European Journal of Political Research **48**: 367–396, 2008
doi: 10.1111/j.1475-6765.2008.00837.x

The limits and rewards of political opportunism: How electoral timing affects the outcome of currency crises

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Abstract. Politicians are often assumed to be opportunistic. This article examines both whether there is a limit to this opportunism and whether voters reward policy makers for opportunistic behaviour. By looking at currency crisis situations, the article presents a graphic rational opportunistic political business cycle model in which incumbents face a tradeoff between their wish to signal competence and the economic constraints imposed by the crisis. It analyses how electoral incentives affect policy makers' management of currency crises and how this management in turn affects the subsequent election outcome. The empirical results of probit models with selection using a sample of 122 crises in 48 industrial and developing countries between 1983 and 2003 confirm the model's prediction that under certain circumstances some types of policy makers do indeed have incentives to deviate from optimal policy in the run-up to elections – and that voters reward this behaviour by re-electing policy makers who follow such strategies. However, there is a limit to the readiness to manipulate: when speculative pressure is too severe, incumbents no longer manipulate policy but implement the least painful policy option instead.

> A president who devalues, is a devalued president.
> (Lopez Portillo, former Mexican president[1])

Introduction

How opportunistic are policy makers? And to what extent do voters reward policy makers for their opportunistic behaviour? The literature on political business cycles has shown that opportunistic policy making is particularly likely to occur in the run-up to elections (Nordhaus 1975; Rogoff & Sibert 1988; Rogoff 1990).[2] Evidence for electorally motivated manipulations have been found in a range of macroeconomic policy areas (for an overview, see Drazen 2000). Nevertheless, the two critical questions posed above have been largely neglected in the evaluation of political business cycle models: First, is there a limit to policy makers' readiness to manipulate economic policy? And second, how do voters react to such policy manipulations? Do they indeed reward policy makers who manipulate the economy by re-electing them to office?

Published by Blackwell Publishing Ltd., 9600 Garsington Road, Oxford, OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA

Answering these questions is important because political opportunism is the standard assumption in the public choice literature (Persson & Tabellini 2002: 10) and is frequently assumed in other political science arguments as well. The answers also matter for the debate on limiting policy makers' room and incentives for opportunistic behaviour through institutional constraints. If, as some scholars suggest, voters have rational reasons to reward policy makers for opportunistic policy making, depriving policy makers of the necessary policy tools might in fact prove suboptimal in the long run.

This article addresses these questions by analysing how electoral incentives affect policy makers' management of currency crises and how this management in turn affects the subsequent election outcome. Currency crises are particularly well suited for studying the limits of political opportunism because the costs of policy manipulation during such crises are likely to be much larger and much more noticeable than in tranquil times. In addition, voters can much more easily observe changes in exchange and interest rates than changes in GDP growth or in the size of fiscal transfers. Previous research has found a strong link between electoral timing and exchange rate policy making in tranquil times, where devaluations and depreciations of the exchange rate tend to be delayed until after elections (Klein & Marion 1997; Frieden et al. 2001; Stein & Streb 2004; Blomberg et al. 2005). Leblang (2003) shows that this effect can also be observed in the context of currency crises.

This article goes one step further and analyses not only how the timing of elections influences policy makers' choices in response to speculative exchange market pressure, but also voters' subsequent decisions to vote for the incumbent or not. It presents a graphic rational opportunistic political business cycle model and argues that under certain circumstances some types of policy makers do indeed have incentives to deviate from optimal policy in the run-up to elections – and that voters reward this behaviour by re-electing policy makers who follow such strategies. However, the argument also suggests that there is a limit to the readiness to manipulate: when speculative pressure is too severe, incumbents no longer manipulate policy, but implement the least painful policy option instead. The empirical results of probit analyses with selection of a sample of 122 crises in 48 industrial and developing countries between 1983 and 2003 support the argument's predictions.

Elections and speculative attacks: Theory

To analyse how the timing of elections influences policy makers' choices in response to speculative exchange market pressure and voters' subsequent electoral choice, I develop a graphic rational opportunistic political business

cycle (PBC) model in the context of speculative attacks on their exchange rates. This type of PBC model makes three crucial assumptions: policy makers are opportunistic and want to be re-elected; both policy makers and voters are rational; and policy makers differ with regard to their policy making aptitude. Following the terminology used in this literature, policy makers can be either 'competent' or 'incompetent'. 'Competence' characterises a capable policy maker, who is generally more efficient in his or her policy decisions than an 'incompetent' policy maker (Rogoff 1990; Rogoff & Sibert 1988; Stein & Streb 2004).[3]

The basic idea of rational PBC models is that voters always prefer having a competent government. However, since they cannot directly observe a policy maker's level of competence, they observe his policies to infer his competence. Voters know that only someone who is competent is able to manipulate economic policy and achieve the resulting policy outcome. Such policy manipulation by competent policy makers, which is suboptimal in the short run, therefore allows voters to re-elect competent policy makers and to get rid of incompetent ones. Since this is beneficial for them in the long run, voters tolerate policy manipulation that allows them to make a more informed electoral decision.

In this model, policy makers manipulate the policy response to a currency crisis – that is, a period of heightened speculative pressure on their country's exchange rate.[4] Such crises differ from tranquil times in two important ways. First, when a country's exchange rate comes under strong speculative pressure, policy makers need to choose one of two possible policy responses: a devaluation of the exchange rate (i.e., external adjustment), or a defence of the exchange rate through reserve sales and tight monetary policy (i.e., internal adjustment). Both of these policy responses are painful, even though the relative magnitude of these costs depends both on the country's economic structure and the intensity of speculative pressure. The net short-term costs of devaluation include a reduction in purchasing power, an increased debt burden on unhedged foreign currency-denominated liabilities, and potential inflationary effects due to the price increase in imported goods and the authorities' loss of monetary credibility. These are to some extent offset by competitiveness gains for a country's export sector. Nevertheless, the overall short-term effect tends to be negative.[5] Defences impose net short-run costs in the form of a loss in foreign currency reserves and tight monetary policy, weighed against the positive effects of defending such as a preservation of credibility and voters' purchasing power. The net costs of both types of policy responses increase with the severity of speculative pressure. Exiting from an exchange rate peg is more costly amid severe crisis conditions. Similarly, while reserve sales suffice to accommodate mild speculative pressure, defending

against severe pressure requires a significant increase in interest rates, which dampens investment, consumption and economic growth. These costs represent the (negative) net short-run welfare effects of these policies.[6]

To represent this crisis setting and the fact that experiencing a crisis is always worse than tranquility, I assume that the net short-term costs associated with the two policy options increase with the intensity of speculative pressure p, making all net cost curves upward-sloping. This is because stronger speculative pressure requires more radical policy responses – larger devaluations or larger interest rate increases – than mild speculative pressure. I assume, however, that the two cost curves for devaluation and defence differ with regard to their functional form. For mild speculative pressure, the cost of a defence is lower than the costs of devaluation, but exceeds the latter when pressure is strong. This reflects the fact that mild speculative pressure usually can be addressed successfully by selling foreign reserves in support of the exchange rate. Such reserve sales tend to be less costly than a devaluation, which apart from real effects leads to a loss of monetary credibility. This setup also reflects the fact that most countries peg for a reason, so that giving up the peg comes at a cost. More severe speculative pressure, however, can only be countered through a significant tightening of monetary policy. Since higher interest rates depress consumption and investment and consequently can induce a recession and increase unemployment, the net cost of this policy response increases markedly as soon as reserve sales no longer suffice to sustain the exchange rate. This functional form also reflects the conventional wisdom that governments are forced to devalue when the intensity of a speculative attack is too severe. Raising interest rates in order to defend the exchange rate eventually leads to prohibitively high welfare costs, so that devaluation, while also associated with undesirable consequences, becomes the less costly option for very severe speculative attacks. In comparison, the flatter net cost curve for devaluation reflects the fact that the negative effects of devaluations on voters' purchasing power are offset by its positive effect on export competitiveness and the fact that despite the possibility of overshooting, the extent of a devaluation is limited. The level of exchange market pressure, at which the two net cost curves intersect, marks the level of speculative pressure at which the optimal response changes from defence to devaluation.[7] By assuming that governments face a given amount of pressure, the setup of this model is static. In a more dynamic setting, this pressure could evolve over time, but the main results of the argument would still hold.

Figure 1 depicts these welfare costs relative to given levels of speculative pressure p. The dotted lines denote the net costs of defending (C^{def}), while the solid lines denote the net welfare cost of a devaluation (C^{dev}). The net costs of the two respective policy options change with respect to different levels of

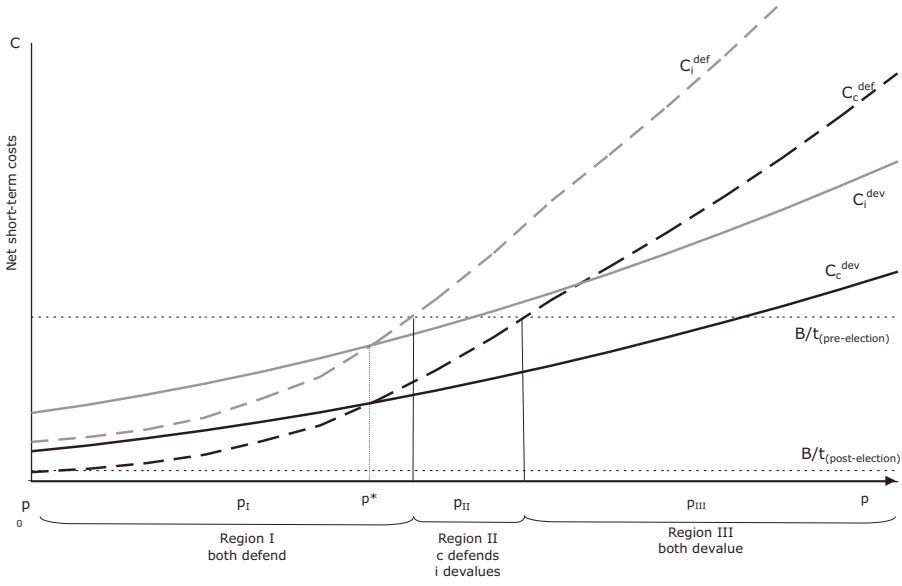

Figure 1. The graphic model.

exchange market pressure. Both net cost curves have a minimum at market pressure p^0 where speculative pressure is low and neither a devaluation nor a defence of the exchange rate is necessary. The net cost associated with p^0 can be thought of the net cost associated with exchange rate stability in tranquil times.[8] The net welfare costs rise with higher pressure p, such that responding to a speculative attack is always worse than any policy action in tranquility (p^0).

Both competent and incompetent policy makers can face currency crises. However, since the general economic environment created by incompetent policy makers is generally of poorer quality, policies implemented by incompetent incumbents always cause higher net costs than those implemented by competent policy makers, no matter which policy response they choose. For example, competent policy makers implement better banking regulations, which lead to a healthier financial sector and reduce the potential cost of currency crises. The net costs of policy responses implemented by an incompetent policy maker i are therefore higher than the net costs that arise when a competent policy maker c responds to the same amount of speculative pressure. Incompetence thus shifts the net cost curves upwards and increases the incompetent incumbent's curve's slope.[9] In Figure 1, the net costs generated by competent policy makers C are shown in black, those generated by incompetent authorities in grey.

The optimal policy response to a speculative attack is the one that minimises the net welfare cost. This means that at low levels of speculative pressure, defending the currency is the optimal response, while it is more efficient to respond to severe market pressure by devaluing. Benevolent, welfare-maximising policy makers will always implement the optimal policy response. In contrast, an opportunistic incumbent not only cares about citizens' welfare, but also cares about his or her re-election (Rogoff & Sibert 1988; Rogoff 1990). An opportunistic incumbent derives a benefit *B* from re-election.[10] This benefit originates from having policy making power or from enjoying what Rogoff (1990: 23) calls the 'ego rent' derived from holding office. In some countries, re-election may also allow the continuation of more traditional types of rents. However, this benefit is discounted by the number of months *t* until the next election: the further away the next election, the lower the discounted benefit *B/t* an incumbent derives in the present from a re-election in the future.[11] Similarly, this benefit is highest immediately before an election. The opportunistic incumbent's utility function thus includes both citizens' social welfare and the discounted benefit from holding office.

When the discounted benefit of re-election (*B/t*) is high and if a deviation from optimal policy increases the incumbent's re-election chances, this creates a temptation to deviate from the optimal policy response (Stein & Streb 2004: 127). This temptation to signal is the difference between the benefit of re-election *B/t* and the net social costs caused by the policy response chosen. Since policy makers genuinely care about their policies' welfare effects, this temptation opportunistically to deviate from the optimal policy response is limited by the point where the net welfare costs of a manipulation exceed the discounted benefits of re-election. The temptation to deviate is higher for competent policy makers than for incompetent ones, because the net costs associated with their policy choices are always lower than those associated with policies implemented by incompetent policy makers. Incompetent policy makers' net benefit of re-election is thus always lower than that of competent policy makers, making policy manipulation less attractive for incompetent policy makers.[12]

Voters understand that, in general, competent policy makers are able to defend the exchange rate against significantly stronger speculative pressure than incompetent incumbents. They are also able to distinguish between three types of speculative pressure: mild pressure, intermediate pressure and severe pressure. Severe pressure is most easily identified because it manifests itself in the context of a widespread economic crisis. Intermediate-level pressure is not necessarily felt directly by voters, but it is widely reported in the media. For example, before Thailand entered a period of very severe exchange market pressure in July 1997, there was a prolonged period of

intermediate-level pressure from February 1997 onwards about which the media reported extensively (Walter 2008). If voters do not perceive severe or intermediate-level pressure, they know that speculative pressure can at most be mild. The incumbent's type, however, is his or her private information: voters do not know whether the incumbent is competent or incompetent. Observing the policies he or she implements helps voters to infer the incumbent's type, especially since exchange rate changes are easy to observe. Since voters know that competent policy makers are more able to keep a commitment to the exchange rate peg, a devaluation serves as a signal that the government is incompetent. Competent incumbents thus try to avoid sending a signal of incompetence in the form of a devaluation. Since exchange rate policy is an area in which voters can fairly easily evaluate the incumbent's performance, devaluations can act as a very strong and unambiguous signal of the policy maker's type.

When elections have recently occurred and new elections are therefore a long time away, the discounted benefit of re-election ($B/t_{(post\text{-}election)}$) is small. In this case, neither type of policy maker has the incentive to deviate from the optimal policy because the discounted benefit of such a deviation is too low. Therefore, both policy makers defend the exchange rate when the speculative pressure is below p* and devalue when it exceeds p*. However, when a speculative attack occurs during the campaign period ($B/t_{(pre\text{-}election)}$), the incumbent chooses a policy response by taking into account that voters know that incompetent policy makers enjoy a lower net benefit of defending; that they can distinguish between mild, intermediate and severe speculative pressure; and that they vote retrospectively. Voters observe the policy outcome and then cast their vote accordingly. The intensity of speculative pressure can then fall into one of three categories (see Figure 1).[13]

Region I represents the case of mild speculative pressure p_I. Here the cost of defending is smaller than the discounted benefit of re-election for both types of policy makers, making the net benefit of defending the exchange rate positive for both types of incumbent. This results in an outcome where both types of policy makers defend the currency, the optimal policy response for most of Region I. Since both competent and incompetent policy makers defend in this situation, voters do not have the possibility to distinguish between incumbent types by observing the policy outcome. Therefore they are not likely to base their voting decision on the government's exchange rate policy.

In Region II, speculative pressure is at an intermediate level p_{II}. In this region, the net cost of defending the exchange rate exceeds the benefit of re-election for the incompetent policy maker. He or she therefore no longer has an incentive to defend the currency and thus implements the less costly

policy option. The policy maker devalues, even though voters interpret this as a signal of incompetence and thus will not re-elect him or her in the upcoming election. In contrast, the competent incumbent's net benefit of defending remains positive, even though defending against medium-level pressure also causes him or her higher costs than devaluing. Since a defence would be too costly to implement for an incompetent incumbent, the competent uses the opportunity to signal their competence to voters by defending the exchange rate. This leads to a separating outcome in which a competent policy maker responds to intermediate levels of speculative pressure by defending the exchange rate, while incompetent policy makers devalue. Voters observe the policy response and do not re-elect an incumbent who has devalued. Note that in Region II, competent policy makers defend the exchange rate even though it would be economically more efficient to devalue. As in traditional rational opportunistic PBC models, voters honour this choice of a suboptimal policy because it allows them to identify the incumbent's type. The competent policy maker's deviation from the optimal policy response thus represents 'a socially efficient mechanism for diffusing up-to-date information about the incumbent's administrative competence' (Rogoff 1990: 22).

Finally, in Region III, the country is facing very severe speculative pressure p_{III}. To fight off a speculative attack of this magnitude, very painful policy measures would be required. These measures – such as extremely high interest rates – are associated with very high net welfare costs. The net benefit of defending the exchange rate against such strong exchange market pressure is thus negative for both types of incumbents. Knowing that manipulating the policy response will not be rewarded with any net benefit, all incumbents devalue when faced with a speculative attack of this intensity. This makes it impossible for voters to separate between competent and incompetent incumbents. Therefore voters do not base their voting decision on the crisis outcome when speculative pressure is severe. Note that the net welfare costs associated with devaluation are still very high; yet since they are lower than those of a defence, they still constitute the optimal response to very strong pressure.

Empirical implications

The model makes several predictions both about currency crisis outcomes and election outcomes. The first set of hypotheses posits that policy makers do indeed manipulate exchange rate and monetary policy. It predicts that competent policy makers are more likely to defend in response to intermediate-level pressure in the run-up to elections because here the discounted benefit of re-election (B/t) – and hence the temptation to signal

– is highest. This leads to the hypothesis that the probability of a defence should increase in pre-election periods (*H1a*). In contrast, the incentive to manipulate the exchange rate is lowest in the aftermath of an election, decreasing the likelihood of a defence in the post-election period (*H1b*).

The second hypothesis concerns the limits of opportunism. The more severe a speculative attack, the more costly is a defence of the exchange rate. The net benefit of a defence thus decreases with increasing market pressure and finally turns negative, eliminating any incentive for opportunistic policy manipulation. It follows that the likelihood of a defence decreases the more severe the intensity of a speculative attack (*H2*).

These predictions coincide with those of traditional opportunistic political business cycle models (Nordhaus 1975; Willett 1988). These models build on the time asymmetry between short-term benefits and long-term costs of economic policies. Like rational political business cycle models, this type of model also predicts that incumbents will seek to avoid devaluations before elections, but arrives at this conclusion on the basis of time asymmetries in the costs and benefits of devaluations (Frieden & Stein 2001).[14] To discriminate between this alternative explanation and the rational models postulating a signaling mechanism, it is therefore necessary to go one step further and investigate whether and how voters reward electorally motivated policy manipulation. The traditional opportunistic models suggest that voters re-elect policy makers who defend the exchange rate regardless of the intensity of speculative pressure. In contrast, the rational opportunistic model presented in this article predicts that voters will reward policy makers for policy manipulation only when this manipulation allows them to distinguish between competent and incompetent policy makers (i.e., in Region II), but not otherwise (Regions I and III). This leads to the following hypotheses:

> *H3a*: When speculative pressure is mild, defending the currency has no influence on incumbent's re-election chances.
>
> *H3b*: When speculative pressure is at a medium level, policy makers who defend their currency against a speculative attack are more likely to be re-elected. Incumbents who devalue are more likely to lose their bid for re-election.
>
> *H3c*: When speculative pressure is intense, the crisis outcome has no effect on incumbent's re-election chances.

The model thus differs from traditional models in predicting that the effect of defending on an incumbent's re-election chances depends crucially on the intensity of the crisis.

Empirical analysis

Data and method

To evaluate the hypotheses about the effect of electoral timing on crisis outcomes and their effect on incumbents' re-election chances, I use monthly data for 122 speculative attacks in 48 countries. As a study of economic policy making in an economically integrated world, I concentrate on the time period from 1983 to 2003, in which capital accounts were increasingly liberalised. Since elections matter only in democratic regimes, my analysis excludes autocratic countries. Democracies are defined as countries that exhibit at least a value of 5 on the POLITY IV index (Marshall et al. 2002), but results are robust to a variety of alternative thresholds, ranging from 1 to 9.

In addition, only countries whose authorities routinely intervene in the behaviour of their exchange rate enter the sample. Countries with floating exchange rate regimes are excluded, as are countries whose currency turmoil is caused by hyperinflation and similar domestic turbulence.[15] Intermediate regimes such as crawling pegs are included in the analysis because at least some intervention is possible in these regimes. I use Reinhart and Rogoff's (2004) classification of 'de facto exchange rate regimes' to identify the relevant cases. This measure takes into account a countries' actual exchange rate behaviour by using parallel and dual exchange rates, which can deviate from the officially announced regime. Since exchange rate intervention often occurs secretly and therefore cannot be measured directly, the de facto exchange rate regime provides a good indirect measure for such intervention. The analysis includes all periods with de facto exchange rate regimes that are classified as noncrawling bands that are narrower than or equal to ± 2 per cent (category 11), and any stricter classification.[16]

'Speculative attacks' are defined as periods of extreme pressure in the foreign exchange market and operationalised as proposed by Eichengreen et al. (1996). Following Nitithanprapas and Willett (2000), an unweighted version of the index is used because a weighted index often leads to an understatement of unsuccessful speculative attacks on fixed exchange rates. Exchange market pressure (EMP) is thus operationalised as the unweighted monthly average of standardised exchange rate changes, reserve changes and changes in the interest rate differential relative to the interest rate in a stable reference country.[17] The rationale behind this index is that governments can respond to speculative pressure either by devaluing or floating their currency, by tightening monetary policy, or by spending foreign reserves to prop up the domestic currency. Large values of the EMP index indicate that

speculative pressure is high. The index is based on data from the IMF's *International Financial Statistics* (*IFS*). Periods where the index exceeds the country-specific mean by at least two standard deviations are identified as crisis episodes.[18] The resulting sample of crises includes many well-known crisis events such as the Mexican peso crisis in December 1994 or the speculative attacks on the Thai baht in 1997 (a list of all crises is available from the author upon request).

One of the most important concepts in the model concerns policy makers' behaviour in response to a speculative attack. I operationalise the policy response to speculative pressure based on the exchange rate's actual behaviour within the six months following the initial attack. An exclusive focus on exchange rate changes is not suitable in this context, because seemingly large exchange rate swings may still be well within the limits of a relatively flexible regime, while relatively small exchange rate changes can be an indicator that a more rigid exchange rate regime has been given up. I therefore use a behavioural criterion, which evaluates exchange rate behaviour based on the country's pre-attack de facto exchange rate regime and grants intermediate exchange rate regimes more freedom to depreciate than countries with a fixed exchange rate.[19] This criterion examines whether the authorities adhered to the limits imposed by their exchange rate regime in the six months following the first attack on the currency. If the exchange rate was not devalued during this period, the episode is counted as a successful defence and the dependent variable takes a value of 1.

In some cases (and in line with the model), policy makers defend the exchange rate until election day, but devalue afterwards. Since the policy response variable looks at the overall behaviour during the six-month post-attack period, however, these cases are wrongly counted as devaluations. To prevent an under-reporting of the pre-election effect on exchange rate policy, the policy response variable is recoded as a defence in these cases. The recoded cases are Brazil (9/1998), Colombia (6/1998), India (5/1991 and 1/1998), Ireland (9/1992) and Latvia (9/1998). Recoding these variables is crucial in order to examine the hypotheses in this article. Not surprisingly, it has a substantial effect on the results, changing the effect of the election variable from a negative and statistically insignificant one to a positive and statistically highly significant one. According to this operationalisation, governments successfully defended their exchange rate in 57.3 per cent of all the cases in the sample, while 42.7 per cent of speculative attacks resulted in a devaluation.[20]

Elections are identified as presidential elections in presidential political systems, and parliamentary elections in all other political systems, using the political system variable from the World Bank's *Dataset of Political Institutions* (*DPI*) (Beck et al. 2001). Election dates were collected from the DPI dataset

and updated with information from various sources, most notably the Election Results Archive (Center on Democratic Performance 2004).[21] Dummy variables are used to identify pre- and post-electoral periods. The dummy variable identifying pre-election periods takes the value of 1 if the speculative attack occurred within the three (alternatively six) months before an election, including the election month.[22] The post-electoral period is defined as the three (alternatively six) months following upon an election. I also use a counter to represent the discounting effect of electoral timing on the re-election benefit B. This variable is defined as (one divided by months until next election) and ranges from 0.014 (immediately after the last election has taken place (maximum of 71 months)) to 1 (one month before election month).

Using this operationalisation and limiting the case selection to democratic countries with some degree of exchange rate intervention in the way described above, 11 (23) speculative attacks occurred in the pre-electoral period with a three (six) month window, while 8 (21) attacks occurred in the three (six) month post-electoral period. Table 1a lists the speculative attacks that occurred in pre-election periods, the policy response, the outcome of the election, crisis severity and some additional information. The table shows that the majority of policy makers chose to defend their exchange rate at least until the election month. Table 1b reports a similar list of crises that occurred in the post-election period.

H1 and *H2* make predictions about policy makers' behaviour during currency crises. To evaluate these hypotheses, I estimate how electoral timing and the severity of speculative attacks influence the probability of an exchange rate defence. When analysing crisis responses, one needs to deal with the fact that the factors making a currency defence more likely also affect whether a country experiences a currency crisis in the first place (Leblang 2003). For example, given that currency speculators tend to have an intuition of electorally motivated policy manipulation, it is not surprising that the likelihood of crises varies systematically with the electoral cycle (Leblang 2002). In the context of a quantitative analysis, one therefore has to incorporate that crises are not random shocks, unrelated to the electoral cycle, and that the rationale for choosing one policy response over another may not be independent from the reasons for which financial markets decide to attack the currency. To control for such potential selection effects, I estimate maximum-likelihood probit models with selection (Dubin & Rivers 1989; for a nontechnical description in a political science context, see Lemke & Reed 2001). These models estimate the direct and indirect impact of the independent variables on the probabilities that a country experiences a currency crisis (selection) and that, in the event of a crisis, its policy makers decide to defend their currency (outcome).

Table 1a. Crises beginning at most six months before an election

Crisis	Election in months	Defence duration in months*	Outcome (defense)**	Re-elected?	Severity	Early election
Brazil 1998m9	1	5	1	1	1	0
Bulgaria 1997m2	2	1	0	0	3	1
Chile 1999m6	6	7	1	1	1	0
Colombia 1998m6	0	5	1	0	2	0
Cyprus 1992m9	5	1	0	0	1	0
Ecuador 1995m11	6	7	1	0	1	0
Finland 1983m3	0	7	1	1	1	0
Finland 1993m9	4	7	1	1	2	0
France 1987m11	6	7	1	1	2	1
France 1992m9	6	7	1	0	3	0
France 1995m3	2	7	1	0	3	0
Greece 1993m6	4	3	0	0	2	1
Guatemala 1999m9	2	7	1	0	1	0
Honduras 1993m7	4	2	0	0	3	0
India 1991m5	0	3	1	1	1	1
India 1995m10	6	7	1	0	1	0
India 1998m1	1	6	1	0	2	1
Ireland 1986m8	6	1	0	1	3	1
Ireland 1992m9	2	6	1	1	3	1
Italy 1983m3	3	7	1	1	2	1
Latvia 1998m9	1	1	1	0	1	–
Pakistan 1993m9	1	7	1	–	2	1
Pakistan 1996m10	4	2	0	0	2	1
Venezuela 1998m7	5	1	0	0	2	0

Notes: * 7 indicates defence lasted 7 or more months. ** until election day.

Table 1b. Crises beginning in the six months after an election

Crisis	Months after election	Defence duration in months*	Outcome (Defence)	Severity	Early election
Bolivia 1993m11	5	7	1	2	0
Botswana 1985m1	4	1	0	3	–
Denmark 1995m3	6	7	1	2	0
Finland 1983m9	6	7	1	1	0
Finland 1983m9	6	3	0	1	0
France 1993m7	4	2	0	2	0
Greece 1985m10	4	1	0	3	0
Honduras 1990m3	4	1	0	3	0
Ireland 1983m3	4	7	1	2	1
Mali 1992m8	4	3	0	2	0
Netherlands 1983m3	6	7	1	3	1
Spain 1983	5	7	1	3	0
United Kingdom 1992m9	5	1	0	3	0
Austria 1990m12	2	7	1	3	0
Bolivia 1989m8	3	1	0	2	0
Colombia 1998m6	0	5	1	2	0
Cyprus 1983m3	1	7	1	3	0
Hungary 1994m6	1	7	1	2	0
Italy 1992m6	2	4	0	1	0
Portugal 1983m7	3	1	0	3	1
Slovak Republic 1998m10	1	7	1	2	0
Thailand 1997m2	3	6	0	1	–

Note: * 7 indicates defence lasted 7 or more months.

In addition to the currency crisis variable and policy response variable discussed above, several control variables are included in the analysis. The selection equation, which estimates the likelihood of a speculative attack, includes economic and political variables that feature dominantly in the literature on currency crises, such as the pre-attack level of foreign reserves relative to M1, real GDP growth, the inflation rate, export share, the degree of overvaluation, contagion and the level of development, in addition to the variables controlling for the electoral cycle.[23]

The outcome equation, which estimates the effect of the electoral cycle on the incumbent's policy choice conditional on the occurrence of a crisis, controls for additional economic, political and institutional constraints on policy makers' behaviour. First of all, the theoretical argument suggests that more severe speculative pressure should decrease the probability of a defence. I therefore use the number of standard deviations by which the EMP index exceeds the country-specific mean as a measure of crisis severity. This operationalisation is slightly problematic because components of this measure affect both whether an episode is counted as crisis and the crisis outcome. While the results for this measure should therefore be regarded with caution, the measure does provide a good way to gauge the intensity of speculative pressure.

I also include economic, political and institutional control variables. Inflation proxies for the causal mechanism underlying first-generation currency crisis models, which predict that bad economic fundamentals will inevitably lead to a devaluation as outcome of currency crises (Krugman 1979). International reserves control for a country's technical ability to defend the exchange rate. I include GDP growth and the degree of overvaluation to control for the state of the domestic economy, which is emphasised by second-generation models (Obstfeld 1994). Since it has been argued that rich and poor countries behave differently in response to currency crises (Leblang 2003), I also control for the level of development. As the exit costs associated with devaluations increase with the rigidity of the proclaimed exchange rate regime (Leblang 2005), the presence of more rigid de jure exchange rate regimes should increase the probability of a currency defence. Export-oriented countries should be more likely to devalue in an effort to enhance their competitiveness (Frieden 1991), while left governments can be expected to defend in an effort to increase their credibility (Leblang 2003). In contrast, central bank independence should not have a statistically significant effect, because even in countries with very independent central banks the decision to change the exchange rate regime is usually within the realm of the government.[24] The descriptive statistics are listed in the Appendix.

Political opportunism and its limits: How electoral timing affects policy responses to speculative pressure

Table 2 shows the results for several probit models with selection that estimate how policy makers react to speculative pressure. These models have high predictive power: They predict between 65.7 per cent (Model 1) and 82.3 per cent (Model 2) of actual crisis outcomes correctly, with a reduction in error between 16.7 and 57.1 per cent, respectively. Most control variables enter the outcome equation as expected. High inflation and an overvalued real exchange rate increase the devaluation probability. Countries with restrictions on the capital account are less likely to devalue. The positive coefficient for GDP per capita indicates that more developed countries are more likely to defend their exchange rate, even though this effect is not statistically significant. Contrary to the expectation that exporters will pressure the government to devalue, the coefficient for export sector size is positive and statistically significant. This may be due to the fact that exporters of non-standardised goods and internationally oriented firms with a high exposure to foreign currency denominated debt can develop a strong interest in exchange rate stability (Frieden 2002; Walter 2008). The coefficients for the level of foreign reserves and GDP growth are not stable across models, but are consistently not statistically significant.

The selection equations show that the probability of a speculative attack is higher both in the pre- and the post-electoral period, particularly in the six to four months before an election and in the six months following an election. This is in line with previous research (Leblang 2002) and indicates that the electoral cycle does indeed affect crisis risk. Nevertheless, the parameter rho, which indicates the correlation between the dependent variables' disturbances, is not statistically significant. This means that the unobserved causes of crisis risk do not affect the subsequent probability of an exchange rate defence to a statistically significant extent.[25] It is therefore not surprising that re-estimating the outcome equation as a probit (or logit) model without selection does not change the substance of the results. The remaining results of the selection equation are mostly consistent with the currency crisis literature: Higher reserves, higher economic growth, a high export share and a high level of development decrease the probability of an attack, while overvaluation and crises occurring in other countries (contagion) increase this probability. These results are robust to the inclusion of additional variables such as partisanship, the de jure exchange rate regime or capital controls in the selection equation.

Do policy makers indeed act opportunistically, and is there a limit to their opportunistic behaviour? To investigate this question, I examine how the timing of elections influences how the authorities respond to mounting

Table 2. Probit models with selection

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome (dependent variable: Exchange Rate Defence)					
Pre-Elect. 3m	3.052 (0.49)***	2.881 (0.49)***	2.787 (0.53)***		3.196 (1.53)**
Pre-Elec. 4–6m			–0.555 (0.42)		
Post-Elect. 3m	–0.598 (0.55)	–0.517 (0.54)			0.101 (0.53)
Post-Elect. 6m			–0.398 (0.42)		
Election counter				1.780 (0.69)**	
Reserves/$M1_{t-1}$	0.043 (0.07)	0.045 (0.07)	0.037 (0.08)	–0.029 (0.12)	–0.032 (0.09)
GDP $growth_{t-1}$	–1.183 (3.22)	–0.680 (3.54)	–1.985 (4.12)	0.900 (3.63)	8.646 (4.26)**
Inflation (t-1)	–0.032 (0.01)***	–0.034 (0.01)***	–0.035 (0.01)***	–0.025 (0.01)***	–0.013 (0.01)
Exports/GDP_{t-1}	0.451 (0.25)*	0.687 (0.29)**	0.682 (0.32)**	0.678 (0.27)**	–0.075 (0.20)
GDP/$capita_{t-1}$	0.107 (0.19)	0.136 (0.22)	0.143 (0.23)	0.177 (0.23)	0.154 (0.13)
Overvaluation	–0.102 (0.03)***	–0.137 (0.04)***	–0.138 (0.04)***	–0.126 (0.04)***	–0.017 (0.03)
Left gov.	0.714 (0.38)*	0.761 (0.39)*	0.764 (0.39)*	0.753 (0.37)**	–0.003 (0.37)
De jure XR	0.051 (0.06)	0.058 (0.07)	0.055 (0.08)	0.047 (0.07)	
Cap. Openness	–0.169 (0.17)	–0.131 (0.19)	–0.160 (0.20)	–0.102 (0.19)	
Severity		–0.340 (0.11)***	–0.349 (0.11)***	–0.326 (0.11)***	–0.407 (0.16)**
CBI					0.095 (1.02)
Constant	–1.595 (0.55)	–0.491 (2.81)	–0.395 (3.12)	–0.857 (2.90)	0.982 (1.27)
Selection (dependent variable: Speculative Attack)					
Pre-Elect. 3m	0.144 (0.14)	0.144 (0.13)	0.215 (0.14)		0.228 (0.15)
Pre-Elec. 4–6m			0.401 (0.13)***		
Post-Elect. 3m	0.064 (0.16)	0.064 (0.16)			0.184 (0.18)
Post-Elect. 6m			0.300 (0.10)***		
Election counter				0.171 (0.22)	
Reserves/$M1_{t-1}$	–0.022 (0.02)	–0.022 (0.03)	–0.020 (0.03)	–0.043 (0.05)	–0.057 (0.06)
GDP $growth_{t-1}$	–1.088 (0.61)*	–1.088 (0.68)	–1.162 (0.68)*	–1.310 (0.84)	–1.137 (0.84)
Inflation (t-1)	–0.000 (0.00)	–0.000 (0.00)	–0.000 (0.00)	–0.001 (0.00)	–0.012 (0.00)
Exports/GDP_{t-1}	–0.087 (0.04)**	–0.087 (0.08)	–0.077 (0.08)**	–0.030 (0.06)	–0.000 (0.07)
GDP/$capita_{t-1}$	–0.039 (0.03)	–0.039 (0.06)	–0.044 (0.06)	–0.060 (0.06)	–0.040 (0.06)
Overvaluation	0.018 (0.01)	0.018 (0.01)	0.018 (0.01)	0.019 (0.02)	0.024 (0.02)***
Contagion	0.944 (0.10)***	0.943 (0.10)***	0.949 (0.10)***	1.011 (0.11)***	1.042 (0.10)
Constant	–1.910 (0.21)***	–1.911 (0.47)***	–1.952 (0.47)***	–1.660 (0.47)***	–2.085 (0.57)***
N (Outcome)	102	102	102	95	72
N (Selection)	6,133	6,133	6,133	4,801	6,103
Rho	0.239	0.057	0.239	–0.013	–0.506
Model χ^2	104.66***	156.07***	104.66***	51.78***	25.17***

Notes: Values in parentheses are robust standard errors, clustered on country. * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

exchange market pressure on their currencies. The results in Table 2 suggest that the answer to both questions is 'yes'. They show that when elections are pending, governments are significantly more likely to defend their exchange rate, thus supporting *H1a*. Approximately 87.5 per cent of attacks occurring in the three months before an election are predicted to end with an exchange rate defence, a substantially higher proportion than the average of 48.7 per cent in non-electoral periods.[26] Policy makers systematically deviate from their 'normal' policy response when elections are pending. The pre-election coefficients are positive and statistically significant at the 1 per cent level across all specifications. In post-election periods the authorities are more likely to devalue (on average, the probability to defend sinks to 33.8 per cent), even though the relevant coefficients do not reach conventional levels of statistical significance.

Further investigation into the pre-election effect reveals that the period in which policy makers are willing to defend their exchange rate is fairly short: while the likelihood of a defence significantly increases in the three months preceding an election, it decreases when the attack occurs four, five or six months before an election (model 3). One possible explanation for this phenomenon is that policy makers of all sorts shy away from imposing the high costs of a defence on their constituencies for a longer period of time when an election is waiting around the corner. Model 4 uses an election counter (one over the number of months until the next election) to gauge the effect of discounting the benefits of re-election. The coefficient is positive and statistically significant: as predicted, the closer an election and the higher the discounted benefit of re-election, the more likely a defence of the exchange rate.

These results show that electoral considerations indeed strongly influence policy makers' decisions as to how to respond to speculative pressure. All else being equal, they behave very differently when elections are pending than when elections are a long way down the road. These results strongly suggest that policy makers do indeed act opportunistically. Two additional results are interesting in this regard. First, even though partisanship matters (left governments are more likely to defend the exchange rate), controlling for partisan considerations does not affect the main finding of a strong electoral effect. This bolsters the finding that policy makers are opportunistic. Second, the most prominent monetary institutional constraints that have been discussed as constraints on opportunistic monetary policy making are fixed exchange rates and central bank independence (Bernhard et al. 2002) but neither the de jure exchange rate regime nor central bank independence (CBI) has a statistically significant effect on currency crisis outcomes, and neither diminishes the pre-election effect. This implies that the conventional institutional constraints on monetary policy are not effective in the context of currency crises.

The statistically significant positive pre-election effect on the likelihood of a defence is robust across a variety of alternative specifications, such as the inclusion of region dummies, the inclusion of additional control variables, and different cut-off points for the level of democracy. It also remains strong and statistically significant when different operationalisations of the dependent variable are used, such as a shorter response period or a 5 per cent devaluation criterion for all exchange rate regimes. The results also hold when OECD and non-OECD countries are analysed separately, when different sample periods are used, and when the outcome equation is estimated as a logit or as a probit model without selection.

The model also predicts that policy makers' opportunism is limited. When the costs of a defence become very high as a result of strong speculative pressure, policy makers are predicted to no longer manipulate policy, but to implement the least painful policy option – a devaluation – instead (*H2*). The severity of speculative pressure thus should have a strong effect on the crisis outcome. The severity coefficient's statistically significant negative effect on the likelihood of a defence (models 2–5) confirms the hypothesis that more severe speculative attacks are more likely to result in a devaluation of the exchange rate, independent of the policy makers' level of competence.

To investigate this result further, Figure 2 plots the predicted probabilities of defence for pre-election periods (3 months), post-election periods (3 months) and periods in which no elections are pending. As expected, the likelihood of a successful defence decreases when speculative pressure becomes more severe, and does so regardless of the electoral calendar. The graphic representation also confirms the strong pre-election effect discussed above: For both mild and particularly intermediate levels of speculative pressure, the probability of a defence is much higher in pre-election periods. This defence probability markedly declines when pressure increases, however. The electoral incentive to manipulate thus seems conditional on the severity of speculative pressure: Policy makers refrain from a defence when pressure is strong. This suggests that there is a limit to their political opportunism.

Figure 2 also shows that policy manipulation is greatest at intermediate levels of speculative pressure. Here the discrepancy between the predicted pre-electoral policy response and the predicted policy response for periods when no elections are pending is highest at medium-level pressure. This again corroborates the findings that policy makers manipulate the policy outcome in order to signal their competence to voters, because signaling is only effective at intermediate-level pressure, but not in response to low- and high-level pressure. While these results should be interpreted carefully due to the

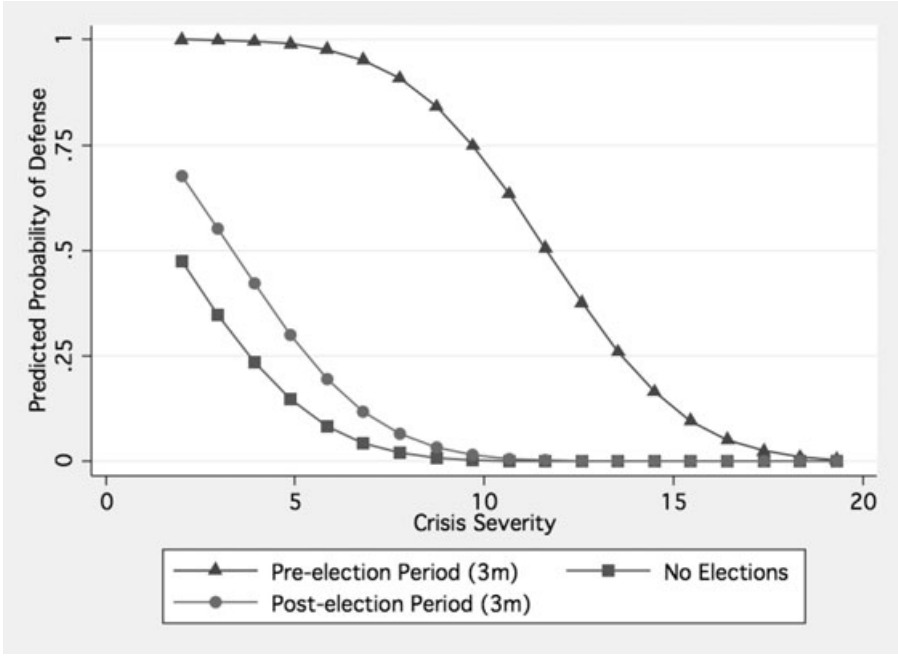

Figure 2. The influence of crisis severity on the likelihood of a defence.

problematic operationalisation of the severity variable and the potential of a resulting simultaneity bias discussed above, these findings support the rational opportunistic PBC logic that policy makers manipulate policy for signaling purposes.

Since the timing of elections can be endogenous as well, I test whether policy makers react differently in the pre-election period when they have called an early election. Table 3 differentiates between pre-election periods for regular (exogenous) elections and pre-election periods for elections that have been called early, using data from O'Mahony (2006). The results show that the positive pre-election effect exists for both early and regular elections. In addition, the coefficient for the post-election period of early elections is negative and statistically significant. The obvious caveat to this analysis is that the number of early elections that coincided with a currency crisis during the campaign period is relatively small. Nevertheless, it is interesting that speculators attack currencies more frequently when an irregular or early election is going to be held within the next three months. Since four out of the six cases of early elections were called before the onset of the speculative attack, this

finding probably reflects that early elections are often called when a government has lost its support.[27] Rather than a tool for opportunistic governments trying to maximise re-election chances (Kayser 2005), early elections are then a sign of political instability and increase crisis risk.

Table 3. The effect of early elections

	Model 6
Outcome (dependent variable: Defence)	
Pre-Elec. 3m (early)	2.307 (0.59)***
Pre-Elec. 3m (regular)	6.800 (0.79)***
Post-Elect. 3m (early)	–5.958 (0.57)***
Post-Elect. 3m (regular)	–0.303 (0.64)
Reserves/$M1_{t-1}$	0.043 (0.07)
GDP $growth_{t-1}$	–0.784 (3.69)
Inflation (t-1)	–0.032 (0.01)***
Exports/GDP_{t-1}	0.677 (0.29)**
GDP/$capita_{t-1}$	0.131 (0.21)
Overvaluation	–0.137 (0.04)***
Left gov.	0.741 (0.39)*
De jure XR	0.055 (0.08)
Cap. Openness	–0.138 (0.20)
Severity	–0.332 (0.11)***
Constant	–0.369 (2.76)
Selection (dependent variable: Speculative Attack)	
Pre-Elec. 3m (early)	0.423 (0.21)**
Pre-Elec. 3m (regular)	–0.011 (0.18)
Post-Elect. 3m (early)	–0.339 (0.36)
Post-Elect. 3m (regular)	0.151 (0.19)
Reserves/$M1_{t-1}$	–0.020 (0.03)
GDP $growth_{t-1}$	–1.025 (0.70)
Inflation (t-1)	0.000 (0.00)
Exports/GDP_{t-1}	–0.086 (0.08)
GDP/$capita_{t-1}$	–0.038 (0.06)
Overvaluation	0.017 (0.01)
Contagion	0.957 (0.10)***
Constant	–1.926 (0.46)***
N (Outcome)	6,053
N (Selection)	101
Rho	0.025

The rewards of political opportunism: Policy response and re-election

The next step of the analysis examines whether these electorally motivated policy manipulations are effective. Including the outcome of elections in the analysis not only allows me to investigate whether voters reward policy manipulations, but also to discriminate empirically between the predictions of traditional and rational opportunistic political business cycle models. A major difficulty in testing whether policy makers actually signal their competence to voters arises because it is impossible to assess a policy makers' level of competence directly. Fortunately, however, one can indirectly evaluate the signaling argument by focusing on the outcomes of elections occurring in the wake of a speculative attack. Only if voters respond to electorally motivated policy manipulation in a manner consistent with the theoretical predictions can a signaling effect be said to exist.

These predictions (*H3a–c*) differ with respect to the severity of a speculative attack. A separating effect in the election outcome should only be observed at intermediate-level crisis intensities, but not when pressure is either mild or very severe. In contrast, traditional opportunistic models would suggest that voters re-elect any policy maker who defends the exchange rate regardless of the intensity of speculative pressure. To derive a typology of speculative pressure, the severity measure introduced above is divided into three categories. Cases, whose EMP measure does not exceed 2.5 standard deviations of the country-specific mean, are coded as weak speculative pressure, those above 3 standard deviations as severe pressure and those in between as intermediate pressure.[28] Table 4 cross-tabulates policy responses and re-election for different levels of crisis intensity. It analyses the outcomes of all elections where a speculative attack occurred in the six months preceding the election.[29]

Table 4. Policy response and re-election

		Defeat	Re-election
Mild pressure	Devaluation	1	0
	Defence	4	4
		Pearson Chi^2 *0.900 (p = 0.343)*	
Intermediate pressure	Devaluation	3	0
	Defence	1	4
		Pearson Chi^2 *4.800 (p = 0.028)*	
Severe pressure	Devaluation	3	1
	Defence	2	1
		Pearson Chi^2 *0.058 (p = 0.809)*	

With all due caution given the small number of cases, the results strongly support the prediction that voters reward opportunistic behaviour under certain circumstances. The data show a strong separating effect in the intermediate zone of speculative pressure. Here, incumbents who defend are re-elected, while those who devalue lose the election. The only case in which a government defended and nevertheless lost the election is the case of Colombia, where the fight against the drug cartels and guerillas dominated the 1998 election campaign. In contrast, when pressure is either mild or severe, defending the currency does not increase incumbents' re-election chances. Here the pooling of policy responses does not allow voters to distinguish between competent and incompetent policy makers. This suggests that some signaling mechanism, rather than pure opportunistic behaviour, is at play.[30] Voters observe the policy response and reward policy makers for their opportunistic behaviour when this behaviour allows voters to assess the incumbent's level of competence.

Conclusion

This article has shown that policy makers do indeed act opportunistically, but that this opportunism has its limits. Using a graphic rational opportunistic political business cycle model of how policy makers respond to currency crises, it has argued that prior to elections, policy makers engage in a signaling process with the electorate. While all policy makers defend the exchange rate in response to mild exchange market pressure and devalue in response to severe pressure, their response to intermediate levels of speculative pressure depends on their level of competence. Here, competent policy makers defend the exchange rate, even though this is not necessarily the optimal policy response. Since incompetent incumbents are incapable of defending against intermediate pressure, defending serves as a screening device and allows voters to assess the incumbent's level of competency. Voters interpret a devaluation as a signal of incompetence and therefore do not re-elect incumbents who devalue in response to medium-level pressure. The empirical evidence strongly supports these predictions. Compared to non-electoral and post-electoral periods, the probability of a defence is significantly higher in the three months preceding an election, but this opportunism is limited by severe speculative pressure. In addition, voters reward policy makers for defending – and thus deviating from the optimal policy outcome – in response to intermediate-level speculative pressure. This supports the notion of rational political business cycle models that voters are willing to endure a suboptimal policy in the short run, if this allows them to choose a policy maker who will implement beneficial policies in the long run.

These results have considerable theoretical and normative implications. They show that opportunism is an important driver of policy makers' actions. Policy makers do not refrain from manipulating economic policy for political gain only because the costs of such manipulations have increased through the onset of crisis. This result bolsters the demands for institutions that limit or remedy the political incentives to pursue suboptimal policy responses. The most prominent monetary institutional constraints that have been discussed in this context are fixed exchange rates and central bank independence (Bernhard et al. 2002). However, the analysis here has shown that in the context of currency crises, neither of these institutions can prevent policy manipulation in response to speculative pressure. This is not surprising because these constraints are engineered to prevent a loosening of monetary policy in the pre-election period. In the context of a crisis, however, policy makers tighten monetary policy more than would be optimal. This implies that the conventional institutional constraints on monetary policy are effective for some, but not all, types of policy manipulation.

Yet, the results also support the prediction of rational PBC models that voters observe economic policy to evaluate whether the incumbent is competent or not. When they can unambiguously identify incompetent incumbents, they punish them by voting them out of office, while they re-elect those identified as competent. Voters thus reward politically opportunistic policy making when this allows them to make a more informed electoral choice. Following the logic of these models, allowing policy makers some scope to act opportunistically might lead to better outcomes in the long run than constraining them too strongly. This is particularly interesting in light of the finding that policy makers are not opportunistic without limit, but that high economic costs of policy manipulation eventually trump policy makers' personal objectives.

Acknowledgements

Previous versions of this article have been presented at the International Political Economy Society Meeting in Princeton, NJ, 17–18 November 2006; the ISA Annual Conference in San Diego, CA, 22–25 March 2006; and the MPSA Annual National Conference in Chicago, IL, 7–10 April 2005. I would like to thank Thomas Bernauer, John Freeman, Simon Hug, Patrick Kuhn, Thomas Sattler, Joshua Walton, Tom Willett, four anonymous *EJPR* reviewers and participants in the EITH Summer Institute 2004, the Claremont SPE Lunchtalk and the CIS Colloquium for valuable comments. Financial support from ETH Zurich grant 0-20206-04 is gratefully acknowledged.

Appendix. Operationalisation of policy response

The outcome of a speculative attack is operationalised as a dummy variable (defence = 1) based on the exchange rate behaviour within the six months following the initial attack. Two exchange rate regime-specific devaluation criteria are used: the amount of depreciation in each individual month, and the cumulated amount of depreciation since the onset the attack (see below). I count the first month in which either of these criteria indicates a devaluation as the month of devaluation.

Appendix Table 1. Devaluation criteria, based on de facto exchange rate regime (Reinhart & Rogoff 2004) (percentages)

	Coded as devaluation if . . .	
	. . . depreciation in one of the six months following the speculative attack exceeds	. . . overall depreciation after the speculative attack exceeds
Preannounced Peg (RR 2)	1	1
Preannounced Horizontal Band (RR 3)	2	2
De Facto Peg (RR 4)	2	2
Preannounced Crawling Peg (RR 5)	2.5	5
Preannounced Crawling Band (RR 6)	2.5	5
De Facto Crawling Peg (RR 7)	4	8
De Facto Crawling Band (RR 8)	4	8
Preannounced Crawling Band (5%) (RR 9)	5	10
De facto crawling band (5%) (RR 10)	5	10
Noncrawling band (2%) (RR 11)	5	10

Source: Sattler and Walter (2008).

Appendix Table 2. Descriptive statistics

Variable	Observations	(Outcome)	Mean	Standard deviation	Minimum	Maximum
Crisis	6,133		0.02	0.13	0.00	1.00
Outcome (1 = Defense)		(102)	0.59 (0.59)	0.49 (0.49)	0.00	1.00
Pre-Election (3m)	6,133	(102)	0.08 (0.11)	0.27 (0.31)	0.00	1.00
Pre-Election (3–6m)	6,133	(102)	0.06 (0.12)	0.24 (0.32)	0.00	1.00
Post-Election (3m)	6,133	(102)	0.06 (0.07)	0.23 (0.25)	0.00	1.00
Post-Election (6m)	6,133	(102)	0.12 (0.20)	0.33 (0.40)	0.00	1.00
Election counter (1/t)	4,801	(95)	0.10 (0.12)	0.17 (0.19)	0.00	1.00
Reserves/$M1_{t-1}$	6,133	(102)	1.47 (1.14)	2.78 (2.40)	0.00	21.83
Real GDP $Growth_{t-1}$	6,133	(102)	0.04 (0.03)	0.09 (0.05)	–0.89	2.50
$Inflation_{t-1}$	6,133	(102)	43.86 (13.80)	976.35 (35.90)	–7.81	48117
$Exports/GDP_{t-1}$	6,133	(102)	0.44 (0.38)	0.78 (0.75)	0.05	8.32
$Log(GDP/Capita)_{t-1}$	6,133	(102)	8.31 (8.22)	1.32 (1.40)	5.23	10.46
$Overvaluation_{t-1}$	6,133	(102)	0.44 (1.72)	4.47 (9.18)	–46.3	99.96
Contagion	6,133	(102)	0.08 (0.41)	0.27 (0.49)	0.00	1.00
Severity		(102)	3.40 (3.40)	2.83 (2.83)	2.01	26.73
Left	6,133	(102)	0.32 (0.75)	0.47 (0.61)	0.13	5.64
De Jure XR $Regime_{t-12}$	6,133	(102)	8.49 (9.35)	3.93 (0.48)	0.00	1.00
Cap. Account Openness	5,657	(102)	0.45 (0.36)	1.48 (1.38)	2.00	15.00
CBI		(72)	(0.47)	(0.18)	0.17	0.86

Notes

1. Cited in Santiso (2000).
2. Such cycles can also arise from partisan effects (Hibbs 1977; Alesina 1987).
3. In addition, the model makes a number of *ceteris paribus* assumptions about voter behaviour and so on that are standard in this literature.
4. The model does not explicitly include the reasoning of speculators, as this would substantially complicate the analysis. The decision to attack is assumed as exogenous in the model. However, the interaction between speculators and policy makers is included in the empirical analysis.
5. Devaluations can have beneficial effects in the long run. However, since this is a static model, I focus only on net short-run costs.
6. I simplify the analysis by focusing on aggregate costs. The distributional effects of exchange rate and monetary policy (Frieden 1991; Walter 2008) are likely to exacerbate the short-run pro-defence bias.
7. The precise functional form of the two cost curves for defending and devaluing crucially depends on a country's economic structure. E.g., the cost of devaluation tends to be

smaller in highly export-oriented countries, but is higher when policy credibility has been closely tied to the exchange rate. This implies that for an equal intensity of speculative pressure, the optimal policy response might be to devalue in one country and to defend in another. Nevertheless, the cost curves C^{dev} and C^{def} always differ from each other and intersect at some point.

8. Since only countries with at least vulnerable fundamentals experience pressure in all types of currency crisis models, countries with good fundamentals will not be attacked. Devaluations at p^0 can thus be thought of as non-needed devaluations.
9. I.e., $C_i^{dev/def} = x + \delta C_c^{dev/def}$, where $x > 0$ and $\delta > 1$. The difference in the intercept implies that exchange rate management in tranquil times is less efficient when managed by incompetent policy makers. The accompanying policies required to sustain a pegged exchange rate regime at p^0 are more costly, while a non-needed devaluation inspires a general loss of confidence among financial markets, which is higher when carried out by an incompetent government.
10. While the size of this benefit can differ across political systems, what matters here is that within a given political context, both a competent and an incompetent incumbent derive the same benefit from re-election.
11. One could also think of more complicated discounting factors.
12. The objection could be raised that central bankers rather than politicians conduct exchange rate and monetary policy. However, even in countries with highly independent central banks, decisions regarding the exchange rate regime itself (such as the devaluation of a pegged exchange rate) are located with the government, not the central bank, making them thoroughly political.
13. The intensity of speculative pressure is not completely independent of the policy maker's type. Given their tendency to implement bad policies, incompetent policy makers are more likely to experience fundamental and severe first-generation-type crises than competent policy makers, who are more likely to experience expectations-based second-generation-type crises, which leave policy makers more room to maneouver.
14. The negative effects of devaluations, such as a loss in purchasing power, often materialise much faster than the positive effects, such as increased exports.
15. Reinhart and Rogoff's (2004) 'freely falling' category.
16. A more restrictive threshold would exclude important crises, such as the 1997 crisis in the Czech Republic.
17. The US dollar is set as reference currency for all countries except for European ones (including Eastern Europe), for whom the Deutsche Mark (until 1998) and the Euro (from 1999) are used. Interest rates are (short-term) money market rates (IFS line 60b) or discount rates (IFS line 60) if money market rates are not available.
18. Since currency crises can stretch over a longer period of time, speculative attacks occurring within six months after the initial attack are not considered as separate attacks.
19. See Appendix.
20. The proportion of successful defences is slightly higher than that reported by Leblang (2003). Much of this difference results from recoding the election dummy and from including developed countries in the sample.
21. Election dates can be deduced from Tables 1a and 1b. Updated election dates include Colombia (presidential elections in May and June 1998), India (two consecutive months were coded as election months for the elections 1991 and 1998), Bulgaria (early elections in April 1997), and Ireland (early elections in November 1983).

22. This operationalisation was chosen because the days in an election month before the actual election tend to be important campaign days, with a strong pre-election effect. The results are robust to recoding the variables such that the post-election dummy includes the election month rather than the pre-election dummy (with the exception that the post-election coefficient turns positive but statistically insignificant).
23. Foreign Reserves: total reserves in US dollars minus gold (IFS line 1l.d), divided by the monetary aggregate M1 (IFS line 34). Real GDP growth: average annual growth rate in real GDP for the previous three months (Source: *World Development Indicators*). Inflation rate: average inflation rates for the three pre-attack months, computed as annual percentage change in the consumer price index (IFS line 64). Real exchange rate overvaluation: the difference between the real exchange rate and the long-run real exchange rate path, as calculated using a Hodrick-Prescott filter ($\lambda = 14400$) (see Leblang 2003). The real exchange rate is the nominal exchange rate (IFS line rf) adjusted for differences between foreign and domestic (consumer) price levels (IFS line 64). Level of development: GDP (IFS line 99b) per capita. Importance of the export sector: exports/GDP. All these variables are lagged by one month. Contagion: dummy variable that takes the value of 1 if a currency crisis is simultaneously occurring in another country.
24. Capital openness: Chinn-Ito index, where higher values denote more openness (Chinn & Ito 2005). De jure exchange rate regime: data are from Ghosh et al. (2002), with higher numbers denoting more flexible regimes. Partisanship: a dummy variable for left governments as defined in the DPI (Beck et al. 2001). Central bank independence: measured as legal central bank independence (data are from Polillo & Guillén 2005).
25. Rho is statistically significant in models with less control variables (not reported here).
26. Values are the mean of predicted probabilities for the actual observations from models 1–4.
27. The results are robust to recoding these cases as no-election periods.
28. These results are robust to using alternative thresholds, such as the median and the 75th percentile.
29. The six-month window was chosen because the three-month window generated too few cases. The results are robust to a variety of alternative definitions of pressure-thresholds.
30. The results correspond to Frankel's (2005) finding that a devaluation increases the likelihood that a political leader will lose office.

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