

**Why Britain Voted for Brexit:  
An Individual-Level Analysis of the 2016 Referendum Vote**

by

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### **Abstract**

This paper investigates forces that shaped the decisions voters made in the June 23, 2016 referendum on the UK's continued membership in the European Union. Using data gathered in a national panel survey conducted before and after the referendum, multivariate models informed by previous research on voting behaviour in major 'polity-shaping' referendums are used to assess the strength of various forces affecting the choices voters made in the EU referendum. Results emphasize the power of two classes of benefit-cost calculations, risk assessments, emotional reactions to EU membership and leader images as predictors of referendum voting. Among leader images, feelings about Boris Johnson had noticeably strong effects, thereby suggesting that his decision to become a leader of the Leave campaign made an important contribution to the forces that generated a Brexit majority.

## **Why Britain Voted for Brexit:**

### **An Individual-Level Analysis of the 2016 Referendum Vote**

On June 23 2016 Britain voted to leave the European Union. When all votes were counted 51.9 percent of those voting had opted to leave providing a lead over the Remain vote that extended to almost 7 percentage points in England. The vote for Brexit followed a campaign by several Eurosceptic groups—notably Vote Leave, Leave. EU and Grassroots Out—that had focused heavily on mobilizing public anxiety over immigration, the free movement of EU nationals and the further enlargement of the EU to encompass Albania, Montenegro and Serbia, and possibly Turkey. The Brexit campaign also had focused heavily on the issues of sovereignty and the economic costs of EU membership, variously claiming that voters could ‘take back control’ by voting to leave the EU and that the country would save £350 million each week that could be redirected into the National Health Service (NHS).

In contrast, the campaign to remain in the EU repeatedly emphasized the claimed heavy economic costs and major risks that would accompany Brexit. The official campaign for remain, Britain Stronger In Europe, alongside Prime Minister David Cameron, Governor of the Bank of England, trade unions and numerous businesses, variously warned that Brexit would leave households £4,300 worse off each year, workers £38 a week worse off and that house prices could fall by 10-18 percent. Only days before the vote pro-Remain Chancellor George Osborne claimed that Brexit would produce a £30 billion ‘black hole’ in the budget that would necessitate harsh public spending cuts and tax increases. Christine Lagarde, Director of the International Monetary Fund (IMF), similarly cautioned that a vote to leave the EU would entail ‘severe global damage.’ Shortly before polling day the IMF predicted that the effects of a vote to leave would be ‘negative and substantial’ and that Britain’s gross domestic product could lose 5.6 percentage points by 2019. In perhaps the most high-profile intervention, U.S. President Obama informed voters that after Brexit the UK would be at ‘the

back of the queue' in trade talks with the United States.

These observations point to the importance of cost-benefit *calculations*, feelings of attachment to a wider *community* and *cues* from political elites in shaping the outcome of the 2016 referendum—three sets of explanations that have received significant attention in academic studies of the drivers of public attitudes to the EU (Hooghe and Marks 2005; see also Hobolt and de Vries 2016). In this article we draw on data gathered in a national panel survey conducted just before and immediately after the June 23rd referendum to investigate what motivated the vote for Brexit. Was the vote to leave the EU motivated primarily by instrumental considerations over the perceived costs and benefits of EU membership? Or was it driven more strongly by feelings of national identity and anxiety over perceived threats to the native in-group, from immigration and the free movement of EU nationals? Furthermore, how influential were cues from prominent politicians, such as David Cameron, Boris Johnson and Nigel Farage, in motivating people to vote, either for remain or leave? After providing a brief overview of existing research on public attitudes towards the European Union, we address these questions in a multivariate analysis of the vote for Brexit.

### **What Drives Public Attitudes toward the EU?**

The 2016 referendum was the second such event to ask UK citizens about their preferred relationship with Europe. The first, which asked voters whether they wanted to stay in the Common Market, as it was then called, was held in 1975 and saw the country endorse continued membership by a strong two to one margin (Butler and Kitinger 1976). The forty-one years between the two referendums witnessed the development of a sizable literature on factors that shape public attitudes toward the EU (e.g., Eichenberg and Dalton, 1993; Franklin, Marsh and McLaren, 1994; Gabel and Whitten, 1997; Gabel, 1998; Hooghe and Marks, 2005, Maier and Rittberger, 2008; Armingeon and Ceka, 2014). These studies explore a range of factors, including the influence of parties and elites on public opinion (e.g.

Steenbergen, Edwards and de Vries, 2007; Ray, 2003), the effects of media coverage of the EU on support for integration (Vliegenthart et al. 2008), the influence of national identities in shaping public attitudes (Carey, 2002), and the role of the economy in influencing support for further integration (Gabel and Whitten, 1997).

Hooghe and Marks (2005) provided a succinct summary of findings on what drives public attitudes towards European integration in their paper: '*Calculation, Community and Cues*'. They conclude that attitudes are driven by three broad factors. First are calculations about perceived costs and benefits of integration, which vary according to who are seen to be the 'winners or losers' in this process. Second are community considerations that relate principally to social identities, with people who subscribe to a more exclusive national identity being significantly more Eurosceptic than those who acknowledge multiple identities, such as feeling 'British' and 'European'. Third are cues or heuristics that voters use when forming opinions about the EU. These cues include images of party leaders and other prominent politicians as well as partisan attachments and ideological predispositions. Hooghe and Marks summarize their argument as follows:

'Citizens take the economic consequences of market integration into account, both for themselves and their countries. They evaluate European integration in terms of their communal identities their views towards foreigners and foreign cultures. Further, their attitudes are cued by their ideological placement and by elites and political parties' (2005: 436-37).

Cost-benefit calculations of European integration take different forms. Some of the earliest research stressed the importance of the objective social characteristics of individuals, such as their occupational status and educational backgrounds (Gabel and Palmer, 1995; Anderson and Reichert, 1996; Gabel 1998; Inglehart, 1970). People with high status occupations who possess significant human capital tend to benefit from lower trade barriers

and the increased geographical mobility of labour brought about by enhanced European integration. In contrast, individuals with low status, poorly paid occupations and few educational qualifications find themselves in competition with similarly low-skilled labour from EU member states. This limits job opportunities and drives down wages. As a result, high status individuals are likely to support EU integration, whereas lower status people are likely to oppose it (Gabel and Palmer, 1995). Recent research also suggests that high levels of education have become a more influential driver of support for the EU over time, with the less well-educated becoming less supportive (Hakhverdian et al. 2013). Others also have produced evidence which suggests that individual economic cost-benefit analyses have become increasingly important for explaining public reactions to the EU since the eruption of the 2008 financial meltdown and ensuing Eurozone crisis (Hobolt and Wratil 2015).

In their multi-country time-series analysis of attitudes towards EU integration Gabel and Whitten (1997) found that national inflation rates negatively affected support for EU integration over a five-year period in the 1980s. They also found that measures such as trade relationships between countries within the EU encouraged positive support for integration. However, their analysis indicated that subjective judgments about economic conditions were significantly more important than the objective performance of economies, a finding that echoes results from the economic voting literature (Lewis-Beck, 1988; Clarke et al., 2009).

Regarding community, a number of studies demonstrate how attitudes toward EU membership and integration are influenced by attachments to one's culture and society, as well as by a 'fear of others' which plays a significant role in defining identities (Carey 2002; McLaren 2006). Research on support for the UK Independence Party (UKIP), for example, has documented the impact of anxiety over the perceived negative effects of immigration (Goodwin and Milazzo 2015; Clarke et al., 2016). Hooghe and Marks (2004) suggest that national identity is more important than economic calculations when it comes to shaping

attitudes about EU integration, a finding supported in later studies (e.g. Boomgaarden et al., 2011). However, the evidence on the effects of identity is mixed, with positive relationships existing between Scottish and Welsh identities and support for European integration (Haesly, 2001). Similar findings have been obtained in studies of other European countries, particularly in Eastern Europe (Maier and Rittberger, 2008). Equally, in a laboratory experiment Vossing (2015) found that individuals with exclusive national identities were more likely to be influenced by elites in forming their attitudes to European integration than individuals with mixed identities, suggesting that opinions can be quite volatile.

In Britain, one of the striking features of attitudes to membership of the EU is how volatile these attitudes can be (Whiteley et al. 2013; Clarke et al., 2016). Figure 1 illustrates this point by showing trends in public attitudes towards EU membership in monthly Essex Continuing Monitoring surveys conducted between April 2004 and December 2015.<sup>1</sup> Since the 2010 general election, approval for EU membership varied by nearly 17 points, ranging from a low of 33.0 per cent in June 2011 to a high of 49.8 per cent in July 2015, before receding sharply to 39.2 per cent in November of that year. Levels of disapproval of EU membership also fluctuated sharply and irregularly, reaching a high of 54.2 per cent in April 2012 before falling to a low of 36.5% in May 2015. In December 2015, shortly before the referendum campaign, 42.6% approved of EU membership while 39.2 per cent disapproved.

(Figure 1 about here)

This pattern of ongoing large-scale volatility clearly presents a problem in explaining attitudes to the EU with a highly inertial variable like national identity. Identity is driven by deep-rooted cultural and historical forces and survey evidence indicates impressive levels of

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<sup>1</sup> Information concerning question wording and variable construction is contained in the Measurement Appendix.

aggregate stability.<sup>2</sup> Yet the ‘fear of the other’ component of identity can change quickly, particularly if it is linked to a sudden crisis, for example over refugees in Europe or increases in levels of net migration due to the free movement of EU nationals. Equally, perceptions of the economic consequences of EU membership as well as cues provided by politicians whose popularity is volatile are also potential candidates for influencing attitudes towards EU membership. This implies that the balance of EU attitudes, especially in a highly charged referendum context, likely will be more dependent on immediate political issues, policy concerns and elite cues than on deep-rooted historical identities.

In this respect, the findings of earlier research are noteworthy. In their analysis of referendums on European integration Franklin, Marsh and McLaren (1994) showed that the votes held to ratify the 1992 Maastricht Treaty on the Single Market were best interpreted as public reactions to short-term, national and domestic issues rather than longer-term considerations about the overall future of the EU. Thus, the unpopularity of the governments in Denmark and France helped to ensure a rejection of the treaty in the former country and near rejection in the latter. Franklin and his colleagues contrast this with Ireland which had a more popular government at the time and where the referendum passed easily.

Subsequent work confirmed that attitudes to the EU are closely tied to domestic political issues and policy-making (Armingeon and Ceka, 2014; Marsh 2015). For example, Steenbergen, Edwards and De Vries (2007) argue that elite and mass opinions interact to influence public attitudes to integration. Similarly, Leonard (2003) shows that parties influence voters in relation to EU integration, but the influence is conditional on the levels of elite agreement over integration and also the strength of attachment that individuals have to

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<sup>2</sup> Data from the 1970-2002 Eurobarometer Trend File show that in 1993, 60 per cent claimed to have exclusive national identities and nearly ten years later in 2002, the figure was very similar, 62 per cent. In contrast, in 1993 45 per cent believed that EU membership was a good thing but in 2002 only 32 per cent did so.



these parties. This suggests that, in general, unified elites have a bigger influence on public attitudes than divided elites.

### **Theoretical Perspectives**

Based on the 'Calculations, Communities and Cues' framework outlined above we would expect that voting in the 2016 referendum on EU membership is influenced by each of these three factors, but with some amendments to the analysis. Considering calculations first, this is commonly viewed as a 'soft' rational choice exercise in which voters evaluate the benefits of EU membership, often focusing on the economy and their own personal circumstances, then weigh these benefits against perceived costs. The present analysis takes this perspective into account using a battery of indicators designed to capture how benefit-cost calculations affected decision-making in the referendum.

As the referendum campaign and its aftermath revealed, public attitudes to EU membership also have a strong emotional component. Although some people have a strong affinity with the concept of being a member of a wider community, others strongly resist this idea. Recent research on affective reasoning suggests that emotional aspects of decision-making have substantial effects on the political choices that people make (Marcus, Neuman and MacKuen, 2000; Neuman, Marcus, Crigler and MacKuen, 2007; Garry, 2013). For this reason, our survey included a question designed to capture the emotions people feel when they think about the EU. The expectation is that positive emotional reactions will promote voting for Remain and negative emotions will prompt voting for Leave.

Another important consideration relates to how risk perceptions affect referendum voting. In his review of research on referendums, LeDuc (2003) identified a 'status quo bias' in voters' decision making. When faced with a complex and difficult issue of the type posed by major 'polity-shaping' events like the referendums on Scottish independence or EU membership, risk-averse voters typically opt for the 'the devil they know'. Prior to the

beginning of a referendum campaign sizable numbers of people tell pollsters that they support the change being proposed. But, as the campaign progresses and decision day nears, some have misgivings, reconsider and, after a period of indecision, end up voting to keep things as they are. This pattern ('LeDuc's law') is consistent with research in experimental economics and cognitive psychology that emphasizes the importance of risk orientations when individuals are making choices in contexts of high stakes and abundant uncertainty (Gigerenzer, 2008; Kahneman, 2011). Accordingly, we incorporate a measure of perceptions of the risks of leaving the EU into our analyses.

We analyze community influences on attitudes to the EU using data on perceptions of voters' identifications as British, English, Scottish, Welsh, European or something else. As observed above, Hooghe and Marks make the case for the effects of such identities on attitudes towards the EU. However, our expectations about the impact of identities on voting in the 2016 referendum are tempered by recent research on voting in the 2014 Scottish Independence referendum and voting for the Scottish National Party (SNP) in elections to the Holyrood Parliament which tends to discount the importance of identity (Johns, Mitchell and Carman, 2013). Also, as noted above, evidence indicates that identities tend to be quite stable over extended time periods. Accordingly, if identities are influential, their effects likely will be antecedents in the causal chain of forces affecting referendum voting, rather than having an immediate effect on the voting decision

Research on how cues affect public attitudes towards the EU emphasizes the roles of political parties and party leaders. In the case of the EU referendum the minor parties and their leaders such as UKIP and Nigel Farage, the SNP and Nicola Sturgeon and the Liberal Democrats and Tim Farron adopted clear and well publicised positions. In contrast, both Labour and the Conservatives were divided on the referendum question—the latter much more so than the former. Prime Minister David Cameron campaigned vigorously for Remain

while former London mayor Boris Johnson—also a very prominent Conservative politician—campaigning to leave alongside lesser known Eurosceptic cabinet ministers, such as Michael Gove, Chris Grayling and Priti Patel. Johnson was widely seen as an unofficial leader of the Leave campaign. As extremely high profile figures on opposite sides of the referendum question, Cameron and Johnson were heavily covered by media throughout the campaign.<sup>3</sup> This gave them ample opportunity to cue the public about how to vote on June 23rd. In contrast, since the Conservative Party as a whole was deeply divided and had been sending contradictory messages about 'Europe' to the electorate for many years before the campaign began, this very likely muted the impact of a more general Conservative partisan heuristic.

Labour was more united on the issue of UK membership with only a handful of MPs such as Gisela Stuart and Frank Field supporting Brexit. However, Labour's internal discord over the unpopular leadership of Jeremy Corbyn, who was seen as providing a lukewarm endorsement of continued EU membership, meant that Labour was sending mixed messages to the voters. Corbyn's unwillingness to campaign enthusiastically for Remain was traced by many journalists to his well-documented Eurosceptic sentiments in earlier years. Corbyn's desultory campaign efforts, together with the much publicised Conservative divisions over the EU, eroded the strength of cueing effects of the Labour Party and its leader.

### **Data and Methods**

The data employed to study the determinants of voting in the EU referendum were generated by a national panel survey<sup>4</sup> conducted as part of the Essex Continuous Monitoring Survey. The first wave of the survey was in the field from the 18<sup>th</sup> to 20<sup>th</sup> of June and the second wave was conducted shortly after the referendum on June 27<sup>th</sup> to June 29<sup>th</sup>. The sample sizes for

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<sup>3</sup> Gabel and Scheve (2007) suggest that parties typically send out multiple cues rather than a single cue in referendum campaigns because they are not unitary actors and internal party dissent ensures that voters hear alternative messages. In the 2016 EU referendum the Conservatives were very much a case in point.

<sup>4</sup> The survey was conducted via internet by YouGov, plc., with funding provided by the ESRC's 'UK in a Changing Europe' programme.

the pre- and post-referendum waves were  $N = 2218$  and  $N = 1993$ , respectively. The panel design is well-suited for studying how various factors affected voting in the referendum. Voting behaviour was measured in the post-referendum wave while, with the exception of campaign contacts, all of the predictor variables were measured in the pre-referendum wave. Measuring variables of interest in this way helps to alleviate threats to inference which can bedevil analyses that rely on cross-sectional survey data (Whiteley et al. 2016).

### Results

In the pre-referendum wave of the Essex CMS referendum panel survey, 46.4 per cent of respondents intending to vote reported that they would vote Remain and 47.9 per cent indicated they would vote Leave, with the remaining 5.8 per cent saying they 'didn't know'. If, as discussed earlier, many in the latter group ultimately would decide to stick with the status quo, these numbers suggest that Remain might have been able to secure a narrow victory. Of course, that did not happen—on June 23rd, 51.9% voted Leave and 48.1% voted Remain. Vote totals in the post-election election wave of our survey closely mirrored the result, with 50.7 per cent stating they had voted Leave and 49.3 per cent saying that they had voted Remain.<sup>5</sup>

In the earlier discussion we argued that benefit-cost considerations were likely to be very important for explaining the vote. Figure 2 displays survey variables that measure public attitudes about the costs and benefits of membership. These items tap perceptions of being either better off or worse off from leaving the EU with regard to a large number of issues, including personal finances, immigration, terrorism, foreign affairs, sovereignty and the economy. As Figure 2, Panel A illustrates, respondents were inclined to think that if Britain left the EU then it would be worse off regarding the economy (39 per cent v. 24 per cent) and

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<sup>5</sup> A 95% confidence interval (standard error = 1.2 per cent) for the vote shares reported in the survey easily covers the actual vote percentages for Remain and Leave.

their own financial circumstances (30 per cent v. 12 per cent), but they felt very much the opposite about immigration. In this case fully 51 per cent thought that there would be less immigration and only 3 per cent thought that there would be more in the event the UK left the EU. At the same time, a plurality (41 per cent) agreed with the proposition that immigration provided workers for jobs that Britons are unwilling to do.

(Figure 2 about here)

During the referendum campaign the Remain side claimed that the EU was a force for peace as well as prosperity. A plurality of the survey respondents agreed; 37 per cent believed that membership of the EU helped to keep the peace in Europe while 29 per cent thought the opposite (Figure 2B). With regard to international affairs 21 per cent believed the UK would have less influence in world affairs if it left the EU while 15 per cent thought it would have more influence. At the same time, a clear majority of 51 per cent indicated that they thought EU membership eroded British sovereignty. Finally, there was a tendency to think that continued EU membership enhanced the risk of terrorism. Thus, 21 per cent stated that the risk would be greater if the country stayed in the EU and 16 said the risk would be smaller. When asked a second question on the topic, the difference was larger—47 per cent agreed that there would be more terrorism if the country stayed in the EU and 28 per cent disagreed.

Confirmatory factor analysis (Acock, 2013) is used to summarize the perceived benefits and costs of leaving the EU. This analysis suggested that two factors could provide a useful representation of the data. The results shows that items focusing on the economy and Britain's influence in the world load heavily on factor one, while items focusing on immigration and security issues load heavily on factor two. Factor scores derived from this analysis are employed in the multivariate modelling presented below.

Figure 3 contains frequency distributions for variables measuring emotional reactions to EU membership. These items are derived from a question asking respondents to describe their feelings about the country's EU membership by selecting up to four words from a list of eight descriptors. Four of the words described positive emotional reactions and four described negative reactions. The figure illustrates that feelings of unease dominated with 44 per cent selecting this word. Although 26 per cent of the respondents described their feelings as 'hopeful' and this was the second most popular choice in the list no other positive word was selected by more than 14 per cent. Overall, as the two bars on the far right of Figure 3 indicate, 32 per cent chose one or more positive words, while 50 per cent chose one or more negative words. On the eve of the referendum negative emotions clearly outweighed positive ones when people thought about UK membership in the EU.

(Figure 3 about here)

Figure 4 displays responses to a question which asked people to use an 11-point scale to indicate how risky leaving the European Union would be for Britain. On the scale, 0 indicates 'no risk' and 10 'very risky'. As the figure illustrates, risk perceptions were widely dispersed. Although the mean score (5.6) was very close to the scale's mid-point (5), opinion was tilted towards the 'risky' end, with a majority (54 per cent) assigning scores of six or greater. In contrast, only one-third (33 per cent) gave scores below the mid-point, thereby indicating that they did not think the risks would be as severe. If risk assessments influenced referendum voting, the expectation is that the more risk people perceived the less likely they were to prefer Brexit.

(Figure 4 about here)

The community aspect of attitudes to membership was measured by a question which asked respondents if they felt 'British', 'English', 'Scottish', 'Welsh', 'European', or some other nationality. Forty-eight per cent described themselves as 'British' with 33 per cent

describing themselves as 'English', 6 per cent as Scottish and 3 per cent as 'Welsh'. Only 3.5 per cent described themselves as 'European' with a further 6 per cent choosing another national identity or saying they 'didn't know'. The expectation is that national identities will influence the vote. Compared with those identifying themselves as British, we expect those thinking of themselves as English or Welsh will be less favourable towards EU membership whereas those identifying themselves as European or Scottish will be more favourable. This is because the former identities are narrower than a more inclusive identity of being 'British'. In the case of Scotland, however, the recent upsurge of nationalism flips this relationship with many seeing EU membership as an attractive alternative to staying in the UK.

The cues component of the model was measured by asking respondents to rate several prominent politicians using 11-point (0-10) 'likeability' scales, where zero means 'strongly dislike' and ten means 'strongly like'. These scales have proved very useful in summarizing important leader image traits, such as competence, honesty, responsiveness and trustworthiness (Clarke et al. 2009; Whiteley et al., 2013). The hypothesis is that respondents will be more responsive to cues provided by leaders they like rather than those they dislike. Given the positions taken by key leaders in the referendum we would expect that positive feelings about David Cameron or Jeremy Corbyn would encourage individuals to vote to remain, whereas positive impressions of Boris Johnson or Nigel Farage would encourage them to vote to leave.

Other possible cues in the referendum campaign came from the political parties and also from the Remain and Leave campaigns. The divisions in the Labour and Conservative parties suggest that cues from them might be largely ineffective in influencing the vote because they were sending mixed messages in the Conservative case and weak messages in the Labour case. In contrast, cues from the SNP, Liberal Democrats and UKIP were quite clear and so attachments to these parties might well have influenced the vote. These

possibilities are tested by including measures of voters' partisan attachments in the analyses.

In addition, three other predictor variables were specified. Two of these variables measure contact with the Leave and Remain campaigns. The expectation is that people exposed to a campaign would be more likely to vote for that option. A third predictor measures the perceived importance of 'Europe' as an issue. Over the years 'Europe' has become a codeword for Euroscepticism and, accordingly, designating Europe as an important issue can be taken as a useful proxy of the strength of Eurosceptic sentiments that could prompt Leave voting.

Finally, we consider the possible effects of four socio-demographic variables. During the campaign, numerous polls showed large differences in support for/opposition to EU membership across age groups, with older people being more likely to endorse Brexit than were younger people. Similarly, echoing previous research on attitudes towards the EU (Ford and Goodwin, 2014), polls revealed that less well-educated people and those in lower social classes were more likely to be Leave supporters. In contrast, relatively little was said about gender differences in attitudes toward the EU. The influence of these four variables (age, education, gender and social class) is assessed by including them in multivariate analyses.

We begin by estimating the direct effects of the several predictor variables discussed above on referendum voting. Since the dependent variable is a dichotomy (vote Leave = 1, vote Remain = 0), model parameters are estimated using binomial logit procedures (Long and Freeze, 2014). In equation form, the model is:

$$\begin{aligned} \text{logit}(E[\text{Vote}]) = & B_0 + B_1 * \text{Fecinf} + B_2 * \text{Fimter} + B_3 * \text{Emreac} + B_4 * \text{Euiss} + \\ & B_5 - B_8 * \text{Leader} + B_9 - B_{14} * \text{Partyid} + B_{15} - B_{19} * \text{Natid} + \\ & B_{20} - B_{21} * \text{Ccamp} + B_{22} - B_{25} * \text{Demos} \end{aligned} \quad (1)$$

where: Vote = referendum vote; Fecinf = economy-influence benefit-cost factor; Fimter = immigration-terrorism benefit-cost factor; Emreac = emotional reactions to EU; Euiss =



importance of EU issue; Leader = leader images (Cameron, Corbyn, Farage, Johnson); Natid = national identities (British, English, European, Scottish, Welsh, Other); Ccamp = contact by Leave or Remain campaigns; Demos = socio-demographics (age, education, gender, social class). Table 1 contains the results of this analysis.

Overall, the model fits the data very well, with a McKelvey  $R^2$  of .90. Over 93 per cent of voters are correctly classified by the analysis—this represents an 86.2 per cent reduction in prediction error. These summary statistics testify that the model provides an excellent statistical explanation of why respondents behaved as they did.

(Insert Table 1 about here)

Both the economic-influence and immigration-terrorism benefit-cost factors played very significant roles in explaining the vote to leave. Table 1 shows that respondents who were optimistic about the economy and Britain's role in the world if the country were to exit the EU were much more likely to vote Leave ( $p < .001$ ). Similarly, those who believed that that Britain would be better able to control immigration and counter terrorist threats if it were not part of the EU were more likely to vote Leave ( $p < .01$ ). As also expected, perceptions of risks associated with leaving the EU have a highly significant impact ( $p < .001$ ) on referendum voting—respondents who thought that Brexit was risky were much less likely to opt to leave than those who minimized the risks. Emotional reactions to the EU were significant ( $p < .001$ ) as well; positive reactions to the EU stimulated a vote to remain, whereas negative emotions promoted a leave vote. In addition, and again as expected, those who designated the EU as an important issue were more likely to vote to leave ( $p < .05$ ).

The national identity measures are not statistically significant with the sole exception of Scottish identifiers, who were less likely to vote to leave than were those who identified themselves as British (see Table 1). Equally, socio-demographic characteristics had no effect apart from a very modest tendency ( $p < .10$ ) for individuals in higher socio-economic grades

to vote for remain. The cues variables indicated that party cues were largely irrelevant with the exception of a negative effect associated with Conservative partisanship, indicating that Conservative identifiers were more likely to vote to remain, other things being equal. Leader images were another story. Although feelings about the David Cameron and Jeremy Corbyn were not influential, feelings about Boris Johnson and Nigel Farage had highly significant effects ( $p < .001$ ). Controlling for the influence of other predictors, positive images of the leaders of the Leave campaign significantly enhanced the likelihood of voting to exit the EU.

The explanatory power of various statistically significant predictors is charted in Figure 5. Since the binomial logit model of referendum voting has a nonlinear functional form, interpretation of the strength of predictor variables is not straightforward (Long and Freese, 2014). To provide intuition, we assess the impact of a change in a predictor variable from its minimum to its maximum value on the probability of casting a Leave ballot while holding all other predictors constant at their mean values. Figure 5 documents that the economics-international influence and immigration-terrorism benefit-cost variables had the strongest effects on referendum voting. As the former moved from negative (very high costs, very low benefits of leaving) to positive (very low costs, very high benefits of leaving), the probability of voting Leave increased by fully .88 points (on a 0-1 scale). The latter also was very powerful—as benefit-cost calculations regarding immigration and terrorism moved from negative to positive, the likelihood of voting Leave increased by .75 points.

(Figure 5 about here)

Predictably, risk perceptions had the opposite impact of benefit-cost calculations. Changing perceptions of risks associated with leaving the EU from their minimum to their maximum reduced the probability of voting for Brexit by .71. This indicates that risk orientations were a very influential factor in the referendum, even though their effect was not enough to change the result, as 'LeDuc's law' would suggest. Emotional reactions to

membership also exerted sizable effects, with a shift from purely negative emotions about EU membership to purely positive ones reducing the probability of a Brexit ballot by .52 points. Leader image cues provided by Farage and Johnson were influential too—in both cases, as feelings about these two figures moved from negative to positive along the 0-10 'likeability' scale, the probability of voting Leave increased by .44 points. Other effects were less powerful, with Scottish identity reducing the likelihood of voting to leave by .32 points, while identification of Europe as an important issue increased it by .14 points. The influence of Conservative partisanship was very weak, reducing the probability of a Leave vote by .07 points.

Additional insight regarding the ability of various classes of predictor variables to account for voting in the referendum is provided by the statistics summarized in Figure 6. The figure displays McKelvey  $R^2$  and AIC values for several logit models of the vote that use different specifications of predictors.<sup>6</sup> As shown, the benefit-costs model dominates its competitors, with the largest  $R^2$  (.85) and the smallest AIC (748.35). Other relatively powerful models include the risk assessment model ( $R^2 = .73$ ), the emotional reactions to the EU model ( $R^2 = .71$ ), and the leader cues model ( $R^2 = .71$ ). The remaining models have much smaller  $R^2$ 's and considerably larger AICs. Thus, the  $R^2$  values for the partisan cues, national identities and socio-demographics models are only .26, .15 and .16, respectively. Note also that the composite model that specifies all of the predictor variables (see Table 1 above) has better fit statistics ( $R^2 = .90$ , AIC = 658.02) than any of its sub-models. Taken together, these statistics document important effects of benefit-cost perceptions, risk assessments and leader images on voting in the EU referendum. However, they also testify that the strongest

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<sup>6</sup> When examining these numbers note that larger  $R^2$  and smaller AIC values indicate that a model has greater explanatory power compared to its rivals.

explanation is provided by the composite model that incorporates all of the predictor variables.

(Figure 6 about here)

Table 2 steps back from the vote and examine the effects of several predictor variables on the benefit-cost scales, the two most important predictors in the vote model. In addition to predictors from the vote model, we also include a variable measuring negative attitudes towards immigration and a variable tapping perceptions that Britain has lost control of its economy to the EU. Since the dependent variables are continuous factor scores, model parameters are estimated using OLS regression.

(Table 2 about here)

Both models in Table 2 have strong explanatory power, with  $R^2$  values of .69 and .75, respectively. Parameter estimates reveal that although voters' impressions of Jeremy Corbyn and David Cameron did not directly influence the vote, the images of these two leaders exerted indirect effects ( $p < .001$ ) by working to shape voters' benefit-cost evaluations of a Brexit decision. Positive evaluations of Cameron and Corbyn nudged respondents towards perceiving fewer benefits and more costs of leaving the EU, with the effects being significantly stronger for the Prime Minister than for the Labour leader in the case of economic-international influence calculations. Predictably, positive images of Leave leaders, Boris Johnson and Nigel Farage, had the opposite effects—working to change both types of benefit-costs evaluations in a pro-Brexit direction.

The partisanship measures show that Labour, Conservative and Liberal Democrat party identifications cued voters in expected ways, increasing perceptions of the benefits and reducing perceptions of the costs of remaining in the EU. Interestingly, the Conservative partisanship effects were weak, unlike those of Labour and the Liberal Democrats. This was probably because the Tories were so divided on the issue, and this served to weaken the

ability of Conservative partisanship to cue voters about costs and benefits of membership. Finally, there is weak evidence that the Remain campaign had an impact on perceptions of benefits and costs, whereas the Leave campaign appeared to have none.

Although, with the exception of viewing oneself as Scottish, national identities did not have directly influence referendum voting, these identities did have a variety of modest but significant effects on benefit-cost evaluations. English identifiers were significantly more likely than those who viewed themselves as 'British' to emphasize the benefits rather than the costs of exiting the EU. The opposite was true for Scottish and European identifiers. Welsh identifiers were an intermediate case; they were no different from British identifiers regarding economic-influence benefit-cost evaluations, but were significantly more likely to have positive immigration-terrorism evaluations.

Negative attitudes towards immigration had highly significant effects ( $p < .001$ ) on both types of benefit-cost assessments. As anticipated, voters with highly negative attitudes about immigration were more likely than other people to extol the benefits of Brexit and to minimize the costs of doing so. This effect obtained not only for the immigration-terrorism benefit-cost factor but also for the economy-international influence factor. Perceptions that Britain's economic sovereignty had been lost to the EU mattered as well. Again, the effects are predictable; those who believed the EU had seized control of the British economy were more likely than other voters to see the benefits and minimize the costs of Brexit.

Finally, the performance of the socio-demographic characteristics is noteworthy. As Table 3 documents, university educated people and those in higher social grades were significantly less likely to see the benefits of leaving in the EU than were other people. In contrast, older voters were more likely to judge that Brexit would have benefits by helping to control immigration and reducing the threat of terrorism. Gender differences in benefit-cost assessments were small and insignificant.

(Table 3 about here)

Next, we model the effects of various predictors on perceptions of risk, the third most important predictor of voting in the referendum. Using OLS regression for this purpose, we see that the model fits the data very well, with the  $R^2$  indicating that 69 per cent of the variance in risk assessments is explained (Table 3). Two highly significant predictors ( $p < .001$ ) in this model are negative attitudes towards immigration and perceptions that Britain no longer controls its own economy. Parameter estimates show that negative attitudes towards immigration tended to dampen perceptions that leaving the EU would be risky. This was also true of perceptions that Britain has lost control of its economy to the EU.

Leader images were highly significant ( $p < .001$ ) predictors of risk orientations as well. As one would anticipate, positive feelings about Cameron and Corbyn were associated with greater perceived risks of leaving the EU, whereas the positive feelings about Farage and Johnson were associated with lower perceived risks. Partisan identifications were significant too ( $p < .001$ ) with Conservative, Labour and Liberal Democrat identifiers thinking that the risks of leaving the EU were higher than did other party identifiers or non-identifiers.

Of the other predictors, the only significant national identity variable was 'European' ( $p < .05$ ). As expected, those viewing themselves as European rather than British were more likely to believe that exiting the EU would entail substantial risks. Among socio-demographics, age has a highly significant ( $p < .001$ ) impact, with younger people being more likely to emphasize risks attendant upon Brexit. Education, gender and social class are not statistically significant. In the next section, we use the results of the multivariate analyses to consider a factor that might have been particularly important for producing the referendum result.

## **Boris and Brexit**

Viewed generally, the analyses presented above indicate that a wide variety of factors worked to shape the decisions that voters made in the EU referendum. Some of these factors, such as attitudes towards immigration and national identities, were established features of the psychology of the electorate when the referendum began. As such, their effects on referendum voting were largely 'baked in' before the campaign began. However, this is not true for cueing effects associated with leader images. The way leader cues played depended, to a substantial extent, on how they were presented to voters during the campaign. As we have seen, leader images had a variety of strong effects in models of forces that affected the referendum outcome.

Of the various leaders, effects associated with Boris Johnson, the high-profile and outspoken former mayor of London, are particularly interesting. Unlike Farage, Johnson had supported UK membership of the European Union for many years and his conversion to the Brexit cause was a surprise to some of his colleagues, not least David Cameron. Johnson announced his decision to campaign for Leave on February 21st, just four months before polling day. Quickly designated as an unofficial leader of the Leave forces, Johnson proceeded to campaign vigorously and the media gave him enormous publicity. His potential impact on the referendum outcome is suggested by the fact that feelings about him had strong and statistically significant effects in our models of forces affecting the vote. It is also noteworthy that Johnson was relatively popular, with an average likability rating of 4.5 on the 0-10 scale compared to 4.2 for Corbyn and only 3.5 for Cameron and 3.2 for Farage.

To gain insight into the strength of the 'Boris intervention', we use the multivariate modelling results to calculate how the probability of voting Leave varied according to feelings about him. In addition to determining how feelings about Johnson influenced the vote directly, we also take indirect effects into account by calculating how these feelings affected

benefit-cost calculations and risk assessments. We vary feelings about Johnson across the 0-10 likability scale holding predictors other than the benefit-cost and risk variables at their mean values. The results are shown in Figure 7.

(Figure 7 about here)

As illustrated, feelings about Johnson had very strong effects on the probability of casting a Leave ballot. For voters who really disliked him, the probability of voting Leave was only .09. However, it climbed sharply as feelings became increasingly positive. For those at top end (10) of the Johnson likability scale, the probability of a Leave vote was fully .93. Even among people who gave Johnson a mid-point score of 5 on the 0-10 likability scale, the probability of voting Leave was .53. Since over half over half (50.5 per cent) of the voters accorded Johnson a score of 5 or more, this suggests his ability to tip the outcome in the Leave direction. These numbers indicate that over half the active electorate were at least lukewarm about the former mayor and, if they were otherwise average, they had a better than even probability of voting Leave. Although the close division of the vote on June 23rd means that it is not possible to say that 'Boris was wot done it'—as documented above, many factors influenced the vote—his boisterous presence was clearly very advantageous to the Leave side whose only other salient leader was the widely unpopular Nigel Farage.

### **Conclusion: Voting in the EU Referendum Reconsidered**

This paper has investigated the factors that shaped the decisions voters made in the historic 2016 referendum on the UK's continued membership in the European Union. Using data gathered in a national panel survey conducted before and after the referendum, and drawing on the wider pan-European literature on what shapes public attitudes to the EU, we employed multivariate models to assess the strength of various forces affecting the vote.

Our results emphasize the importance of benefit-cost calculations, risk assessments and emotional reactions to EU membership as proximate predictors of referendum voting. In



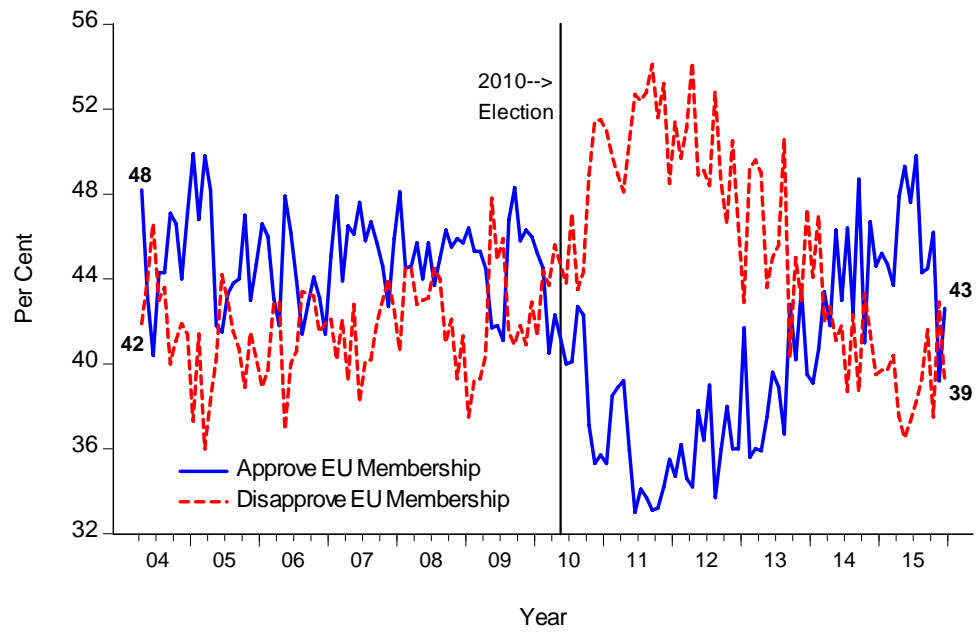
addition, there were a variety of sizable direct and indirect effects associated with the images of the leaders of the Remain and Leave campaigns. Here, strong effects were associated with feelings about Boris Johnson. Although the multiplicity of forces at work means that it is not possible to conclude 'No Boris, No Brexit', it is clear that the presence of London's popular former mayor was a decided plus for the Leave campaign.

Partisan cues were significant too, but their effects were weaker and largely worked indirectly via shaping benefit-cost evaluations and risk assessments. Other forces also were working further back in the causal chain, with the models for cost-benefit calculations and risk assessments documenting the strong influence of negative attitudes towards immigration, as well as effects of the perceived loss of economic sovereignty and national identities. Net of these several factors, effects associated with socio-demographic characteristics including age, education and social class were observed.

During the referendum campaign, the Remain side deployed a veritable 'Davos A List' of world leaders, senior civil servants, business moguls and celebrities to try and convince voters of the negative economic consequences that would ensue if the UK were to leave the EU. 'Project Fear', as it was called, portrayed Brexit as a very risky, economically self-destructive and ill-advised course of action. The Leave forces countered with dire warnings about how EU membership fuelled uncontrolled immigration, increasing terrorist threats, the loss of sovereignty and an accompanying erosion of democratic accountability. Although the dark scenarios advanced by Prime Minister Cameron and his allies were insufficient to secure a Remain majority, this does not mean that their arguments were ineffective as forces affecting individual-level voting. Rather, and as our analyses show, both economic- and immigration-focused benefit-cost calculations had strong effects on the referendum choice. Combining with risk assessments, emotional reactions to the EU and leader image cues, these calculations were important immediate forces driving voting in the EU referendum. The

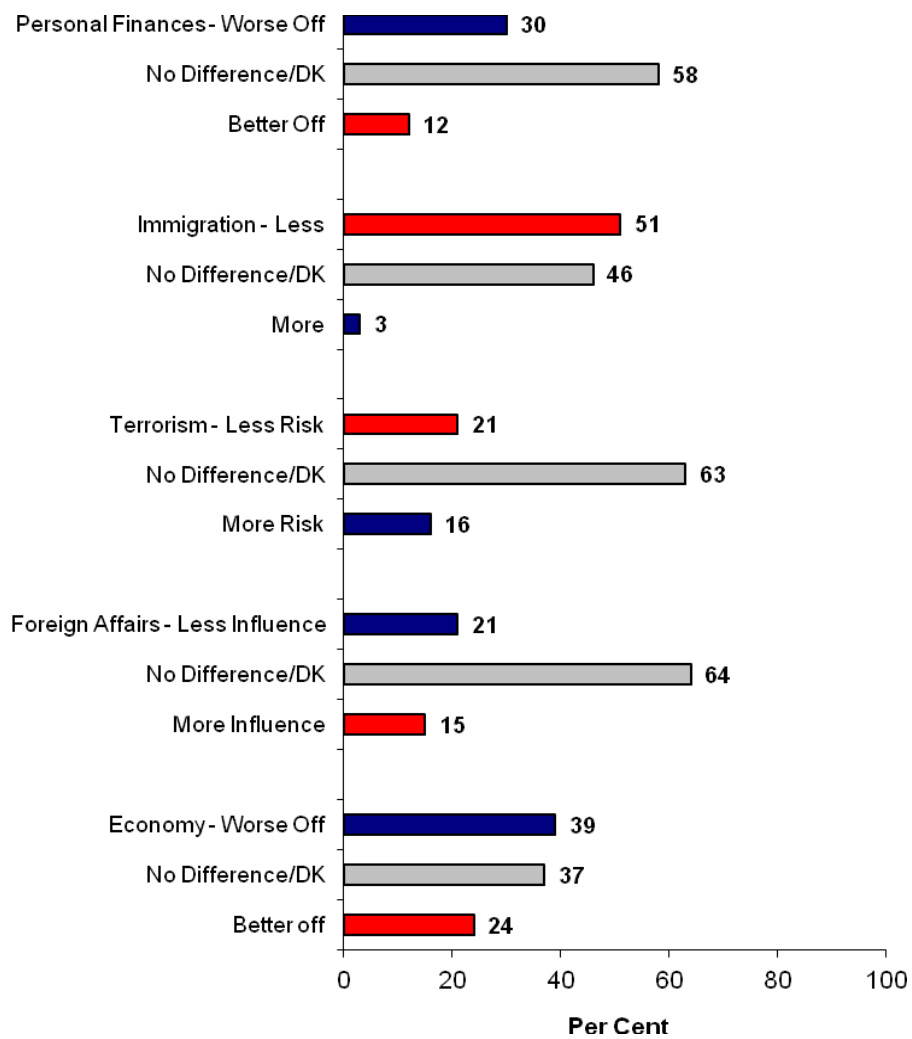
narrow Brexit decision voters made on June 23rd thus reflected a complex, cross-cutting mix of calculations, emotions and cues.

Figure 1. Trends in Support for UK Membership of the European Union,  
April 2004 - December 2015



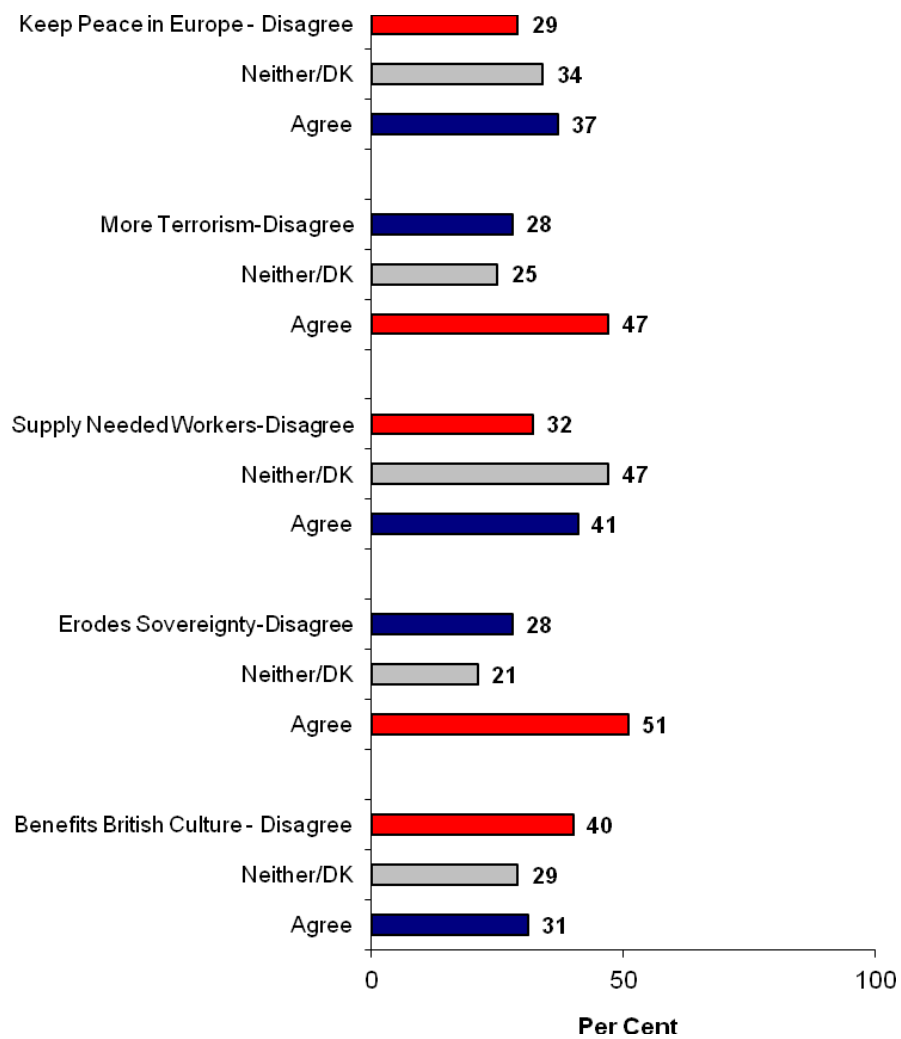
Source: April 2004 - December 2015 Essex Continuous Monitoring surveys.

Figure 2A. Perceived Benefits and Costs of EU Membership



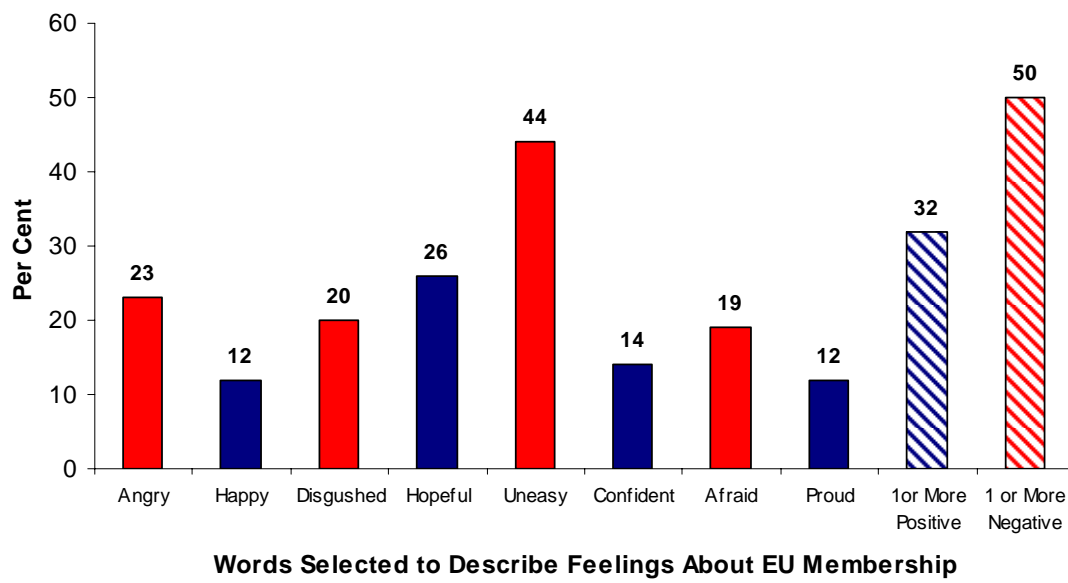
Source: June 2015 Essex Continuous Monitoring Pre-Referendum survey.

Figure 2B. Perceived Benefits and Costs of EU Membership



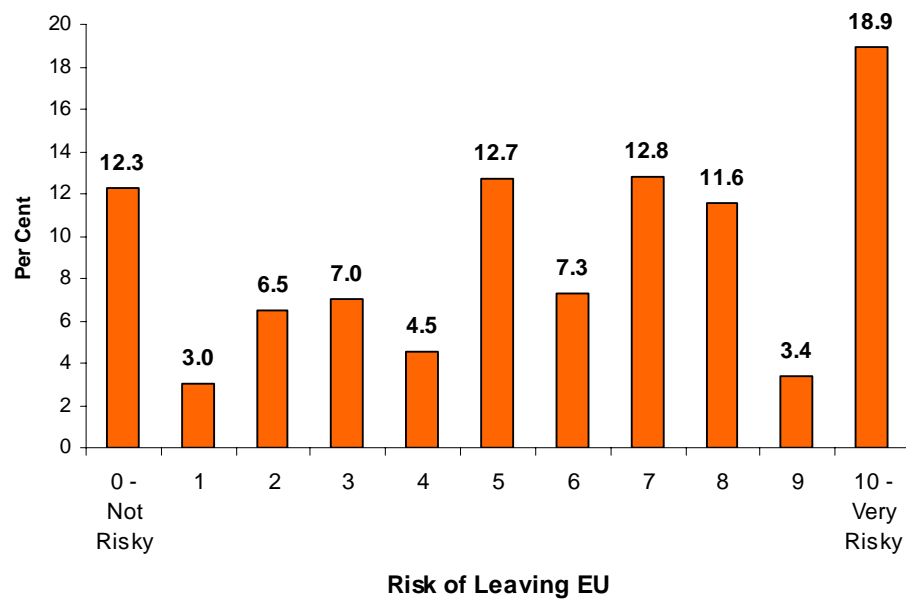
Source: June 2015 Essex Continuous Monitoring Pre-Referendum survey.

Figure 3. Emotional Reactions to Membership of the European Union



Source: June 2015 Essex Continuous Monitoring Pre-Referendum survey.

Figure 4. Perceived Risks of Leaving the European Union



Source: June 2015 Essex Continuous Monitoring Pre-Referendum survey.

Figure 5. Impact of Significant Predictors in the Referendum Voting Model on the Probability of Voting to Leave the European Union

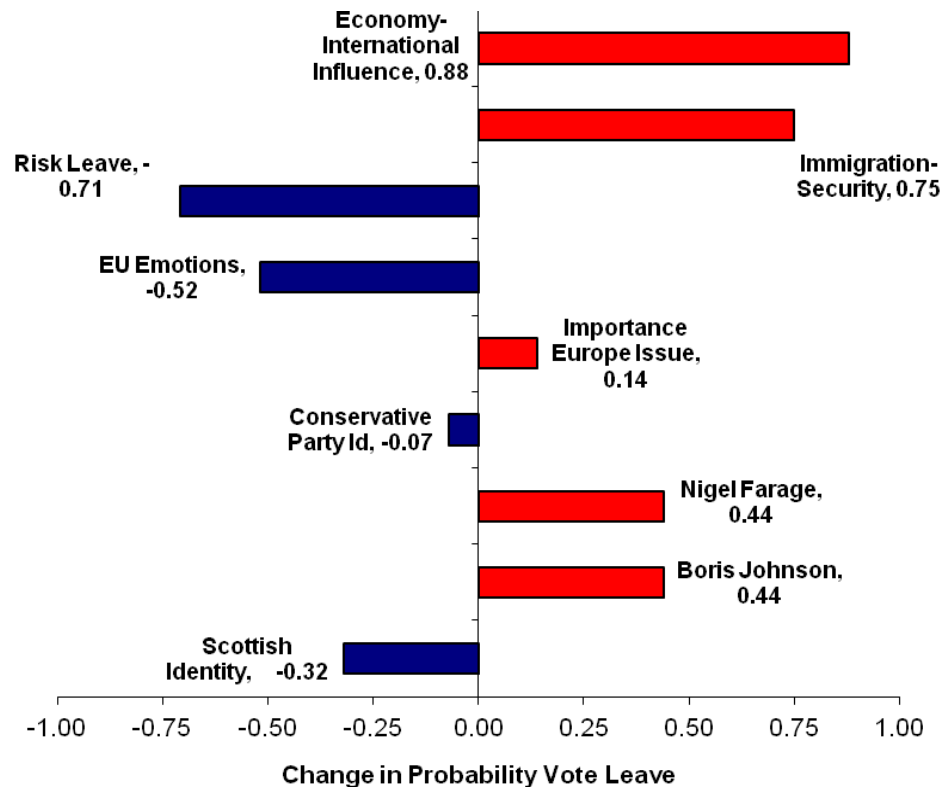




Figure 6. The Explanatory Power of Rival Models of Voting in the EU Referendum

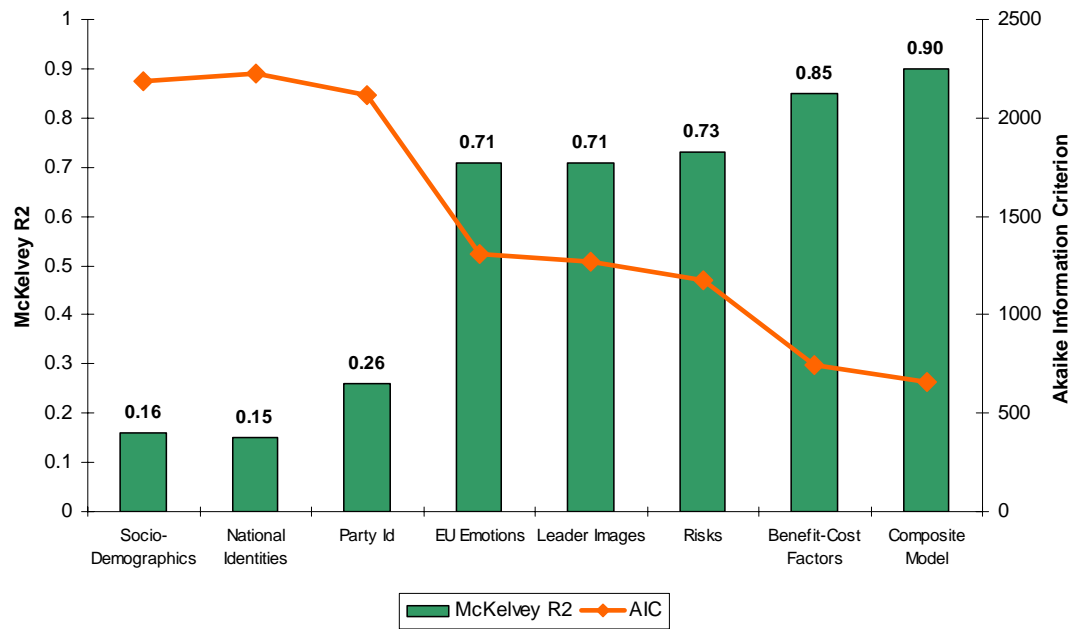


Figure 7. The Impact of Feelings about Boris Johnson on Leave Voting in the EU Referendum

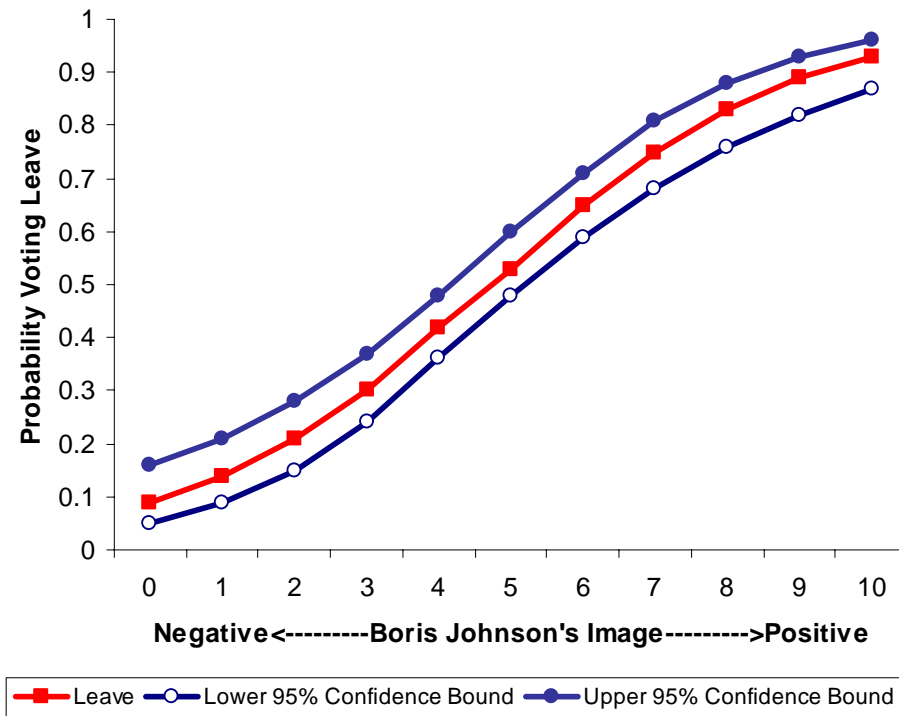


Table 1. Binomial Logit Analysis of Factors Affecting  
Voting to Leave the European Union

<i>Predictor</i>	<u>B</u>	<u>s.e.</u>
Benefits-Costs of Leaving EU		
Economy-Influence	2.509***	.579
Immigration-Terrorism	1.013**	.370
Risk Assessments of Leaving EU		
Emotional Reactions to EU	-.373***	.062
Importance of Europe as Issue	-.304***	.096
Party Leader Images:		
Cameron	.595*	.270
Corbyn	-.035	.056
Farage	-.047	.053
Johnson	.191***	.055
Johnson	.195***	.056
Partisanship:		
Conservative	-.570*	.324
Labour	-.137	.331
Liberal Democrat	-.420	.449
UKIP	-.392	.565
SNP	1.365	.739
National Identity:		
English	.184	.243
Scottish	-1.614**	.550
Welsh	-.289	.591
European	-.860	1.307
Other	-.289	.591
Campaign Contact:		
Remain Campaign	-.081	.193
Leave Campaign	.275	.278
Socio-Demographics:		
Age	-.006	.007
University Education	.112	.238
Gender	.029	.220
Social Class	-.149†	.101
Constant	1.368*	.759

McKelvey  $R^2 = .90$

Percentage Voters correctly classified = 93.2

Percentage reduction in classification error (Lambda) = 86.2%

N = 1780

\*\*\* -  $p \leq .001$ ; \*\* -  $p \leq .01$ ; \* -  $p \leq .05$ , † -  $p \leq .10$ , one-tailed test

Note: dependent variable is scored: vote Leave = 1, vote Remain = 0.

Table 2. OLS Regression Analyses of Predictors of Perceived Benefits and Costs of Leaving the European Union

<i>Predictor</i>	Benefits-Costs of Leaving EU			
	<u>Economy &amp; International Influence</u>		<u>Immigration- Terrorism</u>	
	<u>B</u>	<u>s.e.</u>	<u>B</u>	<u>s.e.</u>
Negative Attitudes towards				
Immigration	.227***	.013	.474***	.020
EU Control of UK Economy	.141***	.023	.204***	.036
Party Leader Images:				
Cameron	-.046***	.004	-.063***	.006
Corbyn	-.029***	.004	-.051***	.006
Farage	.039***	.005	.062***	.007
Johnson	.051***	.004	.082***	.007
Partisanship:				
Conservative	-.044*	.028	-.097*	.043
Labour	-.090***	.028	-.140***	.043
Liberal Democrat	-.141***	.040	-.202***	.062
UKIP	-.050†	.038	-.095	.059
SNP	.018	.063	-.001	.097
Other Parties	-.575	.598	-.032	.073
National Identity:				
English	.041*	.021	.091**	.032
Scottish	-.098*	.047	-.084	.072
Welsh	.062	.053	.146*	.081
European	-.140*	.061	-.240**	.094
Other	-.067†	.046	.048	.071
Campaign Contact:				
Remain Campaign	-.026*	.012	-.029†	.019
Leave Campaign	-.013	.018	.005	.027
Socio-Demographics:				
Age	.001	.001	.002*	.001
University Education	-.041*	.020	-.038†	.030
Gender	-.005	.018	.017	.028
Social Class	-.024**	.008	-.023*	.013
Constant	-.020	.052	-.133†	.080

R<sup>2</sup> = .69 .75

N = 1736

\*\*\* -  $p \leq .001$ ; \*\* -  $p \leq .01$ ; \* -  $p \leq .05$ , † -  $p \leq .10$ , one-tailed test

Note: high scores on benefit-cost factors indicate pro-Leave perceptions.

Table 3. OLS Regression Analysis of Predictors of Perceived Risks of Leaving the European Union

<i>Predictor</i>	<u>B</u>	<u>s.e.</u>
Negative Attitudes towards		
Immigration	-.733***	.077
EU Control of UK Economy	-.740***	.139
Party Leader Images:		
Cameron	.217***	.024
Corbyn	.149***	.024
Farage	-.202***	.027
Johnson	-.220***	.026
Partisanship:		
Conservative	.384*	.166
Labour	.419**	.165
Liberal Democrat	.401*	.240
UKIP	-.159	.230
SNP	.061	.378
Other Parties	-.278	.284
National Identity:		
English	-.105	.123
Scottish	.348	.279
Welsh	-.301	.314
European	.771*	.364
Other	-.131	.273
Campaign Contact:		
Remain Campaign	.117†	.073
Leave Campaign	-.031	.106
Socio-Demographics:		
Age	-.024***	.003
University Education	.058	.117
Gender	-.013	.108
Social Class	.064	.051
Constant	6.827***	.311
R <sup>2</sup> =	.69	
N = 1780		

\*\*\* -  $p \leq .001$ ; \*\* -  $p \leq .01$ ; \* -  $p \leq .05$ , † -  $p \leq .10$ , one-tailed test

Note: risk assessment scores vary from 0 to 10 with higher scores indicating greater perceived risks of leaving the EU.

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## Appendix Measurement of Variables

**Note:** All questions were asked in pre-referendum survey except for campaign contacts and vote in EU referendum.

**Benefits and Costs of Leaving the EU:** we employ two sets of questions. Coding for responses is shown in <>. The first set of questions is: (a) Do you think that the British economy would be better or worse off if we left the European Union, or would it make no difference? <1>Better off, <-1>Worse off, <0>Would make no real difference to the British economy, <0>Don't know; (b) Do you think Britain would have more or less influence in the world if we left the European Union, or would it make no difference? <1>More influence, <-1>Less influence, <0>Would make no real difference to British influence, <0>Don't know; (c) Do you think Britain would be more or less at risk from terrorism if we left the European Union, or would it make no difference? <-1>Britain would be more at risk from terrorism if we left the EU, <1>Britain would be less at risk from terrorism if we left the EU, <0>Would make no real difference to the risk from terrorism, <0>Don't know; (d) Do you think there would be more or less immigration into Britain if we left the European Union, or would it make no difference? <-1>More immigration into Britain <1>Less immigration into Britain <0>Would make no real difference to the amount of immigration, <0>Don't know; (e) Do you think you personally would be financially better or worse off if Britain left the European Union, or would it make no difference? <1>Better off, <-1>Worse off, <0>No real difference, <04>Don't know.

The second set of questions is: Please indicate if you agree or disagree with the following statements: (f) Continued membership in the European Union benefits Britain's culture and traditions; (g) Membership in the European Union is seriously eroding the British Government's ability to make policy decisions; (h) Having lots of workers come to Britain from other European Union countries is helpful because they are willing to take jobs that many Britons won't do; (i) Letting large numbers of immigrants come to Britain from the European Union is significantly increasing the threat of terrorism; (j) Britain's membership of the European Union has helped to preserve the peace in Europe. Items (f), (h) and (j) are scored: <1> Strongly agree, <2> Agree, <3> Neither agree nor disagree, <4> Disagree, <5> Strongly disagree, <3> Don't know. Items (g) and (i) are scored: <5> Strongly agree, <4> Agree, <3> Neither agree nor disagree, <2> Disagree, <1> Strongly disagree.

The 10 items (a) - (j) are subjected to a confirmatory factor analysis (CFA) using Stata 14 (see Acock, 2013). A two-factor model with inter-correlated economic-international influence and immigration-terrorism benefit-cost factors has a satisfactory fit (RMSEA = .085, 95% CI = .078 - .091, AIC = 41613.63) and fits the data better than a single-factor model (RMSEA = .101, 95% CI = .095 - .108, AIC = 41854.45). Factor scores from the two-factor model are created to measure the two types of perceived benefits and costs of leaving the EU.

**Campaign Contacts:** Respondents were asked if they had been contacted by the Remain or Leave campaigns or various parties supporting Remain or Leave. Based on these responses two dummy variables were created: (a) contacted by Remain campaign - yes = 1 and no = 0; (b) Contacted by Leave campaign - yes = 1 and no = 0.

**Economic Sovereignty:** Respondents were asked: Which one of the following do you think affects the general economic situation in this country most? <1> The British Government, <2> The European Union, <3> Both equally, <4> Neither, <5> Don't know. Those choosing the EU were scored 1 and other respondents were scored 0.

**Emotional Reactions to the EU:** Respondents were presented with the list of eight words shown in Figure 3 and asked which ones described their feelings about EU membership. A summary variable was created by subtracting the number of negative words (angry, disgusted, uneasy, afraid) mentioned from the number of positive words (happy, hopeful,

confident, proud) mentioned.

**EU as Important Issue:** Respondents were presented with a list of 11 issues and asked to choose the three most important. Those choosing the EU were scored 1 and other respondents were scored 0.

**Feelings About Leaders:** Respondents were asked: Using the 0 to 10 scale, where 10 means strongly like, and 0 means strongly dislike, how do you feel about [David Cameron, Jeremy Corbyn, Nigel Farage, Boris Johnson]? Respondents saying 'don't know' received the mean score for a particular figure.

**National Identities:** Respondents were asked: Generally speaking, do you think of yourself as British, English, European, Scottish, Welsh, or something else? Answers were used to create series of 0-1 dummy variables with 'British' as the reference category.

**Negative Attitudes Towards Immigration: Immigration:** The following questions are used to measure negative attitudes towards immigration: (a) What do you think are the three most important problems facing the country at the present time? Respondents choosing immigration are scored 1 and other respondents are scored 0; (b) Which of the following statements comes closest to your view? (i) 'Britain should increase the number of immigrants coming to the country' = 1, (ii) 'The current number of immigrants coming to Britain is about right' = 2, (iii) 'Britain should reduce the number of immigrants coming to the country' = 3, (iv) 'don't know' = 2; (c) 'Using the 0-10 scale, how important a problem is the number of immigrants coming to Britain these days? (d) 'Do you think the number of immigrants coming to Britain these days is: 'a lot better' = 1, 'a little better' = 2, 'the same' = 3, 'a little worse' = 4, 'a lot worse' = 5, 'don't know' = 3; (e) 'Which, if any, of the following words describe your feelings about the number of immigrants coming to Britain? (Please tick up to FOUR)'. The words are: angry, happy, disgusted, hopeful, uneasy, confident, afraid, proud. A word is scored 1 if mentioned and 0 if it is not mentioned. Overall emotional reactions to immigration are measured by subtracting the number of negative words mentioned from the number of positive words mentioned. An exploratory factor analysis of the resulting five variables yields a single factor which explains 60.5% of the item variance. A factor score variable measuring negative attitudes towards immigration is created based on the analysis.

**Party Identification:** A series of dummy (0-1) variables is constructed based on responses to the standard BES party identification question. The dummies include: Conservative, Labour, Liberal Democrat, UKIP, SNP, Other parties. Nonidentifiers and those responding 'don't know' are the reference category.

**Risks of Leaving the EU:** Respondents were asked: On a scale from 0 to 10 where 0 means 'not at all risky' and 10 means 'very risky', how risky do you think it would be for Britain to leave the European Union? 'Don't know' responses were coded to the mean (5.6).

**Socio-Demographics:** (a) Age - age in years; (b) Education - respondents who had attended university are scored 1 and other respondents are scored 0; (c) gender - men are scored 1 and women are scored 0; (d) social class - A/B = 4, C1 = 3, C2 = 2, D/E = 1.

**Vote in EU Referendum:** Respondents stating they voted to Leave are scored 1 and respondents saying they voted to Remain are scored 0.