

Batool, Irem; Sieg, Gernot

**Working Paper**

## Pakistan, politics and political business cycles

Economics Department Working Paper Series, No. 7

**Provided in Cooperation with:**

Technische Universität Braunschweig, Economics Department

*Suggested Citation:* Batool, Irem; Sieg, Gernot (2009) : Pakistan, politics and political business cycles, Economics Department Working Paper Series, No. 7, Technische Universität Braunschweig, Institut für Volkswirtschaftslehre, Braunschweig

This Version is available at:

<https://hdl.handle.net/10419/51317>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



**TECHNISCHE UNIVERSITÄT  
CAROLO-WILHELMINA  
ZU BRAUNSCHWEIG**

**ECONOMICS DEPARTMENT  
WORKING PAPER SERIES  
NO 07/ November 2009**

**„Pakistan, Politics  
and Political  
Business Cycles“**

**by Irem Batool  
and Gernot Sieg,  
November 2009**

**© Technische Universität Braunschweig,  
Economics Department, 2009**

**Address**

Institut für Volkswirtschaftslehre  
Spielmannstraße 9  
D38106 Braunschweig, Germany

**Telephone**

+49 531 391 2578

**Website**

<http://www.tu-braunschweig.de/vwl>

**Fax**

+49 531 391 2593

All rights reserved.

Any reproduction, publication and reprint in the form of a different publication, whether printed or produced electronically, in whole or in part, is permitted only with the explicit written authorisation of the TU Braunschweig, Economics Department, or the author(s).

The views expressed in this paper do not necessarily reflect those of the Economics Department or the TU Braunschweig.

The Working Paper Series seeks to disseminate economic research work by the TU Braunschweig Economics Department's staff and visitors. Papers by researchers not affiliated with the TU Braunschweig Economics Department may also be considered for publication to the extent that they have been presented at research seminars/workshops organised by the Department.

The working papers published in the Series constitute work in progress circulated to stimulate discussion and critical comments. Views expressed represent exclusively the authors' own opinions.

The Series is managed by the Director of the Economics Department, and an Editorial Board oversees the process of publication.

# Pakistan, Politics and Political Business Cycles

Irem Batool\*<sup>†</sup>

Gernot Sieg<sup>§</sup> \*

July 19, 2010

## Abstract

This paper studies whether in Pakistan the dynamic behavior of unemployment, inflation, budget deficit and real GDP growth is systematically affected by the timing of elections. We cover the period from 1973-2009. Our results can be summarized as follows: 1. Unemployment tends to be lower in pre-election periods and tends to increase immediately after elections, perhaps as a result of politically motivated employment schemes. 2. Inflation tend to be lower in pre-election periods, perhaps as a result of pre-electoral price regulation. 3. We find election year increases in the governmental budget deficit, financed by heavy government borrowings from the central bank and banking sector. 4. Real GDP growth and real governmental investment growth declines during pre and post election terms.

Keywords: Opportunistic Political Business Cycle, Fiscal Policy, Macroeconomics, Elections, Asia, Pakistan

JEL Classification: D72, D78, H50, H61, E51

---

\*TU Braunschweig, Economics Department, Spielmannstr. 9, 38106 Braunschweig, Germany. <sup>†</sup> Monetary Policy Department, State Bank of Pakistan. <sup>§</sup> corresponding author: E-Mail: g.sieg@tu-bs.de, Tel. +49 531 391 2592

## 1 Introduction

Political business cycle theory formalizes the common perception that politicians use expansionary economic policies in a pre-election period to enhance their chances of re-election.<sup>1</sup> Opportunistic politicians are primarily interested in retaining office. When they face an electorate that prefer high growth, low unemployment and low inflation politicians may use expansionary fiscal or monetary policies to create a short term economic boom before and during the election campaign. Naive voters are unable to understand the politician's manipulation of the economy and its adverse after effects. On the contrary, they enjoy the boom and re-elect the politician. Because inexperienced voters are prone to this manipulation the common view is that political business cycles are more a phenomenon of less-developed than developed countries (Brender and Drazen 2005, ).

The present study investigates the existence of political business cycles in case of Pakistan during the period 1973-2009. During this period Pakistan has undergone seven parliamentary election terms. Single-country studies of the political business cycle often suffer from a small number of elections. However, the political business cycle is a phenomenon that may or may not occur in a country and a multi country study is not able to answer the question if there have been political business cycles in a special country or not. To proof the existence of a political business cycle in Pakistan, which is the aim of this study, a single country study is inevitable.

A number of studies have analyzed politically motivated business cycles for both developed and developing countries. Generally, the empirical political business cycle literature can be divided into three main categories. The

---

<sup>1</sup>Following the seminal papers by Nordhaus (1975, 1989) and MacRae (1977) many authors developed a deep understanding in the political business cycle. See Drazen (2000), Gärtner (2000), Alesina et al.(1992, 1993), and Paldam (1997) for surveys, and Blomberg and Hess (2004), Caleiro (2009), Saporiti and Streb (2008) and Sieg (2006) for current theoretical papers.

first category attempts to locate political cycles in macroeconomic outcomes. These models have been focused, almost exclusively, on four macroeconomic indicators: growth, inflation, unemployment, and income (Alesina, Roubini, and Cohen, 1999; Andrikopoulos et al. 2004; Grier 2008; Hibbs 1977; Krause 2005; and Suzuki 1992). In the short run policy results on growth and unemployment may not be obvious enough to voters, so governments may try to stimulate those policy variables that have direct monetary benefits to voters like government transfers, tax cuts, subsidies, special employment schemes etc. (Hibbs 2000; and Batool and Sieg 2009). The second major category of Political Business Cycle research concentrates on these policy instruments instead of macroeconomic outcomes. The evidence for this type of a political business cycle is generally stronger than that for macroeconomic outcomes (Alesina et al. 1997; Coelho et al. 2006; Drazen 2000, p. 239; Cerda and Vergara 2008; Keech and Pak 1989 and Tufte 1978). The third major category of research focuses on a unique policy instrument: monetary policy (also known as the political monetary cycle). Various studies for many countries are found on central bank monetary policy and political business cycles (Abrams and Iossifov 2006; Beck 1987; Berger and Woitek 2001; Grier 1987, 1989; Havrilesky 1993; Maloney et al. 2003; Persson and Tabellini 2003; Williams 1990 and Woolley 1994). To cover all three categories this study focus on growth, unemployment, inflation and some fiscal and monetary policy indicators.

Despite plenty of empirical evidence found on political business cycles for both developed and developing countries, this area of research remains untouched in case of Pakistan. The present study fills the gap. The paper is organized as follows. Section 2 discusses model specification and research methodology. Section 3 provides empirical evidence using annual data from 1973 to 2009 for various macroeconomic variables. Section 4 gives a summary of our findings and a conclusion.

## 2 Model and Research Methodology

Turning to the empirical literature, politico-economic models have been tested with a time-series approach. The usual research strategy is to isolate a key macroeconomic variable and ascertain whether or not in election and pre-election years this variable behaves differently than in non-election years. The earlier procedures entailed simple comparisons of the average value of the actual unemployment and inflation rates in election and non-election years, or according to the party in power. Generalizing this approach, McCallum (1978) and most of those who followed, estimated uni-variate time series models and tested for shifts in the intercept parameter (Pack 1987; and Keil 1988). According to this procedure the impact of the political sector is viewed as an exogenous intervention in the economic process, producing a cyclical (Political Business Cycle) or temporary shift in the mean value of the time series. Accordingly, the test is for the significance of an appropriately defined dummy variable -the intervention variable- that is added to a uni-variate ARMA(ARIMA) representation of the series.

$$X_t = c + \sum_{p=1}^n \theta_p X_t - p + \sum_{q=1}^m \Phi_q \delta_t - q + \sum D_i + \delta_t \quad (1)$$

To illustrate, let  $X_t$  be a variable of interest and assume that X can only be positive and follows a stationary first-order autoregressive moving average process. Where  $\varphi_1, \dots, \varphi_p$  are the parameters of autoregressive terms of the model, while  $\phi_1, \dots, \phi_q$  are the parameters of moving average terms of the model, c is a constant, and  $\delta$  is the error term assumed to be independent identically-distributed random variables (i.i.d.) sampled from a normal distribution with zero mean:  $\delta_t \sim N(0, \sigma^2)$  where  $\sigma^2$  is the variance. We begin with the construction of a benchmark Autoregressive Moving Average (ARMA) for unemployment and inflation i.e Phillips curve hypothesis and Autoregressive Integrated Moving Average (ARIMA) models for other fiscal and monetary policy indicators, as the fiscal and monetary variables

including GDP are integrated of order one. To test the impact of politics on macroeconomic variables we have defined the following three political dummy variables:

$ED_1 = 1$ , if it is election year and 0 otherwise

$ED_2 = 1$ , if it is election year or one year preceding to a election and 0 otherwise

$ED_3 = 1$ , if it is one year after election and 0 otherwise

The positive and negative signs of these dummy variables will determine the positive and negative impact of elections on macroeconomic outcomes and aggregate demand driven by monetary and fiscal policy instruments. For example, if a government tries to increase growth and employment before an election and uses expansionary fiscal and monetary policies, then  $ED_1$  or  $ED_2$  or both should be positive in the estimated equations of growth, budget deficit, monetary aggregates and government budgetary borrowing. If the government adopts a contractionary policy shift after an election, then these instruments show the downward trend that can be measured by a negative sign of  $ED_3$ . It should however be noted that in case of inflation and unemployment, pre-electoral variables should denote decrease and should have negative signs, while the post-election variables should have a positive sign to reflect the impact of pre-election expansionary policies.

Quarterly or high frequency data is recommended to investigate the issue of political business cycle. But in case of Pakistan national accounts and unemployment data is available only in annual frequency. Therefore we have used the annual time series data from 1973-2009<sup>2</sup> for the proposed variables.

---

<sup>2</sup>Before 1971, the present Bangladesh was part of Pakistan called West Pakistan. Therefore, we have excluded the earlier time period from the analysis.



The underlying study period covers seven elections: 1977, 1988, 1990, 1993, 1997, 2002 and 2008. The election dates and corresponding fiscal years are shown in Table 5 in the Appendix.

### **3 Empirical Results**

First we test predictions of the classic opportunistic political cycle model by Nordhaus (1975). The model predicts political manipulation in unemployment and inflation. Analogical political behavior implies cycles in macroeconomic variables such as growth, money supply, fiscal deficit, and budgetary borrowing etc.

#### **3.1 Unemployment, Inflation and Opportunistic Business Cycle**

ARMA model results (see Table 1) show that  $ED_2$  is significant and has a negative sign. During the election year and one year prior to the election year the unemployment rate was reduced by 19 percent in comparison to other years. The the political dummy variable  $ED_3$  for the post-election year is positive but not statistically significant. This result may attribute to the switch from expansionary to contractionary policy when an incumbent party wins the election, and cancellation of old employment generation schemes if the opposition is elected into office. Both results fully support the political business cycle theories.

Inflation is another important key to understand the political business cycles. Election periods cause great sensitivity on the side of the government to keep quiet about increases of regulated prices by deferring them to the post-election period. Thus after each election it is common to hear oppositional parties accusing the returned party for exploiting the myopic expectations of voters to boost their probability of winning the election. However, if the in-

Table 1: Unemployment, Inflation and Political Business Cycles

Variables	Unemployment ( $U$ )	Inflation ( $\Delta P$ )	
Constant	1.1133***	0.0864***	0.0769***
Deterministic trend	0.0265***		
AR(1)	0.9522***	0.6029***	0.4767***
AR(2)	-0.3255*		
MA(1)			
MA(5)		-0.8984***	-0.8885***
MA(7)	-0.9027***		
MA(8)			
ED <sub>1</sub>		-0.0228***	
ED <sub>2</sub>	-0.1911***		
ED <sub>3</sub>	0.0207	0.0033	0.0157**
$n$	35	35	35
$R^2$	0.95	0.74	0.66
D.W stat	1.97	1.88	1.97
S.EE	0.10	0.102	0.026

\*\*\*, \*\* and \* denote rejection of null hypothesis at 1%, 5% and 10% level of significance respectively. Unemployment rate has been taken in logarithmic form.

cumbent party loses the election despite deferring price increases, then the winning party would again accuse the former incumbent party for leaving a huge economic burden by not increasing the regulated prices. This has to be fulfilled by the new government who would immediately receive a negative point in its honeymoon period.

Estimated ARIMA model for inflation (see Table 1) shows  $ED_1$  with a negative sign means during the pre-election year the inflation has been kept lower by 2.2 percentage points in comparison to other years.

Non realized price increases in regulated sectors are subsidized by the government through debt financing. Consequently, the budget deficit rises and creates an inflationary pressure and debt sustainability problem in the post-election period. The post election year dummy variable found to be insignificant, however if we estimate the ARIMA model and incorporate only the post election year dummy and ignore the pre-election effect then the post election dummy is found to be statistically significant(see Table 1 column 3).

Both unemployment and inflation results are consistent with the pre-election political manipulation as the politicians try to maximize their chance of re-election by increasing the employment conditions and controlling the inflation artificially during the election and prior to the election period. But the post election year dummy variables are found to be statistically insignificant but have correct signs, employing that post election effect is less pronounced. The evidence supports the argument by Ginsburgh and Michel (1983), pointing the fact that if there is government fall and resultant early election as in case of Pakistan in 1990, 1993 and 1997 before the legal term, the political business cycles is less pronounced.

The GDP growth estimated ARIMA model (see Table 2) does not provide any supporting evidence for the Nordhaus (1975) opportunistic business cycle theory as political variable  $ED_1$  and  $ED_3$  both estimated to be negative i.e. have the wrong sign. Miss-allocation of resources during and after the election period could be the reason. Although the results seems to be fine to some extent, there is concern regarding the stationarity of the variable series raised by Enders (2004). The basic underlying assumption of the ARMA model is the stationarity of the variable over time, however a simple ADF/DF test shows that inflation and GDP growth are stationary at level, while the unemployment is found to be integrated of order one which makes the unemployment ARMA model results suspicious. Therefore, the discussion remains inconclusive and there is a need to further exploration of the phenomena.

Table 2: Fiscal and Monetary Variables and Opportunistic Business Cycle

Variables	$\Delta Y$	$\Delta I_g$	$Fisb$
Constant	0.0619***	0.0919***	1.6219***
AR(1)			-0.7198**
MA(2)	0.2968***		
MA(4)	0.1919**		
MA(5)	-0.8061***	-0.9544***	
MA(6)			-0.8820***
MA(9)		-0.857***	
ED <sub>1</sub>		-0.1434***	0.1423***
ED <sub>2</sub>	-0.014***		
ED <sub>3</sub>	-0.032***	-0.1351***	
$n$	36	36	36
$R^2$	0.50	0.68	0.65
<sup>3</sup> D.W stat	2.05	1.61	2.22
S.EE	0.015	0.07	0.17

\*\*\*, \*\* and \* denote rejection of null hypothesis at 1%, 5% and 10% level of significance respectively.

### 3.2 Fiscal and Monetary Variables and Opportunistic Business Cycle

The original opportunistic business cycle model by Nordhaus (1975) focuses on political cycles in inflation, employment and growth which are induced by monetary policy. However, Rogoff's (1990) model is grounded in the use of fiscal policy tools. More recent, Drazen (2000) has argued that PBC models based on monetary surprises are unconvincing, among other reasons, because of their implicit assumption that the incumbent party directly controls the

monetary policy.<sup>4</sup> Instead Drazen (2000) builds on Rogoff (1990) to derive a model in which PBC arises from active fiscal policy interventions that are later accommodated by the monetary expansions. Various empirical studies being in line with that approach have been carried out on monetary and fiscal budget political cycles (Brender and Drazen 2008). Following Schuknecht (1996) we concentrate on fiscal deficit, government investment, monetary aggregate (M2) and government budgetary borrowing. We first apply the unit root test. The ADF results show that all variables are integrated of order one that requires 1st difference for the series to be stationary (see Table 4). In a second step we have estimated the parsimonious ARIMA model for some fiscal and monetary variables. The results are shown in Tables 2 and 3.

The ARIMA model result for real government investment states that  $ED_1$  and  $ED_3$  are both negative which implies that government investment has declined by 14 (13) percent during the election (post-election) year. In contrast, the pre-electoral variable  $ED_1$  is positive in the budget deficit as percentage of GDP equation, which can quantify a 14 percent increase in the budget deficit during the election year. This may be attributed to the fact that during the election campaign the government uses expansionary policies and spends more on current expenditures like tax cuts, subsidies, price supports and election campaigns etc. and not on investment. These current expenditures help the government to realize their short term objective i.e. collect votes, but do not have any significant impact on macroeconomic growth.

Such fiscal deficits are financed by internal or external sources especially accommodated by the countries banks and create additional impact on monetary policy variables. In this regard we have expanded our analytical framework to the monetary sector by including  $M2$ , net government budgetary borrowing and budgetary borrowing from the banking sector.

---

<sup>4</sup>See, however, Sieg (1997), for monetary cycles even if central banks are independent.

Table 3: Fiscal and Monetary Variables and Opportunistic Business Cycles

Variables	$\Delta Gbbn$	$\Delta Gbbs$	$\Delta M2$
Constant	0.1060***	0.1085***	0.1339***
AR(5)		-0.5937***	
AR(10)	-0.4828***	-0.8654***	
MA(1)	0.3088**		
MA(3)	0.3077**	0.8353***	
MA(4)	0.8605***		
MA(5)			-0.987***
ED <sub>1</sub>	0.1196***	0.1381***	0.0481***
ED <sub>3</sub>		-0.077***	-0.0233**
$n$	26	26	35
$R^2$	0.62	0.59	0.59
D.W stat	2.23	1.85	2.05
S.EE	0.08	0.08	0.03

\*\*\*, \*\* and \* denote rejection of null hypothesis at 1%, 5% and 10% level of significance respectively.

The ARIMA model results show that  $ED_1$  has the expected signs, in case of net government budgetary borrowing and borrowing from the banking sector, showing 11 and 13 percent increase during the election years (see Tables 2 and 3). Both effects demonstrate clear patterns of opportunistic politically motivated fiscal expansion accommodated by the monetary sector. These type of government borrowing can cause a sudden rise in money supply and induce inflationary pressures in the economy. Estimated ARIMA model results for  $M2$  confirm this monetary expansion as it registered a 4 percent rise during the same period, however this is less than the rise in the budgetary borrowing.<sup>5</sup> During the post-election year,  $M2$  growth registered a contraction by approximately the same percentage (2 percent), consistent to (7 percent) decline in the budgetary borrowing from the banking sector, representing a tight monetary stance taken to curtail the inflation in the post-election year.

## 4 Summary findings and Conclusion

Inexperienced voters are a well known breeding ground for opportunistic political business cycles. In this study we proof that Pakistan's society suffers from such political motivated inefficient economic policies. We have used annual data for unemployment, inflation, growth and other macroeconomic indicators for the period 1973-2009. The paper has used simple intervention analysis in time series data to examine the fluctuations during the election and non election years. Results show that unemployment rate has been significantly reduced during the election and one year before the election year. Inflation shows similar patterns as during the election period it is kept down

---

<sup>5</sup>This may be due to the fact that Pakistan's current  $M2$  definition has two main components, Net Domestic Assets (NDA) and Net Foreign Assets (NFA). Therefore, it might be possible that the budgetary borrowing rise is offset by the contraction in the other component such as NFA, and not exactly depicted in the  $M2$  expansion.

by 2.2 percent. The reason could be that the ruling party keep the regulated prices artificially low before election and delays the cost push inflation by the post-election period. This is consistent with the recent surge in energy prices in Pakistan, where just after the election of 2008 the government cut all the subsidies and raised energy prices that has been deliberately kept low up to the end of the election. However the post election manipulation is absent or we can say less pronounced in both unemployment and inflation case.

On the fiscal side we see election year increases in the budget deficit accommodated by net government budgetary borrowings, and borrowing from the banking sector resulting in monetary expansion and inflationary pressure on the economy. To summarize, our findings of substantial electorally motivated policy distortions without associated impacts on real GDP suggest that Pakistan's society pays the cost of political business cycles but realizes none of the benefits.

## References

- Abrams, Burton, and Palmen Iossifov 2006. Does the fed contribute to a political business cycle? *Public Choice* 129(3-4):249-262.
- Alesina, Alberto F., Gerald D. Cohen and Nouriel Roubini 1992. Macroeconomic Policy and Elections in OECD Democracies. *Economics and Politics* 4:1-30.
- Alesina, Alberto F., Gerald D. Cohen and Nouriel Roubini 1993. Electoral Business Cycles in Industrial Democracies. *European Journal of Political Economy* 9:1-23.
- Alesina, Alberto F., Gerald D. Cohen and Nouriel Roubini 1999. Political Cycles and the Macroeconomy. *The Economic Journal* 109(459):821-823.
- Alesina, Alberto F. 1978. Inflation, Unemployment and Politics in Industrial Democracies. *Economic Policy* 8:55-98.
- Andrikopoulos, Andreas, Ioannis Loizides and Kyprianos Prodromidis 2004. Fiscal policy and political business cycles in the EU. *European Journal of Political Economy* 20(1):125-152.
- Batool, Irem, and Gernot Sieg 2009. Bread and the attrition of Power: Economic events and German election results, *Public Choice* 141(1-2):151-



165.

- Beck, Nathaniel 1987. Elections and the Fed: Is there a political business cycle? *American Journal of Political Science* 31(1):194-216.
- Berger, Helge, and Ulrich Woitek 2001. The German political business cycle: Money demand rather than monetary policy. *European Journal of Political Economy* 17(3):609-631.
- Blomberg, S. Brock, and Gregory D. Hess 2004. Is the political business cycle for real? *Journal of Public Economics* 87(5-6):1091-1121.
- Brender, Adi, and Allan Drazen 2005. Political budget cycles in new versus established democracies. *Journal of Monetary Economics* 52(7):1271-1295.
- Brender, Adi, and Allan Drazen 2008. How do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries. *American Economic Review* 98(5):2203-2220.
- Caleiro, António 2009. How upside down are political business cycles when there is output persistence. *Research in Economics* 63(1):22-26.
- Cerda, Rodrigo, and Rodrigo Vergara 2008. Government Subsidies and Presidential Election Outcomes: Evidence for a Developing Country. *World Development* 36:2470-2488.
- Chappell, Henry W. Jr., Thomas M. Havrilesky and Rob Roy McGregor 1993. Partisan Monetary Policies: Presidential Influence Through the Power of Appointment. *The Quarterly Journal of Economics* 108(1):185-218.
- Coelho, Cesar, Francisco José Veiga and Linda G. Veiga 2006. Political business cycles in local employment: Evidence from Portugal. *Economics Letters* 93(1):82-87.
- Drazen, Allan 2000. *The Political Business Cycle after 25 Years, Political Economy in Macroeconomics*. Princeton university press. Princeton. New Jersey.
- Enders, Walter 2004. *Applied Econometric Time Series*, John Wiley & Sons Inc. USA.
- Gärtner, Manfred 2000. Political Macroeconomics: A Survey of Recent Developments. *Journal of Economic Surveys* 14(5):527-561.
- Ginsburgh, Victor and Michel, Philippe 1983. Random Timing of Elections and the Political Business Cycle. *Public Choice*. Vol.40(2):155-164.
- Grier, Kevin B. 1987. Presidential Elections and Federal Reserve Policy: An Empirical Test. *Southern Economic Journal* 54(2):475-486.
- Grier, Kevin B. 1989. On the Existence of a Political Monetary Cycle. *American Journal of Political Science*. 33(2):376-389.

- Grier, Kevin B. 2008. US presidential elections and real GDP growth, 1961-2004. *Public Choice* 135(3-4):337-352.
- Havrilesky, Thomas M. 1993. *The Pressures on American Monetary Policy*. Norwell, MA: Kluwer Academic Publishers.
- Hibbs, Douglas 1977. Political Parties and Macroeconomic Policies. *American Political Science Review* 71:1467-87.
- Hibbs, Douglas 2000. Bread and Peace Voting in U.S. Presidential Elections. *Public Choice* 104(1):149-180.
- Keech, William R., 1991. Politics, economics, and politics again. *Journal of Politics* 53:597-611.
- Keil, Manfred W. 1988. Is the Political Business Cycle Really Dead?. *Southern Economic Journal* 55(1):86-99
- Krause, George A. 2005. Electoral Incentives, Political Business Cycles and Macroeconomic Performance: Empirical Evidence from Post-War US Personal Income Growth. *British Journal of Political Science* 35(1):77-101.
- Maloney, John, Andrew C. Pickering and Kaddour Hadri 2003. Political Business Cycles and Central Bank Independence. *Economic Journal* 113(486):C167-C181.
- McCallum, Bennett T. 1978. The Political Business Cycle: An Empirical Test: *Southern Economic Journal* 44(3):504-513.
- MacRae, C. Duncan 1977. A Political Model of the Business Cycle. *Journal of Political Economy* 85(2):239-263.
- Nordhaus, William D. 1989. Alternative Approaches to the Political Business Cycle. *Brookings Papers on Economic Activity* 2:1-68.
- Nordhaus, William D. 1975. The Political Business Cycle. *Review of Economic Studies* 42(2):169-190.
- Paldam, Martin 1997. Political Business Cycles, in Mueller D. C. 1997, ed., *Perspectives on Public Choice. A Handbook* Cambridge University Press, Cambridge 342-379.
- Pack J.r.1987. The political policy cycle: Presidential effort vs. presidential control. *Public Choice* 54:231-259.
- Persson, Torsten, and Guido Tabellini 2003. *The Economic Effects of Constitutions. Munich Lectures in Economics*. MIT Press: Cambridge.
- Rogoff, Kenneth 1990. Equilibrium Political Budget Cycles. *American Economic Review* 80:21-36.
- Saporiti, Alejandro, and Jorge Streb 2008. Separation of powers and political budget cycles. *Public Choice* 137:329-345.

- Schuknecht, Ludger 1996. Political Business Cycles and Fiscal Policies in Developing Countries. *Kyklos* 49(2):155-70.
- Sieg, Gernot 1997. A model of partisan central banks and opportunistic political business cycles. *European Journal of Political Economy* 13(3):503-516.
- Sieg, Gernot 2006. A model of an opportunistic-partisan political business cycle. *Scottish Journal of Political Economy* 53(2):242-252.
- Suzuki, Motoshi 1992. Evolutionary Voter Sophistication and Political Business Cycles. *Public Choice* 81(3-4):241-261.
- Tufte, Edward R. 1978. *Political Control of the Economy*. Princeton University Press.
- Williams, John T. 1990. The Political Manipulation of Macroeconomic Policy. *The American Political Science Review* 84(3):767-795.
- Woolley John T. 1994. The Politics of Monetary Policy: A Critical Review. *Journal of Public Policy* 14(1):57-86.

# Appendix

## Unit Root Test Results

Table 4: Unit Root Test Results

Variable Series	DF/ADF Test Value	lag	Deterministic	Decision
$U$	-1.917812	0	c	I(1)
$\Delta P$	-3.606487**	0	c	Stationary
$\Delta Y$	-3.942443***	0	c	Stationary
$\Delta I_g$	-4.520618***	1	c	Stationary
$\Delta Gbbn$	-3.640938***	0	c	Stationary
$\Delta Gbbs$	-5.019487***	0	c	Stationary
$\Delta M2$	-3.456143**	5	c	Stationary
$Fisb$	-3.3672*	0	c,t	Stationary

## Data Variables and Sources

Table 5: Election Dates

Election	Date	Corresponding Fiscal Year
General Elections 1977	January 7, March 7 and 10, 1977;	1976-77
Legislative Elections 1988	November 16, 1988	1987-88
General Elections 1990	October 29, 1990	1989-90
General Elections 1993	October 6, 1993	1992-93
General Elections 1997	February 3, 1997	1996-1997
General Elections 2002	October 10, 2002	2001-2002
General Elections 2008	February 18, 2008	2007-2008

Table 6: Data Variables and Sources

Name	Description	Unit	Sources
<i>U</i>	log(Unemployment Rate)	in percentage	Labor Force Survey
<i>P</i>	log(consumer price index)	Base at 1999-00	State Bank of Pakistan
<i>Y</i>	log(Real GDP)	Base at 1999-00	State Bank of Pakistan
<i>Ig</i>	log(Real Government Investment)	Base at 1999-00	State Bank of Pakistan
<i>Gbbn</i>	log(Net Government Budgetary Borrowing)	PKR in Millions	State Bank of Pakistan
<i>Gbbs</i>	log(Government Budgetary Borrowing from the Banking Sector)	PKR in Millions	State Bank of Pakistan
<i>M2</i>	log(Broad Money Supply)	PKR in Millions	State Bank of Pakistan
<i>Fisb</i>	log(Fiscal Deficit as%age of GDP)	PKR in Millions	State Bank of Pakistan

## **TU Braunschweig, Economics Department, Working Paper Series**

For a complete list of Working Papers published by TU Braunschweig, Economics Department, please visit the Department's website (<http://www.tu-braunschweig.de/vwl>)

- 01 „Crunch Time: A Policy to avoid the "Announcement Effect" when Terminating a Subsidy“**  
by Marc Gürtler and Gernot Sieg, May 2008
- 02 „Eine ökonomische Analyse einer Ausweitung des Arbeitnehmer-Entsendegesetzes“**  
by Uwe Kratzsch, June 2008
- 03 „Bread, peace and the attrition of power: Economic events and German election results“**  
by Irem Batool and Gernot Sieg, October 2008
- 04 „Grandfather rights in the market for airport slots“**  
by Gernot Sieg, November 2008
- 05 „Strategic Debt Management within the Stability and Growth Pact“**  
by Gernot Sieg and Ulrike Stegemann, April 2009
- 06 „When to Regulate Airports: A Simple Rule“**  
by Uwe Kratzsch and Gernot Sieg, May 2009
- 07 „Pakistan, Politics and Political Business Cycles“**  
by Irem Batool and Gernot Sieg, November 2009