Voting Behavior in Turkey: A Probit Model Approach

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Abstract

This work analyzes the effects of economic variables on voting behavior in Turkey by a probit model approach. It explores how the economic variables impact the probability of the re-election of the incumbent political party. The probit model was used in this work for the period between 1984 and 2017. The direction and size of the effects of each selected economic variable also measured in details. The main findings revealed that economic voting exists in voting behavior in Turkey, and Turkish voters are sensitive to changes in the economy. External debt stock, the balance of foreign trade, deposit interest rate, export, gross domestic product, and oil prices were used as macroeconomic variables, and except oil prices, all of them found to be significant in terms of voting behavior in Turkey.

Keywords: Voting behavior, Economic voting, a Probit model

JEL Codes: C24 ; Q28.

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1. Introduction

Needs and limits are the core concepts of both economics and politics. Unlimited wants are expected to be met with optimization under conditional restrictions. Choosing one alternative and giving up the substitute become critical when the scope of economics and politics is considered.

For example, from an economics point of view, governments have to make a decision between free capital flow, independent monetary policy, and fixed exchange rate such that they can choose only two of these three options. On the other hand, governments have to satisfy their citizens’ expectations with limited sources to gain political support such that they prefer one investment plan, which creates more employment and more value-added production and leaves off the second alternative. Therefore, decision making has become a paramount word in economics and politics.

Political and economic actors have the same agenda, which is maximizing their own specified utilities. While the primary purpose of households as an economic figure is to upgrade their future well-being economically, socially, and even in terms of security, the goal of private sector is absolutely profit maximization. Differently, the utility maximization of political actors passes through implementing favorable policies to gain political support from citizens to stay in power. Reasonable choices could achieve all these divergent utility maximizations.

Voting is the most debated act of decision making in modern democracies. Election results represent the voice of citizens. Since governments obtain exclusive rights and duties granted by means of elections as a collective decision of citizens, voting behavior has become foremost for political agents. Voting is a particular way of uttering citizens’ voices as an evaluation of how the incumbent has governed the country for the last electoral period.

Voting behavior represents a specific pattern of voting and contains several determinants such as domestic issues, economics, ethnicity, religion, culture, foreign policy, and security. Each voter has a specified decision-making process, and diversified determinants for voting and aggregate result of elections include the central message of citizens. Economics is one of the most critical determinants in terms of voting behavior because each citizen is also a household and widely homo-economicus.

The organization of the paper is as follows: Section two gives a literature review on voting behavior analysis. Section three provides a conceptual framework of voting behavior. In Section four, the data and methodology were introduced, and the probit model was structured. Estimation results are in Section five, and Section six gives the conclusion.

2. Literature Review

Voting includes several messages for political actors. Besides, citizens’ evaluations for the last electoral period in terms of both personal finance and national economy could be derived from the voting behavior. In a lackluster economy where standards of living are dissatisfying, the re-election possibility of the incumbent becomes lower.

The literature on voting behavior is large-scale and refined because of its much-discussed characteristics. Even though there is a wide range of studies on voting behavior, the researches in developing countries are recent and in-progress when the analyses in advanced countries were
observed. Fair (1978) analyzed voting behavior in the USA and underlined that the real economic activity in the year of an election has a tremendous effect on presidential election votes. How the financial performance of the current administration affects its probability of being re-elected was studied by Kinder and Kiewiet (1981). They pointed out that the way of the incumbent administration of dealing with current national financial problems, economic issues and the ability to solve them shape voters’ decision-making process.

Lewis-Beck (1983) contributed voting behavior literature with an analysis of a comparison between French and American voters. He underlined that voters in the USA are less sensitive to economic position rather than French voters. In addition, how the economic variables affect election results were studied by Whiteley (1984), and it was found that in the 1983 USA presidential elections, the viewpoint on national economic achievement played a deterministic role in election results. Even the previous studies support the same finding, Miller, and Listhaug (1984) also found out that citizens’ evaluations on the economy affect voting behavior in Norway.

Peffley (1989) pointed out that the incumbent’s ability to manage economy plays a significant role in voting behavior. Chappell (1990) studied economic variables such as GNP growth and inflation to analyze their impact on voting behavior and found a meaningful relationship between them. Lockerbie (1991) studied whether citizens’ voting behavior was affected by retrospective or prospective economic assessments and stated that forward-looking economic considerations were more dominant. Clarke et al. (1994) conducted a study on how selected macroeconomic variables affect voting behavior and concluded that while inflation was not significant for voting behavior, unemployment and income had a meaningful effect. Alvarez and Nagler (1995) analyzed the 1992 presidential election in the USA and pointed out that economic voting was the reason why Clinton was elected. Bartels and Zaller (2001) found out why Al Gore lost the 2000 presidential race even though the USA economy was in excellent condition considering the GDP growth rate and realized that the wrong macroeconomic variable was taken into account. When income growth is considered in voting behavior analyses, Al Gore’s loss makes sense in terms of economic voting.

Flippov (2002) analyzed Russia’s voting behavior in terms of economics and concluded that a weakening economy, especially inflation shock, was a crucial reason why the incumbent party lost political power. McAllister and White (2008) also studied Russian voting behavior and underlined that higher standards of living were the key to United Russia’s 2007 election victory. Kalaycioglu (2007) analyzed voting behavior in Turkey and found out that for the 2002 elections, voters were eager to prefer personal finances and economic well-being over ideological preferences. Similarly, Carkoglu (2008) studied Turkish voting behavior for the 2007 general elections and highlighted that governmental performance on economic issues was one of the main reasons why the Justice and Development Party won the elections. Torcal (2014) examined Spanish voting behavior and concluded that voters punished the Spanish incumbent party for the economic recession in 2011. Bedock and Vasilopoulos (2015) made a comparison between Italian and Greek voting behavior for the 2014 European elections. The result of the study suggests that, compared to Italian citizens, Greek citizens were more sensitive to economic shrinking.

As is seen from the literature, the studies on voting behavior are extensive. The reason for this massive attention on voting behavior is that elections are the backbone of the modern political
system, and that election results construct not only the specific country’s but also the region’s short and medium term political agenda.

3. Voting Behavior

As the establishment of democracy expanded all over the world as a political system, the concept of voting has been investigated more and the interest in this topic also increased. The main idea of voting is about building a consensus in the society, mostly about the issues involving the public’s daily life. Under democratic regimes, voting is a fundamental right and duty. It also creates awareness about the importance of citizenship and democracy. Some voters value democracy (Downs, 1957) or feel that voting is a civic duty (Riker and Ordeshook, 1968). Especially for new freedoms, compulsory voting implementations are enforced in some countries like Turkey, Belgium, Mexico, and Australia.

Voting behavior, on the other hand, is a way of understanding the voters’ decision-making pattern, a restricted and sophisticated sub-field within politics. More specifically, the scope of voting behavior is able to answer the question why a group of people vote for a political party and other people do not. By learning and understanding voting behavior, policymakers can develop future policies to attract more voters in their favor in ballot boxes.

Voting behavior hosts almost all social sciences, from economics to political science, from sociology to social psychology. In other words, each social scientist can contribute to clarify voting behavior partially. Economic voting; on the other hand, is one of the different approaches to voting behavior. Economic polling indicates that citizens choose political figures considering the economy of the country. To understand voting behavior generally and economic voting specifically, the concepts of economic voting, political business cycle, and Rational Choice Theory should be highlighted.

4. Methodology and Data

The binary outcome in econometrics is mostly used when there are only two options, such as yes or no, like or dislike or agree or disagree. The models used for binary responses are called binary outcome models. In binary response models, the dependent variable takes only two values 0 or 1 as follows:

$$y=\begin{cases} 1 & \text{if } yes \\ 0 & \text{if } no \end{cases}$$

(1)

The binary outcome model converts a linear model to a nonlinear relationship with the support of a function. While a standard linear regression predictor is as follows:

$$\hat{y}=\alpha+\beta x$$

(2)

The binary outcome model predictor could be written as:

$$\hat{y}=f(\alpha+\beta x)$$

(3)
The most popular binary outcome models are logit and probit models. Both models take various variables, convert and rescale them between the values of 0 and 1. The distinguishing characteristic between the two models is the function \( f \) in Equation 3 - also named as the link function.

The logit model uses the cumulative distribution function of the logistic distribution - and the name of logit comes from logistic and sometimes referred to as logistic regression. On the other hand, the probit model uses the cumulative distribution function of the standard normal distribution for \( f \) in the equation - and the name of normit is also used to refer this. That is to say, the distribution of error terms makes a difference between these two models.

While the error terms of the logit model are assumed to be distributed as standard logistic, the ones of the probit model are supposed to be distributed as normal. Probit models are applied in advanced econometric models because; when a selected independent variable exceeds the threshold level, it becomes a discrete outcome and; therefore, mostly used by social scientists like economists.

In this work, the probit model was applied to understand the effects of selected economic variables on voting behavior in Turkey. A probit model is an appropriate method for analyzing the voting behavior regarding the re-election of the incumbent party because the result would be either stay or leave is a binary outcome.

The period used in this paper is between 1984 and 2017. The first half of the period suffers from high economic volatility while the second half is more stable. At first sight, the data shows that selected variables also contain high fluctuations in the first half rather than the second.

When the political aspect is considered, the same pattern also exists. While in the first half of the period, the possibility of the re-election of the incumbent party was low. On the contrary, we witnessed consistent incumbent party preferences of voters in the second part of the period. Six different economic variables were selected as independent predictor variables as a reflection of the national economy’s performance for this model. These variables are; external debt stock, the balance of foreign trade, deposit interest rate, export, gross domestic product, and oil prices.

The annual change in the balance of trade and export of goods and services were taken into account as a percentage share of GDP. For the domestic interest rate, again, annual change was included in the model. While external debt stock was taken as a percentage share of gross national income, the real gross domestic product with 2010 US dollar was included to eliminate inflation effect. For the oil price, annual average crude oil prices were considered as dollars per gallon. The data for the first five variables’ was derived from World Bank Open Data and the data regarding oil price was taken from Federal Reserve Economic Data.

### Table 4.1 Identification and Notation of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance of Foreign Trade (% of GDP)</td>
<td>BFT</td>
</tr>
<tr>
<td>Deposit Interest Rate (%)</td>
<td>DIR</td>
</tr>
<tr>
<td>External Debt Stock (% of GNI)</td>
<td>EDS</td>
</tr>
<tr>
<td>Exports of Goods and Services (% of GDP)</td>
<td>EX</td>
</tr>
</tbody>
</table>
Specifically, Y is a discrete random variable, and it can take only one of the two possible values—a binary variable. Y would receive the value of 0 if the incumbent party lost the election and 1 if the incumbent party wins the election. Therefore, the dependent variable in this model is the incumbent political agent’s winning the election. The sample period is between 2002 and 2018 and includes all the general elections, municipal elections, and referendums that took place in this period.

The probit model used to test the correlations between the predictor economic variables and voting behavior could be summarized as follows:

\[ Y_{it} = \sum_{j=1}^{n} \beta_j X_{it} + e_{it} \]  

Where

\( Y_{it} \) = Binary or dichotomous choice random variable. When voting behavior resulted as the re-election of the incumbent political party \( Y_{it} \) takes the value of 1, when the economic variable \( i \) has effects on voting behavior in year \( t \); and takes the value of 0, when the economic variable \( i \) has no impact on voting behavior in year \( t \).

\( X_{it} \) = The independent variable of affecting voting behavior, the \( i_{th} \) the economic ratio of Turkey in year \( t \)

Therefore, the probit model for voting behavior in Turkey is structured as follows:

\[ Y_{it} = \beta_1(BFT) + \beta_2(DIR) + \beta_3(EDS) + \beta_4(EX) + \beta_5(GDP) + \beta_6(OIL) + e_{it} \]  

In Table 4.2, the descriptive statistics of variables, which includes mean, median, maximum and minimum, standard deviation, skewness, and more calculated values were given. This table represents the basic features of the data set. These variables were calculated in EViews.

**Table 4.2 Descriptive Statistics of Variables**

<table>
<thead>
<tr>
<th>Sample: 1984-2017</th>
<th>INCUMBENT</th>
<th>OIL</th>
<th>GDP</th>
<th>EX</th>
<th>EDS</th>
<th>DIR</th>
<th>BFT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>0.294</td>
<td>38.278</td>
<td>598,160</td>
<td>3,040</td>
<td>42,615</td>
<td>-1,041</td>
<td>13,487</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>0.000</td>
<td>27,155</td>
<td>513,298</td>
<td>1,955</td>
<td>40,887</td>
<td>-2,074</td>
<td>-0,630</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>1.000</td>
<td>91,480</td>
<td>1206,000</td>
<td>56,223</td>
<td>57,846</td>
<td>58,401</td>
<td>147,194</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0.000</td>
<td>11,910</td>
<td>266,754</td>
<td>-17,515</td>
<td>33,357</td>
<td>-39,874</td>
<td>-79,838</td>
</tr>
<tr>
<td><strong>Standard Deviation</strong></td>
<td>0.462</td>
<td>25,962</td>
<td>264,865</td>
<td>15,339</td>
<td>6,110</td>
<td>21,063</td>
<td>50,817</td>
</tr>
<tr>
<td><strong>Skewness</strong></td>
<td>0.903</td>
<td>0.9743</td>
<td>0.764</td>
<td>1.454</td>
<td>0.728</td>
<td>0.678</td>
<td>0.663</td>
</tr>
<tr>
<td><strong>Kurtosis</strong></td>
<td>1.816</td>
<td>2.529</td>
<td>2.514</td>
<td>5.812</td>
<td>2.9338</td>
<td>3.818</td>
<td>3.0947</td>
</tr>
<tr>
<td><strong>Jarque-</strong></td>
<td>6.611</td>
<td>5.692</td>
<td>3.644</td>
<td>23.197</td>
<td>3,010040</td>
<td>3,559</td>
<td>2,5044</td>
</tr>
</tbody>
</table>
Voting Behavior in Turkey

<table>
<thead>
<tr>
<th>Bera Probability</th>
<th>0.036</th>
<th>0.0580</th>
<th>0.161</th>
<th>0.000</th>
<th>0.222</th>
<th>0.1687</th>
<th>0.285</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum</td>
<td>10.000</td>
<td>1301.480</td>
<td>20337.46</td>
<td>103.375</td>
<td>1448.942</td>
<td>-35.425</td>
<td>458.58</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>7.058824</td>
<td>22243.76</td>
<td>2315067</td>
<td>7764.627</td>
<td>1232.325</td>
<td>14641.80</td>
<td>85220.43</td>
</tr>
<tr>
<td>Observation</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

5. Estimation Results

The probit model is predicted using the maximum likelihood model. The estimation of the model was reached after 8 iterations. Table 5.1 shows parameter estimates, standard error values, z statistics, and significance values for each independent variable.

To understand whether the independent variable affects the dependent variable, the significance values should be interpreted.

\[ H_0: \beta = 0 \text{ (The independent variable does not affect the dependent variable)} \]  \quad (6)

\[ H_1: \beta \neq 0 \text{ (The independent variable affects the dependent variable)} \]

When Table 5.1 is analyzed, the significance values of the six independent variables were given. The independent variable of OIL’s significance value is 0.1345, while that of GDP is 0.0662, DIR is 0.0135, EDS is 0.0356, EX is 0.0302 and BFT is 0.0384. The hypothesis of \( H_0 \) is rejected under critical value (margin of error) of 0.10 for independent variables whose significance values are less than 0.10.

The hypothesis of \( H_0 \) is accepted under critical value (margin of error) of 0.10 for independent variables whose significance values are more significant than 0.10. According to test results, five of the six independent variables affect the dependent variable. These significant independent variables are GDP, DIR, EDS, EX, and BFT. The remained variable, which is OIL, does not affect the dependent variable.

McFadden R-squared value is a similar value to \( R^2 \)– the coefficient of determination in classical linear regression models. In this model, the McFadden R-squared value is calculated as approximately 53%. That is to say, independent variables explain 53% of the dependent variable.

The LR statistic value has the same function as F-test in classical linear regression. The fundamental difference between these two values is that LR statistics are convenient for chi-squared distribution. The significance of the model is checked by looking at these test statistics.

\[ H_0: \beta_0 = \beta_1 = \ldots = \beta_n = 0 \text{ (The model is not significant)} \]  \quad (7)

\[ H_1: \beta_0 \neq \beta_1 \neq \ldots \neq \beta_n \neq 0 \text{ (The model is significant)} \]
The significance value of LR statistics was calculated as 0.001214. According to this, the hypothesis of $H_0$ is rejected under %10 critical value (margin of error). Based on this result, it could be concluded that this probit model is significant.

According to Table 5.1, the signs of coefficients of the independent variables were also given. By examining the signs of the factors, further evaluations could be uttered about the model. GDP’s sign of the coefficient is positive. This indicates that the probability of former incumbent party re-election and GDP are in the same direction. It is not surprising that the coefficient of the deposit interest rate is negative because it means that the probability of the incumbent party’s re-election increases when there is a decrease in deposit interest rates.

The third independent variable is EDS, which refers to external debt stock, and its coefficient’s sign is negative. It means that the increase in external debt stock decreases the probability of the incumbent’s re-election in further elections. The sign of the coefficient of export as an independent variable is positive, which means that as the share of exports in GDP increases, the probability of the incumbent’s re-election also increases.

The last independent variable, whose sign of the coefficient was observed, is the balance of foreign trade, which has a negative sign. If the level of international trade balance regarding the deficit is higher, it means that Turkey approaches to balance of payments in problem areas and decreases the probability of the incumbent’s re-election because economic policies towards reducing current account deficit is expected from the government.

Table 5.1 The Predicted Values of Probit Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>$z$-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL</td>
<td>-0.050592</td>
<td>0.033802</td>
<td>-1.496.715</td>
<td>0.1345</td>
</tr>
<tr>
<td>GDP</td>
<td>0.007396</td>
<td>0.004026</td>
<td>1.837.266</td>
<td>0.0662</td>
</tr>
<tr>
<td>DIR</td>
<td>-0.094342</td>
<td>0.038207</td>
<td>-2.469.212</td>
<td>0.0135</td>
</tr>
<tr>
<td>EDS</td>
<td>-0.418940</td>
<td>0.199319</td>
<td>-2.101.857</td>
<td>0.0356</td>
</tr>
<tr>
<td>EX</td>
<td>0.236430</td>
<td>0.109112</td>
<td>2.166.856</td>
<td>0.0302</td>
</tr>
<tr>
<td>BFT</td>
<td>-0.044292</td>
<td>0.021391</td>
<td>-2.070.625</td>
<td>0.0384</td>
</tr>
<tr>
<td>C</td>
<td>1.334.756</td>
<td>6.844.131</td>
<td>1.950.220</td>
<td>0.0511</td>
</tr>
</tbody>
</table>

McFadden R-squared 0.533915
Mean dependent var 0.294118
S.D. dependent var 0.462497
S.E. of regression 0.341304
Akaike info criterion 0.976471
Sum squared resid 3.145.178
Schwarz criterion 1.290.722
Log-likelihood -9.600.015
Hannan-Quinn criteria. 1.083.640
Deviance 1.920.003
Restr. deviance 4.119.423
Restr. log likelihood -2.059.711
LR statistic 2.199.420
Avg. log likelihood -0.282353
Prob(LR statistic) 0.001214
Evaluating the coefficients of independent variables could not that straight as it has done for the sign of coefficients because the calculated coefficient values could not be interpreted as done in the linear regression model. The evaluation of the independent variable’s coefficient should answer the question of how much the model’s probability increases when the independent variables increase as one unit. To find out this answer, it should be understood that the change depends not only on the estimated coefficients but also on the level of probability from which the change is measured (Karagol and Turhan, 2008). Therefore, before analyzing the marginal effects of independent variables, it is needed to construct a starting point, which is the mean normal index. This means the normal index is established to measure the changes in the probability of re-election of the first party.

As can be seen from Table 4.2, the mean of GDP is 598, 16, and that of DIR is -1,042, EDS is 42,616, EDS is 42, 62, EX is 3, 04, and BFT is 13, 49 approximately. The independent variable OIL was not used in marginal effect analysis because it has no significant value according to test results. Therefore, the probability of the first party’s re-election at the mean values can be calculated by a mean normal index which is:

\[
P = \Phi(-0.044292(BFT) - 0.094342(DIR) - 0.418940(EDS) + 0.236430(EX) + 0.007396(GDP) + 13.34756)
\] (8)

To calculate the mean index, the mean values of the independent variables were put into mean normal index. Hence, the calculated mean index is as follows:

\[
P = -0.044292(13,49) - 0.094342(-1,042) - 0.418940(42,616) + 0.236430(3,04) + 0.007396(598,16) + 13.34756 \approx 0.14
\] (9)

It can be shown that the corresponding probability is \(P(0, 14) = 0, 5557\), which was obtained from the normal distribution function.

**Table 5.2 The Calculation of Probabilities at Means and When One Unit Increase in Variables**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Probability at Mean</th>
<th>Probability as One Unit Increase</th>
<th>The Change in Probability</th>
<th>Standard Deviation</th>
<th>Scale the Probability by Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>0,5557</td>
<td>0,5596</td>
<td>0,0039</td>
<td>264,8651</td>
<td>1,0330</td>
</tr>
<tr>
<td>DIR</td>
<td>0,5557</td>
<td>0,5160</td>
<td>-0,0397</td>
<td>21,06397</td>
<td>-0,8362</td>
</tr>
<tr>
<td>EDS</td>
<td>0,5557</td>
<td>0,3897</td>
<td>-0,1660</td>
<td>6,110906</td>
<td>-1,0144</td>
</tr>
<tr>
<td>EX</td>
<td>0,5557</td>
<td>0,6443</td>
<td>0,0886</td>
<td>15,33922</td>
<td>1,3591</td>
</tr>
<tr>
<td>BFT</td>
<td>0,5557</td>
<td>0,5359</td>
<td>-0,0198</td>
<td>50,81769</td>
<td>-1,0062</td>
</tr>
</tbody>
</table>

Table 5.2 shows the new recalculated probabilities when each independent variable is increased by one unit. The table also contains the new probabilities which are scaled by standard deviations of each independent variable. As the changed probabilities are scaled by standard deviations, the change in new scaled probability by standard deviations is 1,0330 for GDP, -0,8362 for DIR, -1,0144 for EDS, 1,3591 for EX and -1,0062 for BFT.
Table 5.2 also represents how much the result of the probit model changes when each independent variable increases by one unit. According to this table, EDS has a more significant marginal effect, which is 0.1660, rather than other variables because the change when EDS is increased by one unit is more prominent than the impact of different independent variables on the model. The least marginal effect on the model is GDP. Remember that the signs of the changes in probability are mainly about the direction of the impact. While comparing the marginal results of the independent variables, absolute values were taken into account.

Classification tables point out the contingency tables related to classified estimation values and observed dependent variables. Table 5.3 represents the classification tables. The aim of the setting of the classification table is to determine the performance or fit of the model. The proportion of correct estimations is a measurement of the performance of the probit model. The performance of the model is as follows:

\[ R^2 = \frac{\text{Number of Correct Predictions}}{\text{Total Number of Observations}} \]  

(10)

$R^2$ takes only values between 0 and 1. If the value of $R^2$ approaches to 1, it means that the number of correct predictions also increases, which results an increase in the performance of the model.

Before forming classification tables, a threshold level should be defined. In this model, the threshold level was determined as 0, 5. By analyzing the values of $P(Dep=1) <= C$ and $P(Dep=0)>C$, C, the observations are classified according to the threshold level. According to Table 5.2, 23 observations of the incumbent party lost the first rank, and 8 observation of incumbent party re-elected as the first rank were classified adequately. The calculation of %Correct in the table gives the percentage of the number of correct predictions. Therefore, %95, 83 of the incumbent party lost the first rank observations, and %80 of incumbent party re-elected as the first rank observations were correctly estimated.

The values of $E$ (# of Dep=0) and $E$ (# of Dep=1) are expected values of the dependent variable’s prediction. According to the calculations in Table 5.3, in probit estimation, the expected value of the observation of incumbent party lost the first rank in the election is 20.87, and the observation of the incumbent party re-elected as the first rank in the election is 6.93. The number 56, 03 in the last line of the table indicates the improvement in the constant probability model.

<table>
<thead>
<tr>
<th>Table 5.3 The Expectation-Prediction Evaluation for Binary Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Success Cutoff: C=0.5</strong></td>
</tr>
<tr>
<td>Estimated Equation</td>
</tr>
<tr>
<td>Dep=0</td>
</tr>
<tr>
<td>P(Dep=1)&lt;=C</td>
</tr>
<tr>
<td>P(Dep=1)&gt;C</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Correct</td>
</tr>
</tbody>
</table>
6. Conclusion

Voting behavior is a substantial sub-field of social sciences for modern democracies in today’s world when its role in shaping governments and determining mid-term political agenda results of countries are taken into account. Voting behavior refers to how citizens tend to vote according to several determinants. These determinants are gender, race, age, economic environment, culture, class, education, ethnicity, origin, religion, media, social issues, security, political orientation, party identification, and so on. Each voter takes into account its own voting determinants, and undoubtedly, each vote’s determinants differ from other ones. Admittedly, there are several determinants affecting voting behavior, but one of the most prominent ones is the economy undoubtedly. Voters’ evaluations on the incumbent’s economic performance and candidates’ future projections play a vital role in their decision-making process.

Under this connection, in this study, the economic determinants affecting voting behavior in Turkey were analyzed. Therefore, the probit model was used to reveal the relationship between the economy and voting behavior in Turkey. The relation between voting behavior and selected economic variables’ and its marginal effects were analyzed in details.

According to the results of the probit model, among six independent variables, which are oil prices, the balance of foreign trade, external debt stock, GDP, domestic interest rate, and exports, five of them were found to be significant. It means that the balance of foreign trade, external debt stock, GDP, domestic interest rate, and exports affect voting behavior in Turkey. The only independent variable, which was found to be insignificant for the model, is the oil price. The models Mc-Fadden R-squared is 53%, which indicates the explanatoriness of the model.

A marginal effect analysis was also provided in this work. To understand effect of each independent variables on the dependent variable, firstly, a mean value index was calculated by putting mean values in the model. Then each independent variable was increased by one unit separately, and the corresponding probability from normal distribution function was founded.
Finally, the difference between these two probabilities was measured to find out how much the independent variable was affected by one-unit increase. According to this analysis, external debt stock has the most significant marginal effect on the model; while GDP’s marginal effect is the smallest. An expectation-prediction evaluation for the probit model was also given. According to this evaluation, 95, 8 % of the incumbent party’s loss and 80% of the incumbent party’s winning in elections were estimated correctly.

This study provides an attempt to develop an explanatory and comprehensive economic voting model and uncovers how selected economic determinants affect election results. Different economic variables used in the model contain an inclusive perspective, and its meanings for voting behavior represent the model’s critical aspect. Besides economic variables, political, social, and security determinants’ effects on voting behavior in Turkey is on the author’s agenda for future research. Moreover, it is necessary to conduct a research on economic voting in Turkey such as whether Turkish citizens are shortsighted or far-sighted voters or whether personal finance variables like inflation or unemployment plays a more significant role rather than structural economic variables like industrial production or total reserves of the central bank.

References


