



A Pooled Data Approach to Forecasting the 2024 Elections: Testing the Iowa Model Globally

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Abstract

The globe saw a record number of national-level elections in 2024, in more than 60 electoral democracies. Noted time and time again was how often incumbents were punished during the 2024 elections. How well could this incumbent punishment have been forecasted? I take a retrospective look at 11 of these elections in 2024, focusing on highly performing electoral democracies, and use a simple single equation of punishment (key independent variables being economic performance and government approval) to forecast their results three months prior to the election. Data were collected from 7-9 elections prior to the 2024 election in each country to construct the forecast. The modeling exercise, applied country by country, demonstrates that government approval three months prior to the election strongly tracks incumbent voteshare in the election, while economic performance is moderately related to incumbent voteshare. However, in an innovative pooled data design, the model itself has shortcomings in economic performance that suggests high variation in the application of the theory across countries with idiosyncratic systems and events. The overall results do suggest that the reward/punishment formulation has promise in forecasting around the globe.

Introduction

In this paper, I conduct tests of a simple and venerable theory of election forecasting: voters seek to reward and punish elected officials with their vote, based on governmental performance¹. In several democratic countries, these forecasts have been demonstrated to be accurate months prior to the election date [1, 2]. These forays suggest a recurring pattern for our understanding of how successful election campaigns are conducted, as well as the cluster of issues that concern voters. In some countries such as the United States, the election forecasting papers have become numerous, and prominent in academic journals such as *PS: Political Science and Politics* where the biennial symposium of American congressional and presidential election forecasting has become a publication tradition [3].

Yet while there has been an extension of the election forecasting enterprise beyond its country origins in the U.S. some five decades ago, the extension has been sporadic and is decidedly focused on single-country forecasts [4]. My intent is to expand the universe of these forecasts, using the common election year of 2024 and a common evident theme that year of global discontent with politics and the state of economic and social affairs. I use a common forecasting model, the “Iowa Model” that incorporates as independent variables public approval of the government and national macroeconomic performance in order to explain incumbent party/coalition government voteshare [5], estimated across a larger set of countries in a pooled dataset design. This pooled research design is untried in the literature and is thus innovative. I am exploring the possibility of the “globalization of elections” where through a technologically connected world, we tend to internalize similar perspectives on politics and are thus likely to react to political campaigns and candidates in similar fashion.

In the following sections, I situate my study in the economic forecasting and voting behavior literatures. I then lay out the general voting theory that animates the forecasting models. I then specify the model and data collection strategy. I estimate the model in a pooled data framework. I interpret the parameter estimates, and finally offer some next steps.

Election Forecasting Origins and Current Thought

A half-century ago, U.S. political scientists had rather different views from today on what explains election outcomes. The behavioralist analytical revolution allowed for the collection of large quantities of individual survey data in hopes that we would discover what persuades voters on a deeper psychological level. This emphasis on the individual voter masked some more aggregate level conclusions. For instance, it took Kramer’s innovative 1971 article to articulate a modern relationship between economic conditions and election outcomes [6, 7]. As well, political scientists thought there was little connection between government approval and election results [8].

It took some persuasion for political science to agree that approval and elections are related, as well as the state of the economy and elections, and that lingering past feelings of approval in the minds of voters get transferred onto present-day voting decisions [9-11]. Once those realizations set in, a large industry of scientific election forecasting was birthed and has flourished, with initial work in the United States but then spreading to all continents [1, 4, 12].

The general idea behind the forecasts is this: voters will utilize beliefs about politicians' past performance to make a judgment about how to vote in the current election. Under this conceptual framework, well-performing politicians stand a better chance of gaining a positive evaluation from voters and will thus be rewarded with re-election. This logical schematic was originally presented by V.O. Key in *The Responsible Electorate* [13], in response to the "Michigan School" voting behavior literature that hypothesized voting as an "almost purely deterministic act" (5) based on social, psychological, and demo-geographic characteristics of voters [14-17]. If voters display rationality, even anger, regarding governmental performance, then this should resonate in an election forecast [11].

These scientific election forecasts utilize two primary methodologies: either single-equation models utilizing a time-series of data to make a single point forecast that is normally three months prior to the election, or aggregators of public opinion polls which aggregate them over the months of an election campaign and make daily forecasts of the election outcome starting six months prior to the election date².

The "paramount question" regarding election forecasts comes down to "Is the forecast correct?" [4] Does it accurately predict the results of the election? And does it make this prediction in a non-trivial time interval prior to the election?

Theory

The major theory being tested in these forecasts is reward and punishment as outlined by V.O. Key in *The Responsible Electorate* [13]. Simply put, voters reward good performance and punish bad performance. The approval rating for the current government is the measurement for governmental performance. When voters approve of the government's policies and activities, the approval ratings increase, and when the voters disapprove of the government's policies and activities, the approval ratings decrease. The consequences of high and low approval ratings are felt by politicians most acutely at the polls on election day. In order to anticipate the coming elections, politicians calibrate their policies and activities to encourage greater approval from their respective voting publics at the elections, when approval ratings matter the most. This pleasing behavior by governments, whether parliamentary or presidential, coalition or single-party, is consistent as governments not only seek to retain power but also wish to fulfil policy goals. It is in human nature to seek reward and avoid punishment, and this transfers to the aggregate world of governments.

My expectation is that Key's reward and punishment theory will

be consistent across all electoral democracies in 2024. Voter mood was decidedly negative throughout the year, soured by poorly performing economies, so punishment was more the norm. During 2024, economic growth was almost always lower than the G20 mean of 3.3%, and 2/3 of the OECD countries were below the OECD economic growth mean of 1.9% [18]. Incumbent parties lost executive and legislative voteshare as well as executive positions and legislative seats in diverse countries such as India, the United Kingdom, and the United States.

Data, Methods, and Results

To test this expectation, I compiled a cross-national dataset and estimated both a single forecasting model from the pool of the countries' data, and single-country forecasts for comparison's sake. The forecasting dataset consists of the following countries: Austria, Belgium, Finland, Iceland, Ireland, Lithuania, Portugal, Taiwan, United Kingdom, United States, and Uruguay. The selection of these 11 countries, each holding national elections in 2024, is based on them reaching the "Free" designation from Freedom House in 2024, strongly suggesting a high standard of democratic performance (at least a rating of 80)³. The countries are clustered in Europe, but there are representatives from the Western Hemisphere and East Asia. The election years I used to build the forecast in each country range between 1967 and 2022, a wide range. I sought at least seven to nine previous elections in each country. This desire to cast backwards for previous election data is fundamental to the forecasting literature. The more data the better, witness the evolution of sophistication of U.S. election forecasting using data from seven elections by Sigelman [9] to 19 elections by Lewis-Beck and Tien [19].

The dataset variables are as follows.

- Incumbent Voteshare: the voteshare won by the incumbent party, whether in a parliamentary or presidential election.
- Incumbent Approval: approval of the performance of the government three months prior to the election.
- Incumbent Unemployment Rate: the annual national unemployment rate three months prior to the election⁴.

Data collection on governmental approval and economic measures came from Wikipedia pages associated with elections in each country in the dataset and official country statistics. The governmental approval questions are similar across the countries⁵.

I use a pooled data estimator to test hypotheses about forecasting incumbent party vote: a GLS regression with random effects, controlling for AR(1) (xtregar in STATA 16 IC). I also use a Prais-Winsten Single-Lag OLS estimator for each country in separate regressions, as a comparison to the pooled estimator. Since I wish to forecast the 2024 election results, the 2024 data are omitted from this dataset. Once I made the pooled data estimate, I then plugged the 2024 values for the variables into the equation and created an ex-post forecast.

<u>Fixed or Random Effects</u>	<u>Incumbent Approval (t-ratio)</u>	<u>Unemployment (t-ratio)</u>	<u>Constant (t-ratio)</u>	<u>R² (overall)</u>	<u>N</u>	<u>F/Wald X²</u>	<u>Rho</u>
Fixed	.50* (6.68)	.09 (.29)	19.06* (4.76)	.55	84	22.4	-.06
Random	.60* (9.47)	.24 (.95)	12.08* (3.43)	.57	84	91.2	-.06

Table 1: Pooled Estimators of the Forecasting Model
(GLS Regression STATA 16)

Country (years covered)	Incumbent Approval (t-ratio)	Unemployment (t-ratio)	Constant (t-ratio)	R ² (adj.)	S.E.E.	Durbin- Watson	N
Austria (1994-2019)	1.62* (9.09)	-.57 (.54)	-17.31* (2.27)	.98	1.79	2.11	9
Belgium (1987- 2019)	1.44* (2.54)	-.02 (.04)	-12.14* (2.54)	.93	1.78	1.13	9
Iceland (1995-2021)	.98* (15.74)	1.88* (3.16)	-14.43* (3.39)	.99	2.34	2.57	9
Ireland (1987-2020)	1.03* (31.73)	.01 (.23)	-4.34* (3.56)	.99	.90	2.07	9
Lithuania (1993- 2019)	.70* (9.87)	.98* (4.05)	9.11* (3.98)	.99	1.32	1.52	7
Portugal (1995- 2022)	1.25* (5.91)	.41 (1.93)	-10.99 (1.11)	.97	.86	2.12	8
Taiwan (1992-2020)	.23 (.95)	-3.97* (2.70)	49.27* (3.28)	.60	4.73	1.27	7
United Kingdom (1987-2019)	.42 (1.89)	.26 (.59)	21.74 (2.04)	.84	2.49	1.55	9
United States (1988-96, 2004-20)	.30 (1.30)	1.28 (1.24)	21.74 (2.04)	.90	3.73	1.79	7
Uruguay (1971-2019)	1.06* (8.07)	-.51 (1.66)	2.11 (.31)	.98	2.64	2.32	9

Table 2: Single Country Regression Analyses (Prais-Winsten single lag OLS) (dependent variable is incumbent party/candidate voteshare, bold = presidential)⁶

Country	2024 Election Forecast	2024 Election Result	Difference between Forecast and Result
Austria	27.64	28.8	-1.16
Belgium	18.85	16.7	2.15
Finland	30.81	62.7	-31.89
Iceland	30.87	19.4	11.47
Ireland	26.48	21.9	4.58
Lithuania	53.52	75.3	-21.78
Portugal	38.61	28.0	10.61
Taiwan	47.16	40.1	7.06
United Kingdom	28.09	23.7	4.39
United States	43.80	48.3	-4.50
Uruguay	42.66	47.7	-5.04

Table 3: Election Forecasts of Incumbent Party/Candidate Voteshare for Each Country in the Dataset Based on Pooled Data Estimator
(Italicized = Parliamentary)

Absolute Average Difference = 9.51

incumbents get punished for higher unemployment rates. Approval is positively related to incumbent voteshare.

Table 3 is the election forecast table for the 2024 elections for each, based on plugging the relevant variable values in to the random effects parameter estimates from Table 1. Some estimates are more accurate than others. Austria, Belgium, Ireland, the United Kingdom, and the United States are decently forecasted, with forecasted differences from the election results being within five percentage points. Other countries are forecasted poorly: the presidential elections in Finland and Lithuania are underestimated by 20-30 percentage points. Parliamentary elections are generally better forecasted by this model, though the United States is an exception in it being well forecasted

Discussion of Results

The results in Table 1 are in a sense counterintuitive for the thesis of electoral punishment. I expected the unemployment parameter estimate to be negative and statistically significant, when in fact it is positive and not statistically significant. To the extent that electoral punishment is reflected in views on government performance as opposed to a strict evaluation of economic performance, then perhaps punishment is expressed in the positive and strongly significant slope coefficient for incumbent approval.

The results in Table 2 are more reflective of theoretical expectations, with nearly all countries individually estimated showing statistically significant and negative slope coefficients for unemployment, as

with the Iowa Model. Perhaps parliamentary systems, designed for constituency representation, translate more directly appraisals of government performance than do the multilevel presidential systems which possess more complex accountability structures.

Conclusion

While the results are to an extent mixed, there is some promise to the pooled estimator methodology. About half of the countries are well forecasted by the pooled estimator, which is promising, but the other half are not. The question then becomes: what could improve the model performance?

One issue may be the economic instrument I employed in the forecasting models. As an alternative measure of economics, the annual inflation rate presents itself as a potential assessment that voters can use of the overall economy. Buttressing this potential are some recent findings in the U.S. by Ipsos [20]: “People care more about things that obviously impact their personal finances day-to-day like gas prices and interest rates, and less about things that economists watch a lot, like GDP and employment rates.” With this observation in mind, I substituted inflation for unemployment in the models and re-estimated it. The results, though, remained statistically and substantively similar to those estimates using unemployment as the economics variable.

Another issue is more subtle: it will be that voters have a more general sense of economic malaise than can be captured in broad macroeconomic indicators such as national level unemployment and inflation. Relatively low unemployment did not help the incumbent Democratic party in the 2024 U.S. presidential election, for instance, as consumer confidence fell 15 points during 2024 [21], indicating deeper economic dissatisfaction across the general public. The broad-gauged Iowa Model misses such nuance. The theory of reward and punishment still holds, but the facts that inform these voter judgments may well shift over time.

For the 11 countries in a pooled environment, however, one-half of the Iowa Model is systematically accurate. Governmental approval three months prior to the election is strongly indicative of incumbent voteshare. The lessons from the United Kingdom and the United States are vivid, as incumbents in both countries lost in dramatic manner. As a generalization, incumbent politicians across the globe will be wary of public disapproval, as this bodes poorly for their political fortunes at the next election. These results further the observation from Lewis-Beck and Bélanger that “these models clearly highlight the fact that democratic electoral processes tend to obey very similar rules from one country to the other” [2].

Competing interests: The authors declare that they have no competing interests.

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