

## CSI Brexit 2: Ending Free Movement as a Priority in the Brexit Negotiations<sup>†</sup>

18<sup>th</sup> October, 2017

### Summary

- ‘Immigration’ is consistently ranked as one of the most important issues facing the country, and a substantial majority of Britons would like to see immigration reduced.
- It was also one of the two most frequently cited reasons for voting Leave in the EU referendum; the other being ‘sovereignty’.
- Polls and surveys conducted since the referendum indicate that most Britons want a deal where Britain regains control over EU immigration. In addition, a sizable majority of the public believes continued freedom of movement would not respect the result of the referendum.
- However, a recent meta-analysis of polls found that the public is about evenly split on the putative trade-off between staying in the Single Market and regaining control over immigration.
- Analysis of data from a new online survey of ~5,300 people suggests that Britons may actually be more willing to negotiate about ending freedom of movement than about ending ECJ jurisdiction, ending contributions to the EU budget, or ensuring UK citizens’ rights.
- Comparing Leave and Remain supporters, the former are much less willing to negotiate about ending ECJ jurisdiction, ending freedom of movement, and ending contributions to the EU budget. But the two groups are equally willing to negotiate about maintaining access to the Single Market.

<sup>†</sup> This work is part of a project funded by the Economic and Social Research Council’s *The UK in a Changing Europe* initiative. For more information, see: <http://ukandeu.ac.uk/>. The report was written by Noah Carl, a post-doctoral researcher at the Centre for Social Investigation. Suggested citation: ‘Carl, N. (2017). CSI Brexit 2: Ending Free Movement as a Priority in the Brexit Negotiations. *Centre for Social Investigation*, <http://csi.nuff.ox.ac.uk/wp-content/uploads/2017/10/CSI-Brexit-2-Free-Movement.pdf>’.

## Introduction

This report begins by summarising what is known about public attitudes to immigration, including how they relate to Euroscepticism. It proceeds to review the evidence that has been gleaned since the referendum about what sort of deal the British public wants with respect to EU immigration. It then further explores the extent to which Britons consider ending free movement a priority by analysing data from a new online survey of ~5,300 people.

## Public opinion on immigration and Euroscepticism

Since the mid-1990s when Ipsos MORI began asking the British public about the most important issues facing the country, ‘immigration’ has consistently featured among the top two or three.<sup>1</sup> In fact, it was *the most* important issue during 2015 and the first part of 2016, only to be supplanted by both ‘Brexit’ and ‘NHS’ during the summer of 2016. In the 2013 wave of the British Social Attitudes (a large face-to-face survey with a representative sample), 56% of respondents said that the number of immigrants to Britain should be “reduced a lot”, while a further 22% said that the number should be “reduced a little”; less than 5% said that the number should be increased.<sup>2</sup> Similarly, in the 2015 wave of the British Election Study (another large face-to-face survey with a representative sample), 71% of respondents said that too many immigrants had been let into the country.<sup>3</sup> Indeed, a sizable majority of the British population has been concerned about the number of immigrants in the country ever since public opinion data on the issue were first collected in the 1960s.<sup>4</sup>

Immigration was, of course, one of the main concerns motivating those who voted Leave in the EU referendum. As the number of immigrants in Britain rose precipitously during the 2000s, the proportion of the population citing ‘immigration’ as one of the most important issues facing the country correspondingly increased. And during this time period, concern over immigration became increasingly associated with disapproval of the EU. Between 2004 and 2014, there was a doubling of the difference in EU approval between those who cited ‘immigration’ as the most important issue facing the country and those who did not.<sup>5</sup> Furthermore, three major polls conducted around the time of the referendum confirmed that ‘immigration’ was one of the two most frequently cited reasons for voting Leave; the other being ‘sovereignty’.<sup>6,7,8</sup> It is worth noting, however, that—in all three of these polls—‘sovereignty’ was the *more* frequently cited reason. It should also be noted that control over immigration is simply one particular aspect of national sovereignty.

## What sort of deal does the public want with respect to EU immigration?

Polls and surveys conducted since the referendum indicate that most Britons want a deal where Britain regains control over EU immigration.<sup>9</sup> For example, John Curtice found that 68% of respondents were in favour of “requiring people from the EU who want to come to live here to apply to do so in the same way as people from outside the EU”.<sup>10</sup> Likewise, in a 2016 YouGov poll, 50% of respondents said that the Canada option (where Britain regains control of immigration) would be “good for Britain”, but only 35% of people said that the Norway option (where Britain does not regain control of immigration) would be “good for Britain”.<sup>11</sup> In addition, Sara Hobolt and colleagues presented Britons with different hypothetical Brexit deals, and then used discrete choice modelling to infer their underlying preferences.<sup>12</sup> They found that, all else being equal, respondents were significantly more likely to choose deals where Britain gained full control over EU immigration. Moreover, in a recent YouGov poll, respondents were given a list of eight priorities for the Brexit negotiations, and were asked to tick up to three. The most frequently selected priority—ticked by 41% of respondents—was: “allowing Britain to control immigration from the EU”.<sup>13</sup>

In addition to asking Britons what sort of Brexit deal they want, pollsters have also asked them what sort of arrangements would respect the result of the referendum. Evidence indicates that a sizable majority believes continued freedom of movement would not respect the result of the referendum.<sup>9</sup> In a 2016 poll by Lord Ashcroft, 79% of respondents said that “new foreign nationals [having] the automatic right to live and work in the UK” was not compatible with Brexit. Similarly, when YouGov presented respondents with different hypothetical Brexit deals, less than 40% of respondents said that those in which freedom of movement

continued would respect the result of the referendum.<sup>14</sup> By contrast, deals in which freedom of movement was ended were considered to respect the result of the referendum by at least 60% of respondents.

The preceding evidence suggests that a large number of Britons believe that regaining control over immigration should be a top priority in the Brexit negotiations. However, it is important to note that, when asked directly, the public appears to be evenly split on the putative trade-off between staying in the Single Market and regaining control over immigration. A recent meta-analysis of 39 polls conducted between June 2016 and August 2017 found that about the same percentage of Britons favour prioritising access to the Single Market as favour prioritising control over immigration. While the meta-analysis observed no linear trend in support for “soft” versus “hard” Brexit, it found some evidence of a U-shaped trajectory: support for “soft” Brexit decreased slightly during the winter of 2016, and then went back up during the spring of 2017.<sup>9</sup>

It is also worth commenting on partisan differences. In terms of the putative trade-off between staying in the Single Market and regaining control over immigration, Remain voters and Labour supporters are more likely to prioritise the former, whereas Leave voters and Conservative supporters are more likely to prioritise the latter.<sup>10,11,14</sup> Interestingly however, in Sara Hobolt and colleagues’ study, the outcome that Remain voters were most likely to prioritise was not minimising barriers to trade with the EU, but rather guaranteeing the rights of EU citizens already living in Britain. Indeed, they were substantially more likely than Leave voters to choose deals where all EU citizens living in Britain were allowed to stay indefinitely, but were only slightly more likely to choose deals where there were few barriers to trade. The outcome that Leave voters were most likely to prioritise was full control over EU immigration—although they were also much more likely to choose deals where Britain was no longer subject to EU laws or decisions by the European Court of Justice.

### **Analysis of new data on the public’s Brexit priorities**

~5,300 respondents were surveyed online between 10<sup>th</sup> July and 2<sup>nd</sup> August by the polling company Kantar.<sup>15</sup> They answered questions about their demographic characteristics, social identities, knowledge of the EU, a few general political issues, and certain aspects of the Brexit negotiations.

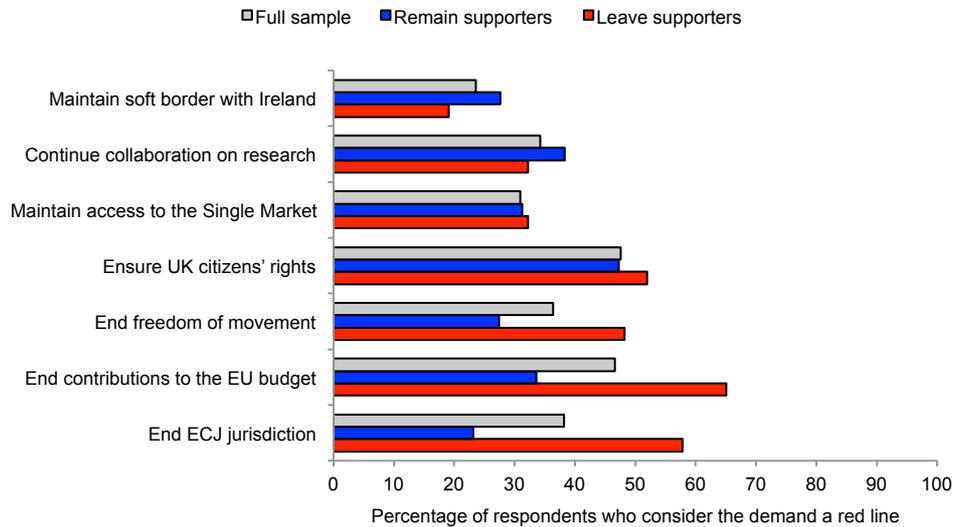
As to general political issues, our respondents were asked the aforementioned question from the 2013 wave of the British Social Attitudes, namely “do you think the number of immigrants into the country should be increased a lot, should be increased a little, should remain the same, should be reduced a little, or should be reduced a lot?” The distribution in our sample was substantially less skewed toward “should be reduced” than the distribution in the BSA. “Only” 58% of the respondents in our sample said the number should be “reduced a little” or “reduced a lot”—compared to 78% in the BSA. This difference should be borne in mind when considering the other results I will present. (See Appendix A for a detailed discussion of what might explain the difference.)<sup>16</sup>

As to the Brexit negotiations, our respondents were asked to say—for each of seven demands—if they would be willing to drop that demand in order to reach a deal, if they would be willing to negotiate, or if they considered that demand a red line. (They were also given the option to say, “I don’t feel I know enough about this issue.”) These seven demands concerned, respectively: the role of the ECJ; the border with Ireland; freedom of movement; UK citizens’ rights; access to the Single Market; future collaboration on research; and contributions to the EU budget. (See Appendix B for full the wording of each demand.) When asked whether freedom of movement should be ended, 19% of respondents said they would be willing to drop the demand, 35% said they would be willing to negotiate, and a further 36% said they considered the demand a red line. (10% said they didn’t feel they knew enough about the issue.) Among those who stated that the number of immigrants into the country “should be reduced”, a full 45% said they considered the demand a red line. How does willingness to negotiate about ending freedom of movement compare to willingness to negotiate about the other seven demands?

Figure 1 displays the percentage of respondents who consider each demand a red line, separately for the full sample, for Remain supporters and for Leave supporters. Looking at the figures, our respondents are *more* willing to negotiate about ending freedom of movement than about ending ECJ jurisdiction, ending contributions to the EU budget, or ensuring UK citizens’ rights. However, they are *less* willing to negotiate about ending freedom of movement than about continuing collaboration on research, maintaining access to the Single Market or maintaining a soft border with Ireland. Comparing Leave and Remain supporters, the former

are much less willing to negotiate about ending ECJ jurisdiction, ending freedom of movement, and ending contributions to the EU budget, while the latter are slightly less willing to negotiate about maintaining a soft border with Ireland, and continuing collaboration on research. Interestingly, the two groups are equally willing to negotiate about maintaining access to the Single Market.

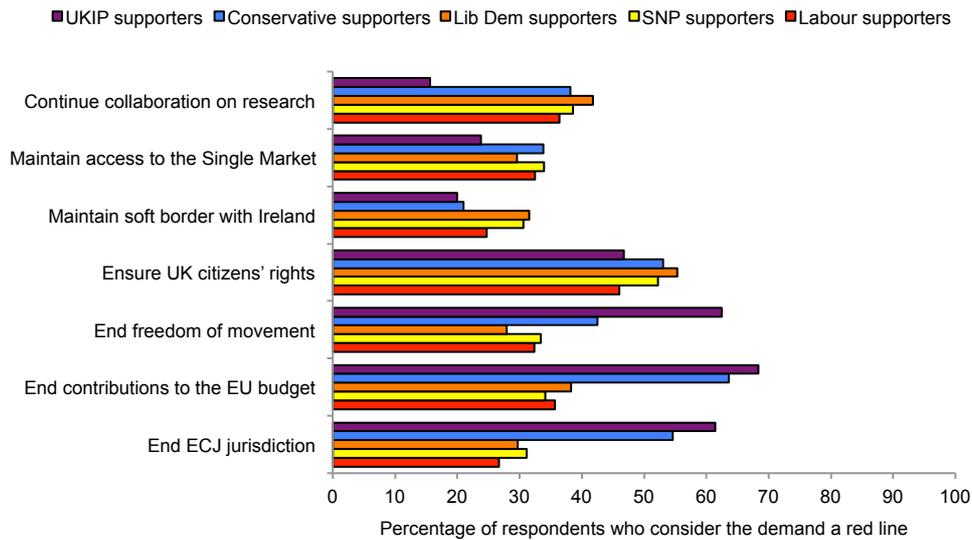
**Figure 1.** Percentage of respondents who consider each demand a red line, separately for the full sample, for Remain supporters and for Leave supporters.



*Notes:* Demands are ordered by the difference between Leave and Remain supporters. Percentages were computed with sample weights applied. Leave supporters were defined as those who either voted Leave in the referendum or said they would have done so if they had voted. Remain supporters were defined in the same way.

Figure 2 displays the percentage of respondents who consider each demand a red line, separately for supporters of each of Britain's five main parties (by vote share). The five groups are more-or-less equally willing to negotiate about ensuring UK citizens' rights. When it comes to maintaining access to the Single Market and continuing collaboration on research, UKIP supporters are more willing to negotiate than the other four groups. When it comes to maintaining a soft border with Ireland, Conservative, Labour and UKIP supporters are slightly more willing to negotiate than the other two groups. The largest differences, however, relate to ending ECJ jurisdiction, ending free movement and ending contributions to the EU budget. In the case of these demands, Conservative and UKIP supporters are much less willing to negotiate than supporters of the other three main parties. And indeed, this makes sense given that people who voted Leave in the referendum were much more likely to vote Conservative in the 2017 General Election.<sup>17</sup>

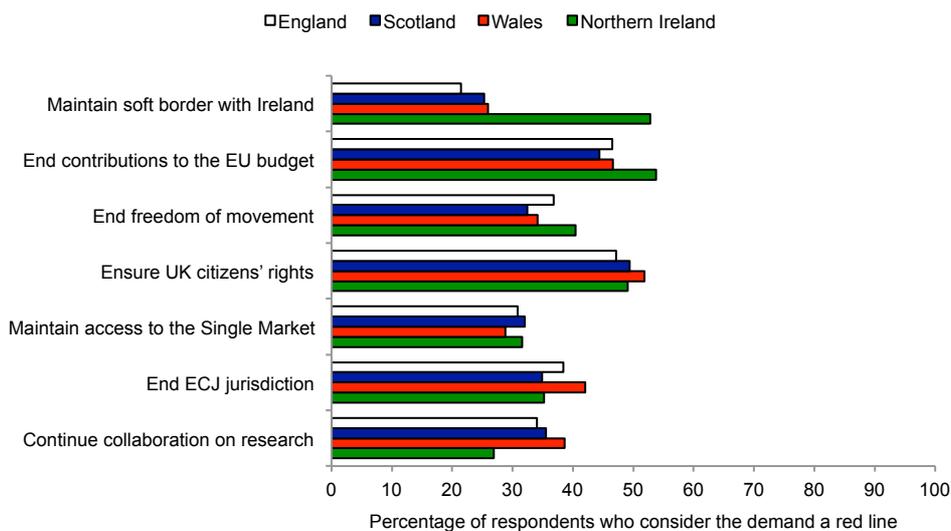
**Figure 2.** Percentage of respondents who consider each demand a red line, separately for UKIP supporters, Conservative supporters, Liberal Democrat supporters, SNP supporters, and Labour supporters.



*Notes:* Demands are ordered by the difference between UKIP and Labour supporters. Percentages were computed with sample weights applied. Labour supporters were defined as those who identified as such. Supporters of other parties were defined in the same way.

Figure 3 displays the percentage of respondents who consider each demand a red line, separately for respondents living in each of the UK's four constituent countries. Differences between the four groups are generally rather small. The only demand for which there is a sizable difference is maintaining a soft border with Ireland, where—unsurprisingly—respondents living in Northern Ireland are much less willing to negotiate than those living in the other three constituent countries. Respondents living in Northern Ireland are also somewhat more willing to negotiate about continuing collaboration on research, though this could be attributable to sampling error.

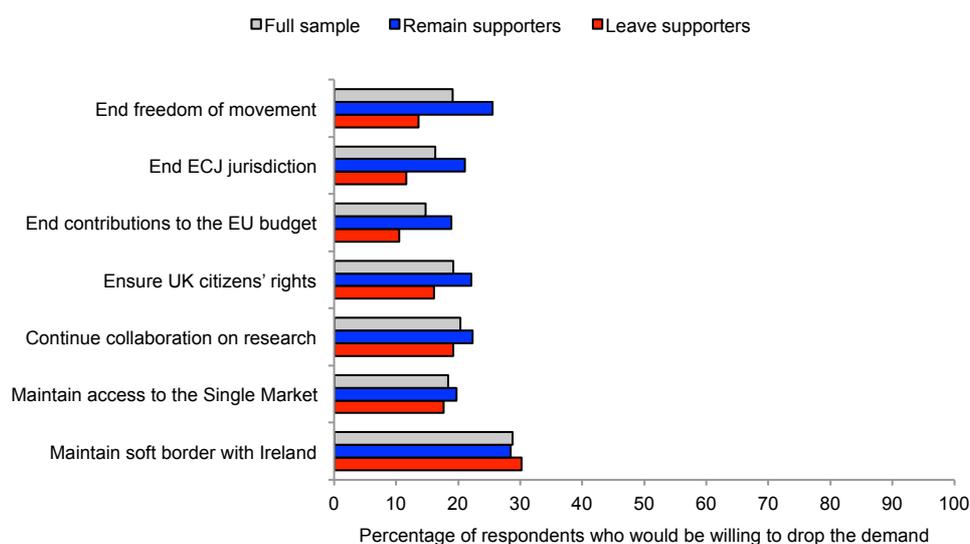
**Figure 3.** Percentage of respondents who consider each demand a red line, separately for residents of England, Scotland, Wales and Northern Ireland.



*Notes:* Demands are ordered by the difference between England and Northern Ireland. Percentages were computed with sample weights applied. Colours correspond to national football kits. Note that the unweighted sample size for Northern Ireland is only 92.

Each of the figures reported above was for the percentage of respondents in a particular category who consider a particular demand a red line. Of course, another way of examining willingness to negotiate is to look at the percentage of respondents who would be willing to drop each demand in order to reach a deal. Figure 4 displays these figures separately for the full sample, for Remain supporters and for Leave supporters. The results are mostly in conformity with those displayed in Figure 4. Our respondents are slightly more willing to drop the demand to end freedom of movement than to drop the demands to end ECJ jurisdiction or to end contributions to the EU budget. They are about as willing to drop the demand to end freedom as to drop the demand to maintain access to the Single Market. Comparing Leave and Remain supporters, the former are less willing to drop the demands to end ECJ jurisdiction, to end freedom of movement, and to end contributions to the EU budget.

**Figure 4.** Percentage of respondents who would be willing to drop each demand in order to reach a deal, separately for the full sample, for Remain supporters and for Leave supporters.



*Notes:* Demands are ordered by the difference between Leave and Remain supporters. Percentages were computed with sample weights applied.

## Conclusion

This report began by summarising what is known about public attitudes to immigration, including how they relate to Euroscepticism. It proceeded to review the evidence that has been gleaned since the referendum about what sort of deal the British public wants with respect to EU immigration. It then further explored the extent to which Britons consider ending free movement a priority by analysing data from a new online survey of ~5,300 people.

‘Immigration’ is consistently ranked as one of the most important issues facing the country, and a substantial majority of Britons would like to see immigration reduced. Moreover, ‘immigration’ was one of the two most frequently cited reasons for voting Leave in the EU referendum; the other being ‘sovereignty’. Polls and surveys conducted since the referendum indicate that most Britons want a deal where Britain regains control over EU immigration. In addition, a sizable majority of the public believes continued freedom of movement would not respect the result of the referendum. However, a recent meta-analysis of polls found that the public is about evenly split on the putative trade-off between staying in the Single Market and regaining control over immigration.

Analysis of data from a new online survey of ~5,300 people suggests that Britons may actually be more willing to negotiate about ending freedom of movement than about ending ECJ jurisdiction, ending contributions to the EU budget, or ensuring UK citizens’ rights. However, they may be less willing to negotiate about ending freedom of movement than about continuing collaboration on research, maintaining access to the

Single Market or maintaining a soft border with Ireland. Comparing Leave and Remain supporters, the former are much less willing to negotiate about ending ECJ jurisdiction, ending freedom of movement, and ending contributions to the EU budget. At the same time, the two groups are about equally willing to negotiate about maintaining access to the Single Market.

## Appendix A

Relative to the 2013 wave of the British Social Attitudes, our sample appears to have somewhat less anti-immigration sentiment—21 percentage points less, in fact. There are at least two possible explanations for this difference. First, the level of anti-immigration sentiment in the population may have actually decreased between 2013 and 2017. For example, some Remainers may have recalibrated their views on immigration in order to reconcile them with a commitment to staying in the Single Market after Brexit. Unfortunately, there is no obvious way to test this hypothesis with the available data—other than by ruling out the alternative.

A second hypothesis, which *can* be tested with the available data, is that our sample differs from the BSA sample with respect to characteristics that predict anti-immigration attitudes. In other words, our sample might have less anti-immigration sentiment due to the underrepresentation of individuals with characteristics that are associated with such sentiment. Table S1 below displays the distribution of responses for variables that are correlated with attitudes to immigration in the BSA sample and our sample, respectively. On the one hand, our sample is slightly younger and considerably more educated. On the other hand, our sample includes somewhat more individuals who identify as white, and slightly more who were born in the UK. Overall, these disparities are insufficient to explain more than a small fraction of the difference in anti-immigration sentiment between the two samples. For example, the difference is reduced by only 1 percentage point when excluding individuals with no qualifications.

**Table S1.** Distribution of responses for variables correlated with attitudes to immigration in the BSA sample and our sample.

	BSA 2013	Our sample	Difference
<i>Age</i>			
18-24	12	11	1
25-34	17	17	0
35-44	17	16	1
45-64	32	34	-1
65+	22	22	-1
<i>Education</i>			
None	19	7	13
Secondary	24	30	-5
Post-secondary	31	35	-4
Degree	25	28	-3
<i>Ethnicity</i>			
Non-white	13	9	4
White	87	91	-4
<i>Country of birth</i>			
Foreign	12	11	1
UK	88	89	-1

*Notes:* Percentages were computed with sample weights applied. In both datasets, the following characteristics predict anti-immigration attitudes: older age, lower education, white ethnicity and UK country of birth.

The preceding results indicate that the level of anti-immigration sentiment in the population may actually have decreased between 2013 and 2017. However, it is of course still possible that our sample and the BSA sample differ with respect to *unmeasured* characteristics that predict anti-immigration attitudes (e.g., personality traits). One possibility is that the two samples differ with respect to political interest. For example, although considerable effort was made to achieve a representative sample, the people who agreed to take part in our survey might still have turned out to be more interested in politics than the general population (and therefore the BSA sample too). Unfortunately, the two samples cannot be compared directly because the question on political interest included the BSA is different from the one included in our survey.

However, there is another representative sample that our survey *can* be compared with, namely the 2015 wave of the British Election Study. (Note that since the BES sample comprises only eligible voters, non-

eligible voters were excluded from our sample for the purpose of this comparison.) Table S2 below displays the distribution of responses for political interest in the BES sample and our sample, respectively. Our sample includes somewhat more individuals who say they are “very interested”, and somewhat fewer who say there are “not at all interested”, indicating a higher overall level of political interest in our sample. And as Table S3 confirms, political interest is a predictor of pro-immigration attitudes, even after controlling for age, education, ethnicity and country of birth. These results suggest that the over-representation of individuals with higher political interest *may* help to explain why our sample has lower anti-immigration sentiment than the 2013 wave of the BSA. It is important to note, of course, that political interest could actually have increased between 2015 and 2017. One reason to suppose it might not have done is that both 2015 and 2017 were General Election years, so one would expect them to have fairly similar levels of political interest.

**Table S2.** Distribution of responses for political interest in the BSA sample and our sample.

	BES 2015	Our sample	Difference
<i>Political interest</i>			
Not at all interested	15	9	6
Not very interested	26	21	5
Fairly interested	45	48	-3
Very interested	14	22	-8

*Notes:* Percentages were computed with sample weights applied.

**Table S3.** Estimates from linear probability models of belief that number of immigrants coming into Britain should be reduced

	Number of immigrants to Britain should be reduced	Number of immigrants to Britain should be reduced
Not very interested	-0.04 (0.04)	-0.05 (0.04)
Fairly interested	-0.08** (0.04)	-0.08* (0.04)
Very interested	-0.25*** (0.04)	-0.23*** (0.04)
Controls for age, education, ethnicity and country of birth		Yes
Observations	5,173	5,173

*Notes:* The dependent variable is a binary indicator that takes the value ‘1’ if the respondent believes that the number of immigrants to Britain should be reduced, and takes the value ‘0’ if the respondent believes the number should remain the same or be increased. Political interest was entered as a set of dummy variables: the reference category is “Not at all interested”. Sample weights were applied. Significance levels: \* 5%, \*\* 1%, \*\*\* 0.1%.

We can try to estimate exactly how much more politically interested our sample is than the 2015 wave of the BES using the following method: first; assign the value ‘1’ to “not at all interested”, ‘2’ to “not very interested”, ‘3’ to “fairly interested”, and ‘4’ to “very interested”; second; compute the pooled sample standard deviation as the average of the standard deviations from the two samples; third, divide the difference in mean political interest by the pooled sample standard deviation. According to this method, our sample is 29% of a standard deviation more politically interested than the 2015 wave of the BES. If we re-run the unconditional model in Table S3 treating political interest as a standardised continuous variable rather than as a set of dummies, we can attempt to gauge how much of the unexpectedly low anti-immigration sentiment in our sample is attributable to selection on political interest. Doing so yielded a coefficient of  $-0.067$ . Since 29% of 0.067 is 0.019, this implies that selection on political interest may only be able to explain only ~2 percentage points of the ~21 percentage point difference in anti-immigration sentiment between our sample and the 2013 wave of the BES. It should be noted however, that the coefficient  $-0.067$  is almost certainly an underestimate of the true effect size, due to measurement error and range restriction. Indeed, the stronger the selection on political interest, the greater the attenuation due to range restriction.

## Appendix B

The full wording for each of the seven demands is given in Table S2.

**Table S2.** Full wording for each of seven demands that respondents were asked about.

Demand	Full wording of demand
End ECJ jurisdiction	"The EU must have no role at all in UK law making"
Maintain soft border with Ireland	"The border between Northern Ireland and the Republic of Ireland must remain 'soft', without any passport control between the UK and the Republic of Ireland"
End freedom of movement	"Free movement of all EU citizens to the UK must be stopped"
Ensure UK citizens' rights	"UK Citizens resident in other EU countries must have the same rights as EU citizens in Britain"
Maintain access to the Single Market	"The UK must be given full access for exporting goods and services to the EU"
Continue collaboration on research	"The UK and EU must agree to continue collaborating on science, research and technology initiatives"
End contributions to the EU budget	"The UK must not be required to make future contributions to the EU budget"

*Notes:* The statements that prefaced these seven demands were as follows: "We want to know what you think would be the best deal for Britain. So imagine you are at a deadlock in negotiations, when EU negotiators point to one part of the deal and say, "If you drop this demand, then we have a deal". What would you be happy to drop or change in order to make a deal and what would be a 'red line' demand that you wouldn't compromise on even if it meant no deal at all?"

## Notes and References

<sup>1</sup> Ipsos MORI. (2017). July 2017 Economist/Ipsos MORI issues index. *Ipsos MORI*, published online.

<sup>2</sup> NatCen Social Research. (2014). British Social Attitudes Survey, 2013. [data collection]. *UK Data Service*, available online.

<sup>3</sup> Fieldhouse, E., Green, J., Evans, G., Schmitt, H., van der Eijk, C., Mellon, J. & Prosser, C. (2015.) British Election Study, 2015: Face-to-Face Survey [computer file]. *British Election Study*, available online.

<sup>4</sup> The Migration Observatory. (2016). UK Public Opinion toward Immigration: Overall Attitudes and Level of Concern. *Briefing for The Migration Observatory*, published online.

<sup>5</sup> Evans, G. & Mellon, J. (2015). Immigration and Euroscepticism: the rising storm. *The Guardian*, published online.

<sup>6</sup> Prosser, C., Green, J. & Mellon, J. (2016). What mattered most to you when deciding how to vote in the EU referendum? *British Election Study*, published online.

<sup>7</sup> YouGov. (2016). On the day poll [Sample Size: 4772 UK Adults; Fieldwork: 23rd June 2016]. *YouGov*, published online.

<sup>8</sup> Lord Ashcroft. (2016). How the United Kingdom voted on Thursday... and why. *Lord Ashcroft Polls*, published online.

<sup>9</sup> Carl, N. (2017). What sort of Brexit deal does the British public want: A review of the evidence so far. *Centre for Social Investigation*, published online.

<sup>10</sup> Curtice, J. (2017). Hard – But not too hard: Much more on what voters want from Brexit. *NatCen*, published online.

*And see:* Curtice, J. (2016). What do voters want from Brexit? *NatCen*, published online.

<sup>11</sup> Wells, A. (2016). 'Canada Option' is most popular type of Brexit deal. *YouGov*, published online.

<sup>12</sup> Hobolt, S. & Leeper, T. (2017). The British are indifferent about many aspects of Brexit, but Leave and Remain voters are divided on several key issues. *LSE Brexit Blog*, published online.

<sup>13</sup> Smith, M. (2017). Immigration is Brits' top Brexit priority but French and Germans focus on "divorce bill". *YouGov*, published online.

<sup>14</sup> YouGov. (2016). [Sample Size: 1676 GB Adults; Fieldwork: 13th - 14th November 2016]. *YouGov*, published online.

*And see:* Wells, A. (2016). 'Canada Option' is most popular type of Brexit deal. *YouGov*, published online.

*And see:* Hobolt, S. & Leeper, T. (2017). The British are indifferent about many aspects of Brexit, but Leave and Remain voters are divided on several key issues. *LSE Brexit Blog*, published online.

<sup>15</sup> Our sample includes a small number of individuals (unweighted  $n = 138$ ) who are not eligible to vote in general elections or referendums because they are not citizens of the UK, Ireland or a Commonwealth country. Excluding these individuals from the analysis did not change any of the results.

<sup>16</sup> Our respondents were also asked, "What is the single most important issue facing the country at the present time?" Unsurprisingly, "Brexit" was the most common answer. "Immigration"—interestingly—was the joint-second most common answer, along with "economy". (The number answering "immigration" was slightly greater when using unweighted data, while the number answering "economy" was slightly lower when using weighted data.)

<sup>17</sup> Lord Ashcroft. (2017). How did this result happen? My post-vote survey. *Lord Ashcroft Polls*, published online.