

## **Empirical Relationship between general elections and exchange rate: A study from Pakistani Market 1970 – 2009**

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**Abstract:** *The paper studies the link between general elections in Pakistan and the depreciation of exchange rate. The paper is unique in a way that no previous study has been done in Pakistan. We strive to prove that Pakistani politicians try to manipulate the exchange rate in some way so that they can get votes of citizens and when the elections are over, exchange rate depreciates at an increasing rate. Due to the presence of high degree of random disturbance in the data we used vector auto regression. The results given by vector auto regression confirms all the previous studies that whenever the elections are over the exchange rate depreciates at a very high rate than it was before the elections which in turn also confirmed that in pre-elections; politicians try different methods to get votes in their favor. We took time series data from 1970 to 2009, which covers a total of nine general elections held in Pakistan.*

**Keywords -** *Depreciate, Elections, Exchange Rate, Political stability*

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### **I. Introduction**

There is a lot of literature which tells us that Elections have a relationship with the financial markets. In Pakistan whenever there has been an election, politicians have used different ways to manipulate economic variables to get the votes of voters. Politicians manipulate the economic variables in the short run, because it helps them to get the votes. According to Lindbeck (1976), real income of an economy can be increased for short period of time through the use of exchange rate and this can be used to get votes of citizens.

Cooper (1971) did his research on the developing countries and he found that the devaluation of exchange rate in the developing nations have a very high political cost on the finance ministers, which results in leaving the positions right after the devaluation of currency takes place.

Out of many economic variables, the one which is most important of all is the exchange rate (real exchange rate).

This macroeconomic variable (real exchange rate) is very important and should not be left unnoticed during the electoral times. Remmer (1991) tells us that during the period of elections the devaluation of currency has a really high political cost and thus it is really important variable that affects the vote function.

Whenever the exchange rate changes it always favor one sector of the economy which are namely

1. The Tradable sector
2. The non-tradable sector

If the exchange rate is appreciated it badly affects the tradable sector of the economy and on the other hand non-tradable sector gets the benefit. When the currency gets depreciated, now at this point the tradable sector gets the most benefit because exports increase due to depreciation and this means more revenue for the tradable sector but the non-tradable sector suffers the most.

According to the Gehzzi et al. (1999), there is a possibility of uncertainty during elections and thus elections can cause manipulation of real exchange rates.

Stein and Streb (1998) found that parties (political ones) usually increase their ranking or popularity (to get votes), they devise different policies which are inconsistent with the exchange rate, thus creating a really good expansion in the short-run. When the political party becomes the government it usually devalues the currency and blame it on the previous régime.

There are various events that took place in the history where political parties deliberately manipulated the exchange rates. Some of these are the Cruzado Plan for Brazil in 1986, Primavera Plan for Argentina which failed badly and most recently is the Peso Crisis which occurred in Mexico in the year of 1994.

The exchange rate of the Brazil in 1986 was kept fixed despite the fact that current account deficits was rising. What happened due to this fixed exchange rate is explained by Cardoso (1991), that there was going to be another election in the Brazil and due to this; every corrective action by the government was kept on hold and as a result the devaluation incurred right after the elections.

The Primavera Plan (spring time plan) interpreted by Heyman (1991) as the attempt to moderate the inflation for the 1989 elections in Argentina. But there was the holdup of external financing, which resulted in devaluations even before the elections took place and this badly affected the ruling party.

The most recent example is the Peso crisis which occurred in 1994 in Mexico and this tells us that government of Mexico did wait to correct the overvalued exchange rate; Obstfeld and Rogoff (1995).

In Pakistan, there has been no research done on whether elections have any effect on the exchange rates or not. This paper looks at whether there exists a link between RER depreciation and elections in Pakistan. Particularly we would be taking the time series data for Pakistan. To understand that whether Pakistani Rupee depreciates or not at an increasing rate after the elections, it will be compared with the U.S dollar.

The paper is divided into four sections. The section 2 of paper looks at the literature review. In Section 3, we will use the model for in depth analysis and the results are presented. Section 4 concludes the paper.

## **II. Literature Review**

Block (1977) and Alesina et al. (1997) note that there is a relation that exists between Politics and financial institutions. The financial institutions can be stock markets, forex market, exchange rates etc.

Christos (2008) found that in established countries elections together with the public opinion polls have an impact on the stock prices. Thompson et al. (1987) found proof that public opinion polls do have impact on the stock marketplace. Manning (1989) examined the impact of Political elections on the stock price of British Telecom for 36-months. Manning (1989) found during this whole period that political impact definitely exists and the price of British Telecom stock strongly reacted to the public opinion polls. Similarly, Gemmill (1992) took FTSE-100 index and found that there exists a relationship between the FTSE-100 index and the public opinion polls. Gemmill (1992) took data from 1987 to 1992 for FTSE-100 index. Steely (2003) tested that whether the financial markets of United Kingdom responded to election night 1997 and Steeley (2003) concluded through the tests that financial markets of United Kingdom do respond to elections. Pantzalis et al. (2000) tested that how stock markets performed (before and after) during election periods in various countries. Pantzalis et al. (2000) verified that stock markets react to political info.

Similarly the exchange rate market also gets affected by political elections. Different researchers have confirmed empirically that elections do impact exchange rate markets (McGillivray, 2000; Leblang and Bernhard, 2000a, b). Leblang and Bernhard (2000 a, b) proved by using a model that political change periods have an effect on exchange rate markets. There is also evidence which supports the fact that exchange rate is kept fixed in pre-election period and is depreciated after the elections. Blomber et al. (2001) found that as the election period comes closer and closer the chances of keeping the exchange rate fixed increases dramatically. Schamis et al (2003) proved that different programs are initiated during pre-election periods and these programs tend to stabilize the exchange rate. Stein and Streb (2004) found that exchange rate is depreciated after the elections. Block (2003) tells us that financial markets consider the probability of depreciation of exchange rate right after the elections. Collins (1996) basically used a probit analysis method and found that there is a political cost attached with the depreciation of fixed exchange rate. Bonomo and Terra (2005) gave a theoretical model (tradable and non-tradable sector) and found that real exchange rates are depreciated after the elections. According to Mussa (1986), whenever there are fluctuations in the RER (real exchange rate); in the short run, is due to the nominal exchange rates. One can infer from this fact that the devaluation of currency cycle should be translated back in the real exchange rate during the time of elections. Frieden et al. (2001) proved with evidence from 26 different countries taken from Caribbean and Latin American that there does exist exchange rate electoral cycle. Similar type of finding was done by Fonte and Ghezzi (2001). Rodolfo et al. (2010) studied 9 Latin American countries and found that depreciation of real exchange rate speeds up after the elections but if central bank does the reforms then exchange rate is less volatile after the elections. Stein and Streb (1998) did a cross country study and took 26 countries from Caribbean and Latin America and what they found that the public doesn't like the inflation because inflation has the ability to reduce the value of savings. What politicians do is that to increase their chances of being successful in political campaign they don't increase the inflation before elections and as a result of this right after the elections the depreciation starts. So delayed depreciation method is followed.

In contrast to Stein and Streb (1998) who took nominal exchange rate Stien et al. (2005) took real exchange rates of 15 countries based on Caribbean and Latin America region and found same kind of findings. According to Bonomo and Terra (2005) found that real exchange rate appreciates before elections. Edwards (1994) worked on the sample of developing countries and was able to prove that depreciation of exchange rate occurred after the elections and deprivation occurred by 15%. Gavin and Perotti (1997) found the fact that right after the elections the government abandons the exchange rate peg. A lot of work has been done on Latin America and according and there is evidence that exchange rates are depreciated after the elections and in pre-elections the exchange rate gets appreciated (Frieden and Stein 2001).

## **III. Data Analysis**

The sample is based on nine general elections, which have taken place in Pakistan starting from 1970 to 2009. Time series data has been taken.

### 3.1 Variables

The data for real exchange rate of Pakistan has been primarily taken from IMF CD-ROM. Real exchange rate has been taken instead of nominal exchange rate because of the following reasons:

1. Real Exchange rate (RER) is directly associated with the economic outcomes of country.
2. If Nominal exchange rate was focused, it could have generated misleading results.
3. Pakistan has experienced inflation in the past thirty eight years. Our data is based on time series and conducting the analysis of nominal exchange rate can become challenging.

The variables which directly impact the real exchange rate are terms of trade, spending of government and trade liberalization. These variables are taken from the model of Goldfajn and Valdes (1999) and according to them these variables are really important in determination of exchange rate (RER). The fourth variable given in Goldfajn and Valdes (1999) empirical model is the international interest rate and we have omitted because we are not taking any panel data. Only Pakistan has been focused.

According to Diaz-Alejandro (1982), if there is small economy than any shock taken by terms of trade (either through rising prices of imports or falling prices of exports) can create a negative impact. We took the data of Imports and Exports of Pakistan from IMF CD-ROM and dividing the exports to imports gave us the values of terms of trade. The import and export data was already given in monthly form.

To calculate the trade liberalization, we used a proxy of economic openness for it. The reason behind is that Goldfajn and Valdes used economic openness as proxy and according to them if import tariffs are reduced, there would be a decrease in the price of non-tradables and it would occur to bring the market back to equilibrium. We calculated the economic openness by adding export and imports and then dividing by real GDP of Pakistan. Imports data, exports data and GDP figures are all taken from IMF CD-ROM. GDP values were given on yearly bases, so it has been divided by 12.

If there is a rise in the government spending then it can have two different kinds of impact on the price of non-tradables. Real exchange rate (RER) can increase through government spending if by some means the government is able to increase the demand for non-tradables. On the other hand if the government starts to spend on imports, then this rise in expenditure will depreciate exchange rate. We took the data of government expenditure as a percentage of GDP of Pakistan from world bank.

### 3.2 Model and Result

Based on the literature review there should be depreciation in the exchange rate after the elections, based on this we create the following hypothesis.

- **H<sub>0</sub>**: Exchange rate is not depreciated after the elections.
- **H<sub>1</sub>**: Exchange rate is depreciated after the elections.

A total of 492 observations have been recorded starting from 1970 to 2009. Monthly data was taken. We want to prove that exchange rate is depreciated after the general elections. First we create a dummy variable which we call it "Pre". Over here "Pre" represents the month of general election plus five months before the elections. This makes it total of six months. Secondly, we then develop another dummy variable which we will be calling the "Post". The post here represents the month of general election (in which the election took place) plus five months after the elections making it total of six-months. All the literature review points us to the direction that exchange rate is depreciated after the elections and it should happen here as well, which is the dummy variable "Post".

To check the normality of the data we conducted unit root test. The results which were given by Eviews showed that data is not stationary. So moving one step further we did the Vector Auto Regression test. The VAR is represented by the following equation:

$$(1) \quad Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + A_4 Y_{t-4} + \dots + A_p Y_{t-p} + Cx_t + \epsilon_t$$

In this equations "t" is the sample time period. "Y<sub>t</sub>" represents the k vector of endogenous variable. A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, A<sub>p</sub> and C represent matrices of coefficient.  $\epsilon_t$  represents vector of innovations.

In this test we kept the RER as dependent variable and terms of trade, trade openness, government expenditure, pre-elections dummy, pre-RER-election dummy, post-election dummy, and post-RER-election dummy as the independent variables. The test results are given in TABLE.

Table

Date: 12/26/12 Time: 19:38
Sample: 1 492
Included observations: 492
Standard errors & t-statistics in parentheses
<b>RER</b>

<b>C</b>	9.805166
	(0.30871)
	(31.7616)
<b>TOT</b>	0.798876
	(0.07806)
	(10.2337)
<b>TRADEOPEN</b>	1.766994
	(0.08275)
	(21.3541)
<b>GOVEXP</b>	-1.733457
	(0.12783)
	(-13.5607)
<b>PREELECDUM</b>	-0.267661
	(0.29150)
	(-0.91822)
<b>PRERERELECDUM</b>	0.173791
	(0.09079)
	(1.91421)
<b>POSTELEC</b>	-0.497415
	(0.29059)
	(-1.71175)
<b>POSTRERELEC</b>	0.241792
	(0.09010)
	(2.68356)
R-squared	0.647465
Adj. R-squared	0.642367
Sum sq. resids	118.4242
S.E. equation	0.494649
F-statistic	126.9878
Log likelihood	-347.7632
Akaike AIC	1.446192
Schwarz SC	1.514460
Mean dependent	3.058427
S.D. dependent	0.827139

- From the above hypothesis and results given in Eviews, we can reject  $H_0$  and accept  $H_1$  which states that exchange rate is depreciated after the elections.

From the table of VAR we can see that in “POSTRERELEC” there is positive and highly significant value i.e. 2.68356. This figure tells us that after the elections which are post-elections period the currency is depreciating significantly or largely.

This is also confirmed by on one recent study done in 2001 by Frieden et al. (2001), in which they took altogether twenty six different Caribbean and Latin American countries. The data which they took was from 1960 to 1994. In this study it was found that there is a significant depreciation of exchange rate after the elections. The exchange rate depreciated 3.7 times more in post-elections then in pre-election period.

#### IV. Conclusion

In this paper we analyzed the interactivity between real exchange rate depreciation and general elections of Pakistan. By using vector auto regression, we found that the interactive dummy i.e. “POSTRERELEC” showed significant value of 2.68, which tells us that depreciation increased after the elections. This study can be further extended by looking at the reforms done by State bank of Pakistan to balance the exchange rate. To understand the concept and implications of elections, stock exchange volume can be taken.

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