Economic determinants of voter turnout: A quantitative approach

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Abstract

Research on voter turnout argues that low economic performance affects the rate of voter turnout. However, scholars continue to disagree on the direction of this relationship as some argue that poor economic performance is a deterrent on voter turnout, while others argue that it is an incentive to vote. Applying a quantitative approach this article aims to further elucidate the relationship between voter turnout and the voters' economic performance. The study finds a strong relationship between economic adversity and voter turnout. As importantly, the study finds that while strong, this relationship is complex and multi-layered. Overall, this article aims to further the debate on the relationship between economic performance and voter turnout and to clarify the mechanisms that affect its strength and direction.

Key Words: *voter turnout, macro-economic adversity, GDP per/capita, GDP growth, unemployment rate*

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Introduction

For nearly a decade, ever since the 2008 economic crisis, the economy has been the most salient issue in global politics, and economic concerns - jobs, the cost of living, and an adequate income - have been the most pressing personal problems citizens have faced. Although the social, economic, and electoral consequences of fluctuations in the economy have been widely examined, no consensus has been reached on the impact of economic adversity on the rate of political participation and in particular voter turnout. The economy clearly affects how a person votes, but does it affect whether he or she votes? As we stated, although a great deal of research has been done on this issue, scholars have failed to achieve an overarching consensus.

Voter turnout bears the difficulty of being a challenging and ambiguous action in terms of political participation. Overall, 'turnout seems to decline by 10 percentage points recently' (Scruggs and Stockemer 2012) as voters increasingly choose to not vote. Considering the idea that representative democracy is, among others, based on voter turnout, its decline can be viewed as an ominous sign for the democratic health of a particular society. As importantly, decline in voter turnout affects disproportionately the poor, the little educated, and the unemployed due to their already pre-exiting propensity to be less engaged in politics (Makszin and Schneider, 2010). This in turn can feed a self-sustained cycle of non-participation, economic under-performance, and ultimately alienation from public life.

While much of the literature on voter turnout focuses on the question of whether - and in what ways - macroeconomic conditions affect electoral outcomes (for reviews, see Radcliff 1992), this article focuses on how the economy affects turnout. According to Pacek and Radcliff (1995), the macroeconomic variations of economy affect electoral turnout; namely how people vote. With regard to voter turnout, several scholars have argued that a non-stabilized economy appears to direct citizens not to participate as voters during election day. As an overall argument, the causes of voter turnout relate to macroeconomic conditions at both the individual and aggregate levels. However, other factors can be identified that can affect voter turnout, such as: population size, population stability, campaign expenditures, the number of political parties, how long in advance people must register to vote; how many hours polling stations stay open; whether elections take place on weekends or workdays; whether businesses are required to give employees time off to go and vote and so on (Ezrow & Xezonakis 2014; Geys 2006).

Since there is still quite a significant degree of disagreement regarding the (type of) effect economic performance has on voter turnout, this article will focus on relationship between the two to identify any causal mechanism between them.

Research Focus and Objectives

This article aims to examine the relationship between voter turnout and the state of the economy. The main objective of the article is to test the hypotheses it generates from the literature review and conclude whether they can account for voter turnout rates in democratic political systems. In particular, the effect of economic performance on voter turnout in this article is analyzed from a macroeconomic perspective through a quantitative analysis. Specifically, the article aims to analyze the effect of economic welfare indicators on voter turnout. The economic welfare indicator is measured by: (i) DGP/capita; (ii) unemployment rate and (iii) GDP growth.

Literature Review

Radcliff (1995) pays a great deal of attention to the relationship between economic conditions and voter turnout and concludes that short-term economic fluctuations are a decisive determinant in voter turnout. Many studies have been conducted to examine this relationship in the United States from Kiewiet and Rivers (1985) quoted in Pacek and Radcliff (1995), where strong and significant evidence has been found linking economic fluctuations and voter turnout. As a result of these findings, an increasing body of theories have been developed to explain this relationship and the current article is mostly influenced by the "negative voting" theory.

The "answers" on voter turnout

Economic adversity increases voter turnout
One point of view is that economic duress increases political participation. The argument here is that people under economic strain blame the government for their situation and vote, organize, lobby, protest, and so on to redress their grievances (Schlozman and Verba 1979:12-19). Lipset puts it this way: "Groups subject to economic pressures with which individuals cannot cope, such as inflation, depression, monopolistic exploitation, or structural changes in the economy, might also be expected to turn to government action as a solution and to show a high voting average" (1960:192). There is also evidence that the motivation to politically punish is greater than the motivation to politically reward (Kernell 1977). If this "negative voting" theory holds, it is reasonable to expect that "the punishers" - those who experience economic duress - would be more likely to vote than people without economic problems.

Economic adversity decreases voter participation

A second perspective makes the opposite claim: people with financial difficulties are less likely to vote. The reason is that economic adversity is stressful: it causes a preoccupation with personal economic well- being, and as a result, the citizen withdraws from such external and non-essential matters as politics. Economic duress reduces a person's capacity to participate in politics because the poor and unemployed are financially strained, lack the information required for active participation, and often cannot afford the burdens of political activeness (Kosa 1969). The poor are more likely to be preoccupied with personal economic concerns than the rest of the population (Brody and Sniderman 1977:344), and the unemployed often must cut back financially, dip into their savings, borrow money from family and friends, apply for welfare and food stamps, and move into cheaper housing (Maurer 1980). Thus, when a person experiences economic adversity his scarce re-sources and time are spent on holding body and soul together – surviving - not on remote and seemingly distant concerns like politics. "Citizens whose chief worry is making ends meet, holding onto their job, or finding one, may well find any interest they might have in the broad affairs of politics deflected to coping with finding a way to deal now, or as soon as possible, with the most immediate and pressing of 'bread-and-butter' problems" (Brody and Sniderman1977:346).

Economic adversity is not related to voter turnout

An essential assumption of the mobilization arguments above is that citizens who experience economic duress blame the government for their hardship and believe that changes in government policy or changes in who holds office would improve their own personal economic situation. But this link between personal well-being and political orientation may be weak, overstated by researchers, or even nonexistent. For example, Kinder (1979) shows that personal economic experiences are not politically important in either presidential or congressional elections in the United States. Similarly, unemployment does not affect (1) the perception of equality of opportunity; (2) class consciousness; or (3) support for policies that would significantly change the government's power over the economy (Schlozman and Verba 1979). One reason why personal economic conditions may be unrelated to political preferences and behavior is that most people do not seek a political solution to their predicament; rather, they hold themselves personally responsible (Sniderman and Brody 1977; Schlozman and Verba 1979: 199). Or, as Kinder and Kiewiet conclude, "economic discontents and political judgments inhabit separate mental domains" (1979:523). An alternative explanation may be that unemployment, poverty, and other economic problems simply do not produce much personal strain (Garraty 1978:251). As one journalist puts it, "unemployment just doesn't hurt as much as it used to" (Donnelly 1978: 1785). Fiorina concludes that "there is no discernible

relationship between economic conditions and voting turnout" (1978:439). The same conclusion also has been reached for unemployment: "any difference between the employed and the unemployed in their amount of political activity is a function of the social characteristics of the unemployed rather than a result of the experience of unemployment" (Schlozman and Verba 1979:245-46).

Since there are such varying, and contradicting, theoretical perspectives on the connection between economic performance and voter turnout, then this paper aims to empirically test their relationship to provide some clarity on their relationship and on the mechanism(s) that might account for their level of possible interaction.

Variables' definition

Independent variables – GDP/capita– GDP growth– Unemployment Rate

We begin from the assumption that the increase or decrease of voter turnout as a phenomenon can be tested through the dynamics of economic adversity. According to the literature mentioned above, societies that face high level of unemployment, poverty and financial troubles are believed to be less/more likely to vote, depending on the approach researchers take to conduct the analysis. In order to test the assumptions above – and achieve more clarity - in this article we test how unemployment, poverty and economic difficulties effect the voter turnout. Specifically, unemployment is measured through the unemployment rate, poverty through the GDP/capita and economic difficulties through GDP growth.

According to Rosenstone, (1982:41) "turnout is lower when short-term unemployment is high, prices are unstable, and a large proportion of the population experience financial difficulties." According to his argument when a country is facing economic difficulties one of the consequences is the non-political participation of the citizens. This relationship is explained by a set of cost opportunities that affect the individuals' decision to participate in politics. For instance, when the level of unemployment is high, the opportunity cost from the political perspective is high since people are more concerned about their "pocket" then politics in general. Therefore, Rosenstone (1982) concludes that "the higher the opportunity costs, the lower the probability the citizen will participate in politics.

Dependent variable – The voter turnout

State-level voter turnout is a measure of turnout among a state's voting-eligible population. Traditionally, voter turnout has been calculated by dividing the number of votes in a given election by the voting-age population. McDonald and Popkin (2001) argue, however, that this measure raises concerns about validity because it includes non-citizens and felons who are ineligible to vote. Their estimate of voting-

eligible population excludes these groups to more accurately reflect the true voting-eligible population. The dependent variable in this study is based on their estimate (see McDonald 2004), which eliminates the validity concerns associated with using turnout rates among voting-age populations across the states. The voter turnout dependent variable is drawn from election years 2002 until the first quarter of 2014 and it includes all the countries under democratic regimes all over the world. It has to be mentioned that the countries that apply compulsory voting are excluded.

Hypothesis Development

This research is led by the following research question: Does the current state of the economy affect voter turnout during the election day?

Based on the literature review provided above, we have designed the following hypotheses:

> **H1:** *During elections, voter turnout is affected by the current state of the economy.*
> **Null HP:** *During elections, voter turnout is not affected by the current state of the economy.*

Based on the literature above, a non-rejected hypothesis is expected.

Research Design

This section provides evidence about the data collection and methodology used to generate the empirical findings. According to the approach used in the framework of this study, this section is organized as follows. The first section corresponds to the macro level analysis and the information regarding the data design and methodology is provided in the corresponding sections.

Data and Methodology

The timeframe where the analysis is based lies from 2002 until the first quarter of 2014. The sample includes 248 countries that are part of the World Bank database.

Data Design

The macro-economic adversity is measured through these main variables: (i) GDP/capita; (ii) unemployment Rate; (iii) GDP Growth; and (iv) voter turnout.

The variables mentioned above, are generated from the World Bank database and are measured on the basis of market prices. GDP per capita is gross domestic product divided by mid-year population. Data are in current U.S. dollars.[2] Unemployment Rate refers to the share of the labor force that is without work but available for and seeking employment.[3.] GDP Growth is the annual percentage growth rate of GDP at the market prices based on constant local currency.[4] The International Institute for Democracy and Electoral Assistance (International IDEA) - an intergovernmental organization that supports sustainable democracy worldwide[5] - is used as the source for voter turnout data.

The table below is as summary of the all variables. It shows the source of the variables and the indicators. The last column of Table 1 indicates the well-known authors in the field.

TABLE 1: Variable Description

Variable	Indicator	Abbre	Source	Authors
Respondent	Voter turnout	Turn	IDEA	Benjamin Radcliff (1992)
Explanatory	-GDP/capita -Unemployment Rate -GDP Growth	GDP	World Bank	Steven J. Rosenstone (1982)
		UNP		
		Growth		

Source: Author

Methodology

In order to identify the relationship between voter turnout and its determinants, a quantitative approach is used; where voter turnout is considered to be the depended variable, while the GDP/capita, the Unemployment Rate and GDP Growth are the explanatory variables. Overall, the relationship between the variables can be stated as follows:

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[2] The source for the GDP per capita http://data.worldbank.org/indicator/NY.GDP.PCAP.CD the last accessed on 14the April 2016
[3] The source for the unemployment rate http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS the last accessed on 14the April 2016
[4] The source for the GDP Growth http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG the last accessed on 14the April 2016
[5] The source for the Voter Turnout http://www.idea.int/about/index.cfm; http://www.idea.int/vt/ the last accessed on 14the April 2016

Voter turnout = f (GDP/capita, Unemployment Rate, GDP Growth)
(1)

After analyzing the distribution of these variables, it was found that most of them did not meet the normal distribution requirement. Therefore, voter turnout, GDP/capita, Unemployment Rate and GDP Growth are cleaned from outliners; meanwhile, the GDP/capita, Unemployment Rate and GDP Growth are transformed into logarithmic. All these variables are run using a multiple regression analysis and the estimated model is stated based on the equation below:

Voter turnout= β_0+ β_1 Log(GDP)+β_2 Log (UNP)+β_3 Log(GDP Growth)+ε
(2)

In addition, since there were several missing data in the dataset, we also cleaned the dataset from the missing. Another aspect that has to be underlined relates to countries that have compulsory voting. To enable a meaningful comparison, it was decided to exclude these countries from the analysis. The variables were also tested for multicollinearity, which refers to the case when two or more explanatory variables in a multiple regression exhibit high pairwise correlations. This can lead to inflated standard errors of coefficients and low significance of estimated coefficients. To check whether our variables exhibit any problematic correlation a Variance Inflation Factor test is computed. According to Jiao et al., (2012) VIF's above 5 indicate a severe multicollinearity. In the case of this article the VIF-values range from 1.01 to 1.03, which means that our variables are not strongly correlated with each other and therefore, the regression model does not suffer from multicollinearity.

In this article data from 248 countries were included and the time frame of the analysis extends from 2002 until 2014. Due to the fact that the measurements of the GDP/capita, the unemployment rate and the GDP growth did not consist with the correspondent years when the national elections were held in the countries included in the study, it was decided to calculate the average of each variable within the time frame mentioned above. Thus, it was taken in account the average value of the GDP/capita, the unemployment rate, the GDP growth and Voter turnout from 2002 to 2014.

Results

In this section the overall findings, summary descriptive of the variables' correlation and the analysis of the results are provided. Thus, it is analyzed whether the hypothesis of the research is verified or not.

H1: *During elections, voter turnout is affected by the current state of the economy.*

Table 2 below summarizes the main variables and provides some descriptive statistics for the listed indicators.

TABLE 2: Descriptive Statistics

	Obs.	Mean	Std.Dev	Min	Max	Skewness	Kurtosis
Voter turnout	233	66.64	11.18	44.26	94	0.48	2.58
Log.GDP/capita	233	3.68	0.67	2.27	5.15	0.53	2.88
Log.Unemployment Rate	233	0.85	0.28	-0.22	1.74	-0.6	3.4
Log. GDP Growth	233	0.55	0.28	-0.24	1.14	-0.52	2.76

In terms of distribution shape, characteristics, kurtosis and skewness are also shown in the descriptive statistics table. They are computed after the sample is corrected for outliers and transformed into logarithmic. Kurtosis checks for how small and sharp the central peak is relative to a standard bell curve. Standard normal distribution is called mesocurtic and equals a kurtosis value of 3.

Table 2 shows that Voter turnout value, logged GDP/capita, logged unemployment rate and the logged GDP growth are slightly above or below 3, which mean that these variables are close to the normal distribution.

FIGURE 1: Voter Turnout
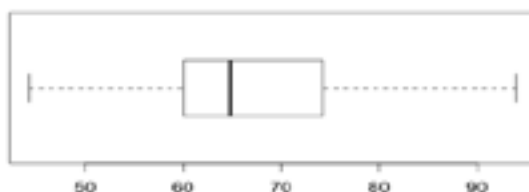
Also voter turnout kurtosis value, which is slightly lower than 3, precisely 2.58, is considered close to the standardized normal distribution. Skewness is an indicator of the asymmetry and deviation from normal distribution. The negative sign for skewness shows that the distribution of observations is left skewed, and vice versa. Table 2 shows that skewness value for voter turnout, logged GDP/capita, logged Unemployment rate, logged GDP growth varies slightly above or below the range of [-0.5 to +0.5] meaning that the distribution is approximately symmetric. See the figure 1.

While kurtosis value for logged GDP/capita is lower than 3, leading to a quasi mesokurtic distribution with normal peak. GDP/capita was highly distanced from normal distribution that is why, before the multiple regression analysis, we

decided to transform its values into algorithm. After this transformation normal distribution was achieved. GDP/capita varies slightly above or below the range of [-0.5 to +0.5] meaning that the distribution is approximately symmetric (see figure 2).
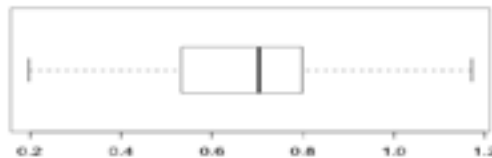
FIGURE 2: Log GDP/capita
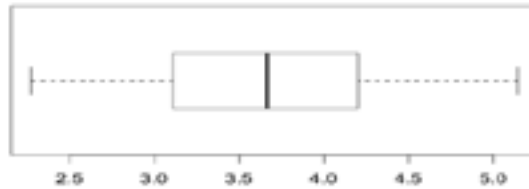
In addition, the unemployment rate varies to the second range $(0.5 - 1)$ meaning that the distribution is slightly skewed (see figure 3).

FIGURE 3: Log Unemployment Rate
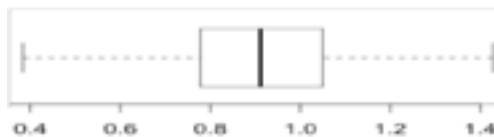
Regarding GDP growth, the distribution is normally distributed and the distribution is almost symmetric (see figure 4).

FIGURE 4: Log. GDP Growth

Pearson Correlation Matrix

Table 3 exhibits the correlation matrix between variables. Pearson Correlation matrix uses the 'r coefficient' to measure the strength of the monotonic relationship (the dependence) between variables. If a high dependence exists between explanatory variables, this is an indication of the existence of a high correlation between explanatory variables, which is not a good indication, as it leads to biased results. In the case of this research we did not find high correlation between the explanatory variables, which means that we will not generate biased results.

TABLE 3: Correlation Matrix

	Voter turnout	Log GDP/capita	Log UNP	Log GDP Growth
Voter turnout	1,000			
Log GDP/capita	0.43	1,000		
Log Unemployment Rate	-0.51	-0.01	1,000	
Log GDP Growth	0.48	-0.07	0.09	1,000

The correlation coefficient varies from -1 to 1. Table 3 above shows that a positive moderate relationship, specifically 0.43, exists between GDP/capita and voter turnout. This means that an increase of the GDP/capita, leads to an increase of voter turnout among citizens. At the same time, the table shows that stronger correlations exist between unemployment rate and voter turnout. The negative value means that an increase of the unemployment rate leads to a decrease of the voter turnout, thus the relation is negative. Meanwhile, the GDP growth shows a positive moderate correlation with the voter turnout. It is important to emphasize that a weak relationship exists between the explanatory variables, which indicates that no biased results are expected.

Analysis of Result

This section provides the empirical evidence of the relationship between variables, based on a multiple regression analysis. The depended variable (voter turnout) is regressed with the explanatory variables (GDP/capita, unemployment rate and GDP growth).

TABLE 4: Regression Analysis

Voter turnout	Coef.	St. Error	t	P value	2.5%- 97.5% Conf Interval	
Log GDP/capita	1.07	0.64	0.6	0.09*	-1.6	3.1
Log Unemployment Rate	-1.15	0.21	-0.31	0.05**	-8.3	6.03
Log GDP Growth	1.8	3.03	-0.9	0.06**	-8.7	3.1
Const.	66.7	5.8	11.34	<2e-16 ***	55.1	78.3
No. Obs: 233						
R Square: 0.22						
F (3, 176) = 0.5						
P-value= 0.06						

P-values in asterisk. Coefficients: * significant at 10%, ** significant at 5%, ***significant at 1%

This regression analysis has an R Square of approximately 0.22, indicating that 22% of the variance is explained by this model.

Considering the p-values it can be said that GDP/capita has a significant p-value (0.09), which means moderate statistical significant relationship with Voter turnout.
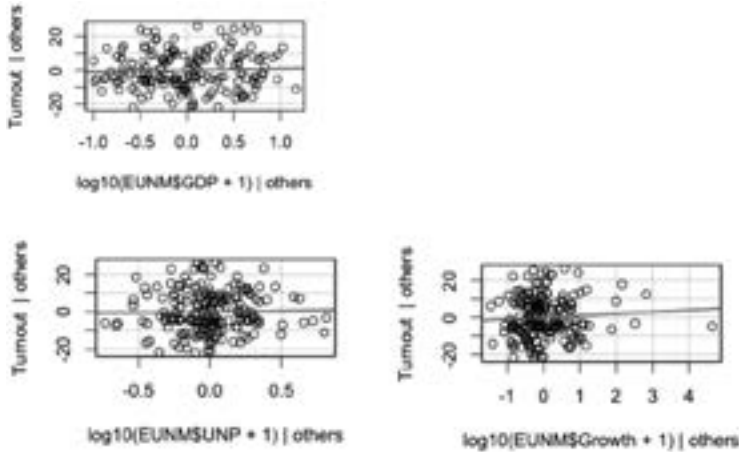
While based on the statistically significant p-values, unemployment rate and GDP growth show a high level of correlation.

Thus, all of them can be interpreted. Therefore, the deterministic equation, is states as below:

$$Voter\ Turnout = 66.7 + 1.07\ Log\left(\frac{GDP}{capita}\right) - 1.15\ Log(UNP) + 1.8\ Log(GDP\ growth)\ \varepsilon \quad (3)$$

(3)

The equation indicated that voter turnout is a function of GDP/capita, unemployment rate and GDP growth.

The statistically significant coefficient of GDP/capita 1.07 indicates that under *ceteris paribus* conditions, where all other variables are considered constant, an increase in GDP/capita of 1%, leads to an increase of 1.07 % in voter turnout among citizens. Using the same logic, it is found that an increase of 1% of unemployment rate, leads to *a decrease* of approximately 1.15 % in voter turnout, also under *ceteris paribus* conditions. This is an indication that in countries where the employment rate is high there will be a tendency for voter turnout to decrease. Meanwhile, an increase of 1% of GDP growth, leads to an increase of 1.8% in voter turnout, under *ceteris paribus* conditions. The constant coefficient 66.7 indicates that despite the explanatory variables, voter turnout takes a positive value of 66.7 meaning that despite of the economic conditions of the country, 66.7% of the citizens would

participate during election day to vote. These findings are in line with Pacek and Radcliff (1995) and Rosenstone, (1982) who stated that the macroeconomic variations affect electoral turnout marginally. According to their approaches when unemployment is high/low, GDP/capita and GDP growth increase/decrease then voter turnout will be affected. In the case of this article an increase of GDP/capita and GDP growth and the decrease of the unemployment rate will be associated with an increase on the voter turnout.

Concluding Remarks

To sum up, this study identifies voter turnout variations from an economic perspective. The study finds that there is a strong relationship between unemployment rate, GDP growth and voter turnout and a less strong relationship between voter turnout and GDP/capita; however, it is statistically significant. This means that macro-economic adversity influences voter turnout. Nevertheless, this relationship remains complex and multi-layered. Voters tend to vote when the GDP/capita is growing and stay home when unemployment is on the rise. This in turn can have perverse incentives on politicians who might become less worried about economic downturns as the ones negatively affected will stay home, while the ones who benefit from the economy will vote and reward the government.

Obviously there are intervening variables that affect voter turnout in any particular election. Therefore, it has to be underlined that due to practical issues this study was not developed deeper in order to better understand the phenomenon. However, it can be considered as a good starting point for further studies in the field. To conclude, it was found that hypothesis 1 is confirmed and that during elections voter turnout is affected by the current state of the economy.

Limitations of the Study

Despite the significant findings this study has some limitations, related to the deterministic variables of voter turnout among citizens. The degree of voter turnout is highly related to political stability, such as: the effective number of political parties in parliament and potential parliamentary boycott, which based on the literature are considered relatively important when determining voter turnout. In the case of this study they are not taken into analysis. So it will be beneficial for further studies to combine a quantitative and qualitative approach to provide a fuller account of the variable that affect voter turnout in general election.

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