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Political Support in Hard Times: Do People Care about National Welfare?

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During the Great Recession mass demonstrations indicated weakened political support in Europe. We show that growing dissatisfaction reflects poor economic conditions; unemployment is particularly important. Using individual level data for 16 Western European countries for 1976-2010, we find that national economic performance even matters beyond personal economic outcomes. Finally, while effects of growth and unemployment rates are the same across demographic subsets, the effect of inflation is heterogeneous. Younger, well-educated, or working individuals put relatively higher weight on price stability than the elderly, less skilled or not working. Our findings reinforce the political importance of employment and growth policies.

Keywords: Political support, Satisfaction with democracy, Growth, Unemployment, Collectivism
JEL codes: H11, O43, P16

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1. Introduction

During the Great Recession since 2007 European countries such as Spain, Greece, Portugal, and Ireland have experienced a phase of economic hardship unprecedented in the last decades. In Spain, for instance, the unemployment rate increased by 11.4 percentage points between 2006 and 2010. Following the economic downturn were the political repercussions: Mass demonstrations took place in many cities as people wanted to express their dissatisfaction with the economic situation and how it was dealt with[1]. Until late 2011 the five EU member countries which were hit hardest economically, Greece, Ireland, Italy, Portugal, and Spain, had overturned their governments. Political actors as well as observers noted that democratic institutions themselves could suffer under adverse economic conditions. For instance, in summer 2010, the president of the European Commission, José Manuel Barroso, expressed his fear that "democracy might disappear" (Groves, 2010) in the most heavily affected Southern European countries; macroeconomic conditions could worsen to an extent that would be impossible to deal with for governments and would therefore make them susceptible to popular uprisings (Groves, 2010). Survey data from the Eurobarometer, using 'satisfaction with democracy' (SWD) as a measure of attitudes towards democracy, shows indeed that in the phase of economic downturn peoples' attitudes have worsened substantially. In Spain, for instance, satisfaction with democracy decreased by about 20 percentage points between 2006 and 2010.

In this paper we show that the economic harshness during the last years can, to a large extent, explain the observed deterioration of satisfaction with democracy. Moreover, growing dissatisfaction reflects a pattern already present before 2007, a positive relationship between economic performance and satisfaction with democracy. Combining individual-level survey data on SWD with country-level data on growth, inflation, and unemployment from 1976 to 2010 for sixteen Western European countries, we find that national economic performance does affect individuals' attitudes towards democracy and the effects are non-negligible in size. Using estimation results from data collected before 2007 a drop in the order of 19 to 24 percentage points in satisfaction with democracy was to be expected for countries which experienced substantially lower growth and higher unemployment rates than during normal times. These estimates compare well with the decreases of around 20 percentage points measured for Ireland, Greece, and Spain. We also correctly predict Portugal to be an outlier; Based on economic data we estimate a decrease of 5.86 percentage points in satisfaction scores while the observed decrease was 4 percentage points.

While we find both growth and unemployment rates to be significant, the latter are quantitatively much more important for SWD. When the growth rate decreases by one standard deviation, SWD is on average 3 percentage points lower; a standard deviation increase in unemployment, however, comes about with a decrease of 7 percentage points. This finding illustrates why "jobless growth" as a policy outcome is problematic and why politicians might want to focus on employment policies even though growth is also important to ensure citizens' support.

[1] Examples of the broad media coverage of the protests are Donadio & Sayare (2011) and Tremlett & Hooper (2011).

The contribution to the literature is fourfold. First, the time frame chosen allows us to show the regularity behind political protest in times of economic crisis: People get less satisfied with a democratic system during economic slowdown. The effects on political support were stronger in recent years because the economic turmoil was more severe than ever before. Second, we show that macroeconomic variables and personal controls are simultaneously influential and we assess their relative importance. Resorting to individual level data uncovers important drivers of satisfaction with democracy, which remain undetected in national-level analyses. In particular, individual unemployment, education, age, and perceived life satisfaction are significant correlates. Third, we present evidence against a pure self-interest explanation of political support: growth and unemployment rates exhibit homogeneous effects on SWD, even though their real implications differ across subgroups of the population.[2] Finally, since we include several macroeconomic indicators at the same time, we can also assess the robustness of previous work relying on subsets of these indicators.

In section 2, we relate our research to the existing literature. In section 3 we summarise our hypotheses (3.1), describe the dataset (3.2) and introduce our empirical model (3.3). We present our results in section 4 and discuss implications with respect to a self-interest explanation of political support and a policy trade-off between inflation and unemployment (Phillips curve) in section 5. We present robustness checks in section 6 and conclude in section 7.

2. Related Literature

Satisfaction with democracy is part of the broader concept of political support. Support can be simply affectional (acceptance or identification with an entity) or it can derive from satisfaction with its outputs (Easton, 1957). Norris (1999b) distinguishes the following five dimensions: political community, regime principles, regime performance, regime institutions, political actors. Research on political support (see, e.g., Norris (1999a) for an introduction) often focuses on government popularity as a dependent variable and thus refers to the most specific dimension: 'political actors'. However, during severe economic crises more than the competence of current governments is called into question. SWD is then a more suitable indicator of political support since it gives us an evaluation of 'system performance'.[3] SWD has the additional advantage of being less influenced by personal sympathy for politicians or ideological attachment to a specific party.

There is some evidence that voters evaluate macroeconomic outcomes retrospectively and vote accordingly in subsequent elections but also prospective voting has been proposed as an explanation and received some empirical support. Since this literature is very broad, we refer the interested reader to the surveys on vote and popularity functions by Nannestad & Paldam (1994) and "Voting and the Macroeconomy" by Hibbs (2006). Revolutionary action or political extremism are likely to indicate the absence of political support and constitute another facet of the related literature. Brückner & Grüner (2010) find a negative relationship between growth

[2] Inflation in contrast exhibits heterogeneous effects but is insignificant for parts of the population.

[3] See also Dalton (1999) who argues that SWD gives an instrumental evaluation of the performance of democracy.

and right-wing extremist voting at the aggregate level for 16 Western European countries. Moving to the micro-level, Lubbers et al. (2002) show how support of extreme right-wing parties increases with unemployment for the same set of countries. MacCulloch & Pezzini (2007) employ survey data from 64 countries and provide evidence that the preference for revolution increases when the economy performs poorly.[4]

Previous work employing the same indicator as we do, SWD, often uses data aggregated at the national level or covers relatively short time periods. Results thereby rely to a large extent on cross-country variation and individual characteristics are ignored.[5] Furthermore, there is hardly any systematic evidence on the role of macroeconomic factors. Using national-level data, Wagner et al. (2009) find significant effects of institutional quality on the satisfaction with democracy and Clarke et al. (1993) document effects of inflation and unemployment. We are aware of only two studies in SWD employing individual-level data: Halla et al. (2011) investigate the role of environmental policy for individuals' satisfaction with democracy, while Wells & Krieckhaus (2006) study the effect of corruption on democratic satisfaction. The latter study uses only few points in time and cannot properly take into account changes in national economic conditions over time.[6] To the best of our knowledge only Halla et al. (2011) use a long time dimension combined with individual level data but their data ends in 2001 and thus excludes the recent years. Wagner et al. (2009) and Halla et al. (2011) do include several macro-economic indicators simultaneously but do not discuss the economic relevance and relation between those.[7]

In this paper we build on these studies and extend them in several dimensions. We compile a dataset covering 16 Western European countries for the period from 1976 to 2010. We thereby extend the sample used by Halla et al. (2011) by another decade. We also use variation in country-specific economic conditions over time in addition to cross-country variation. The use of individual-level data with a long time dimension allows controlling for important factors at the individual level such as sex, age, and labour force status; we abstract from cultural differences in political attitudes by using country-fixed effects. We show how important individual characteristics are in determining democratic satisfaction and relate our results to findings from aggregate level studies. Furthermore we discuss the role of various macroeconomic factors and show how previous findings depend on the selection of only a subset of them.

[4]Both, Brückner & Grüner (2010) and Lubbers et al. (2002), use data from the Eurobarometer as we do. While the latter only rely on few data points in time, the former use the Mannheim trend file covering 1970 to 2002. In contrast, MacCulloch & Pezzini (2007) employ three waves of the World Value Survey for their analysis.

[5]Satisfaction with democracy is an individual attitude and depends on individual characteristics, which are therefore crucial in the analysis of determinants of democratic support. While aggregate-level analyses can, in principle, incorporate individual characteristics as averages, this is not usually done but the individual dimension is left out completely. In contrast, we explicitly take into account the individual level information which the Eurobarometer provides.

[6]All of these studies rely on data from the Eurobarometer for Western European countries. Wells & Krieckhaus (2006) also consider Central and Eastern European countries.

[7]The former study by Wagner et al. (2009) uses the average of the ordinal SWD score as dependent variable. Due to the ordinality of SWD it is problematic to interpret their results quantitatively.

3. Hypotheses, data and model specification

3.1. Hypotheses

Earlier research posited a link from macroeconomic performance to political support based on the presumption that "voters hold the government responsible for economic events" (Lewis-Beck & Paldam, 2000, Responsibility Hypothesis) without detailing the channels of influence. A plausible mechanism, which we believe also applies to satisfaction with democracy, is the following: Economic conditions determine future well-being. Growth increases expected income, inflation reduces the real value of wealth and income, and higher unemployment implies higher risk of job or income loss. Therefore, individuals value, e.g., high growth as an indicator of increasing national welfare and high inflation and high unemployment as signs of decreasing welfare. Going beyond the theory of pure self-interest, individuals may also care about the well-being of others. Macroeconomic performance illustrates the democratic system's capacity to provide collective well-being. This constitutes another reason for economic performance to increase individuals' satisfaction with democracy.

Based on the preceding argument we expect that, ceteris paribus, an individual's democratic satisfaction is

- increasing in national growth,
- decreasing in inflation and unemployment.

Furthermore, we expect that individual income and employment status have similar effects. We hypothesise that an individual's democratic satisfaction is

- increasing in individual income,
- lower in case of personal unemployment.

Moreover, we expect a strong positive correlation between general life satisfaction and satisfaction with democracy. We believe individuals do not perfectly discriminate between their personal lives and their political surroundings when asked for their subjective evaluations. For instance, individuals who are generally optimistic and very happy, should on average also be more positive towards democracy. Thus, we expect an individual's democratic satisfaction to be

- increasing in general life satisfaction.

More generally, we expect that democratic satisfaction has similar determinants as has life satisfaction. We therefore adopt hypotheses from the happiness literature.[8] We hypothesise that an individual's democratic satisfaction is higher if he or she is married, better educated, out of the labour force and richer, and less satisfied when he or she is unemployed or male.

[8] For the macroeconomic variables the happiness literature supports the hypotheses stated above. See for instance Frey & Stutzer (2002a).

3.2. Data

Our analysis combines survey data with national macroeconomic data in 16 countries for up to 33 years. Individual level data was obtained from the Eurobarometer and macroeconomic data from the OECD (2011). Descriptive statistics for all included national and individual variables are displayed in tables A.2 and A.3. The tables show variation in the dependent variable 'SWD' as well as in the explanatory variables 'growth', inflation', and 'unemployment' within countries over time. Figure 1 illustrates that SWD varies over time. Furthermore, it reveals that there are substantial differences in levels of SWD across countries possibly due to cultural idiosyncrasies. Exact variable definitions can be found in table A.1.

3.2.1. Individual level variables: the Eurobarometer

The Eurobarometer data set is a repeated cross section of individuals in the European Union (EU). It covers five of the six founding EU members in 1970 (France, Belgium, Netherlands, Germany, Italy) since 1970, Luxembourg is included since 1973, and other countries were added when they joined the European Union, respectively when official negotiations for accession began. In every wave, about 1000 respondents per country complete the questionnaires. We use the Mannheim Eurobarometer Trend File 1970-2002 (European Commission, Brussels, 2008) and append nine additional waves to extend the dataset until 2010 (European Commission, Brussels, 2002, 2003, 2004a,b, 2006, 2007, 2009, 2010).

As indicator of support for democracy we used 'satisfaction with democracy' or SWD. This indicator refers to the following question: 'On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the way democracy works in <country>?'.[9] This question asks, in line with our research interest, how people evaluate their democracy's current performance and not whether they are in favor of the democratic idea per se.

The variable SWD was collected for the first time in 1973 and then every year from 1976 to 2010 except for the years 1996 and 2008. Our sample comprises France, Belgium, The Netherlands, Germany (since 1991 including East Germany), Italy, Luxembourg, Denmark, Ireland, the United Kingdom, Greece (included since 1981), Spain and Portugal (both included since 1985), Norway (included 1990-1995), Finland (included since 1993), Sweden and Austria (both included since 1995).

From the Eurobarometer we also obtain standard demographic controls as well as information on general life satisfaction. In contrast to the other controls, the latter is not an objective measure but an attitudinal statement: People were asked how satisfied they are with their lives.[10]

[9] <country> is replaced by the name of the country in which the respondent was interviewed.

[10] Analogously to satisfaction with democracy there are four answer categories: 1=not at all satisfied, 2=not very satisfied, 3=fairly satisfied, 4=very satisfied. We constructed dummies, where 'not at all satisfied' represents category 1, 'satislife2' category 2 etc. The omitted category is 3, people indicating to be fairly satisfied with their life.

3.2.2. National level variables

Macroeconomic data was obtained from the OECD. Total GDP (constant prices), GDP per capita, inflation rates, and unemployment rates were downloaded from the OECD database OECD.StatExtracts, which is available online. We transform GDP per head to GDP per head in 1000 US$ (constant prices, constant PPPs), for ease of interpretation of coefficients. Since the distribution of inflation is very skewed we would like to use a log-transformation as, e.g., Wagner et al. (2009) do but a log-transformation is only feasible for positive observations. Around 2009 and 2010, however, Belgium, Ireland, Portugal, and Ireland experienced negative inflation rates. In order not to lose these observations, we adopt a hybrid function of inflation as proposed by Khan & Ssnhadji (2001):

$$f(\text{inflation}_{it}) = (\text{inflation}_{it} - 1)\mathbf{1}_{\text{inflation}_{it} \leq 1} + \log(\text{inflation}_{it})\mathbf{1}_{\text{inflation}_{it} > 1} \qquad (1)$$

The function $f(\text{inflation}_{it})$ is linear in inflation_{it} for values of inflation rates below or equal to one and logarithmic for inflation rates greater than one. The breakpoint one is chosen such that the transformation is continuous.

For robustness checks we also employed "The Comparative Political Data Set 1960-2007" by Armingeon et al. (2009). It contains political and institutional variables on a (mostly) annual basis for 23 democratic countries for the period of 1960 to 2007. From this dataset we extracted information on national budget deficits, national government debt, and the share of social transfers.

3.3. Model setup and specification

Our model employs data at the individual level instead of country averages. This allows us to include individual level characteristics. We estimate a linear probability model using the following equation:

$$\text{SWD}_{itc} = \beta_0 + \text{macro}_{tc}\beta_1 + \text{individual}_{itc}\beta_2 + \text{fe}_t + \text{fe}_c + u_{itc} \qquad (2)$$

where observations are indexed by i for individuals, by c for the country in which the individual participated in the survey, and by t for the year of the survey. The dependent variable 'SWD' as well as individual controls vary at the individual level nested in years and countries, indexed by itc. Macro controls only vary at the year-country level, indexed by tc. All estimations include country fixed effects fe_c as well as survey year fixed effects fe_t and we correct standard errors for clustering at the country level.

We estimate different specifications of equation (2). All have individual satisfaction with democracy as dependent variable on the left hand side but, on the right hand side, we varied which variables we included in the vectors 'macro' and 'individual'. This will be discussed in the context of the results in section 4.

SWD is a dummy derived from the question how satisfied an individual is with the way democracy works in his or her country. It collapses answers 'very satisfied' and 'fairly satisfied' into 'satisfied' (SWD=1) and answers 'not very satisfied' and 'not at all satisfied' into 'not satisfied' (SWD=0). We use this binary recode since

it is less susceptible to noise. In our opinion this outweighs the loss in information on the strength of individuals' democratic support.

Models with binary dependent variables are often estimated as nonlinear models such as logit or probit, which explicitly take the domain restriction into account. Instead we present results from a linear probability model, i.e. from OLS estimation of equation 2 as is suggested by Angrist & Pischke (2009). We also estimated a logit model and expectedly find very similar results; in case of differences we find that our model choice goes against finding significant effects. Results from the logit model are available in appendix B (tables B.2 and B.3).[11]

4. Results

An advantage of our approach over estimations based on aggregates is that we analyse the role of both individual and national variables. Individual unemployment, education, income, and age are likely to be relevant for SWD and are not captured in aggregates. Neglecting individual variables therefore means neglecting potentially important driving factors of SWD and their interaction with aggregate factors. We also discuss whether, in addition to their personal economic situation, people also take national performance into account when evaluating the political system.[12] We first address the impact of the macroeconomic variables (Subsection 4.1) and then the effects of individual level variables (Subsection 4.2). We also elaborate on the role of personal life satisfaction. Thereafter, we present estimations at the aggregate level.

4.1. Macroeconomic Variables

We included different macroeconomic indicators successively in addition to individual characteristics to shed light on the relative importance of each of them. Since a large literature on the relationship between democracy and economy focusses on GDP (e.g Acemoglu & Robinson, 2006; Przeworski, 2000), we use GDP per head as starting point. Our main interest, however, lies in growth, inflation, and unemployment, which vary substantially over time and have been proved influential in previous studies on SWD (Wagner et al., 2009) and right-wing extremism (Knigge, 1998; Brückner & Grüner, 2010). Furthermore, these variables are more responsive to economic policy in the short to medium run and are more likely to be targeted by policy makers. The following results are summarised in table A.4.

We find that economic growth is always statistically significant and so is national unemployment. The sign of the coefficients is as expected positive in case of growth and negative for the unemployment rate. Per capita income and inflation do not gain significance. Without other macroeconomic controls except for per capita GDP one

[11] We also estimated an ordered logit model using the original 4-point scale of SWD, which confirms the results from the binary case which we discuss in section 4. Marginal effects are strongest for the outcome 'fairly satisfied'. See appendix B, table B.4.

[12] The significance of macroeconomic variables does not necessarily imply a collectivist motive. Macroeceonomic variables may be solely important because they affect beliefs and expectations about individual well-being. See discussion in section 5.2.

percentage point higher growth comes on average with a 1.3 percentage points higher probability of satisfaction (column 2). When all three macroeconomic variables are included, growth obtains a smaller coefficient than before but remains significant at the 1% level (column 4).[13] An increase by one percentage point in the unemployment rate comes on average with a decrease of 1.7 percentage points in satisfaction with democracy.

When we interpret the coefficients with respect to variation in the explanatory variable, we find that unemployment is much more important than is growth. A one standard deviation increase above the mean in growth rates implies an increase in SWD of about 3 percentage points. An unemployment rate of one standard deviation above the mean comes with a decrease of more than 7 percentage points in SWD, more than twice as much.

When we compare our results to Halla et al. (2011), we observe important differences.[14] While they also report a significant and positive effect of growth, they find a significant effect of inflation and GDP, two variables which are insignificant in our study. From table A.4 it is clear that the difference cannot be due to their omitting unemployment rates. Even if we omit unemployment rates, inflation does not gain significance. Since we use a binary recode of SWD while Halla et al. (2011) use the four-point scale, we suspected the differences result from this modeling choice. In section 6.2, we therefore also discuss an ordered logit estimation. The results indicate that differences to Halla et al. (2011) do not stem from using a binary model. In 2009, many European countries have experienced deflationary episodes. We strongly suspect that this is driving the differences in results. While we do not find a significantly negative effect of inflation on SWD if we include the recent years, we do find a significant effect for the period before 2009 (see table B.5, column 2).

4.2. Individual Characteristics

At the individual level we included dummies for being unemployed and not being part of the labour force, as well as education, sex, age, marital status.[15] We expected these variables to exhibit a similar relationship with SWD as they have with general life satisfaction. We also controlled for personal life satisfaction. The inclusion of individual characteristics shows that they in fact matter and are important to be taken into account when we want to assess the implications of macroeconomic factors on satisfaction with democracy.

[13] The reduction in coefficient size is intuitive as unemployment and inflation are both negatively correlated with growth in our dataset such that the coefficient on growth is upward biased if we omit those. Still, the significance indicates that growth had an influence on attitudes in addition to what was captured by inflation and unemployment. One explanation is that growth proxies for expectations of income, inflation, and employment in the future. We discuss this hypothesis in more detail in section 6.1.

[14] Since we are not interested in environmental policy measures, we compare our results to the findings without environmental policy. It seems noteworthy, though, that most variables at the macro level become insignificant once Halla et al. (2011) include environmental policy measures.

[15] Income is not available for recent years and when it is available introduces a strong selection effect. We therefore do not include it in our benchmark model but discuss reasons and consequences of this decision under robustness (section 6).

In line with the hypotheses, individual unemployment, education, and age are significant and have the expected signs. People being unemployed showed a 4.7 percentage points lower probability of being satisfied with democracy (table A.4, column 4). It is evident that individuals' views on the democratic system were affected by the national labour market as well as the individual situation at the same time. National unemployment rates are an important factor beyond individual unemployment and vice versa. Education was included in dummy categories. The results indicate that those with higher education (*higher education*, finished school at the age of 20 or later) and those still studying (*still studying*) evaluate democracy more favorable than those with only basic or no full-time education at all (omitted category). The influence of age is u-shaped. Older people were less satisfied with democracy but the relationship reverses at some point in life. In contrast to the expected negative sign, the male dummy obtained a significant, positive coefficient. Those who were out of the labour force did not evaluate democracy significantly differently than those who were employed. Marital status did not reach significance either.

As expected, life satisfaction is strongly positively correlated with SWD. Being not at all satisfied with one's life translated into a probability of not being satisfied with democracy that is 33 percentage points higher than for a person who was fairly satisfied with her life. Those who stated to be 'not very satisfied' with their life in general were still less likely to be satisfied with democracy (-25 percentage points) and those who were very satisfied with their life had a 7.5 percentage point higher probability to also express satisfaction with the way democracy works. This indicates a close link between the perceived personal situation and the view on the democratic system.

Life satisfaction as well as SWD are subjective measures and we are aware of concerns regarding the use of subjective variables as dependent and explanatory at the same time (Bertrand & Mullainathan, 2001). However, many studies indicate that macroeconomic variables also affect individual life satisfaction and happiness (see e.g. Di Tella et al. (2001, 2003); Deaton (2008); Dreher & Öhler (2011)) and ignoring this will likely introduce a bias into the results, in particular since life satisfaction is also known to be correlated with many of our individual level controls (see for instance Frey & Stutzer (2002b)).

In our case, the inclusion of life satisfaction hardly affects the coefficients of macro variables. In case of changes, omitting life satisfaction overstates the importance of the macroeconomy. Specifically, comparing columns 1 and 6 in table A.4, it is clear that quantitative findings from the specification with life satisfaction are more conservative than they are without it. The coefficients of unemployment and age become larger when life satisfaction is omitted and the coefficient of married becomes significantly positive. Furthermore, the effects of education appear stronger. The results imply that the effects of unemployment, age, marital status, and education are overestimated when life satisfaction is not included. The coefficients of macroeconomic variables change very little; growth and unemployment slightly increase when life satisfaction is not included. Also note that the changes in coefficients are not due to a selection effect. In column 5 we show results from the estimation model without

life satisfaction on the sample where the variable is available. There is hardly any difference between column 1 (full sample) and column 5 (restricted sample).

With respect to individual characteristics our results are very similar to Halla et al. (2011), qualitatively. The signs of all coefficients are the same with one exception: In contrast to Halla et al. (2011) we do not find a significantly positive effect of being married on SWD. In section 6.2 we show that this difference is most likely due to the omission of life satisfaction in their study. Life satisfaction should be included in analyses of SWD since it is likely to provide a lower bound on the role of other factors.

4.3. Aggregate Level Regressions

Analyses at the country level cannot inform about how individual satisfaction scores are formed but have to collapse either the ordered data to an average or a binary recode to a percentage measure of support. Changes in these national averages can come by various channels and are less likely to be informative than an analysis with data at the individual level. In this section, we report results from estimations where we ignored the individual dimension of our data set and checked whether there is a relationship between satisfaction with democracy and macroeconomic conditions at the aggregate country level. These results can then also be compared with previous studies on SWD that used country averages over time as observations. We used the year-wise country averages of the SWD dummy as dependent variable, which represents the percentage of people who are satisfied with democracy in a given year in a country.[16]

Comparing aggregate estimations (Table A.5) with our individual-level approach (Table A.4), it becomes evident that coefficients have the same sign and a similar size. In the aggregate estimations growth obtains a slightly smaller coefficient: With the full set of macroeconomic controls the aggregate specification gives a coefficient of 0.0076 instead of 0.0105 with individual level data. The coefficient on unemployment is slightly larger (in absolute terms) in the aggregate (-0.0190) than at the individual level (-0.0172). In contrast to our results using individual level data, at the aggregate level inflation is (weakly) significant.

Our results at the aggregate level are broadly consistent with studies by other authors. Growth is significantly positive, unemployment and inflation are significantly negative (compare for instance Wagner et al., 2009; Clarke et al., 1993). Looking at columns (2) to (3), a one percentage point increase in growth is associated with an increase in the share of the population stating that they are satisfied with democracy of about 1.2 percentage point. In the full specification (column 4), however, the coefficient of growth decreases. Most likely the upward differential in the coefficient of growth (columns 3 to 4) comes from higher growth capturing also the impact of reduced unemployment on democratic satisfaction.[17] An increase in national unem-

[16] When we use average satisfaction scores instead of the average over SWD-dummies as dependent variable, results are qualitatively the same. Results are presented in table B.6.

[17] If unemployment rates change mainly because of changes in economic growth, then it is even informative to look at regressions with growth only.

ployment of 1 percentage point decreased satisfaction with democracy by almost 2 percentage points on average.

5. Discussion

5.1. Economic relevance: satisfaction scores during the Great Recession

Our results suggest that, on average, satisfaction with democracy should have decreased by non-negligible numbers in the context of the Great Recession. We have estimated our model on pre-2007 data and compute predicted changes in satisfaction with democracy due to worsening economic conditions. Using data until 2006 growth and unemployment are significant with coefficients of 0.0089 and -0.0167, respectively. Individual unemployment is significant with -0.0444.[18] Based on these coefficients we expect that individuals experiencing developments of growth and unemployment rates as were observed in Ireland, Spain, and Greece from 2006 to 2010 exhibited a decrease in SWD by about 21 (Ireland), 24 (Spain)and 14 (Greece) percentage points.[19] In fact, for these countries, we observe a substantial decrease of average SWD by about 20 percentage points as compared to the situation before the Great Recession. In Ireland, satisfaction with democracy fell from 0.78 in 2006 to 0.58 in 2010 according to Eurobarometer data; in Spain in the same period from 0.74 to 0.53, in Greece from 0.54 to 0.30.[20]

The above calculation is a rough estimate but matches surprisingly well with actual developments. There are important caveats in that, in our prediction, we only consider macroeconomic variables and the coefficients are based on annual data. The economic downturn, however, stretches over more than one period and if macroeconomic conditions are poor over longer horizons, the picture may change. It is possible that people adapt to worsening economic conditions such that their satisfaction is on average affected less than if there is only a short downturn. It is, however, also imaginable that individuals become increasingly dissatisfied if the macroeconomy fails to recover for several years. Our approach cannot speak to these hypotheses.

Some tentative implication for economic policies can be drawn from our results. Economic policies that result in good economic performance can increase peoples' political support directly via national economic performance and indirectly when the effects materialise at the individual level. Importantly, however, our results also reveal the limitations of these policies. Crucial for political support is personal life

[18] We restricted our sample to the years 1973-2006 and estimated our baseline specification (see table A.4 column 4 for full sample results). Demographic controls obtain very similar to the full estimation discussed before. Results for this estimation are provided in table B.5.

[19] Changes in real growth rates between 2006 and 2010 were -5.7 percentage points for Ireland and -4.2 for Spain. Greece experienced a decrease in its growth rate of 9 percentage points in 2010 (Eurostat, 2011a). Unemployment rates increased by 9.2 percentage points in Ireland, by 11.6 in Spain, and by 3.7 in Greece between 2006 and 2010 (Eurostat, 2011b).

[20] Our prediction for Portugal is much lower with an expected decrease in SWD by 5.86 percentage points. This compares well with the actually experienced drop in SWD by 4 percentage points from 0.31 to 0.27.

satisfaction which cannot be easily addressed by economic policy and might not be an appropriate political target either.

5.2. Channels of influence: micro or macro? selfish citizens or collectivist concerns?

In principle, microlevel data allows us to assess how important are correlates of SWD at the micro level relative to those at the national level. Unemployment manifests itself directly at the individual level. A change in the national unemployment rate leads to a change in employment status for some citizens. At the individual level, being unemployed is associated with a 4.7 percentage point decrease in satisfaction with democracy. To have the same effect the national unemployment rate would have to increase by 2.7 percentage points. At the aggregate level the picture is different though. To assess the effect of an increase in unemployment at the national level, we aggregate the individual effects of being unemployed on SWD for those who become unemployed and compare it with the direct effect of the change in the unemployment rate on SWD. We find that the effect running through individual unemployment is an order of magnitude smaller than the effect of the unemployment rate: Suppose unemployment increases by 1 percentage point. Then, the direct effect is -0.0172. The indirect effect from individuals becoming unemployed is $0.01 \cdot (-0.047) = -0.00047$ and the total effect is the sum of the two, i.e. -0.01767.[21] However, this comparison of individual versus national level determinants takes into account only one period. Taking a longer-term perspective the effect of individual unemployment is larger: since unemployed individuals are less satisfied with democracy than their employed peers, a change in national unemployment implies a persistent level effect in SWD. Even when unemployment rates do not worsen in subsequent periods, as long as unemployment isn't cut back again, those who became unemployed remain less satisfied and imply on average lower SWD in every period after.

This comparison does not tell why national level variables seem to be relevant for individuals' satisfaction with democracy. National unemployment rates can be influential due to pure self-interest since it is for instance indicative of the risk of getting unemployed, of wage developments, or upcoming job opportunities. A similar argument holds for growth rates: their being significant does not imply that individuals care about the performance of their country as a greater good. It can simply mean that they value growth as an indicator of higher transfers, better public services or lower taxes, factors which all materialise at the individual level and highlight the self-interest dimension of national performance. We show that the effects we find are unlikely to be driven by narrow self-interest alone by looking at subgroups of the population. We analyse separately the population with only basic or no education at all and elderly people (table A.6), as well as the unemployed and those who are not part of the labour force (table A.7).

The first interesting finding is that the effects of growth and unemployment rates are very stable across the subgroups we analyse. A second interesting finding is the heterogeneity in the effect of inflation on SWD which we discuss in the next

[21] We take the estimated coefficients from table A.4, column 4.

subsection. National unemployment rates are significant for all subgroups and are not significantly different in size. This means that unemployment rates are not more important for the less-skilled even though they have arguably a higher risk of becoming unemployed. Unemployment rates are relevant no matter whether an individual is still in work or already unemployed, and they are significantly correlated with SWD for those in as well as those out of the labour force. Most interestingly, unemployment rates are highly significant also for those aged 60 or above, who to a large degree will not be directly affected since they do not actively participate in the labour market anymore and will never reenter. A potential explanation is that these individuals often have children who are in working age and therefore they care more. Unfortunately, we cannot test this hypothesis. The Eurobarometer does not contain information on parenthood but only lists the number of children aged under 15.[22]

Our findings that unemployment plays an important role independent of being directly affected are similar to the results by Falk et al. (2011) in the context of right-wing extremist crimes. They analyze the effect of regional unemployment rates on right-wing extremist crimes in German states. While the unemployment rate has a positive and statistically significant effect on right-wing extremist crimes, the youth unemployment rate does not have a statistically significant influence. So, given that most right-wing extremist crimes are comitted by youg men, as in our analysis other factors than personal experience of unemployment seem to explain the overall effect of the unemployment rate.

We cannot conclude that individuals care about the performance of their country per se, e.g., for collective welfare reasons. Still, the effects are unlikely to be driven by pure self-interest. Low-skilled versus high-skilled, unemployed versus employed, and elderly versus younger people are very differently exposed to labour market conditions such that we expect heterogeneous effects according to the self-interest model. Not finding such differences implies other factors are at work.

One explanation for our findings are collectivist welfare concerns. Individuals may have a 'true preference' for democracy because it is believed to be the system that is best able to provide collective welfare. Growth and low unemployment are success indicators of this systems performance and can make individuals be satisfied with democracy even when it does not directly maximise their expected personal income since their true preference implies a concern for collective welfare (see Sen (1977) for a similar argument). Another explanation is that individuals take general equilibrium effects and their consequences at the individual level into account. For instance they anticipate cuts in transfers or increases in taxes when the economic situation is worsening.

[22] We included this information on children and find no effect. Elderly people living together with children under 15 years do not react to unemployment rates any differently than elderly people not living together with children. Neither do individuals with children according to this definition react any differently than those without children.

5.3. Heterogeneous effects and the trade-off between unemployment and inflation

An enduring economic policy debate concerns a possible trade-off between inflation and unemployment which societies may face. Assuming such a relationship, we would like to know which is the trade-off between inflation and unemployment in terms of satisfaction with democracy. In this section, we use our estimation results to analyse the relative costs of inflation and unemployment in terms of changes in SWD. In the full sample, however, inflation rates never gained significance preventing this type of analysis.[23] We therefore analyse subgroups separately and find that in contrast to growth and unemployment, inflation exhibits heterogeneous effects. In terms of satisfaction scores, a trade-off between inflation and unemployment exists, but it is a different trade-off for different parts of the population.

High inflation rates exhibit a significantly negative effect on the higher skilled individuals, those younger than 60 years, and those in the labour force. In the analysis using the full sample, this was blurred by inflation not affecting low skilled individuals, the elderly and those out of labour force. Inflation does not gain significance in the full sample (columns (1) and (6) in table A.6) and neither does it in the subsample of low skilled (column (2) in table A.6), in the subsample of the elderly (column (7) in table A.6), in the subsample of unemployed (column (2) in table A.7), or in the subsample of those out of the labor force (column (7) in table A.7). When we include an interaction term between the subgroup and inflation, we however obtain a negatively significant effect of inflation and a positively significant interaction term (Table A.6, column (5) with respect to education, column (10) with respect to age and table A.7 column (10) with respect to not being part of the labor force).

Inflation does not seem to affect employed and unemployed individuals differently when we look at column (5) in table A.7. However, the control group here is all individuals who are not unemployed, including those who are not part of the labour force. When we include an additional interaction term to allow for a differential effect of inflation on those out of the labour force, we find that the interaction with inflation is highly significant for both subgroups, the unemployed and those out of the labour force (table A.7, column 6). Inflation is found to be negatively associated with satisfaction with democracy only for those actively participate in the labour market and have a job.

We now reexamine the inflation-unemployment trade-off accounting for the heterogeneity in effects. On average younger Europeans experience the same loss in satisfaction with democracy for a 1% point increase in unemployment rates and

[23] If we look at the subsample where information on income is available, inflation is significant. From table A.4, column 7 we read that the loss in satisfaction with democracy from a 1 percentage point increase in unemployment equals the effect from an increase in $f(\text{inflation})$ by 0.537 percentage point (the sum of the direct and indirect effect of inflation divided by the effect of unemployment: $-0.0170 - 0.01 \cdot 0.0399)/(-0.0324) = 0.537$).

an increase by 0.77 in $f(\text{inflation})$[24].[25] The elderly are much more concerned with unemployment. Under the assumption of a linear effect, inflation being insignificant would imply that elderly preferred an arbitrarily large increase in inflation to prevent unemployment from rising. If the effect we find for the elderly was significant, the same decrease in satisfaction would be computed for an increase by 8.36 in $f(\text{inflation})$ as compared to a 1% point increase in unemployment.[26] A similar picture obtains when we split the population into those with low and high education. For individuals with higher education, an increase by 0.6 in $f(\text{inflation})$ is associated with the same satisfaction cost as a 1% point increase in unemployment.[27] For those with low education, inflation is insignificant.[28]

The derived numbers can be interpreted as marginal rates of substitution between $f(\text{inflation})$ and unemployment. Our results indicate a very low importance of inflation in the aggregate when we look at satisfaction with democracy. This is in contrast to Di Tella et al. (2003) who analyse life satisfaction scores and find that the marginal rate of substitution between inflation and unemployment is 1.66. Aggregate numbers hide however, that there is an important heterogeneity across subgroups of the population (not addressed in Di Tella et al. (2003)). Not everybody agrees on unemployment being more costly than inflation. For instance the higher educated and the younger, seem to accept relatively higher unemployment rates and desire lower inflation, as compared to the less educated and elderly, respectively.

6. Robustness

In this section we address important issues to demonstrate the robustness of our findings. First, we investigate the importance of lagged macro variables for our results and possible reverse causality issues. In this context we also discuss the possible role of (growth) expectations. Second, we present results from alternative specifications such as logit and ordered logit as well as a model where we control for income. Lastly, we argue why not controlling for institutional quality is without loss of generality.

[24] Since we use a transformation of inflation we cannot compute the trade-off in terms of percentage points. For low inflation rates $f(\text{inflation})$ is linear (up to 1) or almost linear. A 1% point increase in unemployment rates is associated with the same loss in SWD as a 0.77% point increase in inflation when inflation is low.

[25] From table A.6, column 10 we obtain $0.77 = (-0.0171 + 0.01 \cdot (-0.0456))/(-0.0228)$.

[26] $8.36 = (-0.0171 + 0.01 \cdot (-0.0456))/(-0.0228 + 0.0207)$. With an average share of people aged sixty and above of 21.89% the aggregate effect would then be $0.2189 \cdot 8.36 + (1 - 0.2189) \cdot .77 = 2.43$. Due to the logarithmic transformation of inflation this relates to an extremely high tolerance (about the tenfold) for inflation as compared to unemployment rates. This is consistent with the insignificance of inflation in the full sample.

[27] From table A.6, column (5) we obtain $0.60 = (-0.0172 + 0.01 \cdot (-0.0465))/(-0.0296)$.

[28] If the effect was significant at the size we find, an increase by 5.2 in inflation would be associated with the same satisfaction cost as a 1% point increase in unemployment since from table A.6, column (5) $5.20 = (-0.0172 + 0.01 \cdot (-0.0465))/(-0.0296 + 0.0262)$. With an average share of people with low education of 38.27% the aggregate effect would be $0.3827 \cdot 5.20 + (1 - 0.3827) \cdot 0.60 = 2.36$.

6.1. Lagged Growth, Growth Expectations and Endogeneity

Growth rates from previous periods may be influential in addition to contemporaneous rates because real effects need time to materialise. Thus, we tested whether lagged growth rates have an impact on SWD. Column 1 in table A.8 is our benchmark model which we have discussed before (section 4 and table A.4, column 4). Column 2 shows that lagged growth does not have a significant influence on SWD and including it in the regression hardly affects the coefficients of the other macroeconomic variables. Growth and unemployment rates remain significant, inflation is still insignificant. The result is intuitive as the development of unemployment rates as well as inflation is at least partly determined by economic development and thus lagging behind. If we omit lagged growth and it has a positive influence on employment today and a positive influence on satisfaction, then the coefficient on unemployment is downward biased because unemployment has a negative effect on satisfaction. The argument for inflation is analogous. Coefficients on individual controls are almost unaffected. As lagged growth rates did not gain significance, we did not include them in any other regression.

An important objection to the results presented in section 4 and table A.4 is that not growth has an influence on SWD but instead higher satisfaction levels lead to better economic performance. We undertake a robustness check regarding this endogeneity issue and conclude that our results are not a pure artefact of endogenous growth rates.

First, we included future growth rates (column 3 of table A.8). Future growth obtains a coefficient even larger in size than the coefficient of contemporaneous growth. This might be due to reverse causality, i.e. satisfaction with democracy driving growth rates, but could also be caused by serial correlation of growth rates. In both cases, however, this is not the entire story since contemporaneous growth and unemployment remain significant, in line with our hypothesis that growth has an effect on SWD. The effect which remains when we include future growth can be considered a lower bound on the effect of growth on SWD. A third explanation for why future growth is significant is that it proxies for growth expectations. Growth expectations in turn are likely to have a positive effect on satisfaction scores. These expectations may be influenced by growth forecasts and media reports. In this case, the coefficient on future growth should not be ignored and the full effect of growth on SWD, summing over contemporaneous and future growth it is 1.82 percentage points, is even larger than the previously estimated 1.21 percentage points. Since our data does not allow to control for expectations, we cannot distinguish these hypotheses.

Second, we also included the average lagged satisfaction with democracy at the country level average of SWD (column 4). By doing so, we control for the link potentially running from SWD to growth in the next period. Furthermore, the coefficient on future growth rates controls for correlation between SWD today and growth tomorrow. Thus, the coefficient of growth in column 4 reflects only contemporaneous correlation between SWD and growth. This is more likely to be an effect from growth on SWD than an effect from contemporaneous SWD on contemporaneous growth. Since satisfaction with democracy on average does not change very fast, this absorbs a large part of the variation and might make inference less

reliable. The effect of growth is still about 40% as large as in the main analysis and marginally significant.

6.2. Alternative specifications

In the following, we show that our results are robust to several alternative specifications. We begin with discussing the relevance of personal income and accounting for time trends. Furthermore, we check for the relevance of recoding our dependent variable and of using a linear model. Satisfaction with democracy is originally available at a scale with four categories which we chose to recode as a binary measure of democratic satisfaction. In all regressions so far we employed a linear probability model. In this section, we compare our results to (i) a logit model and (ii) an ordered logit model which makes use of the four categories of SWD.

6.2.1. Income

Income was not asked in every year and not at all in the years after 2004 such that a substantial number of income observations is missing. Since we are particularly interested in including the recent recessionary years and to avoid a selection effect, we do not control for income in our main analysis. Our robustness check indicates that income does not affect our results beyond a selection effect driven by the availability of the income measure. We are therefore confident that our result would be robust to the inclusion of income if it was fully available. Income is only recorded in country-specific classes. To obtain a comparable measure across countries, we computed country-specific income deciles and categorised individuals in three groups 'rich', 'middle income', and 'poor' according to their decile and chose 'middle income' is the omitted category.[29]

We illustrate in table A.4, columns 7 that the effects of inflation and growth are indeed different in the subsample for which income information is available. As compared to the benchmark in column 4, the coefficient of growth decreases substantially to .006 and inflation becomes marginally significant. The coefficient on individual unemployment becomes smaller, and neither sex nor education are significant anymore. Column 8 in the same table shows that beyond this selection effect the inclusion of income seems to have little effect on the results. We do find a small effect of income though. Rich people have a slightly increased probability to be satisfied with democracy compared to middle income earners. There is no significant effect for individuals with low income.

6.2.2. Time trends

Sometimes it is argued that analyses as the one we undertake should include a time trend to avoid spurious regression results due to underlying trends in the variables. To address this issue, we estimated a model including country specific time trends. We find that our specification without time trends leads to more conservative results with respect to growth. However, regarding unemployment rates, the inclusion of

[29] Details on the variable definition can be found in table A.1.

a country-specific time trend leads to marginally lower coefficients (the coefficient goes down from .0172 to .0155). The absolute size of the effect of unemployment rates on SWD should therefore be taken with caution. For details see table B.7.

6.2.3. Logit

Above we only describe results from ordinary least squares regressions (linear probability model) although our dependent variable is binary. In our opinion the advantages in terms of interpretation and simplicity of the linear model outweigh potential gains from the nonlinear model (for a discussion see also Angrist & Pischke (2009)). However, we also estimated a logit model which explicitly restricts the outcome variables to lie between zero and one. Results are qualitatively the same and quantitatively close to those from the OLS. All marginal effects lie above the coefficients estimated by OLS and therefore our model choice gives rather conservative results. For details see tables B.2 and B.3.

6.2.4. Ordered Logit

While we believe that the analysis is more rigorous when a binary recode is used, we also analysed determinants of SWD using the orignal, ordered outcome. This exercise provides little additional insight. All variables which obtained significance in the binary model are significant in the ordered logit and go in the same direction but, in addition, inflation becomes significant. Higher inflation rates were associated with lower probabilities of being very or fairly satisfied and higher probabilities of being not very or not at all satisfied with the way democracy works. When we sum the marginal effects for the two lower categories, we obtain a value by and large comparable in size to the sum of the marginal effects for the two upper categories but with opposite signs.[30] This is consistent with the view that the results in the binary recode are driven by individuals switching from being not satisfied to being satisfied with the way democracy works. It indicates that the binary recode does not come with a substantial loss of information. For details see table B.4.

We have shown before that inflation is insignificant in the binary model with and without unemployment rates (see section 4.1, table A.4). When we estimate an ordered logit model with and without national unemployment rates, we find that inflation is significant only when we include unemployment as well. This contrasts with Halla et al. (2011) who omit unemployment rates but find inflation to be significant. Since they include further macro variables, this might be driven by those.[31] We conclude that the decision which macro variables to include plays an important role for the results. We argue in the following subsection 6.3 that our results do not seem to be affected by the omission of policy variables similar to those included in Halla et al. (2011). We therefore consider our results more robust.

[30] The lower categories are answers 'not at all satisfied' and 'not very satisfied', the upper categories are the answers 'fairly satisfied' and 'very satisfied' with the way democracy works.

[31] While they control for GDP and population and find both significant with opposite signs, we find that GDP per head never gains significance. This is consistent with each other and we therefore do not discuss it further.

6.3. Institutional quality and policy measures

Our analysis assumes that democratic institutions in Western Europe did not change over the relevant time horizon and we do not include a control for institutional quality. We argue that this is not a restriction for several reasons. First, the binary Democracy-Dictatorhsip measure as discussed in Cheibub et al. (2009) is constant at 1 for all country-year pairs in our sample, indicating stable democracies. Consequently, our results would remain the same if we controlled for institutional quality in this sense. Second, our results are robust to the use of alternative indicators of institutional quality, the Polity IV index (Marshall et al., 2011) and the Freedom House index (Freedom House, 2011). Both have often been used but are also criticised (see for instance Cheibub et al. (2009)). Controlling for either of the two indicators does not affect our findings and the indicators remain insignificant as shown in table B.8. The freedom house index is only available until 2008. Omitting the years 2009 and 2010 from the analysis does affect the results, in particular inflation becomes significant. The effect comes only from the sample restriction, though, and is not related to institutional quality. We do not include elective fractionalization, which is also sometimes included in analyses like ours, since it never gained significance in a very related analysis of SWD by Halla et al. (2011). Third, in an analysis of political preferences in Central and Eastern European countries Grosjean & Senik (2011) find no significant effect of market liberalisation on support for democracy. This supports our view that even though there have been major changes for example in the organisation of the European common market these changes are not of major concern.

Another possible objection to our analysis is that it is not the macroeconomic outcomes that influence citizens' satisfaction but instead policies implemented by governments. We therefore test for the effects of debt and deficit levels and also include two measures which proxy for social spending, (1) the population aged 65 and above as a percentage of total population and (2) social security transfers as a percentage of GDP. All four variables are taken from Armingeon et al. (2009). Unfortunately, we have information on deficits and debt levels only until 2007, and information on social transfers only until 2000 such that we cannot compare the results with policy variables directly to those from the main analysis.[32] To be able to assess the relevance of policy measures, we estimate the main model on the subsample for which all policy variables are available and than included the policy measures. The restriction to the subsample changes results substantially, in particular inflation becomes significant due to the omission of recent years with relatively low inflation rates. However, the inclusion of policy measures does not lead to additional changes. In contrast to Halla et al. (2011), none of the policy variables gains significance. Results are provided in table B.9.

[32]Moreover, these variables are missing for Luxembourg, Denmark, Portugal, Spain, Norway, and Austria in some years earlier than 2001. These drawbacks are the reasons why we only present this as a robustness exercise and exclude it from the main analysis.

7. Conclusion

The European debt crisis has had a severe impact on European democracies. In the five most heavily affected EU member countries, Greece, Ireland, Italy, Portugal, and Spain governments have been voted out office. More than that, demands by the various protestors go beyond the deselection of governments. People's perception of the democratic system have changed in the course of the crisis, not only in Greece but also in many other European countries.

This paper shows that the changing attitudes towards democracy were to be expected as a consequence of extremely poor national economic performance, also called the Great Recession. Lower growth rates and higher unemployment rates were both associated with fewer respondents stating they were satisfied with the way democracy works. For drops in growth rates and rise in unemployment rates as experienced for example by Spain or Ireland, our simple annual estimate of a drop in satisfaction with democracy by 19 to 24 percentage points is close to actual changes in satisfaction with democracy which were around -20 percentage points. Moreover, our analysis shows that the unemployment rate is substantially more important than the inflation rate in shaping attitudes towards the democratic system and also more important than the growth rate. From that perspective any policy intended to improve peoples' satisfaction with the democratic system should prioritize job creation.

While not contradicting previous work, our analysis uncovered important new aspects. First, growth and unemployment rates were found simultaneously significant while, in contrast to previous research, inflation is insignificant. This difference is driven by including the years 2009 and 2010.[33] Moreover, while inflation is not significant for the period we consider for the entire population, it has a significantly negative effect on individuals who are higher skilled, younger than 60, or have a job. Second, our results show that individual variables, in particular individual unemployment, education and age, are an important driver of satisfaction with democracy. Moreover, perceived life satisfaction has a strong effect and its inclusion increased explanatory power substantially (with respect to R^2). This last result is a challenge for policy-makers and future research because it is not obvious whether economic policy should indeed target individuals' life satisfaction and if it should how it can do so.

Finally, while individual controls are important, they do not make macroeconomic variables irrelevant. National aggregates like unemployment and growth have a significant effect beyond what materialises at the individual level. It is beyond the scope of this paper to provide a clear-cut answer why national indicators are significant. However, our analysis suggests that a collectivist perspective plays a role. If peoples' evaluation of democracy was driven by pure self-interest, we would expect a differential effect of growth and unemployment across subgroups of the population (for instance skilled versus unskilled). The lack thereof suggests that collectivist concerns for national economic performance play a role.

[33] These years were markedly different: some countries went through a phase of very low inflation rates and some countries even experienced a period of deflation. When we restricted our sample to the period before 2008, the significance of inflation was restored.

A. Figure and Tables

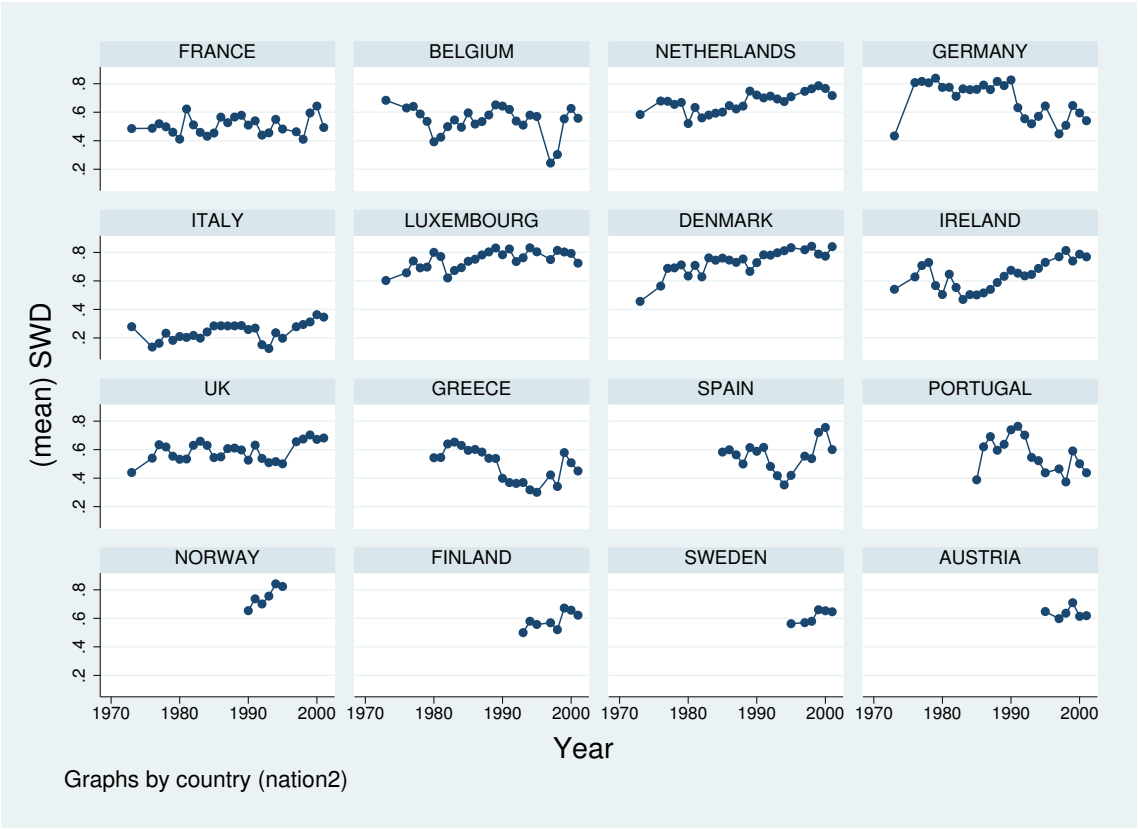

Figure 1: Percentage of individuals satisfied with democracy over time (weighted)

Table A.1: Definitions of variables used

variable name	series name / explanation	source
macroeconomic variables		
GDP per head	1. Gross domestic product: GDP per head, US$, constant prices, constant PPPs, OECD base year; rescaled by factor 1/1000	OECD (2011)
UE rate	Rate of unemployment as % of civilian labour force	OECD (2011)
growth	GDP, growth rate	OECD (2011)
f(inflation)	$f(\text{inflation}_{it}) = (\text{inflation}_{it} - 1)\mathbf{1}(\text{inflation}_{it} \leq 1) + \log \text{inflation}_{it}\mathbf{1}(\text{inflation}_{it} > 1)$. The function $f(\text{inflation}_{it})$, as proposed in Khan & Ssnhadji (2001), is linear in inflation_{it} for values of inflation rates below or equal to one and logarithmic for inflation rates greater than one. The breakpoint one is chosen such that the transformation is continuous.	OECD (2011)
debt	Gross government debt (financial liabilities) as a percentage of GDP	Armingeon et al. (2009)
deficit	Annual deficit (government primary balance) as a percentage of GDP	Armingeon et al. (2009)
elderly	Population 65 and over as a percentage of population	Armingeon et al. (2009)
sstran	Social security transfers as a percentage of GDP	Armingeon et al. (2009)
polity4	Index of institutional quality which is originally coded on a scale from 0 to 10 (highest quality). Since in our sample the index only varies from 8 to 10 we recode as follows: polity4==2 if polity takes the highest value of 10, polity4==1 if polity takes the value 9, polity4==0 if polity takes the lowest value of 8 in our sample.	Marshall et al. (2011)
individual variables		
SWD	Answer to the question "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in <country>? Would you say you are ...?", 1=not at all satisfied, 2=not very satisfied, 3=fairly satisfied, 4=very satisfied	Eurobarometer
SWD dummy	SWD dummy=1 if (SWD=3 or SWD=4); SWD dummy=0 if (SWD=2 or SWD=1)	own calculation
unempl	dummy for those being unemployed at the time of the survey	Eurobarometer
out of LF	dummy for those not in the labour force, subsuming housewives, students, military, and retired	Eurobarometer
married	dummy for being 'married' or 'living as married'	Eurobarometer
male	dummy for males	Eurobarometer
age	age of the respondent in years	Eurobarometer
education	age when full-time education was finished. We use this variable to construct 5 dummies as described below.	Eurobarometer
basic education	age when full-time education was finished: 'up to 15 years' or 'no full-time education'	Eurobarometer
intermediate education	age when full-time education was finished: 16 to 19 years	Eurobarometer
higher education	age when full-time education was finished: 20 years or older	Eurobarometer
still studying	age when full-time education was finished: still studying	Eurobarometer
income	Income is coded in categories which vary over time and from country to country. We use this variable to defer the relative positions of individuals in the income distribution.	Eurobarometer
poor	dummy for individuals whose income is in the lowest three income deciles	Eurobarometer
middle income	dummy for individuals whose income is in the four middle income deciles	Eurobarometer
rich	dummy for individuals whose income is in the three highest income deciles	Eurobarometer
life satisfaction	Answer to the question "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead? Would you say you are ...?" 1=not at all satisfied, 2=not very satisfied, 3=fairly satisfied, 4=very satisfied. We use this variable to construct 4 dummies corresponding to the 4 answer categories.	Eurobarometer

Table A.2: Summary statistics for the macro variables

MACRO	F	B	NL	D	I	L	DK	IRL	UK	GR	E	P	N	FIN	S	A	*all*
GDP/head ($)	21.83	23.55	24.48	22.27	21.77	40.89	24.47	20.07	21.95	17.54	19.31	15.50	28.61	25.77	29.00	29.22	23.70
	(3.41)	(4.34)	(4.95)	(4.01)	(3.67)	(14.33)	(4.36)	(9.14)	(4.83)	(3.20)	(3.38)	(2.68)	(1.68)	(3.77)	(3.04)	(2.20)	(8.33)
growth (%)	2.18	2.12	2.33	2.07	1.98	4.25	2.00	4.63	2.23	1.80	2.94	2.67	3.43	2.82	2.95	2.04	2.61
	(1.47)	(1.69)	(1.85)	(1.97)	(2.07)	(3.09)	(2.16)	(3.81)	(2.07)	(2.64)	(2.13)	(2.58)	(1.09)	(3.40)	(2.63)	(2.00)	(2.51)
f(inflation)	4.41	3.40	2.87	2.50	7.00	3.48	4.48	5.87	5.26	11.37	4.19	6.04	2.67	1.37	1.13	1.68	4.60
	(4.07)	(2.47)	(2.07)	(1.64)	(5.92)	(2.62)	(3.51)	(5.90)	(4.80)	(8.05)	(2.20)	(4.92)	(0.96)	(0.85)	(0.99)	(0.68)	(4.74)
UE rate (%)	8.34	9.73	6.49	7.13	9.57	1.77	7.04	10.49	7.46	8.63	16.61	6.40	5.56	10.53	7.24	4.30	8.06
	(1.79)	(2.32)	(2.92)	(2.19)	(1.87)	(0.86)	(2.05)	(4.61)	(2.41)	(2.09)	(4.93)	(1.89)	(0.42)	(3.12)	(1.55)	(0.50)	(4.01)
debt (%)	49.53	106.89	72.74	47.19	105.02	8.22	62.92	70.59	46.30	81.25	59.15	67.08	34.77	53.79	65.63	n.a.	66.01
	(17.26)	(23.90)	(14.90)	(14.35)	(16.14)	(1.94)	(13.65)	(27.08)	(5.94)	(32.46)	(10.22)	(3.86)	(5.72)	(7.18)	(11.90)	n.a.	(29.89)
deficit (%)	-0.73	1.37	0.31	-0.23	-0.82	1.00	1.98	-0.52	-0.30	-1.20	-0.07	0.18	-2.74	1.46	1.01	n.a.	0.10
	(1.10)	(4.16)	(2.04)	(1.85)	(3.56)	(2.16)	(3.71)	(4.11)	(2.47)	(3.13)	(2.37)	(1.65)	(1.90)	(4.75)	(2.69)	n.a.	(3.10)
elderly (%)	14.65	15.36	12.76	16.28	15.49	13.70	14.95	11.06	15.49	15.22	15.15	15.02	16.16	15.08	17.39	n.a.	14.69
	(1.26)	(1.29)	(1.03)	(1.65)	(2.48)	(0.36)	(0.51)	(0.27)	(0.53)	(1.92)	(1.75)	(1.83)	(0.15)	(0.82)	(0.19)	n.a.	(1.96)
sstran (%)	17.33	17.04	23.42	17.08	15.69	18.89	17.09	13.11	13.33	14.34	15.25	11.68	16.41	20.40	19.47	n.a.	16.53
	(1.04)	(1.08)	(5.46)	(1.13)	(1.16)	(3.71)	(2.02)	(2.53)	(1.55)	(1.67)	(1.97)	(1.13)	(0.51)	(2.94)	(1.12)	n.a.	(3.78)
#observations	33	33	33	33	33	33	33	33	33	29	24	24	6	16	14	14	424

Standard deviations in brackets below estimates.
Calculations use only the years used for the regressions, i.e. 1976-1994, 1997-2010.
Countries are abbreviated according to international vehicle registration codes. Since 1991 East-Germany is included. Before data refers only to West-Germany.
GDP per head in US$1000, constant prices, constant PPPs, reference year 2000.
Missing observations: UE rate in 2010; debt, deficit, elderly for 2009, 2010, and Austria; sstran for 2001-2010 and Austria.
Sources: OECD, for details see table A.1.

Table A.3: Summary statistics for the individual variables

	F	B	NL	D	I	L	DK	IRL	UK	GR	E	P	N	FIN	S	A	*all*
SWD	0.52	0.56	0.68	0.69	0.27	0.77	0.77	0.65	0.60	0.50	0.59	0.53	0.76	0.66	0.70	0.68	0.59
	(0.50)	(0.50)	(0.47)	(0.46)	(0.45)	(0.42)	(0.42)	(0.48)	(0.49)	(0.50)	(0.49)	(0.50)	(0.42)	(0.47)	(0.46)	(0.47)	(0.49)
unempl	0.06	0.07	0.04	0.05	0.05	0.01	0.05	0.07	0.06	0.04	0.07	0.05	0.05	0.06	0.05	0.04	0.06
	(0.24)	(0.26)	(0.20)	(0.21)	(0.22)	(0.12)	(0.23)	(0.26)	(0.23)	(0.20)	(0.26)	(0.22)	(0.22)	(0.24)	(0.22)	(0.19)	(0.23)
out of LF	0.42	0.44	0.50	0.43	0.48	0.48	0.38	0.46	0.42	0.49	0.50	0.45	0.39	0.43	0.39	0.39	0.44
	(0.49)	(0.50)	(0.50)	(0.49)	(0.50)	(0.50)	(0.48)	(0.50)	(0.49)	(0.50)	(0.50)	(0.50)	(0.49)	(0.49)	(0.49)	(0.49)	(0.50)
married	0.65	0.65	0.68	0.60	0.59	0.65	0.66	0.58	0.64	0.66	0.58	0.63	0.60	0.59	0.63	0.60	0.63
	(0.48)	(0.48)	(0.47)	(0.49)	(0.49)	(0.48)	(0.47)	(0.49)	(0.48)	(0.47)	(0.49)	(0.48)	(0.49)	(0.49)	(0.48)	(0.49)	(0.48)
male	0.49	0.50	0.48	0.49	0.48	0.51	0.50	0.50	0.48	0.49	0.48	0.47	0.53	0.46	0.51	0.46	0.49
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
age	42.91	44.17	43.10	44.77	42.90	43.75	44.96	41.92	44.89	43.70	43.29	44.72	41.53	46.17	47.97	44.64	44.02
	(17.82)	(17.96)	(17.04)	(17.69)	(17.47)	(17.34)	(18.01)	(17.77)	(18.51)	(17.85)	(18.79)	(18.92)	(17.42)	(18.40)	(18.07)	(17.06)	(17.94)
education																	
basic	0.26	0.25	0.23	0.37	0.48	0.26	0.27	0.29	0.40	0.45	0.47	0.63	0.14	0.18	0.16	0.28	0.34
	(0.44)	(0.43)	(0.42)	(0.48)	(0.50)	(0.44)	(0.44)	(0.45)	(0.49)	(0.50)	(0.50)	(0.48)	(0.35)	(0.38)	(0.37)	(0.45)	(0.47)
interm.	0.41	0.41	0.39	0.41	0.25	0.40	0.23	0.51	0.43	0.28	0.24	0.18	0.29	0.28	0.29	0.49	0.36
	(0.49)	(0.49)	(0.49)	(0.49)	(0.43)	(0.49)	(0.42)	(0.50)	(0.49)	(0.45)	(0.43)	(0.38)	(0.45)	(0.45)	(0.46)	(0.50)	(0.48)
higher	0.24	0.25	0.28	0.15	0.16	0.25	0.40	0.10	0.12	0.18	0.16	0.10	0.43	0.42	0.43	0.16	0.21
	(0.43)	(0.43)	(0.45)	(0.36)	(0.36)	(0.43)	(0.49)	(0.31)	(0.33)	(0.38)	(0.37)	(0.30)	(0.49)	(0.49)	(0.49)	(0.36)	(0.41)
still stud.	0.09	0.08	0.10	0.07	0.12	0.09	0.09	0.09	0.05	0.10	0.12	0.09	0.14	0.13	0.12	0.08	0.09
	(0.29)	(0.28)	(0.30)	(0.26)	(0.32)	(0.29)	(0.29)	(0.28)	(0.22)	(0.30)	(0.32)	(0.29)	(0.35)	(0.33)	(0.32)	(0.27)	(0.29)
no full-time	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.03)	(0.05)	(0.01)	(0.01)	(0.02)	(0.08)	(0.06)	0.00	0.00	(0.02)	(0.04)	(0.03)
life satfct.																	
... satisfied																	
not at all	0.06	0.03	0.01	0.02	0.07	0.01	0.01	0.04	0.03	0.12	0.04	0.08	0.01	0.01	0.01	0.02	0.04
	(0.24)	(0.18)	(0.10)	(0.15)	(0.25)	(0.11)	(0.08)	(0.19)	(0.18)	(0.32)	(0.19)	(0.28)	(0.11)	(0.11)	(0.08)	(0.13)	(0.20)
not very	0.17	0.11	0.05	0.13	0.21	0.05	0.03	0.09	0.10	0.27	0.18	0.26	0.05	0.07	0.04	0.11	0.13
	(0.38)	(0.31)	(0.22)	(0.33)	(0.41)	(0.23)	(0.17)	(0.29)	(0.29)	(0.44)	(0.38)	(0.44)	(0.22)	(0.25)	(0.20)	(0.32)	(0.34)
fairly	0.62	0.58	0.49	0.64	0.60	0.52	0.36	0.52	0.55	0.48	0.58	0.61	0.49	0.62	0.53	0.60	0.55
	(0.48)	(0.49)	(0.50)	(0.48)	(0.49)	(0.50)	(0.48)	(0.50)	(0.50)	(0.50)	(0.49)	(0.49)	(0.50)	(0.48)	(0.50)	(0.49)	(0.50)
very	0.14	0.28	0.45	0.21	0.12	0.41	0.60	0.35	0.32	0.14	0.21	0.05	0.45	0.30	0.42	0.27	0.28
	(0.35)	(0.45)	(0.50)	(0.41)	(0.33)	(0.49)	(0.49)	(0.48)	(0.47)	(0.35)	(0.41)	(0.23)	(0.50)	(0.46)	(0.49)	(0.44)	(0.45)
income																	
rich	0.23	0.26	0.25	0.25	0.25	0.22	0.24	0.23	0.24	0.25	0.22	0.26	0.26	0.26	0.23	0.24	0.24
	(0.42)	(0.44)	(0.43)	(0.44)	(0.43)	(0.41)	(0.43)	(0.42)	(0.43)	(0.43)	(0.41)	(0.44)	(0.44)	(0.44)	(0.42)	(0.43)	(0.43)
middle	0.42	0.38	0.40	0.40	0.36	0.42	0.41	0.41	0.42	0.38	0.43	0.39	0.40	0.38	0.35	0.38	0.40
	(0.49)	(0.48)	(0.49)	(0.49)	(0.48)	(0.49)	(0.49)	(0.49)	(0.49)	(0.49)	(0.50)	(0.49)	(0.49)	(0.49)	(0.48)	(0.49)	(0.49)
poor	0.35	0.36	0.35	0.34	0.39	0.36	0.35	0.36	0.34	0.37	0.35	0.35	0.35	0.35	0.42	0.38	0.36
	(0.48)	(0.48)	(0.48)	(0.47)	(0.49)	(0.48)	(0.48)	(0.48)	(0.47)	(0.48)	(0.48)	(0.48)	(0.48)	(0.48)	(0.49)	(0.49)	(0.48)
#obs	52474	52065	54349	53298	56052	22012	53992	51233	53606	46516	37230	36471	7826	20676	17822	18590	673914

Calculations use only observations from the years used in the regressions and observations where all variables used in the regressions are not missing. #observations varies slightly for some variables.
Standard deviations in brackets below estimates.
Countries are abbreviated according to international vehicle registration codes. Since 1991 East-Germany is included. Before data refers only to West-Germany.
Income is only available from 1973 to 1994 and from 1997 to 2003.
Source: Eurobarometer.

Table A.4: Impact of macroeconomic and individual level variables on SWD (individual data)

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
macroeconomic variables								
GDP per head	0.0066	0.0054	0.0056	0.0010	0.0011	0.0010	0.0045	0.0045
	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
growth		0.0131***	0.0131***	0.0105***	0.0116***	0.0106***	0.0060*	0.0060*
		(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
f(inflation)			-0.0054	-0.0188	-0.0200	-0.0218	-0.0324*	-0.0326*
			(0.016)	(0.012)	(0.012)	(0.013)	(0.019)	(0.019)
UE rate				-0.0172***	-0.0187***	-0.0194***	-0.0170***	-0.0171***
				(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
individual variables								
unemployed	-0.0512***	-0.0509***	-0.0511***	-0.0470***	-0.1122***	-0.1086***	-0.0399***	-0.0352***
	(0.006)	(0.006)	(0.006)	(0.005)	(0.009)	(0.008)	(0.007)	(0.007)
out of LF	-0.0018	-0.0019	-0.0020	-0.0015	-0.0053	-0.0042	-0.0013	0.0019
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.004)
married	-0.0000	0.0000	0.0000	0.0007	0.0266***	0.0257***	-0.0002	-0.0039
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)
male	0.0069*	0.0068*	0.0068*	0.0067*	0.0031	0.0033	0.0061	0.0061
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
age	-0.0023***	-0.0023***	-0.0023***	-0.0025***	-0.0052***	-0.0049***	-0.0025***	-0.0026***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
age^2	0.0000***	0.0000***	0.0000***	0.0000***	0.0001***	0.0001***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
intermediate education	0.0092	0.0095	0.0095	0.0089	0.0219**	0.0222***	0.0073	0.0042
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.009)	(0.008)
higher education	0.0273*	0.0278*	0.0278*	0.0266*	0.0511***	0.0512***	0.0161	0.0098
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.016)	(0.015)
still studying	0.0288*	0.0296*	0.0295*	0.0282*	0.0597***	0.0602***	0.0156	0.0093
	(0.014)	(0.014)	(0.014)	(0.014)	(0.016)	(0.016)	(0.017)	(0.015)
not at all satisfied	-0.3419***	-0.3402***	-0.3401***	-0.3371***			-0.3536***	-0.3511***
	(0.025)	(0.024)	(0.024)	(0.023)			(0.028)	(0.029)
not very satisfied	-0.2484***	-0.2479***	-0.2479***	-0.2456***			-0.2645***	-0.2626***
	(0.017)	(0.017)	(0.017)	(0.016)			(0.020)	(0.020)
very satisfied	0.0753***	0.0750***	0.0751***	0.0745***			0.0805***	0.0791***
	(0.005)	(0.005)	(0.005)	(0.005)			(0.006)	(0.005)
poor								-0.0097
								(0.006)
rich								0.0142**
								(0.005)
survey FE	yes	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes	yes
N	606504	606504	606504	602545	602545	660546	353132	353132
R^2	0.1373	0.1388	0.1388	0.1433	0.0961	0.0968	0.1501	0.1504

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(4) is the reference for robustness checks. In (5) we restrict attention to the subsample were life satisfaction is available but do not include it. In (6) we exclude life satisfaction from the estimation. (7) is estimated on the reduced sample where income is available, (8) controls for income groups.
The chosen order of inclusion of macroeconomic variables is irrelevant for our results (see table B.1).

Table A.5: Impact of macroeconomic variables on percentage SWD (country panel)

dependent: SWD	(1)	(2)	(3)	(4)
GDP per head	0.0044***	0.0034**	0.0031**	0.0017
	(0.001)	(0.001)	(0.001)	(0.001)
growth		0.0118***	0.0121***	0.0076***
		(0.003)	(0.003)	(0.002)
f(inflation)			0.0013	-0.0030*
			(0.002)	(0.002)
UE rate				-0.0190***
				(0.002)
survey FE	yes	yes	yes	yes
country FE	yes	yes	yes	yes
N	483	483	482	476
R^2	0.7421	0.7537	0.7540	0.8101

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is the average of the SWD dummy in a given country.
Standard errors are corrected for clustering at nation level.

Table A.6: Analysis of subgroups: Education and Elderly people

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GDP per head	0.0011	0.0063	0.0011	0.0012	0.0008	0.0010	0.0026	0.0010	0.0010	0.0010
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
growth	0.0108***	0.0109***	0.0108***	0.0102***	0.0110***	0.0114***	0.0119***	0.0105***	0.0105***	0.0105***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
f(inflation)	-0.0205	-0.0239	-0.0209	-0.0206	-0.0296**	-0.0189	-0.0136	-0.0186	-0.0186	-0.0228*
	(0.013)	(0.019)	(0.013)	(0.013)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)
UE rate	-0.0173***	-0.0188***	-0.0179***	-0.0173***	-0.0172***	-0.0170***	-0.0188***	-0.0176***	-0.0171***	-0.0171***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
low educ.*UE rate			0.0015							
			(0.003)							
low educ.*growth				0.0017						
				(0.003)						
low educ.*f(inflation)					0.0262**					
					(0.010)					
old*UE rate								0.0026		
								(0.002)		
old*growth									-0.0000	
									(0.001)	
old*f(inflation)										0.0207***
										(0.006)
unemployed	-0.0470***	-0.0389***	-0.0469***	-0.0470***	-0.0465***			-0.0448***	-0.0453***	-0.0456***
	(0.005)	(0.009)	(0.005)	(0.005)	(0.005)			(0.005)	(0.005)	(0.005)
low education	-0.0184*		-0.0316	-0.0229*	-0.0513***					
	(0.009)		(0.026)	(0.013)	(0.014)					
old						0.0111		-0.0151	0.0069	-0.0170
						(0.008)		(0.020)	(0.008)	(0.010)
age, age^2	yes	yes	yes	yes	yes	no	no	no	no	no
education dummies	no	no	no	no	no	yes	yes	yes	yes	yes
ind. controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
survey FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	547515	203033	547515	547515	547515	613061	134230	602545	602545	602545
R^2	0.143	0.1529	0.143	0.143	0.1435	0.1418	0.129	0.1432	0.1431	0.1434

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
The dummy *low education* takes a value of 1 for basic education and 0 for higher education or still studying.
The dummy *old* takes value 1 for those aged 61 and above, 0 otherwise.
In (1) we adjust the model from column 4 in table A.4, and control for low education instead of several education dummies. (1) to (5) are estimated on a subsample excluding those who are still studying. (2) is estimated on the subsample with low education. (6) is estimated for all observations where age is not missing, (7) is estimated on the subsample being older than 60 years old, (8) to (10) use the full sample.

Table A.7: Analysis of subgroups: Employment status and labour force participation

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
macroeconomic variables										
GDP per head	0.0010	0.0014	0.0010	0.0010	0.0010	0.0010	0.0023	0.0010	0.0010	0.0010
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
growth	0.0105***	0.0099***	0.0105***	0.0105***	0.0105***	0.0105***	0.0100***	0.0105***	0.0100***	0.0106***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
f(inflation)	-0.0188	-0.0110	-0.0188	-0.0188	-0.0194	-0.0263**	-0.0163	-0.0188	-0.0187	-0.0244*
	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)
UE rate	-0.0172***	-0.0174***	-0.0172***	-0.0172***	-0.0172***	-0.0171***	-0.0174***	-0.0176***	-0.0172***	-0.0171***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
unempl.*UE rate			0.0004							
			(0.002)							
unempl.*growth				0.0006						
				(0.001)						
unempl.*f(inflation)					0.0088	0.0155**				
					(0.006)	(0.006)				
out of LF*UE rate								0.0010		
								(0.001)		
out of LF*growth									0.0011	
									(0.001)	
out of LF*f(inflation) f						0.0144***				0.0127***
individual variables										
unemployed	-0.0470***		-0.0505***	-0.0486***	-0.0564***	-0.0643***		-0.0465***	-0.0471***	-0.0476***
	(0.005)		(0.016)	(0.008)	(0.008)	(0.009)		(0.006)	(0.005)	(0.005)
out of LF	-0.0015	0.0000	-0.0015	-0.0015	-0.0014	-0.0188***		-0.0102	-0.0043	-0.0168***
	(0.004)	(0.000)	(0.004)	(0.004)	(0.004)	(0.005)		(0.013)	(0.004)	(0.005)
ind. controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	
survey FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	
nation FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	
N	602545	35253	602545	602545	602545	602545	265592	602545	602545	602545
R^2	0.1433	0.1485	0.1433	0.1433	0.1433	0.1435	0.1356	0.1433	0.1433	0.1435

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table A.4, column (4). (2) is estimated on the subsample of the unemployed. (7) is estimated on the subsample not being part of the labour force. (3) to (6) and (8) to (10) use the full sample.

Table A.8: Lagged growth and endogeneity

dependent: SWD	(1)	(2)	(3)	(4)
macroeconomic variables				
GDP per head	0.0010	0.0008	0.0018	0.0004
	(0.003)	(0.004)	(0.003)	(0.001)
growth_t	0.0105***	0.0095***	0.0057**	0.0040*
	(0.003)	(0.002)	(0.002)	(0.002)
growth_{t-1}		0.0028		
		(0.002)		
growth_{t+1}			0.0102***	0.0062***
			(0.002)	(0.002)
$f(\text{inflation})_t$	-0.0188	-0.0195	-0.0216*	-0.0139
	(0.012)	(0.012)	(0.011)	(0.011)
$\overline{SWD}_{t-1}$				0.5549***
				(0.063)
ind. controls	yes	yes	yes	yes
survey FE	yes	yes	yes	yes
country FE	yes	yes	yes	yes
N	602545	602545	592075	546239

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table A.4, column (4).

B. Additional tables

Table B.1: Order of inclusion of macro variables does not matter

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
macroeconomic variables									
GDP per head				0.0054	0.0068	0.0013	0.0056	0.0006	
				(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	
growth	0.0141***			0.0131***			0.0131***	0.0106***	0.0106***
	(0.004)			(0.004)			(0.004)	(0.002)	(0.003)
f(inflation)		0.0001			-0.0049		-0.0054		-0.0184
		(0.018)			(0.018)		(0.016)		(0.012)
UE rate			-0.0175***			-0.0171***		-0.0162***	-0.0175***
			(0.003)			(0.003)		(0.003)	(0.003)
ind. controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
survey FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	607486	607486	602545	606504	606504	602545	606504	602545	602545
R^2	0.1382	0.1364	0.142	0.1388	0.1373	0.1421	0.1388	0.143	0.1433

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.

Table B.2: Impact of macroeconomic and individual level variables on SWD (individual data) - Logit

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
macroeconomic variables								
GDP per head	0.0092*	0.0076	0.0078	0.0014	0.0014	0.0016	0.0057	0.0057
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
growth		0.0145***	0.0145***	0.0121***	0.0116***	0.0126***	0.0069*	0.0069*
		(0.005)	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
f(inflation)			-0.0056	-0.0214	-0.0235	-0.0214	-0.0384	-0.0385
			(0.019)	(0.015)	(0.015)	(0.014)	(0.024)	(0.024)
UE rate				-0.0199***	-0.0215***	-0.0208***	-0.0197***	-0.0198***
				(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
individual variables								
unemployed	-0.0589***	-0.0587***	-0.0589***	-0.0551***	-0.1178***	-0.1216***	-0.0476***	-0.0420***
	(0.007)	(0.007)	(0.007)	(0.006)	(0.010)	(0.010)	(0.009)	(0.008)
out of LF	-0.0020	-0.0022	-0.0023	-0.0018	-0.0046	-0.0057	-0.0017	0.0020
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
married	0.0002	0.0002	0.0002	0.0011	0.0286***	0.0295***	-0.0003	-0.0047
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)
male	0.0081*	0.0080*	0.0080*	0.0080*	0.0038	0.0036	0.0074	0.0074
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
age	-0.0027***	-0.0027***	-0.0027***	-0.0028***	-0.0054***	-0.0057***	-0.0029***	-0.0030***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
age^2	0.0000***	0.0000***	0.0000***	0.0000***	0.0001***	0.0001***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
intermediate education	0.0104	0.0107	0.0107	0.0100	0.0233***	0.0235***	-0.0188	-0.0113
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.020)	(0.018)
higher education	0.0312*	0.0317*	0.0317*	0.0306*	0.0557***	0.0556***	-0.0104	-0.0067
	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)	(0.015)	(0.014)	(0.014)
still studying	0.0331**	0.0339**	0.0338**	0.0327**	0.0649***	0.0652***	-0.0005	-0.0004
	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)	(0.017)	(0.007)	(0.007)
not at all satisfied	-0.3680***	-0.3669***	-0.3669***	-0.3652***			-0.3823***	-0.3802***
	(0.013)	(0.013)	(0.014)	(0.012)			(0.013)	(0.014)
not very satisfied	-0.2650***	-0.2649***	-0.2649***	-0.2637***			-0.2868***	-0.2849***
	(0.012)	(0.012)	(0.012)	(0.012)			(0.014)	(0.014)
very satisfied	0.0855***	0.0854***	0.0854***	0.0853***			0.0911***	0.0896***
	(0.006)	(0.006)	(0.006)	(0.006)			(0.007)	(0.007)
poor								-0.0116*
								(0.007)
rich								0.0166***
								(0.006)
survey FE	yes	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes	yes
N	606504	606504	606504	602545	660546	602545	353132	353132
Pseudo R^2	0.1057	0.1069	0.1069	0.1106	0.0737	0.0732	0.1159	0.1161

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Marginal effects. When independent variable is a dummy, discrete change of dummy variable from 0 to 1.
Standard errors are corrected for clustering at nation level.
(4) is the reference for robustness checks. In (5) we restrict attention to the subsample were life satisfaction is available but do not include it. In (6) we exclude life satisfaction from the estimation. (7) is estimated on the reduced sample where income is available, (8) controls for income groups.

Table B.3: Lagged growth and endogeneity - Logit

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)
macroeconomic variables						
GDP per head	0.0014	0.0011	0.0026	0.0023	0.0009	0.0010
	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)
growth_t	0.0121***	0.0110***	0.0064**	0.0053*	0.0046*	0.0048**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
growth_{t-1}		0.0030		0.0029		-0.0006
		(0.003)		(0.003)		(0.003)
growth_{t+1}			0.0118***	0.0116***	0.0068***	0.0068***
			(0.003)	(0.003)	(0.003)	(0.002)
f(inflation)	-0.0214	-0.0221	-0.0249*	-0.0255*	-0.0163	-0.0162
	(0.015)	(0.014)	(0.014)	(0.013)	(0.013)	(0.013)
UE rate	-0.0199***	-0.0195***	-0.0201***	-0.0197***	-0.0068***	-0.0068***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
$\overline{\text{SWD}}_{c,t-1}$					0.6426***	0.6436***
					(0.069)	(0.069)
ind. controls	yes	yes	yes	yes	yes	yes
survey FE	yes	yes	yes	yes	yes	yes
country FE	yes	yes	yes	yes	yes	yes
N	602545	602545	592075	592075	546239	546239
Pseudo R^2	0.1106	0.1106	0.1111	0.1111	0.1158	0.1158

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Marginal effects. When independent variable is a dummy, discrete change of dummy variable from 0 to 1.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table B.2, column (4).

Table B.4: Results - Ordered Logit

dependent:	(1)				(2)				(3)			
SWD Scores	SWD1	SWD2	SWD3	SWD4	SWD1	SWD2	SWD3	SWD4	SWD1	SWD2	SWD3	SWD4
macroeconomic variables												
GDP per head	-0.0005	-0.0009	0.0009	0.0004	-0.0005	-0.0008	0.0009	0.0004	-0.0025	-0.0039	0.0043	0.0021
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.002)
growth	-0.0040***	-0.0075***	0.0080***	0.0035***	-0.0044***	-0.0069***	0.0076***	0.0037***	-0.0055***	-0.0087***	0.0095***	0.0047***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.001)
f(inflation)	0.0074**	0.0141**	-0.0149**	-0.0066**	0.0093**	0.0147**	-0.0162**	-0.0078**	0.0033	0.0052	-0.0058	-0.0028
	(0.004)	(0.007)	(0.007)	(0.003)	(0.004)	(0.007)	(0.007)	(0.004)	(0.006)	(0.010)	(0.011)	(0.005)
UE rate	0.0062***	0.0118***	-0.0124***	-0.0055***	0.0075***	0.0120***	-0.0132***	-0.0063***				
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)				
individual characteristics												
unemployed	0.0166***	0.0291***	-0.0328***	-0.0129***	0.0509***	0.0638***	-0.0839***	-0.0308***	0.0536***	0.0660***	-0.0874***	-0.0322***
	(0.003)	(0.004)	(0.005)	(0.002)	(0.005)	(0.006)	(0.008)	(0.003)	(0.005)	(0.006)	(0.009)	(0.003)
out of LF	0.0001	0.0002	-0.0002	-0.0001	0.0013	0.0020	-0.0023	-0.0011	0.0016	0.0025	-0.0028	-0.0014
	(0.001)	(0.003)	(0.003)	(0.001)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)
married	0.0012	0.0024	-0.0025	-0.0011	-0.0106***	-0.0166***	0.0185***	0.0087***	-0.0103***	-0.0161***	0.0179***	0.0085***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)	(0.003)	(0.001)
male	-0.0049**	-0.0094**	0.0099**	0.0044**	-0.0032	-0.0050	0.0055	0.0027	-0.0031	-0.0049	0.0054	0.0026
	(0.002)	(0.004)	(0.004)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)
age	0.0007***	0.0013***	-0.0013***	-0.0006***	0.0019***	0.0030***	-0.0033***	-0.0016***	0.0019***	0.0029***	-0.0032***	-0.0016***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
age^2	-0.0000***	-0.0000***	0.0000***	0.0000***	-0.0000***	-0.0000***	0.0000***	0.0000***	-0.0000***	-0.0000***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
education												
intermediate	-0.0022	-0.0043	0.0045	0.0020	-0.0082***	-0.0132***	0.0144***	0.0071***	-0.0084***	-0.0135***	0.0146***	0.0073***
	(0.003)	(0.005)	(0.005)	(0.002)	(0.003)	(0.005)	(0.005)	(0.003)	(0.003)	(0.005)	(0.005)	(0.003)
higher	-0.0089*	-0.0175*	0.0180*	0.0084*	-0.0202***	-0.0340***	0.0353***	0.0189***	-0.0207***	-0.0348***	0.0360***	0.0195***
	(0.005)	(0.010)	(0.011)	(0.005)	(0.005)	(0.009)	(0.009)	(0.005)	(0.005)	(0.009)	(0.009)	(0.005)
still studying	-0.0092*	-0.0182*	0.0186*	0.0088*	-0.0226***	-0.0396***	0.0396***	0.0227***	-0.0232***	-0.0405***	0.0403***	0.0235***
	(0.005)	(0.010)	(0.010)	(0.005)	(0.006)	(0.010)	(0.010)	(0.006)	(0.006)	(0.010)	(0.009)	(0.006)
life satisfaction												
... satisfied												
not at all ...	0.2929***	0.1268***	-0.3480***	-0.0716***								
	(0.017)	(0.010)	(0.014)	(0.005)								
not very ...	0.0976***	0.1231***	-0.1698***	-0.0508***								
	(0.007)	(0.007)	(0.012)	(0.003)								
very ...	-0.0439***	-0.0920***	0.0875***	0.0485***								
	(0.003)	(0.007)	(0.006)	(0.005)								
survey FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	602545	602545	602545	602545	660546	660546	660546	660546	664511	664511	664511	664511
Pseudo R^2		0.0789				0.0482				0.0456		

* p<0.10, ** p<0.05, *** p<0.01

Table reports marginal effects for scores.

The function f(inflation) is linear in inflation$_{it}$ for values of inflation rates below or equal to one and logarithmic for inflation rates greater than one as proposed by Khan & Ssnhadji (2001). See table A.1 for further details.

Sample covers period 1973-2010 excluding 1974, 1975, 1996, 2008 as SWD is not available in these years. All 16 Countries are included, but the periods covered for each country vary depending on the time of their accession to the European Union. See tables A.2 and A.3.

All estimations include dummies for survey years and nations.

(2) is estimated on reduced sample where life satisfaction is available. (3) uses an enlarged sample where observations from waves without life satisfaction are included.

Table B.5: Sample restrictions: (1) 1973-2006, (2) 1973-2008

dependent: SWD	(1)	(2)
macroeconomic variables		
GDP per head	0.0029	0.0023
	(0.003)	(0.003)
growth	0.0089**	0.0091**
	(0.004)	(0.004)
f(inflation)	-0.0322*	-0.0313*
	(0.017)	(0.017)
UE rate	-0.0167***	-0.0169***
	(0.002)	(0.002)
ind. controls	yes	yes
survey FE	yes	yes
nation FE	yes	yes
N	561582	576656
R^2	0.1438	0.01442

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.

Table B.6: Impact of macroeconomic variables on average SWD scores (country panel)

dependent: SWD	(1)	(2)	(3)	(4)
GDP per head	0.0060**	0.0042*	0.0043*	0.0021
	(0.002)	(0.002)	(0.003)	(0.002)
growth		0.0214***	0.0215***	0.0136***
		(0.005)	(0.005)	(0.004)
f(inflation)			-0.0001	-0.0076***
			(0.003)	(0.003)
UE rate				-0.0331***
				(0.003)
survey FE	yes	yes	yes	yes
country FE	yes	yes	yes	yes
N	483	483	482	476
R^2	0.7596	0.7716	0.7716	0.8220

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is the average of the SWD scores in a given country.

Table B.7: Results including time trends

dependent: SWD	(1)	(2)	(3)	(4)
macroeconomic variables				
GDP per head	0.0010	-0.0053	0.0010	0.0011
	(0.003)	(0.008)	(0.003)	(0.002)
growth	0.0105***	0.0108***	0.0105***	0.0063***
	(0.003)	(0.002)	(0.003)	(0.002)
f(inflation)	-0.0188	-0.0232*	-0.0188	-0.0173
	(0.012)	(0.011)	(0.012)	(0.010)
UE rate	-0.0172***	-0.0155***	-0.0172***	-0.0145***
	(0.003)	(0.002)	(0.003)	(0.003)
time - time trend - survey year FE				
time			0.0030	
			(0.002)	
country specific time trend	no	yes	no	no
ind. controls	yes	yes	yes	yes
survey FE	yes	yes	yes	yes
nation FE	yes	yes	yes	yes
N	602545	602545	602545	602545
R^2	0.1433	0.1486	0.1433	0.1397

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table A.4, column (4).

Table B.8: Influence of institutional quality: Polity IV index and Freedomhouse data

dependent: SWD	(1)	(2)	(3)	(2)	(4)	(5)	(6)
gdphead	0.0010	0.0001	0.0006	0.0023	0.0023	0.0022	0.0023
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
growth	0.0105***	0.0121***	0.0109***	0.0091**	0.0091**	0.0092**	0.0091**
	(0.003)	(0.002)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
loginf	-0.0188	-0.0156	-0.0182	-0.0313*	-0.0313*	-0.0321*	-0.0313*
	(0.012)	(0.012)	(0.012)	(0.017)	(0.017)	(0.018)	(0.017)
uerate	-0.0172***	-0.0164***	-0.0164***	-0.0169***	-0.0169***	-0.0167***	-0.0169***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
institutional quality							
polity4			-0.0284				
			(0.035)				
freedomstatus					0.0000		
					(0.000)		
polrights						0.0245	
						(0.058)	
civillib							-0.0021
							(0.016)
ind. controls	yes	yes	yes	yes	yes	yes	
survey FE	yes	yes	yes	yes	yes	yes	
nation FE	yes	yes	yes	yes	yes	yes	
N	602545	546751	602545	576656	576656	576656	576656
R^2	0.1433	0.1433	0.1435	0.1443	0.1443	0.1443	0.1443

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table A.4, column (4). (2) is estimated on the reduced sample for which the polity IV index is equal to its highest value 10. (3) is estimated on the subsample where the freedomhouse data is available, i.e. years 2009 and 2010 are dropped. (4), (5), and (6) control for the indicators 'freedom status' (1=free, .5=partly free, 0=not free), 'political rights', and 'civil liberties' respectively. 'Political rights' and 'civil liberties' are measured on a one-to-seven scale, with one representing the highest degree of Freedom and seven the lowest.

Table B.9: Impact of policy variables

dependent: SWD	(1)	(2)	(3)	(4)	(5)	(6)	(7)
macroeconomic variables							
GDP per head	0.0010	-0.0013	-0.0038	-0.0013	-0.0002	0.0045	0.0038
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.009)	(0.009)
growth	0.0105***	0.0070*	0.0079***	0.0070**	0.0068*	0.0062	0.0054
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
f(inflation)	-0.0188	-0.0460***	-0.0468***	-0.0462***	-0.0456***	-0.0508**	-0.0536**
	(0.012)	(0.015)	(0.015)	(0.015)	(0.015)	(0.020)	(0.019)
UE rate	-0.0172***	-0.0184***	-0.0159***	-0.0186***	-0.0189***	-0.0184***	-0.0162***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)
policy variables							
debt			-0.0007				
			(0.001)				
deficit				-0.0008			
				(0.003)			
elderly					0.0060		
					(0.012)		
sstran							-0.0043
							(0.003)
ind. controls	yes	yes	yes	yes	yes	yes	yes
survey FE	yes	yes	yes	yes	yes	yes	yes
nation FE	yes	yes	yes	yes	yes	yes	yes
N	602545	522403	522403	522403	522403	395936	395936
R^2	0.1433	0.1496	0.1498	0.1497	0.1497	0.1553	0.1554

* p<0.10, ** p<0.05, *** p<0.01
Dependent variable is a dummy.
Standard errors are corrected for clustering at nation level.
(1) is the reference estimation from table A.4, column (4). (2) is estimated on reduced sample where debt, deficit, and elderly is available. (6) is estimated on reduced sample where debt, deficit, elderly, and sstran is available. The variables debt, deficit and elderly are available until 2008, sstran only until 2000.

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