Forecasting the 2015 British election through party popularity functions

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ABSTRACT

To forecast the May 7, 2015 British General Election, we develop party popularity models based on Continuous Monitoring Survey (CMS) data from April 2004 to February 2015. Our models predict party vote shares three months prior to the election, using previous support levels, national economic evaluations, macro-partisanship and political measures. Our Seemingly Unrelated Regression (SUR) methodology allows us to predict support for the Tories, Labour, Liberal Democrats and "other" parties, separately, yet simultaneously, by constraining total support for all parties to 100%. Our model, estimated with data from February 2015, predicts that Labour will win the highest vote share in Great Britain, but that no party will win a majority of seats in parliament.

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1. Introduction

Who will win the election? This straightforward question has generated an array of methodological approaches to election forecasting, the diversity of which continues to expand due to advancements in public opinion polling (Lewis-Beck and Stegmaier, 2014). In this article, we take advantage of the monthly Continuous Monitoring Survey (CMS) data from April 2004 to February 2015 to estimate theoretically-grounded party popularity functions that we use to predict party vote shares in the May 2015 British General Election. The CMS allows us to avoid two challenges other models face. First, in the context of British elections, most structural models rely on data from past election years. With just 18 national elections in the post WWII era, these models are estimated on a very small number of observations, while our monthly models use data from 118 months. Further, predictions based on past election results rely on historical voting patterns that might not capture the recent changes in the British party system that affect how support shifts between parties. Because our models cover the past 10 years, our prediction is unaffected by the party dynamics in previous decades.

Our methodology differs from other structural models which have typically predicted vote or seat shares for the governing party or for Conservatives versus Labour. We expand the range of party forecasts using Seemingly Unrelated Regression (SUR) which allows us to model support for the Conservatives, Labour, Liberal Democrats and all "other parties" as four separate, yet simultaneous, predictive equations, recognizing that support levels are inter-related and that total party support must equal 100%. Separate equations permit different factors, or different magnitudes of the factors, to influence support for each party.

2. Background on popularity functions

The term 'popularity function' refers to the analysis of government support or presidential approval using national aggregate time series data, measured monthly, quarterly or annually. This literature dates back to the seminal piece by Goodhart and Bhansali (1970), which identified the link between macroeconomic conditions and governing party support in Britain. The popularity function literature flourished, and while many debates continue, there is general agreement on the fundamentals that shape party preferences (Nannestad and Paldam, 1994; Lewis-Beck and Stegmaier, 2013). Specifically, these studies identify the strong role of the national economy, and suggest that models must account for political factors.

The idea of using popularity functions to forecast election outcomes is not new. In advanced democracies, predictive popularity functions complement the array of forecasting approaches

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(Stegmaier and Norpoth 2013). In young democracies with a short history of democratic elections, such as Hungary, structural forecasting models cannot be estimated using past election results. However, forecasting with a party support model with more frequently collected data, offers a viable alternative (Stegmaier and Lewis-Beck, 2009).

Popularity functions have been used previously to predict UK elections (Sanders, 1991, 2005); however, they faced data challenges that are overcome with the CMS. Previous work had to deal with differently-worded survey questions and incomplete time series from different polling agencies. Sanders (2005) used techniques to adjust for house effects and for inconsistent question wording as he combined data from different polls. He also interpolated data to fill in gaps in the time series to create a predictive popularity function model. These adjustments and data interpolation could affect the accuracy of the forecast, positively or negatively, in a way that a full series from the same agency with consistent questions would avoid.

3. Data and methods

To estimate our models we use monthly CMS data from April 2004 to February 2015. This dataset overcomes earlier data collection challenges in that it provides a continuous series with consistent question wording. Additionally, the survey asks well-established questions that inform election theory, which is important for our theoretically-driven model.

We aggregate the responses in each survey, weighted by the weight variable, to create monthly summary measures on vote intention, partisanship, and retrospective national economic evaluations. We supplement these data with variables capturing salient political events, the party of the Prime Minister, coalition partner, and the cost of ruling.

Our dependent variable − which we use to predict vote shares − is based on the vote intention question "If there were a general election tomorrow, which party would you vote for?" Vote share is calculated as the percent of respondents supporting each party out of all respondents who indicated a vote choice. We use two additional questions from the survey as independent variables. Partisanship provides us with the long-term anchor in explaining party support (Campbell et al., 1960). The survey question asks "Generally speaking, do you think of yourself as Conservative, Labour, Liberal Democrat or what?" Partisanship is computed as the percent reporting each party out of all responses, including "no party". The retrospective national economic evaluation question is included in our model since this measure has proven to be the strongest economic variable in numerous studies, more so than future expectations or personal finances (Lewis-Beck and Stegmaier, 2013). The survey question asks how the respondent thinks the national economic situation has changed over the last 12 months, with response options ranging from "got a lot better" to "got a lot worse" on a 5-point scale. Our measure is the percent of respondents who said "got a lot or got a little better" minus the percentage of respondent who said "got a lot worse or got a little worse". A positive value indicates that more people think the economy has improved.

We expect economic evaluations to impact parties differently depending on whether they hold the prime ministership, sit in opposition, or serve as a junior coalition member. The Prime Minister's party should be rewarded when the public perceives economic improvement and punished for economic decline. The junior coalition party may have the same experience as the PM's party, or it might be insulated from the effects of economic changes if voters see the PM as responsible for economic management. To allow for this, we interact economic evaluations with dummy variables accounting for a party's position in government.

Additional political variables are also in our models. We control for previous party vote shares, which is the lagged dependent variable. We also account for events that affected party support. While we tested a variety of events,[1] only the selection of Gordon Brown as PM impacted support in July/August 2007 and the MP Expense Scandal in May 2009. Finally, we measure a party's time in office. The theoretical argument stems from the observation that the longer a party is in power, the lower its support, and eventually the public is ready for a change (Lebo and Norpoth, 2007; Sanders, 2005). To capture this, the cost of ruling variable simply counts the number of consecutive months the party has governed.

To estimate our party support models, we use Seemingly Unrelated Regression. This allows us to separately, yet simultaneously, model support for the Tories, Labour, Liberal Democrats and "other parties". This approach differs from most other structural models which predict support for the PM's party or Labour versus Conservatives, and enables us to account for the rise of smaller parties. With separate equations, the variables are not constrained to having the same impact on all parties. Rather, we will demonstrate that the variables have different effects (and levels of significance) across parties.

With monthly data, we can estimate predictive equations for any lead time. We observe, as one would expect, that the shorter the lead, the greater the accuracy. Because it is more interesting and meaningful for the public and politicians to have forecasts with a longer lead time (Lewis-Beck, 2005), our models are estimated three months prior to the election. This means that our British party vote share predictions for May 2015 are based on February 2015 CMS results.

4. British party vote share models

Table 1 presents the vote share models for the parties. Our time series includes 118 months, covering all months from April 2004 to February 2015, excluding May 2005 and May, June, July, and August 2010. May is excluded in both years since the CMS was not conducted in the election months. We exclude the three months following the 2010 elections to account for the change in government.

In all 4 models, we see that the lagged vote share is positively related to the predicted vote share, meaning that the higher the party's vote share 3 months ago, the higher it will be at the predicted time. As we expected, the prime minister's party is rewarded for perceived economic improvements and is punished when the public feels the economy is deteriorating. This is reflected the positive coefficients on the interaction "PM x Econ Evals", which continues to be positive when we account for the coefficients on the economic evaluations variable. When the Tories or Labour sit in opposition, positive economic evaluations hurt their party support, as seen in the negative coefficients on economic evaluations. The Liberal Democrat equation shows that they reap no benefits from positive economic evaluations when in coalition. The combination of the interaction and economic coefficients (−0.04 and 0.05) is 0.01. Positive, but tiny. In fact, without rounding, the difference is 0.003. In essence, economic evaluations have had no impact on Lib Dem support during the time they have been in the coalition.

The MP expense scandal and the selection of Gordon Brown as PM have the expected directional impact on party support. The cost of ruling does, too. The longer Labour governed, the lower their

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[1] Political event variables that were insignificant and therefore not included in our models: London underground bombings, Northern Rock bank run, Cameron's EU veto, and the "omnishambles" budget.