



Electoral cycles in Philippine fiscal and monetary policy

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Filipino politicians are frequently characterized as being driven by office-seeking motives. Despite this, surprisingly little systematic evidence is available to support the electoral-cycle hypothesis in the Philippines. This paper tests the real-world relevance of the long-standing belief in election economics by using intervention analysis or interrupted time-series analysis, a version of the classical multiple regression model, to determine the impact of elections on economic policies and economic outcomes. Time-series regressions confirm the presence of political business cycles in measures of fiscal policy such as total government expenditures and public construction spending. However, monetary authorities show no inclination to engage in pre-electoral expansion on their own. They respond to higher money demand near election periods by adjusting the domestic and foreign components of the monetary base to stabilize the growth of monetary aggregates. The net effect of fiscal policy manipulations on measures of aggregate economic activity is found to be negligible.

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1. Introduction

The interplay between politics and economics has always been a topic of interest to political economists and has created a need for a systematic framework with which to study this interaction. Credit for formalizing the relationship between economic policymaking and political objectives within a coherent economic model is usually given to Nordhaus [1975]. His model

asserts that the political system would cause fluctuations to appear around an economy's long-term movement, hence the term political business cycle. The predicted cyclical behavior is based on the assumption that incumbent politicians manipulate policy instruments to improve their probability of reelection. This framework has since been used to delve into intriguing issues such as the actual effect of economic conditions on voting outcomes and that of election timings on government policies.

Despite its intuitive appeal, the empirical evidence for supporting political business cycles (PBCs) has yielded mixed results. The initial paucity of support for the Nordhaus model has since inspired variations of PBC theories that incorporate different assumptions, including partisan governments and rational expectations. These developments notwithstanding, results have remained far from unequivocal. In some cases, even the significance of the findings within the same country has varied based on the assumptions employed by the researchers. Furthermore, the bulk of the empirical studies have focused on Western democracies. Plausible reasons for the lack of emphasis on developing countries may be the data limitations for those countries as well as possible theoretical constraints (e.g., the absence of democracies). Some researchers have tried to get around the problem of limited data availability by pooling observations from different countries to form larger datasets, but such studies implicitly assume that the dynamics of PBCs will be the same for each country regardless of variations in electoral and campaign systems.

We hope to add to the understanding of the relationship between elections and economics by focusing on a single country that is developing in terms of both its economy and democracy—the Philippines. The Philippines should be an interesting case because it usually ranks at or near the top on levels of perceived corruption in the region. There is also widespread public perception that government mismanagement has hindered rapid sustainable growth despite solid macroeconomic fundamentals. Moreover, there persists the image of local politicians as self-serving individuals who engage in manipulative behavior to keep themselves in power, paving the way for possible political manipulation of the economy. It is thus surprising that there exists very little systematic research to examine and uncover the nature of the Philippine electoral economy as commonly understood by the people. Since conventional wisdom dictates that local politicians would have the propensity and propinquity to pursue opportunistic behavior, this study should serve as an excellent opportunity to test whether existing economic theory on the matter adequately explains observable patterns. The study aims to confirm the veracity of such opinions through the use of national-level economic data.

This paper investigates whether economic policies during the post-Marcos era have been tainted by opportunistic political motives. A distinguishing characteristic of this study from its predecessors is its focus on both fiscal

and monetary policies as instruments of office-seeking behavior. Although the Philippine central bank is supposedly nonpartisan and considered legally independent from the national government, we do not rule out the possibility that political influence may be behind the erratic policymaking by the *Bangko Sentral ng Pilipinas* (BSP) during the past two decades. We thus test whether the fiscal and monetary authorities' decisions are consistent with the predictions suggested by a recent variant of the rational opportunistic PBC theory that takes into account observed institutional facts such as central bank independence.

The road map for the rest of the paper is as follows. The succeeding section gives a brief background on the Philippine political system as well as the conduct of monetary policy in the Philippines and why we suspect political monetary cycles are a possibility. Section 3 discusses the existing literature on political business cycles. Section 4 outlines how and why traditional and rational opportunistic business-cycle works might be pursued through a formal model. Section 5 describes the methodology employed in this paper while section 6 presents the empirical results. Section 7 summarizes the key findings and concludes with recommendations for further research.

2. Background of the study

This section provides a brief account of how the Philippine government is structured and its possible implications on the possible form of an electoral cycle. Additionally, an overview of the conduct of monetary policy in the Philippines during the past two decades is discussed.

2.1. The Philippine political system

The Philippine Constitution that is currently in effect emphasizes separation of powers and the role of checks and balances within the political system. Authority by the national government is exercised by its three main branches: the legislative, executive, and judiciary. Members of the legislative branch as well as the heads of the executive branch are elected through popular vote while the judicial branch derives its mandate from being appointed by the nation's top-ranking executive officer (based on the recommendation of the Judicial and Bar Council).

The length of a presidential, vice presidential, and senatorial term lasts for six years while local officials and those in the lower house of representatives are given three-year terms. In accordance with this, selection of the president, vice president, and senators is done during national elections. National elections for the president and vice president are held every six years. Senatorial elections are set every three years, with half of the 24 seats being available each time. Officials from the provincial to the municipal level and members of the House of Representatives are selected during local elections held every three years. In

all cases, winners of the elections are decided through plurality or those who have the largest share of votes as compared with other candidates.

Although it is generally decreed that presidents are not eligible for reelection, some constitutional provisions have granted two of the four presidents since the Marcos regime (Corazon Aquino and Gloria Macapagal-Arroyo) the right to run for a second term. In fact, the current president has exercised this option and successfully ran for reelection. Moreover, even if this were not a viable option for the incumbent, he or she may still have an incentive to change the course of policy in hopes of improving the chances of a handpicked successor. Combining such logic with theory suggests that the incumbent president will be more motivated to send signals of competence in periods just before presidential elections by stimulating the economy.

In assessing whether to include midterm elections, two things must be noted. First, while the separation of powers is meant to protect democracy, it may also make the process of implementing the president's desired policies much harder, especially if majority of the legislature follows a different platform. The national budget, for example, needs to be approved by both houses in the bicameral Philippine legislature to be enacted. Second, although there is no clear-cut partisan system in our country, major (albeit usually short-lived) coalitions that are decidedly pro- and anti-administration are usually formed, particularly when election seasons loom.

The study also considers possible cycles around midterm elections despite the fact that the incumbent president is not running for office during these elections because there are candidates who are evidently associated with the administration and others who are clearly against it. The executive official in office will want to maximize the margin of friendly candidates in power as internal dissent partially determines his own governing capacity and ability to carry out desired policies. The executive official thus derives some benefit from interfering in midterm elections, as good economic performance will be ascribed to candidates affiliated with the current administration and increase their chances of winning.

Thus, the election dates within the scope of the paper and their corresponding quarters are listed in Table 1.

2.2. Monetary policy in the Philippines

In this subsection, we deal with the more complicated issue of monetary policy setting in the Philippines and how it may have already been affected by political motives.

Following the passage of Republic Act 7653 in 1993, the independence of the Bangko Sentral ng Pilipinas from the fiscal sector was formally established, and it was given the responsibility of maintaining "price stability conducive to sustainable economic growth" in the country. The mandate also places the

decision of which monetary policy framework to adopt mainly in the hands of monetary authorities. This allows the BSP to modify the choice of which variable to target in order to better meet its objectives, a right which it has exercised quite a few times.

Table 1. Elections dates in the Philippines

<i>Election date</i>	<i>Quarter</i>
11-May-87	1987Q2
11-May-92	1992Q2
11-May-95	1995Q2
11-May-98	1998Q2
11-May-01	2001Q2
11-May-04	2004Q2
11-May-07	2007Q2

Previous to this, the Central Bank of the Philippines (CBP) (as it was then known) had mostly been under the guidance of the International Monetary Fund (IMF), so monetary policy during most of the 1980s and early 1990s was supposedly based on targeting money growth to control for inflation. If we assume a quantity theory of money (QTM) equation of exchange and a stable income velocity of money, this simply means that money growth is set at the level so that money market equilibrium with target inflation and real output can be achieved. The CBP employed base money and total liquidity (M3) growth as operating target and intermediate target, respectively, in this regard. Of course, the effectiveness of this framework rests on the assumptions that the relationship between base money and M3, as well as that between M3 and inflation, will remain stable. The alleged weakening of these relationships in light of financial liberalization led the central bank to modify its policy rule.

In June 1995, the BSP shifted to a combination of money and inflation targeting called “complementing monetary aggregate targeting with some form of inflation targeting” to deal with the increasing unpredictability between variables [Gochoco-Bautista and Canlas 2003]. The new framework allowed adjustments in the base-money ceiling if the program’s inflation performance exceeds expectations. As of 2002, monetary targeting has been altogether scrapped in favor of inflation targeting.

There is evidence, however, that monetary authorities under these regimes embraced a different nominal anchor than what they have proclaimed in public. Gochoco-Bautista and Canlas [2003] contend that the central bank followed exchange rate targets from 1980 to 1991 as shown by the relatively stable exchange rate movements and wild swings in both inflation and interest rates and confirmed by Granger causality tests. Formal tests using the vector

autoregression (VAR) methodology also show that from 1990 to 2000, authorities chose to sterilize capital flows to prevent exchange rate depreciation, except during crisis periods [Gochoco-Bautista and Bautista 2005]. Furthermore, Gochoco-Bautista [2001] questions the theoretical underpinning of the 1995 modified framework. While the concept of inflation targeting at least appears to be more theoretically sound, setting an initial upper bound of 10 percent for annual inflation has been criticized as being unreasonably high even for a developing country. The policy seems to excessively prize the BSP's flexibility and sidesteps its commitment to fulfilling its *de jure* objective of keeping prices stable above anything else.

Since the transmission mechanism of monetary policy is complex, it is entirely possible that the BSP merely finds it necessary to moderate exchange rate movements to control price stability. The liberalization of the foreign exchange market has understandably magnified its possible inflationary effects through import prices. The problem lies in the fact that monetary policy autonomy and exchange rate stability cannot be achieved simultaneously when capital moves freely (the so-called policy trilemma in macroeconomics), as the erratic movements in money supply during the 1980s have shown. Also, since the BSP has not been explicit about the degree of foreign exchange interventions, the lack of transparency on the conduct of monetary policy actually defeats the purpose of having an independent central bank since the central bank may be pursuing its own private agenda. Given the Philippine government's history of central bank manipulation, it also raises the question of whether the maintenance of a favorable exchange rate may itself be a form of fiscal accommodation to minimize repayments of foreign-denominated debt. If so, then instruments being utilized as political variables by elected officials may not be exclusively limited to exchange rates and could encompass other monetary instruments as well. After all, statutory independence does not necessarily translate to actual autonomy.

3. Review of related literature

This section provides a brief background on the existing literature on political business cycles (PBCs). Although a great deal of theoretical and empirical work has been done on the topic, the existence of such phenomena remains controversial. Moreover, most empirical studies have focused on one or more OECD (Organisation for Economic Co-operation and Development) countries, leaving a lot of room for a closer and more thorough examination of developing country cases like the Philippines. Subsection 3.1 gives an overview of the theoretical developments in the PBC literature while subsection 3.2 focuses on the empirical findings.

3.1. Political business cycle theory

There are two basic variations of the PBC theory. The opportunistic model attempts to explain systematic policy expansions before elections by opportunistic governments seeking reelection. The partisan model, on the other hand, assumes that economic outcomes are affected by ideological differences between different parties.

3.1.1. The opportunistic model

Opportunistic models describe the economy by an expectations-adjusted Phillips curve with a short-run trade-off between inflation and unemployment. The model describes politician behavior as being driven by their desire to be reappointed. Two main lines of research have branched from this hypothesis.

Early variants of the opportunistic model such as the seminal paper by Nordhaus [1975] and that of Lindbeck [1976] are based on the additional assumption that voters are myopic or look only to the immediate past information in forming their expectations of future inflation. Politicians are also assumed to be identical and wish to maximize their voting function. Nonrationality among voters means incumbents find it desirable to enhance voter support by pursuing expansionary policies prior to elections and reducing the ensuing inflation once the elections pass. The myopic nature and retrospective voting attitudes of the electorate allow the self-serving politicians to repeat this cycle of opportunistic behavior indefinitely. The model predicts an increase in growth and a slight increase in inflation during the run-up to the election period and a permanent increase in inflation after the election, a suboptimal result because price increases are incurred without any real benefit to the economy.

A major criticism of the traditional opportunistic model is the assumption that voters consider only the present state of the economy. Because the traditional model assumes voters are myopic, voters appear to be irrational and constantly deceived, as they never learn from the past despite the predictable strategy of incumbents. Hence, Rogoff [1990] and Cukierman and Meltzer [1986] have developed rational opportunistic models to take into account rational voter behavior. Their models explain manipulations in fiscal policy through national budgets.

Persson and Tabellini [1990] take this new branch of research further by utilizing the same inflation-unemployment trade-offs via a Phillips curve framework as in the Nordhaus model, although theirs differs from the traditional opportunistic model in two key aspects: (a) expected inflation is determined rationally; and (b) candidates differ in their level of competency (or the ability to manage the economy), which is assumed to be reflected in the natural rate of unemployment that the economy can achieve. The competence term is further assumed to be a moving average, thereby allowing voters to make informed guesses about an incumbent's future competency by looking at his present

performance. Since voters are rational, they pick the most competent candidate possible.¹ Voters could easily determine the incumbent candidate's competence if inflation were known at the time of election. The authors, however, argue that employment will most likely be known before inflation because prices take some time to adjust. Since policy (and consequently, competence) can be observed only after a lag, the incumbent may find it personally advantageous to increase employment to signal his competence. The model implies that PBCs are caused by asymmetric information between candidates and voters. That is, the voting public may not be fully aware of the incumbent's true level of competence and ascribe output growth as measurement of the policymaker's capabilities. The candidate will thus have an incentive to raise employment levels prior to the elections in order to "signal" his competence.

3.1.2. The partisan model

In sharp contrast to the opportunistic models, partisan business cycles assume that candidates and voters are not identical. Hibbs [1977] attributes the periodic movement in the economy to the ideological divide between different parties and the policies they pursue. Left-wing politicians emphasize unemployment while right-wing politicians focus on lower inflation. Voter preference on the combination of inflation and unemployment determines which party wins the elections.

The Hibbs model's assumption of adaptive expectations has been criticized on the same grounds as the Nordhaus model. Voter irrationality, including backward-looking behavior, and adaptive inflation expectations have been perceived as being far too unrealistic. As in the case of Nordhaus, critics have generally argued that a situation wherein voters have lived for more than two periods and have a better idea of forming their expectations is more likely, implying limited applicability of the traditional partisan model.

It is also worth mentioning that although partisan cycles provide a workable hypothesis for some countries such as the United States, the underlying mechanism of this version of the PBC does not hold much relevance in the Philippine political arena because dominant parties are lacking and party-switching is prevalent. PBCs in the Philippines, assuming they exist, are more likely to take on other forms.

While not much can be done about the latter as they are due to institutional limitations (at least for the Philippines), succeeding research has come up with different assumptions to address some of the theoretical limitations of the basic theory. Alesina [1987] extends the original partisan theory to accommodate rational expectations. This simply means that voting decisions and future expectations take on a more forward-looking dimension by considering all

¹Since the opponent's competence cannot be readily observed, the expected value of his perceived competence is zero. In equilibrium, the incumbent wins the election when his competence term is greater than zero.

available information. In this case, cycles are generated because of uncertainty in election outcomes. That is, voters are unsure which party will eventually win the election so expected inflation is based on the average target inflation rate of both parties weighted by each party's probability of winning. Actual inflation will thus be higher or lower than the expected inflation. An implication of the rationality assumption is that cycles are shorter-lived than what its traditional counterpart predicts because wage-setters adjust nominal income as soon as the uncertainty disappears [Gautier 2003].

Despite the immense research interest this field of study has generated, quite a number of studies have greeted it with theoretical skepticism. More recently, the focus on monetary surprises as the driving force and the unrealistic assumption that candidates control monetary policy has also been criticized. Drazen [2001] observes that some countries wherein monetary cycles have been found are known to have very independent central banks with little incentive to create PBCs on their own. He reconciles the monetary effects with a fiscal policy-driven PBC by pointing that even independent central banks are affected by their political environments. He proposes an Active Fiscal-Passive Monetary (AFPM) model, which better fits the observed institutional facts. We discuss the details of this model in greater depth in section 4.

3.2. Empirical literature

Aside from theoretical criticisms, the PBC theory also suffers from the lack of unequivocal empirical support. In evaluating the empirical support for PBCs, Haynes and Stone [1989:426] remark that critics like "Alt and Chrystal [1983] suggest that '... no one could read the political business cycle literature without being struck by the lack of supporting evidence'". A more thorough review, however, reveals that empirical evidence remains mixed, although they do skew away from the presence of PBCs on usual measures of economic outcomes such as gross national product (GNP) and unemployment.

3.2.1. Empirical studies on the existence of PBCs on economic outcomes

The controversy certainly does not lie under the assumption that politicians will have an incentive to initiate pre-electoral expansion. There exists abundant documented support to back up the crucial assumption that economic performance in the run-up to the elections heavily influences voters' choices. Fair [1980, 1982] finds that the predicted share of votes going to incumbents based on models with the growth rate of real per capita GNP during election years all came within 4 percentage points of the actual result for the 17 US presidential elections covered in his study. Econometric voting equations for France, Italy, Spain, United Kingdom, and West Germany yield similar qualitative results [Lewis-Beck 1988 as cited in Drazen 2001].

It should be noted, however, that while the results imply that policymakers may be reasonably tempted to engage in pre-electoral pump-priming, estimates of voting functions do not directly support the existence of actual electoral cycles. Indeed, if conventional measures of aggregate economic activity such as GNP and unemployment are any indication, evidence indicates that they fail to take full account of this voter behavior. Alesina and Roubini [1990] and Alesina, Cohen, and Roubini [1991] find that the standard autoregression equations of the rate of output growth in different OECD countries do not give the results predicted by either the opportunist or partisan cycles. A broad survey of previous tests for PBCs compiled by Block [2001] suggests that cycles are rarely reflected in aggregate measures like GNP and unemployment literature, and this is generally true even for developing countries. For example, Chan [2005] finds no evidence of political cycles from observing the movements in GNP and inflation.

Haynes and Stone [1989], however, claim that the ad hoc specifications of election variables in several tests have led many researchers to wrongly dismiss the presence of political cycles in both macro-policy and macroeconomic outcomes. Hence, instead of arbitrarily placing election variables, which provide "spurious results", they specified an election dummy for each quarter in the US presidential election term and used the sine wave dating technique for autoregressive estimation of real GNP, unemployment, and inflation. The unrestricted tests provide clear sinusoidal patterns for the three variables. Their estimation shows that, on average, the US GNP peaks a quarter before the election for the period 1951 to 1986; unemployment and inflation reach their troughs during the election quarter and three quarters before the election, respectively.

On the other hand, evidence from observations of policy instruments and inflation are more supportive of the theory. Alesina and Roubini [1990] observe that while the Nordhausian hypothesis in output is rejected by data in 18 OECD countries, inflation has generally increased after elections, which they explain through pre-electoral monetary and fiscal expansion. Similarly, Alesina, Cohen, and Roubini's [1991] panel regression for the same countries from 1960 to 1987 shows evidence of loose monetary policy and political budget cycles causing a "post-electoral jump" in inflation but no net effect on either unemployment or GDP growth. Haynes and Stone [1989] also employ the sine wave dating technique for regressions of logarithmic difference of M1 and cyclically adjusted budget surplus. They suggest that the electoral patterns found in the second-order autoregressive estimates of both variables are significant and consistent with electoral patterns in outcomes.

3.2.2. Empirical studies on the existence of PBCs on policy instruments

It therefore seems that cycles are more visible in economic policies than they are in measures of economic activity. One plausible reason is the unpredictable relationship between policies and outcomes. Policymakers' motivations may not have significant net economic impact because other exogenous factors complicate the relationships among variables and blunt the influence of traditional instruments for controlling outcomes. Manipulation of fiscal and monetary policy may result in expansion coming too early or too late at times. Therefore, the absence of cycles in outcomes may not be sufficient condition for ruling out the existence of attempted manipulation. One will need to look at the behavior of different fiscal and monetary policy instruments to substantiate such claims.

Indeed, the lack of hard evidence for cycles in aggregate economic activity still allows for the possible existence of cycles in policy instruments. In this regard, accountability for economic policy must be thoroughly considered, because it allows one to see which instruments are available to an incumbent politician who wants to engineer a PBC. Accountability for policy manipulation is of particular interest as the executive branch designs fiscal policies while the central bank formulates monetary policy. Despite the vast literature on PBCs, however, the separate roles of national governments and central banks have rarely been factored into the analysis. Earlier theoretical literature even ignores these separate accountabilities; the Nordhaus model, for example, conveniently assumes that a single entity is jointly responsible for both fiscal and monetary policy. In many economies, though, the central bank is often seen as independent of the executive branch; that is, incumbents are usually not allowed to influence the direction of monetary policy (assuming, of course, that national governments do not informally exert pressure on their central bankers).

The same observation can then be used to reason the importance of testing for electoral cycles in the decisions that central bankers undertake, as evidence of election-economics that are directly attributable to monetary authorities will have huge implications on future central bank credibility. Even if central banks are taken to be legally independent, politicians may still exert some informal influence over monetary policy and use it to engineer PBCs.

To attain significant macroeconomic consequences, the incumbent may need to exercise his influence to adjust either fiscal policy or monetary policy, if not both. The choice, of course, is not unconstrained. While statutory central bank independence means that monetary authorities will not necessarily yield to political pressure from executive powers, the president's control over congressional decisions is also limited at best. In practice, political differences may cause a gridlock and large inside lags in fiscal policy. On the other hand, decision making over monetary policy is comparatively simpler and more

flexible since a small body is placed in charge of crafting policies, and these can be adjusted on a monthly basis. These attributes increase the attractiveness of orchestrating PBCs with monetary policy, either in part or in whole. Indeed, several studies have shown that democratic countries tend to follow electoral cycles in the growth rate of money supply even for those with independent central banks [Dreher and Vaubel 2005]. In any case, there appears sufficient evidence of fiscal policy manipulation as well as occasional central bank involvement in PBCs.

3.2.3. Empirical evidence of fiscal manipulation

Research has shown that fiscal cycles are on stronger empirical ground especially in developing countries. Brender and Drazen [2004] consider a panel data of 68 democratic countries for the period 1960-2001. Using ordinary least square (OLS) and general method of moment (GMM) and including fixed country effects, they find that fiscal balance rises by about 0.3 percent of GDP in the election year. Moreover, the significance of the election coefficient is driven by the presence of new democracies within the list of countries. They restrict the sample to this smaller set of countries and find quantitatively stronger effects. Established democracies, on the other hand, have insignificant election variables. Furthermore, regression runs for the entire sample with separate dummies for each of the first four country elections show that the PBC effects decrease in significance after each election.

Using the same election variable, Shi and Svensson [2002] arrive at similar results with a larger sample of 91 countries. They find a significant pre-electoral cycle for the entire data set, but the magnitude of the election coefficients for developed countries alone is 0.6 percentage points of GDP whereas the subset of developing countries has an election coefficient of 1.4 percentage points. They find that the difference between both sets of countries stems not from the revenue side but from higher expenditure in developing countries.

The positive results have not been limited to cross-country studies and are complemented by research on individual developing countries. Asutay [2004] provides convincing proof of Nordhausian cycles in the behavior of the Turkish government from 1980 to 2002 by modeling four variables of fiscal policy as univariate AR(1). Government expenditures, non-interest government expenditures, transfers to state-owned enterprises, and public sector investments were all found to exhibit a bump a few quarters before every election.

Treisman and Gimpelson [2001] include a wide array of fiscal and government financing instruments that the large Russian national government has at its disposal such as setting incomes (real minimum wage, social allowances, and pension), federal spending (on health, education, and social policy), regional transfers and issuances of government bonds, among others. They advance the notion that the Russian government treats these instruments as alternative

vehicles for manipulation whenever national elections neared, so a cycle should appear in some but not all of these instruments. By combining tests for multiple policy tools using the seemingly unrelated regression estimation method (SURE), they were able to find predicted patterns of PBCs despite their relatively small sample period of four years. Their results indicate that real minimum wages and the stock of outstanding treasury bonds increase more than the usual before each of the four elections from 1993 to 1996 while a variety of others exhibit cycles during certain election periods only.

In the Philippines, Pascua [2007] finds strong empirical proof that that prospect of reelection prompts local government officials to create transitory expansions in spending policies. Her econometric testing shows that mean per capita social spending and economic spending in 116 Philippine cities from 2001 to 2004 increase dramatically during an election year. At the national level, Chan's [2005] attempt to discover cycles in output, inflation, government expenditures, and budget deficits in the Philippines using trend analysis and OLS regression has been less successful. Her results indicate that PBCs are weakly reflected in budget deficits from 1949 to 2003 but not in the other variables. The positive result for budget deficits, however, is quite sensitive to the time frame and disappears when the sample period is divided into subperiods. Moreover, we have attempted to reproduce her work and find that she fails to correct for serial correlation in most of her estimations.² We suspect that her use of OLS estimation despite the presence of serial correlation may have led to the inconclusive results.³

3.2.4. Empirical evidence of central bank involvement

The case for cycles in monetary policy is more difficult to interpret. To determine the actual involvement of the central bank, one has to separate the possible effects of fiscal policy. Most country studies conducted to determine active central bank involvement have been confined mostly to the US Federal Reserve. Even so, no consensus seems to have been reached on the Fed's or other central banks' involvement worldwide.

Beck [1987] finds that election variables significantly affect quarterly percentage growth in seasonally adjusted M1 in the United States for the period 1961:1 to 1984:3. His first model uses an election variable specified to be zero a year after the election, increases by one unit every quarter after the election, after which it declines again. The election variable for the second model is a dummy that takes a value of one during the election quarter and the four preceding ones. The former indicates that M1 grows 1.8 percent faster during

²Aside from autocorrelation, her OLS estimations for national government expenditures violate the classical assumption of stationarity and should be considered spurious regressions.

³According to Gujarati [2003], OLS estimators remain unbiased and consistent but not efficient when serial correlation exists. The usual t and F tests of significance are unreliable and tend toward declaring a coefficient statistically insignificant.

an election quarter than it does a year later, while the latter variable suggests money growth that accelerates by 1 percent per quarter starting two years before the election quarter. He also points out that both variables lose their significance in the same M1 autoregression when fiscal policy is factored in. Beck suggests that the cycle in monetary aggregates should be interpreted as a passive accommodation by the Federal Reserve since it cannot control money supply completely. Furthermore, money growth in both models reaches a peak during the election quarter when such expansion is unlikely to have significant effects on the election outcome so active involvement by the Fed is unlikely.

Beck [1984] goes on to use the quarterly first difference in the Fed funds rate instead as an indicator of monetary stance and fails to find a cyclical pattern when regressed on the growth rate of industrial production, producer price index (PPI) growth rate, employment surplus, and trend-adjusted fiscal surplus as a proportion of GNP. Given his emphasis on finding an exogenous Fed-controlled variable, the market-determined interest rate appears to be an odd choice.

In an earlier study, Beck [1984] employed bank reserves (adjusted for changes in reserve requirements) as a signal of monetary policy. This study estimates a reaction function for the Fed to check how the economic and political environment affects monetary policy. Inflation, employment surplus, and change in the yield of AAA bonds are found to be significant determinants of this policy instrument while changes in international reserves as a proportion of import and balance of payments (BOP) as a proportion of GNP were not. Timing variables are tested, and the hypothesis of opportunistic cycles is rejected regardless of whether the employment surplus is included in the OLS regressions. However, the study does provide some evidence of partisan cycles wherein the Fed follows looser policy when Democrats hold office regardless of economic conditions and the indirect effect of fiscal policy. Moreover, there are cases in which monetary policy during certain presidential administrations transcends party differences. Furthermore, he tests for the Fed chair's impact during his tenure and finds a positive linear trend in money growth over time.

Allen [1986] also detects no evidence of politically induced changes in monetary policy whatsoever after tinkering with a variety of election variable specifications in regressions of changes in the log of monetary base and M1 on lagged changes of the regressand, output gap, unemployment rate, expected inflation, change in net federal debt, and 90-day Treasury bill rates. He does observe, however, that the Fed's general willingness to accommodate government debt is intensified just before elections in four separate time periods from 1954 to 1980.

Not all studies have turned up negative though. Grier [1989] finds a cyclical component of money growth in US data for the period 1961:1-1982:4, which is consistent with a political monetary cycle by estimating a 15-quarter, second-

degree Almon lag with no endpoint constraints on a dummy variable that equals 1 during the election quarter and 0 for all other periods. The election dummy retains its significance even after controlling for output, interest rate, and deficit fluctuations. Although the smoothed, symmetric shape of the dummy variable gives a neat visual appearance to the cycle, this method places undue constraints on the dynamic relationships implied by the opportunistic cycle. Additionally, his results have been criticized by Alesina, Cohen, and Roubini [1991] who notice that the test results are sensitive to the sample period.

Meanwhile, there is a similar lack of consensus for cross-country studies. These studies typically add a new angle in the form of international constraints central bankers encounter when they try to engineer a PBC. Leertouwer [2002] controls for these factors by adding an exchange rate dummy to reflect fixed or flexible exchange rate regimes. He argues for the appropriateness of using short-term interest rates as an indicator of monetary policy stance since demand-driven growth in monetary aggregates will unfairly place the blame on the central bank. A shortcoming with this measure is that an identification problem may result if both fiscal and monetary policy exhibit the same cycle. Nevertheless, the author justifies his choice by asserting that the use of pooled regression means fiscal policy would have to occur in all the countries covered by the study for this to happen. Based on autoregressive panel data estimation, he concludes that there is no evidence of active central bank involvement from the data of 14 OECD countries for the period 1960-1997.

Dreher and Vaubel [2005] incorporate the same international constraint but model their study under the relatively different assumption that monetary authorities involved in electoral manipulations will engage in foreign exchange sterilization in order to expand money supply without depreciating the exchange rate to minimize public visibility of manipulations. They test for changes in net international reserves relative to trend GDP in 158 countries (including the Philippines) prior to elections while controlling for the level of development, openness, and external debt. OLS and GMM estimation of panel data from 1975 to 2001 both support their hypothesis. A dummy variable controlling for the exchange rate regime was also included but was found insignificant. Furthermore, their result is robust with respect to outliers. Their conclusion shows that election-induced monetary manipulations are possible and do occur for several countries even after considering important constraints in policymaking.

Finally, detailed studies on monetary policy manipulation for specific developing countries such as the Philippines have been scarce, leaving the possibility that possible sources of additional proof are simply being overlooked. In the Philippines, the possible involvement of the BSP in PBCs has not been explicitly tested. Chan's [2005] work focuses primarily on outcomes and fiscal policy. Despite the anomalous conduct of monetary policy outlined in the

previous section, she probably does not bother with such tests because of the implicit assumption that legal independence guarantees that monetary authorities will not be involved. While a cycle may not be apparent in economic outcomes and fiscal policy, her study does not say anything about the possibility of political manipulations manifesting from the monetary end.

Having said this, we now turn to a model that stresses how the interaction between elected officials and an independent monetary authority can produce such cycles.

4. Theoretical framework

Standard PBC theories typically use a three-equation framework that specifies a policymaker's objective function, a model of the economy that features the inflation-unemployment trade-off, and an expectations formation equation. However, the assumption that the incumbent directly controls monetary policy instruments does not sit well with existing facts. Here, we present the active fiscal-passive monetary (AFPM) model developed by Drazen [2001] that retains many key assumptions such as utility-maximization of voters and election-conscious politicians but takes into account the existence of a separate monetary authority.

The main difference between the AFPM models from other monetary-based PBC models is the separation of authority over macroeconomic policy. Fiscal policy is controlled by an elected official while a central bank directs monetary policy. Instead of assuming that the direct use of monetary policy as an electoral tool, it makes the weaker assumption that the executive branch can influence the direction of monetary policy.

A key argument here is that an independent central bank may prefer to accommodate electorally inspired policies because it does not want to be seen as engaging in partisan politics. Beck [1987] explains the central bank's dilemma of trying to appear nonpartisan and counterbalancing electorally motivated activities. Since the central bank derives much of its authority from its reputation as an impartial body, it tries to maintain policy stability near election periods to prevent being criticized of political involvement even at the cost of being unable to offset opportunistic fiscal stimuli generated by election-oriented politicians.

4.1. Assumptions on the economic and political structure

Instead of the usual Phillips curve, Drazen's AFPM model describes the economy by means of an aggregate supply and aggregate demand equation with stochastic terms:

$$x_t = \pi_t - E_t \pi_t + 1 + s_t \quad (4.1)$$

$$x_t = -\varphi(i_t - E_t\pi_t + 1) + \eta_t \quad (4.2)$$

Equation (4.1) gives the output gap x_t (or the difference of actual from potential output) as a function of unanticipated inflation and a stochastic supply shock s_t with the form $s_t = \rho s_{t-1} + \varepsilon_t$, where $0 \leq \rho \leq 1$ and ε_t is an independently and identically distributed random variable with zero mean. Equation (4.2) expresses aggregate demand as a function of the *ex ante* real interest rate and a stochastic term $\eta_t = d_t + g_t$ where d_t is an i.i.d. mean-zero random variable, and g_t represents fiscal policy.

Time periods are classified as being either an election period E or non-election period O with elections taking place at the end of every other period. The form specified for the AD and AS functions implies that optimal policy setting in any period will be forward-looking. The central bank will set its inflation policy at time t based on the expectations about period $t+1$, which depends on the subsequent period and so on. To avoid unnecessary complications associated with serial dependence to shocks, it is assumed that shocks are not serially correlated. This allows the determination of a closed-form solution for an infinitely repeated game.

Since the policy goals of the politician will differ from that of the central bank (as will be shown below), both players will engage in a bargaining process that will determine equilibrium monetary policy. The final policy outcome will generally depend on the strength of each player's bargaining position. Drazen [2001] considers the simple case when politician appropriates most of the gains from cooperation and forces the central bank to its indifference point, although no key insight is lost when the benefits are more equally shared.

The specification for the timing assumptions is as follows. At any given period, the incumbent can apply pressure on monetary authorities to follow his desired policy by threatening to impose an additional cost C on the central bank's loss function without any cost to himself.⁴ This can be interpreted as the ability to criticize central bank policy and thus elicit a more favorable policy from the central bank that wishes to avoid the criticism. The central bank can react to such pressure by making a "complaint" K during the period when pressure is applied at some small cost to itself. The effect of such counterpressure is to neutralize possible political pressure in the succeeding period. However, issuing a complaint does not affect policy outcomes in the current period and is limited to the period when pressure is applied (i.e., it cannot be used to fend off anticipated pressure). This implies that the politician will have to restrain from intervening in monetary policy during non-election periods to be able to apply pressure during election periods when his payoffs are much higher.

⁴Modifying the assumption to allow for some direct cost to the politician does not change the qualitative results of the solution.

4.2. Optimal monetary policy in the absence of political constraints

It is assumed that the central bank targets total output to keep it at its natural rate (meaning $x = 0$) and inflation at zero.⁵ The single-period loss function the central bank assigns for any deviations from these targets is given by:

$$L_t^{CB} \gamma \frac{x_t^2}{2} + \frac{\pi_t^2}{2} \quad (4.3)$$

where γ is the relative weight assigned for output fluctuations and $\gamma > 0$. The central bank wishes to minimize the expected present discounted value of these losses Λ^{CB} based on the discount rate β :

$$\Lambda_t^{CB} = L_t^{CB} + E_t \left(\beta L_{t+1}^{CB} + \beta^2 L_{t+2}^{CB} + \beta^3 L_{t+3}^{CB} + \dots \right) \quad (4.4)$$

Due to the forward-looking inflation expectations in the AS and AD functions, minimizing (4.4) with respect to x_t and π_t can also be expressed as minimization of (4.3) subject to (4.1). This gives us the optimal inflation-output gap relation $\pi_t = -\gamma x_t$. Substituting this into equation (1) and assuming rational expectations about future shock for all periods yield the desired central bank policy:

$$\begin{aligned} x_t^B &= \frac{1}{1+\gamma} s_t \\ \pi_t^B &= \frac{\gamma}{1+\gamma} s_t \end{aligned} \quad (4.5)$$

if no serial correlation of shocks exists. The superscript "B" is meant to indicate the central bank's first best policy. The corresponding interest rate response for supply and demand shocks is

$$i_t^B = - \left(\gamma \rho + \frac{1}{\phi} \right) \left(\frac{1}{1+\gamma} \right) s_t + \frac{1}{\phi} \eta_t \quad (4.6)$$

Equation (4.6) shows that in the absence of political pressure, the central bank prefers that shocks be fully offset by movements in the interest rate, leaving x_t and π_t unchanged.

4.3. The incumbent's objective function and desired policy

Candidates are concerned with voters' welfare but with the additional assumption that they enjoy being in office. Reelection prospects q are assumed to depend negatively on the voters' loss function and positively on targeted spending directed at politically sensitive voters, denoted as g , which the politician is able to directly control. This can be written as

⁵Persson and Tabellini [1990] believe that the optimal inflation rate is greater than zero. In any case, the assumption here was made for the purpose of simplification and does not significantly alter the results.

$$q_t = q(\Lambda^V, g_t) \tag{4.7}$$

where $q_\Lambda < 0$ and $q_g > 0$.

Voters are generally aware of the current state of the economy. This is expressed by their voting preference function:

$$\Lambda_t^V = L_t^V + E_t(\beta L_{t+1}^V + \beta^2 L_{t+2}^V + \beta^3 L_{t+3}^V + \dots) \tag{4.8}$$

with the single-period loss function being:

$$L_t^V = \alpha \frac{(x - x^T)^2}{2} + \frac{\pi_t^2}{2} \tag{4.9}$$

where $x^T \geq 0$. This assumes that voters would prefer a higher output level than is considered optimal by the central bank. The difference in target output thus becomes a source of conflict between fiscal and monetary authorities. Aside from the discrepancy in target output, a second component also enters into the social welfare function through the loss incurred by general voters because of targeted expenditures g . This is represented by $\Delta(g)$, where $\Delta' > 0$.

Combining both these components with the reelection aspirations in a single equation yields the incumbent's current-period objective function for election periods E :

$$\Omega_t^P = (1 - \theta)(-\Lambda_t^V - \Delta(g_t)) + q(\Lambda_t^V, g_t)\theta \tag{4.10}$$

During non-election periods O , equation (10) reduces to:

$$\Omega_t^P = (1 - \theta)(-\Lambda_t^V - \Delta(g_t)) + \theta \tag{4.11}$$

Assuming that the politician disregards the effect of g_t on aggregate demand, differentiating (4.10) with respect to g gives the desired fiscal policy during the election period:

$$\theta q_g(\cdot) = (1 - \theta)\Delta'(g) \tag{4.12}$$

with a solution $g_p > 0$. From (11), desired targeted expenditures during the non-election period will be zero. This implies that expected demand shocks $E(\eta_t) = g^P > 0$ during an election period and $E(\eta_t) = 0$ otherwise.

The desired monetary policy can be derived by differentiating (4.10) with respect to π and solving for x . Although the algebra is a bit cumbersome, it can be shown that the incumbent's desired output policy is more responsive to demand shocks and less responsive to supply shocks. This implies that the politician will want fiscal shocks to have a larger effect on aggregate output. The ideal interest rate response of the politician to output shocks is also more stable as compared to the central bank's.

4.4. The political equilibrium

To achieve his desired policy (x^p, π^p) , the executive official tries to influence monetary policy by threatening to apply pressure on the monetary authority during an election period. The central bank thus faces the option of incurring a single-period loss $L^{CB}(x^p, \pi^p)$ if it chooses to comply with the incumbent and $L^{CB}(x^D, \pi^D) + C$ if it decides to deviate from the incumbent's ideal policy. Equilibrium policy is determined by the constraint:

$$L_t^{CB}(x^p, \pi^p) \leq L_t^{CB}(x^D, \pi^D) + C \quad (4.13)$$

To the extent that a strict inequality holds, equilibrium policy $(x^*, \pi^*) = (x^p, \pi^p)$ and the central bank fully accommodates political pressure. This is likely to occur when the magnitude of demand and supply shocks are relatively small. In such cases, the central bank's optimal policy will be close enough to the politician's desired policy so that it is willing to comply with the executive branch when pressured. The central bank is also willing to partially accommodate this political pressure with a compromise policy (x°, π°) at the margin or when $L_t^{CB}(x^p, \pi^p) = L_t^{CB}(x^D, \pi^D) + C$.

4.5. Empirical strategy

The empirical implications of the AFPM model are quite clear. When the central bank fully accommodates political pressure, monetary authorities will be forced to respond to expansionary fiscal policy by increasing money supply and allowing real economic output to rise through stable interest rate movements. As such, we expect accelerated growth in monetary aggregates during election years but not in other monetary policy instruments. The surfacing of monetary cycles also presupposes the existence of fiscal manipulation since they are explained as consequences of electoral cycles in fiscal policy. Moreover, its magnitude will depend on the size of the fiscal shock, the interest rate elasticity of aggregate demand, and the interest rate elasticity of money demand.

The model advances three main propositions: (1) government policy instruments will exhibit active electoral cycles; (2) fiscal policy interacts with monetary policy to induce monetary cycles; and (3) in the presence of such policy manipulations, the relative effect on aggregate economic activity may or may not be significant depending on whether or not monetary authorities fully accommodate political pressure from incumbents and the relative size of different elasticities. Hence, this paper analyses the effect of elections on macroeconomic variables as given by the following relationship:

$$\text{behavior of macroeconomic variables} = f(\text{election period}). \quad (4.14)$$

In the next section, we develop a formal test for capturing the impact of elections on macroeconomic policy and outcomes.

5. Econometric specification

The above literature suggests that election periods may entice officials to engage in electorally inspired policy manipulations, which cause cyclical fluctuations from the natural time path of policy and outcome variables. Since election dates are exogenous events, we can measure the consequence of such actions on the time-series data of interest by modeling the opportunistic business cycle using intervention analysis or interrupted time-series analysis, a version of the classical multiple regression model. The model treats elections periods as possible intervention components that can provide some explanation regarding the movements in macroeconomic variables. This is done by using the traditional Box-Jenkins strategy to estimate an autoregressive integrated moving average (ARIMA) model that also includes election periods as a right hand-side explanatory variable.

5.1. Empirical Model

Following a common practice in the literature, we proceed by estimating a set of regression equations that is of the general form:

$$Y_t = \alpha + \sum_i \beta_i Y_{t-i} + \sum_i \gamma_i ELEC_{t-i} + \varepsilon_t \quad (5.1)$$

where Y_t represents each of the stationary time-series observations (both policies and outcomes) we wish to test; $ELEC_t$ represents the intervention variable or the election dummy variable that equals one during the election period, and zero otherwise; and ε_t is a white noise disturbance term. Y_{t-i} represents the autoregressive components that are included to correct for serial correlation in the error term. The exact order of the autoregressive (AR) terms will be determined by the autocorrelation function (ACF) and partial autocorrelation function (PACF).⁶

For monetary instruments, we also run another set of augmented autoregressions in addition to the one provided above:

$$Y_t = \alpha + \sum_i \beta_i Y_{t-i} + \sum_i \gamma_i ELEC_{t-i} + \delta FP_t + \sum_i \lambda_i FP_{t-i} * ELEC_{t-i} + \varepsilon_t \quad (5.2)$$

where Y_t is the monetary policy instrument and FP_t is fiscal policy stance at the time of elections. A multiplicative interaction term between the fiscal policy variable and intervention variable is included to capture the indirect effects of

⁶The possibility of having more than one AR term in an equation admittedly makes interpretation of the coefficients' magnitude quite tricky. We shall include additional terms nonetheless if the ACF and PACF suggest that they are necessary so as not to risk misspecification or serial correlation in our estimates.

fiscal policies during elections on monetary policy. The added terms should help separate the effects of fiscal policy on monetary policy and test whether monetary authorities respond to fiscal activity differently during election periods. The coefficient of the election variables ELEC in equation (5.2) would give the net policy response of monetary authorities to elections. Since the addition of new variables into the equation may change the autoregressive moving average (ARMA) structure integrated in the original equation, AR terms are adjusted if necessary.

5.2. Data specifications

We gauge the significance of Philippine elections on macroeconomic outcomes by studying the behavior of Philippine real gross domestic product (GDP) with 1985 base year as indicator of economic activity. We chose GDP over GNP because the former gives a better indication of the vibrancy of the local economy and, therefore, of most local citizens' well-being. To measure inflation, we used changes in the consumer price index as basis since it is the index a typical voter will most likely be concerned with.⁷

It must be noted, however, that the review of literature suggests that investigations for PBCs should emphasize testing for electoral cycles in policy instruments and not just economic outcomes. We thus consider three variables for fiscal policy: total government expenditure, public sector construction, and total government consumption. We used M3, reserve money, and domestic credit growth as indicators of monetary policy measures. The use of M3 and monetary base over other measures of domestic liquidity is justified by the fact that they served as the BSP's official operating target and intermediate targets for most of the period covered in this study (see section 2). Strictly speaking, the monetary base is equivalent to the sum of net domestic assets and net foreign assets. Due to data limitations, however, we use reserve money as a proxy variable since we consider it to be sufficiently close to the textbook definition of the monetary base as defined by Mishkin [2003]. Additionally, we include domestic credit since central bank accommodation may show up in the form of loans extended to public sector agencies or the purchase of additional domestic securities.

With a few exceptions, our dataset draws mainly from the IMF's comprehensive International Financial Statistics (IFS) databank. Data for the CPI were lifted directly from the BSP's online database. Real public construction expenditure was based on the national income accounts figures released by the National Statistical Coordination Board (NSCB) and obtained indirectly from the Institute for Development and Econometric Analysis (IDEA).

⁷Unemployment rate was excluded as an alternative measure because the recent change in the official definition would have introduced certain complications when comparing between different periods.

The choice of data frequency may influence the study's outcome. Annual data, for example, might not capture the effect of PBCs as cycles may even out within that span of time. Quarterly data were used as these provide a richer sample of variable movements than annual data while at the same time allowing some monthly aberrations to smooth out. Moreover, some of the variables, like GDP and government expenditure, are not available monthly. Although monetary aggregates are released monthly, it was decided that quarterly data be used uniformly to facilitate possible comparisons between variables and estimations such as equation (5.2).

The sample period for most variables starts from 1986Q2 and goes until 2007Q1, coinciding with the post-Marcos regime in the Philippines. However, for reserve money and domestic credit, the sample covers only from 1993Q3 to 2007Q1 because of the massive restructuring of the BSP's financial accounts database. This is just as well since the analytical breaks in the dataset occurred about the same time as the BSP's transition into a legally independent entity.

Election dummies were self-generated based on historical election dates. The effects of a maximum of seven national (presidential or legislative) elections are placed under observation, depending also on the availability of data during the respective periods. The list of election quarters covered in this paper has been presented in Table 1.⁸

5.3. Econometric procedure

Intervention analysis calls for the estimation of a plausible ARIMA model for each of the time series. Such procedure presumes that the data are stationary. Therefore, the stationarity of each variable must first be established. Furthermore, the stationarity of variables is of crucial importance in the context of regression analysis since nonstationary time series cannot be modeled. Insisting upon regressing nonstationary variables may produce spurious or senseless results that are devoid of any economic meaning [Gujarati 2003]. As expected, unit root tests confirm the nonstationarity of the raw data. This is understandable as the data have not yet been "cleaned". To determine the proper transformation, we eyeball the graphs to get an idea of the changes needed (Figure 1). The increasing amplitude and nonlinear trend for the time-series data over time suggests that a logarithmic transformation may be easier to model as opposed to the linear form. Aside from straightening the observable trend, this has the added benefit of stabilizing the variance.

⁸Although time-series data for 2007:2 are still unavailable at the time of this study, the election variables make use of the pre-election period for the 2007 elections.

Figure 1-A. Graphs of original time-series data

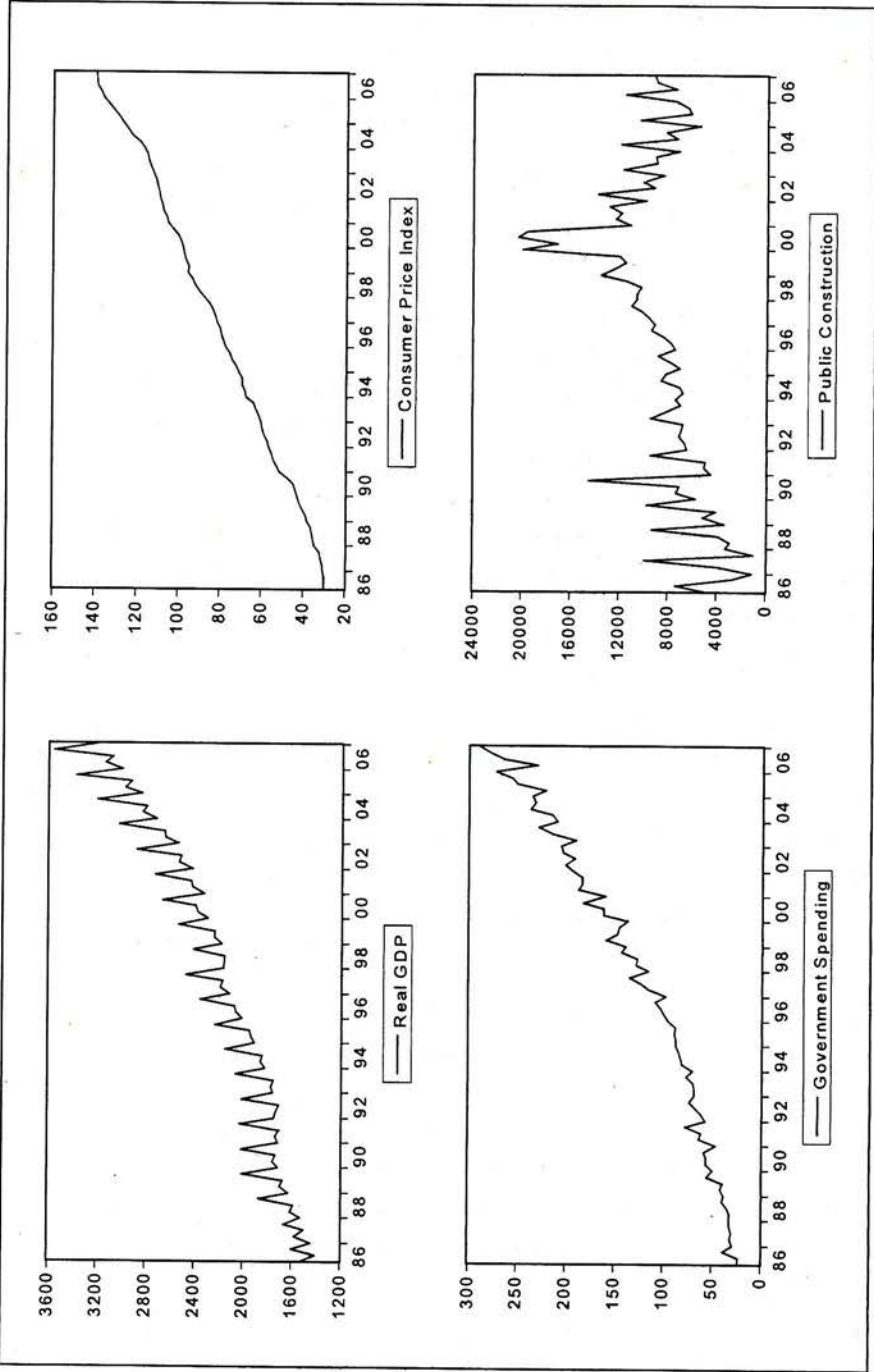
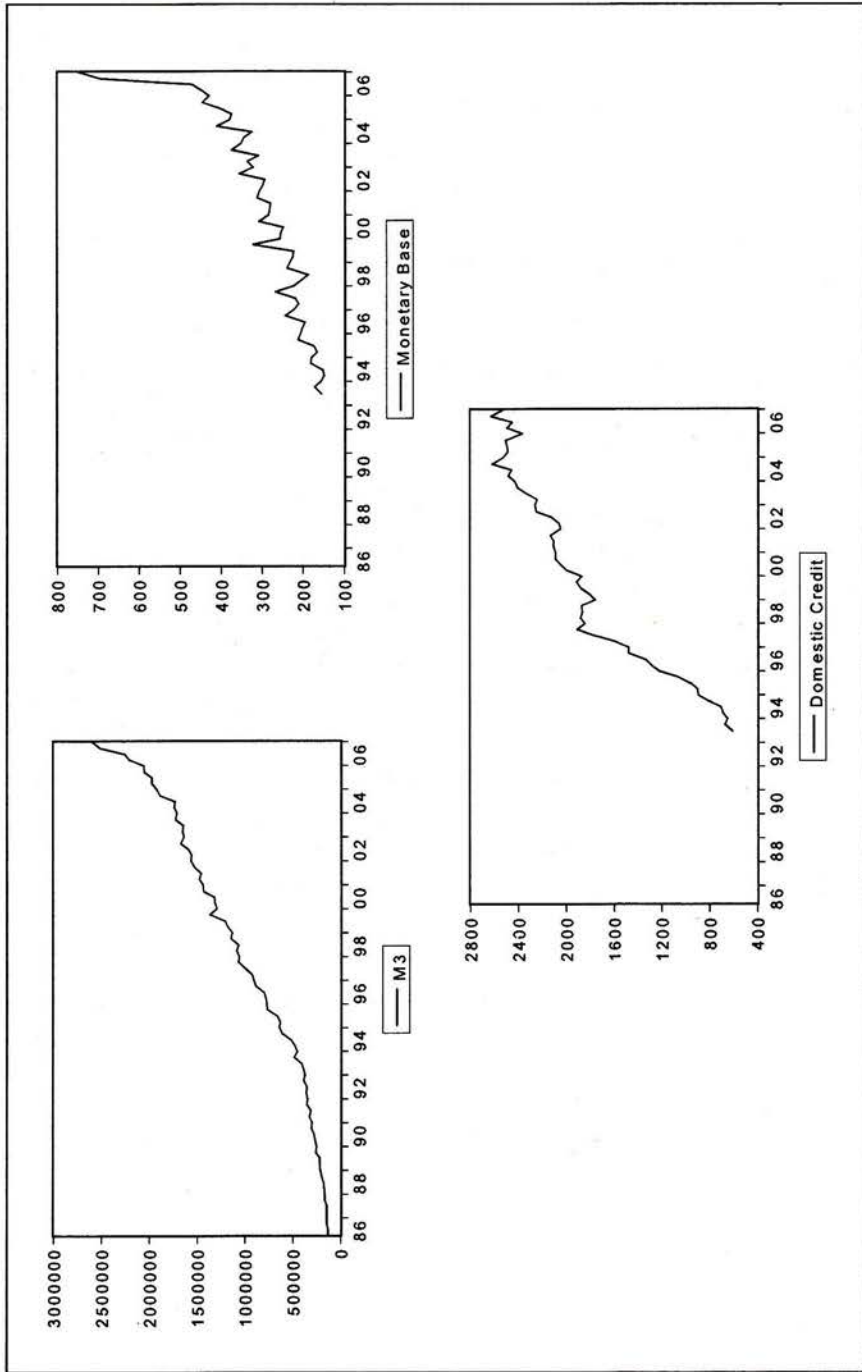


Figure 1-B. Graphs of original time-series data



Using quarterly time-series data introduces another complication that is evident in most of the graphs. Enders [2004] warns against the common mistake of failing to take seasonality into account. He suggests that it is better to err on the side of caution by deseasonalizing data because aggregate level data may continue to exhibit seasonal patterns even after supposed deseasonalizing by the primary data gatherers. Pronounced up-and-down patterns were observed in graphs, strongly indicating the presence of seasonality that is most likely attributable to the use of quarterly data. Variables exhibiting seasonal patterns are thus deseasonalized using the Census X12 method to prevent misinterpreting seasonal variations as evidence of electoral manipulations.

Finally, the trend component for each variable is removed by either detrending or differencing in order to produce a stationary series. Enders [2004] suggests a way of finding the proper method of eliminating the trend by analysing the correlograms of the series and utilizing unit root tests. Taking the first difference of the seasonally adjusted log transformed time series suffices for most of the variables in the study. The exceptions are total government spending and public construction expenditure, which exhibited significantly negative lag-1 autocorrelation after first differencing (a sign of overdifferencing), implying that it may be trend stationary instead of difference stationary.

Detrending is done by regressing the seasonally adjusted time series on a deterministic time trend and saving the residuals. The degree of the deterministic time trend is ascertained by the significance of conventional t-statistics and common model selection criteria such as the Akaike information criteria (AIC) and Schwarz information criteria (SIC). A second-degree polynomial time trend was found to be the best fit for both variables.

As the trend component has been removed, upward departure from the trends for all outcome and policy indicators prior to elections could now be interpreted as evidence of electoral manipulation. The graphs of the transformed data also appear to be stationary (Figure 2).⁹

Before proceeding, we first confirm the stationarity of the time series through augmented Dickey-Fuller (ADF) tests. As expected, the test now rejects the null hypothesis of a unit root for all the transformed variables. The results of the ADF tests are provided in Table 2.

⁹Visual inference, however, suggests the presence of outliers in some of the time-series observations. This will need to be remedied either through the exclusion of the extreme values or the addition of dummy variables to control for other exogenous shocks.

Figure 2-A. Graphs of transformed dataset

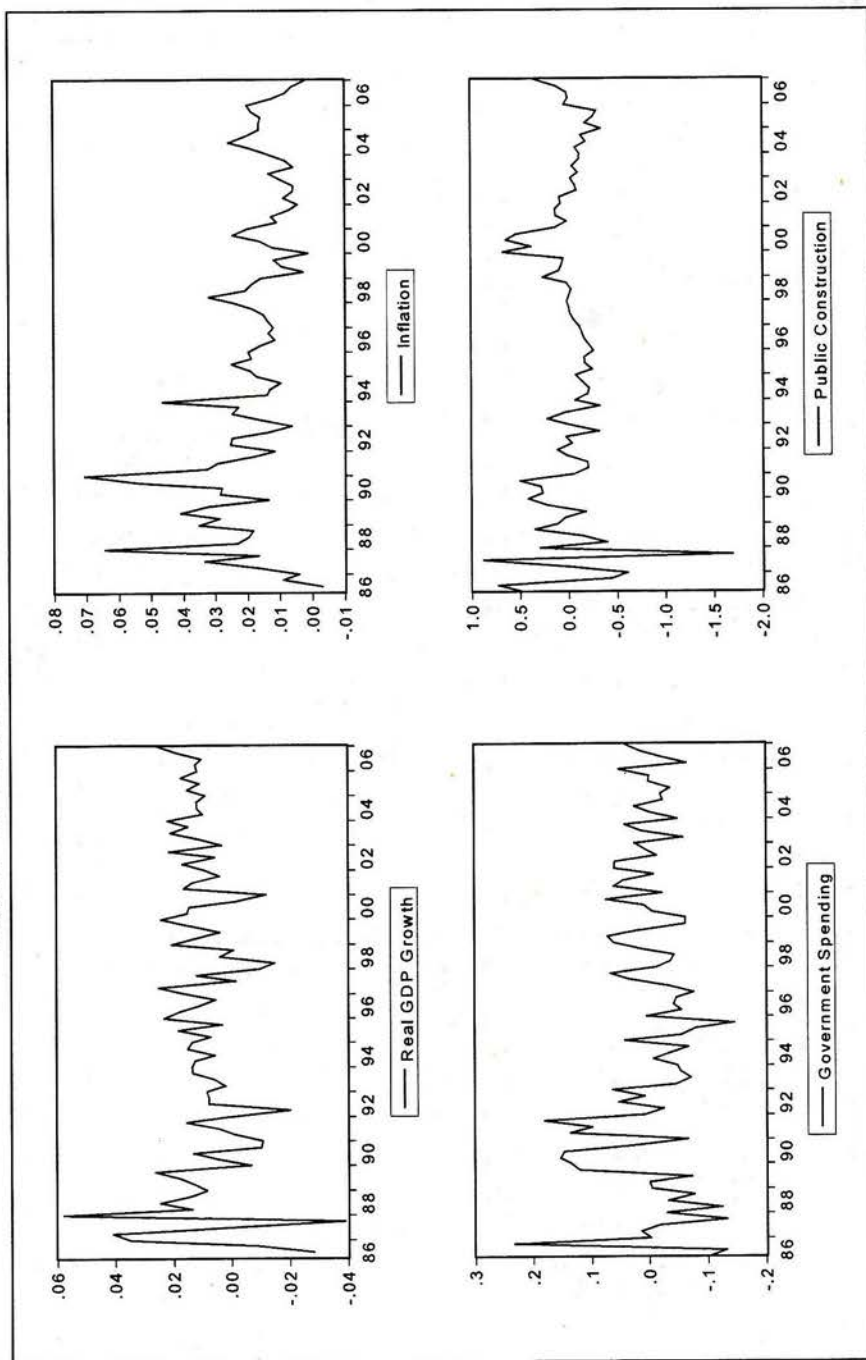


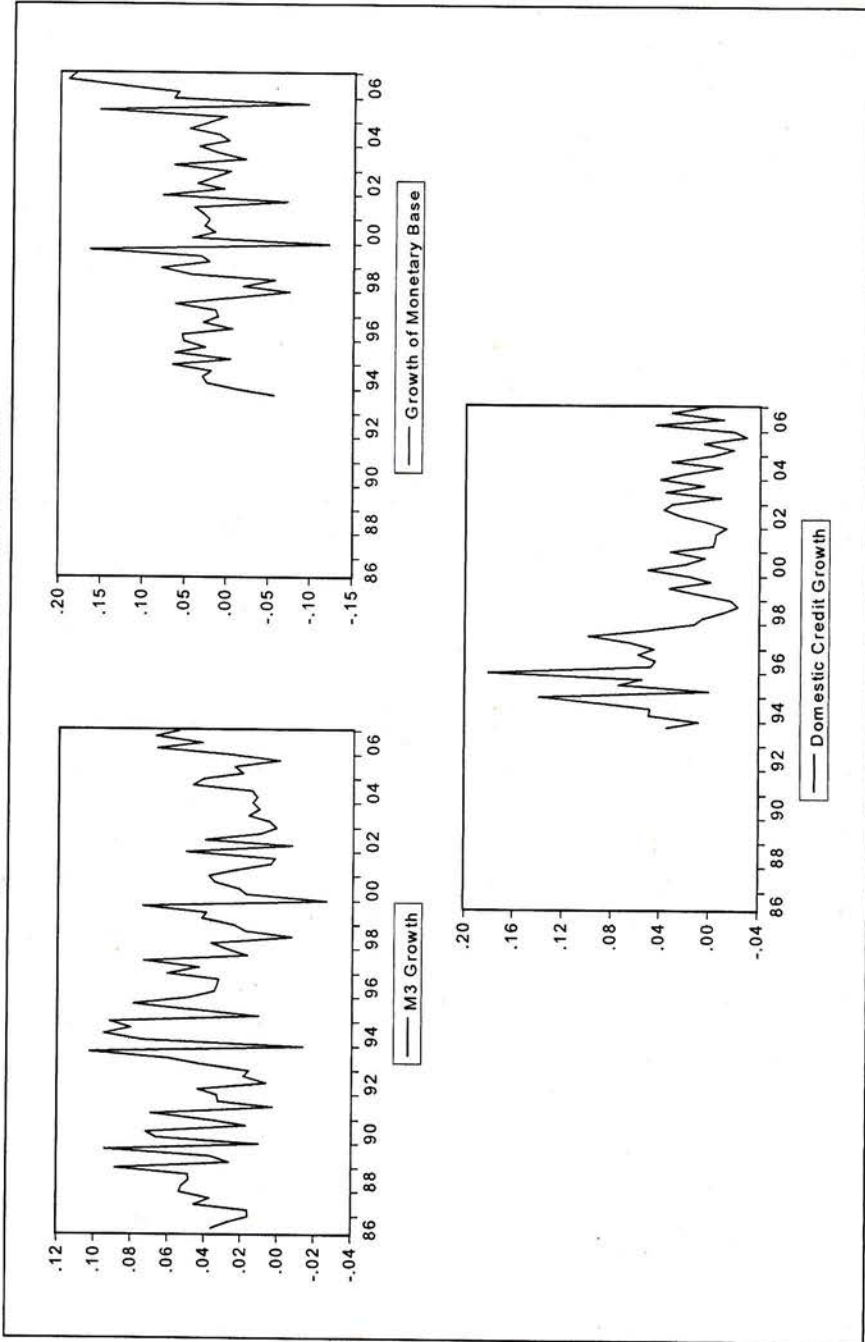
Figure 2-B. Graphs of transformed dataset

Table 2. Unit root test results*

<i>Variable</i>	<i>1% critical value</i>	<i>ADF test statistic</i>
RGDP	-3.5123	-8.8635
Inflation	-3.5123	-5.1119
Spend	-3.5113	-6.8671
Construction	-3.5113	-8.6646
M3	-3.5123	-7.8023
MB	-3.5600	-6.7779
Credit	-3.5600	-4.7264

*Null hypothesis: variable has a unit root

We now turn our attention to the proper identification of the ARIMA model using the Box-Jenkins methodology for model selection. Enders [2004] proposes an initial estimation based on a visual inspection of the ACF and PACF and checking to see whether the residuals approximate white noise. Furthermore, it is recommended that the different models be compared to assess the best-fitting model, with a premium placed on parsimony determined with the help of statistics such as the Akaike and Schwarz information criteria. To check for possible autocorrelation because of the inclusion of lagged variables, we used the Breusch-Godfrey serial correlation Lagrange multiplier (LM) test. The test results do not reject the null hypothesis of no serial correlation. The OLS estimates are presented in the succeeding section.

6. Presentation of results

This section examines the results based on our estimation procedures. Our estimates for (5.1) and (5.2) are divided according to the following: policy outcomes, fiscal policy, monetary policy, and the interaction between fiscal and monetary policy. We examine each one in turn.

6.1. *Opportunistic cycles in economic outcomes*

Before looking at policy tools, we examine whether opportunistic cycles are reflected in economic outcomes at the national level. This section utilizes the estimation procedure covered in the previous section to determine the impact of elections on two traditional measures of economic outcomes: inflation and real GDP.

The AFPM model predicts a step-up in economic activity before the elections as officials try to swing votes in their favor. Hence, our estimates for equation (5.1) should produce positive signs in the coefficients of pre-election variables and the opposite for the post-election dummies. It is uncertain when inflation from the policy manipulation should start to creep in as the lag between policy

implementation and inflation is an empirical issue. However, we assume that a candidate would wish to keep election-induced price increases from surfacing too early as a highly inflationary environment would be unpopular with voters and may set back his chances for reelection. We thus expect a lower-than-average inflation rate at least a few quarters before the election and an above-average rise in the level of prices most likely after the elections.

Table 3 gives an idea of how the regression coefficients of our intervention variables for real GDP and inflation fit the predicted pattern.

The results are strikingly simple. Even with the best-fit model, the election coefficients hardly show any signs of a political cycle. Since it is hypothesized that elections are more likely to be won when economic conditions are favorable, the incorrect signs for real GDP during the quarter preceding elections do not support the theory. Instead of the expected pick-up in the growth rate of real GDP, the actual numbers actually suggest a slight drop-off. Yet while the results show very meager evidence of pre-electoral manipulations, the post-election patterns are at least aligned with the theory as the economy takes a downturn two quarters after the elections.

Table 3 also shows that not much attention should be given to our estimates for inflation other than the interpretation of little or no correlation with election periods as none of the election coefficients are statistically significant at the conventional levels.

**Table 3. Regression analysis of PBC effects
on aggregate economic activity, 1986Q2-2007Q1**

<i>Regressors</i>	<i>Real GDP</i>		<i>Inflation</i>	
	<i>coefficient</i>	<i>t-statistic</i>	<i>coefficient</i>	<i>t-statistic</i>
Constant	0.0108	6.8203***	0.0245	8.2270***
Crisis			-0.0105	-2.6572***
AR(1)			0.4049	3.7126***
AR(2)	-0.2409	-2.2284**		
ELEC(-2)	0.0020	0.3678	-0.0021	-0.4640
ELEC(-1)	-0.0020	-0.3966	-0.0023	-0.4542
ELEC	-0.0056	-1.0434	0.0024	0.4278
ELEC(+1)	-0.0022	-0.4065	0.0046	0.8943
ELEC(+2)	-0.0123	-2.2716**	-0.0039	-0.8546
ELEC(+3)	0.0105	1.9522*		
Observations	84		82	
R-squared	0.1888		0.3485	
Prob (F-statistic)	0.0272		0.0000	

Notes: *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent level, respectively. Estimation is done using ordinary least squares.

The notion that incumbents attempt to increase their popularity by stimulating the economy and suppressing prices is not substantiated by the results. The analysis in this section demonstrates that elections do not lead to increased growth rates in GDP or lower inflation before elections. Despite the underwhelming evidence here, the AFPM model actually makes room for the possibility of such results. It asserts that because of the central bank's independence, fiscal and monetary authorities may engage in differing policies that cancel each other out. Moreover, even with coordinated responses, policy outcomes are harder to control than policy instruments. Thus, it is possible that the national government's electoral engineering may exist but not appear evident in these traditional measures of economic outcome. To determine whether this explanation bears any force, we observe the effects of fiscal and monetary policy separately in the next subsections.

6.2. Opportunistic cycles in fiscal policy

This subsection aims to discover the use of different fiscal policy instruments in accordance with the specified theoretical and empirical framework. We do so by estimating equation (5.1) with total government expenditures and public sector construction expenditures as the dependent variables.

Our starting assumption is that with all other things held constant, people generally desire a higher level of public services. Rather than risk electoral losses, an administration trying to win voters may incur larger total public expenditures during the crucial periods leading to the election. Table 4 depicts the regression results for the fiscal policy variables we have mentioned.

Our estimation of total government expenditures shows a significant bump in the level of spending around six months before the elections. Conversely, total government expenditures undergo a decline a couple of quarters after the elections. The results also demonstrate that these deviations are highly significant. The analysis thus provides support for opportunistic cycles in fiscal policy.

Fiscal policy is further examined by looking at public construction expenditures. The rationale behind this is to determine the key area to which the incumbent may allot more resources. Spending on infrastructure development immediately becomes a likely candidate because of the large number of people that this public service can reach out through accruable future benefits. Construction projects may also serve to attract myopic voters through the additional employment and the perception of heightened economic activity they usually generate. Large inaugural ceremonies that have become associated with these also translate into added publicity for the sponsoring politician.

The analysis reported in Table 4 reveals that construction activities increase just before elections. However, the redistributive pattern for construction projects differs from the pattern exhibited by government spending in general.

Although spending for construction activities grows before elections, they do not decline after the elections as predicted by theory but also before the elections (albeit several quarters before the election quarter). We are inclined to believe that this pattern may be brought about by financing constraints and the structure of the infrastructure budget. Despite this unexpected result, the important point is that intertemporal distribution remains designed to maximize electoral impact. The data seem to be telling us that fiscal authorities allocate more resources for public constructions when it is more politically valuable.

This subsection has shown that fiscal activity exhibits some support for opportunistic cycles. In accordance with the theory, the government expands the public sector within two quarters of the election quarter. To pinpoint a possible subcomponent this fiscal cycle manifests in, we checked for similar patterns in public construction expenditures. While infrastructure spending also increases before elections, a different budgetary allocation is observed for this expenditure category and does not coincide with that of total government expenditures. As such, the allocation for the increase in spending before elections remains uncertain. In the next subsection, we shift the focus to monetary policy.

Table 4. Regression analysis of PBC effects on fiscal policy, 1986-2007

<i>Regressors</i>	<i>Total government expenditure</i>		<i>Public construction expenditure</i>	
	<i>coefficient</i>	<i>t-statistic</i>	<i>coefficient</i>	<i>t-statistic</i>
Constant	-0.0006	-0.05952	-0.0046	-0.1199
AR(1)	0.3430	3.2902***	0.1023	5.0184***
Year2000			0.5829	5.2229***
ELEC(-4)			-0.1103	-1.7918*
ELEC(-3)			-0.0470	-0.7632
ELEC(-2)	0.0793	3.5126***		
ELEC(-1)			0.0975	1.6946*
ELEC(+2)	-0.0535	-2.1978**	-0.0506	-0.8323
Observations		84		75
R-squared		0.2426		0.5634
Prob (F-statistic)		0.0001		0.0001

Notes: *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent level, respectively. Estimation is done using ordinary least squares. The time series for public construction actually starts from 1988Q3 due to the presence of outliers in the earlier values. Year2000 is a dummy variable that controls for the sudden spike in construction expenses for that year.

6.3. *Opportunistic cycles in monetary policy*

We have argued that the lack of transparency in the conduct of monetary policy may provide an opportunity for manipulating the economy from the monetary end. This section presents the results for the empirical analysis of three monetary policy instruments—M3, monetary base, and domestic credit.

To weed out the possible change in monetary policy as a response to the Asian currency crisis, we also tried adding an additional intervention variable CRISIS to separate the period before and after this exogenous factor. It was found that CRISIS greatly increases our model's explanatory power for domestic credit growth, but not as much for base money and M3 growth. On average, credit has been much tighter since the onset of the crisis. The impacts of elections on monetary policy are reported in Table 5.

Table 5 does not indicate strong support of an opportunistic cycle in monetary policy either. Most of the estimates are not significantly different from zero, but two observations are worth mentioning. First, the M3 growth rate tends to decline immediately after the elections and the corresponding t-statistic is at least marginally significant at the 10 percent level. As in our previous findings, a post-election contraction also appears in monetary policy. It is unclear, however, what we should make of the significant decrease in the M3 growth rate after elections. Since M3 is targeted through the monetary base and the latter does not follow the same predicted pattern (the coefficients are not even close to achieving a 10 percent significance level), a conscious attempt to systematically reduce the money stock does not appear to be a definitive answer. Other explanations such as an unstable money multiplier may be possible.

More interesting though is the pattern depicted by the growth in domestic credit. Our findings show that the central bank tends to provide more lending before the election quarter, and these estimates are quite robust. Moreover, unlike M3, domestic credit expansion need not necessarily imply a larger monetary base as long as additional lending is met by a simultaneous decrease in other assets within the central bank's balance sheet.¹⁰

While the dubious timing for extra lending provides a stronger argument for opportunistic behavior, both monetary aggregates and domestic credit can be supply or demand driven so it may be unfair to blame central bankers of manipulation just yet. In fact, the AFPM model explicitly states that monetary cycles are induced by fiscal cycles. For now, we should probably withhold judgment since further analysis is needed to determine the extent of the central bank's accountability.

¹⁰We applied equation (5.1) on net foreign assets to determine whether the results are in line with the hypothesis. The results show that the BSP tends to run down net foreign assets a quarter before the elections, indicating that the asset-substitution pattern we have suggested on the central bank's balance sheet does occur. This explains why an increase in monetary aggregates is not visible during pre-election quarters.

Table 5. Regression analysis of PBC effects on monetary policy, 1986-2007

Regressors	Broad money(M3)		Monetary base		Domestic credit	
	coefficient	t-statistic	coefficient	t-statistic	coefficient	t-statistic
Constant	0.0388	9.1094***	0.0177	2.6420**	0.0603	6.6812***
Crisis					-0.0525	-5.3328***
AR(1)			-0.3462	-2.4721**		
AR(3)	0.2522	2.2253**				
ELEC(-3)			0.0288	1.2083	0.0202	1.2851
ELEC(-2)					0.0177	1.1272
ELEC(-1)	0.0038	0.3513			0.0269	1.7106*
ELEC	-0.0143	-1.2262			-0.0148	-0.8561
ELEC(+1)	-0.0220	-1.8873*	-0.0109	-0.4210	-0.0088	-0.5116
ELEC(+2)					-0.0063	-0.3648
ELEC(+3)			0.0388	1.5004		
Observations	78		52		55	
R-squared	0.1249		0.1665		0.4267	
Prob (F-statistic)	0.0427		0.0732		0.0003	

Notes: *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent level, respectively. Estimation is done using ordinary least squares. Available time-series data for domestic credit and monetary base starts from 1993Q3. The values for the last three quarters in the monetary base were also considered outliers and excluded from this procedure.

6.4. Interaction between fiscal and monetary policy instruments

We have mentioned above that fiscal authorities may need to enlist the cooperation of monetary authorities in their bid for reelection through policy manipulation. The previous subsection has shown some evidence of a cycle in monetary aggregates. The consistently significant electoral cycle coefficients for monetary policy in domestic credit and M3 lead us to an investigation of whether this is due to interaction with fiscal policy. Because evidence of fiscal cycles is also present, we wish to establish the strength of fiscal policy as a possible predictor of monetary policy. We do so by estimating (5.2) for M3 and domestic credit, which gives the impact of elections on central bank policy after controlling for the direct and indirect impacts of fiscal policy. Because (5.2) is premised on a significant relationship between elections and monetary policy in (5.1), there is little point in estimating the monetary base.

Fiscal policy in this context is defined as the first difference of the government-spending variable based on section 5.3. The first difference is used since BSP is more likely to act based on changes in fiscal policy rather than the actual level. The expected sign for the fiscal policy coefficient would depend on how we expect monetary and fiscal policy to interact. A positive sign hints at accommodation, and a negative sign should be interpreted as a countercyclical approach to fiscal policy taken by the BSP. The sign of the interaction term reflects how fiscal policy affects monetary policy during election periods and can be compared with the fiscal policy variable to infer whether monetary authorities react differently when politicians attempt to maneuver fiscal policy during elections. A significant coefficient in this variable would mean that the usual relationship for fiscal and monetary policy is markedly different as compared to election periods. Finally, the original election coefficient gives the BSP's policy stance during election periods net of fiscal policy. The results are presented in Table 6.

The coefficient signs for fiscal policy indicate a general tendency for fiscal and monetary policy to move in the same direction. The central bank typically responds to loose fiscal policy by easing monetary policy somewhat. However, the signs of the multiplicative interaction term suggest that monetary authorities take a more conservative stance near elections. The significant negative terms two quarters before the election for both M3 and credit imply an attempt to counterbalance the effect of fiscal effects of expansion by following a tight monetary policy. This is most likely why aggregate economic activities, such as real GDP growth and inflation, are not visibly affected by election periods.

Moreover, the results also show that the money supply does not respond in any special way to aid or counteract fiscal policy a couple of quarters after the elections, which, based on earlier findings, is when the government undertakes a contractionary policy. Although the large decline in domestic credit growth

coincides with the austere fiscal policy, displacement within the components of money supply may again be in motion to prevent money growth rate from decelerating in response to more stringent fiscal policies. The BSP may choose to do so for several purposes. One plausible reason is to recoup the foreign reserves it may have lost while trying to simultaneously expand domestic credit and keep total money in circulation constant before elections. A more likely justification is that it may be concerned with preventing a possible recession from happening. As it is, the failure to offset tight fiscal policies after elections already causes a noticeable decline in the growth of real GDP based on earlier findings.

**Table 6. Regression analysis of PBC
and fiscal policy effects on monetary policy, 1986-2007**

<i>Regressors</i>	<i>Broad money(M3)</i>		<i>Domestic credit</i>	
	<i>coefficient</i>	<i>t-statistic</i>	<i>coefficient</i>	<i>t-statistic</i>
Constant	0.0395	8.2130***	0.0210	2.1509**
AR(2)			0.5029	3.5523***
AR(5)	0.3508	3.0042**		
FP	0.1127	2.3935**	0.2071	2.3889**
ELEC(-2)	0.0066	0.5079	0.0295	1.6867*
ELEC(-1)			0.0321	2.1731**
ELEC(+1)	-0.0239	-2.0991**		
ELEC(+2)			-0.0086	-0.5020
ELEC(+3)	-0.0064	-0.3353		
FP*ELEC(-2)	-0.3433	-1.8089*	-0.9217	-2.2561**
FP*ELEC(-1)			0.0667	0.3407
FP*ELEC(+1)	-0.4210	-1.4386		
FP*ELEC(+2)			-0.6185	-2.0520**
FP*ELEC(+3)	-0.0672	-0.3000		
Observations		78		55
R-squared		0.2116		0.4100
Prob (F-statistic)		0.0292		0.0021

Notes: *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent level, respectively. Estimation is done using ordinary least squares.

The relatively high coefficients of the election coefficient, however, are rather disturbing because they suggest that monetary policy may be an independent source of opportunistic cycle behavior. However, such an explanation seems doubtful since our results also show that monetary authorities have not been accommodating of fiscal expansion near election periods. It is

unlikely that the increased growth rates are due to active manipulation. The fact that the significant election variables in domestic credit do not transmit to M3 merely serves to confirm that the intention is not to pump-prime the economy. Moreover, it must be noted that we have not factored in private money demand. We believe that the increase may be due to higher private demand, which may be related to elections such as campaign finance demands of the private sector. We have tested for this possibility and find a significant increase in the total credit of the private sector during the same two quarters prior to elections that is not due to government expansion.¹¹ The evidence is thus compatible with the alternative hypothesis that private money demand is responsible for the rise in domestic credit near election periods.

In sum, the BSP responds passively to fiscal policy but not when it is electorally inspired. Our estimates from equation (5.2) show a general coordination between fiscal and monetary policy but provides no support whatsoever to a specially coordinated electoral cycle or active monetary involvement. The reverse is actually true since both domestic credit and M3 growth slow down in response to fiscally motivated election policies. The results can be interpreted in several ways. The optimistic view is that the BSP's independence has hindered possible manipulation of monetary policy by politicians. An alternative view, following that of Beck [1987], is that the BSP may still not be apolitical but prefers to stay uninvolved to protect its legitimacy as an independent nonpartisan body, whence its authority lies. It does this by shifting the components of the monetary base to reduce the unwelcome effects of policy combinations on exchange rates because they are visible to the public.

7. Summary and recommendations

The purpose of this study has been to seek empirical support for the existence of political business cycles in both economic policy and outcomes using standard regression techniques. Several findings emerge from this study. Foremost we find very weak support that electoral cycles affect aggregate economic outcomes. The insignificant election coefficients indicate that PBCs are not visible in real GDP and inflation.

For fiscal policy, electoral cycles are evident in both total government spending and public construction expenditures. We observe that the coefficients for total government spending increase and decrease around election quarters as predicted by theory. However, the exact nature of the fiscal cycle remains unclear. While spending patterns for public construction are affected by elections, they are not entirely consistent with that of overall fiscal spending. The study thus provides some support, albeit not systematic support, to opportunistic fiscal cycles. A more detailed study of the possible changes in the allocation of public resources is needed to shed more light on this matter.

¹¹The results are available from the authors upon request.

As there is ample evidence for opportunistic fiscal manipulation, we have shown that the case for political business cycles in the Philippines is not closed. Other forms of office-motivated behavior in policies should also be explored. To engineer a PBC, a candidate may also increase transfer payments to particular regions or sectors before elections to sway key votes in his favor. This seems highly likely since debt servicing places a cap on the absolute amount of available resources for public services. Moreover, its effects on macro data are not likely to be significant. Further research is needed to determine whether fiscal manipulation has also acquired a distributional aspect aside from the usual aggregate expansion. So far, only PBCs at the national level have been assumed to exist and tested, but there is nothing to prevent possible cycles in other levels of government such as the provincial levels. In both cases, evidence from regional or sectoral expenditures may be more conclusive than aggregate data.

The evidence for cycles in monetary policy does not appear to be much stronger except for domestic credit. However, having only one significant variable does not undermine the robustness of the analysis. We believe that the presence of cycles in domestic credit coupled with the absence in M3 and the monetary base is consistent with the BSP's aversion to exchange rate depreciation. The BSP runs down net foreign reserves to mitigate possible exchange rate effects from the expansion in domestic credit.

Despite this, much of the movements in monetary policy instruments, including the observed electoral cycle in domestic credit, are due to fiscal policy movements. Even with the BSP's legal independence, the results clearly show that the central bank needs to factor in government policy when conducting its own policies. The evidence here may be a slight cause for concern since a significant positive coefficient in the fiscal policy variable hints at fiscal accommodation regardless of the economic condition. It is unclear whether this stance constitutes an optimal economic policy and how this should be interpreted in terms of de facto central bank independence. The dynamic of fiscal and monetary policy interaction in the Philippines appears to be a promising area of research. In the absence of such information, however, the least we should expect from a legally independent central bank is that it steers clear of any involvement in electoral cycles because of their debilitating effects on the economy. Even if a monetary cycle seems evident in some of our estimates, it appears that this is due to a failure to completely offset fiscal policies and an increased demand from the private sector rather than an active creation by the BSP. Despite all the criticisms hurled against it, the BSP at least passes the minimum standard we have set and does not disappoint in this regard.

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