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Political Business Cycles and Expenditure Policies
in Developing Countries

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Abstract

The paper studies empirically fiscal policies around elections in 35 developing countries. It finds that governments try to improve their re-election prospects with the help of expansionary expenditure policies. Rising fiscal deficits before elections are followed by fiscal consolidation afterwards. These cycles can be found particularly in countries which are less trade-oriented or which pursue fixed exchange rate policies. Certain IMF-supported programs (SAF/ESAF and EFF arrangements) contribute to fiscal stabilization, but they do not appear to affect the incidence of fiscal cycles. The paper concludes that policy advice and macroeconomic projections should not overlook election constraints, and political feasibility of reforms should be strengthened particularly before elections.

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Summary

This paper examines the impact of elections on economic policymaking in developing countries and finds that governments try to improve their re-election prospects by pursuing expansionary expenditure policies. Rising fiscal deficits before elections are followed by fiscal consolidation afterwards. These cycles are found particularly in countries that are less trade-oriented because additional demand does not leak abroad and in countries that pursue fixed exchange rate policies, perhaps because additional import demand does not trigger a devaluation-inflation spiral.

The paper also shows that certain IMF-supported programs contribute to fiscal stabilization but do not affect the incidence of fiscal cycles over elections. This finding suggests the importance of taking account of election constraints in macroeconomic projections and policy advice on the design and schedule of reforms. The political feasibility of reforms should be strengthened before elections.

The paper's findings may be summarized as follows:

On fiscal deficits. Regression results show that the overall fiscal balance worsens by over 0.6 percent of GDP over an election period. Deteriorating terms of trade, natural catastrophes, and inward-oriented policies also contribute to larger fiscal deficits. On the other hand, SAF/ESAF programs (from the second program period) and EFF arrangements improve the overall fiscal balance.

On revenue and expenditure. Regression results indicate that the election-induced fiscal stimulation translates into increasing government expenditures rather than declining revenues.

On the expenditure composition. The estimations show that, prior to elections, capital expenditure rises as a share of both overall expenditure and GDP, presumably to create short-term employment in public works.

On fiscal cycles in various country groups. Countries with flexible exchange rate regimes do not exhibit election cycles, but cycles are very pronounced in countries with fixed rates and adequate reserves. Fiscal cycles over elections occur both when a country has an IMF-supported program and when it does not, which indicates that domestic political constraints dominate international influences. Economies that are not trade-oriented exhibit very pronounced election cycles, while trade-oriented countries show more fiscal stability over election periods.

I. Introduction

"It is impossible to consider the ordinary course of affairs in the United States without perceiving that the desire to be re-elected is the chief aim of the President;... and that especially as [the election] approaches, his personal interest takes the place of his interest in the public good." 1/

Alexis de Tocqueville in Democracy in America (1835-1840)

"In particular, the timing of elections influences the rate of unemployment, the flow of transfer payments, the undertaking of expansionary or contractive economic policies, and the time perspective of economic policy-making. ... Economic life vibrates with the rhythms of politics."

Edward Tufte (1978)

"The functioning of the political system is not always in good harmony with the requirement of stabilization policies".

Assar Lindbeck (1976)

As the above quotations indicate, democratic governments in industrial countries adjust the policy-mix around the election date to enhance their re-election prospects. For example, before an election the economy is stimulated with the help of fiscal or monetary policies. Resulting employment gains or wealth transfers increase the government's popularity. After elections, contractionary policies are pursued to reduce inflation or the fiscal deficits. The result is a so-called political business cycle or, when just referring to the effects of elections on fiscal policies, a fiscal policy cycle.

Over the past decade, democratization has transformed the governance structure in many developing countries. Many of the remaining autocracies of South America and Africa, as well as most former socialist countries, have held free elections and established democratic institutions. However, so far only anecdotal evidence from newspapers or other media describes the behavior of these countries in the context of elections, mentioning, for example, employment programs, subsidies, or delayed austerity programs. It seems useful, therefore, to study empirically the impact of elections on economic policy making in developing countries.

1/ Quoted from Nordhaus (1989).

This study is the first one to examine election-oriented policy making in developing countries in a systematic manner. For this purpose, it looks at 35 developing countries that held elections during at least part of the 1970 to 1992 period. 1/ It finds significant empirical evidence for fiscal policy cycles: before elections, expansionary fiscal policies increase fiscal deficits and government expenditures. This behavior of governments can be found particularly in countries with fixed exchange regimes or a relatively small share of external trade. 2/ The study also finds that certain programs supported by the International Monetary Fund (IMF) improve the fiscal situation of countries, but they do not affect the incidence of fiscal policy cycles. This has important implications for the reform of fiscal institutions, for external policy making, for adjustment programs supported by international organizations, as well as for macroeconomic projections.

After surveying the literature in Section II, the study derives hypotheses on fiscal policy making around elections in developing countries in Section III. These are tested empirically in Section IV, which is followed by a summary and policy implications in Section V.

II. The Literature

Do governments adjust their policy making when faced with re-election? How do different ideologies affect policy making? These are the two main questions discussed by the political business cycle literature which first flourished in the second half of the 1970s and recently regained attention when new developments in the theoretical and empirical literature were incorporated. The theoretical literature distinguishes between the so-called Nordhaus models (after Nordhaus, 1975) and the partisan models (Hibbs, 1977; Alesina, 1987).

1. Nordhaus models

In Nordhaus models, incumbent governments tailor politics to maximizing their popularity and their re-election prospects. Typically they try to stimulate the economy before elections with expansionary monetary policies

1/ Although most sample countries are democracies, some elections may not be considered democratic in a strict interpretation of the term. However, military or authoritarian regimes which face public discontent or which strive for confirmation of their position in elections will also try to maximize support with populist policies (Tullock, 1987). The hypothesis and results discussed in this paper, therefore, can apply independently of the regime under which elections are held.

2/ As will be explained later, expansionary fiscal policies under fixed exchange regimes do not immediately lead to a devaluation-inflation spiral from increased import demand. In countries with little external trade, import demand will not leak abroad so that fiscal stimulation is more effective.

to take advantage of the short-run Phillips curve effects on output and unemployment. 1/ The models assume that voters have adaptive expectations, i.e., they base their voting decision largely on the recent performance of governments. Governments can then gain votes from expansionary policies before elections because voters reward the resulting lower unemployment.

In a recent Nordhaus-type model, Persson and Tabellini (1990) assume that voters have rational expectations. However, they do not know the policy makers' competence (asymmetric information), and they have to infer it from observable economic data. The government then pursues expansionary monetary policies before elections to create positive real effects, i.e., to raise output and lower unemployment. These signal to voters (who have no other source of information) that the government is very competent. Restrictive policies after the election then lead to a full cycle in economic activity. Rogoff and Sibert (1988) and Rogoff (1990) also design a model in which asymmetric information about the government's competence leads to an electoral cycle and real effects on fiscal and monetary variables but not necessarily on the real economy. While the standard Nordhaus-model is criticized for assuming that voters base their vote only on the recent performance of the government, the group of models described above maintain the questionable notion of welfare-maximizing governments and apply a somewhat unsatisfactory interpretation of rational expectations. 2/

The literature supports the relevance of Nordhaus-type models in explaining policy making in industrial countries: Frey and Schneider (1978a, 1978b) conduct studies for the United States and the United Kingdom, respectively. 3/ Other studies include Keil (1988) on the United Kingdom, Ben-Porath (1975) on Israel, Paldam (1978) on OECD countries, and Allen (1986) on the United States. Laney and Willet (1982) discuss the impact of elections on the fiscal deficit in the United States. They find for the period before 1980 that, despite the Federal Reserve's relative independence, the deficit feeds into monetary expansion as the monetary authorities try to keep interest rates down. As mentioned, the most detailed and institutionally rich study on political cycles in the United States and in other democracies is the classic by Tufte (1978).

1/ In all models, central banks are assumed to be a branch of government and the government determines the level of inflation. While most models assume closed economies, Willet and Mullen (1982) analyze political cycles in open economies.

2/ In Persson's and Tabellini's (1990) model which is exclusively forward looking, information from the past is irrelevant; the results crucially depend on the assumption that voters can not infer any information on the government's competence from past performance; developments in the pre-election period are the only signal for future competence.

3/ Frey and Schneider's United States study tests a mixed "Nordhaus-partisan" model.

Few studies discuss the effect of expansionary policies on different fiscal variables. Nordhaus (1975) finds inconclusive evidence as to the effect of presidential elections on transfer payments in the United States. Tufte (1978) assigns significant importance to pre-election tax-cuts and expenditure increases (particularly transfer payments) in the United States. He also finds similar pre-election expansions in most other democracies. Frey and Schneider (1978a) find similar evidence to explain changes in U.S. transfer payments.

2. Partisan models

In partisan models, left-wing parties assign greater value to low unemployment, while right-wing parties assign more value to low inflation. In these models, rightist governments generate consistently lower rates of inflation and higher unemployment rates than do leftist governments over the course of their governance period, and hence, different types of cycles than in Nordhaus models.

In Alesina's (1987) version of this model, cycles are caused by long-term labor contracts which prevent an immediate adjustment of real wages to an unanticipated monetary expansion or contraction after elections. The model assumes that the election outcome is uncertain and wage contracts are based on past levels of inflation and extend beyond the election date. A change in government, for instance, from the left to the right then leads to more restrictive monetary policies and lower levels of inflation. As nominal wage increases are fixed in anticipation of a higher inflation, this fall in inflation will cause real wages to rise which in turn has a negative effect on output and employment until real wages adjust. Critical points of this model include the formation of expectations and the behavior of the government. Voters, for example, are assumed to have rational expectations, but they do not adjust their contracting behavior to the uncertainty of election outcomes. It is also assumed that governments do not adjust their macroeconomic policies to past wage contracts. 1/

There are a number of empirical studies testing this approach. Paldam (1979, 1989), and Alesina (1992) test Hibbs and Alesina "partisan" models. Alvarez, Garrett, and Lange (1991) examine the role of partisan models in the context of specific labor market institutions and union arrangements.

1/ Voters who are rational and forward-looking would not negotiate wage contracts which extend beyond an election date with an uncertain outcome. They would predict the chances of rising or falling real wages after a change in government and would avoid long-term labor contracts. It is also questionable to assume that governments' post-election macroeconomic policies do not take into account earlier wage contracts, although political pressure of the involved parties must be expected. In Alesina's model, for example, labor unions would accept a fall in real wages when a leftist government comes into power. The latter would inflate the economy without consideration for the real wages of its labor union constituency.

Alesina, Cohen, Roubini (1992) analyze the development of budget deficits and monetary expansion in election years in OECD countries. The literature is surveyed partly by Alesina (1988); more encompassing surveys are Nordhaus (1989), Willet (1989), and Gaertner (1993; 1994).

Recently, political cycles have also been analyzed in the context of exchange arrangements and exchange rates. Gaertner and Ursprung (1989) show how the political-economic interaction of industries, voters, and governments can generate an exchange regime-trade policy cycle. Stephan (1992, 1993) shows that governments in industrial countries influence exchange rates to improve their election prospects.

III. Hypotheses for Political Business Cycles in Developing Countries

Of the two approaches discussed in the previous section, the Nordhaus-approach is more appropriate for the analysis of developing countries: governments stimulate their economies with expansionary fiscal or monetary policies before elections to gain votes. Afterwards, they pursue restrictive policies to counter fiscal deficits and inflation. 1/ Looking at the party-political landscape in the West and the empirical evidence, both Nordhaus models and partisan models have proven useful in analyzing political business cycles in industrial countries. However, the results for partisan-cycle models crucially depend on a left-right ideological polarization with different preferences for inflation and unemployment. This approach is hardly applicable to developing countries where the distinctions between parties do not always exhibit the typical Western right-left pattern.

We should expect election-oriented behavior by governments in developing countries to be quite pronounced and straightforward. Anecdotal evidence from many countries suggests, for instance, that governments try to enhance their election prospects with subsidized credits, free distribution of food, massive hiring of the unemployed or other "opportune" measures. Since many industrial country economies seem to exhibit cycles over elections despite important constraints on monetary and fiscal expansion and checks and balances in the political process, there should be even more room for election-oriented policy making in developing countries where checks and balances are often little developed and the incumbent government has significant monetary and budgetary discretion.

1/ Both monetary and fiscal policies can be pursued to influence the economy. A largely monetized economy and an unanticipated monetary expansion are required to have a real effect on the economy. Both conditions are frequently not fulfilled in developing countries. For this reason and for limiting the scope of the paper, monetary policy cycles are not further investigated.

The following sub-sections discuss the expected behavior of the real economy and of fiscal variables around elections. ^{1/} They discuss, in particular, how elections affect the overall fiscal balance, revenue and expenditure levels, and the composition of expenditure. They also examine the effect of a country's trade-orientedness and of the exchange rate regime on fiscal policies, and the role of international organizations and adjustment programs.

1. Hypotheses on the behavior of the real economy and fiscal policies around an election

a. Hypothesis 1: Output rises and unemployment declines

Before elections, expansionary fiscal or monetary policies enhance the government's popularity if they lead to higher output and lower unemployment. The political costs of fighting the resulting inflation or fiscal deficits with restrictive monetary and fiscal policies are deferred until after the election. The effects of such policies on output and employment, however, may not be significant in developing countries. Unrest, for example, can hinder a positive development of the real economy before elections. The recessionary effect of this type of event is likely to dominate the impact of expansionary policies. The size of the public sector can also limit the effect of election-oriented fiscal policies on real variables in many developing countries. If the share of central government expenditures of GDP, for example, is only 15 or 20 percent, a relatively large fiscal stimulation would be needed to achieve a significant effect on the entire economy. Direct wealth transfers around elections, which do not have an effect on output or measured unemployment, can also play an important role in these countries.

^{1/} The paper only considers country-wide general, legislative or presidential elections, depending on the political system of the sample countries. The hypotheses are less likely to apply to local than to general elections, depending on the degree of decentralization of policy making and budgetary autonomy of local and regional units. The paper also does not distinguish between countries in which governments can set the election date themselves and those in which this is not the case. When governments can determine the election date, they can, to some extent profit from the given business cycle, by choosing a date during an economic upturn. This reduces the need for fiscal stimulation. On the other hand, the government can also set the election date to target the point of maximum political support after having undertaken expansionary policies. This could make fiscal expansion more effective than in a regime with given election dates, hence increasing the incentive for stimulative policies.

b. Hypothesis 2: Fiscal deficits increase

Fiscal policies are an effective means of influencing government popularity. Expansionary fiscal policies allow significant wealth transfers in order to gain votes. These policies can consist of expenditure increases or tax reductions. In both cases, we would expect an increase in the fiscal deficits before elections and fiscal consolidation thereafter. 1/

c. Hypothesis 3: Expenditures increase
before an election rather than revenues decline

Tufte (1978) argues that "[measures] must be easy to start up quickly and must yield clear and immediate economic benefits to a large number of voters." In industrial countries with a broad tax base, tax cuts can significantly enhance the government's popularity. This was the case, for example, in the United States during the Reagan era. In developing countries, however, the tax base, particularly for income taxes, is small, and tax cuts do not enhance broad government support. 2/ In addition, the impact of a tax cut on economic performance is not very direct, predictable, and immediate, which makes it difficult for the government to reap the political benefits from the resulting economic stimulation. Tax-related measures also result in long-term problems such as an eroded tax base, and tax morale may be difficult to reconstruct after elections against the resistance of special interests. 3/

Expenditure policies are a more effective instrument for governments to increase their popularity, for example, through the distribution of free or subsidized food, or through employment generation in public works programs. The effect of expenditure increases on employment can be easily observed and governments can claim direct credit for it. The same holds for increases in disposable incomes through transfer payments or subsidies. Contractionary measures after elections are also easier to implement: short-term public

1/ Countries may not always pursue restrictive policies after elections due to the expenditure bias in democratic countries which makes it easier for governments to spend than to tax (Buchanan, et.al., 1987). In that case, significant structural deficits can accumulate over a number of election periods.

2/ Governments, however, can target very specific groups on the revenue side. This can be hard to detect empirically. We would, for example, expect an increase in tax exemptions before elections. However, a detailed analysis of exemptions is rendered difficult by the lack of detailed data for most countries.

3/ However, revenue decline is frequently observed in newly democratized countries where government revenue is eroded as government control declines together with the former established institutions. Tax payers can then divert potential tax revenue into their own pockets "spontaneously" while sharing the benefits with officials, for example, by means of corruption.

works or direct distribution of food, etc., are relatively easy to stop after elections. Consequently, expenditures will increase rather than revenues decline.

- d. Hypothesis 4: The share of capital and current expenditure in the budget changes

The government can change not only the level of expenditures but also the composition. It may prefer to enhance its popularity by increasing current expenditures, such as food subsidies or the wage bill, but higher capital expenditure on public works programs (with immediately visible results such as better roads and lower unemployment) may have the same effect. In addition, in many developing countries, capital expenditure is foreign financed with little discretion by the government to reduce it. Current expenditure could then decline relative to capital expenditure, but the opposite may also occur.

- e. Hypothesis 5: The wage bill and consumer subsidies increase relative to other current expenditures

Redistribution within the budget and fiscal expansion will not affect various current expenditure items equally for the reasons discussed above. As employment and food are the most important concerns of people in poor countries, the government has an incentive to take additional people onto the pay role and to distribute food or to increase consumer subsidies. ^{1/}

2. Hypothesis on the behavior of different country groups

- a. Hypothesis 6: Trade-oriented economies have less pronounced cycles than less trade-oriented economies

In more trade-oriented economies, i.e. economies with a large value of trade as a share of GDP, the leakage of demand abroad and the resulting costs from external payment difficulties make expansionary policies less attractive (Lindbeck, 1976). The less trade-oriented economies are, the more effective is government demand management. Therefore, expansionary fiscal policy is a more attractive tool for these countries' governments.

- b. Hypothesis 7: Countries with fixed exchange regimes exhibit more pronounced cycles

The exchange regime is of crucial importance for the effectiveness of election-oriented policy making. Flexible exchange rates result in a

^{1/} On the one hand, transfers to public enterprises may be increased to improve their labor-absorbing capacity. On the other hand, in many developing countries, state enterprises are under direct government supervision. They could then be asked to request less transfers so that the government has more funds for other election-oriented measures.

steeper short-run Phillips curve because increased import demand quickly feeds into domestic inflation through devaluations (Willet and Mullen, 1982). Rising import prices are also unpopular with the country's elite as well as with urban voters who may depend on imported food. This further reduces the incentive for expansionary policies. 1/ Fixed exchange rates, however, allow an increase in current consumption through a higher trade deficit without additional inflation. The trade-off in terms of future consumption through depleted reserves or higher debt is difficult to understand for the public.

Despite of their interest in popularity-enhancing policies, governments will not want to run into balance of payments problems just before an election. They will, therefore, be more prone to apply expansionary fiscal policies with fixed exchange rates when either reserves are high or access to foreign financing is available.

3. Hypotheses on the effect of programs supported by the International Monetary Fund

a. Hypothesis 8: IMF-supported programs constrain fiscal policies leading to lower fiscal deficits

Over the past two decades, the international community has been increasingly involved in giving policy advice to developing countries. Adjustment programs supported by the International Monetary Fund have been among the main vehicles to tackle the effects of the oil crisis, the debt crisis or domestic structural problems. As the conditionality in such programs usually stresses economic stabilization, including fiscal consolidation, programs should "harden" the governments' budget constraint and constrain deficits. Programs with the poorest countries (SAF/ESAF), however, might initially result in higher budget deficits before grants. For some structural measures, initial costs outweigh budgetary savings so that the fiscal deficit declines only over time. In civil service reform, for example, severance pay can initially exceed budgetary savings on the wage bill. When destabilization has progressed to the point where vital functions of the government are affected, new aid money may revitalize the government which can also lead to higher deficits initially. In these programs, therefore, fiscal consolidation should occur only with a lag.

1/ Theoretically, expansionary fiscal policies under flexible exchange rates need not stimulate inflation through depreciation if rising interest rates lead to capital inflows which finance the expansion. In LDCs, it is unlikely that the government would let the interest rates rise during an election period enough so that international capital would finance all the additional deficit. Political instability around elections further reduces the likelihood of significant capital inflows before elections.

b. Hypothesis 9: Fiscal policy cycles emerge also during program periods

If programs supported by the IMF constrain fiscal policies effectively over election periods, governments can only adjust the composition of expenditure in order to enhance their popularity. They will promote expenditures which are more election-sensitive and reduce others. However, we hypothesize that domestic constraints override international ones, as governments consider winning an election more important than achieving program targets. We will then observe fiscal policy cycles even during periods with IMF-supported programs.

IV. Empirical Study

This section investigates empirically the above hypotheses on developing country government behavior around elections, discussing the methodology and the estimation results.

1. Methodology

a. Technique

Regressions with annual panel data for the period 1970-1992 were conducted on a 35-country sample in accordance with the established literature (e.g., Alesina et. al., 1992). The T-statistics indicate a 10 percent level of significance with one star (*). Significance at the 5 percent and 1 percent level is indicated by two (**) and three stars (***) respectively. The data appendix provides a list of the variables and sample countries.

There are shortcomings in the data set. Although, theoretically, the sample consists of 875 observations, few estimations have more than 400 because of missing observations. Some interesting hypotheses could not be tested for lack of data. Missing values and inconsistencies between countries affect some estimation results, particularly, for unemployment.

Unit root tests were conducted on all independent variables and the occurrence of cointegration can be rejected at the 95 percent level for almost all variables. The variable reflecting periods with Fund-supported SAF or ESAF arrangements is an exception because of the limited number of such programs in this sample. The Dickey-Fuller-test statistics of the variable representing a country's openness is just below the critical value of 95 percent significance.

b. Dependent variables

Various real and fiscal variables were chosen as dependent variables. Real growth of GDP as a proxy for output changes and the national unemployment rate serve as dependent variables in the first set of

estimations to find real effects of election-oriented policies. As mentioned, data limitations suggest that the results for these estimations have to be interpreted with caution.

Central government spending, revenues, and the overall fiscal balance, expressed as a share of GDP, serve as dependent variables for the analysis of overall fiscal policies. Current expenditure and capital expenditure as a share of total expenditure indicate changes in the composition of expenditure. The detailed analysis of expenditure policies also include government wages and subsidies as a share of current expenditure. The expenditure variables are also expressed and analyzed as a percentage of GDP. Reserves in months of imports serve as a dependent variable to cross-test the effect of election-oriented fiscal policy making on the external sector.

c. Independent variables

The independent variables were chosen to reflect the domestic economic situation of the countries, the important external influences, and domestic elections. The data appendix provides a list of variables, including the type of variable and the source of the data. The tables in the appendix summarize the expected signs for the independent variables in the respective estimations.

Elections: Most important for our analysis, a dummy variable is introduced to reflect the effect of elections. This election variable takes the value of one in the period when expansionary policies are expected and minus one when we anticipate the post election contraction. In all other periods it is set as zero. However, in many countries the fiscal year and the calendar year do not coincide. Therefore, the variable value is set relative to its position during the fiscal year to be consistent with the other fiscal variables it supposedly influences. Elections sometimes take place at the beginning, during or at the end of the fiscal or calendar year. Therefore, the period during which we expect expansionary policies and during which a contraction is expected must be defined, taking into account the fact that most stimuli affect the economy and thereby popularity only with a short lag. In the following table, FY'0 is the fiscal year during which the election is held, FY-1 is immediately preceding, and FY+1 is immediately following:

Election Month of Fiscal Year	Value of the Election Variable		
	1 (Expansion)	-1 (Contraction)	0 (No change)
1st or 2nd	FY-1	FY'0	other
3rd or 4th	FY-1	FY+1	FY'0 and other
5th to 12th	FY'0	FY+1	other

The specification is somewhat complicated, but it is based on the following argumentation: in years when the election is during the first two months of the fiscal year, expansionary policies are expected for the fiscal year preceding the election (FY-1). Because the elections are very early in the fiscal year, the contraction starts already later during the election year (FY'0); hence, the variable takes the value of one for FY-1, and minus one for FY'0.

If the election is in the third or fourth month of the fiscal year, expansionary policies are expected to start during the fiscal year preceding the election (FY-1). They will continue in the election year (FY'0), but more or less at the same level. Consequently, the election variable takes the value of one for FY-1 and zero for FY'0. Contractionary measures are only introduced in the fiscal year after the election, and the variable takes the value of minus one in FY+1. This specification takes into account the fact that governments after elections have to reward their "supporters." This is another reason why fiscal consolidation is assumed to start only with FY+1.

If the election takes place during or after the fifth month of the fiscal year, all expansionary policies are expected to take place during the election year (FY'0). There is also some time left after the election to reward "friends." Fiscal consolidation then starts with the post-election fiscal year (FY+1).

The coefficient of this variable is expected to have a negative sign in estimations of the fiscal balance and unemployment, because elections shall lead to a worsening of the fiscal balance and lower unemployment. A positive sign is expected for output and the various expenditure variables, because output is stimulated with increasing expenditure. A negative sign is expected for reserves as elections shall result in a reduced level of reserves.

Lagged dependent variable: All estimations include a lagged dependent variable with an expected positive coefficient. Variations in output and unemployment are to some extent cyclical. Government administrations are-- more or less--constrained by budgets and the current budget largely determines the next period's appropriations (Niskanen, 1971). This "inertia" provides stability and predetermines revenue and expenditure patterns.

Trading partners' output: The estimation of output includes a variable which reflects the weighted GDP growth of the countries' major trading partners. Domestic output and output in partner countries are expected to be correlated. This reflects the spill-over from international recessions or booms on the domestic economy.

Trade-orientedness: A variable which reflects a country's trade-orientedness is defined as the ratio of the sum of imports and exports over GDP. It is expected to be correlated with higher GDP growth and an improved fiscal balance.

The more trade-oriented an economy, the less effective is an expansionary policy before elections. We, therefore, test separately whether there are differences in the degree of cycling between more and less open economies. For this purpose, the sample is split into two groups; the benchmark value which determines whether a country is considered more or less open is 0.5 for the ratio of exports plus imports over GDP.

Real effective exchange rate: The real effective exchange rate is an indicator of a country's competitiveness. It looks at the development of the domestic exchange rate as compared to the exchange rate of the major trading partners and adjusts for inflation differentials among these countries. On the one hand, when the real effective exchange rate depreciates, the economy's competitiveness improves. This enhances government revenues from profits and export taxes, which in turn could improve the fiscal balance if higher revenues are not fully passed through into higher expenditure. A negative sign of this variable can, therefore, be expected for revenues and possibly also for the fiscal balance. On the other hand, when the real effective exchange rate appreciates, growth and employment are affected adversely. This may induce the government to increase the public sector work force to maintain popularity or to prevent civil unrest. As a result, we expect the real effective exchange rate and the public sector wage bill to be positively correlated.

Exchange regimes: An exchange regime variable is derived from the International Financial Statistics (IFS) which provides a summary table on countries' exchange regimes starting in 1977. IFS distinguishes between countries with more flexible arrangements, on the one hand, and those with very limited flexibility or pegged currencies, on the other hand. A dummy variable takes the value of one for a relatively fixed exchange regime according to this classification) and 0 otherwise. Fixed exchange rates frequently result in periods of overvaluation of the domestic currency. Similarly to the response of governments to declining competitiveness, the government may have to mop up part of the labor force which gets displaced by the recessionary effect from an overvalued exchange rate. Fixed exchange rate regimes then result in higher public sector wage bills, and a positive sign of the coefficient can be expected in this estimation.

In a separate estimation, the sample is split into two groups of countries with relatively fixed and relatively flexible exchange rates respectively. This aims at testing whether or not these country groups exhibit different patterns of policy-making around elections. As mentioned, countries with fixed exchange rates are anticipated to exhibit more pronounced cycles than those with flexible ones. There is, however, one qualification to be made: fixed exchange rates without adequate reserves could rapidly lead to balance of payments problems. Political cycles

should, therefore, be more pronounced in countries with high reserves. The sample of countries with fixed rates is, therefore, split into sub-samples with reserve levels below and above 1 month of imports (to allow for two sufficiently large samples).

Wars, catastrophes, and political regimes: Shocks are incorporated in dummy variables taking the value of one during periods of wars and catastrophes, such as floods, earthquakes, or the eruption of volcanos. The variables are expected to have a positive coefficient with respect to government expenditure and a negative one in estimations of the fiscal balance. If the government finances the war, or if it contributes to catastrophe-relief measures through the budget, government expenditure should rise which worsens the fiscal balance. However, as many military operations are conducted outside the official budget, the estimation results for the "war" variable may not be reliable.

The study also includes a variable indicating a shift in the political regime from dictatorship to democracy and vice versa. However, the expected effect of the political regime on fiscal policies is not clear ex ante; hence no significant effect of a regime change is expected.

Terms of trade: Effects of changes in the terms of trade are also examined with the help of a corresponding variable. If the external shock is positive (i.e., countries experience an improvement in their terms of trade), output and government revenue are likely to increase, while unemployment declines and the fiscal balance improves. This translates into an expected negative sign of the coefficient with respect to unemployment, and a positive one with respect to economic growth, the fiscal balance, and government revenue. Declines in the terms of trade, on the other hand, should raise government expenditure, for instance, through higher financing requirements for public enterprises, and hence result in a positive sign for government expenditure.

IMF-supported programs: The estimations also include three types of programs supported by the IMF. ^{1/} Dummy variables stand for structural adjustment facilities (SAF) or enhanced structural adjustment facilities (ESAF) arrangements, stand-by (SB) arrangements, and extended fund facility (EFF) arrangements. The variables take the value of one when the respective program is in force for at least six months of the respective fiscal year. It becomes one half when the particular program covers at least a full quarter of the fiscal year. While stand-by arrangements emphasize immediate macroeconomic adjustment, EFF arrangements apply to medium-income countries and have a stronger structural adjustment component. Similarly, SAF/ESAF

^{1/} These variables are often not independent of the fiscal variables which they try to explain. Frequently, the Fund is lender of last resort and programs are negotiated when the fiscal and external situation has already considerably deteriorated and would otherwise deteriorate further. These variables therefore understate their true impact.

arrangements target low-income countries with emphasis on structural reforms. The latter are assumed to have a lagged effect on the fiscal balance, because, as discussed above, the structural measures take some time to be effective and may initially even result in net costs for the budget which is then financed with additional donor assistance. For these countries with SAF/ESAF arrangements it is in fact tested whether the fiscal situation improves in the second year of the program.

"General programs": A "general program" variable takes the value of one half or one whenever a country has any kind of these three arrangements with the Fund. The expected effect on growth, the fiscal balance, and revenues is positive while the various expenditure categories are expected to decline. Fund-supported programs are expected to strengthen the balance of payment position of a country, hence leading to higher reserve levels and a positive sign of the respective coefficient.

2. Results

The study provides considerable evidence for election-generated fiscal policy cycles. The latter are characterized by expansionary expenditure policies in election periods and contractionary policies thereafter. Expenditure increases translate into higher capital expenditure, presumably for labor-intensive public works programs. Fiscal policy cycles are stronger under fixed exchange regimes and in less trade-oriented economies. Among IMF-supported programs, EFF arrangements reduce fiscal deficits and government expenditures, while arrangements under SAF/ESAF result in an improved fiscal balance only from the second program period.

Evidence on real effects (i.e., on output and unemployment) is inconclusive and a useful analysis of transfer and subsidy policies was impossible, largely for lack of data.

The summary table on the following page presents the most important results in an abbreviated manner, while the appendix tables provide a detailed account of the estimation results.

a. Output and unemployment (hypothesis 1)

Elections do not have a significant impact on either output or unemployment (Appendix Table 1). 1/ Output of the country's major trading partners, improved terms of trade, a country's openness and stand-by arrangements have a positive effect on output.

1/ The table does not indicate the individual country intercepts as these coefficients are not further analyzed here.

Summary of Estimation Results
Fiscal Variables as Affected by Elections and Other Factors

Fiscal Variables	Overall Fiscal Balance	Revenue	Expenditure	Ratio of Capital to total Expenditure	Ratio of Wage Bill to Current Expenditure	Overall Fiscal Balance		Fiscal Balance Only Program Periods	Overall Fiscal Balance	
						Less Trade Oriented Economies	More Trade Oriented Economies		Flexible Exchange Regime	Fixed Exchange Regime
Independent variables (coefficients/significance):										
Elections	-0.66 ---	-0.22 0	0.39 +	0.66 ++	0.59 0	-0.94 ---	-0.36 0	-0.59 -	-0.41 0	-0.86 --
Other influences:										
Terms of trade	0.02 ++	0.02 +++	-0.01 0	0.02 ++		0.03 ++	0.002 0	0.03 +	0.01 0	-0.01 0
Trade orientedness	0.64 +	1.43 0	1.96 0					-2.68 0		
Real effective exchange rate		-0.13 -			0.04 ++					
Exchange arrangement					2.44 +					
Natural catastrophes	-7.19 ---	0.95 0	1.47 0			-2.82 -	-10.2 ---	0.15 0	-3.16 -	-17.3 ---
IMF-supported program		0.14 0				0.07 0	0.65 0			
SAF/ESAF arrangement (one period lag)	4.86 +			-5.41 0	0.11 0				2.3 0	14.3 +++
EFF arrangement	1.07 <u>1/</u> +		-1.08 -	-0.27 0	-0.64 0				1.12 +	0.44 0
Stand-by arrangement	1.25 0			0.90 0	0.35 0				-0.44 0	-0.04 0

+++, ---: very strong significance of positive or negative effect (1 percent level); ++, --: strong significance (5 percent level); -, +: weaker significance (10 percent level); 0: no significant effect; blank: not included in estimation.

1/ Overall balance after grants.

b. Overall fiscal balance (hypothesis 2)

The effect of elections on the overall fiscal balance before grants is quite considerable (Appendix Table 2). The estimations indicate an election-related expansion and reduction in the fiscal deficit by over 0.6 percent of GDP, or approximately 15 percent of the median deficit. The coefficient does not change when grants are included, suggesting that donors do not finance election-induced deficit increases. This finding indicates that donors do not give governments an incentive to expand their economies in anticipation of a donor bail-out.

The table also shows that improving terms of trade and the degree of openness of an economy affect the fiscal balance positively. Catastrophes worsen the overall fiscal balance considerably, while the coefficient of the variable reflecting wars and civil unrest and a change in the political system do not yield a significant result (not indicated).

The evidence on the effect of IMF-supported programs is interesting: SAF/ESAF arrangements improve the fiscal balance before grants starting from the second program year. 1/ The evidence on EFF arrangements points in the same direction for the fiscal balance including grants. In the latter type of programs, domestic fiscal prudence may be complemented by increased foreign assistance. This may explain the larger and more significant coefficient of the variable for the fiscal balance after grants. 2/

c. Total revenue and expenditure (hypothesis 3)

As anticipated, the main vehicle for election-oriented fiscal policies is expanding government expenditure (Appendix Table 3). Revenue-reducing policies, for example tax concessions, are not a major means of gaining popularity before elections in developing countries.

Improving terms of trade translate into higher government revenues while expenditure remains unaffected. Improving competitiveness, as measured by the real effective exchange rate, has the same effect on revenue.

1/ This result, however, has to be interpreted with some caution as only a very limited selection of SAF/ESAF countries is part of the panel. Surprisingly, the coefficient of the variable does not remain significant in the estimation of the fiscal balance after grants.

2/ As mentioned, IMF-supported programs may prevent a deterioration of the fiscal situation in the absence of a program. The full effect of programs can not be measured in the absence of counterfactual evidence.

d. Expenditure composition: current
versus capital expenditure (hypothesis 4)

Elections result in a significant increase in capital expenditure, both in terms of overall expenditure (Appendix Table 4) and GDP (not indicated). As mentioned, the government may speed up labor-intensive investment projects before elections.

This finding is very interesting from a normative perspective: there is a chance that governments undertake investments due to upcoming elections which they would not undertake otherwise. Election-induced cycles would then be actually advantageous to the long-run growth prospects of an economy. However, it is more likely that elections lead to a boost of relatively unproductive investment expenditure which are not adequately prepared and integrated into the national investment program and which only promote cyclical fluctuations in investment activities. 1/

When the terms of trade of a country improve, capital expenditure rises as a share of overall expenditure. There is no conclusive evidence, suggesting a decline in capital expenditure during periods of IMF-supported programs.

e. Composition of expenditure:
subsidies, and the wage bill (hypothesis 5)

It is expected that the share of consumer subsidies and, to a lesser extent, the share of the wage bill in current expenditure would rise around elections and decline thereafter, but the findings are not conclusive. Although the results point in this direction for the wage bill, (Appendix Table 5) the coefficient is not significant at the 90 percent level of confidence either for wages as a share of current expenditure or as a share of GDP. 2/ This is consistent with the finding that fiscal expansion translates largely into higher capital expenditure, while governments shy away from extending the (often well-organized) public labor force too much around elections.

It seems surprising that the evidence on the effect of elections on subsidies did not yield significant results. However, it should be noted that subsidies in the U.N. national accounts statistics comprise only those to private industries and parastatals. We would expect that only consumer subsidies are highly election sensitive.

1/ A case in point would be a government which employs laborers to build a road but there are no shovels or other construction materials.

2/ High inflation rates may introduce a bias into these ratios. Lower real wages as a result of inflation may neutralize the effect of additional employment around elections on the wage bill. Kraay and Van Rijckeghem (1994) study the determinants of the public sector wage bill in more detail.

Interestingly, fixed exchange regimes and appreciating real effective exchange rates are strongly correlated with higher public sector wage bills. This is indicative evidence for the importance of the government as an employer of last resort in times of economic down-turns (which frequently coincide with fixed, overvalued exchange rates and deteriorating competitiveness).

f. Trade-oriented versus less trade-oriented economies (hypothesis 6)

Governments of trade-oriented economies engage less in election-oriented policy making than their counterparts in less trade-oriented countries (Appendix Table 6, first and second column). Trade-oriented economies and their fiscal stability even seem to be more robust towards terms of trade shocks. The fiscal balance in less trade-oriented economies, on the other hand, reacts strongly to changes in the terms of trade. These countries exhibit very strong election cycles with the deficit expanding by almost 1 percent of GDP.

g. Flexible versus fixed exchange rates (hypothesis 7)

Countries with fixed exchange regimes exhibit more pronounced cycles than countries with flexible exchange regimes. The coefficient for the overall fiscal balance is not significant for countries with flexible exchange regimes, independent of their reserve position. On the other hand, Appendix Table 7 indicates that in countries with fixed arrangements, almost 60 percent of all observations, the fiscal deficit worsens by almost 0.9 percent of GDP around elections.

The hypothesis of a need for adequate reserves to pursue election-oriented policies under fixed exchange rates was also confirmed: while countries with adequate reserves show increasing fiscal deficits over the election period, countries with foreign reserves of less than one month of imports do not exhibit fiscal cycles (results not indicated). Countries with fixed exchange rates exhibit declining levels of reserves in anticipation of elections, while Fund-supported programs result in improved reserve positions (not indicated). ^{1/}

h. Programs and fiscal policies (hypothesis 8) As anticipated, SAF/ESAF arrangements improve the fiscal balance before grants starting from the second program year. The evidence on EFF arrangements points in the same direction for the fiscal balance including grants (Appendix Table 2).

^{1/} The respective estimation yields a decline in reserves by over two months of imports in anticipation of elections. Improvements in the real effective exchange rate and Fund-supported programs (with a one period lag) show a positive effect on reserves while evidence on demand growth and the terms of trade is not conclusive. This estimation, however, uses annual data and should be refined by a more detailed analysis with monthly data.

i. Program versus non-program years (hypothesis 9)

Estimation results indicate that the fiscal deficit worsens by about 0.6 percent of GDP, independent of whether or not a Fund-supported program is in place (Appendix Table 6, third column). Programs, hence, do not prevent fiscal policy cycles. This indicates that winning an election is more important than fulfilling policy commitments to the international community.

V. Conclusion

In summary, developing country governments are not different from industrial country governments when it comes to policy making in the wake of elections: governments of developing countries engage in expansionary fiscal policies to enhance their re-election prospects. This raises the fiscal deficit via increased expenditure. The share of capital expenditure clearly rises before elections, probably to generate temporary employment in labor intensive projects. Fiscal consolidation follows after the election. The resulting fiscal policy cycles are more pronounced in less trade-oriented economies and in those with fixed exchange arrangements.

The domestic election constraint may override the constraints imposed by the international community: programs supported by the International Monetary Fund, for instance, do not appear to moderate these cycles. However, the findings suggest that IMF-supported SAF/ESAF programs (from the second year on) and EFF arrangements contribute to fiscal stabilization by improving the overall fiscal balance.

There are important implications for policy reform from this study in three areas: the feasibility and, at times, the timing of policy reforms, the contents of reform programs, and macroeconomic projections.

1. It is particularly important to strengthen the political support of reforms around elections. Fiscal stabilization and reform need to be politically feasible. However, the feasibility of many reforms declines during election periods. Careful persuasion and information of the public and interest groups as well as compensation schemes should enhance the support for certain measures. In certain instances, it may also be appropriate to consider election constraints when deciding on the timing of policy reforms, and certain reforms might better be implemented during less sensitive periods.

To avoid moral hazard problems, i.e., countries reject reforms with the excuse of upcoming elections or even announce elections to prevent reforms, however, overall conditionality should not be relaxed around elections.

2. Reforms of policies and institutions should take into account the incentive structure of governments seeking reelection. There is a general hope that democratic governance promotes fiscal stability through increased government accountability rather than promote destabilization through fiscal

laxity and redistributive struggles. For this to come true, the administration in charge of control and enforcement of the budget, i.e., expenditure and revenue, should be strengthened in democratic countries. This would help to limit the scope of expansionary expenditure policies around elections.

A reduction in budgetary discretion of the central government and decentralization may be advisable to reduce the redistributive discretion of the government. Redistributive discretion provokes struggles between political factions. These struggles have at times even destabilized the democratic system.

When only looking at fiscal stability, the results of this study also suggest outward-oriented policies with a flexible exchange regime as these policies limit the scope for election-oriented fiscal expansion.

3. Macroeconomic projections should take into account the likely effect of elections on macroeconomic variables.

In addition, the study leaves a number of open questions for further analysis. Individual countries could be investigated with more differentiated models. It would be interesting to look, for example, at "new" versus "old" democracies, at transition versus non-transition economies, at countries where the government can set the election date versus those where it can not, or at presidential versus parliamentary systems. One could also compare "newly" adjusting countries with those that have had programs for extended periods of time. The path of the cycle could be different in countries where a change in government is expected or actually takes place. Popularity data would be interesting to incorporate in this context. Recent democratization in Africa, Latin America and Asia provides numerous new "sample countries" for future studies. 1/

1/ Regarding the debate over the Nordhaus- versus partisan-approach to policy analysis, the paper may provide some guidance for other research in this area: the findings clearly support the relevance of the Nordhaus-approach for developing countries. In particular, they are also consistent with Rogoff's and Sibert's prediction of fiscal cycles without real effects.

Table A1. Elections, Output, and Unemployment

Dependent variables:	(Expected Sign)	Output	(Expected Sign)	Unem- ployment
Independent variables:				
Domestic Influences:				
Lagged dependent variable	(+)	0.31 (6.36)***	(+)	0.79 (8.67)***
Elections	(+)	-0.55 (-1.55)	(-)	-0.44 (-1.02)
External influences:				
Growth in partner countries	(+)	0.44		(4.25)***
Lagged growth in partner countries	(+)	0.05 (0.44)		
Terms of trade (one period lag)	(+)	0.015 (1.90)*	(-)	-0.003 (-0.18)
Trade-orientedness	(+)	6.09 (3.01)***	(.)	-3.75 (-1.08)
International organizations:				
SAF/ESAF arrangement	(+)	1.20 (0.49)		
EFF arrangement	(+)	0.90 (0.96)		
Stand-by arrangement	(+)	1.05 (1.76)*		
Number of observations		430		74
R2 adjusted		0.31		0.87

Modelling technique: Panel regressions.

Sample range: 35 Countries, period: 1970-1992.

Columns indicate estimated coefficients (t-statistics)

*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level.

Table A2. Overall Fiscal Balance
Before Grants, and Including Grants

Dependent variables:	(Expected Sign)	Overall Fiscal Balance	
		Before Grants	Including Grants
Independent variables:			
Domestic influences:			
Lagged dependent variable	(+)	0.76 (24.1)***	0.63 (15.1)***
Elections	(-)	-0.66 (-2.85)***	-0.60 (-2.70)***
Natural catastrophes	(-)	-7.19 (-4.74)***	
External influences:			
Terms of trade	(+)	0.015 (2.00)**	0.004 (0.83)
Terms of trade (one period lag)	(+)	-0.006 (-0.68)	
Terms of trade (two periods lag)	(+)	-0.009 (-1.34)	
Trade-orientedness	(+)	0.639 (1.74)*	2.45 (1.80)*
International organizations:			
SAF/ESAF arrangement one period lag)	(+)	4.86 (1.99)**	1.754 (0.68)
EFF arrangement	(+)	0.68 (1.25)	1.07 (1.88)*
Stand-by arrangement	(+)	0.31 (0.88)	
Number of observations		376	381
R2 adjusted		0.62	0.62

Modelling technique: Panel regressions.

Sample range: 35 Countries, period: 1970-1992.

Columns indicate estimated coefficients (t-statistics).

*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level.

Table A3. Central Government Revenue and Expenditure

Dependent variables:	(Expected Sign)	Revenue	(Expected Sign)	Expenditure
Independent variables:				
Domestic influences:				
Lagged dependent variable	(+)	0.70 (16.0)***	(+)	0.64 (15.1)***
Elections	(.)	-0.22 (-1.09)	(+)	0.39 (1.75)*
Natural catastrophes	(.)	-1.01 (-0.97)	(+)	2.40 (1.54)
International influences:				
Terms of trade (One period lag)	(+)	0.023 (3.25)***	(.)	-0.006 (-1.1)
Trade-orientedness	(+)	1.43 (0.95)	(.)	1.96 (1.47)
Real effective exchange rate	(-)	-0.13 (-1.78)*		
International organizations:				
Fund-supported program	(+)	0.14 (0.39)		
EFF arrangement			(-)	-1.08 (-1.92)*
Number of observations		246		379
R2 adjusted		0.95		0.91

Modelling technique: Panel regressions.

Sample range: 35 Countries, period: 1970-1992.

Columns indicate estimated coefficients (t-statistics).

*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level.

Table A4. Expenditure Composition:
Current and Capital Expenditure as Share of Total Expenditure

Dependent Variables	(Expected Sign)	Current/ Total Expenditure	(Expected Sign)	Capital/ Total Expenditure
Independent variables:				
Domestic influences:				
Lagged dependent variable	(+)	0.69 (16.7)***	(+)	0.66 (16.2)***
Elections	(+/-)	-0.54 (-1.23)	(+/-)	0.66 (2.11)**
External influences:				
Terms of trade	(-)	0.02 (-2.10)**	(+)	0.019 (2.56)**
International organizations:				
SAF/ESAF arrangement	(+)	7.67 (0.71)	(-)	-5.41 (-0.71)
EFF arrangement	(+)	2.34 (1.99)**	(-)	-0.27 (-0.33)
Stand-by arrangement	(+)	-0.16 (-0.19)	(-)	0.90 (-1.57)
Number of observations		380		379
R2 adjusted		0.75		0.77

Modelling technique: Panel regressions
Sample range: 35 Countries, period: 1970-1992
Columns indicate estimated coefficients (t-statistics)
*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level.

Table A5. Government Subsidies and the Wage Bill
as a Share of Current Expenditure

Dependent Variables	(Expected Sign)	Subsidies Over Current Expenditures	Wage Bill Over Current Expenditures
Independent variables:			
Domestic influences:			
Lagged dependent variable	(+)	0.59 (13.7)***	0.58 (12.7)***
Elections	(+)	0.05 (0.18)	0.59 (1.53)
External influences:			
Real effective exchange rate	(+)		0.04 (2.37)**
Exchange arrangement	(+)		2.44 (1.91)*
International organizations:			
IMF-supported program	(-)	-0.18 (-0.42)	
SAF/ESAF arrangement	(-)		0.11 (0.06)
Extended arrangement	(-)		-0.64 (-0.83)
Stand-by arrangement	(-)		0.35 (0.36)
Number of observations		333	320
R2 adjusted		0.83	0.91

Modelling technique: Panel regressions
Sample range: 35 Countries, period: 1970-1992
Columns indicate estimated coefficients (t-statistics)
*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level

Table A6. Fiscal Balance During Program Periods
and Depending on Trade-orientedness

Dependent Variables	(Expected Sign)	<u>Overall Fiscal Balance 2/</u>		<u>Overall</u>
		Less Trade Oriented Economies 2/	More Trade Oriented Economies	<u>Fiscal Balance</u> Program Periods Only 1/
Independent variables:				
Domestic influences:				
Lagged dependent variable	(+)	0.37 (4.91)***	0.75 (14.2)***	0.49 (5.72)***
Elections	(-)	-0.94 (-3.32)***	-0.36 (-0.93)	-0.59 (-1.82)*
Natural catastrophies (cyclone, earthquake, etc.)	(-)	-2.82 (-1.72)*	-10.2 (-3.93)***	0.15 (0.09)
War or civil unrest	(+)			1.48 (1.10)
External influences:				
Terms of trade	(+)	0.03 (2.74)**	0.002 (0.20)	0.031 (1.75)*
Terms of trade (one period lag)	(+)	-0.005 (-.40)	-0.007 (-0.50)	-0.01 (-0.54)
Terms of trade (two periods lag)	(+)	-0.007 (-0.70)	-0.02 (-1.35)	-0.02 (-1.67)*
Trade-orientedness	(+)			-2.68 (-0.79)
International organizations:				
IMF-supported program	(+)	0.07 (0.19)	0.65 (.78)	
Number of observations		193	183	145
R2 adjusted		0.57	0.60	0.55

Modelling technique: Panel regressions

Sample range: 35 Countries, period: 1970-1992

Columns indicate estimated coefficients (t-statistics)

*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level.

1/ Sample limited to program countries and periods.

2/ Trade-oriented versus less trade-oriented countries. The benchmark value separating more and less open economies is $(X+M)/GDP < 0.50$.

Table A7. Overall Fiscal Balance and Cycles
under Fixed versus Flexible Exchange Arrangements

Dependent Variables	(Expected Sign)	Fiscal Balance Flexible Regime	(Expected Sign)	Fiscal Balance Fixed Regime
Independent variables:				
Domestic influences:				
Lagged dependent variable	(+)	0.433 (4.46)***	(+)	0.76 (12.2)***
Elections	(0/-)	-0.41 (-1.18)	(-)	-0.86 (-2.11)**
Catastrophes	(-)	-3.16 (-1.71)*	(-)	-17.3 (-5.03)***
External influences:				
Terms of trade (one period lag)	(+)	0.006 (0.32)	(+)	-0.006 (0.44)
International organizations:				
SAF/ESAF arrangement	(+)	2.30 (0.45)	(+)	14.3 (3.26)***
EFF arrangement	(+)	1.12 (1.67)*	(+)	0.44 (0.24)
Stand-by arrangement	(+)	-0.44 (-0.78)	(+)	0.04 (0.04)
Number of observations		130		164
R2 adjusted		0.50		0.62

Modelling technique: Panel regressions

Sample range: 35 Countries, period: 1970-1992

Columns indicate estimated coefficients (t-statistics)

*(**)[***] Rejection of the null hypothesis on the 90(95)[99] percent level

Dependent and Independent Variables
Considered for Inclusion in Estimations

Variable	Minimum	Maximum	Mean	Data Source <u>1/</u>
Dependent variables				
Real GDP growth	-15.7	28.0	4.4	GFS
Unemployment rate	1.5	31.1	9.2	WEO
Overall deficit before grants as share of GDP	-27.6	24.6	-4.1	GFS
Overall deficit after grants as share of GDP	-27.6	19.9	-3.2	GFS
Revenue as share of GDP	6.8	53.3	20.6	GFS
Expenditure as share of GDP	8.3	62.7	25.0	GFS
Current expenditure as share of total expenditure	36.8	112.1	74.2	GFS
Capital expenditure as share of total expenditure	0.8	56.7	19.2	GFS
Current expenditure as share of GDP	6.5	40.2	18.9	GFS
Capital Expenditure as share of GDP	0.6	19.2	5.0	GFS
Subsidies as share of total expenditure	0.008	43.8	7.4	UN NA/GFS
Subsidies as share of GDP	0.002	8.7	1.4	UN NA/GFS
Government wage bill as share of total expenditure	5.1	70.3	36.2	GFS
Government wage bill as share of GDP	0.9	20.1	6.9	GFS
Independent variables				
Election variable (expansion and contraction)	-1.0	1.0	-0.007	Europa
Election variable (expansion only)	--	1.0	0.2	Europa
Growth in partner countries	-2.2	7.5	2.6	Trade/GFS
Openness (exports plus imports over GDP)	0.1	2.4	0.7	IFS
Terms of Trade	27.3	351.0	121.6	Worldtables
Exchange Arrangements (1=fixed exchange rate)	--	1.0	0.6	IFS
Real Effective Exchange Rates	33.6	283.1	92.8	IFS
Reserves	--	66.0	3.2	IFS
Fund-supported program	--	1.0	0.3	IFS
SAF/ESAF arrangement	--	1.0	0.03	IFS
Stand-by arrangement	--	1.0	0.22	IFS
EFF arrangement	--	1.0	0.06	IFS
Wars	-1.0	--	-0.02	Europa Handbook
Catastrophes (floods, volcanos, cyclones, earth-quakes)	-1.0	--	-0.007	Europa Handbook

1/ WEO = IMF World Economic Outlook; GFS = IMF Government Financial Statistics; IFS = IMF International Financial Statistics; UN NA = United Nations National Accounts; Europa = Europa World Year Book; Trade = IMF Direction of Trade Statistics.

List of Countries Included in the Panel

Countries

Argentina
The Bahamas
Bangladesh
Barbados
Belize
Botswana
Brazil
Costa Rica
Dominican Republic
Ecuador
Fiji
The Gambia
Guatemala
Guyana
India
Korea
Malaysia
Malta
Mauritius
Mexico
Pakistan
Papua New Guinea
Peru
Philippines
Solomon Islands
South Africa
Sri Lanka
St. Kitts and Nevis
St. Lucia
St. Vincent
Thailand
Trinidad and Tobago
Turkey
Uruguay
Venezuela

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