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Closeness and Turnout: Evidence from Election of Taiwan

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Abstract

This paper will take Taiwan as an example to investigate the closeness-turnout relation. Instead of using actual electoral data, we utilize the information provided by pre-election polls to construct the measure for electoral closeness. The empirical result of Taiwan shows when the race is perceived to be decisive, the voters are more likely to vote. Moreover, the smaller the economic growth rate difference between China and Taiwan is, the voter's motive for voting will be stronger.

1. Introduction

The rational voter model proposed by Downs (1957) suggests that a person will vote if the expected benefits of voting exceed the costs. The theory implies that people are more likely to vote when the election is perceived as close. A vast empirical literature has been testing whether closeness induces participation. However, the results are mixed. See Matsusola and Palda (1993) for a survey of relevant empirical studies from 1973 to 1992. More recent empirical works are Kuncze (2001), Geys (2006), Grant and Toma (2008). Reviewing the previous researches, we find the control variables considered in the closeness-turnout regression are mainly socio-economic variables (population size, education, income, religion) and political variables (campaign expenditures, open seat race). Moreover, most previous literature is the empirical study of advanced countries because of their long development in electoral history. In this paper, we intend to investigate whether the closeness-turnout relation can be found in the emerging economy. Besides socio-economic variables and political variables, the factors influencing the participation may be more complex in those newly democratized countries. This paper takes Taiwan as an empirical sample. And this would help us to understand the emerging economies from different views.

Two sides of the Taiwan Straits, China and Taiwan, have been in conflict for over sixty years. The relation between China and Taiwan is always an important subject in each election. Since it is difficult to measure the degree of military tension, we had better discuss the issue from the economic views. This paper utilizes the difference in output growth between China and Taiwan to measure how the two economies converge on the economic development. The per capita GDP of Taiwan is four times more than that of China. However, China is stepping into the episode of growth miracles. Intuitively, the higher economic growth rate China has, the faster China would catch up with the advanced countries. Meanwhile, it will stimulate the economic interdependence between China and Taiwan. The purpose of this paper is to investigate how the turnout will be influenced by the closeness in international economics. This could be regarded as a special factor determining the outcome of elections in emerging economies.

2. The Empirical Model and Data Description

The traditional method to study the closeness-turnout relation is to regress the turnout ratio on an index of electoral closeness. The first question is how to measure the electoral closeness. Cox (1988) suggests that using actual, ex post, aggregate election data involves the spurious closeness-turnout relation. Recent research universally utilizes pre-election polls, reported by newspapers before the election, as a measure for the voters' perception of closeness. In Taiwan, the information of pre-election

polls has been available since 1998, the first mayoral election of Taipei. Therefore, the paper sampling from 1998 to 2009 includes presidential elections, legislative election, mayoral elections and the elections of chief in county. The sample comprises central and local elections and the number of observations is 98.

The regression model is:

$$Turnout_i = \beta_0 + \beta_1 \cdot Closeness_i + \beta_2 \cdot Growthdiff_i + \beta_3 \cdot Level_i + \beta_4 \cdot Z_i + \varepsilon_i \quad (1)$$

where i indicates the i th observation. $Turnout_i$ represents the turnout ratio which is the percentage of eligible citizens who actually vote. $Closeness_i$, called margin ratio, is an index for electoral closeness. We modify the closeness measure suggested by Matsusaka and Palda and construct two margin ratios. The first measure is:

$$Closeness1_i = \%Votes_i(1) - \%Votes_i(2) \quad (2)$$

where $\%Votes_i(1)$ is the percentage of votes the winning candidate receives and $\%Votes_i(2)$ is the percentage of votes the runner-up receives. The difference of the percentage of votes receives measures the distance between the first two lead candidates. When the value of $Closeness1$ is small, it implies the race is perceived to be tight.

$\%Votes_i(1)$ and $\%Votes_i(2)$ obtained from pre-election polls are available prior to the election. There are actually some voters who are indeterminate. Intuitively, the more the determinate voters are, the larger the difference in received voters. We construct the second measure to adjust for this bias and the form is:

$$Closeness2_i = \left[\frac{\%Votes_i(1) - \%Votes_i(2)}{\%Votes_i(1) + \%Votes_i(2)} \right] \cdot 100\% \quad (3)$$

The difference is deflated by the percentage sum of the votes for these two candidates which represents the size of the determinate voters. If the coefficient β_1 is negative, the electoral closeness really stimulates the participation. Then the Downsian Closeness Hypothesis holds.

$Growthdiff_i$ is the proxy for closeness in international economics. We define it as the GDP growth rate of China minus the GDP growth rate of Taiwan. This definition imitates the first measure of electoral closeness. When the value of $Growthdiff$ is small, it means the international economic condition is close. And the coefficient β_2 will tell us how relative economic states in China and in Taiwan influence the motive for voting.

We also set a dummy variable, $Level_i$, to describe the size of the election. $Level_i$ would be 1 if it is the presidential election where the electoral area extends over all Taiwan. In the other hand, $Level_i$ would set to be 0 if it is a local election where the electoral district covers a city or a county. Observing the coefficient β_3 , we could know whether the size of election affects participation.

Z_i will indicate all the control variables. Considering the availability of data, we include three variables in the regression model: the average personal disposal income, the literacy rate over 15 years old, the population. The data for pre-election polls is taken from TVBS Poll Center and we select the information made public most near the electoral day. The sources of other data are *Election database* from the Central Election Commissions of Taiwan, *Statistical Yearbook of Interior* from Ministry of Interior in Taiwan, *DGBAS* from Executive Yuan of Taiwan. The descriptive statistics for the variables in the regression model are presented in Table 1. The closeness-turnout relation is shown in Figure 1. The interaction between closeness and turnout ratio is not obvious.

Table 1 Descriptive statistics for the variables

Variable	Mean	S. D.	Maximum	Minimum
<i>Turnout</i> (%)	62.5734	8.6046	82.6900	36.0000
<i>Closeness1</i> (%)	17.9939	12.7169	53.0000	0
<i>Closeness2</i> (%)	25.6809	17.4283	79.1045	0
<i>Growthdiff</i> (%)	7.7816	2.1092	10.6100	1.6621
<i>Level</i>	0.0306	0.1732	1.0000	0
Personal disposal income (NT dollars)	265102	63414	501848	185972
Literacy rate over 15 years old (%)	97.3035	1.5155	98.9600	92.18
Population (one thousand of persons)	1361122	2804743	17321622	70427

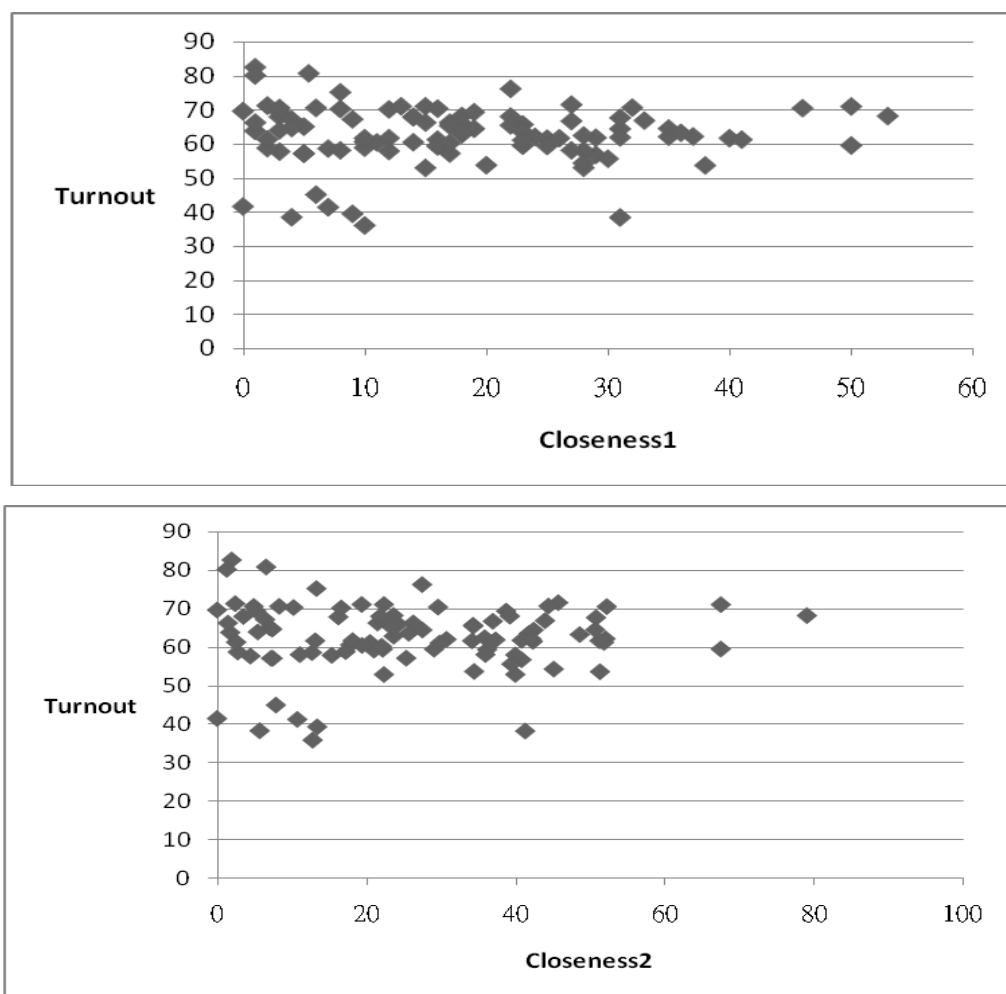


Figure 1 The plots of closeness and turnout

3. Empirical Results

The regression is estimated by ordinary least squares. Each variable, except the dummy variable (*Level*), is entered as its natural logarithmic transformation. The estimated results are displayed in Table 2. The first model (in column 2) includes the independent variables considered in the previous studies. And the second model (in column 3) adds the international economic closeness as a variable. Surprisingly, the coefficients on electoral closeness measures are almost significantly positive in these two models. It implies that when the race is perceived to be decisive, the voters are more likely to vote. This result violates the Downsian Closeness Hypothesis and is also opposite to the finding of much previous literature. There are two possible explanations. First, the mobilized power of the losing party stimulates the participation. The largest two political parties in Taiwan are Kuomintang (KMT) and Democratic Progressive Party (DPP). Because of the fierce competition between the two parties, and the design of the electoral system, the fear of losing the election causes the parties to mobilize all of their supporters. They want to reverse the

electoral outcome. It will increase the turnout. The second explanation is the credibility of the pre-election polls. The votes received by the DPP may be underestimated because the supporters of DPP are more likely to be afraid of declaring their stands. To deal with this problem, we also use the actual electoral data to run the regression model. The results that are not reported here show the coefficients on closeness measures are insignificantly different from zero. The positive relation vanishes.

In the model 2, the coefficients on *Growthdiff* are significantly negative. It means the voters will not vote when the economic growth rate of China is higher. The economic development of China reduces the hostility between the two economies. And people will not have intense interest in the election.

The other finding is summarized here. The turnout of the presidential election is not significantly different from that of the local election. The level of personal disposal income does not significantly affect the motive for voting. There are two significant control variables: literacy rate and population. The people who are more educated do not have much interest in election. And the turnout ratio is positively related to the population.

Table 2 Results for estimation – dependent variable: turnout ratio

Independent variable	Model 1		Model 2	
	Constant	15.8903 (3.2695)***	15.6070 (3.2101)***	16.5704 (3.6147)***
<i>Closeness1</i>	0.0087 (1.5911)		0.0095 (1.8308)*	
<i>Closeness2</i>		0.0088 (1.6535)*		0.0095 (1.8882)*
<i>Growthdiff</i>			-0.1623 (-3.5488)***	-0.1622 (-3.5506)***
<i>Level</i>	-0.0559 (-0.4802)	-0.0583 (-0.5017)	-0.0822 (-0.7474)	-0.0849 (-0.7739)
Personal disposal income	0.1226 (1.3165)	0.1245 (1.3411)	0.0722 (0.8130)	0.0745 (0.8409)
Literacy rate over 15 years old	-2.9945 (-2.4888)**	-2.9818 (-2.4831)**	-2.9203 (-2.5751)**	-2.9051 (-2.5669)**
Population	0.0629 (3.2580)***	0.0632 (3.2809)***	0.0522 (2.8314)***	0.0526 (2.8574)***
\bar{R}^2	0.2490	0.2506	0.3331	0.3346

Note: *t* – ratios are in parentheses. *, ** and *** indicate significant at 10%, 5% and 1% respectively.

4. Conclusions

This paper takes Taiwan as an example to investigate the closeness-turnout relation. The empirical result shows when the race is perceived to be decisive, the voters are more likely to vote. This phenomenon is not found in the advanced countries. In Taiwan, KMT and DPP are at opposite ends of the political spectrum. The supporters of the losing party have determined intentions to reverse the electoral outcome. Therefore, the empirical result is consequent on the mobilization of the losing party. The other finding is the higher economic growth of China reduces the motive for voting. The economic development of China loosens the closeness between the two economies. It makes voters have little interest in election.

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