

Playing with Fire: Pre-Electoral Fiscal Manipulation and the Risk of a Speculative Attack

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Abstract:

Pre-electoral fiscal manipulation is a pervasive phenomenon in developing countries. Existing explanations of pre-electoral fiscal manipulation focus primarily on domestic characteristics. I extend this line of inquiry by examining how developing countries' international economic ties influence governments' decisions to engage in pre-electoral fiscal manipulation. In a global economy in which speculative attacks are common, I argue that governments are unlikely to engage in pre-electoral fiscal manipulation when the risk of a speculative attack is high. In particular, when the exchange rate is fixed, governments are less likely to engage in fiscal electioneering when their real exchange rate is highly appreciated or when their foreign exchange reserves are low. In contrast, under a flexible exchange rate, neither a country's real exchange rate nor its reserves affect the government's decision to engage in pre-electoral fiscal manipulation. This argument receives support through a quantitative analysis of government budget balances in 97 developing countries from 1975 to 2005.

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Governments are more likely to be reelected in economic good times.¹ Pre-electoral fiscal manipulation—spending more or taxing less prior to an election—is a powerful policy tool that governments may employ to increase the strength of the economy in the run up to the election. Recent studies have found that pre-electoral fiscal manipulation is a pervasive phenomenon in developing countries, suggesting that in these countries the likelihood that fiscal manipulation will be punished electorally is low and governments’ desire to remain in office is high.² Despite widespread recognition of the impact of the international environment on developing countries’ fiscal policies,³ little attention has been paid to how developing countries’ international economic ties constrain governments’ decision to engage in fiscal manipulation.⁴ In a global economy in which speculative currency attacks are an increasingly common and costly feature,⁵ I argue that governments are less likely to engage in pre-electoral fiscal manipulation when their country is at risk of a speculative attack.

Countries that maintain fixed exchange rates are vulnerable to speculative currency attacks. Speculative attacks occur when speculators sell the country’s currency, putting pressure on the government to either defend or abandon its exchange rate peg. Either option is politically costly for governments in the run-up to an election. Defending a fixed exchange rate generally requires tightening monetary policy, thereby reducing economic growth, while abandoning the exchange rate peg results in a sharp drop in the

¹ Lewis-Beck and Stegmaier 2008.

² Brender and Drazen 2005, Shi and Svensson 2006.

³ Mosley 2003, Wibbels 2006.

⁴ One exception is Hyde and O’Mahony 2010, which examines how international economic scrutiny reduces the likelihood that governments in developing countries will engage in pre-electoral fiscal manipulation.

⁵ Leblang 2002, Walter 2009.

country's purchasing power, an increase in the country's foreign debt burden, and a loss of government credibility as it reneges on its promise to maintain its exchange rate value.

Speculative attacks are most common when a country's real exchange rate is highly appreciated or its foreign exchange reserves are low.⁶ Under a fixed exchange rate, fiscal manipulation increases the risk of a speculative attack by appreciating the real exchange rate.⁷ Because a speculative attack may occur rapidly in response to an increase in government expenditures, pre-electoral fiscal manipulation may not simply require a post-electoral fiscal correction, but may also increase the risk of a pre-electoral speculative attack. Thus, I expect that governments are unlikely to engage in fiscal electioneering when the risk of a speculative attack is high. I argue that under a fixed exchange rate, governments are less likely to engage in fiscal manipulation when their real exchange rate is highly appreciated or when their foreign exchange reserves are low. In contrast, because flexible exchange rate regimes do not face the risk of a speculative attack, under a flexible exchange rate, neither a country's real exchange rate nor its level of reserves should affect the government's decision to engage in fiscal electioneering.

This argument stands in stark contrast to existing studies of pre-electoral fiscal manipulation that focus predominantly on domestic factors, as well as to the few studies that consider the effect of international ties on pre-electoral fiscal manipulation. Most prominently, William Roberts Clark and Mark Hallerberg argue that because fiscal policy

⁶ Frankel and Saravelos 2010. A country's real exchange rate is appreciated when the nominal value of the country's currency is relatively greater than that indicated by the country's purchasing power; i.e., the country's nominal exchange rate is overvalued.

⁷ Beetsma, Giuliodori, and Klaassen 2007 argue that increased government expenditures lead to an appreciation of the real exchange rate through an increase in domestic prices vis-à-vis international prices. Bénétrix and Lane 2009 find that the real exchange rate appreciation associated with an increase in government expenditure under a fixed exchange rate occurs rapidly.

under a flexible exchange rate is less effective in a world of international capital mobility, governments are less likely to engage in fiscal expansion under a flexible exchange rate than a fixed exchange rate.⁸ Clark and Hallerberg's argument focuses on government demand for fiscal manipulation and their empirical work considers fiscal manipulation in developed countries. This paper instead focuses on the constraints imposed on developing countries by the risk of a speculative attack, and suggests that pre-electoral fiscal manipulation is more likely under a flexible exchange rate than under a fixed exchange rate.

The argument developed in this paper is tested through a quantitative analysis of pre-electoral fiscal manipulation in 97 developing countries from 1975 to 2005. Based on this analysis, when a country's exchange rate is fixed, governments appear to engage in pre-electoral fiscal manipulation only when the risk of a speculative attack is low, i.e. when foreign exchange reserves are high and the real exchange rate is relatively depreciated. In contrast, under a flexible exchange rate, governments appear to engage in pre-electoral fiscal manipulation regardless of their country's level of foreign exchange reserves or the value of its real exchange rate.

Argument

Previous research has found that pre-electoral fiscal manipulation is widely employed prior to democratically contested elections in developing countries. Explanations for why incumbents are so likely to engage in fiscal electioneering focus on domestic characteristics, and scholars have shown that fiscal manipulation is more likely

⁸ Clark and Hallerberg 2000.

the less consolidated the democracy,⁹ the less transparent the political system,¹⁰ the less independent the media,¹¹ the less aware the voters,¹² the larger the benefits from holding office,¹³ and the poorer the country.¹⁴ These studies suggest that the high cost of losing office coupled with low levels of oversight create an environment in which fiscal manipulation is a relatively effective, low-risk strategy for increasing governments' chances for reelection.

This economic literature comports well with comparative politics studies of political systems in developing countries. Developing countries tend to have weak, volatile party systems in which neither voters nor politicians exhibit strong party affiliations.¹⁵ Low partisan attachment increases electoral volatility, increasing governments' uncertainty about their reelection chances. This uncertainty is exacerbated by governments' inability to rely on parties or parties' platforms to attract voters.¹⁶ As a result, governments in developing countries are dependent on voters' retrospective judgments to win reelection, and thus have a strong desire to engage in fiscal electioneering.¹⁷ Governments' desire to engage in fiscal manipulation in developing countries is coupled with their low probability of getting 'caught' manipulating the economy. Democracies in developing countries tend to be weakly institutionalized, with

⁹ Gonzalez 2002.

¹⁰ Alt and Lassen 2006.

¹¹ Brender 2003.

¹² Brender and Drazen 2005.

¹³ Shi and Svensson 2006.

¹⁴ Schuknecht 2000.

¹⁵ Mainwaring 1999.

¹⁶ Keefer 2007.

¹⁷ Lewis-Beck and Stegmaier 2008.

low levels of transparency, making it difficult to observe economic manipulation.¹⁸ Even if economic manipulation were observed, it is less likely that voters would find out. As Simeon Djankov and co-authors find, media are highly likely to be controlled by the state in developing countries, and hence, are unlikely to expose government electioneering.¹⁹

Thus, the domestic political environment in which democratically contested elections are held in developing countries increases governments' desire to engage in fiscal manipulation. However, governments in developing countries are subject not only to domestic political pressures, but to international economic pressures as well. In an environment of international capital mobility, governments that adopt fixed exchange rates must also consider whether pre-electoral fiscal manipulation will trigger a speculative attack on their country's currency.

During a speculative attack, market actors sell domestic currency, lowering demand for the country's currency and increasing pressure on the government to devalue. Speculative attacks occur when market actors believe that governments cannot or will not maintain the fixed value of their currency. Thus, speculative attacks are only a risk for countries that maintain fixed exchange rates.

For governments that adopt a fixed exchange rate, abandoning their exchange rate peg can be very costly. Politically, an abandoned peg is tantamount to a broken promise, and a tacit admission of deteriorating economic conditions.²⁰ Economically, devaluation increases the cost of imports, puts upward pressure on inflation, and increases the country's foreign debt burden. These costs to consumers do not appear to be quickly

¹⁸ Rose and Shin 2001.

¹⁹ Djankov, et al 2003.

²⁰ Sattler and Walter 2010.

offset by competitiveness gains to the tradables sector. As Jeffrey Frankel finds, devaluations tend to erode economic growth in developing countries.²¹

The costs of devaluation become more acute politically as elections approach.²² Governments that devalue their exchange rate in the run-up to an election are much more likely to lose office.²³ As a result, governments are less likely to devalue their exchange rate before an election.²⁴ Concomitantly, real exchange rate appreciation also increases prior to elections. In fact, some scholars have argued that real exchange rate appreciation in the run-up to an election is not simply the result of a postponed devaluation, but a policy goal in its own right.²⁵ An appreciated currency increases consumers' purchasing power, weakens inflationary pressures and may spur economic growth.²⁶

However, real exchange rate appreciation should be appreciated in small doses. Highly overvalued exchange rates entail a stark risk of a speculative attack. As the real exchange rate appreciates, the sustainability of the exchange rate peg is undermined. Moreover, the economic cost of an exchange rate defense increases as the real exchange rate appreciates, and governments' commitment to maintaining their peg is called into question as "markets react to real or anticipated inconsistencies between macroeconomic policy and the exchange rate parity".²⁷ Market uncertainty is exacerbated before elections as governments' time horizons, and thus potentially their commitment to long run

²¹ Frankel 2005. The economic costs of devaluation are felt under flexible exchange rates as well. However, the short-term devaluation associated with abandoning an exchange rate peg is much larger than generally occurs under a flexible exchange rate.

²² Frieden, Ghezzi and Stein 2001.

²³ Cooper 1971, Frankel 2005, Walter 2009.

²⁴ See Stein and Streb 2004 for a review.

²⁵ Stein and Streb 2004, Stein, Streb and Ghezzi 2005, Bonomo and Terra 2005.

²⁶ van der Ploeg 1989.

²⁷ Leblang 2005, 182.

exchange rate stability, shrink. As a result, speculative attacks are more likely around elections.²⁸ Therefore, governments' desire for an appreciated currency prior to an election will be offset by their desire to maintain their exchange rate peg.

Thus, governments' desire to engage in macroeconomic policies that result in an appreciation of their real exchange rate should be inversely related to the value of the country's real exchange rate. When the real exchange rate is highly appreciated, the government should be less likely to adopt policies that will further appreciate the currency. In particular, under a fixed exchange rate, pre-electoral fiscal manipulation is likely to cause rapid real exchange rate appreciation, increasing the likelihood of a pre-electoral speculative attack.²⁹ As a result, under a fixed exchange rate, the more overvalued the currency, the less likely that governments will engage in pre-electoral fiscal manipulation. In contrast, for governments with a flexible exchange rate, the decision to engage in fiscal electioneering should be unrelated to the likelihood of a speculative attack, and thus unrelated to the value of the real exchange rate. This leads to Hypothesis 1.

H₁: Under a fixed exchange rate, pre-electoral fiscal manipulation is negatively correlated with the level of real exchange rate appreciation.

Speculative attacks are not simply a function of a country's macroeconomic fundamentals. Although speculative attacks are more likely when market actors believe

²⁸ Leblang 2002, 2003, Walter 2009.

²⁹ See footnote 7. Bonomo and Terra 2005 and Stein and Streb 2004 model pre-electoral real exchange rate appreciation resulting from a pre-electoral increase in expenditures or decrease in taxation respectively.

the exchange rate peg is unsustainable, they are less likely when markets believe the government can successfully defend its currency against a speculative attack. In particular, the deeper the country's supply of foreign exchange reserves, the longer the country can withstand a speculative attack. Larger holdings of reserves, by tying up a larger share of the country's financial assets, are also a costly signal of the country's commitment to maintain its fixed exchange rate. Thus, speculators are more likely to be deterred as a country's foreign exchange reserves increase.³⁰ As a result, countries increase their holdings of foreign exchange reserves as a form of self-insurance,³¹ and David Leblang finds that democracies amass reserves as a 'war chest' to fend off speculative attacks.³² The policy flexibility that reserves purchase should be particularly important for governments in the run-up to an election. By reducing the likelihood of a speculative attack, large foreign exchange reserves should increase governments' ability to engage in fiscal manipulation under a fixed exchange rate. For governments with a flexible exchange rate, pre-electoral fiscal manipulation should be unrelated to the level of reserves. This leads to Hypothesis 2.

H₂: Under a fixed exchange rate, pre-electoral fiscal manipulation is positively correlated with foreign exchange reserves.

The value of a country's real exchange rate and its level of foreign exchange reserves jointly affect a country's risk of a speculative attack. A speculative attack is

³⁰ Frankel and Saravelos 2005, Leblang 2002, 2003, and Walter 2009.

³¹ Aizenman and Lee 2007.

³² Leblang 2005.

most likely when the real exchange rate is appreciated and foreign exchange reserves are low, and least likely when the real exchange rate is depreciated and reserves are high. However, when the real exchange rate is perceived to be overvalued, increasing reserves may be insufficient to stave off a speculative attack.³³ Similarly, when a country's foreign exchange reserves are low, relatively low levels of exchange rate appreciation may trigger a speculative attack.³⁴ Thus, either low foreign exchange reserves or an appreciated real exchange rate may be sufficient to increase the risk of a speculative attack. As a result, governments under a fixed exchange rate should be most likely to engage in pre-electoral fiscal manipulation when both its foreign exchange reserves are high and its real exchange rate value is depreciated. Governments should be less likely to engage in fiscal manipulation when either their real exchange rate is highly appreciated or when their foreign exchange reserves are low. This leads to Hypothesis 3.

H₃: Under a fixed exchange rate, pre-electoral fiscal manipulation is most likely when both the value of the real exchange rate is depreciated and the level of foreign exchange reserves is high.

Empirical Analysis

This section explores the hypotheses presented above with a quantitative analysis of fiscal manipulation in 97 developing countries, 1975-2005.³⁵ The results are consistent

³³ Wyplosz 2008.

³⁴ Obstfeld 1996.

³⁵ The Online Appendix, available at http://_____, includes the list of countries included in the analyses, descriptive statistics for the variables included in the analyses, and all referenced robustness tests.

with the hypotheses. Under a fixed exchange rate, pre-electoral fiscal manipulation is greatest when the real exchange rate is depreciated and foreign exchange reserves are high. When either the real exchange rate is highly appreciated or reserves are low, there is less evidence of pre-electoral fiscal manipulation. In contrast, under a flexible exchange rate, pre-electoral fiscal manipulation is not associated with a country's real exchange rate value or its level of foreign exchange reserves.

The baseline model adopted here is similar to Adi Brender and Allan Drazen's analysis of fiscal manipulation.³⁶ This model was chosen for two reasons. First, findings from Brender and Drazen's and Min Shi and Jakob Svensson's analyses represent the alternative hypothesis—that developing countries engage in pre-electoral fiscal manipulation regardless of the risk of a speculative attack.³⁷ Second, Brender and Drazen adopt a well-accepted array of controls for fiscal policy analyses in developing countries. The estimation technique used is ordinary least squares regression with country and year fixed effects, which limits the analysis to short-term, within-country variation.³⁸

The dependent variable, *Government Balance*, represents the central government's fiscal balance as a percent of GDP. It is positive (negative) when the current year's budget is in surplus (deficit). Fiscal manipulation should be inversely related to *Government Balance*—the more manipulation, the larger the government's budget deficit or the smaller the government's budget surplus will be. Data for *Government Balance*

³⁶ Brender and Drazen 2005

³⁷ Shi and Svensson 2006

³⁸ Results are almost identical when an Arellano-Bond linear dynamic panel model with robust standard errors is used.

come from two sources—the International Monetary Fund’s *International Financial Statistics* and Brender and Drazen.³⁹

The analyses include a series of economic and demographic control variables.⁴⁰ Richer countries, countries with strong economic growth, and countries that trade a lot tend to run smaller budget deficits; thus, I expect *GDP per capita*, *GDP Growth* and *Trade* will be positive. *Population between 15 and 64* represents the fraction of the population presumed to be of working age. The greater the working age population, the greater the tax base, all else equal. In contrast, the greater the *Population 65 and above*, the greater the demand for government expenditures. Finally, *Government Balance (lagged)* is included to control for temporal dependence in the dependent variable.

Election data are from Susan Hyde and Nikolay Marinov’s database on elections for national office in developing countries.⁴¹ The theory developed in the previous section presupposes that holding an election implies some risk that the incumbent will give up power. In some elections, however, opposition is banned or otherwise restricted. To exclude elections that are a priori uncompetitive, *Election* is coded from three questions in the Hyde and Marinov data: Was opposition allowed? Was more than one party legal? Was there a choice of candidates on the ballot? *Election* is coded 1 if the

³⁹ The IMF publishes information on government fiscal balance in its *International Financial Statistics* 2007. However, not all countries’ government balance data are included therein. Brender and Drazen 2005 augment these data based on other IMF publications. To test for systematic bias caused by splicing two data sources, I re-run the analyses using each data source separately. The results are comparable but with larger standard errors reflecting the smaller sample sizes.

⁴⁰ Data for *GDP per capita* (logged), *GDP Growth*, *Trade*--(Imports + Exports)/GDP, *Population between 15 and 64*, and *Population 65 and above* from World Bank 2009.

⁴¹ The sample of countries is determined by countries’ inclusion in Hyde and Marinov 2010. These countries are defined as developing countries that hold elections but that are not already considered to be consolidated democracies.

answer to all three questions is “yes” and 0 otherwise, generating a set of 426 elections in which competition is possible.⁴²

Model 1 in Table 1 shows that, on average, elections are associated with a 0.5 percentage point decline in *Government Balance*. This is consistent with previous findings of pre-electoral fiscal manipulation in developing countries, and supports the alternative hypothesis that developing countries engage in pre-electoral fiscal manipulation without regard to the risk of a speculative attack. Turning to the non-election variables, a budget surplus is associated with a budget improvement in the previous year, higher economic growth, and higher trade openness.

[Table 1 about here]

The argument developed in the previous section suggests that governments engage in pre-electoral fiscal manipulation differentially under fixed and flexible exchange rate regimes. For governments under fixed exchange rates, the attractiveness of fiscal manipulation as a tool for improving governments’ chances of reelection is offset by the risk of a speculative attack. Thus, when the exchange rate is fixed, governments only engage in fiscal manipulation when the risk of a speculative attack is low. In contrast, when the exchange rate is flexible, governments do not face the risk of a speculative attack, and thus, concern over a speculative attack does not affect governments’ decision to engage in fiscal electioneering.

⁴² This analysis focuses on electoral competition, rather than quality of democracy. This raises the concern that the results may be driven by the inclusion of elections held in non-democratic countries. To examine this, I re-run the analysis excluding all observations in which the country received a POLITY score below zero on a -10 to 10 scale (Marshall and Jaggers 2002). These results provide support for the hypotheses developed in this paper.

A blunt implication of this argument is that on average, pre-electoral fiscal manipulation is higher under a flexible exchange rate than under a fixed exchange rate. To test this, I examine pre-electoral fiscal manipulation under fixed and flexible exchange rates. Exchange rate data are from Carmen Reinhart and Kenneth Rogoff.⁴³ Reinhart and Rogoff code exchange rate regimes based both on how flexible countries say their exchange rate is and how flexible it is in reality.⁴⁴ Based on their categorization, *Fixed Exchange Rate* is coded 1 if exchange rate fixity ranges from ‘no separate legal tender’ to ‘*de facto* crawling band that is narrower than or equal to +/-2%’. All regimes that exhibit more flexibility are coded 0.⁴⁵

In Model 2, *Election* is bifurcated by exchange rate regime.⁴⁶ There is statistically significant evidence of pre-electoral fiscal manipulation under both types of exchange rate regime. However, under a flexible exchange rate, an election is associated with a one percentage point fall in *Government Balance*, which is more than twice the size of the decline in *Government Balance* under a fixed exchange rate. Moreover, the difference between these two effects is statistically significant at the 93% level. Based on these results, governments appear to engage in less pre-electoral fiscal manipulation under a fixed exchange rate than under a flexible exchange rate.

⁴³ Reinhart and Rogoff 2004.

⁴⁴ An assessment of *de facto* versus *de jure* exchange rate measures is presented in the Online Appendix.

⁴⁵ Sixty percent of observations are coded as fixed exchange rate regimes. Results are almost identical if ‘managed floating’ regimes are coded as fixed rather than flexible regimes, or if observations in which a country’s exchange rate regime differs from the previous or subsequent year are excluded.

⁴⁶ Bifurcating *Election* by *Fixed Exchange Rate* and including *Fixed Exchange Rate* as a control is an identical model specification to an interaction between *Election* and *Fixed Exchange Rate* (presented in the Online Appendix), but is more easily interpretable.

These results stand in contrast to Clark and Hallerberg's prediction that governments only engage in fiscal manipulation under fixed exchange rates.⁴⁷ Examining pre-electoral fiscal manipulation in developed countries, Clark and Hallerberg argue that because fiscal policy under a flexible exchange rate is ineffective in a world of international capital mobility, governments do not engage in fiscal expansion under a flexible exchange rate. However, given developing countries' greater desire to engage in pre-electoral fiscal manipulation, if fiscal manipulation is less effective rather than ineffective under a flexible exchange rate, then governments may engage in more fiscal manipulation under a flexible exchange rate to accomplish the same improvement in their chances for reelection.⁴⁸ If the differential effectiveness of fiscal policy under alternative exchange rate regimes is the explanation for the results in Model 2, then taking into account a country's real exchange rate and its foreign reserves should have no effect on pre-electoral fiscal manipulation, and there should be no support for Hypotheses 1-3.

To test Hypothesis 1, that under a fixed exchange rate, pre-electoral fiscal manipulation is lower the more appreciated the real exchange rate, Model 3 includes two-way interactions between *Real Exchange Rate* and both *Election under a Fixed Exchange Rate* and *Election under a Flexible Exchange Rate*. *Real Exchange Rate* data are from Penn World Tables.⁴⁹ *Real Exchange Rate* is a measure of exchange rate undervaluation.

⁴⁷ Clark and Hallerberg 2000.

⁴⁸ O'Mahony forthcoming. Under the Mundell-Fleming model, fiscal policy will only be fully ineffective when capital is completely mobile internationally.

⁴⁹ Following Rodrik 2008, I use the variable 'p' from Penn World Tables 6.3 (Heston, Summers and Aten 2009) as a measure of real exchange rate value. Two concerns arise with this measure. First, the data are not normally distributed. To account for this, I re-run the analyses with *Real Exchange Rate (ln)*. Second, based on the Balassa-Samuelson effect, *Real Exchange Rate* may produce systematically biased estimates of the level of real exchange rate appreciation for poor countries. Rodrik 2008 proposes an alternative

Thus, lower values of *Real Exchange Rate* capture greater real exchange rate appreciation. As *Real Exchange Rate* increases, the real exchange rate depreciates. Thus if Hypothesis 1 is correct, pre-electoral fiscal manipulation should increase (*Government Balance* should decline) as *Real Exchange Rate* increases. To better gauge support for Hypothesis 1, Figure 1 graphically displays the results from Model 3 of the marginal effect of an election on *Government Balance* as *Real Exchange Rate* varies from its 10th to its 90th percentile under fixed and flexible exchange rates.

[Figure 1 about here]

Based on these results, Model 3 provides support for Hypothesis 1. When a country's real exchange rate is highly appreciated (at low values of *Real Exchange Rate*), there is no evidence of pre-electoral fiscal manipulation under a fixed exchange rate. When the real exchange rate is relatively depreciated, governments appear to engage in greater pre-electoral fiscal manipulation.⁵⁰ At the 90th percentile of *Real Exchange Rate*, an election under a fixed exchange rate is associated with a 0.7 percentage point decline in *Government Balance*.⁵¹ In contrast, under a flexible exchange rate, governments appear to engage in pre-electoral fiscal manipulation regardless of the value of the real exchange rate. These results suggest that when the risk of a speculative attack is high, as

measure that corrects for the Balassa-Samuelson effect by regressing *Real Exchange Rate (ln)* on *GDP per capita*, and coding *Undervaluation* as the difference between *Real Exchange Rate (ln)* and the predicted values from the regression. The results from both alternative measures provide support for the argument.

⁵⁰ The effect of an election on *Government Balance* is statistically significant when *Real Exchange Rate* is greater than 0.35, which represents sixty-two percent of the observations under a fixed exchange rate.

⁵¹ This result needs to be interpreted with some caution as the difference between the effect of an election when *Real Exchange Rate* is at its 10th percentile versus its 90th percentile is only statistically significant at 0.72. If Hypothesis 3 is correct, this may reflect the exclusion of a country's reserves from consideration.

captured by an appreciated real exchange rate under a fixed exchange rate regime, governments do not engage in pre-electoral fiscal manipulation. When the risk of a speculative attack is low—when the exchange rate is flexible, or, if the exchange rate is fixed, when the real exchange rate is relatively depreciated—governments do engage in fiscal electioneering.

To test Hypothesis 2, Model 4 includes two-way interactions between *Reserves* and both *Election under a Fixed Exchange Rate* and *Election under a Flexible Exchange Rate*. *Reserves* are foreign exchange reserves divided by money supply (M1).⁵² If Hypothesis 2 is correct, then pre-electoral fiscal manipulation should increase as *Reserves* increase. Figure 2 graphically displays the marginal effect of an election under fixed and flexible exchange rates on *Government Balance* as *Reserves* varies from its 10th to its 90th percentile. As Figure 2 depicts, there is support for Hypothesis 2. When the exchange rate is fixed there is no evidence of pre-electoral fiscal manipulation when *Reserves* are low. As *Reserves* increase, elections are associated with a statistically significant decline in *Government Balance*.⁵³ When *Reserves* are at their 90th percentile, an election is associated with a 0.6 percentage point decline in *Government Balance*. In contrast, *Reserves* do not appear to be significantly related to pre-electoral fiscal manipulation when the exchange rate is flexible. Under a flexible exchange rate, elections are associated with about a one percentage point decline in *Government Balance* regardless of a country's level of foreign exchange reserves.

⁵² World Bank 2009. Results are almost identical when *Reserves in Months of Imports* or *Reserves as a Percent of GDP* is used instead.

⁵³ The difference in the effect of an election on *Government Balance* under a fixed exchange rate as *Reserves* increases from its 10th to its 90th percentile is statistically significant at 0.97. The effect of an election is significant when *Reserves* is greater than 0.68, which represents 55% of observations under a fixed exchange rate.

[Figure 2 about here]

Although Models 3 and 4 provide support for Hypotheses 1 and 2, if the effects of a country's real exchange rate value and level of reserves on pre-electoral fiscal manipulation under a fixed exchange rate are interrelated as suggested in Hypothesis 3, then Models 3 and 4 are improperly specified. To test Hypothesis 3, that under a fixed exchange rate, pre-electoral fiscal manipulation is most likely when a country's real exchange rate is not highly appreciated and its reserves are high, Model 5 includes a three-way interaction between *Real Exchange Rate*, *Reserves*, and *Election under a Fixed Exchange Rate*.⁵⁴ These results are presented graphically in Figure 3.

[Figure 3 about here]

Figure 3 provides strong support for Hypothesis 3. Under a fixed exchange rate, governments only appear to engage in pre-electoral fiscal manipulation when foreign exchange reserves are high and the real exchange rate is not highly appreciated. When *Reserves* are low (10th percentile), there is not a statistically significant relationship between elections and *Government Balance*, regardless of the level of *Real Exchange Rate*. Similarly, when *Real Exchange Rate* is low (10th percentile), there is not a significant relationship between elections and *Government Balance*, regardless of the level of *Reserves*. In contrast, when *Reserves* are high (90th percentile), pre-electoral fiscal manipulation increases as *Real Exchange Rate* increases.⁵⁵ Similarly, when *Real*

⁵⁴ *Election under a Flexible Exchange Rate* captures the average effect of an election on *Government Balance* when the exchange rate is flexible. A three-way interaction between *Real Exchange Rate*, *Reserves*, and *Election under a Flexible Exchange* is reported in the Online Appendix.

⁵⁵ When *Reserves* is at its 90th percentile, increasing *Real Exchange Rate* from its 10th to its 90th percentile is associated with a 1.2 percentage point decline in *Government Balance*, an effect that is significant at 0.85.

Exchange Rate is high (90th percentile), pre-electoral fiscal manipulation increases as *Reserves* increase.⁵⁶

These results present a sharply different picture than that depicted in previous research. Far from governments in developing countries engaging unconditionally in pre-electoral fiscal manipulation, these results suggest that for developing countries under a fixed exchange rate, pre-electoral fiscal manipulation may be a tool that governments use relatively infrequently. Figure 4 presents a two-way scatterplot of *Real Exchange Rate* and *Reserves* for country-year observations under a fixed exchange rate analyzed in Model 5. Based on this sample, only 26 percent of observations fall within the range of *Real Exchange Rate* and *Reserves* in which an election is associated with a statistically significant decline in *Government Balance*. These results suggest that when governments are concerned about the risk of a speculative attack, either due to an appreciated real exchange rate, or a low level of reserves, governments are less likely to engage in pre-electoral fiscal manipulation.

[Figure 4 about here]

After controlling for the effect of *Real Exchange Rate* and *Reserves*, the difference between pre-electoral fiscal manipulation under fixed and flexible exchange rates found in Model 2 disappears. This can be seen in Figure 5 Panel A, which compares the marginal effect of an election on *Government Balance* under a flexible exchange rate with the marginal effects of an election under a fixed exchange rate when *Real Exchange Rate* and *Reserves* are set at their 10th and 90th percentiles. Under a fixed exchange rate,

⁵⁶ When *Real Exchange Rate* is at its 90th percentile, increasing *Reserves* from its 10th to its 90th percentile is associated with a 1 percentage point decline in *Government Balance*, an effect that is significant at 0.99.

when *Real Exchange Rate* and *Reserves* are both at their 90th percentiles (when the risk of a speculative attack is low), an election is associated with a 1.2 percentage point decline in *Government Balance*. This effect is not significantly different from the 0.9 percentage point decline associated with an election under a flexible exchange rate.

[Figure 5 about here]

Although the results from Model 5 provide support for the argument that governments engage in pre-electoral fiscal manipulation when the risk of a speculative attack is relatively low, these results may also support alternative explanations. First, a depreciated real exchange rate and high foreign exchange reserves may be a proxy for good economic conditions. As Ernesto Talvi and Carlos Végh find, fiscal policy in developing countries is highly procyclical.⁵⁷ Therefore, unlike in developed countries where fiscal manipulation is more likely when the economy is weak, governments in developing countries may only have the fiscal wherewithal to engage in pre-electoral fiscal manipulation when the economy is relatively strong. To assess this argument, an interaction between *GDP Growth* and *Election under a Fixed Exchange Rate* is included in Model 6 in Table 2. If this alternative explanation is correct, then the negative effect of an election on *Government Balance* should increase as *GDP Growth* increases, and the relationship between elections, exchange rate value and reserves should disappear. As can be seen in Figure 5 Panel B, this is not the case. *GDP Growth* does not appear to affect pre-electoral fiscal manipulation. Fiscal electioneering appears largest under a depreciated real exchange rate and high foreign exchange reserves.

[Table 2 about here]

⁵⁷ Talvi and Végh 2005.

Second, although the absence of pre-electoral fiscal manipulation under a fixed exchange rate when the real exchange rate is appreciated or foreign exchange reserves are low may not directly reflect economic bad times, it may reflect governments' disinclination to engage in fiscal electioneering when facing the international economic scrutiny that accompanies International Monetary Fund programs—programs that governments are more likely to be under when economic times are bad.⁵⁸ Model 7 includes an interaction between *IMF Agreement*, which is coded 1 when a country is under an IMF agreement and 0 otherwise,⁵⁹ and *Election under a Fixed Exchange Rate* to test this argument. As depicted in Figure 5 Panel C, this argument does not receive support.

Third, countries that trade more are likely to have a more depreciated real exchange rate to maintain their international competitiveness and high reserves to facilitate their trade transactions. Countries that are highly exposed to trade may also be more exposed to international economic volatility, which in turn may reduce the government's certainty about the strength of the economy prior to the election.⁶⁰ If so, then greater fiscal manipulation when the real exchange rate is less appreciated and reserves are high may reflect not the low risk of a speculative attack, but rather greater demand for fiscal electioneering in open economies. To assess this argument, Model 8 includes an interaction between *Trade* and *Election under a Fixed Exchange Rate*. As can be seen in Figure 5 Panel D, this explanation does not receive support. Election-year *Government*

⁵⁸ Hyde and O'Mahony 2010.

⁵⁹ Data on IMF program participation are from Vreeland 2003. IMF program participation post-2000 was provided by James Vreeland.

⁶⁰ Kose, Prasad, and Terrones 2006.

Balance declines most sharply when the exchange rate is less appreciated and reserves are high, even after controlling for trade openness.

Fourth, in the post-Bretton Woods period, individual countries have attempted to reduce capital mobility, and by weakening the economy's ties with international capital markets, lower capital mobility may increase governments' scope for fiscal policy. To assess whether the results from Model 5 reflect variation in capital mobility rather than variation in the risk of a speculative attack, Model 9 includes an interaction between Menzie Chinn and Hiro Ito's *Capital Openness* measure and *Election under a Fixed Exchange Rate*.⁶¹ As shown in Figure 5 Panel E, this explanation does not receive support.

Finally, the results from Model 5 may capture differences in countries' quality of democracy. Pre-electoral fiscal manipulation may be a more important policy option for governments in more democratic regimes with fewer extra-legal tools for influencing election results. Democracies also tend to have larger foreign exchange reserves. Thus, a more depreciated currency and higher reserves may serve as a proxy for level of democracy. To assess this argument, Model 10 includes an interaction between *POLITY* and *Election under a Fixed Exchange Rate*.⁶² As shown in Figure 5 Panel F, there is no support for this alternative explanation. After controlling for quality of democracy, pre-electoral fiscal manipulation remains highest when *Real Exchange Rate* and *Reserves* are both high.

⁶¹ Chinn and Ito 2008.

⁶² *POLITY* is coded as the 21 point *POLITY* scale (Marshall and Jaggers 2002).

Conclusion

As international capital mobility has increased, so too has the risk of speculative currency attacks. For developing countries, the heightened risk of a speculative attack may cause governments considering fiscal manipulation as a tool to increase their chances of reelection to reconsider their options. Governments increase their chances of reelection by engineering a strong economy, and when the exchange rate is fixed, by maintaining their exchange rate peg. This research suggests that when these two goals come into conflict, governments often forgo pre-electoral fiscal manipulation in an effort to stave off an attack on their exchange rate.

Under a fixed exchange rate, engaging in fiscal manipulation may increase the risk of a speculative attack, first by increasing real exchange rate appreciation, and second by signaling to international capital markets that the government's commitment to maintaining its exchange rate peg is faltering. For governments that face a low risk of a speculative attack, the increased risk created by fiscal manipulation may be unimportant. However, as the risk of a speculative attack increases, either with a highly appreciated exchange rate or a low level of reserves, pre-electoral fiscal manipulation will become a less attractive policy option.

The empirical analysis presented here provides support for this argument. Under a fixed exchange rate, governments appear to engage in pre-electoral fiscal manipulation only when the risk of a speculative attack is low, as captured by low real exchange rate appreciation and high foreign exchange reserves. When the exchange rate is flexible, neither a country's real exchange rate nor its reserves significantly affects the government's decision to engage in pre-electoral fiscal manipulation. These results,

which suggest that pre-electoral fiscal manipulation is constrained by countries' international economic ties, stand in sharp contrast to previous research that argues that pre-electoral fiscal manipulation is widespread in developing countries. They are also starkly different from research on pre-electoral fiscal manipulation in developed countries, which finds that governments are more likely to engage in fiscal electioneering under a fixed exchange rate than under a flexible exchange rate.

Although governments in developing countries may have a stronger desire to engage in pre-electoral fiscal manipulation than governments in developed countries, the constraining effect of developing countries' international economic ties may be stronger as well.

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Table 1. Pre-Electoral Fiscal Manipulation and the Risk of a Speculative Attack

	Model 1	Model 2	Model 3	Model 4	Model 5
Election	-0.52 (0.19) **				
Election under Fixed ER		-0.41 (0.20) *	0.11 (0.51)	-0.18 (0.22)	-0.67 (1.05)
Election under Fixed ER x RER			-1.26 (1.17)		0.86 (2.21)
Election under Fixed ER x Reserves				-0.23 (0.10) *	0.68 (0.90)
Election under Fixed ER x RER x Reserves					-1.86 (1.67)
Election under Flexible ER		-1.01 (0.32) **	-0.54 (0.58)	-1.16 (0.48) *	-0.94 (0.34) **
Election under Flexible ER x RER			-0.95 (0.87)		
Election under Flexible ER x Reserves				0.19 (0.33)	
Fixed Exchange Rate (ER)		-0.09 (0.46)	1.31 (1.21)	-0.80 (0.57)	1.65 (1.58)
Real Exchange Rate (RER)			0.37 (0.49)		1.02 (1.39)
Reserves				-0.37 (0.26)	-0.23 (0.92)
RER x Reserves					-0.24 (2.34)
Fixed ER x RER			-3.26 (2.72)		-5.66 (3.30) ^
Fixed ER x Reserves				0.63 (0.24) **	-0.08 (1.05)
Fixed ER x RER x Reserves					1.43 (2.36)
Change in Government Balance (lagged)	0.39 (0.10) **	0.37 (0.11) **	0.37 (0.11) **	0.37 (0.11) **	0.37 (0.11) **
GDP Growth	0.06 (0.03) *	0.05 (0.03) ^	0.06 (0.03) *	0.04 (0.03)	0.04 (0.03)
GDP per capita	-0.41 (0.90)	-0.19 (0.99)	-0.11 (0.98)	0.07 (0.96)	0.27 (0.94)
Trade	0.04 (0.01) **	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01) *
Population between 15 and 64	0.15 (0.10)	0.12 (0.11)	0.13 (0.12)	0.11 (0.11)	0.11 (0.11)
Population 65 and above	-0.49 (0.30) ^	-0.37 (0.32)	-0.21 (0.33)	-0.30 (0.31)	-0.12 (0.34)
Constant	-6.73 (5.57)	-6.70 (6.29)	-7.60 (6.11)	-6.90 (6.52)	-8.39 (5.88)
R2	0.52	0.51	0.51	0.52	0.53
Observations	1850	1648	1647	1521	1521

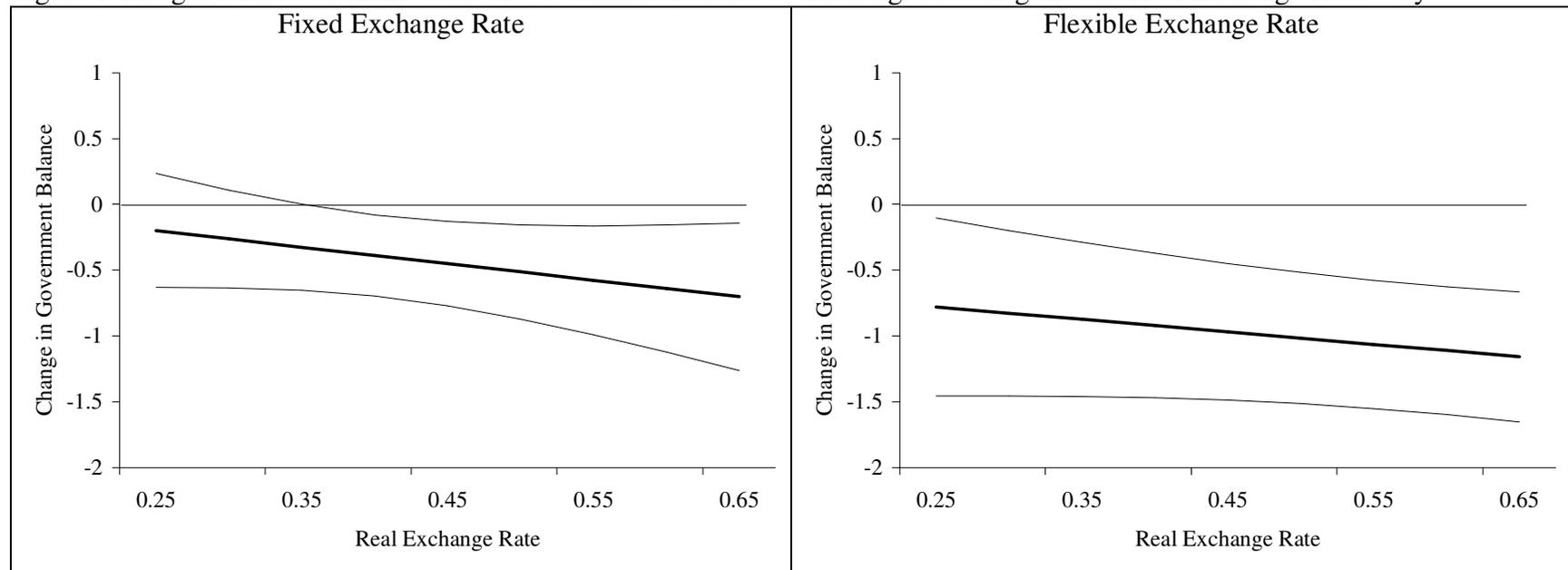
^ p<0.1, * p<0.05, ** p<0.001. Standard errors in parentheses.

Table 2. Fiscal Manipulation, Speculative Attack Risk, and Alternative Hypotheses

	Model 6	Model 7	Model 8	Model 9	Model 10
Election under Fixed ER	-0.92 (1.10)	-0.66 (1.00)	-0.70 (1.05)	-0.70 (1.20)	-0.65 (1.05)
Election under Fixed ER x RER	0.84 (2.18)	0.83 (2.19)	0.80 (2.33)	1.07 (2.44)	1.02 (2.21)
Election under Fixed ER x Reserves	0.67 (0.88)	0.67 (0.92)	0.66 (0.90)	0.65 (1.06)	0.69 (0.90)
Election under Fixed ER x RER x Reserves	-1.86 (1.64)	-1.85 (1.71)	-1.84 (1.67)	-1.79 (1.94)	-1.85 (1.69)
Election under Fixed ER x GDP Growth	0.06 (0.07)				
Election under Fixed ER x IMF Agreement		0.01 (0.47)			
Election under Fixed ER x Trade			0.00 (0.01)		
Election under Fixed ER x Capital Openness				-0.01 (0.16)	
Election under Fixed ER x POLITY					-0.03 (0.03)
Election under Flexible ER	-0.95 (0.34) **	-0.95 (0.34) **	-0.94 (0.34) **	-1.01 (0.38) **	-0.97 (0.36) **
Fixed Exchange Rate (ER)	1.64 (1.58)	1.67 (1.59)	1.65 (1.58)	1.20 (1.55)	1.62 (1.60)
Real Exchange Rate (RER)	1.02 (1.39)	0.98 (1.33)	1.02 (1.39)	0.85 (1.42)	0.94 (1.41)
Reserves	-0.24 (0.92)	-0.19 (0.96)	-0.23 (0.93)	-0.48 (0.97)	-0.26 (0.95)
RER x Reserves	-0.21 (2.34)	-0.32 (2.40)	-0.25 (2.35)	-0.15 (2.75)	-0.21 (2.38)
Fixed ER x RER	-5.60 (3.31) ^	-5.70 (3.31) ^	-5.65 (3.30) ^	-5.63 (3.35) ^	-5.60 (3.30) ^
Fixed ER x Reserves	-0.07 (1.05)	-0.12 (1.08)	-0.08 (1.05)	0.14 (1.04)	-0.06 (1.07)
Fixed ER x RER x Reserves	1.40 (2.36)	1.50 (2.42)	1.43 (2.36)	1.18 (2.45)	1.38 (2.40)
IMF Agreement		-0.13 (0.33)			
Capital Openness				0.29 (0.21)	
POLITY					0.02 (0.05)
Change in Government Balance (lagged)	0.37 (0.11) **	0.37 (0.11) **	0.37 (0.11) **	0.36 (0.11) **	0.37 (0.11) **
GDP Growth	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.05 (0.03)	0.04 (0.03)
GDP per capita	0.27 (0.94)	0.23 (0.94)	0.27 (0.94)	0.20 (0.99)	0.33 (0.98)
Trade	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01) *	0.03 (0.01) *
Population between 15 and 64	0.11 (0.11)	0.11 (0.10)	0.11 (0.11)	0.11 (0.10)	0.11 (0.11)
Population 65 and above	-0.11 (0.34)	-0.13 (0.34)	-0.12 (0.34)	-0.20 (0.37)	-0.13 (0.35)
Constant	-8.24 (5.90)	-8.04 (5.80)	-8.36 (5.86)	-7.71 (6.15)	-8.63 (5.86)
R2	0.53	0.53	0.53	0.53	0.53
Observations	1521	1521	1521	1464	1519

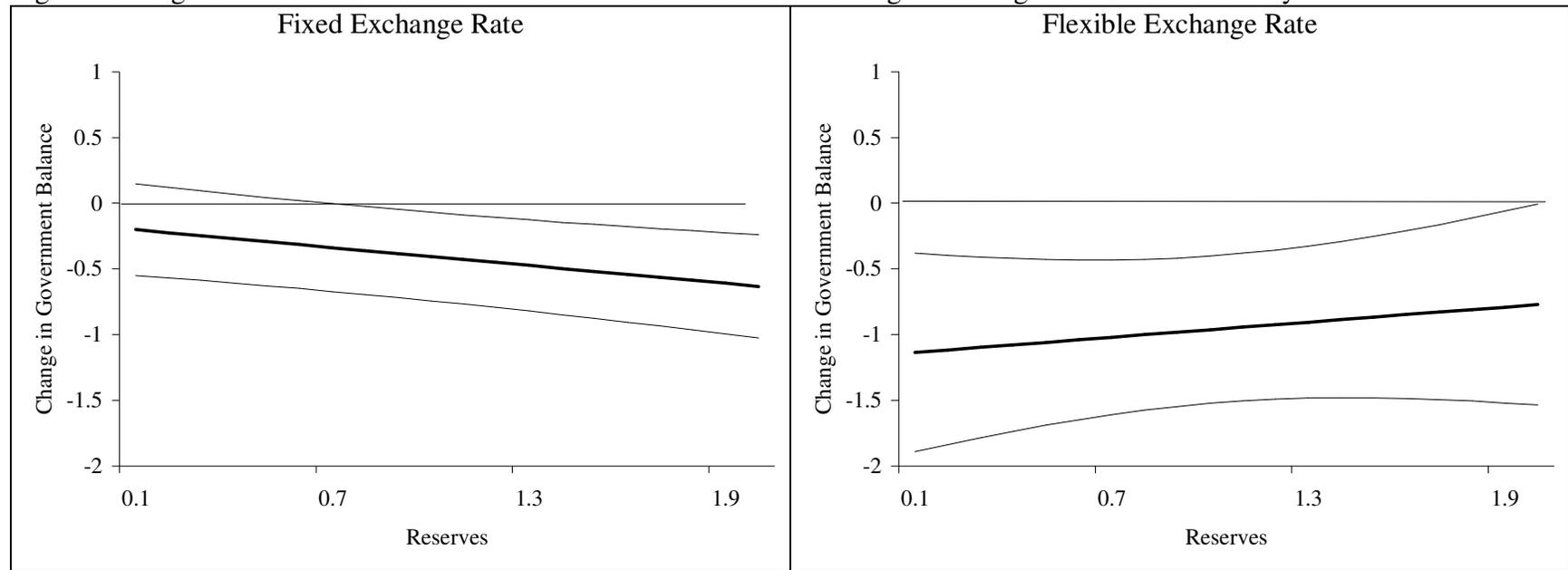
^ p<0.1, * p<0.05, ** p<0.001. Standard errors in parentheses.

Figure 1. Marginal Effect of an Election on Government Balance as Exchange Rate Regime and Real Exchange Rate Vary



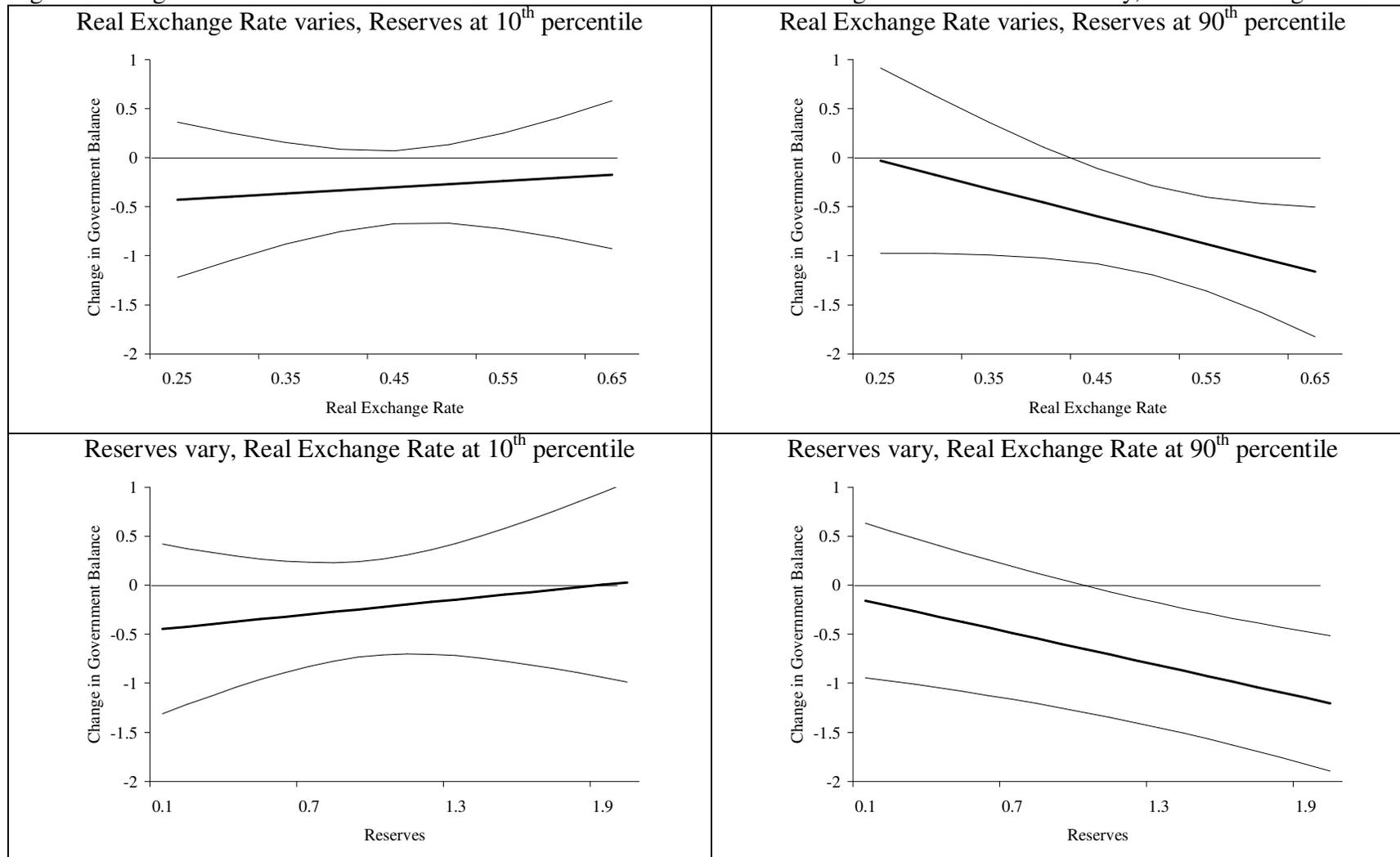
— Predicted marginal effect of an election; — 90% Confidence intervals

Figure 2. Marginal Effect of an Election on Government Balance as Exchange Rate Regime and Reserves Vary



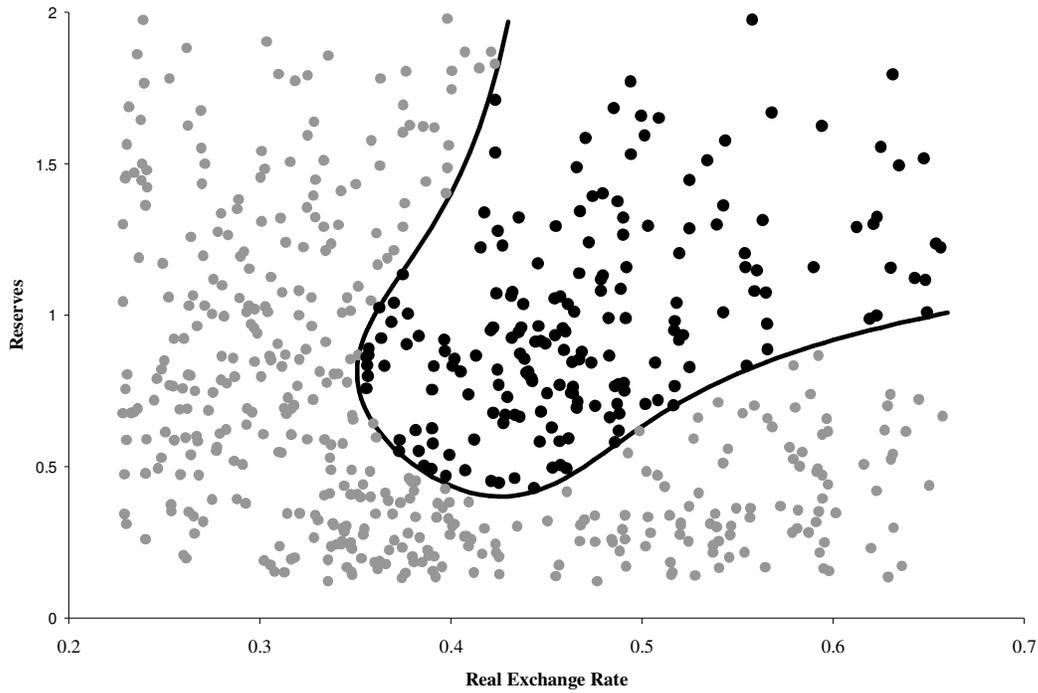
— Predicted marginal effect of an election; — 90% Confidence intervals

Figure 3. Marginal Effect of an Election on Government Balance as Real Exchange Rate and Reserves Vary, Fixed Exchange Rate



— Predicted marginal effect of an election; — 90% Confidence intervals

Figure 4. Scatterplot of Observations by Significance of Marginal Effect of an Election on Government Balance, as Real Exchange Rate & Reserves vary, Fixed Exchange Rate

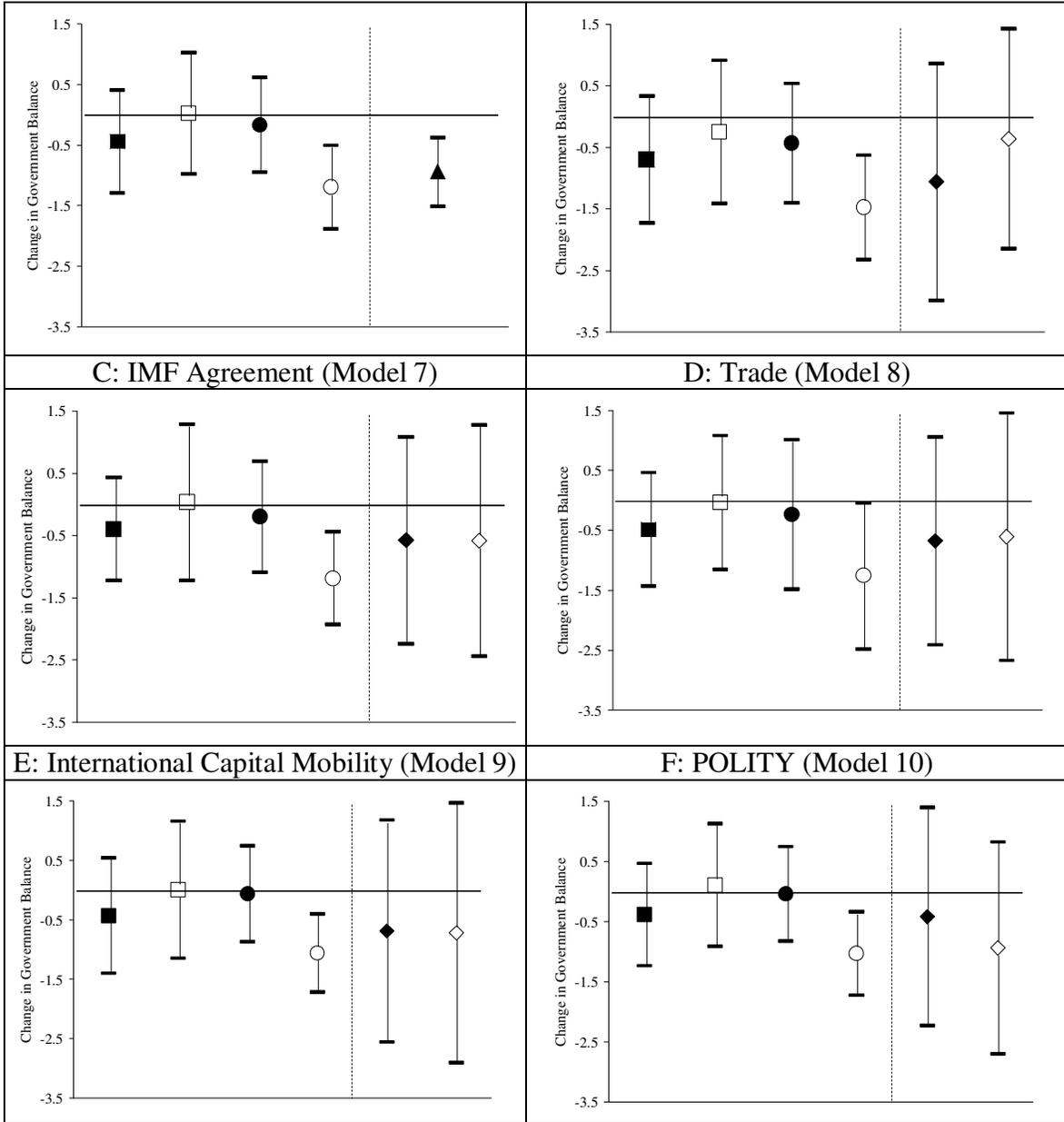


- Marginal effect of an election on Government Balance is significant at 0.9.
 - Marginal effect of an election on Government Balance is not significant at 0.9.
- Observations in figure range from 10th to 90th percentiles of Real Exchange Rate and Reserves.

Figure 5. Marginal Effects of an Election on Government Balance, Models 5-10

A: Base Model (Model 5)

B: GDP Growth (Model 6)



Markers indicate point predictions of the marginal effect of an election on *Government Balance* for the following variables of interest:

A-D:		A:	Notes:
■ Low Real Exchange Rate (RER), Low Reserves	▲ Flexible Exchange Rate		Low values: 10 th Percentile
□ Low RER, High Reserves			High values: 90 th Percentile
● High RER, Low Reserves	◆ Low value of specified variable	B-D:	— 90% Confidence Interval
○ High RER, High Reserves	◇ High value of specified variable		