When Bad News is Good:
Political Knowledge in Times of Crisis

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Abstract

A strong argument can be made for the prime importance of political information in the context of an economic recession. It is in times of crisis that citizens have high stakes in politics and ought to become motivated to acquire political information. However, we also know that economic adversity puts a strain on people’s resources to participate in politics and, by extension, to acquire political information. In this paper we weigh in on these conflicting arguments by examining the processes through which individuals relate to the economy. While the personal experience of economic hardship negatively affects the availability of resources to acquire information, a deteriorating macroeconomic situation can motivate people to tune into politics, evaluate political alternatives and find solutions to ongoing problems. Using panel data from Spain and cross-sectional time-series data, we show that the two processes unravel parallel to each other. We also show that this is not a matter of objective resources only, but that emotions (particularly anger) have a negative effect on knowledge.

Keywords
political knowledge, perceptions of the economy, economic crisis
Few would dispute the need for an informed citizenry in a representative democracy. Study after study demonstrates that representative democracy functions better when the masses are well informed. Knowledge of public affairs boosts political participation and tolerance of minorities and contributes to a stronger mass-elite linkage, with positive consequences for political representation and accountability (Andersen et al., 2005; Bartle, 2003; Delli Carpini and Keeter, 1996; Gomez and Wilson, 2001; Goren, 1997; Grönlund 2003; Hobolt, 2004; Jacoby, 2006; Lau and Redlawsk, 2001; Lupia, 1994; Luskin, 2003; Popkin and Dimock 1999; Sniderman et al., 1990; Sturgis and Tilley, 2004; but cf. Zaller, 2004). The relevance of political knowledge is ever more important in the context the ongoing global economic recession. After all, it is in times of crisis that citizens ought to monitor public affairs most closely. This paper examines just how knowledgeable citizens are of politics in times of economic upheaval.

The extant literature offers contradictory hunches of how the economy may affect citizens’ information seeking. Some have argued that socioeconomic resources are crucial for political participation (Norris 2002; Dalton et al. 2010). Economic duress, as brought on by macroeconomic crises, ought to stymie the acquisition of new information. However, others have argued that ongoing economic crises prompt citizens to pay closer attention to politicians’ decisions and to keep abreast of the economic and political situation (Martin 2008; Shen 2009). According to this view, worsening economic conditions ought to boost political knowledge. We weigh in on this debate by considering the process through which citizens acquire economic information. We argue that the impact of the economy on political knowledge is conditional on whether citizens experience economic adversity directly or whether they become informed of worsening macroeconomic conditions by the media. The experience of economic hardship puts a strain on citizens’ resources to seek political information. However, receiving information from the media about worsening economic conditions in the country motivates people to tune into politics, evaluate political alternatives and find solutions to ongoing problems. We test these arguments with panel data from Spain and cross-sectional time-series data. With both approaches, we make use of variation in economic performance that resulted from the recent global economic recession.

The results offer initial support for our preliminary expectations. Citizens are indeed less likely to be well informed when they experience economic hardship (such as being unemployed, having a low income, experiencing worsening working conditions and paying higher prices). In some cases, however, the effect is modest and does not reach statistical significance at conventional levels. We also find some evidence of a process unravelling simultaneously to the experience of personal economic hardship: citizens are more politically knowledgeable when macroeconomic conditions worsen. In particular, the shrinking of the economy and the rise in national unemployment both boost the acquisition of political information. As the extant literature finds that citizens learn about macroeconomic conditions through the media rather than through personal experience (e.g., Ansolabehere, Meredith and Snowberg 2008), our findings lead us to believe that the media plays an important role in signalling the deterioration of economic performance and in stimulating citizens to acquire political knowledge in order to change the status quo.

We believe that our initial findings constitute good news for the functioning of representative democracy. Namely, our study helps qualify the extant literature which has thus far painted a bleak picture of citizens’ motivation to stay politically informed (e.g., Bennett 1989; Howe 2006). That citizens are not always well informed is not necessarily bad news for
representative democracy. Higher levels of political awareness in times of economic crises – that is, when the stakes are highest – may make up for otherwise low levels of political knowledge.

The paper is structured as follows. First we briefly review extant theories linking economic conditions to political participation. We highlight their relevance for the literature on political knowledge, which has largely neglected the economic context. We then develop some preliminary expectations of how economic conditions affect political knowledge. In the following sections we test these preliminary expectations with cross-national data and panel data from Spain. We conclude by discussing the implications of our empirical findings.

**Economic adversity: Political mobilization or withdrawal?**

Previous work on the relationship between economic adversity and political engagement can be aligned along two theoretical strands: political mobilization and political withdrawal. These frameworks produce contradictory expectations and, in doing so, highlight the complex relationship between economics and politics. While the former framework stresses the importance of grievances for mobilizing citizens to participate, the latter puts an emphasis on the availability of resources to engage in political activity. Here we briefly summarize the relevant findings in this field and relate them to the acquisition of political information.

Approaches that emphasize grievances hold that economic hardship (particularly when measured at the contextual level) can mobilize citizens to participate. This tradition goes back to Gurr’s (1970) analysis of rebellion and relative deprivation. More recently Pontichelli & Voth (2011) find that budget cuts and recession were significantly and positively correlated with social unrest in Europe between 1919 and 2008. In their analysis of the United States, Burden & Wichowsky (2012) show that unemployment can actually stimulate people to vote. Lim & Sander (2013) show that high state-level unemployment increases political participation (particularly among the employed). This positive relationship at the aggregate level offsets the negative relation at the individual level (unemployed people are less likely to participate). In the same line, Gomes & Hansford (2010), also in the context of the US, show that while income at the individual level has the expected negative effect, reductions in median income actually bring more citizens to the polls. In the Eastern European context, Bahry & Lipsmeyer (2001) and Pacek et al. (2009) also show that economic adversity can produce public mobilization.

However, many other works have failed to find support for these mobilizing effects of economic hardship (Kinder & Kiewiet 1979, Schlozman & Verba 1979, Rudig & Kariotis 2013). In fact, some have uncovered precisely the opposite relationship between economic resources and political engagement. Almost all analyses of participation stress the importance of resources and predict that economic adversity reduces participation through a combination of diminishing resources, increasing alienation and raising the costs of coping with economic adversity (see Brady, Verba and Schlozman 1995, Dalton 2010). This withdrawal effect has been found to exist for electoral turnout (Brody and Sniderman 1977, Radcliff 1992, Tillman 2008), as well as for other forms of political participation (Muñoz 2013) and civic engagement (Putnam 2000).

In both lines of research, scholars have focused on the behavioural components of political involvement (mainly turnout, protest and civic engagement) while the analysis of the cognitive elements of participation (e.g., knowledge) has been largely neglected. It is also striking that the economic contest is almost absent from the large number of works dealing with different
explanatory factors of political knowledge. Beyond cognitive capacities and motivation, some previous research has considered how the political context conditions citizens’ opportunities to become informed. Namely, different contexts provide varying opportunities to acquire information. These contexts can be close to the individual, mass media, socioeconomic inequality, political institutions, and election campaigns. But still, Delli Carpini & Keeter argue (1989:115) that public opinion data lead to no clear conclusion about the consequences of political events and socioeconomic trends on knowledge. Prior (2002) shows that a dramatic event such as the 9/11 attacks can have significant consequences on levels of news interest and political knowledge beyond the issue of terrorism. After 9/11, citizens had the urge to know what had happened and whether it could happen again. Similar questions can be asked of the many citizens who suffered from the Great Recession in recent years. We know surprisingly little about how the economic situation affects people’s propensity to become informed about politics.

The two strands of literature, the mobilization and withdrawal frameworks, can be mapped directly onto the study of political knowledge. Consider the withdrawal framework first. Since socioeconomic resources are crucial for political participation (Norris 2002; Dalton et al. 2010), unemployment, poverty or a decline in economic well-being are likely to increase the opportunity costs of acquiring political information. As Steven Rosenstone forcefully argues, “When a person suffers economic adversity his scarce resources are spent holding body and soul together, not on remote concerns like politics” (1982, p. 25). Thus in times of economic crisis, citizens’ levels of political knowledge may reach an all-time low.

However, the logic of political mobilization leads to the opposite set of expectations. In times of political or economic crisis voters have much stronger incentives to pay close attention to politicians’ decisions and to keep abreast of the economic and political situation. As Shen (2009: 382) explains, “if the electorate perceives the incumbent can no longer fulfill a desirable role, comparing and contrasting alternative presidential candidates by paying attention to the news media could bring the chance of change”. We can thus expect a mobilization effect in the sense of economic hardship producing incentives for people to pay closer attention to their political and economic context and to the potential alternatives at hand (both in terms of policies and in terms of parties or candidates) to alter the status quo.

These schools of thought, as applied to the understanding of political knowledge, have important implications for voter rationality and for the workings of representative democracy. The extant literature paints a bleak picture of citizens’ levels of political awareness, stressing further that the already scant levels of knowledge are experiencing a decline over time (e.g.

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1 Much of the empirical variation in the propensity to know about politics is explained in the literature by individual differences in motivation and ability (e.g., Luskin, 1990; Bennett, 1995; Delli Carpini and Keeter, 1996, Althaus, 2003, Fraile 2014).
2 For instance, group membership increases knowledge for women (Dow 2009). Some aspects of political discussion and network size and heterogeneity influence structural knowledge (Eveland & Hively 2009).
3 The media context is a crucial element, although evidence regarding the effects of media exposure on knowledge is more mixed (See Atkin et al 1976, McLeod & McDonald 1985, de Vreese & Boomgaarden 2006).
4 Redistributive policies make citizens more likely to use social services, be aware of their rights, see the role of politics and the state in their daily lives and hence become informed (Fraile 2013:123, Grönlund & Milner 2006).
5 Gordon & Segura (1997) argue that the complexity of institutional contexts set the incentives for people to learn more or less about politics (See also Jackman 1987, Fraile 2013, Gröndlund & Milner 2006, and Berggren 2001).
6 Campaign exposure (paid ads or news coverage) increases information (Ansolabehere & Iyengar 1996 Brians & Wattenberg 1996, Chaffee et al 1994, see Iyengar & Simon 2000 for a summary), with some debate about whether people learn more from news coverage than from ads (Iyengar & Simon 2000:155).
Bennett 1989; Howe 2006; Delli Carpini & Keeter 1996). But perhaps it is premature to set off the alarm bells just yet. Low levels of political knowledge may in fact be a sign of voter rationality. As Shen (2009, p. 389) argues, “A rational public in a representative democracy does not need to possess high levels of political knowledge all the time” (cf. Martin 2008). During times of relative economic well-being and political stability, it is arguably rational that voters not monitor politicians closely or keep informed of public affairs. As long as policy and economic outputs are satisfactory, voters can comfortably delegate public policy to policy-makers, sparing the time and effort necessary to acquire political information. In short, low levels of political knowledge are not necessarily bad news for democracy. Heightened political awareness in times of crises – that is, when it really matters – make up for otherwise low levels of political knowledge.

In the following section we distil these conflicting arguments further by taking a closer look at how citizens relate to their economic realities, and we lay out a set of empirical expectations.

**Economic conditions and political knowledge: Preliminary expectations**

Although the consequences of economic upheaval for levels of political knowledge have thus far not been explored, we have good reasons to believe that economic ups and downs may be an important factor for the acquisition of political information. Shen (2009) makes three arguments for the economy’s primacy in understanding citizens’ political information seeking. For one, the economy is essentially a valence issue; everyone supports economic prosperity. Further, poor performance of the economy is nearly always an important political issue because it affects the lives of large segments of society. Finally, poor economic performance usually receives plenty of press, thus making it also a salient issue (see also Soroka 2006). Here we examine the pathways through which economic adversity affects citizens’ motivation and resources to seek political information. We begin by outlining how citizens relate to economic realities. We then chart preliminary expectations about how the experience of economic performance affects citizens’ ability and motivation to seek information.

The first essential piece of the puzzle is where voters get information about the current state of the economy. This question has received relatively little attention in the field, but the evidence suggests that people learn about economic conditions through two distinct processes (Ansolabehere, Meredith and Snowberg 2008). In the first scenario, citizens learn about the economy through personal experience. For example, citizens’ knowledge of changes in the price of goods comes from direct contact with the market (ibid). In the second scenario, the public learns about economic ups and downs through the media. Knowledge of macroeconomic trends, such as the rate of unemployment, comes from the media rather than personal experience (ibid). Unlike inflation, unemployment rates or the rate of GDP growth are abstract and not directly observed; as a result, the public depends on the media for such information. A number of studies corroborate this result by demonstrating that the media strongly influence the public’s understanding of macroeconomic conditions (Hetherington 1996; Jacoby 2000; Kayser and Peress 2012; Nadeau, Niemi, Fan, and Amato 1999; Sanders and Gavin 2004). We argue that the process through which citizens acquire economic information is critical to the relationship between economic conditions and political knowledge. Namely, the relationship is conditional on whether citizens experience economic adversity directly or whether they become informed of macroeconomic conditions by the media.
First, we argue that personal experience of economic adversity affects the availability of resources to acquire information. The logic is straightforward and follows directly from extant literature on political participation (e.g., Rosenstone 1982; Tillman 2008). When citizens experience duress directly (e.g., in facing higher prices at the grocery store or becoming unemployed), they have fewer resources to collect political information and participate in politics. As others have noted, those facing unemployment, for example, have more pressing concerns, including applying for social welfare, borrowing money or moving into cheaper housing (Maurer 1980). Under personal economic strain, politics becomes a “remote concern” and yields to more immediate, material needs (Rosenstone 1982). Following this logic, we also expect that citizens whose income declines will generally be harder pressed to become politically informed. Given Ansolabehere et al.’s (2008) finding that citizens learn about changes in the price of goods by experiencing them directly rather than through the media, we also expect that higher inflation will depress political information seeking.

Second, we argue that when citizens learn about worsening economic conditions through the media – rather than by personally experiencing economic adversity – they become increasingly motivated to acquire political information (cf. Martin 2008; Shen 2009). Our reasoning here is informed by extant theory on the role of emotion in decision-making (Marcus, Neuman & MacKuen 2000). Namely, news of economic adversity signals threat and uncertainty, which produce anxiety in citizens (Hirsh, Mar & Peterson 2012). Anxious people rely less on their habits and are more motivated to learn and pay attention to current events. Anxiety increases citizens’ attention to politics and their motivation to learn (Marcus & McKuen 1993; Marcus et al. 2000). Marcus et al. (2000) find positive effects of anxiousness on campaign attentiveness, newspaper and magazine attention. Valentino et al. (2009) find that both anger and anxiousness have positive effects on participation, and these effects are largely of equal size. These emotional reactions then become tools for information processing.

The flip side of our argument is that citizens have few incentives to acquire political information during times of economic well-being. For one, satisfaction with the status quo encourages people to rely on decision-making shortcuts rather than invest time and resources in becoming fully informed (Shen 2009). Furthermore, the economy is not a salient issue in high times. Good economic conditions are less often covered by the media as attention is disproportionately directed toward negative performance (e.g., Soroka 2006; Harrington 1989; Goidel & Langley 1995). Given scant media attention to the economy, citizens are more likely to go on with their daily lives than to pay attention to economics or politics.

In line with our argument, a number of studies have shown that political knowledge increases with intense political events. Page & Shapiro (1992) find that political knowledge was higher at the time of the 1960s social movements. Americans’ knowledge of politics also peaked during the Persian Gulf War of 1990 (Bennett 1994). Similarly after September 11, 2001, political knowledge increased to uncommonly high levels, spilling into knowledge of political

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7 Previous research has explored emotional reactions to economic conditions and how these reactions affect political attitudes (see Conover & Feldman 1986).
8 Note that threat in this sense does not need to present immediate danger (Martin 2008) but can also refer to candidates who generate anxiety among voters in the context of a political campaign (Marcus & MacKuen 1993; Marcus et al. 2000; Pantoja and Segura 2003).
9 The logic of our argument is consistent with the rational choice framework. According to Downs (1957) citizens evaluate the costs against the expected returns of acquiring new information. In a context of economic hardship, the expected returns of making the correct decision are higher as decisions become critical to solving economic hardship. The presence of economic threat thus raises the returns of political information.
issues unrelated to 9/11 (Prior 2002). Delli Carpini & Keeter (1996:130) found in their seminal work that unusual levels of aggregate knowledge gains involve socioeconomic issues such as the funding for the Medicare program (started in 1962) and the twin deficits (the federal budget and the balance of trade) in the late 1980s. Although these findings are certainly suggestive of an association between intense political events and knowledge, a systematic analysis of how different economic scenarios affect political knowledge is yet to be performed. Our preliminary expectations are probabilistic and can be summarized as follows:

**Expectation 1**: Citizens who experience economic hardships (e.g., are unemployed, have lower income, pay higher prices or experience worse working conditions) are less politically knowledgeable than citizens who do not experience such hardships.

**Expectation 2**: Citizens who experience worsening macroeconomic conditions (e.g., higher rate of unemployment, lower rate of economic growth) are more politically knowledgeable than citizens who experience stable or improving macroeconomic conditions.

**Expectation 3**: Citizens who experience anxiety and anger related to the economic crisis are more politically knowledgeable than citizens who do not experience such emotions.

Our hypotheses have wide-ranging implications. If indeed the experience of economic hardship and the acquisition of political knowledge are linked as postulated in hypothesis 1, universal suffrage would not be sufficient for political participation in its full sense. Economics and politics are intricately linked, with those in an unprivileged economic situation being also politically disadvantaged, and with economic adversity reinforcing preexisting political inequality. The implications of our second hypothesis are more optimistic, however. If citizens pay attention to politics when it is critical, the overall low political knowledge of mass publics, as described elsewhere, need not be cause for alarm. The media play an important role in the regulatory process between masses and elites by alerting the public of the economic threats that require their attention (see Schudson 1998).

**Empirical Analyses**
To test the hypotheses outlined above, we employ two strategies. First, we use cross-national survey data to investigate the extent to which citizens became informed of political issues during economic downturns and, in particular, in those countries hardest hit by the economic recession. Second, we use of a five-wave panel survey of Spanish citizens carried out between 2010 and 2013. This empirical strategy allows us to assess the consequences of cross-national differences in economic hardship as well as longitudinal changes in a country hit particularly hard by the recent economic recession.

In both analyses, we operationalize political knowledge as knowledge of parties' ideological leanings. We choose this operationalization for several reasons. First and most importantly, our theoretical argument is based on the idea that citizens, in acquiring political information in times of crisis, are driven by a desire to improve the status quo. The kind of information that would allow citizens to do this is knowledge of party positions, including the positions of challengers. By comparing the positions of incumbents to those of challengers, citizens may be able to bring about desired change. Second, we are interested in a type of political knowledge that needs updated over time. Knowledge of party positions is one such type
of political knowledge because parties shift positions on existing policy issues and take stands on new issues, and new parties appear with their own set of ideological leanings. Compare this to knowledge of political facts (e.g., the number of legislative chambers). Such knowledge is normally acquired in the early years rather than updated regularly; as such it would not allow us to test the hypotheses of this study. Furthermore, alternative indicators of political knowledge are replete with problems related to varying question difficulty across elections and cross-national comparability (see Elff 2009). Given our comparative research design, these items are not suited for testing the hypotheses of our study. Finally, from a normative point of view, we believe that knowledge of party positions is important for how well electoral democracy works.

Analysis of cross-sectional data
As our hypotheses have empirical implications for cross-sectional time-series tests, we use survey data from seventy-six elections of forty-three European countries, 1996-2011, by appending the three modules of the Comparative Study of Electoral Systems (CSES).

Dependent variable. To estimate knowledge of parties' ideological leanings, we use survey questions available in the CSES. We calculate how much each respondent's placement of each party on a 0 to 10 left-right ideological scale deviates from political experts' placement of the corresponding party on the same scale. Larger values indicate higher inaccuracy in respondents' political knowledge; for ease of interpretation, we reverse the scale.

Independent variables. We use several variables to operationalize economic conditions. At the individual level, we include household income quintile, and unemployment status (as a binary variable). At the macro level, we test the effects of unemployment, GDP growth and inflation rate. As previous research shows that citizens take into account macroeconomic conditions roughly a year prior to the election (for a recent review, see Lewis-Beck and Stegmeier 2013), we estimate the percent change in unemployment in the past year, the rate of GDP growth in the past year and the rate of inflation in the past year. These variables are available in the CSES, and missing years were complemented with macroeconomic data from the World Bank.

Control Variables. Citizen knowledge about politics is a function of their capabilities and motivation, on one hand, and of their opportunities to become informed, on the other hand (Althaus 2003; Berggren 2001; Delli Carpini and Keeter 1996; Fraile 2013; Gordon and Segura 1997; Grönlund and Milner 2006). Some individual characteristics lower the costs of acquiring information while certain institutional features increase the availability of information and thus lower its cost. At the individual level, we control for education, gender and age. In addition, we control for several variables at the election level. In multiparty systems the availability of information is greater due to the incentives of political elites to differentiate themselves from competitors (Berggren 2001, Gordon and Segura 1997). Hence we control for the effective number of electoral parties (ENEP, Laakso and Taagepera 1979). The competitiveness of electoral systems has been found to motivate voters to stay politically informed. Hence, we control for district magnitude and binary variables for proportional and majoritarian electoral system rules (Gordon and Segura 1997). Furthermore, bicameral legislatures increase the complexity between vote choice and electoral outcomes and may thus create a disincentive for citizens to gather information (bicameral=1). When voting is compulsory, some of the voters who otherwise would gather no political information will choose to gather some (Gordon and Segura 1997). All of the control variables come from the CSES. Finally, we include a binary
variable for the two Baltic elections (Latvia-2010 and Estonia-2011) where, despite the deep economic recession, the economy was not a politically salient issue (See Singer 2013).

Method of Analysis. We estimate a series of linear models with fixed effects for year and robust standard errors clustered around country. The general model may be expressed as

\[ K_{it} = \gamma'X_{it} + \epsilon_{it}, \]

where \( i \) is the cross-sectional dimension and \( t \) is the time-series dimension, \( K_{it} \) is knowledge of party positions, \( X_{it} \) is a vector of covariates, and \( \gamma' \) is a vector of coefficient estimates. The analyses were performed in Stata 13.

Empirical Findings. Our results offer some support for the expectations outlined above. At the micro level, the experience of economic hardship, as expressed by lower household income and being unemployed, has a negative impact on political knowledge. The latter covariate is statistically significant at \( p<0.1 \) only when controlling for the rate of inflation (Model 3), and its negative effect on knowledge is negligible (0.05 on a ten-point scale). Income has a stronger yet modest effect; going from the highest to the lowest quintile is associated with misplacing each party by 0.4 points on the ten-point scale.\(^\text{10}\) This effect is comparable to the effect of education on political knowledge (e.g., 0.34).\(^\text{11}\)

At the macro level of analysis, higher inflation rate has an impact on political knowledge that is similar to income and to being unemployed. Higher prices tend to decrease political knowledge; a one-percent increase in inflation is associated with a decrease in knowledge of each party’s position by 0.04 points on average. The opposite is true for unemployment and GDP growth, however. Worsening unemployment (e.g., an increase in the percent unemployed) is associated with higher political knowledge; however, the coefficient estimate is not statistically significant at \( p<0.1 \). Worsening growth is also associated with higher political knowledge; a 5% decrease in GDP output boosts citizens’ knowledge of each party by 0.25 points. In short, bad news on unemployment and growth tends to boost political knowledge while bad news on inflation depresses it. We argue that this difference makes sense and is due to the way in which citizens experience these macroeconomic indicators; while change in the price of goods are experienced directly by consumers, knowledge of the rate of GDP growth and the rate of unemployment is acquired through the media (Ansolabehere, Meredith and Snowberg 2008).

Analysis of Spanish panel data
The second part of our analysis involves individual-level longitudinal data. We use a five-wave online panel survey of Spanish citizens, with waves in November 2010, May 2011, November 2011, May 2012 and May 2013. Respondents were selected from an online survey pool set up through active recruitment of potential subjects in the main commercial online services and websites in Spain.\(^\text{12}\) Since Internet use decreases with age, the survey was directed only to respondents between 16 and 45 years of age.\(^\text{13}\)

\(^\text{10}\) Multiplying the coefficient estimate on income (0.81 to 0.84) by five (due to five categories of income) yields an average difference of 0.41 to 0.42.

\(^\text{11}\) We also tested for an interaction effect between macroeconomic conditions and personal economic situation, but we did not find evidence for an interaction.


\(^\text{13}\) In 2010, when the panel started, 70 per cent of the under-45 age group had Internet access in their households, and 86 per cent reported having used the Internet in the previous three months. However, this figure is increasing with education, and ranges between 78 per cent for those with only primary education to over 90 per cent for those with a university degree (see Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares (TIC-H) 2010, INE at [www.ine.es](http://www.ine.es)). Quotas were applied to the sampling process in order to reduce biases related to the non-probability nature of our sample. The first wave of the panel obtained a response rate, among
Dependent variable. We use knowledge of the main parties’ (PP and PSOE) positions in the left-right scale. We compute the distance between the respondent’s location of each of these parties on the scale, subtract it from the mean position, reverse the scale so that higher values indicate better knowledge of the party’s position, and calculate the mean for the two parties for each respondent. The average value of this variable is 8.3 and the standard deviation is 1.1. Knowledge levels decrease slightly along waves, from 8.5 in wave 1 to 8.3 in wave 5.

Independent variables. As explanatory variables we use the following variables according to our theoretical expectations. Change in the occupational situation. This is a categorical variable that measures changes in the occupational situation of the respondent. It takes four values: kept (if respondent had a job at time t-1 and keeps it at time t), found (if respondent did not have a job at time t-1 and found one at time t), lost (if respondent had a job at time t-1 and lost it at time t), not found (if respondent did not have a job at time t-1 and did not find one at time t). Only 5% of the observations fall in the “found” category, while “lost” is a limited 6%. Most of our observations (71%) fall in the “kept” category, while 18% are in “not found”. Change in income. This is a variable coded 0 if at time t respondents fall within the same income category as in t-1, -1 if they are in a lower income category and +1 if they are in a higher income category. Contrary to what we would expect in a context of crisis, 31% of the observations show higher income levels, 49% stay in the same category, and 20% show a reduction. Income categories refer to monthly net revenues in a 10-point scale from less than 300 euros to more than 6,000. However although reductions are less frequent than increases, the former seem to be larger than the latter, as the average value for income change considering change across categories is -0.05. Reduction in expenses in the last two years. This variable is measured only in wave 5. It is an index that summarizes reductions in money allocation to leisure, food, clothing, holidays and savings. For each of these items respondents were asked if they had (1) not reduced, (2) reduced a little, (3) reduced some, (4) reduced quite a lot, (5) reduced a lot or (6) reduced completely their expenses. The score for the five items was added and recoded so that it ranks from 0 to 1. Deteriorating working conditions in the last two years. This variable is measured only in wave 5. It is an index that summarizes worsening working conditions regarding pay drop, over-qualification, unpaid extra hours, reduction in hours, need for a second job, increasing workload, deteriorating job environment, instability in job, deteriorating work schedule, firings in their firm. Respondents are asked if they have experienced (yes or no) any of these situations, the positive responses are added and the result is divided by the number of items so that the index ranks from 0 to 1. Anger. Is an index from 0 to 1 build with two items in which people were asked to what extent they felt powerlessness or wrath when thinking about the economic crisis (nothing, a little, somewhat, quite, a lot). The

those invited to participate, of 66 per cent. Men and respondents living in cities with more than 500,000 inhabitants had a slightly greater probability of responding. Some differences between our sample and simultaneous probability samples obtained for other surveys exist: in our first wave younger and university educated respondents are overrepresented, while the population with lower education is underrepresented. These deviations might run against our ability to find evidence of a relationship between experience and information about the crisis as the segments that are more present in our sample will be less deeply affected by the crisis. To partially correct for this bias, wave 2 of the panel included a refresh sample with 620 new individuals with the primary or less and secondary education. Once in the panel, attrition was relatively low and modestly related to the educational level (those with higher level had a smaller probability of leaving the panel). Contact for subsequent waves was done only for those that had responded in the previous waves. In wave 5 we re-contacted all individuals that had ever responded to any wave, which explains the lager N.
alpha coefficient for both items is 0.81. Anxiety is an index from 0 to 1 build with two items in which people were asked to what extent they felt anxiety or fear when thinking about the economic crisis (nothing, a little, somewhat, quite, a lot). The alpha coefficient for both items is 0.75.

Method of analysis. We model change after Margalit (2013) simply by using OLS estimation where the dependent variable is knowledge at time t and knowledge at time t-1 is included as control variable. We also include are age, gender and education (primary or less, secondary and higher).

Empirical findings. Table 2 reports the consequences of changes in the occupational situation, changes in income, reduction in expenditures and worsening working conditions on political knowledge. Models 1 and 2 show that objective indicators of changes in the occupational situation and income measured across waves do not have a significant effect on knowledge once controlling for knowledge in the previous wave. Models 3 and 4 repeat the same analysis but considering reductions in expenses and worsening working conditions as measured in wave 5. In this case we control for the level of knowledge as measured in wave 2, because this is the wave with the highest number of cases. The results show that both variables reduce the level of political knowledge. The effect is large and statistically significant. Model 5 includes both variables in the same model, and only a reduction in expenses keeps statistical significance. Table 3 includes anger and emotion as explanatory factors of political knowledge. Like in models 3, 4 and 5 of the previous table, we include political knowledge in wave 2 as a control variable. The results show that only anger has a significant negative effect on knowledge.

Discussion of the results
Our first set of findings offer some support to our preliminary expectations: bad news about the economic context (growth, unemployment rate) push citizens to get better information about political alternatives, as expected from Hypothesis 2. However, the personal experience of hardship (rising prices, being unemployed, having a low income), have the expected negative effect on reflecting withdrawal from politics as expected from Hypothesis 1.

Our findings the panel data are more complex. On the one hand, changes in objective conditions (having or not a job, income) measured across waves do not seem to produce changes in political knowledge. On the other hand reports of being affected by the crisis (in terms of expenses, working conditions) do reduce knowledge. This is coherent with our expectation that personally experienced hardship produces withdrawal, but only when there is some sort of consciousness of these deteriorating conditions or a sense of economic dissatisfaction and deprivation (Schlozman & Verba 1979). In addition, while anger is often referred to as the emotion that mobilizes citizens, according to our data anger reduces knowledge, while anxiety has no effect. Hence, our hypothesis 3 is not at all confirmed. Anger may be operating as a mediating factor between the experienced of economic hardship and political knowledge rather than macroeconomic conditions and knowledge.

Our findings raise a number of questions. First, is our dependent variable a good measure of knowledge? It is not clear how we should conceptualize reductions in political knowledge about parties’ position in the left-right scale within the same individual along time (e.g., in the panel data). An increase in knowledge can be interpreted as the result of learning, but how do we substantively interpret that a person’s accuracy in locating a party is smaller than it was before? We could argue that people can learn but also misperceive information from their environments as a result of a challenging personal situation. Previous research does not say much on this issue.
Wolak (2011) finds some negative changes in the analysis of knowledge across two waves of the panel, but does not explore this issue. Hooghe et al. (2011) use a research design similar to ours (measuring knowledge at time t and controlling for measurement at time t-1) and do find some negative effects of joint decision making at schools that are hard to make sense of. We need more research on how to assess political learning processes longitudinally.

Second, the analysis of within-individual change is crucial for a rigorous test of whether people are mobilized or withdraw in times of economic hardship. But the test is perhaps too hard as we are controlling for knowledge only a few months before and once the economic recession was already well established in Spain (that is, by the time of the first wave of our panel in 2010).

Notwithstanding these conceptual and methodological questions, our data provide initial evidence that economic hardship has both mobilization and withdrawal effects on political knowledge. On one hand, personally experiencing hardship reduces knowledge levels. Both the cross-sectional (inflation) and the panel data (deteriorating working and living conditions) analyses support the withdrawal hypothesis. Although resources have traditionally been the explanation for this relation, this is only part of the story. Our analysis of panel data show that in addition to the objective condition of employment and income, emotions also have a significant role to play. Contrary to our initial expectations, anger produced by the economic crisis reduces political knowledge, while anxiety has now effect.

On the other hand, there is some good news as well. Economic hardship experienced through the environment (in terms of growth or unemployment) boosts political knowledge. From an empirical point of view this provides support for the mobilization hypothesis. This goes in line with other work that relates economic conditions to political engagement and that has found evidence mobilization effects particularly when looking at the contextual level (Pontichelli & Voth 2011, Lim & Sander 2013, Gomes & Hansford 2010). The distinction between the levels of observation (individual vs. contextual) becomes crucial when assessing the relevance of mobilization versus withdrawal. From a normative perspective, this also provides some hope for the ability of citizens to better identify their interests in times where these are crucially threatened.
Bibliography


and Schuster.
### Tables and Figures

Table 1. Knowledge of party positions (CSES data): OLS models with fixed effects and robust standard errors

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Note: Coefficient estimates and standard errors are reported. All models include fixed effects for year and robust standard errors clustered around country. Seventy-six elections from forty-three countries were included in the models. A total of 87,808 respondents from seventy-six elections from forty-three countries were included in the models. ‡, p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001
Table 2. Effects of changes in occupational situation, income, life expenditures and working conditions on political knowledge

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Note: OLS estimates and standard errors reported. Models 1 and 2 include binary variables for panel wave. + p<0.01 * p<0.05, ** p<0.01, *** p<0.001
Table 3. Effects of emotions on political knowledge

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Note: OLS coefficient estimates and standard errors reported. * p<0.05, ** p<0.01, *** p<0.001