget figures were taken from the Court of Auditors Annual Reports. Values for intra EU trade and the EU budget are available only on an annual basis. For these variables, we assign half of the annual amount to each half-year period. In every model specification, all other economic variables are measured as two-quarter averages.

Political and institutional factors, represented in equation (1) by vector PIV_{it} , may also affect the EU's popularity. Those include honeymoon effects, the length of each country's membership in the EU, the impact of European Parliament's elections, and the effect of Excessive Deficit Procedures. The honeymoon effect represents a state of grace that the EU may enjoy in a country immediately after it joins the Union, because its citizens may be overjoyed with the fact that they are now members of the EU. In the model, this is captured by a discrete variable assuming positive values for the first (eight, six or four) half-year periods after each country enters the EU, and zero in the remaining periods. When we assume the honeymoon effects to last three years, this variable takes the value of six in the first semester the country joins the EU, five in the second, and so on, until it assumes the value of one in the sixth semester and zero for the remaining periods.

for the same country, in the same period, and GDP_{it} is the gross domestic product for that country at that time.

It is also likely that as time in the Union goes by citizens get increasingly disappointed with it, and therefore less supportive. To test this hypothesis, the variable membership length assumes a value corresponding to the number of periods that each country has been a member of the EU. A negative sign is expected for the estimated coefficient associated with this variable for the reason given above.

As for the European Parliament elections, we suspect that before elections more information about European issues is passed on to voters, which may affect their attitudes towards the EU. According to Eichenberg and Dalton (1993), the introduction of direct elections for the European Parliament was motivated, at least partially, by the belief that European election campaigns would increase voters' support for the community. A dummy variable was included, which takes the value 1 in each semester when European Parliament elections were held, and 0 otherwise.

The convergence criteria set in the Stability Growth Pact, in 1996, established that countries not complying with the public debt to GDP and budget deficit to GDP ratios (60% and 3%, respectively) would be subject to an Excessive Deficit Procedure (EDP), administered by the European Commission. Given the restrictive nature of the EDP, it is expected that when governments are subjected to them, they will blame the EU for negative short-run consequences in the country's economy. Therefore, when countries are under the EDP, it is likely that the EU's popularity diminishes. To study this effect, a dummy variable was created, assuming the value of 1 whenever a country is under the EDP, and zero for all remaining periods.

Data on the European Parliament Elections, the Excessive Deficit Procedures, and the entrance date of each member state was retrieved from the European Union's official website (<http://europa.eu>). Summary statistics for both the dependent and the explanatory variables included in the empirical model are presented in Table 1.

[Table 1 here]

4 Citizens' support for the EU

4.1. Econometric issues

The baseline econometric framework for estimating the model described above is the fixed effects method, although some models were also estimated by Ordinary Least Squares (OLS) for purposes of comparison. The fixed effects model is appropriate when there is correlation between the error term and the regressors due to unobserved individual effects. Given that there are country-specific social, economic, political, and institutional characteristics that are likely to have a permanent influence, on citizens' support for the EU, the fixed effects method is justified. Both the Hausman test and the Breusch and Pagan Lagrangian multiplier test indicate the existence of correlation between the regressors and the error term, supporting the use of the fixed effects method instead of the random effects method.

Although we are estimating a dynamic model, the Arellano and Bond (1991) Generalized Method of Moments estimator was not used since it is better suited for datasets with a large number of individuals and a small number of periods, which is clearly not our case. A Fisher test for panel unit root, using an augmented Dickey-Fuller test, was performed in order to assess whether the dependent variable is stationary or not. The test rejected the null hypothesis of a unit root, allowing for the estimation of the model in levels.

4.2 The baseline empirical model

Table 2 presents the estimation results of models using each of the three popularity indices proposed previously as the dependent variable. All models share the same explanatory variables, in order to make comparisons straightforward. As can be seen from the Table, public support for the EU shows strong persistence over time. The first two lags of the dependent variable are always

statistically significant and the sum of the estimated coefficients associated with them is around 0.8. All fixed effects estimation results reject the null hypothesis that the country dummies are all zero. Regardless of the index used as dependent variable, the R-squared, t-statistics, and the significance levels of variables are similar. From now on, we will focus on estimation results using index 1, because this index ranges from 0 to 100, making results easier to interpret.

[Table 2 here]

Regarding the economic variables, the estimated coefficient associated with inflation in the previous period is always statistically different from zero at the 1% confidence level. When the inflation rate increases one percentage point, public support for the EU falls by approximately 0.6 points. GDP growth is not statistically significant, although when using OLS it turned out to be marginally statistically significant, and with the expected sign (positive) in all models. The degree of openness of the economy is signed as expected but it is not statistically significant.⁸ Finally, the variable that represents the length of each country's membership is statistically significant and negatively signed, indicating that as time goes by public support for the EU decreases. Therefore, for all else equal, countries that have been members of the EU for longer periods of time tend to be less supportive of the EU. A possible explanation for this result is that citizens from older member states may not be enthusiastic about the more recent members, particularly if those countries are economically weaker and compete for the EU budget's transfers.

To test if other real economic variables have an effect on public support for the EU, the GDP growth rate was replaced by the unemployment rate. As can be seen from the first column of Table 3, the coefficient associated with the unemployment rate is negative, as expected, but it is not

⁸ The percentage of trade with EU countries was tested as an alternative variable to the degree of openness of the economy, since their correlation is 70%. Like the degree of openness, it turned out to be positively signed but not statistically significant in most of the estimations.

statistically significant. Results for the other variables are very similar to the previous estimation, except for the degree of openness of the economy that is now marginally statically significant. Its positive coefficient suggests that the EU has a larger support base in countries more open to international trade. To permit the possibility that individuals respond more to changes than levels, in column 2 we report the results for a regression using the growth rate of the unemployment rate. This variable turned out to be statistically significant at the 5% level and larger than the inflation effect. When the growth in the unemployment rate increases by one standard deviation, public support for the EU falls by approximately 0.6 points. Government consumption and the EU budget, each expressed as a percentage of GDP, were also tested as explanatory variables. However, neither was statistically significant.

[Table 3 here]

In order to test the impact of European Parliament elections, the Excessive Deficit Procedure, and honeymoon effects on public support for the EU, three dummy variables were included in the model. The last column of Table 3 presents estimation results for these specifications. There is evidence of an erosion of public support for the EU when the country is under the Excessive Deficit Procedure. This is not surprising, since in these periods members states have to adopt restrictive fiscal policies in order to return the deficit to GDP ratio to the 3% limit imposed by the EU. Although signed as expected, the variables for honeymoon effects and European Parliament elections are not statistically significant.⁹ This implies that there is no positive bias in public opinion about the EU in the first years the country joins the Union and that citizens don't change their opinion about the EU in European electoral periods, when information about European issues is more easily available through the media.

⁹ The variable for honeymoon effects included in the regression refers to a period of two years, but larger periods (three and four) were also tested.

The results presented in Tables 2 and 3 indicate that there are significant country effects at the 1% confidence level. Table 4 presents the estimated coefficient for each country specific effect for the last equation reported in Table 3. All of the six EU founding members (Belgium, France, Germany, Italy, Luxemburg and Netherlands) have high positive coefficients, which is in accordance to our expectations since the process of European integration began in those countries. They have shaped the European institutions and policies according to their interests and have benefited from stronger bargaining power in the negotiations with new entrants.

[Table 4 here]

There are great differences in public opinion in the countries joining the European Community in 1973. UK's reluctance to fully embrace the EU has been evident ever since it began negotiating its entrance, and this is confirmed by a negative estimated coefficient. Denmark's negative coefficient is also not surprising, since the Danish people rejected the ratification of the Maastricht Treaty in a 1992 referendum. Ireland, on the other hand, has a positive coefficient. The country approved the ratification of the Treaty of Maastricht in 1992, and enjoyed a long period of economic growth, especially during the 1990s, that the Irish people may attribute to their EU membership. Greece, the solo entrant of 1981, also has a positive coefficient, as does Spain, who joined the Community five years latter and has enjoyed great spells of growth since then. The coefficient associated with Portugal is very close to zero. The country also entered the Community in 1986, but has not been able to achieve a similar improvement of its economic situation.

The three most recent members in our sample (Austria, Finland and Sweden) joined the union in 1995, and they have the largest negative coefficients. This is not surprising, since it took them much longer to embrace the ideals of economic integration. These countries were already quite rich when they joined the EU, and their citizens may consider that there are no significant benefits from giving up part of their autonomy to European supranational authorities and joining a union with

poorer nations.

4.3 Time Evolution

The European integration process was slow and progressive. It took more than half a century for the union to reach the level of integration experienced by its members today. During this period, not only the level of integration changed, but the economic environment changed as well. Therefore, it is likely that the way individuals incorporate economic conditions on their opinions about the EU has changed over time. In order to study how different levels of economic integration changed the way citizens form their opinion about the EU, the sample was split into three periods, according to the two most important changes in the EU's integration levels:

- 1974 – 1987 (13 years): The first period goes from the beginning of the sample until the coming into effect of the Single European Act.¹⁰
- 1987 – 1993 (6 years): The second period starts with the Single European Act and ends with the implementation of the Maastricht Treaty and the definition of the convergence criteria.
- 1994 – 2008 (14 years): The last interval of time begins with the coming into effect of the Treaty of the European Union,¹¹ and extends until the end of the sample.

We have considered dividing the last period in two, in order to separate the time before and after the European Monetary Union (EMU), but we ultimately decided not to do so because before the EMU its members were already bound to comply with the convergence criteria. Of course, an additional split would also reduce the number of degrees of freedom in the estimations. Summary

¹⁰ The Single European Act was signed in 1986 and came into effect on July 1st 1987.

¹¹ The Treaty of the European Union was signed in Maastricht in December 1991, and came into effect after November 1993.

statistics for each period concerning the most relevant economic variables used in the previous estimations are presented in table 5.

[Table 5 here]

Estimation results for different time periods are presented in Table 6.¹² As expected, the impact of economic conditions on public support for the EU varied over time. During the first period considered (1974 to 1987), only GDP growth seems to influence public support for the EU (inflation and unemployment growth are never statistically different from zero). The degree of openness of the economy is negatively signed. Since open economies are more vulnerable to exogenous shocks, it is reasonable that openness would be inversely related to EU support during this period that includes two large oil price shocks.¹³

[Table 6 here]

Empirical results for the second period (1987-93) reveal that the growth rate of the unemployment rate exerts the largest effect on the EU popularity, and has a larger coefficient than in the previous period indicating that individuals attribute a much larger importance to it in their evaluations. This is not surprising, given that the average unemployment rate is larger in the second period than in the first. The degree of openness of the economy is now positively signed and marginally statically significant in the estimation of column 3, reinforcing our interpretation that more open economies were more affected by the oil shocks and once the shocks disappeared, EU

¹² For some estimations the second lag of the dependent variable turned out not to be statistically significant and was excluded from the regression.

¹³ The percentage of trade with EU countries was tested as an alternative variable to the degree of openness of the economy but turned out not to be statistically significant.

citizens viewed international trade as a positive thing.¹⁴ It should also not be forgotten that this period starts in 1987, when the Single European Act (SEA) was implemented, establishing a commitment to complete the single market by the end of 1992, and raise the integration of decision making processes across members of the European Economic Community (EEC). The years preceding the SEA made clear that the changing international political environment required greater consistency of members' external policies, at least if the community was to be an important player in the new international scheme. The EEC's economy needed to have a more flexible and liberalized market in order to compete as a global power in the world economy.

In the estimations for the last period considered in the sample (1994 - 2008), the degree of openness of the economy turned out to be positively signed but statistically insignificant, and was replaced by the percentage of trade with EU countries. As can be seen in the last two columns of Table 6, trade with fellow EU members is now a relevant variable influencing support for the EU. Furthermore, real economic variables (GDP growth rate and growth of the unemployment rate) are no longer significant, but inflation now affects EU support. Inflation is statistically significant and has a much larger coefficient than in the previous two periods. Since this period starts with the implementation of the Treaty of the European Union and the imposition of the Maastricht criteria for countries willing to participate in the creation of a monetary union, it is not surprising that citizens attribute more importance to inflation. The decline in the unemployment rate during this period may also justify the reduction in the magnitude of the coefficient associated with the unemployment growth rate. Another difference from previous periods is that in semesters where European Parliament elections are held voters are less in favour of the EU. Finally, there is evidence that when countries are under the Excessive Deficit Procedure public support for EU

¹⁴ As for the previous period, the percentage of trade with EU countries was not statistically significant when included in the regression.

diminishes.

To make comparison between periods before and after the Maastricht Treaty more straightforward, we have estimated the model for the complete pre-Maastricht period (1974 to 1993) and for the subsequent period (1994-2008) with only the first nine EU members, instead of all the 15 nations included in the sample. Results, presented in Table 7, reinforce previous conclusions. Before the Treaty of the Monetary Union, real economic variables were the main determinants of citizens' opinions about the EU, since both the growth of GDP and of the unemployment rate are statistically significant at the 5% significance level. After the Maastricht Treaty came into effect, inflation became the main economic variable influencing EU popularity. It is also worth noticing that the coefficient associated with inflation is larger in the estimations for the first nine countries than for the 15. After the Maastricht Treaty, the percentage of trade with fellow EU countries exerts a positive influence on public support for the EU, while being under the Excessive Deficit Procedure or having Parliamentary elections diminishes it.

[Table 7 here]

5 Conclusion

Understanding how public opinion about EU membership is formed is important because citizens' support for the EU influences its legitimacy and functioning. National governments will be more reluctant to adopt policies fostering integration if they are not supported by the electorate. Citizens have been called upon to directly decide some European issues through referenda, and also express their views through elections for the European Parliament.

Using a panel for the first fifteen EU members over a sample period from 1974 to 2008, we investigated the determinants of public support for EU membership. Among the economic explanatory variables, inflation and the growth in unemployment have a negative impact on the

EU's popularity, while GDP growth exerts a positive influence. When the sample is split into shorter time periods, we find evidence that economic variables exerted different influences on individuals' attitudes toward the EU over time. Real economic variables seem to be more important than nominal variables during the first years of the EU, with unemployment being especially relevant between 1987 and 1993, when it was particularly high. After the implementation of the Treaty of the European Union, inflation became much more relevant for public support for the EU, as well as the percentage of trade with other EU countries.

There is also evidence of the existence of erosion in public support toward the EU as time in the Union accumulates, and after the signing of the Maastricht Treaty EU popularity also falls when countries are under the excessive deficit procedure or have European Parliament elections. An analysis of country specific effects reveals that the EU is more popular among its founding members and receives much less support in the 1995 entrants (Austria, Finland and Sweden) and in the UK.

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Table 1 - Summary Statistics

	No Obs.	Mean	Stand Dev.	Min.	Max.
Popularity Index 1	855	74.36	12.44	36.17	94.38
Popularity Index 2	855	48.72	24.89	-27.66	88.77
Popularity Index 3	855	36.44	27.70	-39.36	85.20
Inflation	1,038	0.01	0.01	-0.004	0.08
GDP Growth Rate	841	0.01	0.03	-0.12	0.15
Unemployment Rate	857	0.07	0.04	0.01	0.24
Unemployment Growth Rate	842	0.01	0.11	-0.22	0.80
Degree of Openness of the Economy	845	0.78	0.47	0.29	3.30
Percentage of Trade with EU countries	966	0.64	0.09	0.38	0.85
Private Consumption	734	0.53	0.07	0.16	0.76
Government Consumption	754	0.21	0.03	0.07	0.30
Honeymoon effect (2 Years)	1.050	0.06	0.42	0	4
European Parliament Elections	1.050	0.08	0.28	0	1
Excessive Deficit Procedures	1.050	0.04	0.20	0	1
Membership Length	1.050	36	28	0	94
Economy Previous Year Index 1	147	-17.17	23.31	-71.71	28.34
Economy Previous Year Index 2	147	266.04	46.73	156.56	359.68
Economy Previous Year Index 3	147	13.93	8.72	1.04	36.41
Household Financial Situation Previous Year Index 1	140	-9.54	13.41	-51.01	14.28
Household Financial Situation Previous Year Index 2	140	281.09	26.95	197.98	331.56
Household Financial Situation Previous Year Index 3	140	11.39	4.67	2.02	26.26
Economy Next Year Index 1	311	-13.53	23.36	-63.29	50.00
Economy Next Year Index 2	311	41.20	6.97	22.72	66.44
Economy Next Year Index 3	311	-33.86	21.09	-77.84	31.89
Household Financial Situation Next Year Index 1	315	9.43	14.31	-74.64	40.90
Household Financial Situation Next Year Index 2	315	34.89	5.88	20.83	56.25
Household Financial Situation Next Year Index 3	315	-18.94	13.36	-80.28	21.59

Source: IMF, Eurostat, OECD, AMECO, Eurobarometer, European Commission

Table 2 – The baseline model: alternative indexes

	Index 1	Index 2	Index 3
Popularity (-1)	0.61*** (11.81)	0.61*** (11.85)	0.60*** (12.05)
Popularity (-2)	0.20*** (4.86)	0.21*** (5.01)	0.20*** (5.04)
Inflation (-1)	-65.39*** (-3.33)	-130.3*** (-3.31)	-155.0*** (-3.19)
GDP Growth Rate (-1)	10.41 (1.48)	20.76 (1.51)	21.41 (1.40)
Degree of Openness of the Eco. (-1)	2.78 (1.48)	5.55 (1.47)	6.69 (1.49)
Membership Length	-0.046* (-2.08)	-0.091* (-2.08)	-0.11** (-2.17)
Constant	13.62*** (4.38)	9.19** (2.64)	7.36* (2.02)
Observations	616	616	616
Adjusted R - Squared	0.64	0.64	0.63
Countries	15	15	15
Fixed Effects	Yes***	Yes***	Yes***

Notes: t statistics in brackets obtained with robust standard errors. Significance level for which the null hypothesis is rejected: *** 1%, ** 5% and *10%. For all fixed effects models, Prob > F = 0, providing evidence of the existence of Fixed Effects. Robust standard errors used in all models.

Table 3 – Additional tests using Index 1

	1	2	3
Popularity (-1)	0.59*** (9.81)	0.61*** (10.32)	0.60*** (10.65)
Popularity (-2)	0.18*** (3.65)	0.17*** (3.40)	0.18*** (4.12)
Inflation (-1)	-51.48** (-2.21)	-23.18 (-1.09)	-22.52 (-1.05)
Unemployment rate (-1)	-6.25 (-0.91)		
Degree of Openness of the Economy (-1)	3.25* (1.83)	2.30 (1.49)	1.85 (1.28)
Membership Length	-0.07** (-2.88)	-0.05** (-2.49)	-0.04** (-2.22)
Unemployment Rate Growth Rate (-1)		-5.50** (-2.68)	-5.13** (-2.39)
Excessive Deficit Procedures			-0.83* (-2.10)
European Parliament Elections			-0.35 (-1.03)
Honeymoon Effect			1.03 (1.42)
Constant	17.72*** (4.17)	16.88*** (4.50)	16.89*** (4.90)
Adjusted R - Squared	0.62	0.63	0.63
Observations	576	571	571
Fixed Effects	Yes	Yes	Yes

Notes: t statistics in brackets obtained with robust standard errors. Significance level for which the null hypothesis is rejected: *** 1%, ** 5% and *10%. For all fixed effects models, Prob > F = 0, providing evidence of the existence of Fixed Effects. Robust standard errors used in all models.

Table 4 - Country Specific Effects

Country	1978-2008
Belgium	0.66
France	1.54
Germany	1.07
Italy	2.77
Luxembourg	0.59
Netherlands	2.78
Denmark	-1.36
Ireland	1.59
United Kingdom	-2.90
Greece	0.43
Portugal	-0.06
Spain	0.72
Austria	-5.27
Finland	-4.60
Sweden	-4.99

Table 5 - Summary Statistics by Period

<u>1974-1987</u>					
	No Obs.	Mean	Stand Dev.	Min.	Max.
Popularity Index 1	280	74.24	13.88	36.17	92.71
Inflation	399	0.02	0.01	-0.004	0.08
Unemployment Rate	233	0.06	0.04	0.01	0.21
Unemployment Growth Rate	219	0.04	0.15	-0.26	0.81
GDP Growth Rate	258	0.01	0.04	-0.12	0.15
Degree of Openness of the Economy	259	0.59	0.22	0.29	1.52
Percentage of Trade with EU countries	351	0.59	0.09	0.38	0.78
<u>1987-1993</u>					
	No Obs.	Mean	Stand Dev.	Min.	Max.
Popularity Index 1	154	81.11	9.20	54.21	94.39
Inflation	193	0.01	0.009	-0.002	0.05
Unemployment Rate	182	0.07	0.04	0.04	0.22
Unemployment Growth Rate	182	0.02	0.12	-0.24	0.64
GDP Growth Rate	156	0.01	0.02	-0.08	0.12
Degree of Openness of the Economy	156	0.64	0.28	0.36	1.43
Percentage of Trade with EU countries	175	0.68	0.07	0.54	0.80
<u>1994-2008</u>					
	No Obs.	Mean	Stand Dev.	Min.	Max.
Popularity Index 1	421	71.98	11.57	40.53	92.55
Inflation	446	0.005	0.003	-0.003	0.02
Unemployment Rate	442	0.07	0.03	0.01	0.24
Unemployment Growth Rate	441	-0.01	0.09	-0.22	0.37
GDP Growth Rate	427	0.01	0.03	-0.05	0.15
Degree of Openness of the Economy	430	0.95	0.58	0.41	3.31
Percentage of Trade with EU countries	440	0.68	0.07	0.55	0.86

Source: IMF, Eurostat, OECD

Table 6 - Sample Division by time periods

	1974-1987		1987-1993		1994-2008	
	1	2	3	4	8	9
Popularity (-1)	0.44*** (5.27)	0.27* (1.90)	0.54** (6.32) *	0.58*** (7.99)	0.54*** (7.05)	0.54*** (7.47)
Popularity (-2)	0.14 (2.37)**				0.13** (2.35)	0.14** (2.47)
Inflation (-1)	-92.20 (-1.31)	-103.1 (-1.59)	22.96 (0.15)	87.22 (0.61)	-163.53** (-2.62)	-170.45** (-2.86)
GDP Growth Rate (-1)	22.55* (2.10)		18.55 (1.26)		7.17 (1.06)	
Growth Rate of the Unemployment Rate (-1)		-3.89 (-1.41)		-18.15* (-2.25)		-4.12 (-1.48)
Degree of Openness of the Economy (-1)	-6.07 (-1.20)	-22.41** (-2.63)	22.01* (2.10)	9.20 (1.01)		
Percentage of Trade with EU countries (-1)					16.76** (2.29)	15.88** (2.49)
Membership Length	-0.01 (-0.24)	-0.03 (-0.76)	0.003 (0.02)	0.13 (0.84)	0.02 (0.41)	0.01 (0.34)
Excessive Deficit Procedure					-1.29*** (-3.40)	-1.07** (-2.54)
European Parliament Elections					-1.99*** (3.48)	-1.87*** (-3.06)
Constant	36.29*** (3.30)	73.65*** (5.96)	21.49 (1.67)	19.94 (1.66)	12.40** (2.31)	12.64*** (2.42)
Adjusted R - Squared	0.33	0.37	0.33	0.36	0.45	0.45
Observations	139	93	103	104	348	355
Number of countries at the period's beginning	9	9	12	12	15	15
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: t statistics in brackets obtained with robust standard errors. Significance level for which the null hypothesis is rejected: *** 1%, ** 5% and *10%. For all fixed effects models, Prob > F = 0, providing evidence of the existence of Fixed Effects. Robust standard errors used in all models.

Table 7 – Before and after the Maastricht Treaty

	1974-1993		1994-2008	
	1	2	3	4
Popularity (-1)	0.54*** (9.24)	0.65*** (12.30)	0.60*** (5.59)	0.59*** (5.48)
Popularity (-2)	0.19 (2.85)**		0.08 (1.84)	0.08 (1.78)
Inflation (-1)	-61.96 (-1.07)	-29.04 (-0.70)	-253.6*** (-3.76)	-248.1*** (-3.99)
GDP Growth Rate (-1)	24.37** (3.19)		-10.96 (-1.31)	
Growth Rate of the Unemployment Rate (-1)		-7.13** (-2.67)		
Degree of Openness of the Economy (-1)	0.77 (0.23)	-0.57 (-0.13)		
Percentage of Trade with EU countries (-1)			18.75* (1.95)	19.92* (2.11)
Membership Length	0.05 (1.06)	0.02 (0.43)	0.02 (0.41)	0.01 (0.34)
Excessive Deficit Procedure			-0.87** (-2.82)	-0.73 (-1.79)
European Parliament Elections			-2.92*** (-4.23)	-2.91*** (-4.17)
Constant	18.82*** (4.04)	27.20*** (4.44)	13.63** (2.65)	12.97** (2.45)
Adjusted R - Squared	0.62	0.51	0.44	0.44
Observations	249	205	213	216
Number of countries at the period's beginning	9	9	9	9
Fixed Effects	Yes	Yes	Yes	Yes

Notes: t statistics in brackets obtained with robust standard errors. Significance level for which the null hypothesis is rejected: *** 1%, ** 5% and *10%. For all fixed effects models, Prob > F = 0, providing evidence of the existence of Fixed Effects. Robust standard errors used in all models.