

ARTICLE

Mind the Gap: Why Wealthy Voters Support Brexit

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Abstract

Wealth provides self-insurance against financial risk, reducing risk aversion. We apply this insurance mechanism to electoral behaviour, arguing that a voter who desires a change to the status quo and who is wealthy is more likely to vote for change than a voter who lacks the same self-insurance. We apply this argument to the case of Brexit in the UK, which has been widely characterized as a vote by the 'economically left-behind'. Our results show that individuals who lacked wealth are less likely to support leaving the EU, explaining why so many Brexit voters were wealthy, in terms of their property wealth. We corroborate our theory using two panel surveys, accounting for unobserved individual-level heterogeneity, and by using a survey experiment. The findings have implications for the potential broader role of wealth-as-insurance in electoral behaviour and for understanding the Brexit case.

Keywords: Brexit; wealth; insurance; risk; voting behaviour

Many choices in political behaviour concern trade-offs between the net benefits a choice may bring and its potential risks. This is especially true in high-stakes elections that usher in major changes to the status quo: 'in democracies, citizens can be called upon to make decisions that have profound and irreversible consequences, yet the environment in which they make these decisions is inherently uncertain, and sometimes hazardous' (Nadeau, Martin, and Blais 1999, 523). Political actors compete over alternative versions of the likely costs and benefits of such a contentious electoral choice. However, this discord increases the risk to a voter who has to decide between the two sides of a consequential decision (Alvarez and Franklin 1994; Franklin 1991).¹

Referendums provide such high-stakes and risky decisions (De Vries 2018; Hobolt 2009). Voters are asked to choose between a familiar status quo and the much less certain outcome of a fundamental change. When faced with such choices, voters tend to be biased toward the status quo (Masatlioglu and Ok 2005; Samuelson and Zeckhauser 1988) – for example, as seen in the cases of independence for Quebec, Catalonia, and Scotland (Hierro and Queralt 2021).

Status quo votes tend to be irreversible in the foreseeable future. They relate to profound political, economic, cultural and constitutional change and, by definition, tend to lack local or recent precedent. However, voters may perceive benefits from changing the status quo, such as greater sovereignty, economic independence, and appeals to national identity. This was the experience of former Soviet republics, the unification of East and West Germany, and decisions to join, or

¹In a risky situation one can assign probabilities to the various possible outcomes, whereas in a case of uncertainty one is unable to identify the relevant probabilities. Similar to Baderin and Barnes (2020), we use risk in this paper to denote intermediate cases, that are neither instances of pure risk nor of pure uncertainty.

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indeed leave, the European Union's economic area and monetary union (Abadie, Diamond, and Hainmueller 2015; Atikcan, Nadeau, and Belanger 2020; De Vries 2018; Hierro and Queralt 2021; Hobolt 2009; 2016).

Yet, 'not all voters who are disenchanted with the status quo take a chance on the less known alternative' (Morgenstern and Zechmeister 2001). As status quo changes pose potential economic risks to individuals, voters' decisions are likely affected by their tolerance to that risk (Morisi 2018).

Risk aversion is often linked to a stable personality trait, but a growing body of literature documents its variation with wealth. In particular, the accumulation of wealth is associated with a higher tolerance for risk (Donkers, Melenberg, and Van Soest 2001; Pahontu 2020; Zanetti 2014). This happens because wealth provides insurance for individuals (Ansell 2014) in case of income shocks or economic risks (Hariri, Jensen, and Lassen 2020; Tertytchnaya and De Vries 2019). This should be highly relevant to electoral choice where risk aversion is a central component, such as in status quo votes (Liñeira and Henderson 2021; Morisi 2018; Steenbergen and Siczek 2017). We focus on the role of wealth in informing risk aversion and its effect on decision-making to study why some individuals refrain from supporting status quo changes despite wanting to do so.

We apply this framework to the case of Brexit, a high-stakes referendum that posited the economic, cultural, and sovereignty costs and benefits of leaving the European Union against the risks of fundamentally changing the UK's relationship with its largest trading partner, the EU. The dominant explanation has been a focus on those 'left behind' from the economic and cultural benefits of globalization, either in the form of direct localized economic grievances (Carreras 2019; Colantone and Stanig 2018; Fetzer 2019) or through the relationship between economic and immigration concerns (Carreras, Irepoglu Carreras, and Bowler 2019; Green, Hellwig, and Fieldhouse 2022; Sobolewska and Ford 2020).

In reality, the Brexit vote was heterogeneous. According to British Election Study (BES) data collected immediately after the 2016 EU referendum (Fieldhouse et al. 2016), 73 per cent of Leave voters in the referendum were homeowners (71 per cent for Remain voters); 60 per cent of Leave voters were 'very unlikely' or 'unlikely' to become unemployed (53 per cent for Remain voters); and 23 per cent of Leave voters were 'very unlikely' or 'likely' to be at risk of poverty (28 per cent for Remain voters). Older voters in Britain were substantially more likely to have voted Leave. They were also more likely to have wealth through assets and savings and more likely to have higher economic security as a result (Chrisp and Pearce 2019; Green and de Geus 2022). There were also more Eurosceptics in the British population than voters who opted to leave the EU, suggesting that a sizeable proportion of voters might have seen greater downsides of membership of the EU but did not take the risk of voting Leave.

We argue that this pattern can be understood through a self-insurance perspective. More voters in poorer areas of the UK saw benefits to Brexit than in prosperous ones (Adler and Ansell 2020; Ansell 2019; Carreras 2019). But *within* those areas, we show that individuals lacking self-insurance in the form of personal wealth were less likely to vote to leave the EU than those within the same areas who had assets.

To identify this effect, we use a variety of individual-level data sources on wealth and public opinion, including two nationally representative panel surveys and a survey experiment. It is not common for detailed wealth measures to be combined with detailed political variables, so we took advantage of new datasets that made this possible. We present multiple sets of evidence in support of our core expectation that wealth (at the individual level) increases support for Brexit and that this effect is due to its role in decreasing risk aversion. With little or no insurance, poorer Britons are less likely to support a status quo change and vote for Brexit. We also find that this effect holds once we study these individual-level effects within areas classified as above and below local median wealth levels. At the aggregate level, we replicate the patterns highlighted by Ansell (2019), Adler and Ansell (2020), and Carreras (2019), showing that wealthier areas

exhibited higher support for Brexit overall. But *within* those areas, wealth was associated with higher support for Leave.

The implications of our analysis may be instructive for contexts other than referendums concerning a risky (economic) choice. While others have documented the importance of wealth as a source of economic voting (Lewis-Beck and Nadeau 2011; Nadeau, Foucault, and Lewis-Beck 2011; Nadeau, Lewis-Beck, and Foucault 2019), the application of the wealth-as-insurance logic might explain why, when choosing between an incumbent and uncertain hypothetical future under a challenger (Fiorina 1977; Fiorina 1981), some voters opt for the more predictable status quo. This might be especially important when an electoral choice could trigger a period of dramatic economic change or instability. That certainly applies to other secession referenda and may apply to electoral choices where a voter prefers certain goals (such as sovereignty, immigration, environmental protection, and public spending), but the change itself will result in economic instability. A wealthier individual may be more likely to support a radical economic change associated with, for example, rapid decarbonization if they are insured against economic disruption. This logic expands the idea that economic inequalities drive people's political preferences by showing that they also alter people's ability to act on those preferences.

Wealth as Insurance

People care about risk and are likely to demand insurance against those risks (Moene and Wallerstein 2001). Insurance typically refers to welfare state provisions that provide a last-resort financial cushion against severe misfortune. As a result of its insuring role, support for welfare spending tends to be higher among individuals who rely on social insurance, as well as those faced with higher risks of unemployment, sickness, or exposure to crime (Hacker 2019; O'Grady 2019; Rehm, Hacker, and Schlesinger 2012; Rueda and Stegmueller 2016).

However, many have increasingly documented the importance of 'self-insurance', which takes the form of an individual's wealth (Ansell 2014; Bussemeyer and Iversen 2020; Hilt and Rahn 2020; Tertychnaya and De Vries 2019). Wealth provides an income buffer to individuals and their families in case of misfortune, such as job loss, inflationary pressures, and other market fluctuations. A lack of wealth in the form of savings or assets is an extremely important form of economic insecurity, as shown in a range of studies and applications (Ansell 2014; Conley and Gifford 2006; Ehrlich and Becker 1972; Pahontu 2020; Tertychnaya and De Vries 2019). Those who lack wealth are more likely to support social insurance policies to insulate against income shocks (Hariri, Jensen, and Lassen 2020). Wealthier individuals are also found to be significantly less risk averse in light of their increased economic security (Donkers, Melenberg, and Van Soest 2001; Guiso and Paiella 2008; Malmendier and Nagel 2011; Paravisini, Rappoport, and Ravina 2017; Zanetti 2014).²

Wealth provides a permanent stock of financial means to buffer against risk. The same cannot be said of a person's income absent wealth. If high incomes provide a buffer, they do so through the accumulation of wealth made possible by savings and asset holding. Due to its transitory nature, income does not offer the same type of economic security as wealth. This is because individuals experiencing a drop in income, in the absence of wealth, cannot smooth consumption. We note that there is only a weak empirical correlation between wealth and income (Ansell 2019), which supports the importance of focusing on both wealth and income to understand people's economic interests.³ As Hariri, Jensen, and Lassen (2020, 893) state, 'economic vulnerability,

²Savings and home ownership ensure forms of wealth. This is in contrast to higher-risk market speculation, which is far more uncommon (Alan 2006). Market speculation is more likely for those who have secure forms of wealth to fall back on, such that individuals with greater wealth are insured against risks (Vestman 2019).

³A further distinction can be made between the economic security afforded by liquid wealth in the form of savings and illiquid wealth in the form of assets. Liquid wealth, readily available savings (net of debts), may compensate for short-term income losses, smoothing consumption in the short term. This logic is illustrated by Hariri, Jensen, and Lassen (2020), who

measured by a lack of access to economic buffers, is also common among middle-class and rich households and, thus, largely unrelated to current income'. Many high-income, middle-class households lack the economic security provided by wealth. On the other hand, consistent with the life cycle model (Ando and Modigliani 1963), wealth is especially high among older (retired) generations who otherwise have lower incomes, as is the case in the UK (Chrisp and Pearce 2019; Green and de Geus 2022). This happens partly because these individuals also have lower debt levels, particularly housing debt (Wolff 2010).

Home ownership, in particular, increases an individual's sense of economic security (Ronald and Doling 2012; Weller 2007; Williams 2014). People buy homes for a sense of agency and as a long-term economic investment, both of which are sources of personal and economic security. Dupuis and Thorns (1998) argue that home ownership can provide a sense of ontological security in a world that is otherwise experienced as threatening and uncontrollable. In addition, asset ownership is associated strongly with the ability to borrow, and borrowing ability provides additional economic security against short-term income losses (Aladangady 2017). Home ownership is increasingly out of reach for people with unreliable income sources, unsecured debts, poor credit ratings, and without other borrowing potential, such as through family. Therefore, asset ownership reflects higher economic security, both as a proxy for greater access to potential short-term consumption smoothing through borrowing and as a source of longer-term household economic and psychological security.

The security afforded through wealth should depend on its availability, its reliability as a form of insurance against economic shocks, and how different forms of wealth might 'de-risk' particular electoral choices. While standard economic theory expects individuals to smooth consumption and savings over their lifetime (Browning and Crossley 2001), few individuals actually accumulate substantial savings in practice. Property wealth is typically substantially higher than financial wealth.⁴ In the UK, this is due, at least in part, to a series of government-induced incentives to take up home ownership (Lewis-Beck, Nadeau, and Foucault 2013). The appreciation of house prices has been far higher over a longer period than interest rates on savings or returns from the British stock market (Chrisp and Pearce 2019). Moreover, UK property wealth has been remarkably buoyant in response to major economic downturns. Ansell (2014) shows how property wealth in the UK rebounded strongly after the 2008 global financial crisis, whereas the same period has been much more detrimental to savers. This property wealth accumulation offered homeowners economic security and appreciation in a protracted period of economic downturn, historically low interest rates on savings, and austerity. Moreover, post-2008 financing regulations meant that UK mortgages were far less likely to suffer from negative equity as affordability criteria were made more stringent. Those owning a home in the UK, post-2008–2009, were more likely to hold a secure asset that would remain secure against short-term income shocks, longer-term national-level recessions, or weak growth.

Our key point is that the political and economic context should determine which type of wealth is most insuring. We expect property wealth, at least within the UK, to offer considerable economic security. This should be especially true for the case we explore in this paper – Brexit – where the short-term economic shock of leaving the EU might have favoured a focus on liquid assets, but the economic debate centred on the much longer-term economic consequences of Britain's new trading partnerships and economic costs and benefits, and long-term projections about an overall loss of GDP. In this context, housing wealth gives individual households a

show that a lack of savings, as opposed to holding assets, explains support for social insurance policies in Denmark. More generally, however, asset-based and liquid wealth have been shown to offer a considerable psychological benefit to an individual (Kendall, Nguyen, and Ong 2019).

⁴For the UK, see Banks, Blundell, and Smith (2002); Crawford, Innes, and O'Dea (2016). See Causa, Woloszko, and Leite (2019) for comparative evidence. The mean (median) UK property wealth is £85,000 (£50,000), in contrast to £28,000 (£4,000) in savings (Crawford, Innes, and O'Dea 2016).

reliable return on their assets and savings, and their borrowing ability helps smooth consumption in the shorter term.

We expect wealth to alter support for the status quo in addition to a standard cost-benefit calculation. Despite having similar preferences, a wealthier individual is more likely to support a status quo change than her less wealthy counterpart. This happens because wealth cushions individuals against risks, making wealthier individuals less risk averse. Incorporating risk aversion into the cost-benefit calculation enhances the understanding of status quo support. When calculating net benefits, a more risk averse individual should put higher weight on costs rather than benefits, dampening their decision to change the status quo. In brief, for a given set of preferences, wealthier individuals are expected to be more likely to support a change to the status quo.

The Brexit Case

The Brexit cost-benefit calculation turned on a combination of the cultural, economic and political benefits of EU independence or the opposite costs of exiting the EU (Clarke, Goodwin, and Whiteley 2017; Evans and Menon 2017; Green, Hellwig, and Fieldhouse 2022; Hobolt 2016; Iakhnis et al. 2018). Much of the explanation for the Brexit vote draws on wider insights into the drivers of populism (Autor et al. 2019; Ford and Goodwin 2014; Mudde 2010; Van Hauwaert and Van Kessel 2018) and mirrors the interpretation of the election of Donald Trump in the United States (Bobo 2017; Mutz 2018; Norris and Inglehart 2019; Schaffner, MacWilliams, and Nteta 2018). In the UK, researchers pointed to the combination of cultural and economic grievances that motivated support for greater independence from the EU. The degree to which these motives are economic has been the source of considerable debate, with immigration concerns, national identity, and sovereignty being strongly related to voting Leave or Remain (Clarke, Goodwin, and Whiteley 2017; Hobolt 2016; Iakhnis et al. 2018; Norris and Inglehart 2019; Sobolewska and Ford 2020). Others have argued for the importance of local economics, either directly or via a connection between localized economic decline and immigration concerns, pointing to local factors such as import shocks (Colantone and Stanig 2018), austerity (Fetzer 2019), and long-term relative local economic decline (Carreras, Irepoglu Carreras, and Bowler 2019).

These studies provide information on the sources of people's Brexit preferences but not the risk calculation associated with a vote against the status quo. A status quo bias was evident in other referendums where the anti-EU vote was presented as entailing costly economic consequences (Born et al. 2019; Breinlich et al. 2017; Dhingra et al. 2017; Hobolt 2016). 'People will only be expected to risk voting for Brexit when they perceive that their country could do as well, or even better outside' (De Vries 2018, 156).

Among those who have incorporated risk in the case of Brexit, researchers have pointed to three possible answers for why Britons voted by a majority to leave the EU. The first is that Leave voters and supporters of populist movements are generally less risk averse (Morisi 2018; Steenbergen and Siczek 2017) and less likely to be dissuaded by the risks associated with a departure from the status quo. For example, Morisi (2018) shows that levels of risk aversion are especially important for less-informed voters and applies this finding to the EU and Scottish independence referenda. This expectation could help point to the importance of lower risk aversion via higher wealth among Leave voters, which is consistent with our expectations.⁵ The second is that Leave voters were persuaded against the risks associated with leaving the EU; that is to say, the Leave campaign successfully 'de-risked' the question of Brexit (Atikcan, Nadeau, and Belanger 2020). However, it was also the case that the Remain vote was much higher than the proportion of Britons who held a prior Eurosceptic preference; and economic concerns

⁵Note that our analysis shows that Leavers are not wealthier (or significantly poorer) than Remain voters. We demonstrate this in Fig. C.2.

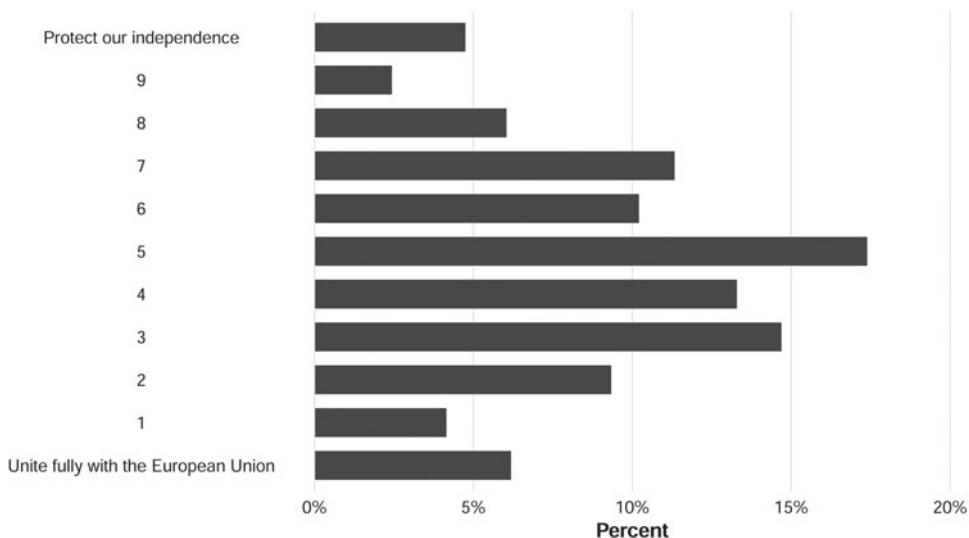


Figure 1. Euroscepticism distribution among Remain voters.

were their main reported motivation.⁶ This suggests that many Remain voters might have voted for Brexit had many not been convinced of the risks associated with an exit with the EU. Figure 1 shows the relationship between Euroscepticism before the referendum (in Wave 8 of the British Election Study (BES) internet panel) and voting Leave in the referendum (Wave 9 of the BES panel). Many people who voted Remain in the referendum held strong preferences for greater independence from the EU.

The third explanation, consistent with prospect theory, is that voters who resided in areas that had experienced economic decline were willing to risk Brexit since, relatively speaking, they thought the gains to the national economy would be higher (Carreras 2019). These communities had little to lose and were more likely to support independence from the EU. This explanation is fundamentally a sociotropic one, rooted in the localized experiences of communities who saw that their community might do better.

We contend that individual wealth, through its role in reducing risk aversion, should be a useful addition to these accounts. We propose that people in more economically deprived areas of the UK are more likely to prefer Brexit, which is consistent with prospect theory. But, within those areas, wealthier individuals are more likely to sustain their preferences in support of a change in the status quo. By providing insurance and reducing individuals' tolerance to risk, wealth 'de-risks' the vote for a change in the status quo. We complement existing work by showing that individuals' economic circumstances are just as important as sociotropic or local economic experiences. In other words, we expect wealthier individuals in 'left-behind communities' to be more likely to vote for Brexit than less wealthy individuals in those same areas and, similarly, wealthy voters to be more likely to support Brexit than less wealthy individuals in prosperous areas.

Indeed, this is consistent with considerable heterogeneity in the Brexit vote. The majority of Leave voters were not economically deprived or insecure. Brexit voters may have been more likely to live in parts of the country that had not benefited from rapid growth through globalization, immigration, and the expansion of high-skilled labour. The vote to remain in the EU was higher

⁶John Curtice (2016) How Deeply Does Britain's Euroscepticism Run? *British Social Attitudes* 33; Prosser, Mellon and Green (2016) What Mattered Most to You When Deciding How to Vote in the EU Referendum? *British Elections Study Blog*.

in cities, which are also composed of greater numbers of younger voters, graduates, and ethnic minorities (the demographic groups most likely to support Remain). Those living outside these metropolitan hubs may have felt resentful of more prosperous areas and groups (Green, Hellwig, and Fieldhouse 2022). However, at the individual level, more homeowners supported Brexit (73 per cent) than those who voted Remain (71 per cent), 60 per cent of those reporting to be very unlikely or unlikely to become unemployed supported Brexit compared to 53 per cent for Remain, 23 per cent of Leave voters reported being very unlikely or unlikely to encounter issues covering day-to-day living costs compared to 48 per cent of Remain.⁷ In short, Leave voters were, on average, more economically secure than Remain voters. Furthermore, economic left-right values exhibited no statistical association with Leave support, which was most strongly correlated with liberal-authoritarian and immigration attitudes, which correlate with education and age rather than income (Fieldhouse et al. 2021). Such indicators of economic security are predominant among older generations, who favour Leave, with greater social conservatism and more negative attitudes about immigration (Green and de Geus 2022).

Applying this logic to the Brexit vote, we derive three hypotheses. The first is that, controlling for predictors of Brexit preference (the cost-benefit part of the Brexit calculation), wealth will have a positive relationship with support for leaving the EU.

H1: At the individual level, wealth is positively associated with support for leaving the EU.

We also expect wealthier individuals to perceive themselves to have greater economic insurance, to be insulated against the economic consequences of Brexit. We can assess this through perceptions about the personal and national economic consequences of Brexit. Consistent with our insurance argument, wealth should not predict expected national-level economic circumstances, but wealth should increase perceptions that personal economic circumstances should be unaffected by leaving the EU.

H2: At the individual level, wealth is positively associated with expectations of no Brexit effects on personal economic circumstances.

Finally, to further corroborate the theorized causal argument, we expect wealth, consistent with the existing literature, to lead to lower risk aversion.

H3: An increase in wealth leads to a decrease in risk aversion.

Data and Methods

We test our expectations with observational data from the British Election Study (BES) internet panel and data from the Bank of England's 2016–2018 panel survey of income and expenditure. These data sources offer a rare opportunity since national election surveys rarely include individual wealth measures (Nadeau, Foucault, and Lewis-Beck 2011) and federal banking datasets rarely include questions about political preferences, but include plenty of measures of individual wealth. We also designed an additional survey experiment administered as part of the BES by YouGov in 2019.⁸

⁷ Authors' own calculations based on the raw post-EU referendum British Election Study data (Fieldhouse et al. 2016), weighted for national representativeness.

⁸ See Fieldhouse et al. (2018) for further information about BES Wave 14 and Anderson et al. (2016) about the Bank of England survey. BES data collection, in which our experiment is also conducted, is subject to ethical approval at the University of Manchester. Data are collected by YouGov, who compensate respondents with points redeemed in payments according to YouGov processes on numbers (and lengths) of surveys completed. Note that no wealth data existed prior to the EU referendum, where EU referendum preferences were included.

Most studies rely on household income to proxy wealth. However, as discussed earlier, the correlation between income and wealth is weak (Ansell 2019). Therefore, we try to better approximate an individual's economic circumstances and insurance leverage by relying on respondents' reported financial and property wealth and adjusting all these measures for household size (Browning, Chiappori, and Lewbel 2013).

We used the BES panel study to field a battery of questions on wealth. These wealth measures are available in 2018 (Wave 14). Usefully, the BES panel allows us to link individuals to their locations, thereby enabling us to examine our findings across aggregate patterns. However, the BES data only provides a snapshot into citizens' wealth in one wave of the BES panel and is limited in making broader claims about wealth accumulation and potential changes in political support. The Bank of England (BoE) data provides us with a way to tackle this shortcoming. It includes three waves of wealth measurement and Brexit support, asked to the same respondents, covering the period 2016–2018.⁹

Relying on both datasets further allows us to distinguish and account for respondents' intentions and their current support for Brexit. The dependent variable in the BES asks respondents their prospective vote intention: 'If there was a referendum on Britain's membership of the European Union, how do you think you would vote?' This divides respondents into two groups: Leavers and Remainers. BoE respondents are asked, 'Taking everything into account, how do you [currently – as of 2016/2017/2018] view the UK voting to leave the EU (European Union) in the recent referendum – which has become known as "Brexit"?' Possible responses vary from 'very positive' to 'very negative'. These attitudes are then mapped onto a binary Leave/Remain support scale.¹⁰

Our main explanatory variable, wealth, is similarly defined in the two datasets. To define financial wealth, we rely on individuals' reported savings and debt accumulations and adjust this measure by the number of household members. Property wealth is defined as the respondent's home value adjusted for the number of household members and as null if she does not own a house.¹¹ We document all of these measurements in Table 1.

We validate the BES and BoE wealth measures against official statistics in Appendix A (in the supplementary material) and document remarkable similarities between the central tendencies reported in the two surveys and those reported among the UK population. In Appendix B, we further explore the distribution of wealth in the BES and BoE samples and find few discrepancies between the two surveys. In Figure A.1, we report the relationship between an individual's voting intention in the EU referendum and her likelihood of not reporting various items pertaining to her economic circumstances. Leave status does not appear to be correlated with the likelihood of reporting these items.¹² Finally, in section C in the appendix, we document the geographical distribution of wealth (at the LSOA level) and its distribution across several individual characteristics. As Figure C.1 shows, property wealth is not confined to London; it displays greater variance across the country. Additionally, Figures C.3 and C.4 provide supportive evidence that wealth is not confined to the economically active but is positively correlated with age and education. Further suggestive of the idea that there is no predefined beneficiary of Brexit, in Figure C.2 we report the fact that there are no differences in personal wealth across Remain or Leave voters.

⁹Although the data was collected after the referendum, we were reassured of the validity of our analysis as individuals' support for Brexit remained stable over time (Grynberg, Walter, and Wasserfallen 2020). In fact, in BES data, about 97 per cent of people and in BoE about 90 per cent of others maintained their preference across time.

¹⁰We exclude the undecided from the analysis and note that Brexit preferences are relatively stable over time (Grynberg, Walter, and Wasserfallen 2020).

¹¹In our analysis, we control for whether a respondent owns their home, with or without a mortgage, and the results remain robust.

¹²Leavers appear less likely to report their home value. In order to address this, we report the robustness of our results in Fig. D.1 by including those who answered 'do not know' in the regression.

Table 1. Wealth items

Wealth type	Question text
BES	
Financial Debt	Do you and/or your partner (as applicable) have any debts, not including mortgage/student loans? If 'yes': Please pick the approximate value of your household debt.
Savings	Total amount of deposits and savings (continuous measure) If 'yes': Please pick the approximate value of your household savings.
Property Homeowner	Which of these applies to your home? [Owner, Owner with a mortgage, Rent, Housing Association] If 'owner': Please pick the approximate value of your home.
BoE	
Financial Debt	Unsecured debt (continuous measure)
Savings	Total amount of deposits and savings (continuous measure)
Property Homeowner	Housing tenure [Owner, Owner with mortgage, Rent, Housing Association] If 'owner': House value (continuous measure)

Based on these measures, we model the relationship between an individual's wealth and her support for Brexit in the BES sample as follows:

$$\text{Leave} = \alpha + \beta_1 \text{Financial Wealth} + \beta_2 \text{Property Wealth} + \beta_3 X + \epsilon \tag{1}$$

where **X** is a vector of covariates that includes respondents' disposable income, age, gender, education, working and marital status, authoritarian values and location based on Office for National Statistics area classifications (to control for the possible effects of area on wealth and Brexit support).¹³

Estimates from Equation 1 may, however, be biased if there are systematic differences in wealthy voters' unobserved characteristics that are correlated with higher support for Leave. We address this concern by modelling unobserved, time-invariant individual-level heterogeneity in the BoE panel dataset. We are able to estimate Leave support for each individual *i* at time *t* as follows:

$$\text{Leave}_{it} = \gamma_1 \text{Financial Wealth}_{it} + \gamma_2 \text{Property Wealth}_{it} + \gamma_3 X_{it} + \xi_i + \lambda_t + u_{it} \tag{2}$$

where, in addition to equation 1, we account for individual ξ_i and time λ_t specific effects.¹⁴

Results: British Election Study

Main Effects

Starting with the cross-sectional estimates in the BES sample, Table 2 reveals the importance of accounting for respondents' wealth to understand their support for Brexit. The wealth measures are standardized to mean 0 and one standard deviation (because respondents may experience financial shortages once accounting for outgoing payments or debts). Hence, the coefficients are interpretable as a standard deviation increase in the intention to vote Leave. We also report the wealth effects visually in Fig. 2.

¹³Established area classifications are produced using the 2011 Census and define areas by their economic activity, density, and ethnic diversity.

¹⁴This specification not only allows us to have a better claim at identifying a causal effect of wealth on the Leave vote, but allows us to account for the polarization in attitudes that happened as a result of the EU referendum.

Table 2. Wealth effect on leave support (BES)

	1	2
HH Adj Financial wealth	0.011* (0.006)	−0.004 (0.006)
HH Adj Property wealth	0.027*** (0.006)	0.013** (0.006)
HH Adj Disposable income	−0.076*** (0.006)	−0.014** (0.006)
Gender		−0.028*** (0.010)
Age		0.003*** (0.001)
Education: Enrolled in HE		−0.078* (0.047)
Education: have not completed HE		−0.040* (0.021)
Education: Graduated from HE		−0.081*** (0.012)
Married		−0.006 (0.011)
Unemployed		0.058 (0.046)
Student		0.041 (0.056)
Retired		0.033** (0.016)
Not in paid work		0.092*** (0.019)
Authoritarian-libertarian scale		0.089*** (0.002)
Controls	X	✓
Observations	7,627	7,627
R ²	0.018	0.244

Note: The dependent variable and leave vote intention, is binary (1 = Leave). Compared to model (1), model (2) includes controls for disposable income, gender, age, education, marital status, employment status, authoritarian values, and respondents' location based on the ONS Super Area Group classification. The reference categories are as follows: Gender: male, Education: not enrolled in HE, ONS Area: Affluent England. Robust standard errors are reported in parentheses.***p < 0.01, **p < 0.05, *p < 0.1.

Financial wealth does not seem to account for Remain or Leave support, whereas a standard deviation increase in property wealth increases Leave support by 1.3–2.7 percentage points. Since property wealth is significantly higher in the UK than financial wealth, these differences are expected, as our foregoing discussion showed.¹⁵ Overall, the effects are substantively important; they run in the opposite direction to those assumed in 'left-behind' accounts, including running in a counter direction to results at the aggregate level (Adler and Ansell 2020; Ansell 2019). In effect size terms, the effect can be benchmarked against the closeness of the referendum, tilted in favour of Leave by less than a 4 per cent difference, and by the effect sizes for other commonly cited variables, household income (as shown in Table 2), and also against the real-world size of increases in property wealth, which – in the UK case – has risen by an average of 8 percentage points over the five year period that preceded Brexit (Office for National Statistics, 2021).

Mechanism

The property wealth effect could be due to a couple of factors that relate to wealthy respondents' expectations of the economic impact of Brexit. Consistent with our insurance argument, we

¹⁵We explore the robustness of our results in Fig. D.2 to two alternative explanations correlated with support for Leave, the risk of unemployment and Euroscepticism.

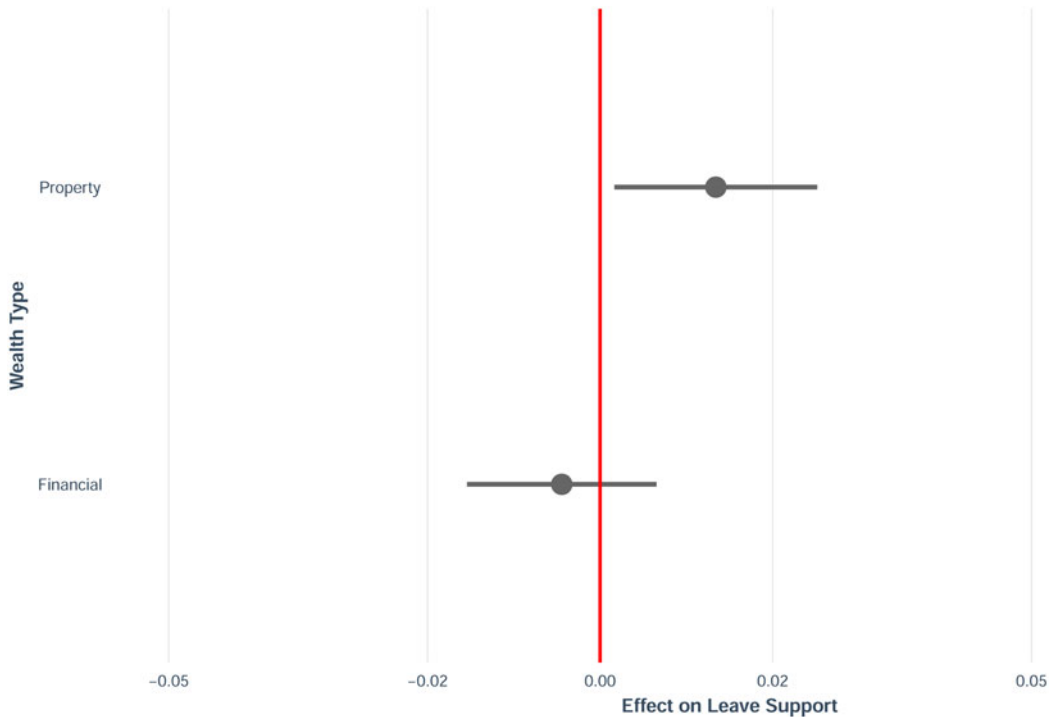


Figure 2. Wealth increases leave support.

Note: The dependent variable, leave vote intention, is binary (1 = Leave). Controls include household-adjusted disposable income, gender, age, education, marital status, employment status, authoritarian values, and respondents' location based on the ONS Super Area Group classification (95% confidence intervals).

expect that wealthier respondents are more likely to consider that they will be unaffected economically by Britain's departure from the EU. Figure 3 explores how national and personal economic situation evaluations vary by property wealth in predicting 'no change' in economic circumstances.¹⁶ Consistent with our expectations, wealthier respondents are more likely to think that Brexit will bring no change to their own economic circumstances. However, that is not true about their beliefs about the national outcomes – denoted by a flat line across the wealth distribution.

Aggregate and Individual-Level

Our results are, as discussed, different from aggregate-level patterns that identify the geographic relationship between wealth and higher Remain support. In what follows, we report the extent to which aggregate-level results may be unable to detect greater individual-level variations in wealth. We exploit BES data linkage to contextual data on median home prices at the Lower Super Output Areas (LSOA) level. We identify respondents who live in low-priced LSOA areas (below average median home prices) versus those in a high-priced LSOA area. The bottom panel of Figure E.1 in the online supplementary material replicates the results from the existing literature, showing that individuals living in wealthier areas are more supportive of Remain. However,

¹⁶There may be greater heterogeneity in preferences among the wealthy such that, for example, they expect personal economic circumstances to improve after Brexit. We explore this possibility in Fig. D.3 and found no evidence that wealthier individuals expected circumstances to improve. However, as Fig. 3 shows, we find evidence that they expected no change in circumstances, consistent with an insurance mechanism.

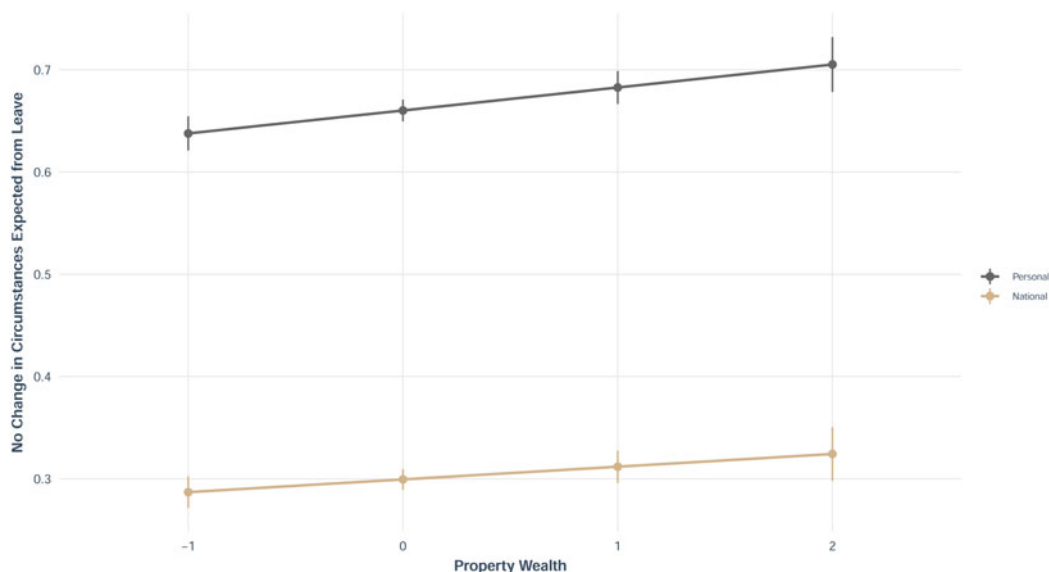


Figure 3. Expectations of Brexit effect on national vs personal finances (BES).

Note: The dependent variable is binary and takes the value 1 if the respondent believes leaving the EU will have no effect on her national or personal circumstances. Property wealth is denoted by the respondents' home value, standardized to mean 0 and standard deviation 1 (95% confidence intervals).

we find a positive association between property wealth and Leave support when we explore the individual wealth effect, as in the top panel. Therefore, we explore heterogeneity in individual wealth by low- and high-priced LSOA areas in appendix Figure E.2. Consistent with Figure E.1 and prospect theory, we find evidence that poorer areas were more likely to support Brexit. However, within areas, wealthier individuals were more likely to support Brexit. We therefore contribute to the literature by providing evidence that, despite local conditions, personal wealth informs and increases Brexit support. These results suggest that higher sociotropic wealth is associated with higher Remain support, but individual-level wealth is associated with higher Leave support.

Results: Bank of England Data

Main Effects

We proceed by exploring changes in wealth and related preferences over time. This allows us to account for all time-invariant unobserved individual-level characteristics, such as Britishness, xenophobia, education, etc. Table 3 reports significant wealth effects on Leave support, accounting for individual-specific, unobserved characteristics. A standard deviation increase in property wealth increases Leave support by as much as 7.1 percentage points. We also report the wealth effects visually in Fig. 4.

Contrary to the cross-sectional results in Fig. 2, a standard deviation change in financial wealth also increases Leave support, though its effect is half that of property wealth. This is in line with expectations pertaining to the higher absolute value of property rather than financial wealth and also shows how different types of wealth could be more or less insuring, given the economic and political context.

Mechanism

Similar to the BES data, in Fig. 5, we explore how evaluations of national and personal economic situations vary by property wealth by predicting 'no change' in economic circumstances. The

Table 3. Wealth effect on leave support (BoE)

	1	2
HH Adj Financial wealth	0.036** (0.016)	0.038** (0.016)
HH Adj Property wealth	0.071** (0.032)	0.062** (0.030)
HH Adj Disposable income	0.006 (0.019)	0.006 (0.019)
Age		−0.031 (0.023)
Age squared		0.000 (0.000)
Education: high school		−0.079 (0.077)
Education: higher education		0.055 (0.111)
Unemployed		−0.053 (0.073)
Student		0.074 (0.152)
Retired		−0.160 (0.120)
Not in paid work		−0.068 (0.095)
Region: East Midlands	0.235 (0.153)	0.245 (0.159)
Region: Greater London	0.225 (0.254)	0.243 (0.258)
Region: North	0.015 (0.218)	−0.032 (0.232)
Region: North West	−0.117 (0.238)	−0.179 (0.262)
Region: South East	0.134 (0.185)	0.112 (0.188)
Region: South West	0.124 (0.188)	0.104 (0.195)
Region: Wales	−0.076 (0.229)	−0.152 (0.256)
Region: West Midlands	0.104 (0.188)	0.097 (0.194)
Region: Yorkshire & Humberside	0.129 (0.175)	0.088 (0.184)
Controls	X	✓
Observations	6,242	6,242
R ²	0.033	0.046
Number of ids	5,230	5,230

Note: The dependent variable is binary (1 = Leaver). Compared with model (1), model (2) includes controls for age, age squared, education, employment status, and respondent's location. The reference categories are as follows: Education: not in higher education, Region: East Anglia. Clustered robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

figure paints a similar picture to that displayed using the BES data in Fig. 3; higher wealth positively correlates with an increase in expectations of no personal economic change.¹⁷

Results: Survey Experiment

We complement this observational evidence by using a survey experiment that provides a hypothetical wealth treatment.¹⁸ In addition to bolstering our confidence in the relationship between

¹⁷An alternative narrative could suggest that wealthier voters expect their properties to appreciate in value following Britain's exit from the European Union. We entertained this possibility in Fig. D.5 across the property wealth distribution, but we do not find supportive evidence of this mechanism.

¹⁸The hypothetical nature of this treatment ensures that the respondents are not deceived.

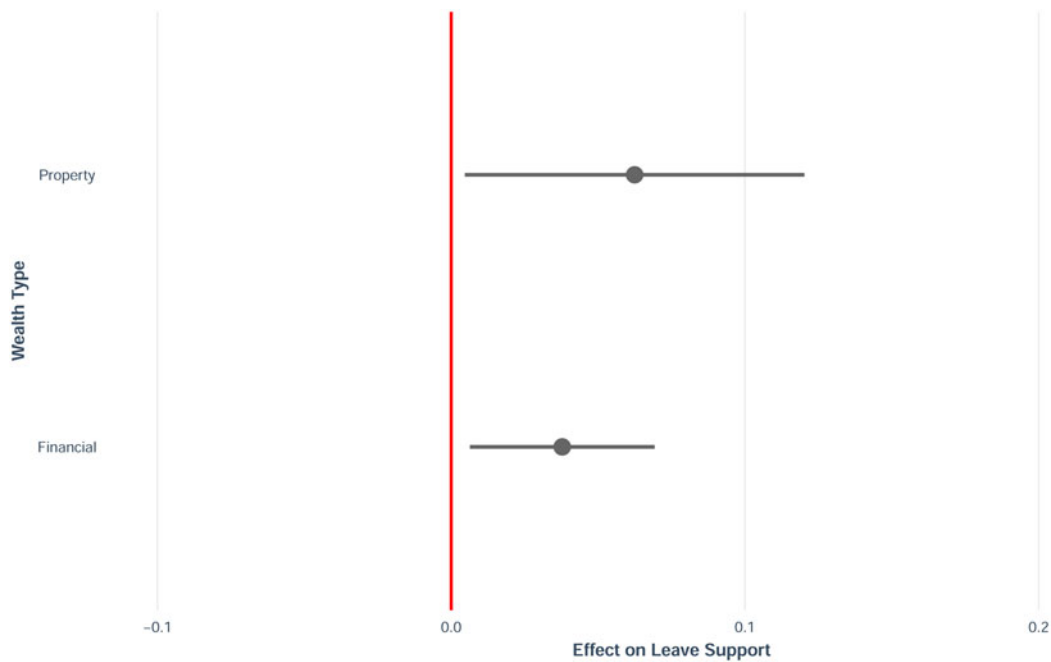


Figure 4. Wealth increases leave support.
Note: The dependent variable is binary (1 = Leaver). All models include controls for age, age squared, education, employment status, and respondent’s location. Models include time and individual fixed effects (95% confidence intervals).

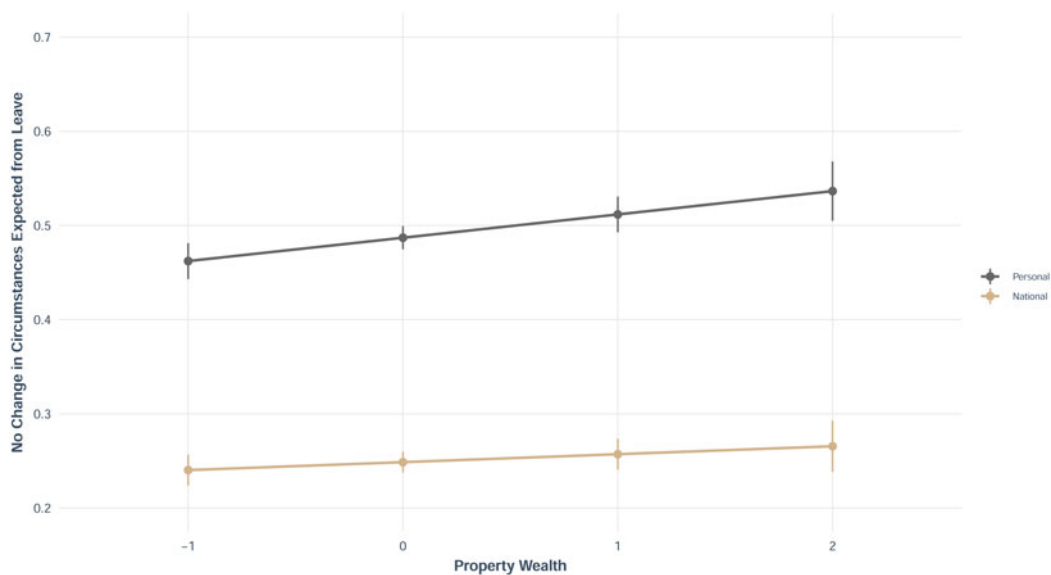


Figure 5. Expectations of Brexit effect on national vs personal finances (BoE).
Note: The dependent variable is binary and takes the value 1 if the respondent believes that the next 12 months will have no effect on national or her personal circumstances. Prospective evaluations are available for 2016–2018, and results are pooled across all respondents. Property wealth is denoted by the respondents’ home value, standardized to mean 0 and standard deviation 1 (95% confidence intervals).

wealth and Brexit support, we use this experimental approach to test whether a wealth win decreases risk aversion, as specified in hypothesis 3. The experiment was fielded in BES Wave 19 in the post-election survey in December 2019.

First, the experiment randomizes respondents into a treatment group with a hypothetical wealth win and a control group. Each treatment condition then receives a question about their Brexit preference and willingness to take risks. In total, there are four groups: a control group who were only asked about their Brexit preference, a treatment group who received a hypothetical wealth win and asked about their Brexit preference (the Brexit Support Treatment), a control group who were only asked their risk aversion, and a treatment group who received a hypothetical wealth win and then requested their risk aversion (the Willingness to Take Risk Treatment). The protocol is described in Table 4. To measure risk aversion, we rely on a two-question battery of questions proposed by Barsky et al. (1997) to capture financial risk-taking. Similar questions have since been used in the Cooperative Congressional Election Study and the 1996 Panel Study of Income Dynamics, which have been validated in various contexts (Eckles et al. 2014; Hryshko, Luengo-Prado, and Sørensen 2011; Pahontu 2020). Around 15,000 people participated in the experiment, about half of them receiving the Brexit Support Treatment and the other half receiving the Willingness to Take Risk Treatment. Figure D4 in the supplementary material gives us confidence that randomization was successful across all relevant observables.

Main Effect

The BES and Bank of England results have accounted for the effect of levels and changes in wealth on Brexit support. To complement this evidence, in Fig. 6 we report the treatment effect of a hypothetical £1 million home win on the respondent’s satisfaction with the UK’s vote to leave the EU, as noted in Table 4.

Consistent with the observational data, property wealth increases satisfaction with Brexit by 0.2 to 0.25 on the scale, equivalent to a 4 per cent increase compared to the control. A ‘hypothetical’ wealth increase would not be sufficient evidence of wealth’s effect on voting for Brexit. However, in combination with evidence from two separate data sets, this evidence gives us greater confidence in our conclusions.

Mechanism: Wealth and Risk Aversion

The observational evidence is consistent with the proposed insurance based mechanism that wealthier respondents enjoy in their support for Brexit. We also argued that the mechanism

Table 4. Experimental conditions and outcome wording

Conditions and outcomes	Text
Treatment	Imagine you took part in a lottery, and you are now the lucky winner of a £1 million house! 1/2 of sample
Brexit support Outcome 1	How satisfied or dissatisfied are you that the UK voted to leave the EU? 1/2 of the <i>treated</i> sample
Willingness to take risks Outcome 2	Suppose you are the only income earner in the family, and you have a good job guaranteed to give you income every year for life. You are given the opportunity to take a new and equally good job, with a 50–50 chance it will double your income and a 50–50 chance that it will cut your income by a third. Would you take the new job? If ‘yes’: Suppose the chances were 50–50 that it would double your income, and 50–50 that it would cut it in half. Would you still take the new job? If ‘no’: Suppose the chances were 50–50 that it would double your income and 50–50 that it would cut it by 20 per cent. Would you then take the new job? 1/2 of the <i>treated</i> sample

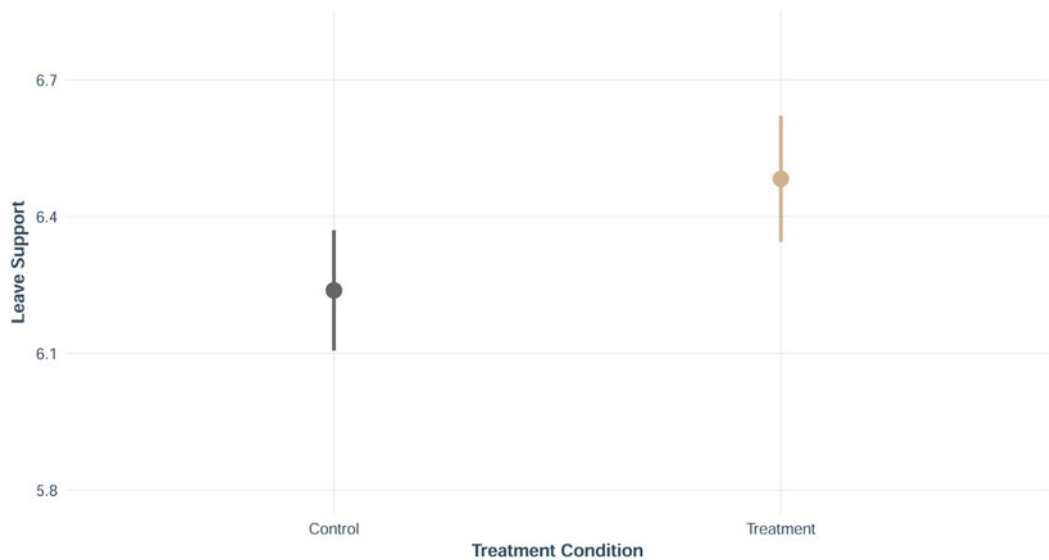


Figure 6. Wealth increases leave support.
Note: The dependent variable is measured on a scale from 0 to 10 (10 = Leave). This question is one of two randomized outcomes that were asked of the treatment and control group. The treatment group received a hypothetical wealth win. Full results in Table D.1 (95% confidence intervals).

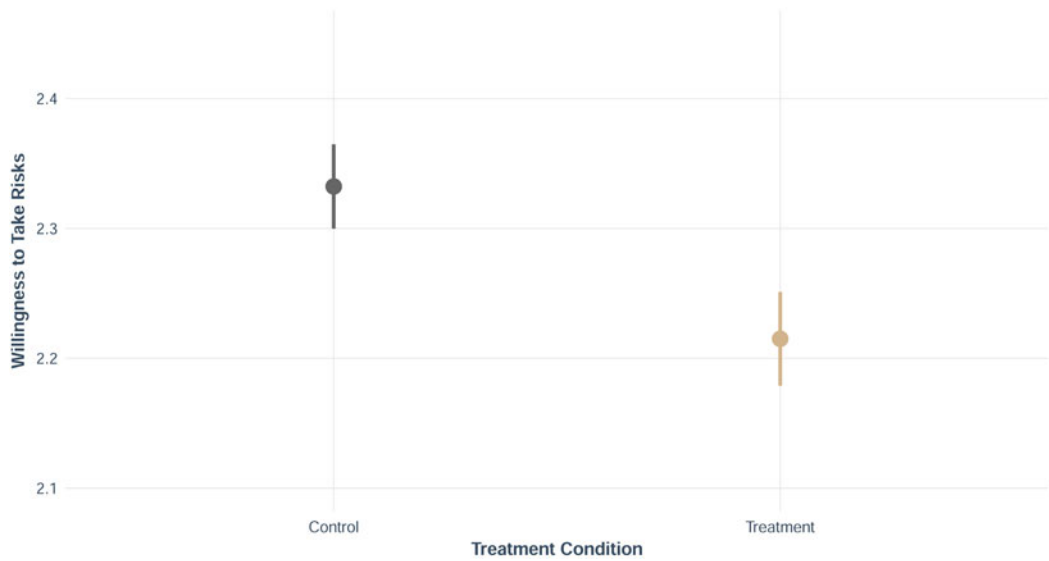


Figure 7. Wealth treatment decreases risk aversion.
Note: The dependent variable is measured on a scale from 0 to 3 (3 = risk averse). This question is one of two randomized outcomes that were asked of the treatment and control group. The treatment group received a hypothetical wealth win. Full results in Table D.2 (95% confidence intervals).

through which wealth increases Brexit support is via wealth’s effect on reducing risk aversion. Like Pahontu (2020), we test whether the insurance provided by the respondents’ wealth reduces their risk aversion, thereby allowing those with underlying preferences to support a change in the status quo. Looking at the results in Fig. 7, we notice a substantial and significant increase in risk-

taking among the treated, equivalent to a 5% increase in risk-taking behaviour. This is a very similar effect magnitude as in the case of Brexit support from Fig. 6.

Taken together, the observational and experimental evidence increases our confidence that the mechanism linking wealth to Brexit support works through insurance and risk aversion; this insurance and lower risk aversion allows individuals to support a change to the status quo – in this case, Brexit.

Conclusion

It is well-established that wealth provides self-insurance against economic risks, cushioning individuals from possible income shocks and other risks (Ansell 2014; Ehrlich and Becker 1972; Tertychnaya and De Vries 2019). Consequently, wealth leads to lower risk aversion (Pahontu 2020; Zanetti 2014). Despite these observations, the role of wealth has gone unstudied as a mechanism that enables voters to opt for more risky political propositions, such as large-scale changes to the status quo where voters offset costs, benefits, and risks.

Studying the effect of wealth in the Brexit case, we demonstrate that variation in personal wealth – especially property wealth – enables wealthier individuals to support Brexit and less wealthy individuals to support Remain. We provide evidence that the mechanism linking wealth and higher Leave support comes via wealthy voters' expectations that Brexit would not impact their personal finances; we also show that an increase in wealth lowers risk aversion. We explore these relationships using a rare combination of observational and experimental data across three separate contexts that include individual-level measures of wealth: a large cross-sectional electoral study, a separate panel study accounting for unobserved individual-level heterogeneity, and the use of a survey experiment. We also provide evidence that these results run contrary to aggregate-level relationships, although these findings could be complementary. We propose that wealth enables individuals to support Brexit and that sociotropic concerns also matter. This explains why our conclusions differ from those of studies of contextual economic effects on support for Brexit (Carreras 2019; Colantone and Stanig 2018; Fetzer 2019). People living in left-behind areas were more likely to support Brexit than those living in prosperous areas. The gains of Brexit were perceived to be greater in areas of the country that had experienced economic decline (Carreras 2019). But within those areas, given people's preferences, we show that wealthier individuals were more likely to vote for Brexit, and poorer individuals were more likely to vote for Remain. This individual-level finding is new and important for the Brexit case, which has otherwise focused on the economic determinants of preferences for Brexit rather than the role of wealth in economic risks.

Our research design, relying on observational cross-sectional panel data and experimental data, allows us to validate our results across three separate datasets and increases confidence in the validity and magnitude of the causal estimate of wealth on Brexit support. While studies on Brexit rely almost exclusively on cross-sectional comparisons, leaving room for endogeneity concerns, we are the first to identify (to the best of our knowledge), at the individual level, a causal estimate of wealth on Brexit support. We do so by exploiting the time dimension in Bank of England panel data and relying on a random variation in hypothetical wealth. We also offer a novel test of the individual-level mechanisms in the observational and experimental data.

Our findings imply that, while many poorer individuals may have held a preference for Leave, they were less likely to vote for Brexit given their lack of economic insurance. Walter (2021) questions why the British were willing to risk potentially imposing enormous economic self-harm on themselves. Our analysis shows that poorer individuals likely recognized a risk of economic self-harm due to their lack of economic insurance. These findings underline the importance of examining causal effects at the individual level alongside broader trends at the aggregate level. They are also important for understanding Brexit's long-term political and electoral implications. Support for Brexit might have been higher still had fewer poorer voters not perceived the economic risks associated with their lack of insurance. If the outcomes of Brexit are damaging to those who lack

the insurance to withstand personal economic shocks, support for this political project may be significantly weakened.

How might our findings generalize from the Brexit case and the context of Great Britain? One variation point may be the relative importance of financial and property wealth and the ability of different types of wealth to be more or less insuring. In Britain, owning a home has become an especially reliable form of wealth. Brexit was the type of shock that would most likely disturb the economy over the long term. In future applications of a ‘wealth-as-insurance’ lens in political behaviour, it would be useful to consider the possibility that different forms of economic insurance might be more important in different contexts. Our findings may apply more broadly where political choices over changes substantially affect the economy. This applies to other referenda on national secession. It may also apply if nations confront periods of economic instability due to a different kind of democratic choice. For example, it may apply to initiatives that change existing economic models motivated by decarbonization, which entails substantial economic instability. Wealthier voters may be more able to vote with their preferences over climate change reduction and support a party and its policies because they are insured against the immediate economic consequences.

The general implications of our findings are normative, theoretical, and empirical. While there is a considerable amount of research on the relationship between inequality and redistributive preferences, we show that poorer voters do not just have different political preferences; they also lack the insurance to act on some of those preferences. Economic inequalities create inequalities in experience, preferences, and political risk-taking. Finally, supporting other research advocating for the unique role of wealth, in addition to standard predictors of economic voting (Lewis-Beck and Nadeau 2011; Nadeau, Foucault, and Lewis-Beck 2011; Nadeau, Lewis-Beck, and Foucault 2019), we have shown how it is important to measure economic positions in different ways, how income and wealth are weakly correlated, and, as a result, how wealth will lead to different substantive conclusions than a focus only on income. Our findings show the importance of wealth for understanding political behaviour in a new and potentially important way. By providing insurance, wealth cushions individuals from the economic risks associated with a vote for a major change to the status quo.

Supplementary Material. The supplementary material for this article can be found at <https://doi.org/10.1017/S0007123423000728>.

Data availability statement. Replication data for this article can be found in Harvard Dataverse at: <https://doi.org/10.7910/DVN/LOGVPZ>.

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Competing interests. None.

Ethics standards. The research was conducted in accordance with the protocols for the British Election Study approved by the University of Manchester, UK.

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