Brexit Measurement Appendix

This appendix presents information on key variables used for various analyses in Brexit - Why Britain Voted to Leave the European Union. For additional information please contact Harold Clarke: clarke475@msn.com or Paul Whiteley: whiteley@essex.ac.uk

ECMS Data: data gathered in monthly ECMS surveys and data gathered in the pre- and post- referendum waves of the June 2016 ECMS EU referendum survey and survey questionnaires are available at: bes2009-10.org. The referendum survey data and questionnaires also are available from the Harvard Dataverse.

Chapter 4 - Attitudes to Brexit Over Time

**Figure 4.1 Attitudes to UK Membership of the EU:** 'Overall, do you strongly approve, approve, disapprove, or strongly disapprove of Britain’s membership in the European Union?' Responses categories are scored: 'strongly approve' = 1, 'approve' = 2, 'disapprove' = 4, 'strongly disapprove' = 5, 'don't know' = 3. The aggregate analysis uses percentage strongly approving or approving minus the percentage disapproving or strongly disapproving.

**Figure 4.2 and Tables 4.1, 4.4, 4.5 Best Prime Minister** Who would make the best Prime Minister? Response categories are 1, ‘Named Labour Leader’ 2 ‘Named Conservative Leader’ 3. ‘Named Liberal Democrat leader’ 9 ‘Don’t Know. The aggregate analysis uses the percentage choosing the Conservative leader minus the percentage choosing the Labour leader.


**Party Best on the Economy** ‘With Britain in economic difficulties, which party do you think could handle the problem best – the Conservative Party, the Labour Party or the Liberal Democrats?’ Response categories are 1. Conservatives 2. Labour 3. Liberal Democrats 4. ‘None of them’ 5.’Don’t know’. The aggregate analysis uses the percentage choosing the Conservatives minus the percentage choosing Labour.

**Attitudes to Immigration** '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. The aggregate analysis uses the percentages saying ‘a lot/little better’ minus the percentages saying ‘a lot/little worse’.

**General Economic Situation** ‘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’. The aggregate analysis uses the percentage who choose the European Union.

*Additional Measures in Table 4.6*

**Feelings About Party Leaders:** measured using the following question: 'Using a scale that runs from 0 to 10, where 0 means strongly dislike and 10 means strongly like, how do you feel about 'named Conservative leader'; 'named Labour leader'; 'named Liberal Democrat leader'; Respondents saying 'don't know' were assigned the mean score.

**Personal & national retrospective economic evaluations** - 'How does the financial situation of your household now compare with what it was 12 months ago?'; 'How do you think the general economic situation in this country has changed over the last 12 months?'; Response categories are: 'got a lot better'; 'got a little better'; 'stayed the same'; 'got a little worse'; 'got a lot worse'. For purposes of analysis, the response categories are coded: lot better = 5, little better =4, stay the same/don't know = 3, little worse =2, lot worse = 1;

**Emotional Reactions to Economic Conditions:** 'Which, if any, of the following words describe your feelings about the country’s general economic situation? (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 national emotional reactions to economic condition variables are constructed by subtracting the number of negative words mentioned from the number of positive words mentioned.

**Evaluations of the National Health Service:** 'Do you think the National Health Service these days is: 'a lot better' = 5 , 'a little better' = 4, 'the same' = 3, 'a little worse' = 2, 'a lot worse' = 1, 'don't know' = 3'?

**Chapter 6 - The Rise of UKIP**

**Figure 6.1 Voting Intentions:** Respondents are asked 'If there were a General Election tomorrow, which party would you vote for?' Those saying they 'don't know' are asked: 'Which party would you be most inclined to vote for?' For the aggregate time series analysis, the dependent variable is the percentage of respondents saying that they are intending to vote UKIP or are 'leaning' towards doing so. Respondents saying they 'would not vote' or that they 'don't know' which party they are inclined to vote for are removed before these percentages are computed.

**Figure 6.2** The same variables on economic evaluations appearing in Table 4.6 measured at the aggregate level using the percentages saying 'got a lot better' or 'got a little better' minus the percentages saying 'got a little worse' or 'got a lot worse'.

**Figure 6.3** The same variable for UKIP voting intentions as in Figure 6.1 and the aggregate immigration variable in chapter 4 Tables 4.1, 4.4 and 4.5

**Figure 6.4** The same variable for UKIP voting intentions as in Figure 6.1 and the aggregate NHS variable in Table 4.6 measured using 'a lot better '; or 'a little better' minus 'a little worse' or 'a lot worse'.
Figure 6.5 The same variable for UKIP voting intentions as in Figure 6.1 and the average scores on the Leader Affect variables in Table 4.6 combined.

Figure 6.6. The same variable for UKIP voting intentions as in Figure 6.1. The relative deprivation index is the difference between the percentages saying ‘got a lot better’ or ‘got a little better’ for the respondent’s personal financial situation minus the percentages saying this for the national economic situation.

Table 6.1 The aggregate versions of the variables in Figures 6.1 to 6.6 plus dummy variables for the months when the various events cited occurred.

Tables 6.2, 6.4 All the individual level variables are coded the same as in Table 4.6 and in addition democratic satisfaction is measured using the following question: ‘Thinking about how well democracy works in this country, on the whole, are you very satisfied, fairly satisfied, a little dissatisfied, or very dissatisfied with the way that democracy works in this country?’ codings are: 1. Very dissatisfied 2. A little dissatisfied 3. Don’t know 4. Fairly satisfied 5. Very satisfied. Perceptions of Government treatment is measured using the following question: ‘The Government generally treats people like yourself fairly’ 1. Does Not 2. Don’t Know 3. Does.

Chapter 7 - Voting to Leave

The ECMS EU referendum survey has two waves. The pre-referendum wave was conducted on June 18-20th and the post-referendum was conducted on June 27-29th. All of the variables used in the multivariate models were measured in the pre-referendum wave except for reported referendum vote.

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 structure of the 10 items (a) - (j) is analysed using confirmatory factor analysis (CFA) implemented in Stata 14 (see Acock, 2013). A two-factor model with inter-correlated economy-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). Average factor loadings for the two-factor model are .75 for the economy-international influence factor and .72 for the immigration-terrorism factor. 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 Party 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.

Feelings of Being Left Behind: Respondents were asked about their evaluations of national and personal economic conditions using five-point Likert scales ranging from a 'lot better' (scored 5) to a 'lot worse' (scored 1). The 'Left Behind' variable is the difference between the national and personal evaluation variables.

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.

Missing values for continuous variables are recoded to mean values; missing values for ordinal-scale variables are recoded to the mid-point of the scales.

Chapter 8 - The Consequences of Brexit

Chapter 9 - Beyond Brexit

European Social Survey data used in this chapter can be downloaded from [http://www.europeansocialsurvey.org/](http://www.europeansocialsurvey.org/).

**Figures 9.4 and 9.5.** The European Unification question is: 'Now thinking about the European Union, some say European unification should go further. Others say it has already gone too far. Using this card, what number on the scale best describes your position?' The scale is coded from zero ‘Unification has gone too far’ to ten ‘Unification should go further’. The variable is labelled ‘euftf’ in the 2014 data file.

**Figures 9.6 and 9.7.** The immigration figures are constructed from the following variables in the 2014 European Social Survey dataset:
- ‘imsmetn’ (Allow many/few immigrants of same race/ethnic group as the majority)
- ‘imdfetn’ (Allow many/few immigrants of a different race/ethnic group as majority,
- ’eimpcnt’ (Allow many/few immigrants from poorer countries in Europe)
- ’impcent’ (Allow many/few immigrants from poorer countries outside Europe)
Codings are 1. Allow many 2. Allow some 3. Allow a few 4. Allow none. The analyses focus on categories 3 and 4 in each case.