

Political Attitudes in Times of Crisis: The Role of Financial Literacy

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Abstract

We examine the role of financial literacy on individuals' political attitudes in the wake of the financial crisis in Europe. Using panel data from the Survey of Health, Ageing and Retirement in Europe, we employ a measure of political orientation capturing individual's self assessment on the left-right axis. The panel nature of the data allows for making stronger claims about causal mechanisms than previous cross-sectional studies. We find that financial literacy decreases extreme left political attitudes by about 4.5% and extreme right political attitudes by about 6%. Moreover, financially literate individuals are some 7.5-9.5% more likely to have moderate political views. Financially literate individuals are also some 30% less likely to report that they do not know their political orientation. When we allow regression slope coefficients to vary between countries, we observe that in the North, West and South of Europe, financial literacy becomes highly significant and has a big negative effect on extreme political views. However, the relationship between financial literacy and extreme political attitudes becomes insignificant in countries belonging to the Central-Eastern Europe. The results are robust, even after controlling for an important number of potential predictors of political orientation, including both economic and social variables, such as trust, religion, risk preferences and attitudes towards immigration.

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“Financial literacy deepens individuals understanding of the world economy and equip them to be engaged citizens and informed voters”.

Ben S. Bernanke, 2013

1 Introduction

In the recent years, Europe’s political landscape has undergone profound changes: New political forces have entered the parliaments while others have disappeared and populism became mainstream. Since 2002, the electoral support for extreme political parties in Europe increased by more than 20 percentage points (World Bank (2016)). The welfare effects of political polarization are well documented in the literature. Polarization has been shown to significantly affect investment rates (Azzimonti (2011)), public spending (Lindqvist and Östling (2010a)), income inequality (McCarty et al. (2006)), macroeconomic volatility (Alt and Lassen (2006); Azzimonti and Talbert (2014)), and, eventually, the development path of the economy (Frye (2002); Lo and Rogoff (2015); Mian et al. (2014); Frieden (2015); Funke et al. (2015)). Therefore, the increasing popularity of extreme parties across Europe has led to a discussion about the underlying causes of this trend and has triggered an increasing interest in better understanding how individuals shape their political attitudes.

In this study, we explore whether electorate’s ability to understand essential economic concepts may be a relevant element for shaping their left-right orientation. Political decisions nowadays are influenced more and more by voters’ economic considerations¹. However, empirical evidence shows that people systematically hold biased beliefs about economic issues which lead them to demand undesirable policies. This, in turn, also means that the aggregate political outcome gets distorted (Caplan (2007)). We argue that financial literacy may affect political orientation by enhancing individuals ability to better understand certain economic policies and their future implications.

Our aim in this paper is twofold: First, we examine the impact of financial literacy on left/right attitudinal variability in the electorate. Second, we examine to what extent this relationship may differ across different European regions, by comparing the established European democracies with the newer democracies of Central and Eastern Europe. We investigate these questions accounting for a rich set

¹According to the traditional theory of economic voting, voters form their opinion based on governments’ economic competence; governments with strong economic performance are being rewarded, while those who perform poorly in terms of economic matters are punished (V. O. Key (1966); Kramer (1971); Fiorina (1978); Lewis-Beck (1988)).

of variables, including individual socio-economic characteristics, but also, attitudes to risk, to immigration and trust to other people. We also conduct robustness checks, by controlling for omitted variable bias and the potential effect of other human capital variables, such as education, mathematical ability and verbal fluency.

Our analysis is based on individual level panel data from the 2011-2015 waves of the Survey of Health, Ageing and Retirement in Europe (SHARE), which includes questions on political orientation, alongside a set of individual characteristics and socio-economic variables, such as income, education, age, gender, marital status, risk attitudes, trust and religion. Our study expands across eighteen European countries and our survey population creates an ideal setting to examine the impact of financial literacy on political attitudes. This is for two reasons: First, in the last decades, European democracies have been facing important demographic shifts: Their populations are aging. This means that the number of older people, who are usually more likely to vote, is growing in relative and absolute terms. Therefore, older people are certainly becoming more influential, as their vote can have a fundamental impact on the electoral results (Sarfati (2007)). Second, recent evidence shows that there is a dramatic increase in political polarization amongst those 65 and older, and especially towards the right (Boxell et al. (2017)). Within this framework of demographic change, financial hardship and rising populism, it is important to examine the political attitudes of the elderly population and whether financial literacy helps them to form a reasoned opinion.

Our main findings are the following: Financial literacy decreases extreme left political positions by about 4.5% and extreme right political positions by about 6%. Moreover, financially-literate individuals are some 7.5-9.5% more likely to place themselves on the centre-right/centre-left of the political spectrum. Finally, financially-literate individuals are also some 30% less likely to report that they don't know their political orientation. To pin down differences arising from the heterogeneity between countries, we run separate models for two groups of countries, established and new democracies. We find that there is a great variation between these two European regions, with regard to the impact of financial literacy on the political orientation. In particular, in established democracies (i.e. Northern, Western and Southern Europe) the relationship between financial literacy and extreme political attitudes is highly significant and negative, while in new democracies (i.e. Central-Eastern Europe) the effect of financial literacy on political attitudes becomes much smaller in magnitude and statistically insignificant for the extreme political views. The findings are robust and highly significant even after controlling for a number of variables, including religion, risk preferences as well as attitudes towards several

public issues, such as immigration.

Our findings contribute to the growing literature of the importance of economic and financial knowledge to people’s decision making. Recent studies show that financial literacy is an essential ingredient for personal wealth accumulation and distribution (Lusardi et al. (2017)). Financial literacy is also related to better portfolio choices (Guiso and Jappelli (2009); Jappelli (2010); Giofré (2017)) and retirement planning (Rooij et al. (2012)). On the other hand, poor financial knowledge is associated with excessive debt taking and naive use of credit (Ricaldi et al. (2013)). Despite the growing literature on this field, little attention has been paid to the effect of financial literacy on politically-related decisions. This comes to our surprise, even more because of the well-established connection between political choices and economic outcomes. To our knowledge there is only one paper relevant to our work, which uses data from the British Election Study and analyzes the impact of financial literacy on political orientation and party preferences (Montagnoli et al. (2016)). The study relies on 2014 cross-sectional data coming from the UK and it establishes a link between financial literacy and moderate political attitudes.

Our work may have important implications on public policy frontiers and official organizations across Europe. The effects of financial literacy go beyond the individual and also impact society. The promotion of financial literacy and awareness through financial education programmes might encourage citizens to involve in social change, make them less prone to populist solutions and enhance participation and moderate political views.

The rest of the paper is organized as follows: Section 2 provides the literature review on the determinants of left-right orientation and describes briefly the political European framework. Section 3 develops the framework and the main hypotheses. Section 4 discusses the methodology. The data description, variable definitions and sample construction are presented in Section 5. Finally, Section 6 discusses the empirical evidence and Section 7 concludes.

2 The Left-Right Scale

For more than 200 years, the concept of the left-right divide has dominated the political sphere in Europe. Its origins can be tracked back in France Revolution, when, with the new political regime, the National Constitutive Assembly met to decide what political powers should be allowed to the king. Radical democrats, i.e. those who wanted a highly restricted veto power for the king, were seated on the left, while supporters of the aristocracy sat on the right. This accident of history, as

it is characterized by [Cochrane \(2012\)](#), signified a division of the society and charged the left and right vocabulary with a political meaning, which lasts till nowadays. However, according to [Gauchet \(1994\)](#), only after the 19th century these ideological labels started gaining recognition in France and not until the beginning of the 20th century did they start spreading in the rest of the world ([White \(2012\)](#)). In 1960, one of America's great intellectuals, Daniel Bell, published the book "*The End of Ideology: On the Exhaustion of Political Ideas in the Fifties*", arguing that political ideology has become irrelevant among people. However, about a decade later and in spite of all the theories about the end of ideology (see e.g. [Atkins and Bell \(1960\)](#)), [Inglehart and Klingemann \(1976\)](#) conducted an empirical study in nine European countries and renewed the prominence of left-right ideology. Ever since, left and right has been of fundamental importance in politics, and especially in Continental Europe ([Laponce \(1981\)](#)).

The importance of left-right orientation is well documented in the literature: It serves as an instrument for the categorization of ideologies and the classification of the political positions of the different parties; it is also considered to facilitate communication and orientation in the political world; at the individual level, the division between left and right functions as an instrument which support voters in the interpretation of political phenomena when making decisions ([Fuchs and Klingemann \(1990\)](#)). More importantly, various studies have documented the growing importance of individuals left-right positions as a powerful predictor of their voting choices. In general, evidence shows that left-right self-placement is the most important or one of the most important predictors of partisan choice ([Franklin et al. \(1992\)](#); [Gunther and Montero \(2001\)](#); [Freire \(2004\)](#)).

2.1 The Determinants of Left-Right Orientation

Like every human behavior, political behavior is influenced by a complex array of factors, some of which are external to the individual and some of which are more personal ([Cawvey et al. \(2017\)](#)). The most common way of explaining individual differences in left-right self-placements is the examination of socio-demographic characteristics (e.g., [Himmelweit et al. \(1981\)](#); [Freire \(2008\)](#)). Therefore, age, gender, income, education, region, marital status, religion, and risk attitudes are critical variables to examine when analyzing individuals' political attitudes. More recent studies have extend this list, by adding variables, such as the level of urbanization and material possessions (see e.g. [Glaeser and Steinberg \(2016\)](#)). Here, we summarize the main determinants of political behaviour, as they have been reported in the literature so far.

There are no existing studies that specifically examine the determinants of older people's political attitudes in a European framework. However, there are many studies which look at the impact of voters' age on their political behaviour. A person's age at different stages of the life cycle is accompanied by different economic and social experiences which influence their policy preferences and their political views. But how individuals' policy preferences are influenced by age? The most prominent hypotheses, from a life-cycle perspective, are the following:

i) *Economic Conservatism Hypothesis*. As people age they become more conservative (Crittenden (1962); Glenn (1974)). In this context, political conservatism is argued to exist in the form of economic conservatism. In other words, as people age, they accumulate more material goods that they want to preserve and therefore they adjust their beliefs accordingly (Binstock and Quadagno (2001)).

ii) *Pro State-Spending Hypothesis*. Older people prefer 'big state' policy positions that they are likely to benefit from, i.e. older people want a strong state that applies higher taxes that fund welfare programmes for them (Campbell (2003)).

iii) *Status-quo Hypothesis*. As people age, they develop a stronger preference towards parties that are large and/or regularly part of government (Barnes (1989)). As mainstream parties, either in government or the opposition, these parties leave a repeated impression on ageing voters. Consequently, smaller parties and new ideas are at a disadvantage among older individuals who had a lifetime to develop and stabilize their political attitudes.

With regard to age, despite the fact that the theories seem to be contradictive, they all have in common individuals' objective for economic and financial security and their preference towards mainstream political parties².

Research shows that there is an established gender gap in the political behaviour of men versus women: women tend to be on average more liberal³ than men (Ondercin (2013); Gillion et al. (2015a)). This gap has been attributed to several factors including, among others, differences on (a) the levels of resources, (b) the economic development and the welfare state, (c) the socialization of the traditional gender roles, (d) the political context as well as (e) the way of understanding and valuing issues (for an extensive review on this literature see Kittilson (2016)). For instance,

²Campbell and Strate (1981) looked at various definitions of conservatism and concluded that older people are indeed more conservative than younger people, but still in the mainstream of the political spectrum. More recent empirical studies provide similar evidence; For instance, studies from Britain show that older people are much more supportive of the Conservatives and younger people much more supportive of Labour or the Liberal Democrats.(Tilley (2002, 2003, 2014); Tilley and Evans (2014)).

³In modern American politics, liberals are referred to as the "Left" group and conservatives as the "Right". In addition, the Democratic Party is considered to be liberal, and the Republican Party conservative.

when women think about economy and politics they tend to think more in terms of the national economy, whereas men think in terms of their own financial situation (Welch and Hibbing (1992)). Furthermore, women are found to be more supportive towards welfare state, and social spending and less supportive towards market-based solutions than men (Jelen et al. (1994); Studlar et al. (1998); Gidengil et al. (2001); Kaufmann and Park (2017)). Recent research suggests that regional reasons may also bolster this puzzle; Abendschon and Steinmetz (2014) find that women across Western European countries have increasingly supported leftist parties, while the gender gap in post-communist countries is leaning to the right. In addition, research across Western European countries shows that women are significantly less likely to support extreme right parties than men (Givens (2004)). Even after controlling for a wide range of socio-economic and political variables, the gender gap in favour of the radical right remains. Trends in American elections reflect those found in Europe. According to a new study from the Pew Research Center, the percentage of women leaning to the left has increased by 4 percentage points since 2015, with about 56% of women in the U.S. today to identify with or lean toward the Democratic Party, compared to 44% of men (Pew Research Center (2018)).

In addition to the gender gap, the literature has identified a marriage gap. Conventional wisdom suggests that unmarried people are more likely to have liberal views compared to married individuals. Indeed, in a seminal contribution by Weisberg (1987), it is shown that married people are 13% more likely to have conservative political beliefs than unmarried people. However, it is not just the act of marrying that leads to a marriage gap in voting choices. It is the several life changes implied by marriage - such as potential changes in the socio-economic status (since many resources are now shared), interaction between the couple, and the increased likelihood of having children -, all of which can affect underlying reasons for political choices (Stoker and Jennings (1995); Sandell and Plutzer (2005)). Therefore, married couples tend to share a domestic lifestyle with more conventional characteristics than non-married people, which is probably transferred to the political realm. On the other hand, people who share non-traditional lifestyles and values - such as being single until later in life, having children out of wedlock, or having a same sex partner-, are more probable to have more liberal views (Flanigan and Zingale (2006)).

In investigating additional factors, the level of income is also found to be important determinant of the way people shape their political attitudes. A number of studies show that higher levels of income are related to more right-wing views (see e.g. Gelman (2007); Evans and Tilley (2012)). An analogous result is reported

by Karabarbounis (2011), who states that when a group of voter becomes richer, redistribution tilts closer to this group's most preferred policies. Further, Oswald and Powdthavee (2014) examine the impact of an income and wealth shock on individuals attitudes and find that a positive shock is more likely to move individuals to the right of the political spectrum. In addition, from a macro-economic perspective income inequality is the most frequently discussed factors of political polarization in the literature (see Londregan and Poole (1996); McCarty et al. (2006); Pontusson and Rueda (2008); Garand (2010)), among others.

In addition, religious attachments have been traditionally identified as one of the most crucial predictors of electoral behavior (Lazarsfeld et al. (1948); Berelson et al. (1954); Campbell et al. (1960)). Classical works suggest that among several socio-political cleavages, such as class or social status, religious divides are more important in determining electoral behaviour (Rose and Urwin (1969); van der Eijk and Franklin (1996)). Since then, many studies have confirmed the growing importance of religion as a social force (e.g. Minkenberg (2003); Norris and Inglehart (2004); Knutsen (2004); Klausen (2006)). Jou and Dalton (2017) summarize the effect of religious cleavages on a persons' position on the left-right scale as follows: Left becomes synonymous with attitudes related to limited social and political role for religious organizations, while right represents more dominant role for the religious organizations in the society. In accordance with this definition, existing research has shown that religious voters tend to favour parties of the mainstream right, irrespective of whether these parties are of the conservative or the Christian and Christian Democratic type⁴ (Girvin (2000); Norris and Inglehart (2004)). A recent study by van der Brug et al. (2009) arrives to similar results, showing that religion matters especially for political choices related to conservative parties. In addition, the authors highlight that the effect of religion has increased within all generations and its impact varies with the religious diversity in a country, in such a way that religion plays a bigger role in more fractionalised societies.

With regard to education, there is a big literature showing that electorates' awareness has a significant impact on their political decisions. From a theoretical perspective, the Rational Choice Theory (Downs (1957)) posits that voting is a rational choice based on policy positions (i.e. understanding on key issues) and therefore it requires a well-informed electorate. Individuals are assumed to be able to understand various public issues and develop informed preferences on them⁵.

⁴Christian and Christian Democratic parties differ from conservative parties regarding their origins and the ideologies they represent. In particular, the former traditionally defend Christian values and the latter have no links with organized religion.

⁵From a theoretical perspective, it is not a clear cut in the literature that knowledge about

They should also be able to make judgements about which party best represents these preferences and link them accordingly to the left-right dimension (Fuchs and Klingemann (1990)). However, recent evidence shows that voters systematically hold biased beliefs about economic issues which lead them to demand undesirable economic policies. This, in turn, also means that the aggregate outcome gets distorted (Caplan (2007)). The importance of individuals' capacity to clearly understand the different policy alternatives and make informed political decisions is summarized by Delli Carpini, M. and Keeter (1996) who state that "*democracy functions best when its citizens are politically informed*". Thus, sophisticated citizens can elect better representatives who can make better policies.

The hypothesis that higher awareness leads to more democratic politics has received a good deal of empirical support. One strand of the literature has focused on aggregate data in order to establish a relationship between education and democratic attitudes (Barro (1999); Glaeser et al. (2004); Papaioannou and Siourounis (2008); Glaeser et al. (2007)). Some other researchers have examined this relationship from a micro-economic perspective. For instance, Dassonneville et al. (2012), use panel data from Belgian late adolescents and find that education offers a better understanding of the political system, something which contributes positively to the development of democratic attitudes and behaviors. In a recent study, Marshall (2016) takes advantage of Britain's 1947 compulsory education reform and examines the relationship between education and voting behaviour. The author finds that each additional year of high school education increases the probability of voting conservative in later life by 12 percentage points. More importantly, Rockey (2010) uses data from the United Kingdom to show that education decreases extreme political attitudes, as more educated individuals are more likely to take centrist positions. In our dataset, we control for electorates' awareness, by including in our analysis the levels of education and cognitive ability⁶, i.e. measure of memory, verbal fluency and numeracy.

Apart from the socio-demographic characteristics, another source of variation in left-right positions stems from individuals' political values and positions on various

politics is a necessary ingredient for informed political behaviour. Some scholars have argued that less-informed voters can use informational shortcuts to vote as if they are informed (see, for instance, Popkin et al. (1976); Conover and Feldman (1989); Lupia (1994); McDermott (2009)); and others suggest that even if voters do make errors, this may not necessarily introduce an aggregate bias on the electorate result (Shapiro and Page (1988); Wittman (1989); Page and Shapiro (1992))

⁶Because education and cognitive ability are strongly correlated with political sophistication (e.g. Campbell et al. (1960); Converse (1964); Fiske et al. (1990); Price and Zaller (1993); Delli Carpini, M. and Keeter (1996)), they are often used as a proxy for these types of attributes in public opinion scholarship (e.g., Brady and Sniderman (1985); Carmines and Stimson (1989); Zaller (1994); Berinsky (2009); Freire and Belchior (2013); Hayes and Guardino (2013); Gillion et al. (2015b)).

issues. In his seminal work *"An Economic Theory of Democracy"*, Downs (1957) introduced the left-right axis to the economic theory, suggesting that left-right positions correspond to the amount of government intervention in the economy. After some decades, Inglehart and Klingemann (1976) generalized it and introduced the term *"ideological component"* which refers to a *"persistent and pervasive theme"* based on which people place themselves on the left or the right of the political spectrum. The recent financial crisis has moved the center of the political debate on economic and financial issues and became a pervasive theme in the political arena. At the same time, new issues have become politically more salient, such as the recent debate over immigration, as well as issues related to globalization and international terrorism. People tend to prioritize differently these issues and to identify with the most credible party proponent of issues that are salient to them (Dalton (1996); Bélanger and Meguid (2008); Winston (2017)). SHARE does not contain information on individuals' attitudes towards public issues. To control for this, we use external data from the 2014 European Social Survey (ESS) and we create an aggregate variable, capturing attitudes towards a series of public issues on a country level.

2.2 Left-Right Orientation Diversity in Europe

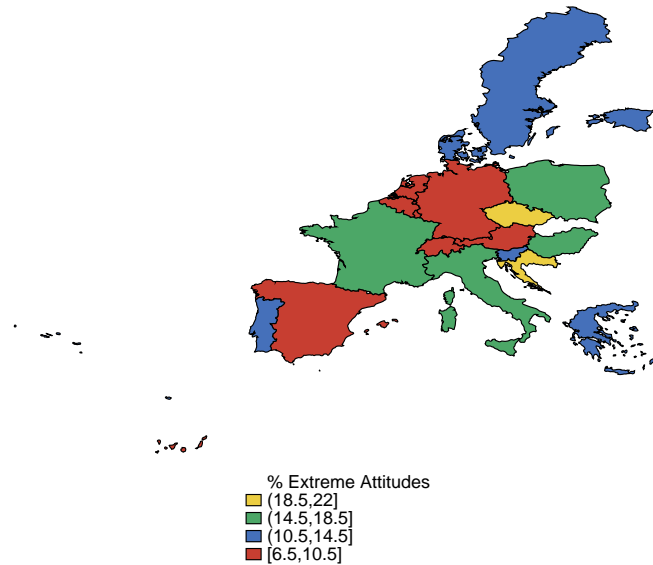
Our analysis includes countries from different geographical areas in Europe. In particular, we distinguish between:

- Established European Democracies: Austria, Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland (West Europe); Denmark and Sweden (North Europe); Greece, Italy, Portugal and Spain (South Europe).
- New Democracies in Central and Eastern Europe: Croatia, Czech Republic, Estonia, Hungary, Slovenia and Poland.

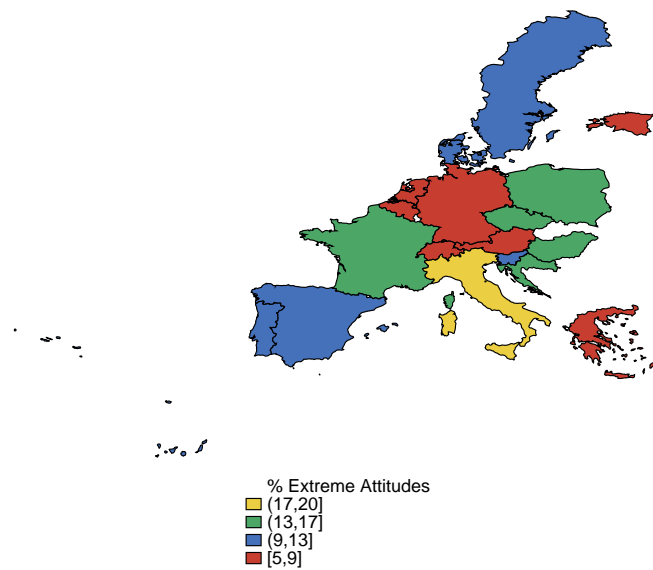
Despite some shared history, the political landscape can vary considerably across the various European countries. As it is explained by Aspelund (2013), left-right orientation might be significantly different in societies that have been historically highly diverse such as post communist countries (Central-East Europe) and established democracies. The author highlights that the different political regimes in these societies had a significant impact on people's political identity within the specific societies. Consequently, left-right orientation may have a different significance in western democracies compared to Central-Eastern European countries.

Figure 1 displays the map of Europe with regions shaded according to the average level of extreme attitudes over the period 2011-2015. For the sake of comparison, we

draw the same map twice, once using the SHARE data (Figure 1a) and once using data from the ESS (Figure 1b), for the same period of time.



(a) Polarization in Europe (SHARE)



(b) Polarization in Europe (ESS)

Figure 1: Political Polarization across Europe. The two maps show the average level of political polarization (left and/or right) across Europe over the period 2011/12, 2013 and 2015.

Focusing on Figure 1a, we see that populist radical parties have left their largest mark in Eastern Europe, with 21.90% of the population in Croatia and 20.10% of the population in Czech Republic reporting extreme political views. Analogous figures are observed in Poland and Hungary, where extreme left/right positions won a big

share of the voters' support. Between 2011 and 2015, radical political views have also gained increasing popularity in France and Italy, with 17.90% of the Italian population and 15.80% of the French population placing themselves at the far ends of the political spectrum. Relatively lower levels of polarization are observed in Scandinavian countries as well as in Greece, Portugal, Estonia and Slovenia. The lowest levels of political polarization are observed at the heart of continental Europe (i.e. Germany, Austria, the Netherlands, Luxembourg, Switzerland, Belgium and Spain) where extreme political views gain the support of about 6.50%-10.50% of the population. When comparing our data with data from the European Social Survey (ESS), which uses random sampling techniques based on full coverage of the population aged 15 or over, we observe that the figures are very similar (as shown in Figure 1b).

In this work, we are interested in the relationship between financial literacy and political attitudes in Europe. Variations in this relationship may stem from the socio-economic and cultural distance between the countries under examination. These refers to differences in socio-economic development and culture, religion and social class structure (Aspelund (2013)), but also to important variations in terms of financial literacy between different European countries (see e.g. Klapper et al. (2015)).

Figure 2 shows the percentage of high and low literate groups for each category of political attitudes across different European regions, as described above.

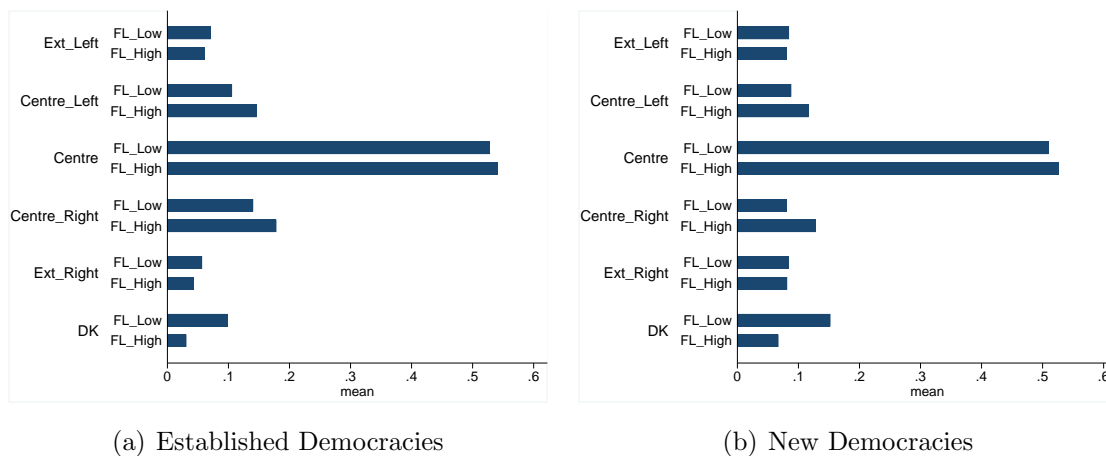


Figure 2: Political attitudes by high and low level of financial literacy across Europe.

The graph reveals considerable differences between the two regions. In the case of Northern, Western and Southern Europe (Figure 2a) the percentage of high literate individuals reporting that they belong to the extreme right of the political spectrum

is 1.40% lower compared to low literate individuals. Regarding those who report extreme left political attitudes, the gap between high and low literate remains high (1 percentage point difference). In Central-Eastern Europe (Figure 2b) the figures are much different. In particular, 8.14% of high literate individuals and 8.37% of low literate individuals place themselves on the "Right" of the political spectrum. This is a minor difference of 0.23% between the two groups. An equally small difference between the two groups (0.37%) is observed in the case of those reporting extreme left political views.

Overall, the country heterogeneity we observe in our data motivates us to run "by-country" regressions, by splitting our sample in "Established Democracies" and "New Democracies" of Central and Eastern Europe. Although we control for country fixed-effects in our baseline regression and this mitigates endogeneity bias associated to omitted variables, a pooled regression might deliver a poor fit if the data generating process is very different amongst countries. In other words, if the relationship between political attitudes and its covariates varies considerably across these two groups of countries, a regression through the mean for the pooled dataset ought to be misleading.

3 Framework and Hypotheses

This study is the first to examine the role of financial literacy on peoples' political attitudes across Europe. The recent financial crisis has moved the center of the debate on complex economic and financial issues and has increased even further the concerns about the economic competence of the parties. With the downturn of the economic cycle, many European governments were forced to implement extensive economic reforms in order to fix certain economic issues. Many of these reforms, such as reductions on the welfare provisions and the transformation of the pension system, had a special impact on older individuals' lives. Therefore, in the recent years, older people have usually been among the groups most likely to stand in the way of mainstream parties efforts for economic rehabilitation and oppose to these kind of reforms. These events come together with some new evidence showing a dramatic increase in polarization amongst those 65 and older, and especially towards the right (Boxell et al., 2017). These evidence along with the generic increase in political polarization across Europe has triggered an increasing interest in better understanding how people shape their political attitudes and whether they are able to make informed electoral choices (see e.g. Best and McDonald (2011); Ansolabehere et al. (2014); Talving (2017); Otjes and Krouwel (2018); Fornero and Lo

Prete (2018)).

Starting from these premises, we suggest financial literacy as a measure of voters' understanding on economic and financial issues, and we examine its impact on their political attitudes. Financial literacy is defined by PISA (2012) as *"knowledge and understanding of financial concepts (...) and skills, motivation and confidence to make informed decisions, which improve the financial well-being of individuals and society (...)"*. The effect of financial literacy on the macro-side of the economy is well documented in the literature. As stressed by Mishkin (2008), when households are well informed, they can also discipline policy makers, so that *"better-informed citizenry makes for better economic policy-making"*, a point also highlighted by Bernanke (2006) who argues that educating the public about the reasoning behind policy making is a way to maintain a stable financial system and build confidence in the economy. When looking at political decisions, which involve considerable level of economic evaluations, we expect that financial knowledge should be very important for individuals to make meaningful decisions. Thus, we expect that financial literacy should influence individuals' political orientation in three ways: (a) by enhancing their insight and understanding on current economic conditions, political actions and party manifestos, which in the last years have been focused on a range of issues, mostly related to the economy; (b) by leading people to prioritize the issue of the economic and financial stability on the long-term and guide them to adjust their left-right position closer to those parties that serve their economic interests and are the most competent in managing the nation's economy; and finally (c) by shaping voters with opinion and thus reducing the probability of "Don't know" responses. In the following we develop our hypotheses:

Hypothesis 1: More financially literate individuals are less likely to report "Extreme Left/Extreme Right" self-placements.

Financial literacy should keep individuals away from extreme political views for two reasons: First, radical populist parties have been connected to suboptimal economic outcomes and political deadlock. For instance, political polarization is strongly associated with smaller public spending (Lindqvist and Östling (2010b)), barriers to investment and increased levels of debt (Alesina and Tabellini (1990); Azzimonti (2011)). Empirical evidence shows that more numerate and financially literate individuals are more likely to accumulate wealth as they grow older, participate in financial markets and invest in stocks (Kimball and Shumway (2006); Christelis et al. (2010); Rooij et al. (2012); Yoong (2011); Arrondel et al. (2012)) as well as to look for lower-cost methods of borrowing (Lusardi and Scheresberg

(2013)). Based on this, we would expect that financially literate individuals would not identify with extreme right or left political parties.

Second, radical parties build their political agendas on a series of non-economic issues related mainly to nationalistic (Burgoon (2013); Halikiopoulou et al. (2012)), eurosceptic (Hooghe et al. (2002)), and populist (Rooduijn and Akkerman (2017)) views. A recent report by the European Economic Advisory Group (EEAG (2017)) highlights that populist parties usually aim to give "easy solutions" to complex economic matters and defines the populist economic agenda as "shortsighted" and unable to offer justified arguments for different economic policy options. We expect more financially literate individuals to be less likely to support radical political parties because: (a) more literate individuals should have a deeper understanding of economic issues and be better equipped to counter-argue populist rhetoric, which provides a distorted picture of the reality and (b) they should be more concerned with their financial well-being in the long term and keep away from short-term unrealistic solutions, suggested by radical parties. This hypothesis is in line with evidence coming from both the economics and politics: It is found that more knowledgeable individuals possess a more accurate view of political reality and they process information in a systematic way (see e.g. Hsu and Price (1993); Goren (1997); Tewksbury (1999)), whereas less knowledgeable individuals are more likely to report biased political judgements and decisions (Ottati and Isbell (1996); Hart et al. (2011)). Furthermore, new evidence from economics suggests that financial literacy is highly correlated with individuals' time preferences, with more literate individuals exhibiting substantially higher discount factors than their illiterate counterparts (Meier and Sprenger (2013)). Therefore, financial knowledge may also affect opinions and attitudes about political issues through systematic variation in time or risk preferences (Falk et al. (2018)).

Hypothesis 2: More financially literate individuals are more likely to report "Center/Center Left/Center Right" self-placements.

We expect that higher levels of financial literacy are linked with mainstream political attitudes. Mainstream parties organize and get most of their support from the economic dimension, while radical parties usually prioritize issues irrelevant to the economy. In particular, mainstream parties are mainly concerned about financial and economic stability of the nation on the long-run and compete on the primary issue of economics; they develop robust economic agendas with clear policy positions on key issues, such as taxation, the size of the welfare state and the need for specific socio-economic reforms. In addition, mainstream parties are responsible for

economic measures that typically require sacrifices today in expectation of benefits tomorrow, with a clear impact on individuals' life cycles. Therefore, financially literate individuals should be more likely to identify with these parties for two reasons: (a) they prioritize economic issues and (b) they promote the socio-economic well-being on the long-run. This hypothesis is linked with recent evidence showing that the electoral cost of a pension reform appears to be significantly lower in countries where the level of financial literacy among the electorate is higher (Fornero and Lo Prete (2018)). We argue that this might also be mediated by the systematic variation of time and risk preferences among high and low literate individuals (Meier and Sprenger (2013)).

Hypothesis 3: More financially literate individuals are less likely to report "Don't know" self-placements.

We expect that financially literate individuals will be better positioned to understand and evaluate the political and economic scenery and thus know their political orientation. This could be translated into greater political participation. Previous research has found that voters who fail to identify on the left-right political spectrum are typically of lower education level and have limited understanding/interest of politics (e.g., Campbell et al. (1960); Nie, N. H., Verba, S. ., and Petrocik (1976); Palfrey and Poole (1987); Krosnick (1988); Alvarez (1997); Basinger and Lavine (2005)). In the last years, economic and financial issues have moved to the forefront of the national conversations and became the most important issue determining peoples political attitudes. Within this framework of economic turmoil and multiple political agendas under consideration, basic understanding of economic issue should allow individuals to make judgments about which party best represents these preferences and link them accordingly to the left-right dimension.

4 Empirical methodology

4.1 Multinomial Probit Model (MNP)

The study examines the relationship between political polarization and financial literacy. Given the nature of our dependent variable, we use a multinomial response model in order to estimate the probability that an individuals political attitudes fall in one of the six categories recorded in our sample. We analyze an unbalanced panel dataset that contains the political attitudes of $i=1,2,\dots,N$ individuals showing up $t = 1, 2, \dots, T$ time periods. The dependent variable y_{it} has categorically distributed

data on political attitudes. We observe m different categories of political attitudes, ranging from extreme left ($m = 1$) to extreme right ($m = 5$) and Dont know ($m = 6$). The k -vector of control variables is denoted by $x_{k,it}$ and the corresponding vector of parameters to be estimated by β_m . In this framework, the political attitudes of individual i are determined by a set of explanatory variables and occur with an unobserved probability $p_{it,m}$ as follows:

$$p_{it,m} = Pr[y_{it} = m | x_{it}, \dots, x_{k,it}], \quad (1)$$

To motivate the model, we use the following latent-variable framework:

$$y_{it}^{m*} = x'_{k,it} \beta_m + u_{it,m}, \quad (2)$$

with the outcome variable y_{it}^{m*} to be selected only if $y_{it}^{m*} > \max_{j \neq m} y_{it}^{j*}$ which can be written as follows:

$$y_{it}^m = \begin{cases} 1 & \text{if } y_{it}^{1*} > y_{it}^{2*}, \dots, y_{it}^{6*} \\ 2 & \text{if } y_{it}^{2*} > y_{it}^{1*}, y_{it}^{3*}, \dots, y_{it}^{6*} \\ \dots & \\ 6 & \text{if } y_{it}^{6*} > y_{it}^{1*}, y_{it}^{2*}, \dots, y_{it}^{5*}, \end{cases} \quad (3)$$

Several studies of voter choice have compared and examined the advantages of multinomial probit (MNP) model relative to multinomial logit (MNL) model. Technically, these two models are very similar and they only differ in the distribution of the error terms. In particular, [McFadden \(1974\)](#) has shown that MNL errors are independent and identically distributed with Gumbel (type 1 extreme value) distribution (see [Greene \(2000\)](#) for a more detailed discussion of this distribution). On the other hand, MNP errors are not necessarily independent and are following a multivariate normal distribution ([Greene \(2000\)](#)). This difference between the two models may seem quite minor at a first glance, however it has two basic implications, related to the accuracy and effectiveness of the estimation.

In terms of effectiveness, MNL model has a clear advantage over MNP. In the framework of a maximum likelihood estimation, the likelihood function is calculated as the product of choice probabilities for each individual. While the maximization of the likelihood function in an MNL model is relatively quick and simple to compute even for a large number of choices, when it comes to MNP, it usually requires a lot of time to be estimated and can even fail to converge.

The second implication has to do with the accuracy of the estimations. The

independent errors of MNL forces the Independence of Irrelevant Alternatives (IIA) assumption. In practice, IIA requires that an individual's evaluation of an alternative relative to another should not change if a third (irrelevant) alternative is added or dropped out of the analysis. In our framework, we can think of the following example: If an individual is twice as likely to have right-wing attitudes rather than center political views, they should remain twice as likely to have right-wing attitudes even if the political scenery has changed. However, in practice political attitudes can change and, in this case, IIA assumption leads to unrealistic predictions.

When IIA is violated, MNL is an incorrectly specified model, and MNL coefficient estimates are biased and inconsistent. MNP does not impose the independence assumption and advances in computer technology make its estimation increasingly practical. For these reasons, in our study, we use the multinomial probit model to estimate the relationship between political orientation and financial literacy.

The model assumes that the errors follow a multivariate normal distribution and are correlated across choices:

$$u \sim MND(0, \Sigma), \quad (4)$$

The probability of individual i selecting political attitude m can then be written as:

$$p(y_{it} = mx_{k,it}) = \int_{-\infty}^{x'_{k,it}} \dots \int_{-\infty}^{x'_{k,it}} f(u^*_{itj}, \dots, u^*_{itm-1}) \partial u^*_{itj}, \dots, \partial u^*_{itm-1}, \quad (5)$$

where $f(\cdot)$ is the probability density function of the multivariate normal distribution.

The Variance-Covariance matrix Σ is chosen in such a way that the multidimensional integral is finally reduced into a one-dimension form for the estimation of the probability.

5 Data and Descriptive Statistics

5.1 Survey of Health, Ageing, and Retirement in Europe

In our study we use data from the SHARE (Survey of Health, Ageing, and Retirement in Europe) which is a panel database of a representative sample of ageing population in various regions in Europe and Israel. SHARE is designed to ensure comparability with other international ageing surveys, such as with the U.S. Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA).

By this time, SHARE has collected five panel waves⁷ (2004/05, 2006/07, 2011/12, 2013 and 2015) on current individual life circumstances and a divergent wave on life histories⁸ (2008/09, SHARELIFE). Table 1 summarizes the countries participated in the survey at each point of time.

⁷The first wave, which was conducted in 2004/05, collects and provides detailed information from 30,434 respondents in eleven European countries: Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, and Switzerland. Israel also joined the SHARE framework at the end of 2004. Three new countries, Czech Republic and Poland and Ireland, participated in the second wave of the survey, which was conducted in 2006. The number of observations in the second wave rises to 37,900. The life history data were collected in the third wave (SHARELIFE) and provided information for 29,699 respondents across thirteen countries for the period 2008-09. The participation of new countries as well as the national samples of the current European countries increased importantly in the last three regular panel waves, which were conducted in 2011/12, 2013 and 2015 respectively. Estonia, Hungary, Portugal and Slovenia joined the survey for the first time in the fourth wave (2011), in which 59,358 SHARE respondents were interviewed. In addition, Luxemburg was added in the fifth wave (2013), storing information for 68,419 respondents. Finally, the picture of the ageing process across Europe is completed with the addition of Croatia in the last wave (2015), which provides information for 71,606 respondents.

⁸By the end of 2024, four additional panel waves are being planned to take place on a biennial basis. The preparation and design of the Wave 7 questionnaire has already been completed and it will be combining both a life history interview and a regular panel interview for Waves 3 respondents.

Table 1: Countries in SHARE waves 1-6 and number of respondents by wave and country.

Country	Wave 1 (2004/05)	Wave 2 (2006/07)	Wave 3 (2008/09)	Wave 4 (2011/12)	Wave 5 (2013)	Wave 6 (2015)	# Respond.
Austria	•	•	•	•	•	•	17,275
Belgium	•	•	•	•	•	•	27,303
Croatia						•	2,494
Czech Republic		•	•	•	•	•	21,322
Denmark	•	•	•	•	•	•	17,222
Estonia				•	•	•	18,953
France	•	•	•	•	•	•	23,455
Germany	•	•	•	•	•	•	19,635
Greece	•	•	•			•	14,883
Hungary				•			3,072
Ireland		•	•				1,926
Israel	•	•			•	•	10,045
Italy	•	•	•	•	•	•	22,353
Luxemburg					•	•	3,192
Netherlands	•	•	•	•	•		15,144
Poland		•	•	•		•	8,418
Portugal				•		•	3,813
Slovenia				•	•	•	10,105
Spain	•	•	•	•	•	•	24,157
Sweden	•	•	•	•	•	•	18,948
Switzerland	•	•	•	•	•	•	13,701
# Respond.	30,434	37,900	29,699	59,358	68,419	71,606	297,416

The survey covers approximately 300,000 respondents aged 50 years and over providing information on a wide range of thematic blocks (or modules) such as demographic characteristics, education, physical and mental health, level of financial literacy and cognitive ability, economic and financial activities, general life satisfaction as well as expectations and political attitudes⁹.

The study limits its attention in Europe and thus Israel is excluded from the analysis. This leaves the research sample with twenty European countries and 10,045 less observations. In addition, we restrict our sample on the years after the financial

⁹The main module files are part of the general questionnaire and are repeated in each wave, providing information on Demographics and Networks, Children, Physical Health, Behavioral Risks, Cognitive Function, Mental Health, Health Care, Employment and Pensions, Grip Strength, Social Support, Financial Transfers, Housing, Household Income, Consumption, Assets, Activities and Expectations. SHARE also includes seven additional modules which are not part of every wave and contain information on Social Networks, Computer Use, Mini Childhood, Walking Speed, Chair Stand, Blood Sample and Peak Flow.

crisis and, thus, we use information from the waves 2011/12, 2013 and 2015 in order to examine the relationship between financial literacy and political attitudes. Therefore, the research sample is reduced further to 194,399 observations and nineteen European countries, as Ireland did not participate in the last three waves. The last criterion applied on the data is to restrict the sample for individuals between the ages of 30 and 100 years old (6472 observations are deleted). Some simple methods for filling the missing values of specific independent variables are also used. In particular, the replacing strategy is implemented only in the case of the gender variable and is based on the notion that we know the real missing value with certainty¹⁰. Finally, after excluding from the analysis all cases with missing values on at least one variable, the final sample is formed to around 33,000 observations.

As we elaborate below, the SHARE data are well suited for this study, as they provide combined information on both individuals political orientation and financial literacy through time and across several European countries. In contrast to other survey datasets on political attitudes that either are focused to one only country or lack information on financial literacy, the harmonized cross-national design of the SHARE provides rich information for both variables. Furthermore, the panel format of our dataset allows us to capture more sample variability and thus to improve the efficiency of the econometric estimates (Hsiao, 2007; Levendusky, 2009).

5.2 Variable definitions and descriptive statistics

5.2.1 Left-Right Orientation

We study the relationship between financial literacy and political attitudes across Europe. We derive the dependent variable from a standard question of classifying political positions, which is commonly used in the social sciences. The question is given as follows:

"In politics people sometimes talk of left and right. On a scale from 0 to 10, where 0 means the left and 10 means the right, where would you place yourself?"

Individuals can select any value on the scale from 0 to 10 or they can also report that they "Don't Know". In order to facilitate the analysis and make the interpretation of the results easier we follow the same methodology as in [Montagnoli et al. \(2016\)](#) and we construct an index of "Left-Right" orientation that takes the following six categories:

- [1] Extreme left, if an individual chooses 0 or 1 in the scale from 0-10.

¹⁰In order to exploit as much as of the available information for the investigation analysis and to decrease the item non-response bias, missing values of the sex variable have been fixed and replaced with previous or following non-missing values.

- [2] Centre-left, if an individual selects 2 or 3.
- [3] Centre, for any response which falls into the median values of 4, 5 and 6;
- [4] Centre-right, if an individual chooses 7 or 8.
- [5] Extreme right, if an individual selects the values 9 or 10.
- [6] Don't Know, when an individual opts out by answering "Don't know" in the question.

Figure 3 offers an insight of the distribution of individuals across the political spectrum. Only a small fraction of the individuals appears to have extreme attitudes to the left or right while the majority place themselves in the centre. In particular, some 7% of individuals place themselves on the extreme left and about 6% assess themselves to be on the extreme right. More than half of the respondents place themselves on the centre. Moreover, there are more centre-right individuals than centre-left; some 14% assess their political orientation as being on the centre-right and 12% as being on the centre-left. Finally, 8% of the respondents replied that they did not know their political orientation.

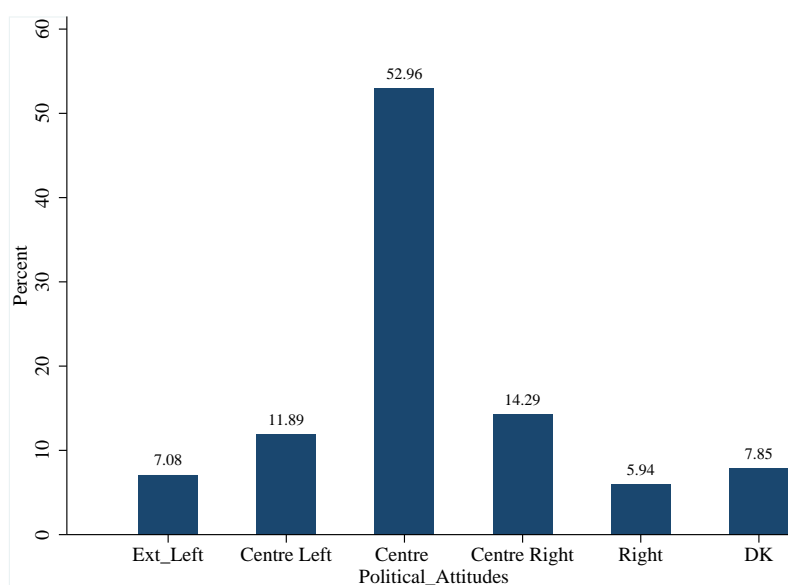


Figure 3: Distribution of left-right orientation for the full sample over the period 2011-2015.

5.2.2 Financial Literacy

We create a measure of financial literacy from the set of numerical and financial questions, available in SHARE. Our financial literacy index is measured as the number of correct answers out of four questions, covering numeracy (one question), sales discount (two questions) and interest rate compounding (one question). The exact wording of the questions is given below:

Question 1: "If the chance of getting a disease is 10% how many people out of 1,000 would be expected to get the disease?"

Question 2: "In a sale, a shop is selling all items at half price. Before the sale a sofa costs 300 euro. How much will it cost in the sale?"

Question 3: "A second hand car dealer is selling a car for 6,000 euro. This is two-thirds of what it costs new. How much did the car cost new?"

Question 4: "Lets say you have 2,000 euro in a savings account. The account earns 10% interest each year. How much would you have in the account at the end of two years?"

Similar surveys in the US and the UK, such as the U.S. Health and Retirement Study (HRS) and the English Longitudinal Study on Ageing (ELSA), have delivered modules with similar questions and have been shown to measure both numeracy and financial literacy (Lusardi and Mitchell, 2009, 2011c; Banks and Oldfield, 2007; Stango and Zinman, 2009). An important advantage of SHARE's questionnaire is the open-ended format of the questions. This gives individuals the opportunity to provide with spontaneous responses, something that allows us to capture the real level of numeracy and financial knowledge by eliminating potential bias from guessing the correct answer among a set of suggested responses. At the same time, the nature of the questions itself provides a good measure of basic economic and financial knowledge, without focusing on the kind of financial literacy that "elite" groups of the population with experience, for instance, on shares and financial assets are more likely to have.

We construct an index of financial literacy as follows: Respondents who answer the first question correctly are moving forward to a more demanding one (*Question 3*), while those who answer incorrectly, "Don't Know" or "Don't Answer" complete the test by answering an easier one (*Question 2*). If they manage to answer Question 2 correctly they get 1 point, otherwise 0. The last question (*Question 4*) is only asked to individuals who managed to provide a correct answer for Question 3 and is commonly regarded as a very good proxy for testing basic financial literacy (see e.g. Atkinson and Messy (2010); Lusardi and Mitchell (2008); Lusardi et al. (2010)). We create a financial literacy index by combining these questions into a single summary index, which shows the number of correct answers out of four questions.

Table 2 presents the descriptive statistics for each of the four financial literacy questions for the full sample and across the years. In the pooled sample, the mean number of correct answers is around 2.4 out of 4 questions. Panel B of Table 2 shows the average changes in financial literacy responses over time. On average, the big majority of respondents (81.16 %) gave a correct answer in the first question; this

figure is quite consistent over the years, varying between 80% and 82%. The individuals who answered the first question correctly moved further to the third question and 61.48% of them managed to answer it correctly. Question 2 was answered only by the individuals who failed to answer the first question correctly (around 19%) and concentrated about 75% of correct answers. Strikingly, a significant 8.9% denied to answer or answered incorrectly. The last question is examining interest compounding and was asked only to individuals who answered Question 3 correctly. This question is of particular interest, as it is considered as a strong indicator of financial literacy. In the polled sample, about 31.56% of the individuals reported the correct answer with the majority (67.94%) to reply wrongly. In addition, this question shows the biggest variation throughout the years; In 2011/12, 30.78% of the respondents answered correctly; 35.75% in 2013; and 24.62% in 2015.

Panel C of Table 2 shows the within individual variation in the secondary financial literacy measure high and low financial literacy groups by presenting a transition matrix for each year. The rows show the initial values and the columns reflect the final values. Each year, the number of individuals who remained low literate is roughly 60%. Some 70% of the individuals remained high literate between 2011-2013 and around 80% between 2013-2015. Despite the fact that the diagonal elements are the highest, the figures show that there is considerable variation in the data, both upward and downward. In particular, low literate had a more than 35% chance of becoming high literate in each year. Individuals in the high financial literacy group were about 28% and 14% more likely to become low literate between 2011-2013 and 2013-2015 respectively.

{Table 2 about here}

Table 3 presents the statistics for two groups of individuals: those with high and those with low levels of financial literacy. Column 3 shows the mean differences between the two groups and the asterisks indicate the level of significance. We define the group who answered correctly to at least three financial literacy questions as "high" financial literacy group. This definition is common in the literature and it allows for individual variation across waves. High literate individuals are more likely to be male, married and have completed some level of higher education. They are also more likely to be employed or self-employed and have significantly higher income. Importantly, "high" financial literacy individuals are more likely to have a long - term planning horizon and to be more tolerant towards risks. These observations are consistent with many other surveys on financial literacy all over the world

(see e.g. Lusardi and Mitchell, 2011c, for an overview of financial literacy data in eight countries).

Our primary interest is the relationship between financial literacy and political orientation. Table 3 indicates that there is a strongly negative relationship between higher levels of financial literacy and extreme political attitudes to the right or the left. On the other hand, high literacy groups are significantly more likely to belong to the centre of the political spectrum. Moreover, individuals who respond that they Do not know what their political orientation is, are significantly more likely to belong to the low financial literacy group. The same associations occur if we look at the correlation matrix (see Appendix).

{Table 3 about here}

5.3 Other Controls

Table 4 provides summary statistics for the main control variables. The statistics are reported for the full sample (Column 1) and for each year separately (Columns 2-4). The average age is approximately 64, with a slight female majority. Most of the individuals are married (63.94%). On average, about 37% of the sample has below upper secondary education, as their highest level of attainment; about 40% has completed upper secondary education and only 27% has completed post-secondary or tertiary education. Regarding health status, about 28% of the individuals report excellent/very good health; 35.54% say that they have good health and a slightly higher fraction of individuals (36.67%) report fair/poor health.

With regard to employment status, almost half of the respondents are retirees. About 33% are employed or self-employed and close to 17% are inactive (i.e. unemployed, permanently sick/disabled, homemakers and other). Approximately, 25% of the individuals live in a big city or the suburbs of a big city and an important 74.73% are homeowners. Individuals report an average yearly income of just above 10,000 euro.

SHARE asks individuals to assess their level of financial risk tolerance and planning horizon of spending and saving. In our sample, 24.92% of the individuals report that they are taking financial risks and about 40% report that they have long-term planning horizon. The remaining characteristics used in the regression, along with all the variables described above are shown in the Appendix, Table 4.

{Table 4 about here}

6 Results

6.1 Baseline Results on Financial Literacy

In this section, we discuss the results of our baseline estimates and analyze whether individual heterogeneity in political attitudes can be explained by financial literacy. Table 5 presents the results for the pooled sample (Panel A) and the by-country analysis (Panels B and C). The reported coefficients measure the expected instantaneous change in the probability of choosing a specific category (Ext_Left, Centre-Left, Centre, etc.) as a function of an increase in the number of correct financial literacy answers by one, while keeping all the other covariates constant. In order to facilitate the interpretation of the results, we calculate the percentage point effect of financial literacy by dividing the average marginal effect with the predicted probability of the model.

The estimates in Panel A, Table 5 reveal a significant and persistent relationship between financial literacy and political orientation. There is a significantly negative effect (at the 5% level) of financial literacy on the likelihood of belonging to the extreme left or right of the political spectrum. In particular, one additional correct financial literacy response decreases the likelihood of being in the "Ext_Left" or "Ext_Right" by 4.56% and 5.75% respectively. Moreover, an additional correct answer increases the probability of reporting "Centre-Left" or "Centre-Right" views by 9.49% and 7.27%, respectively (at the 1% level of significance). The effect of financial literacy on Central political attitudes remains positive and highly significant (at 5% level); however, it decreases in magnitude at 1.41%. Another interesting finding is the relationship between financial literacy and "Don't know" responses. The probability of someone not knowing her political orientation decreases significantly as financial literacy increases; financially-illiterate individuals are about 30% more likely not to have a certain political attitude on the left-right axis.

To pin down differences arising from the heterogeneity between countries, in Panel B and C, Table 5 we run separate models for two groups of countries, allowing regression slope coefficients to vary. It is apparent that there is a great variation between established and new democracies, with regard to the impact of financial literacy on the political orientation. In particular, in Northern, Western and Southern European countries (Panel B) the relationship between financial literacy and extreme political attitudes is highly significant and negative. The magnitudes of the marginal effects on the probability of belonging to the extreme left or right becomes -8.37% and -7.87%, respectively. There is also a significant positive association of financial literacy with the probability of belonging to the Centre-Left (9.05%) and

Centre-Right (6.87%), at 1% level of significance. In Panel B, the magnitude of the marginal effect on the probability to belong to the "Centre" remains quite low and becomes 1.96%. On the contrary, the effect of financial literacy on political attitudes in the Central-Eastern Europe (Panel C) becomes much smaller in magnitude and statistically insignificant for the "Ext_Left" and "Ext_Right", as well as the "Centre". There is, however, a significant positive association of financial literacy with the probability of belonging to Centre-Left (8.58%) and Centre-Right (15.64%), at 5% and 1% levels of significance respectively. Interestingly, the probability of not placing oneself on the left-right axis is notably decreasing as financial literacy increases, in both group of countries. The magnitude of these effects is large, corresponding to -37.46% in Panel B and -25.16% in Panel C. Thus, financially-literate individuals are more likely to possess a certain political position and place themselves in the left-right spectrum, in both groups of countries.

{Table 5 about here}

6.2 Results on other covariates

Table 8 reports the full estimates for the baseline regression. Among the traditional determinants of political attitudes, being a male increases the probability of being in the "Center-Right" and "Right" of the political spectrum. Age is also a significant factor. Across the 30 to 100-year-old age range, older people are more likely to place themselves on the right. Marital status also seems to have a significant effect on political attitudes. We find that single and divorced individuals are more likely to lean on the left of the political spectrum and report "Ext_Left" and "Centre-Left" political attitudes than married individuals. According to our expectations, more educated individuals are more likely to report central and central left political views. Additionally, we find that home-makers have a significantly higher probability of reporting "Right" and "Centre-Right" political attitudes. Also individuals who have higher income are more likely to place themselves on the "Centre-Right" of the political spectrum.

Moreover, we find that financial risk tolerance increases the probability of someone being in the right of the political spectrum and decreases the probability of being in the left. The positive relationship between financial risk tolerance and right political views can be explained if our measure reflects further characteristics of the individuals. In particular, we expect that financial risk tolerance unlike to risk aversion accounts for unobserved characteristics, such as attitude, experience and trust

to the financial markets, which should be related to more conservative views and parties which support market-based solutions. Regarding trust, we find that people who trust more other people are significantly less likely to report "Ext_Right" views and significantly more likely to report "Centre-Left" views. In our baseline regression we also control for two of the most significant societal factors, religiousness and trust to other people¹¹. In line with our expectations, our results show that preying is positively related with attitudes to the right and negatively related with attitudes to the left of the political spectrum. Regarding trust, we find that higher levels of trust decrease the probability of belonging to the extreme right or reporting "Don't know" in the political-orientation question. Finally, the level of urbanization is also a significant factor. People living in rural areas or villages are significantly less likely to report "Ext_Left" and "Centre-Left" political views and significantly more likely to belong to the "Right" of the political spectrum.

{Table 8 about here}

6.3 Alternative Empirical Specifications and Robustness Checks

In the section we summarize results from alternative specifications that help us verify the robustness of our results. In particular, we account for a set of additional key variables, which may influence left-right orientation. In a first place, we control for other human capital variables, which capture cognitive ability. Specifically, we incorporate in the regression the following variables: (a) verbal fluency and (b) memory. Table 6 reports the marginal effects from our multinomial probit model. The results are interesting and show associations in the expected directions. Lower levels of verbal fluency are positively associated with extreme left and "Centre-Left" political views and negatively associated with the right-wing. In other words, individuals with higher level of verbal fluency tend to be more right-wing. When it comes to memory, we observe similar results. People with better memory tend to place themselves on the right-wing, while people with worse memory are more likely to place themselves on the left-wing. These findings are consistent with the literature; people with higher cognitive ability are more likely to have more conservative political ideology, as they tend to be more fiscally conservative in areas such as

¹¹The first variable is based on the following question: "Thinking about the present, how often do you pray?". There are six potential answers, ranging from 1 to 6, with 1 denoting "More than once a day", and 6 denoting "Never". In our regression, we include a binary variable, with 0 indicating "Never Praying" and 1 "Praying". The second variable is based on the question: "Generally speaking, would you say that most people can be trusted or that you should be too careful in dealing with people?". For this question the answer range between 0, which means "You can't trust other people", to 10, which means that "Most people can be trusted"

redistribution of income and government intervention in the economy (Caplan and Miller (2010); Rindermann et al. (2012); Carl (2014); Mollerstrom and Seim (2014); Oskarsson et al. (2015)).

Focusing on the effect of financial literacy on the probability of reporting extreme left and right political views, we observe that it remains statistically significant and high in magnitude (4.09% and 7.18% respectively). In addition, financially literate individuals are about 8% more likely to place themselves on the centre-right and centre-left of the political spectrum. There is a modest effect of 1.25% on the probability of choosing the centre and a large negative effect of 26.55% on the probability of reporting "Don't Know".

{Table 6 about here}

In order to examine even further the robustness of financial literacy on political attitudes, Table 7 presents an alternative specification, which controls for individuals attitudes towards public issues, and in particular individuals' public opinion on immigration, the state of the economy and income inequality. In the recent years, matters of immigration have become prominent in European politics. More importantly, attitudes towards immigration have often considered as the core element shaping voters' behaviour (Azmanova 2011; Kriesi et al, 2008). Analogous significance have received matters related to the state of the economy and the actions of the government to reduce income inequality. To control for these, we use external data from the 2014 European Social Survey (ESS). Specifically, we construct our variables ¹² and we merge them with our primary data on a year and country-level basis. This process leaves us with 13 countries, including Austria, Germany, Sweden, Netherlands, Spain, France, Denmark, Switzerland, Belgium, Czech Republic, Poland, Portugal and Slovenia. Figure 4 shows the distribution of attitudes towards immigration across 15 European countries.

¹² The first variable is constructed using the following question: "Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?" Answers range between 0 and 10, with 0 signifying Bad for the economy and 10 signifying "Good for the economy". The question related to evaluation of the economy is given as follows: *On the whole how satisfied are you with the present state of the economy in [country]?* Answers range from 0 to 10, with 0 signifying Extremely dissatisfied and 10 signifying "Extreme satisfied". Finally, the last question has to do with income inequality and the role of government and is given as follows: "Using this card, please say to what extent you agree or disagree with each of the following statements. The government should take measures to reduce differences in income levels." The potential answers range from 1 to 5, with 1 denoting "Agree strongly" and 5 "Disagree strongly".

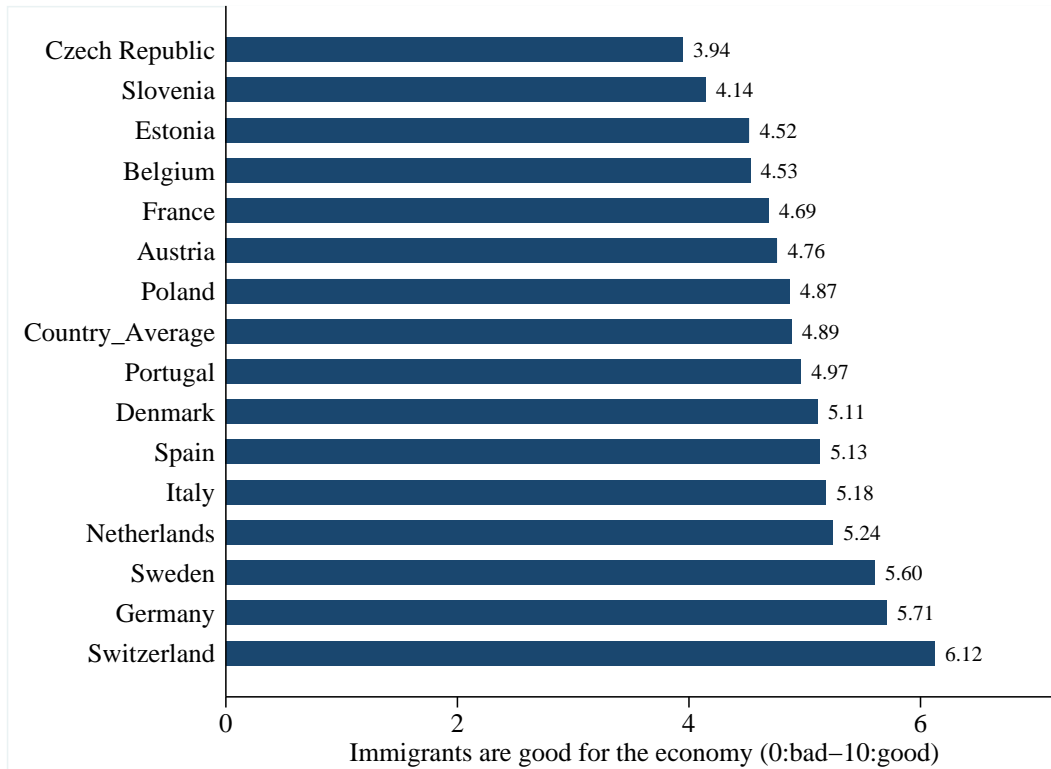


Figure 4: Attitudes to Immigration across 15 European Countries

Table 7 reports the marginal effects from our multinomial probit model for political attitudes, controlling for public opinion on three different political issues. The results are interesting and reveal significant association between attitudes for immigration and political attitudes, in the expected directions. In particular, positive attitudes towards immigrants are related to placements on the "Centre-Left" (at 5% level of significance) and "Ext_Left" (at 5% level) of the political spectrum. In contrast, attitudes against immigration increase the likelihood of being on the Centre-Right or "Right" of the political spectrum, however the effect is not statistically important. Also, satisfaction with the state of the economy is related to more right-wing views and attitudes against income inequality are related to more left-wing views.

It should be noted that adding attitudes towards public issues does not much affect the estimates of financial literacy; Specifically, financially literate individuals are about 4% and 5% less likely to place themselves in the Ext_Left and "Right" categories, respectively. On the other hand, there is a large positive effect of financial literacy on the probability of being in the "Centre-Left" (about 9.5%) or "Centre-Right" (about 8.5%) of the political spectrum, while there a small positive effect on being in the Centre (about 1.2%). Finally, financially literate individuals are some 29% more likely to express a certain political orientation. Thus, financial

literacy has a robust effect on political orientation above and beyond individuals attitudes to public matters, such as immigration.

{Table 7 about here}

7 Conclusions

In a pluralist democracy, voters face a wide choice of candidates and parties, each of whom is judged based on various criteria. The recent financial crisis and the downturn of the economic cycle around the world have moved the centre of the debate on the economic performance of governments in a national level and on individuals' economic security. The results of the general elections recently held in Europe, show that individuals political choices did not always lead to a clear victory of mainstream parties and new political forces from the extreme right and left political spectrum have gained increasing popularity. This has raised an increasing interest in better understanding how people shape their political preferences and whether they are able to make informed policy choices.

So far, the literature in political sciences has indicated that a large proportion of the public cannot deal with the complexities of politics and lacks basic understanding on political issues. Our study is the first of its kind to show a comprehensive link between financial literacy and left-right orientation, in a European level.

We find that there is a strong and positive relationship between financial literacy and Centre-Right/ Centre-Left political attitudes. More importantly, more financially literate individuals are significantly less likely to take extreme (left or right) political positions. Finally, financial literacy decreases the probability for Don't Know answers. When we allow regression slope coefficients to vary between countries, we observe that in the North, West and South of Europe, financial literacy becomes highly significant and has a big negative effect on extreme political views. However, the relationship between financial literacy and extreme political attitudes becomes insignificant in countries belonging to the Central-Eastern Europe. The effects are sizeable and statistically significant even after controlling for a number of variables related to social factors, generic knowledge and cognitive skills as well as, attitudes towards public issues, such as immigration. We interpret our findings as indicative that greater financial literacy means voters with opinion; skeptical towards populist parties; and in favour of central views, which are usually held by parties that are perceived as the most competent in managing the nations economy.

8 Appendix

Table 2: Financial Literacy: Descriptive Statistics and Transition Matrix

Definition		Full Sample		Yearly			
		(1)	(2)	(3)	(4)		
Panel A: Financial Literacy measures							
#Correct	"Mean number of correct answers out of four question"	2.42	2.45	2.44	2.31		
#Wrong	"Mean number of wrong answers out of four question"	1.5	1.46	1.47	1.63		
#DK/DA	"Mean number of DK/DA answers out of four question"	0.29	0.29	0.29	0.26		
FL.High	"Mean percentage of individuals who have answered at least three questions correctly"	49.89%	52.64%	49.35%	44.57%		
Panel B: Summary statistics-Financial Literacy							
Numeracy	# Observations:	32,800	14,402	12,174	6,224		
	"If the chance of getting a disease is 10% how many people out of 1,000 would be expected to get the disease?"	Correct	81.16%	80.86%	82.09%	80.03%	
		Incorrect	15.2%	15.15%	14.28%	17.08%	
		DK/DA	3.65%	3.99%	3.62%	2.89%	
Sales Discount 1	# Observations:	6,180	2,757	2,180	1,243		
	"In a sale, a shop is selling all items at half price. Before the sale, a sofa costs 300 euro. How much will it cost in the sale?"	Correct	74.84%	75.52%	72.52%	77.39%	
		Incorrect	16.26%	15.13%	16.74%	17.94%	
		DK/DA	8.9%	9.36%	10.73%	4.67%	
Sales Discount 2	# Observations:	26,620	11,645	9,994	4,981		
	"A second hand car dealer is selling a car for 6,000 euro. This is two-thirds of what it costs new. How much did the car cost new?"	Correct	61.48%	65.11%	60.13%	55.69%	
		Incorrect	36.67%	32.92%	38.17%	42.42%	
		DK/DA	1.85%	1.97%	1.7%	1.89%	
Compound Interest	# Observations:	16,365	7,582	6,009	2,774		
	"You have 2,000 euro in an account, which earns 10% interest each year. How much would you have at the end of two years?"	Correct	31.56%	30.78%	35.75%	24.62%	
		Incorrect	67.94%	68.75%	63.77%	74.73%	
		DK/DA	0.5%	0.46%	0.48%	0.65%	
Panel C: Transition matrix - Financial Literacy							
2011/2013	FL.Low	FL.High	Total	2013/2015	FL.Low	FL.High	Total
FL.Low	63.64%	36.36%	100%	FL.Low	61.54%	38.46%	100%
FL.High	28.57%	71.43%	100%	FL.High	14.29%	85.71%	100%
Total	42.68%	57.32%	100%	Total	37.04%	62.96%	100%

Table 3: Mean differences between individuals with high and low financially literacy.

	FL.High (1)	FL.Low (2)	T-test (3)
<u>Political Attitudes:</u>			
Left	6.63%	7.54%	-3.23***
Center-left	13.79%	10%	10.63***
Center	53.75%	52.22%	2.77***
Center-right	16.46%	12.13%	11.22***
Right-wing	5.32%	6.57%	-4.76***
DK	4.05%	11.54%	-25.55***
<u>Demographics:</u>			
Male	49.55%	36.18%	24.69***
Age	62.19	65.71	-31.42***
Marital Status: Married	68.32%	59.58%	16.54***
>>: Single	7.73%	7.56%	0.57***
>>: Divorced	12.9%	11.03%	5.21***
>>: Widowed	11.05%	21.83%	-26.59***
Education:None or Pre-primary	2.06%	10.31%	-31.45***
>>: Primary education or first stage of basic education	5.4%	18.42%	-37.14***
>>: Lower secondary or second stage of basic education	13.44%	23.91%	-24.54***
>>: (Upper) secondary education	39.78%	30.12%	18.44***
>>: Post-secondary non-tertiary education	5.35%	3.69%	7.24***
>>: First stage of tertiary education	32.2%	12.9%	42.99***
General Health: Excellent	12%	6.65%	16.72***
>>: Very good	23.52%	13.43%	23.75***
>>: Good	36.71%	34.38%	4.42***
>>: Fair	22.02%	31.7%	-19.89***
>>: Poor	5.75%	13.84%	-24.87***
Job Status: Retired	47.25%	53.66%	-11.64***
>>: Employed or self-employed	40.78%	25.56%	29.66***
>>: Unemployed	3.46%	4.54%	-4.96***
>>: Permanently sick or disabled	2.76%	4.73%	-9.41***
>>: Homemaker	4.7%	9.67%	-17.52***
>>: Other (Rentier, Student, etc)	1.05%	1.83%	-5.93***
Income (after taxes)	13,063.02	7,233.83	35.36***
Log(Income)	8.43	7.80	34.68***
House Owner	76.52%	72.95%	7.44***
Place of Living: City	27.88%	22.73%	10.75***
>>: Town	38.57%	45.4%	-12.57***
>>: Rural area or village	33.55%	31.86%	3.25***
Financial Risk Tolerance	32.47%	17.41%	32.02***
Planning horizon of spending and saving (Short or Long term)	47.49%	33.96%	25.16***
Trust in other people	6.10	5.63	17.99***
Preying	51.25%	59.03%	-14.20***
<u>Cognitive Abilities:</u>			

Continued on next page

Table 3 – *Continued from previous page*

	FL.High	FL.Low	T-test
	(1)	(2)	(3)
Verbal Fluency(Quantiles): 1st Lowest	11.51%	33.57%	-44.18***
>>: 2nd	23.7%	29.52%	-10.70***
>>: 3rd	30.3%	20.99%	17.45***
>>: 4th Highest	34.49%	15.92%	35.72***
Memory: Excellent	10.1%	6.35%	11.21***
>>: Very good	27.85%	17.35%	20.72***
>>: Good	45.45%	44.62%	1.36***
>>: Fair	14.79%	25.55%	-21.99***
>>: Poor	1.81%	5.88%	-17.16***
<u>Attitudes towards public issues:</u>			
Immigrants are good for the economy (0:bad 10:good)	4.92	4.84	11.61***
Satisfied with the state of the economy (0: Dissatisfied-10:Satisfied)	4.65	4.01	39.90***
Govt should reduce differences in income(1:Agree-5:Disagree)	2.19	2.10	27.15***
<i># Observations:</i>	16,365	16,435	

Table 4: Descriptive Statistics.

	Full Sample	By Wave		
		2011/12	2013	2015
	(1)	(2)	(3)	(4)
<u>Demographics:</u>				
Male	42.85%	39.97%	46.28%	42.82%
Age	63.96	64.29	64.38	62.35
Marital Status: Married	63.94%	59.25%	68.58%	65.71%
»: Single	7.65%	7.89%	7.15%	8.05%
»: Divorced	11.96%	13.93%	10.65%	9.99%
»: Widowed	16.45%	18.93%	13.63%	16.24%
Education :None or Pre-primary	6.19%	2.08%	6.51%	15.09%
»: Primary education or first stage of basic education	11.93%	13.76%	12.86%	5.86%
»: Lower secondary or second stage of basic education	18.69%	18.66%	17.27%	21.55%
»: (Upper) secondary education	34.94%	37.14%	33.17%	33.31%
»: Post-secondary non-tertiary education	4.52%	6.09%	3.94%	2.02%
»: First stage of tertiary education	22.53%	20.74%	25.19%	21.45%
General Health: Excellent	9.32%	7.09%	11.95%	9.32%
»: Very good	18.46%	16.78%	19.23%	20.87%
»: Good	35.54%	34.97%	36.6%	34.8%
»: Fair	26.87%	30.41%	24.13%	24.05%
»: Poor	9.8%	10.76%	8.08%	10.96%
Job Status: Retired	50.46%	54.52%	49.38%	43.17%
»: Employed or self-employed	33.15%	31.04%	35.24%	33.97%
»: Unemployed	4%	3.71%	3.66%	5.35%
»: Permanently sick or disabled	3.75%	3.76%	3.86%	3.5%
»: Homemaker	7.19%	6.05%	6.71%	10.78%
»: Other (Rentier, Student, etc)	1.44%	0.92%	1.14%	3.23%
Income (after taxes)	10,142.21	9,120.57	12,586.40	7,725.43
Log(Income)	8.12	7.97	8.44	7.82
Place of Living: City	25.3%	24.18%	24.96%	28.57%
»: Town	41.99%	38.43%	46.74%	40.95%
»Rural area or village	32.7%	37.39%	28.3%	30.48%
House Owner	74.73%	73.8%	71.91%	82.42%
Financial Risk Tolerance	24.92%	21.82%	29.31%	23.54%
Planning horizon of spending and saving (Short or Long term)	40.71%	33.34%	48.35%	42.82%
Trust in other people	5.86	5.87	6.00	5.58
Preying	55.15%	52.8%	50.61%	69.46%
<u>Cognitive Abilities:</u>				
Verbal Fluency (Quantiles): 1st Lowest	22.92%	23.32%	23.45%	18.66%
»: 2nd	26.71%	27.96%	25.52%	26.16%
»: 3rd	25.49%	25.5%	25.38%	25.89%
»: 4th Highest	24.89%	23.22%	25.65%	29.28%
Memory: Excellent	8.14%	6.57%	9.14%	11.05%
»: Very good	22.38%	19.91%	24.84%	22.86%

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Table 4 – *Continued from previous page*

	Full Sample	By Wave		
		2011/12	2013	2015
	(1)	(2)	(3)	(4)
»: Good	45.02%	44.95%	44.86%	46.11%
»: Fair	20.39%	23.83%	17.64%	16.65%
»: Poor	3.93%	4.63%	3.34%	3.34%
<i>Attitudes towards public issues:</i>				
Immigrants are good for the economy (0:bad 10:good)	4.88	4.63	5.2217	4.4905
Satisfied with the state of the economy (0: Dissatisfied-10:Satisfied)	4.32	4.13	4.5976	3.9254
Govt should reduce differences in income(1:Agree-5:Disagree)	2.14	2.11	2.1916	2.0783
<i># Observations</i>	32,800	14,402	12,174	6,224

Table 5: Financial Literacy and Political Orientation: Baseline Regression.

This table presents the marginal effects and the robust standard errors, clustered at the individual level, from multinomial probit estimates. Columns (1) to (6) present the results for each category of political attitudes. Panel A presents the results for the full sample (i.e. Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Czech Republic, Poland, Luxembourg, Portugal, Slovenia, Estonia and Croatia). Panel B restricts the analysis in the Established European Democracies. Panel C reports the results for the Central and Eastern Europe. The primary variable of interest is financial literacy. *, ** and *** indicate statistical significance at level 10%, 5% and 1%, respectively.

Panel A: Pooled sample						
VARIABLES	Ext_Left (1)	Centre-Left (2)	Centre (3)	Centre-Right (4)	Ext_Right (5)	Don't Know (6)
Fin. Literacy:# correct answers/4Q	-0.003** [0.002]	0.011*** [0.002]	0.007** [0.003]	0.010*** [0.002]	-0.003** [0.001]	-0.022*** [0.002]
Predicted probability	7.09%	11.89%	53.00%	14.29%	5.94%	7.79%
% Financial Literacy Effect	-4.56%	9.49%	1.41%	7.27%	-5.75%	-28.89%
Country Fixed Effects	YES	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	YES	YES	YES	YES
No. of Observations	32,818					
Panel B: Established Democracies						
VARIABLES	Ext_Left (1)	Centre-Left (2)	Centre (3)	Centre-Right (4)	Ext_Right (5)	Don't Know (6)
Fin. Literacy:# correct answers/4Q	-0.006*** [0.002]	0.011*** [0.002]	0.010*** [0.004]	0.011*** [0.003]	-0.004*** [0.002]	-0.024*** [0.002]
Predicted probability	6.58%	12.66%	53.51%	16.02%	4.95%	6.29%
% Financial Literacy Effect	-8.37%	9.05%	1.96%	6.87%	-7.87%	-37.46%
Country Fixed Effects	YES	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	YES	YES	YES	YES
No. of Observations	22,991					
Panel C: New Democracies						
VARIABLES	Ext_Left (1)	Centre-Left (2)	Centre (3)	Centre-Right (4)	Ext_Right (5)	Don't Know (6)
Fin. Literacy:# correct answers/4Q	-0.003 [0.003]	0.009** [0.003]	0.009 [0.005]	0.016*** [0.003]	-0.001 [0.003]	-0.028*** [0.003]
Predicted probability	8.28%	10.11%	51.80%	10.24%	8.27%	11.30%
% Financial Literacy Effect	-4.17%	8.58%	1.67%	15.64%	-1.74%	-25.16%
Country Fixed Effects	YES	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	YES	YES	YES	YES
No. of Observations	9,827					

Table 6: Financial Literacy and Political Orientation: Specification with Other Human Capital Variables.

This table presents the marginal effects and the robust standard errors, clustered at the individual level, from multinomial probit estimates. Columns (1) to (6) present the results for each category of political attitudes. In this specification, verbal fluency and memory are added in the regression. The primary variable of interest is the level of financial literacy. The regression includes time fixed effects and country fixed effects. *, ** and *** indicate statistical significance at level 10%, 5% and 1%, respectively.

VARIABLES	Ext_Left	Centre-Left	Centre	Centre-Right	Ext_Right	Don't Know
	(1)	(2)	(3)	(4)	(5)	(6)
Fin. Literacy:# correct answers/4Q	-0.004** [0.002]	0.010*** [0.002]	0.007** [0.003]	0.011*** [0.002]	-0.004*** [0.001]	-0.020*** [0.002]
Verbal Fluency (Ref: 4thHighest)	0.008* [0.004]	0.013** [0.006]	0.002 [0.008]	-0.006 [0.006]	-0.005 [0.004]	-0.011*** [0.004]
-1st Lowest-	0.005 [0.005]	0.021*** [0.006]	0.006 [0.009]	-0.013** [0.006]	-0.007* [0.004]	-0.012*** [0.004]
-2nd-	0.010** [0.005]	0.032*** [0.006]	-0.008 [0.010]	-0.009 [0.007]	-0.003 [0.004]	-0.022*** [0.005]
-3rd-						
Memory (Ref: Excellent)						
": Very good	-0.001 [0.005]	0.012* [0.007]	-0.002 [0.011]	0.001 [0.007]	-0.011** [0.005]	0.001 [0.006]
": Good	-0.007 [0.005]	0.009 [0.007]	0.021** [0.010]	-0.004 [0.007]	-0.021*** [0.005]	0.002 [0.006]
": Fair	0.002 [0.006]	0.018** [0.008]	0.015 [0.012]	-0.016** [0.008]	-0.018*** [0.005]	-0.001 [0.006]
": Poor	0.001	0.029**	0.004	-0.018	-0.027***	0.011
Predicted probability	7.22%	12.11%	53.04%	14.15%	5.91%	7.56%
% Financial Literacy Effect	-4.09%	8.09%	1.25%	8.07%	-7.18%	-26.55%
Country Fixed Effects	YES	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	YES	YES	YES	YES
No. of Observations	31,421					

Table 7: Financial Literacy and Political Orientation: Specification with Attitudes towards Public Issues.

This table presents the marginal effects and the robust standard errors, clustered at the individual level, from multinomial probit estimates. Columns (1) to (6) present the results for each category of political attitudes. In this specification, attitudes towards three public issues - immigration, sexual orientation and income inequality- are added in the regression. The primary variable of interest is the level of financial literacy. The regression includes time fixed effects and country fixed effects. *, ** and *** indicate statistical significance at level 10%, 5% and 1%, respectively.

VARIABLES	Ext_Left (1)	Centre-Left (2)	Centre (3)	Centre-Right (4)	Ext_Right (5)	Don't Know (6)
Fin. Literacy:# correct answers/4Q	-0.003* [0.002]	0.012*** [0.002]	0.006* [0.003]	0.012*** [0.002]	-0.003* [0.002]	-0.024*** [0.002]
Immigrants are good for the economy	0.053* [0.028]	0.085** [0.036]	-0.190*** [0.057]	-0.006 [0.040]	-0.039 [0.027]	0.097*** [0.032]
Satisfied with the state of the economy	0.014 [0.011]	0.02 [0.014]	-0.003 [0.022]	0.042*** [0.015]	0.019* [0.010]	-0.092*** [0.014]
Attitudes against income equality	0.056 [0.051]	0.166** [0.069]	-0.332*** [0.110]	0.065 [0.076]	0.022 [0.049]	0.023 [0.066]
Predicted probability	7.28%	12.16%	51.89%	14.49%	5.79%	8.39%
% Financial Literacy Effect	-4.19%	9.6%	1.22%	8.4%	-4.8%	-28.99%
Country Fixed Effects	YES	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	YES	YES	YES	YES
No. of Observations	25,354					

Table 8: Financial Literacy and Political Orientation: Full estimates from Table 5A

VARIABLES	Ext_Left (1)	Centre-Left (2)	Centre (3)	Centre-Right (4)	Ext_Right (5)	Don't Know (6)
Fin. Literacy:# correct answers/4Q	-0.003** [0.002]	0.011*** [0.002]	0.007** [0.003]	0.010*** [0.002]	-0.003** [0.001]	-0.022*** [0.002]
Male	0.001 [0.003]	-0.004 [0.004]	-0.012** [0.006]	0.022*** [0.004]	0.014*** [0.003]	-0.021*** [0.003]
Age	0 [0.000]	-0.001* [0.000]	-0.002*** [0.000]	0.003*** [0.000]	0.001*** [0.000]	-0.000** [0.000]
Marital Status (Ref: Married)						
>>: Single	0.011** [0.005]	0.018*** [0.007]	-0.017 [0.011]	-0.004 [0.007]	-0.011** [0.005]	0.003 [0.006]
>>: Divorced	0.009* [0.004]	0.003 [0.006]	-0.016* [0.009]	-0.01 [0.006]	0.006 [0.004]	0.008 [0.005]
>>: Widowed	0.004 [0.004]	-0.008 [0.006]	0.008 [0.009]	-0.009 [0.006]	-0.004 [0.004]	0.010** [0.004]

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Table 8 – Continued from previous page

VARIABLES	Ext_Left	Centre-Left	Centre	Centre-Right	Ext_Right	Don't Know
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Education (Ref: Post-graduate)</i>						
»: None or Pre-primary educ.	-0.023**	-0.008	0.028	-0.027**	-0.013	0.043***
	[0.009]	[0.011]	[0.018]	[0.013]	[0.008]	[0.009]
»: Primary educ. or first stage	-0.016**	-0.036***	0.057***	-0.025**	-0.011	0.031***
	[0.008]	[0.010]	[0.015]	[0.010]	[0.007]	[0.007]
»: Lower secondary or second stage	-0.014**	-0.034***	0.036***	-0.007	-0.002	0.021***
	[0.007]	[0.009]	[0.014]	[0.009]	[0.006]	[0.007]
»: (Upper) secondary educ.	-0.004	-0.019**	0.014	0.001	0.004	0.004
	[0.006]	[0.008]	[0.013]	[0.009]	[0.006]	[0.007]
»: Post-secondary non-tertiary educ.	0.013*	0.01	-0.002	0.004	-0.008	-0.016**
	[0.007]	[0.008]	[0.013]	[0.009]	[0.006]	[0.007]
<i>General Health (Ref: Bad)</i>						
»: Excellent	-0.016**	-0.033***	-0.01	0.055***	0.019***	-0.015**
	[0.007]	[0.009]	[0.014]	[0.010]	[0.006]	[0.007]
»: Very good	-0.022***	-0.019**	0.020*	0.052***	0.001	-0.032***
	[0.006]	[0.008]	[0.012]	[0.009]	[0.006]	[0.006]
»: Good	-0.019***	-0.021***	0.019*	0.033***	0	-0.013***
	[0.005]	[0.007]	[0.011]	[0.008]	[0.005]	[0.005]
»: Fair	-0.008	-0.021***	0.014	0.021***	0.002	-0.008*
	[0.005]	[0.007]	[0.010]	[0.008]	[0.005]	[0.005]
<i>Job Status (Ref: Retired)</i>						
»: Employed or self-employed	0	-0.005	-0.008	-0.002	0.002	0.013***
	[0.005]	[0.006]	[0.009]	[0.006]	[0.004]	[0.005]
»: Unemployed	0.01	0.007	-0.028*	-0.011	-0.002	0.025***
	[0.007]	[0.010]	[0.015]	[0.012]	[0.008]	[0.007]
»: Permanently sick or disabled	0.004	0	-0.008	-0.007	-0.009	0.021***
	[0.008]	[0.010]	[0.016]	[0.012]	[0.008]	[0.007]
»: Homemaker	-0.016**	-0.016**	-0.009	0.017**	0.011*	0.014**
	[0.007]	[0.008]	[0.012]	[0.008]	[0.006]	[0.005]
»: Other (Rentier, Student, etc)	0.002	-0.031*	-0.006	-0.004	0.016	0.022**
	[0.012]	[0.017]	[0.024]	[0.017]	[0.010]	[0.011]
Log(income)	-0.001	0	-0.001	0.005***	0.001	-0.003***
	[0.001]	[0.001]	[0.002]	[0.002]	[0.001]	[0.001]
Houseowner	-0.010***	-0.008*	0.001	0.024***	-0.002	-0.005
	[0.003]	[0.004]	[0.007]	[0.005]	[0.003]	[0.004]
<i>Place of Living: Big Town</i>						
»: Town	-0.001	-0.011**	0.002	-0.006	0.009**	0.007**
	[0.003]	[0.004]	[0.007]	[0.005]	[0.003]	[0.004]
»: Rural area or village	-0.017***	-0.020***	0.007	0.004	0.015***	0.012***
	[0.004]	[0.005]	[0.008]	[0.005]	[0.004]	[0.004]
Financial Risk Tolerance	-0.017***	-0.004	-0.003	0.042***	0.006*	-0.024***
	[0.004]	[0.004]	[0.007]	[0.005]	[0.003]	[0.004]
Planning horizon	-0.007**	0.002	0.007	0.011***	0	-0.013***
	[0.003]	[0.004]	[0.006]	[0.004]	[0.003]	[0.003]
Trust in other people	0	0.004***	-0.002	0.001	-0.002***	-0.002***

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Table 8 – Continued from previous page

VARIABLES	Ext_Left	Centre-Left	Centre	Centre-Right	Ext_Right	Don't Know
	(1)	(2)	(3)	(4)	(5)	(6)
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Frequency of Praying	-0.044***	-0.048***	0.035***	0.041***	0.014***	0.004
	[0.003]	[0.004]	[0.006]	[0.004]	[0.003]	[0.003]
Wave (<i>Ref: 2011/12</i>)						
»: 2013	-0.006	0.006	0.006	-0.016**	0.007	0.003
	[0.004]	[0.006]	[0.009]	[0.006]	[0.004]	[0.004]
»: 2015	-0.019***	-0.021***	0.024**	0.006	0.015***	-0.006
	[0.005]	[0.007]	[0.011]	[0.008]	[0.005]	[0.005]
Country (<i>Ref: Germany</i>)						
»: Austria	0.015	0.009	0.012	-0.016	0.008	-0.028***
	[0.009]	[0.011]	[0.017]	[0.012]	[0.010]	[0.010]
»:Sweden	0.040***	0.002	-0.173***	0.091***	0.058***	-0.018*
	[0.009]	[0.010]	[0.016]	[0.010]	[0.008]	[0.010]
»:Netherlands	0.004	-0.011	-0.099***	0.098***	0.013	-0.005
	[0.010]	[0.010]	[0.017]	[0.011]	[0.010]	[0.009]
»:Spain	0.047***	0.034***	-0.086***	-0.030**	0.01	0.025***
	[0.008]	[0.010]	[0.016]	[0.012]	[0.009]	[0.008]
»:Italy	0.090***	0.030***	-0.206***	0.019*	0.053***	0.014*
	[0.008]	[0.010]	[0.016]	[0.011]	[0.008]	[0.008]
»:France	0.061***	0.009	-0.158***	0.028**	0.050***	0.01
	[0.009]	[0.011]	[0.017]	[0.012]	[0.009]	[0.009]
»:Denmark	0.007	-0.015	-0.137***	0.101***	0.077***	-0.033***
	[0.010]	[0.010]	[0.017]	[0.011]	[0.008]	[0.011]
»:Greece	0.061***	0.048***	-0.114***	0.004	0.042***	-0.042***
	[0.011]	[0.013]	[0.021]	[0.014]	[0.010]	[0.012]
»:Switzerland	0.012	0.011	-0.048**	0.009	0.041***	-0.025**
	[0.011]	[0.012]	[0.020]	[0.013]	[0.010]	[0.012]
»:Belgium	0.026***	-0.019**	-0.109***	0.058***	0.028***	0.015*
	[0.008]	[0.009]	[0.015]	[0.010]	[0.008]	[0.008]
»:Czech Republic	0.049***	0.023**	-0.155***	0.013	0.076***	-0.007
	[0.008]	[0.010]	[0.016]	[0.011]	[0.008]	[0.008]
»:Poland	0.028	-0.098***	-0.145***	0.084***	0.100***	0.032*
	[0.023]	[0.036]	[0.039]	[0.024]	[0.015]	[0.018]
»:Luxembourg	0.007	-0.060***	-0.096***	0.057***	0.054***	0.038***
	[0.011]	[0.013]	[0.018]	[0.012]	[0.009]	[0.009]
»:Portugal	0.036	0.015	-0.046	-0.069	0.069**	-0.005
	[0.046]	[0.053]	[0.080]	[0.064]	[0.032]	[0.040]
»:Slovenia	0.054***	0	-0.064***	-0.076***	0.036***	0.050***
	[0.008]	[0.010]	[0.016]	[0.012]	[0.008]	[0.008]
»:Estonia	0.011	-0.069***	-0.103***	0.020*	0.076***	0.065***
	[0.009]	[0.011]	[0.016]	[0.012]	[0.008]	[0.008]
»:Croatia	0.078***	0	-0.102***	-0.033**	0.079***	-0.022*
	[0.011]	[0.014]	[0.021]	[0.015]	[0.010]	[0.011]
No. of Observations	32,818					

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Table 8 – *Continued from previous page*

VARIABLES	Ext_Left	Centre-Left	Centre	Centre-Right	Ext_Right	Don't Know
	(1)	(2)	(3)	(4)	(5)	(6)
Wald chi2(235)				4,594.44		
Prob > chi2				0.0000		

References

- Abendschon, S. and Steinmetz, S. (2014). The Gender Gap in Voting Revisited: Women's Party Preferences in a European Context. *Social Politics: International Studies in Gender, State & Society*, 21(2):315–344.
- Alesina, A. and Tabellini, G. (1990). A Positive Theory of Fiscal Deficits and Government Debt. *The Review of Economic Studies*, 57(3):403.
- Alt, J. E. and Lassen, D. D. (2006). Transparency, political polarization, and political budget cycles in OECD countries. *American Journal of Political Science*, 50(3):530–550.
- Alvarez, R. (1997). *Information and Elections*. University of Michigan Press, Ann Arbor, MI.
- Ansolabehere, S., Meredith, M., and Snowberg, E. (2014). Macro-Economic Voting: Local Information and Micro-Perceptions of the Macro-Economy. *Economics and Politics*, 26(3):380–410.
- Arrondel, L., Debbich, M., and Savignac, F. (2012). Stockholding and Financial Literacy in the French Population. *International Journal of Social Sciences and Humanity Studies*, 4(2):1309–8063.
- Aspelund, A. (2013). Conservative values have a different effect on political orientation in Central and Eastern European countries than they do in the West . *LSE European Politics and Policy (EUROPP) Blog*, pages 10–12.
- Atkins, R. and Bell, D. (1960). The End of Ideology, On the Exhaustion of Political Ideas in the Fifties. *Midwest Journal of Political Science*, 4(4):402.
- Atkinson, A. and Messy, F.-A. (2010). Measuring financial literacy. *The Journal of Consumer Affairs*, 44(2):296–316.
- Azzimonti, M. (2011). Barriers to Investment in Polarized Societies. *American Economic Review*, 101(5):2182–2204.
- Azzimonti, M. and Talbert, M. (2014). Polarized business cycles. *Journal of Monetary Economics*, 67(C):47–61.
- Barnes, S. H. (1989). Partisanship and Electoral Behavior. In Jennings, K. and van Deth, J., editors, *Continuities in Political Action*, pages 235–274. Berlin: De Gruyter.
- Barro, R. J. (1999). Determinants of Democracy. *Journal of Political Economy*, 107(S6):S158–S183.
- Basinger, S. J. and Lavine, H. (2005). Ambivalence, Information, and Electoral Choice. *American Political Science Review*, 99(02):169–184.
- Bélanger, É. and Meguid, B. M. (2008). Issue salience, issue ownership, and issue-based vote choice. *Electoral Studies*, 27(3):477–491.

- Berelson, B. R., Lazarsfeld, P. F., and McPhee, W. N. (1954). Democratic Practice and Democratic Theory. *The Cambridge Companion to the Age of Pericles*, pages 238–257.
- Berinsky, A. J. (2009). *In Time of War: Understanding American Public Opinion from World War II to Iraq*. Chicago, IL: University of Chicago Press.
- Bernanke, B. (2006). A Message from Chairman Bernanke. *Federal Reserve Bank of Dallas*.
- Best, R. and McDonald, M. (2011). The role of party policy positions in the operation of democracy. In Dalton, R. and Anderson, C., editor, *Citizens, context, and choice: How context shapes citizens' electoral choices*. Oxford: Oxford University Press.
- Binstock, R. H. and Quadagno, J. (2001). Aging and politics. In Binstock, R. H. and George, L. K., editors, *Handbook of aging and the social sciences*, pages 333–351. San Diego: Academic Press, 5th edition.
- Boxell, L., Gentzkow, M., and Shapiro, J. M. (2017). Is the Internet Causing Political Polarization? Evidence from Demographics. *NBER Working Paper Series*.
- Brady, H. E. and Sniderman, P. M. (1985). Attitude Attribution: A Group Basis for Political Reasoning. *American Political Science Review*, 79(04):1061–1078.
- Burgoon, B. (2013). Inequality and anti-globalization backlash by political parties. *European Union Politics*, 14(3):408–435.
- Campbell, A., Converse, P., Miller, W., and Stokes, D. (1960). *The American Voter*. New York: Wiley.
- Campbell, A. L. (2003). Participatory reactions to policy threats: Senior citizens and the defense of Social Security and Medicare. *Political Behavior*, 25(1):29–49.
- Campbell, J. C. and Strate, J. (1981). Are Old People Conservative? *Gerontologist*, 21(6):580–591.
- Caplan, B. (2007). *The myth of the rational voter*. Princeton, NJ: Princeton University Press.
- Caplan, B. and Miller, S. C. (2010). Intelligence makes people think like economists: Evidence from the General Social Survey. *Intelligence*, 38(6):636–647.
- Carl, N. (2014). Verbal intelligence is correlated with socially and economically liberal beliefs. *Intelligence*, 44:142–148.
- Carmines, E. G. and Stimson, J. A. (1989). *Issue Evolution: Race and the Transformation of American Politics*. Princeton, NJ: Princeton University Press.
- Cawvey, M., Hayes, M., Canache, D., and Mondak, J. J. (2017). *Personality and Political Behavior*. Oxford University Press.

- Christelis, D., Jappelli, T., and Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54(1):18–38.
- Cochrane, C. (2012). Left and Right: Empty Vessels , Essential Core, or Family Resemblance? *Conference of the Canadian Political Science Association*, pages 1–19.
- Conover, P. J. and Feldman, S. (1989). Candidate Perception in an Ambiguous World: Campaigns, Cues, and Inference Processes. *American Journal of Political Science*, 33(4):912.
- Converse, P. E. (1964). The Nature of Belief Systems in Mass Publics. In Apter, D. E., editor, *Ideology and Discontent*, pages 206–261. New York: The Free Press.
- Crittenden, J. (1962). Aging and Party Affiliation. *The Public Opinion Quarterly*, 26(4):648–657.
- Dalton, R. J. (1996). *Citizen politics : public opinion and political parties in advanced industrial democracies*. Chatham, N.J.: Chatham House Publishers, 2nd edition.
- Dassonneville, R., Quintelier, E., Hooghe, M., and Claes, E. (2012). The Relation Between Civic Education and Political Attitudes and Behavior: A Two-Year Panel Study Among Belgian Late Adolescents. *Applied Developmental Science*, 16(3):140–150.
- Delli Carpini, M. and Keeter, S. (1996). *What Americans Know about Politics and Why It Matters*. New Haven, CT: Yale University Press.
- Downs, A. (1957). *An economic theory of democracy*. New York: Harper.
- EEAG (2017). The EEAG Report on the European Economy, Economic Policy and the Rise of Populism It’s Not So Simple,. *CESifo*, pages 50–66.
- Evans, G. and Tilley, J. (2012). How Parties Shape Class Politics: Explaining the Decline of the Class Basis of Party Support. *British Journal of Political Science*, 42(1):137–161.
- Falk, A., Becker, A., Dohmen, T., Enke, B., Huffman, D., and Sunde, U. (2018). Global Evidence on Economic Preferences*. *The Quarterly Journal of Economics*.
- Fiorina, M. P. (1978). Economic Retrospective Voting in American National Elections: A Micro-Analysis. *American Journal of Political Science*, 22(2):426.
- Fiske, S. T., Lau, R. R., and Smith, R. A. (1990). On the Varieties and Utilities of Political Expertise. *Social Cognition*, 8(1):31–48.
- Flanigan, W. H. and Zingale, N. H. (2006). *Political Behavior of the American Electorate*. Washington, D.C: CQ Press, 11th edition.

- Fornero, E. and Lo Prete, A. (2018). Voting in the aftermath of a pension reform: the role of financial literacy. *Journal of Pension Economics and Finance*, (April):1–30.
- Franklin, M. ., Mackie, T. ., and Valen, H. (1992). Electoral change : responses to evolving social and attitudinal structure in Western countries. Cambridge University Press.
- Freire, A. (2004). Issue Voting in Portugal: The 2002 Legislative Elections. *West European Politics*, 27(5):779–800.
- Freire, A. (2008). Party polarization and citizens’ left-right orientations. *Party Politics*, 14(2):189–209.
- Freire, A. and Belchior, A. (2013). Ideological Representation in Portugal: MPs’Electors’ Linkages in Terms of LeftRight Placement and Substantive Meaning. *The Journal of Legislative Studies*, 19(1):1–21.
- Frieden, J. (2015). The political economy of adjustment and rebalancing. *Journal of International Money and Finance*, 52:4–14.
- Frye, T. (2002). The Perils of Polarization: Economic Performance in the Postcommunist World. *World Politics*, 54(3):308–337.
- Fuchs, D. and Klingemann, H.-D. (1990). The LeftRight Schema. In Jennings, M. K. and Van Deth, J., editors, *Continuities in Political Action*, pages 203–34. Berlin: deGruyter.
- Funke, M., Schularick, M., and Trebesch, C. (2015). Politics in the Slump : Polarization and Extremism after Financial Crises , 1870-2014. *Working Paper*.
- Garand, J. C. (2010). Income Inequality, Party Polarization, and Roll-Call Voting in the U.S. Senate. *The Journal of Politics*, 72(4):1109–1128.
- Gauchet, M. (1994). Right and Left. In Nora, P., editor, *Realms of Memory: Rethinking the French past (Vol.1)*, pages 241–98. New York: Columbia University Press.
- Gelman, A. (2007). Rich State, Poor State, Red State, Blue State: What’s the Matter with Connecticut? *Quarterly Journal of Political Science*, 2(4):345–367.
- Gidengil, E., Blais, A., Nadeau, R., and Nevitte, N. (2001). Women to the Left ? Gender Differences in Political Beliefs and Policy Preferences. In Tremblay, M. and Trimble, L., editors, *Gender and elections in Canada*, pages 140–159. Don Mills: Oxford University Press.
- Gillion, D. Q., Ladd, J. M., and Meredith, M. (2015a). Education, Party Polarization and the Origins of the Partisan Gender Gap. *Working paper*.
- Gillion, D. Q., Ladd, J. M., and Meredith, M. (2015b). Party Polarization, Ideological Sorting and the Emergence of the Partisan Gender Gap. *Unpublished Manuscript*, pages 1–61.

- Giofré, M. (2017). Financial education, investor protection and international portfolio diversification. *Journal of International Money and Finance*, 71:111–139.
- Girvin, B. (2000). The political culture of secularization. European trends and comparative perspectives. In Broughton, D. and ten Napel, H.-M., editors, *Religion and Mass Electoral Behaviour in Europe*, pages 7–27. Routledge, London.
- Givens, T. E. (2004). The Radical Right Gender Gap. *Comparative Political Studies*, 37(1):30–54.
- Glaeser, A. R. D. L., Porta, R. L. A., and Shleifer, A. (2004). Do Institutions Cause Growth ? *Journal of Economic Growth*, 9:271–304.
- Glaeser, E. L., Ponzetto, G. A. M., and Shleifer, A. (2007). Why Does Democracy Need Education? *Journal of Economic Growth*, 12(2):77–99.
- Glaeser, E. L. and Steinberg, B. M. (2016). Transforming Cities: Does Urbanization Promote Democratic Change? *NBER Working Paper No.22860, National Bureau of Economic Research, Inc.*
- Glenn, N. D. (1974). Aging and Conservatism. *The Annals of the American Academy of Political and Social Science*, 415(1):176–186.
- Goren, P. (1997). Political Expertise and Issue Voting in Presidential Elections. *Political Research Quarterly*, 50(2):387–412.
- Greene, W. H. (2000). *Econometric Analysis*. Upper Saddle River, N.J.: Prentice Hal, 15th edition.
- Guiso, L. and Jappelli, T. (2009). Financial literacy and portfolio diversification. *Quantitative Finance*, 10(5):515–528.
- Gunther, R. and Montero, R. (2001). The anchors of partisanship: a comparative analysis of voting behaviour in four southern European countries. In Diamandouros N., Gunther R., B., editor, *Parties, Politics, and Democracy in New Southern Europe*. The John Hopkins University Press.
- Halikiopoulou, D., Nanou, K., and Vasilopoulou, S. (2012). The paradox of nationalism: The common denominator of radical right and radical left euroscepticism. *European Journal of Political Research*, 51(4):504–539.
- Hart, W., Ottati, V. C., and Krumdick, N. D. (2011). Physical Attractiveness and Candidate Evaluation: A Model of Correction. *Political Psychology*, 32(2):181–203.
- Hayes, D. and Guardino, M. (2013). *Influence from Abroad: Foreign Voices, the Media, and U.S. Public Opinion*. New York: Cambridge University Press.
- Himmelweit, H., Humphreys, P., Jaeger, M., and Katz, M. (1981). *How Voters Decide: A Longitudinal Analysis of Political Attitudes Extending over Fifteen Years*. London: Academic Press.

- Hooghe, L., Marks, G., and Wilson, C. J. (2002). Does Left/Right Structure Party Positions on European Integration? *Comparative Political Studies*, 35(8):965–989.
- Hsu, M. L. and Price, V. (1993). Political Expertise and Affect. *Communication Research*, 20(5):671–695.
- Inglehart, R. and Klingemann, H.-D. (1976). Party identification, Ideological Preference and the Left-right Dimension among Western Mass Publics. In Ian Budge, I. C. and Farlie, D., editors, *Party Identification and Beyond: Representations of Voting and Party Competition*, chapter 13. Chichester: Wiley.
- Jappelli, T. (2010). Economic Literacy: An International Comparison ECONOMIC LITERACY: AN INTERNATIONAL COMPARISON. *Economic Journal*, 120(548):F429–F451.
- Jelen, T. G., Thomas, S., and Wilcox, C. (1994). The gender gap in comparative perspective. *European Journal of Political Research*, 25(2):171–186.
- Jou, W. and Dalton, R. J. (2017). Left-Right Orientations and Voting Behavior. 1(May):1–23.
- Karabarbounis, L. (2011). One Dollar, One Vote*. *The Economic Journal*, 121(553):621–651.
- Kaufmann, K. M. and Park, C. (2017). The Changing Politics of American Men : Understanding the Sources of the Gender Gap Author (s): Karen M . Kaufmann and John R . Petrocik Source : American Journal of Political Science , Vol . 43 , No . 3 (Jul . , 1999), pp . 864-887 Published by : Midw. 43(3):864–887.
- Kimball, M. S. and Shumway, T. (2006). Investor Sophistication and the Home Bias, Diversification, and Employer Stock Puzzles. *University of Michigan Working Paper*.
- Kittilson, M. C. (2016). *Gender and Political Behavior*, volume 1. Oxford University Press.
- Klapper, L., Lusardi, A., and van Oudheusden, P. (2015). Financial Literacy Around the World: Insights from The Standard & Poor’s Ratings Services Global Financial Literacy Survey. https://responsiblefinanceforum.org/wp-content/uploads/2015/12/2015-Finlit_paper_17_F3_SINGLES.pdf.
- Klausen, J. (2006). *The Islamic Challenge Politics and Religion in Western Europe*. Oxford: Oxford University Press.
- Knutsen, O. (2004). Religious Denomination and Party Choice in Western Europe: A Comparative Longitudinal Study from Eight Countries, 1970-97. *International Political Science Review*, 25(1):97–128.
- Kramer, G. H. (1971). Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964. *American Political Science Review*, 65(1):131–143.

- Krosnick, J. a. (1988). The role of attitude importance in social evaluation: a study of policy preferences, presidential candidate evaluations, and voting behavior. *Journal of personality and social psychology*, 55(2):196–210.
- Laponce, J. (1981). *Left and Right: The Topography of Political Perceptions*. University of Toronto Press.
- Lazarsfeld, P. F., Berelson, B., and Gaudet, H. (1948). *The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign*. New York: Columbia University Press.
- Lewis-Beck, M. (1988). *Economics and Elections: The Major Western Democracies*. Ann Arbor, MI: University of Michigan Press.
- Lindqvist, E. and Östling, R. (2010a). Political polarization and the size of government. *American Political Science Review*, 104(3):543–565.
- Lindqvist, E. and Östling, R. (2010b). Political polarization and the size of government. *American Political Science Review*, 104(3):543–565.
- Lo, S. and Rogoff, K. (2015). Secular Stagnation, Debt Overhang and Other Rationales for Sluggish Growth, Six Years On. *BIS Working Papers 482, Bank for International Settlements*.
- Londregan, J. B. and Poole, K. T. (1996). Does High Income Promote Democracy? *World Politics*, 49(01):1–30.
- Lupia, A. (1994). Shortcuts Versus Encyclopedias: Information and Voting Behavior in California Insurance Reform Elections. *American Political Science Review*, 88(01):63–76.
- Lusardi, A. . and Scheresberg, C. d. B. (2013). Financial Literacy and High-Cost Borrowing in the United States. *National Bureau of Economic Research, Inc., (Working Paper 18969)*.
- Lusardi, A., Michaud, P.-C., and Mitchell, O. S. (2017). Optimal Financial Knowledge and Wealth Inequality. *Journal of Political Economy*, 125(2):431–477.
- Lusardi, A. and Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? *American Economic Review*, 98(2):413–417.
- Lusardi, A., Mitchell, O. S., and Curto, V. (2010). Financial Literacy Among The Young. *The Journal of Cunsumers Affairs*, 4(2):358–380.
- Marshall, J. (2016). Education and Voting Conservative: Evidence from a Major Schooling Reform in Great Britain. *The Journal of Politics*, 78(2):382–395.
- McCarty, N., Poole, K. T., and Rosenthal, H. (2006). *Polarized America: The Dance of Political Ideology and Unequal Riches*. Cambridge MA: MIT Press, 2006. Print.

- McDermott, M. L. (2009). Voting Cues in Low-Information Elections : Candidate Gender as a Social Information Variable in Contemporary United States Elections Author (s): Monika L . McDermott Source : American Journal of Political Science , Vol . 41 , No . 1 (Jan . , 1997), pp. *American Journal of Political Science*, 41(1):270–283.
- McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In Zarembka, P., editor, *Frontiers in econometrics*, pages 105–42. New York: Academic Press.
- Meier, S. and Sprenger, C. D. (2013). Discounting financial literacy: Time preferences and participation in financial education programs. *Journal of Economic Behavior & Organization*, 95:159–174.
- Mian, A., Sufi, A., and Trebbi, F. (2014). Resolving debt overhang: Political constraints in the aftermath of financial crises. *American Economic Journal: Macroeconomics*, 6(2):1–28.
- Minkenbergh, M. (2003). The West European Radical Right as a Collective Actor: Modeling the Impact of Cultural and Structural Variables on Party Formation and Movement Mobilization. *Comparative European Politics*, 1(2):149–170.
- Mishkin, F. (2008). The Importance of Economic Education and Financial Literacy. *Speech before the Federal Reserve Board at the Third National Summit on Economic and Financial Literacy, Washington, D.C.*
- Mollerstrom, J. and Seim, D. (2014). Cognitive Ability and the Demand for Redistribution. *PLoS ONE*, 9(10).
- Montagnoli, A., Moro, M., Panos, G. A., and Wright, R. E. (2016). Financial Literacy and Political Orientation in Great Britain. *IZA Discussion Papers 10285, Institute for the Study of Labor (IZA)*.
- Nie, N. H., Verba, S. ., and Petrocik, J. R. (1976). *The Changing American Voter*. Cambridge, MA: Harvard University Press.
- Norris, P. and Inglehart, R. (2004). *Sacred and Secular. Politics and Religion Worldwide*. Cambridge: Cambridge University Press.
- Ondercin, H. (2013). What Scarlett O’Hara thinks: Political attitudes of Southern women. *Political Science Quarterly*, 128(2):233–259.
- Oskarsson, S., Cesarini, D., Dawes, C. T., Fowler, J. H., Johannesson, M., Magnusson, P. K. E., and Teorell, J. (2015). Linking Genes and Political Orientations: Testing the Cognitive Ability as Mediator Hypothesis. *Political Psychology*, 36(6):649–665.
- Oswald, A. and Powdthavee, N. (2014). Does money make people right-wing and inequalitarian? A longitudinal study of lottery winners. *Warwick Economic Research Papers*, 44(1039).

- Otjes, S. and Krouwel, A. (2018). Old Voters on New Dimensions: Why Do Voters Vote for Pensioners' Parties? The Case of the Netherlands. *Journal of Aging & Social Policy*, 30(1):24–47.
- Ottati, V. C. and Isbell, L. M. (1996). Effects on mood during exposure to target information on subsequently reported judgments: An on-line model of misattribution and correction. *Journal of Personality and Social Psychology*, 71(1):39–53.
- Page, B. I. . . and Shapiro, R. Y. (1992). *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*. Chicago: University of Chicago Press.
- Palfrey, T. R. and Poole, K. T. (1987). The Relationship between Information, Ideology, and Voting Behavior. *American Journal of Political Science*, 31(3):511.
- Papaioannou, E. and Siourounis, G. (2008). Economic and social factors driving the third wave of democratization. *Journal of Comparative Economics*, 36(3):365–387.
- Pew Research Center (2018). Wide gender Gap, Growing Educational Divide in Voters' Party Identification.
- Pontusson, J. and Rueda, D. (2008). Inequality as a source of political polarization: A comparative analysis of twelve oecd countries.
- Popkin, S., Gorman, J. W., Phillips, C., and Smith, J. A. (1976). Comment: What Have You Done for Me Lately? Toward An Investment Theory of Voting. *American Political Science Review*, 70(03):779–805.
- Price, V. and Zaller, J. (1993). Who Gets the News ? Alternative Measures of News Reception and Their Implications for Research. *The Public Opinion Quarterly*, 57(2):133–164.
- Ricaldi, L., Finke, M. S., and Huston, S. J. (2013). Financial literacy and shrouded credit card rewards. *Journal of Financial Services Marketing*, 18(3):177–187.
- Rindermann, H., Flores-Mendoza, C., and Woodley, M. A. (2012). Political orientations, intelligence and education. *Intelligence*, 40(2):217–225.
- Rockey, J. (2010). Who is left-wing, and who just thinks they are? *Discussion Papers in Economics*, (09).
- Rooduijn, M. and Akkerman, T. (2017). Flank attacks. *Party Politics*, 23(3):193–204.
- Rooij, M. V., Lusardi, A., and Alessie, R. (2012). Financial Literacy, Retirement Planning, and Household Wealth. *The Economic Journal*, 122:449–478.
- Rose, R. and Urwin, D. (1969). Social Cohesion, Political Parties and Strains in Regimes. *Comparative Political Studies*, 2(1):7–67.
- Sandell, J. and Plutzer, E. (2005). Families, divorce and voter turnout in the US. *Political Behavior*, 27(2):133–162.

- Sarfati, H. (2007). *The Political Future of Social Security in Aging Societies*, by Vincenzo Galasso, Cambridge, Mass., London: MIT Press, 2006, 257 pp., ISBN-13: 978-0-262072-73-1, ISBN-10: 0-262072-73-4. *Relations industrielles*, 62(4):777.
- Shapiro, R. Y. and Page, B. I. (1988). Foreign Policy and the Rational Public. *Journal of Conflict Resolution*, 32(2):211–247.
- Stoker, L. and Jennings, M. K. (1995). Life-Cycle Transitions and Political Participation: The Case of Marriage. *American Political Science Review*, 89(02):421–433.
- Studlar, D. T., McAllister, I., and Hayes, B. C. (1998). Explaining the Gender Gap in Voting: A Cross-National Analysis. *Social Science Quarterly*, 79(4):779–798.
- Talving, L. (2017). The electoral consequences of austerity: economic policy voting in Europe in times of crisis. *West European Politics*, 40(3):560–583.
- Tewksbury, D. (1999). Differences in How We Watch the News. *Communication Research*, 26(1):4–29.
- Tilley, J. (2002). Political generations and partisanship in the UK, 1964-1997. *Journal of the Royal Statistical Society. Series A: Statistics in Society*, 165(1):121–135.
- Tilley, J. and Evans, G. (2014). Ageing and generational effects on vote choice: Combining cross-sectional and panel data to estimate APC effects. *Electoral Studies*, 33:19–27.
- Tilley, J. R. (2003). Party Identification in Britain: Does Length of Time in the Electorate Affect Strength of Partisanship? *British Journal of Political Science*, 33(02).
- Tilley, J. R. (2014). Age significantly impacts on the choices that voters make at elections. pages 0–1.
- V. O. Key, J. (1966). *The Responsible Electorate: Rationality in Presidential Voting, 1936-1960*. Cambridge: Belknap Press of Harvard University Press., 2nd edition.
- van der Brug, W., B. Hobolt, S., and de Vreese, C. H. (2009). Religion and Party Choice in Europe. *West European Politics*, 32(6):1266–1283.
- van der Eijk, C. . and Franklin, M. (1996). *Choosing Europe? The European Electorate and National Politics in the Face of Union*. Ann Arbor (Mich.): The University of Michigan Press.
- Weisberg, H. F. (1987). The Demographics of a New Voting Gap Marital Differences in American Voting. *Public Opinion Quarterly*, 51(3):335.
- Welch, S. and Hibbing, J. (1992). Financial Conditions, Gender, and Voting in American National Elections. *The Journal of Politics*, 54(1):692–713.
- White, J. (2012). Community, transnationalism, and the Left-Right metaphor. *European Journal of Social Theory*, 15(2):197–219.

- Winston, B. Y. D. (2017). Placing Priority: How Issues Mattered More than Demographics in the 2016 Election. *Democracy Fund Voter Study Group*.
- Wittman, D. (1989). Why Democracies Produce Efficient Results. *Journal of Political Economy*, 97(6):1395–1424.
- World Bank (2016). Europe and Central Asia Economic Update Office of the Regional Chief Economist April 2016. Technical report, World Bank Report, Office of the Regional Chief Economist.
- Yoong, J. (2011). Financial Illiteracy and Stock Market Participation: Evidence from the RAND American Life Panel. In *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, pages 76–97. Oxford University Press.
- Zaller, J. R. (1994). Elite Leadership of Mass Opinion: New Evidence from the Gulf War. In Bennet, W. L. and Paletz., D. L., editors, *Taken by Storm: The Media, Public Opinion, and U.S. Foreign Policy in the Gulf War*, pages 186–209. Chicago, IL: University of Chicago Press.