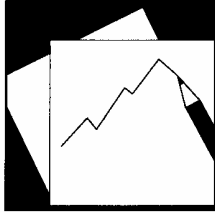


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Exits from Heavily Managed Exchange Rate Regimes

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Exits from Heavily Managed Exchange Rate Regimes

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Abstract

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

A widely held nostrum is that countries should exit heavily managed exchange rate regimes when the going is good, rather than when the exchange rate is under pressure to depreciate. Have countries followed this advice in practice? And, if so, how good has the going been? We find that in the past 25 years or so, almost all exits to more flexible regimes were followed by a depreciation of the exchange rate, and that exits were about evenly divided between disorderly and orderly cases. A logit econometric model, indicates that the general circumstances of orderly and disorderly exits have been broadly similar: an overvalued real exchange rate, falling reserves, a difficult fiscal position, and high world interest rates. Well-established pegs were less likely to end.

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I. INTRODUCTION

As more and more countries, especially emerging markets and developing economies, abandon tightly managed exchange rate regimes in favor of more flexibility, the question of when and how to effect the transition is widely debated. Recently, the debate has been particularly intense in reference to China, whose authorities have voiced their intention of moving away from the U.S. dollar peg, but have not acted so far.²

A widely accepted advice has been to exit when the going is good. Exit is best undertaken when the exchange rate is not under speculative pressure to depreciate; better still, some would argue, the exit should occur when the exchange rate is likely to strengthen (Eichengreen and Masson, 1998). In his characteristically lucid manner, Eichengreen (2004, page 5) explains:

There is never a convenient time to abandon a currency peg following an exchange-rate-based stabilization. But the easiest time to do so is when capital is flowing in and the exchange rate is strong. If the authorities wait too long, capital flows may have turned around in response to a deceleration in growth, problems in the banking system, or another negative event. At that point, having a more flexible exchange rate will be essential. But obtaining it smoothly, in the face of adverse speculation and without further disturbing already volatile expectations, will be nigh well impossible.

The reason for avoiding exit under pressure to depreciate is that national authorities may lose control, confidence in the country's prospects may weaken, and the costs may be borne in the form of a heavy output loss (typically lasting between one and two years).

In practice, judging whether conditions are right to change the exchange rate regime and choosing what alternative regime to adopt is likely to be tricky, and the change in regime may bring about speculative pressures. Given the risks involved, policymakers may prefer to keep the status quo as long as the times are good (Agénor, 2004). In particular, moving from a peg to a band may create the expectation that the band is likely to be widened in the future, inviting speculators to test the government's resolve to maintain the band. Equally, when the reason to introduce flexibility is to allow for currency depreciation to counter the overvaluation of the real rate, the determination of the extent of overvaluation is typically not straightforward. Frankel (1999) raises a more serious question of the viability of original strategy of the decision to peg or manage the exchange rate when the peg is deployed to break persistent high inflation. If this peg is to be followed by a flexible regime, knowing that a future depreciation is likely, he asks: "will the stabilization be credible in the present?" Thus, writing in September 1999, when by the standards of the second half of the 1990s

² For a comprehensive review of the policy debate on China, see Prasad and others (2005).

conditions were calm, Frankel concluded: “Argentina seems to have done well, all things considered, by sticking with a binding commitment” (pp. 27).

Our purpose in this paper is a simple one: to characterize the types of exits from a heavily managed to a more flexible regime that have occurred since 1980. Have countries followed the approach of exiting when economic conditions are favorable? If they have not, has the outcome always been a disorderly exit with high costs? And, to the extent we observe both orderly and disorderly exits, are there identifiable differences in the conditions under which these two forms of exit occur?

We use the Reinhart and Rogoff (2004) system to classify countries into exchange rate regimes. This system has several advantages relative to other classification systems. For instance, it captures the actual behavior of monetary authorities and the foreign exchange market rather than the official exchange rate classification reported to the IMF. It provides a very detailed breakdown of observed regimes and it takes into account the presence of active parallel markets.³ Obviously, an accurate regime definition is essential to identify and date transitions to more flexible arrangements. For our purposes, an additional advantage of the Reinhart-Rogoff classification is that it offers a natural definition of orderly and disorderly exits, since it identifies a “freely falling” category, one in which the country experiences a high rate of inflation and/or a speculative attack and large depreciation of the currency. We take the transition to the freely falling category to be a “disorderly” one, while all other transitions to more flexible regimes are considered orderly.

We have three main findings. First, a simple tabulation of the data shows that in the past 20 years or so, the vast majority of exits were followed by a depreciation of the nominal exchange rate. Second, in about half the episodes, the exit was orderly and did not lead to a currency crisis or high inflation within the following 12 months. Third, based on a multinomial analysis that distinguishes between no exit, orderly exit, and disorderly exit, we find no robust differences between the general circumstances of orderly and disorderly exits. On the other hand, exits (of either type) do differ from tranquil times, in that the real exchange rate is more overvalued, the country loses reserves, and the government steps up its borrowing from the central bank. In addition, we find exits to be more likely in periods of high international interest rates and when pegs are not well established yet.

These findings indicate that, in practice, countries do not heed the advice to move away from heavily managed exchange rate regimes when the going is good, but rather wait until the parity is under pressure to depreciate. Nonetheless, the outcome is not always disastrous, as about half of the time a crisis is averted. Unfortunately, the data does not offer clear indications as to what circumstances best improve the chances of an orderly transition to greater exchange rate flexibility.

The rest of this paper is organized as follows. In Section II, we present data on episodes in which more exchange rate flexibility was introduced. Section III describes the empirical

³ For a detailed description of the methodology used and comparison with other existing classifications, see Reinhart and Rogoff (2004).

methodology and the explanatory variables. Section IV presents the results of a multinomial and binomial logit analysis. Section V contains a review of related research. The final section presents some concluding remarks.

II. THE FREQUENCY AND FEATURES OF ORDERLY AND DISORDERLY EXITS

The Reinhart-Rogoff “natural” classification categorizes exchange rate regimes into 6 coarse and 15 fine groups (Table 1). We define an exit as a move to a more flexible exchange rate regime. More specifically, an exit occurs when a country moves from coarse categories 1–2, corresponding to pegs or heavily managed exchange rate regimes, to coarse categories 3–6, corresponding to more flexible regimes. Furthermore, a disorderly exit is one in which the transition is to the “freely falling” category, either immediately or within 12 months of the original exit. According to Reinhart and Rogoff (2004), the exchange rate is freely falling if its rate of depreciation is large, there is high inflation, or a speculative attack against the currency takes place.⁴ In the empirical work, we will examine the sensitivity of the results to alternative definitions of exit.

In the period 1980-2001, there were 156 periods of contiguous observations with a heavily managed exchange rate regime (categories 1–2), often more than one per country. Of the total number of spells, 63, or 40 percent, ended in an exit. Flexibility was introduced in an orderly manner in 32 instances while the remaining 31 were disorderly exits (Table 2).⁵ Thus, in contrast with the earlier findings of Eichengreen et al. (1998), our sample based on the Reinhart-Rogoff regime classification indicates that orderly exits are possible and just as common as disorderly ones.⁶

The average duration of a spell was 199 months, and spells ending in disorderly exits were considerably shorter than those ending in orderly ones (Figure 1). Most of the exits occurred in non-emerging developing countries, but this is just a reflection of the larger number of

⁴ Spells that ended with an exit to coarse category 6 (Dual market/no parallel market data) were excluded, since it was not possible to determine if the exit was orderly or disorderly. Only a handful such episodes are in the sample.

⁵ If an orderly exit is followed by “freely falling” within the subsequent twelve months, it is classified as a disorderly exit.

⁶ This is true also if we use a tighter definition of managed exchange rate regime, closer to that used by Eichengreen et al. (1998). Using the IMF de facto classification for 1985–2002, Duttagupta and Otker-Robe (2003) find that orderly exits were even more frequent. Specifically, they identify 41 episodes in which more flexibility was introduced in an orderly fashion and 30 episodes in which a sharp depreciation of the currency followed the exit (see Section IV below).

such countries in the sample (Figure 2).⁷ In relative terms, exits were more frequent among emerging countries. The highest concentration was that of disorderly exits in emerging markets during the 1980s, corresponding to the international debt crisis.

Next, to get a sense for whether exits occurred when the parity was under pressure to appreciate or depreciate, we turn to the behavior of the nominal exchange rate following the change in regime. Column 7 in Table 2 shows the rate of change of the exchange rate vis-à-vis the reference currency (usually the U.S. dollar) in the six months following the exit relative to the previous six months. Except for three cases, exits, including orderly ones, were followed by a *depreciation* of the nominal exchange rate. One can see similar results when a 12-month window is used. This suggests that, contrary to the policy recommendation of the conventional wisdom, countries facing pressures to let the exchange rate appreciate rarely respond by making the exchange rate regime more flexible. It is only when there are pressures to devalue that policymakers go for regime change.

What might explain this asymmetry is clear: when the exchange rate is weak, the country will run out of reserves unless action is taken, while when the exchange rate is strong there is no identifiable upper bound to how much foreign exchange can be accumulated. Nonetheless, the near absence of cases in which a movement toward flexibility is followed by an appreciation is perhaps surprising. Of course, this behavior may just reflect the myopia of policymakers or other distortions, and need not be optimal.⁸

Next, we turn to an econometric model to conduct a more rigorous investigation of the circumstances that lead countries to introduce more exchange rate flexibility and determine the orderly or disorderly character of the transition.

III. DETERMINANTS OF EXITS

A. Methodology and Data

To study the circumstances surrounding the introduction of more flexibility in the exchange rate regime, we estimate a multinomial logit econometric model, which distinguishes orderly and disorderly exits from “tranquil” times. In this model, the probability of exiting a heavily managed regime in an orderly or disorderly fashion relative to the probability of not exiting is estimated as a function of several explanatory variables. More formally, let the letters t , o , and d denote the three possible events (tranquil time, disorderly exit, and orderly exit), let β be a vector of coefficients to be estimated, and let X a vector of explanatory variables. Choosing tranquil times as the base category, the multinomial logit model can be written as

⁷ As in Husain, Mody, and Rogoff (2004), emerging market countries are defined using Morgan Stanley Capital International (MSCI) classification, implying that international investors have a real interest in these economies.

⁸ For a model explaining policymakers’ status quo bias, see for instance Fernandez and Rodrik (1991).

$$\ln \frac{\Pr(y = e|X)}{\Pr(y = t|X)} = X\beta$$

for $e = d, o$. So for each outcome (orderly exit and disorderly exit) the coefficients to be estimated (the β 's) represent the effect of a change in the explanatory variable on the logarithm of the ratio of the probability of that outcome to the probability of a tranquil observation.

The model is estimated on a panel of observations containing all the spells during which the exchange rate was tightly managed in the Reinhart-Rogoff sample over 1980-2001. Observations are classified as exits if they refer to the month before more flexibility is introduced. In alternative specifications, observations are classified as exits for the entire six or twelve month periods before a transition. The wider window takes into account that the changes in the explanatory variables that trigger the change in regime may occur some time before the actual transition. Comparing the three alternative specifications also allows us to assess if the factors associated with the exits were exercising their influence at these different time horizons. Exits are considered disorderly if the new regime is coded as freely falling either right away or within the twelve month following an exit. Exits are classified as orderly otherwise.

The multinomial logit also allows us to formally test the hypothesis that orderly and disorderly exits are indistinguishable events with the respects to the independent variables. This is done through a Wald test. Should this hypothesis not be rejected, then the data would indicate that the appropriate model is a bivariate logit, which only discriminates between tranquil times and exits.

Although exit episodes in the Reinhart-Rogoff datasets number over 60, data limitations constrain our econometric exercise to 40 episodes in the benchmark specification, of which 18 are orderly and 22 disorderly.⁹ Thus, although the total number of observations is large (about 9,500) the sample is still quite small because exits are rare events. Estimation is by maximum likelihood. The standard errors are clustered by country to allow for possible correlation of the error term within each country. We find clustered standard errors to be markedly larger than robust standard errors in these data, suggesting that failure to cluster may lead to over rejections of the null hypothesis of no significant effect.

⁹ As customary in cross-country studies, we exclude from the sample very small countries, defined as those with population less than one million. Also, to eliminate outliers, we exclude observations in which explanatory variables are beyond four standard deviations from the mean. Results do not change much if extreme observations are included.

B. The Explanatory Variables

A number of factors identified in the exchange rate regime literature have been included as explanatory variables. The deviation of the real exchange rate from a moving average of the previous five years captures a possible misalignment in the real exchange rate which may contribute to the imbalance of the external accounts. Changes in foreign exchange reserves indicate pressures on the parity. Real economic conditions and trade performance are captured by export growth. Government borrowing from the central bank is introduced to test whether exits are triggered by potential inconsistencies between fiscal and exchange rate policy, as emphasized by first generation models of balance of payments crises. Private credit growth may signal a credit boom ushering in financial sector vulnerabilities that destabilize the exchange rate regime, as in the Asian crises. Trade openness may also affect the size of external shocks and the ability of an economy to respond to such shocks under limited exchange rate flexibility. GDP per capita controls for the level of development of the country, and the U.S. real interest rate captures global macroeconomic conditions. Finally, the logarithm of the number of months since the peg began measures the duration of the exchange rate regime. Duration may affect the credibility of the regime, or it may proxy unobserved country characteristics that affect the likelihood of exit. Details on the construction, sources, and summary statistics for the explanatory variables are in the Appendix.

Table 3 shows the means and standard deviations of the explanatory variables for the three categories of observations, tranquil times, orderly, and disorderly exits. Some differences across means are apparent, though standard deviations are quite large: for instance, before disorderly exits the real exchange rate is more overvalued than in tranquil times, private credit growth is faster, government borrowing from the central bank accelerates, reserves decline, and export growth is slower. Differences between orderly exits and tranquil times are typically less pronounced, but mostly go in the same direction, with the exception of private credit growth, which is slower before disorderly exits than before orderly ones. Thus, differences in means point in the direction of exits—of either type—being preceded by deteriorating economic conditions. In addition, exit observations tend to be “younger” in terms of the age of the peg than tranquil ones, the more so for disorderly exits, indicating that less well-established regimes may be more prone to change.

C. Results from the Multinomial Logit

The first three columns in Table 4 present the determinants of the probability of orderly and disorderly exits relative to tranquil times for three different windows (1 month, 6 months, and 12 months before the exit). The fourth and fifth column contain variants of the benchmark model using a more restrictive and a less restrictive definition of heavily managed exchange rate regime (categories 1-4 and categories 1-11, while the benchmark is categories 1-8), and correspondingly different definitions of exit.

A number of factors distinguish exits of either type from tranquil periods: first, exits, particularly disorderly ones, are preceded by an overvalued real exchange rate. Not surprisingly, the effect is particularly in evidence in the variant using the strictest definition of managed exchange rate, when the nominal exchange rate has hardly any flexibility. Losses

in reserves are significant for disorderly exits, though not in all specifications, while an acceleration in government borrowing from the central bank and higher U.S. interest rates seem to precede orderly exits. Regimes ending in a disorderly exit are more likely to be short-lived.

Although there are some differences among the determinants of the two types of exit, a Wald test of whether the two events are indistinguishable rejects the null only when the window is one month and in the variant in which a looser definition of managed exchange rate is considered.

Another way to gauge the difference between orderly and disorderly exits is to reestimate the multinomial logit using orderly exits as the base category. The coefficients of the probability of disorderly exits, then, indicate which variables increases the probability of a disorderly exit relative to that of an orderly exit (Table 5). While some variables are significant in some specifications, no explanatory variable is robust. So the multinomial logit suggests that, at least with regard to the explanatory variables considered here, there is no significant robust difference between the circumstances preceding orderly and disorderly exits.

We subject this conclusion to additional sensitivity tests (not reported). For instance, we include high inflation episodes (defined as observations with inflation exceeding 40 percent per year), and we control for U.S. GDP growth. Also for these alternative models the hypothesis that orderly and disorderly exits are indistinguishable cannot be rejected.

Besides the small sample size, a possible reason for lack of robust results is that the decision to exit may be non-monotonic with respect to some of the explanatory variables. Specifically, countries may be more likely to introduce flexibility both when reserves grow strongly and when reserves decline rapidly, since in both cases there are pressures on the parity. Similarly, a very overvalued or undervalued real exchange rate may prompt a move to a more flexible regime. However, a visual inspection of the frequency distribution of the various explanatory variables by category (tranquil, orderly exit, disorderly exit) does not suggest non-monotonicities of this sort. We also rerun the benchmark model splitting the change in reserves between gain and losses, and find that gains in reserves do not develop a positive and significant coefficient, suggesting that non-monotonicities are absent (Table 6).

D. Results from the Binomial Logit Model

Since distinguishing between orderly and disorderly exits proved inconclusive, we now turn to estimating a bivariate logit model in which observations can only be exits or tranquil times. This should give us an indication of what prompts moves to more exchange rate flexibility. The results show that changes occur when there are pressures to devalue the exchange rate (Table 7): the real exchange rate is overvalued, reserves are falling, and the government is increasingly relying on the central bank for deficit financing. In addition, world interest rates tend to be higher before change in regime, suggesting that reversals in capital inflows may contribute to trigger exits. Finally, there is some evidence that less well-established regimes are more likely to be abandoned. These results are fairly robust to changing the window and the definition of exit.

Turning now to the performance of the model, it is customary to compare fitted probabilities with the sample frequency of each event. If the fitted probability exceeds the sample frequency, then the model provides useful information about the event. Based on the benchmark model with a six month window, the fitted probability of exit exceeds the sample frequency in 64 percent of the exit cases; the same is true for tranquil observations. The percentage of observations correctly predicted is higher (reaching 80 percent) when the definition of peg is stricter. Similar results obtain in the alternative specifications.

Table 8 contains further sensitivity tests: excluding high inflation countries does not change the results much, and neither does replacing GDP per capita with dummies for emerging and developing countries. When the real effective exchange rate is used to measure exchange rate overvaluation, this variable is not significant, although the sign remains positive, and government borrowing also loses significance. The specification in the last column contains a new explanatory variable: changes in the political regime. It appears that this variable is positively correlated with changes in the exchange rate regime, and when it is introduced the coefficients of the other explanatory variables do not change much.

IV. A REVIEW OF THE LITERATURE

Most of the empirical work on exchange rates has focused either on the choice of the regime and its economic performance or on the circumstances preceding speculative attacks.¹⁰ There is, however, a smaller literature on exits from pegs or other heavily managed regimes, whether or not they are associated with speculative attacks.

Eichengreen et al. (1998) identify changes in the exchange rate regime in developing countries using the IMF's *Annual Report of Exchange Arrangements and Exchange Restrictions* (AREAER). Accordingly, recorded episodes reflect changes in the official (or de jure) regime, rather than in the de facto one. The definition of exit includes exits from single currency or basket pegs, but excludes exits from crawling pegs, target zones, and unofficially pegged regimes. 29 cases are identified during 1977-95, of which 23 are currency crises based on the definition of Frankel and Rose (1996). Hence, orderly exits are extremely rare in this sample, and the authors do not attempt to distinguish between orderly and disorderly episodes through an econometric analysis of the data. Based in part on the high rate of disorderly exits, this paper concludes that countries should introduce exchange rate flexibility in good times, when pressures are for the exchange rate to appreciate and reserves are accumulating. This view is reiterated in Eichengreen (2004).

Klein and Marion (1997) examine the duration of exchange rate pegs in Latin America using a binomial logit econometric model. In contrast with our study, in this paper, an exit need not imply a change in the exchange rate regime, but can be (and often is) simply a change in the parity. As in Eichengreen and others, the regime is identified based on the de jure IMF classification. In addition, there is no attempt to distinguish among types of exits (orderly or

¹⁰ For a recent review of the first group of studies, see Rogoff and others (2004). For the latter, see among others, Eichengreen, Rose, and Wyplosz (1995) and Frankel and Rose (1996).

disorderly, new peg or more flexible regime). The main findings are that exits tend to occur when the real exchange rate is overvalued and reserves are low; trade openness and political stability are associated with more exchange regime stability; and exits become less likely the longer is the duration of the regime.

Using the IMF de facto classification of Bubula and Ötoker-Robe (2002), Duttagupta and Ötoker-Robe (2003) take a comprehensive look at changes in exchange regimes. In this study, the definition of exit includes one-off changes in the parity (including revaluations) as well as shifts to *less* flexible regimes.¹¹ They further distinguish between orderly and disorderly exits, with the latter being defined as an exit accompanied by a large depreciation of the exchange rate. They find that orderly exits tend to be associated with more government borrowing and trade openness than tranquil times, while disorderly exits are associated with declining reserves, lower export revenues, and an overvalued real exchange rate.¹² In contrast with Klein and Marion (1997), they find that a longer duration for the peg is more likely to trigger a crisis. Finally, at conventional significance levels the empirical model rejects the hypothesis that regime changes differ from tranquil observations in all cases, except for exits to more flexible regimes (both orderly and disorderly).

In a recent paper, Asici and Wyplosz (2003) study what sets apart orderly and disorderly exits, identified based on the Reinhart-Rogoff classification, but do not study how exits differ from “tranquil times.” The conclusions support the conventional wisdom that countries that exit when macroeconomic performance is good avoid crises. Corruption and financial depth are found to make an exit more likely to be disorderly.

IMF (2004) carries out a descriptive review of emerging market transitions toward more exchange rate flexibility using the IMF de facto classification. The focus is mostly on the evolution of monetary and financial institutions during the transition. Among the findings is that countries moving to more flexibility tend to introduce more central bank independence, move towards an inflation targeting framework, and have better bank supervision and more developed securities markets than other countries.

V. CONCLUSIONS

This paper finds that exits from managed exchange rate regimes towards more flexibility occur when the parity is under pressure to devalue, while exits when the exchange rate is

¹¹ The IMF de facto classification is based in part on qualitative judgment of its desk economists. Unlike the Reinhart-Rogoff classification, parallel foreign exchange markets are not taken into account.

¹² As in other studies, real overvaluation is measured as deviation from a linear trend estimated over the sample period. Because large nominal devaluations typically also entail a large real devaluation, which likely pulls the entire trend down, finding the real exchange rate above trend before a disorderly exit is almost tautological. Also, failure to cluster standard errors by country may lead to underestimate standard errors in this study.

under pressure to appreciate are exceedingly rare. Exits have been about evenly divided between orderly and disorderly events, but differences in economic conditions preceding orderly and disorderly exits are not sharp, and cannot be picked up by our econometric tests.

Thus, countries have not heeded the conventional policy advice to exit tight pegs when the going is good. To the contrary, they seem to have relied more on the popular wisdom summarized by the principle: “if it isn’t broken, why fix it?” Waiting until conditions deteriorate has not always proven disastrous, as exits have remained orderly in about half the cases. Nonetheless, a policymaker may wish to know what might improve chances of a smooth exit. In this respect, our findings are disappointing, because none of the variables we have studied, which capture many of the factors highlighted in the literature, helps to discriminate between orderly and disorderly exits.

Failure to uncover clear patterns may be due to the small sample size although we have data for many years and countries, exits remain relatively rare events. But our results may also point to a more fundamental indeterminacy of the effects of changes in the exchange rate regime, which in turn may explain why country authorities wait till they are left with little choice. If an exit at any time can go wrong, then postponing change is always an attractive option.

Data Description

Label	Variable	Source / Definition
A	Reinhart-Rogoff regime classification	http://www.wam.umd.edu/~creinhar/Links.html
B	Nominal exchange rate vis-à-vis U.S. dollar	International Financial Statistics, line ..RF.ZF
C	Consumer price index	International Financial Statistics, line 64..ZF
D	Annual exports	International Financial Statistics, line 99C..ZF/99C.CZF
E	Annual imports	International Financial Statistics, line 98C..ZF/98C.CZF
F	Banks' claims on private sector	International Financial Statistics, line 22D..ZF
G	Central banks' claims on governments	International Financial Statistics, line 12A..ZF
H	Total reserves minus gold	International Financial Statistics, line .1L.DZF
I	Money market rate	International Financial Statistics, line 60B..ZF
J	Gross domestic product	International Financial Statistics, line 99B..ZF/99B.CZF
K	Population	International Financial Statistics, line 99Z..ZF
L	Real effective exchange rate	INS/IFS/GDS
M	Monthly exports	Direction of Trade Statistics, line 70..DZD001
N	Monthly imports	Direction of Trade Statistics, line 71..DZD001
O	Real GDP per capita	World Development Indicators, line NYGDPPCAPKD
P	Polity variables	http://www.cidcm.umd.edu/inscr/polity/
Q	Real exchange rate appreciation vis-à-vis U.S. dollar	Rate of change relative to the past five-year average
R	Trade openness	(D + E) / J; interpolated to allow it to vary on a monthly basis
S	Annual private credit growth	Year-to-year growth rate of F / C
T	Annual government borrowing growth	Year-to-year growth rate of G / C
U	Changes in scaled reserves	H divided by the past one-year average of imports (N)
V	Annual real export growth	Year-to-year growth rate of M / C
W	Real GDP per capita	O interpolated to allow it to vary on a monthly basis
X	U.S. real money market rate	I adjusted by year-to-year U.S. inflation rate (C)
Y	Politically unstable periods	Six month before and after political changes or transitional periods (P)

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Table 1. Reinhart-Rogoff Natural Exchange Rate Classification

Coarse	Fine	Regime
1	1	No separate legal tender
1	2	Preannounced peg
1	3	Preannounced horizontal band
1	4	De facto peg
2	5	Preannounced crawling peg
2	6	Preannounced crawling band (narrow)
2	7	De facto crawling peg
2	8	De facto crawling band (narrow)
3	9	Preannounced crawling band (wide)
3	10	De facto crawling band (wide)
3	11	Moving band
3	12	Managed floating
4	13	Freely floating
5	14	Freely falling
6	15	Dual market/no parallel market data

Source: Reinhart and Rogoff (2004).

Table 2. Exits to More Flexible Exchange Rate Regimes, 1980–2001

Country	Year	Month	From	To	Length (months)	6-Month Depreciation (in percent)	12-Month Depreciation (in percent)	Anchor
<i>Orderly exits</i>								
Australia	1982	11	De facto crawling band (narrow)	→ Managed floating	515	6.8	15.0	USD
Burundi	1985	9	De facto crawling band (narrow)	→ De facto crawling band (wide)	549	-7.1	-9.5	USD
China	1981	3	De facto crawling band (narrow)	→ Managed floating	87	12.6	15.1	USD
Colombia	1983	10	De facto crawling band (narrow)	→ Managed floating	115	13.0	27.3	USD
Czech Republic	1996	3	De facto crawling band (narrow)	→ De facto crawling band (wide)	67	-1.9	-4.2	DM
El Salvador	1982	8	De facto crawling band (narrow)	→ Managed floating	512	0.0	0.0	USD
Greece	1981	7	De facto crawling band (narrow)	→ Managed floating	375	10.2	24.7	USD
Guinea	2000	5	De facto crawling band (narrow)	→ Managed floating	168	3.4	19.9	USD
Haiti	1989	5	De facto crawling band (narrow)	→ De facto crawling band (wide)	593	0.0	0.0	USD
Honduras	1985	4	Pre announced peg	→ De facto crawling band (wide)	418	0.0	0.0	USD
Hungary	1999	1	De facto crawling band (narrow)	→ Pre announced crawling band (wide)	56	0.6	5.8	DM
Iceland	2000	10	De facto crawling band (narrow)	→ Managed floating	170	7.8	13.9	DM
Iraq	1982	1	Pre announced peg	→ Managed floating	505	0.0	1.1	USD
Israel	1989	1	De facto crawling band (narrow)	→ Pre announced crawling band (wide)	25	13.8	19.9	USD
Israel	1991	2	De facto crawling band (narrow)	→ De facto crawling band (wide)	12	11.5	13.8	USD
Jamaica	1993	5	De facto peg	→ De facto crawling band (wide)	5	12.6	27.6	USD
Kenya	1987	1	Pre announced peg	→ Managed floating	565	6.0	11.8	SDR
Madagascar	1985	7	De facto crawling band (narrow)	→ Managed floating	144	10.0	19.5	FRC
Mauritania	1983	11	De facto crawling band (narrow)	→ De facto crawling band (wide)	527	4.6	14.2	USD
Mauritius	1982	6	De facto crawling band (narrow)	→ De facto crawling band (wide)	78	5.0	11.6	USD
Nepal	1992	3	De facto crawling band (narrow)	→ De facto crawling band (wide)	126	0.0	9.8	USD
New Zealand	1985	3	De facto crawling band (narrow)	→ Managed floating	543	-15.6	-14.3	AUS
Paraguay	1999	7	De facto crawling peg	→ De facto crawling band (wide)	102	13.1	17.8	USD
Philippines	1993	5	De facto crawling band (narrow)	→ De facto crawling band (wide)	99	9.7	9.8	USD
Singapore	1998	12	De facto crawling band (narrow)	→ Managed floating	708	0.2	1.2	USD
Slovak Republic	1997	9	De facto crawling band (narrow)	→ De facto crawling band (wide)	54	0.1	-2.0	DM
Sri Lanka	2000	1	Pre announced crawling band (narrow)	→ Pre announced crawling band (wide)	331	3.8	9.0	USD
Sweden	1992	12	De facto crawling band (narrow)	→ Managed floating	490	22.8	26.9	DM
United Kingdom	1992	9	Pre announced horizontal band	→ Managed floating	24	16.6	16.2	DM
Venezuela	1983	3	Pre announced peg	→ Managed floating	519	0.1	1.3	USD
Zimbabwe	1983	7	De facto crawling band (narrow)	→ Managed floating	41	8.9	25.1	USD
<i>Disorderly exits</i>								
Argentina	1981	3	Pre announced crawling peg	→ Freely falling	27	94.3	198.3	USD
Argentina	1986	4	Pre announced peg	→ Freely falling	11	13.7	47.9	USD
Argentina	2001	12	Pre announced peg	→ Freely falling	129	114.8	186.2	USD
Brazil	1986	9	Pre announced peg	→ Freely falling	7	8.7	109.5	USD
Brazil	1989	4	Pre announced peg	→ Freely falling	4	146.2	1749.0	USD
Brazil	1999	2	Pre announced crawling band (narrow)	→ Freely falling	56	44.5	54.3	USD
Chile	1982	6	Pre announced peg	→ Freely falling	53	46.8	68.7	USD
Costa Rica	1980	10	Pre announced peg	→ Managed floating	78	38.4	78.9	USD
Ecuador	1982	3	Pre announced peg	→ Freely falling	109	18.5	25.5	USD
Ecuador	1997	10	De facto crawling band (narrow)	→ Freely falling	8	11.1	28.9	USD
Finland	1992	9	De facto crawling band (narrow)	→ Freely falling	300	19.8	26.1	DM
Guatemala	1984	12	Pre announced peg	→* Dual market/no parallel market data	259	0.0	0.0	USD
Guatemala	1989	6	De facto crawling peg	→ Freely falling	12	4.3	23.1	USD
Indonesia	1997	8	De facto crawling peg	→ Freely falling	225	88.0	217.6	USD
Israel	1986	9	Pre announced crawling band (narrow)	→ Freely falling	12	2.4	5.3	USD
Italy	1992	9	De facto crawling band (narrow)	→ Freely falling	117	17.1	20.9	DM
Jamaica	1990	10	Pre announced peg	→ Freely falling	138	15.6	37.8	USD
Jordan	1988	10	Pre announced peg	→ Freely falling	586	35.1	46.4	SDR
Korea	1997	12	De facto crawling peg	→ Freely falling	284	64.3	58.7	USD
Laos	1997	1	De facto crawling band (narrow)	→ Freely falling	80	9.4	36.8	USD
Malawi	1997	8	Pre announced peg	→ Freely falling	32	19.5	41.6	USD
Malaysia	1997	8	De facto crawling band (narrow)	→ Freely falling	692	36.9	45.8	USD
Mexico	1982	2	De facto crawling peg	→ Freely falling	60	73.1	151.6	USD
Mexico	1994	2	De facto peg	→* Pre announced crawling band (wide)	63	5.9	14.8	USD
Moldova	1998	6	De facto peg	→ Freely falling	40	14.7	56.8	USD
Philippines	1997	7	De facto peg	→ Freely falling	23	23.7	38.1	USD
Poland	1991	6	Pre announced peg	→ Freely falling	18	16.9	24.1	USD
Tajikistan	1998	10	Pre announced peg	→ Freely falling	12	22.5	45.0	USD
Thailand	1997	7	De facto peg	→ Freely falling	499	42.4	57.1	USD
Uganda	1989	10	Pre announced peg	→ Freely falling	38	73.9	109.7	USD
Uruguay	1982	12	Pre announced crawling peg	→ Freely falling	50	137.0	166.3	USD
Uruguay	1991	12	Pre announced crawling band (narrow)	→ Freely falling	13	24.4	51.4	USD

Note: The two exits with asterisks were followed by "freely falling" within the subsequent twelve months and thus considered to be disorderly.

There are some episodes whose depreciation rates appear zero, but these are in fact the ones in which multiple exchange rates existed, and the market rates were depreciating even though the official rates (shown above) were not.

USD, DM, FRC, AUS, SDR stand for U.S. dollar, Deutsche mark, French franc, Australian dollar, and SDR, respectively.

Source: Reinhart and Rogoff (2004), International Financial Statistics, and authors' calculations.

Table 3. Summary Statistics of Explanatory Variables

		Six-Month Window				
		Obs.	Mean	S.D.	Min.	Max.
Real exchange rate appreciation	Tranquil	9528	-0.039	0.150	-0.584	0.557
	Orderly	105	-0.029	0.139	-0.329	0.263
	Disorderly	124	0.025	0.100	-0.252	0.228
Trade openness	Tranquil	9528	0.488	0.242	0.000	1.587
	Orderly	105	0.413	0.189	0.086	1.136
	Disorderly	124	0.436	0.284	0.120	1.556
Private credit growth	Tranquil	9528	0.074	0.146	-0.975	0.907
	Orderly	105	0.050	0.093	-0.188	0.236
	Disorderly	124	0.112	0.122	-0.158	0.608
Government borrowing growth	Tranquil	9528	0.055	0.467	-1.111	7.746
	Orderly	105	0.364	0.817	-0.503	4.332
	Disorderly	124	0.182	0.731	-0.871	2.867
Changes in scaled reserves	Tranquil	9528	0.005	0.314	-1.529	1.520
	Orderly	105	-0.035	0.320	-1.360	0.788
	Disorderly	124	-0.065	0.428	-1.492	1.515
Export growth	Tranquil	9528	0.051	0.294	-1.000	2.011
	Orderly	105	-0.047	0.270	-0.789	0.683
	Disorderly	124	0.017	0.196	-0.455	0.803
Real GDP per capita	Tranquil	9528	7.914	11.171	0.151	46.895
	Orderly	105	4.115	6.423	0.194	26.936
	Disorderly	124	5.078	6.078	0.164	24.355
U.S. money market rate	Tranquil	9528	0.030	0.019	-0.042	0.087
	Orderly	105	0.037	0.021	-0.003	0.087
	Disorderly	124	0.029	0.022	-0.042	0.079
Duration of spells	Tranquil	9528	294.157	233.695	1	744
	Orderly	105	271.143	215.734	2	593
	Disorderly	124	176.903	194.025	3	692

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, and authors' calculations.

Table 4. Multinomial Logit Estimation Results (Tranquil as Base Category)

	Benchmark Specification			Stricter Peg	Looser Peg
	1 Month	6 Month	12 Month	6 Month	6 Month
<i>Orderly exits</i>					
Appreciation of real exchange rate (t-1)	0.61 [0.37]	1.31 [0.87]	1.69 [1.18]	2.96 [3.55]***	1.89 [1.43]
Trade openness (t-1)	-0.21 [0.21]	-0.83 [0.96]	-0.74 [0.84]	-1.78 [1.06]	-1.63 [0.89]
Annual private credit growth (t-1)	-0.33 [0.31]	-1.45 [1.29]	-1.88 [1.76]*	-0.01 [0.01]	-2.94 [2.83]***
Annual gov'n't borrowing growth (t-1)	0.51 [3.35]***	0.49 [3.01]***	0.48 [2.64]***	0.74 [0.72]	0.55 [2.22]**
Changes in scaled reserves (t-1)	-0.29 [0.47]	-0.23 [0.74]	-0.02 [0.07]	-0.51 [1.58]	-0.20 [0.67]
Annual real export growth (t-1)	-0.98 [1.75]*	-1.01 [1.70]*	-0.63 [1.47]	-0.16 [0.37]	-0.62 [0.97]
Real GDP per capita (USD) (t-1)	-0.06 [1.69]*	-0.04 [1.40]	-0.03 [1.23]	-0.61 [1.25]	0.00 [0.04]
U.S. real money market rate (t-1)	24.51 [1.85]*	20.39 [1.72]*	18.92 [1.72]*	44.80 [3.79]***	42.79 [4.04]***
Duration of spells	-0.14 [0.69]	-0.12 [0.53]	-0.10 [0.41]	-0.71 [4.85]***	-0.06 [0.35]
Constant	-6.04 [4.92]***	-3.92 [3.10]***	-3.31 [2.50]**	-0.40 [0.42]	-5.11 [4.92]***
<i>Disorderly exits</i>					
Appreciation of real exchange rate (t-1)	2.19 [1.67]*	2.69 [2.69]***	2.73 [2.75]***	2.97 [3.38]***	1.49 [1.45]
Trade openness (t-1)	-0.19 [0.16]	-0.61 [0.52]	-0.45 [0.39]	-0.52 [0.45]	-1.09 [1.02]
Annual private credit growth (t-1)	-0.06 [0.07]	0.49 [0.57]	0.87 [0.93]	0.56 [0.57]	0.63 [0.64]
Annual gov'n't borrowing growth (t-1)	0.32 [2.16]**	0.26 [1.30]	0.25 [1.06]	-0.94 [0.71]	0.40 [2.14]**
Changes in scaled reserves (t-1)	-2.48 [4.01]***	-0.55 [1.68]*	-0.23 [1.21]	-0.09 [0.41]	-0.72 [2.65]***
Annual real export growth (t-1)	-0.17 [0.38]	-0.51 [1.45]	-0.49 [1.34]	-0.24 [0.50]	-0.36 [0.87]
Real GDP per capita (USD) (t-1)	-0.02 [1.09]	-0.03 [1.41]	-0.03 [1.39]	-0.14 [3.58]***	-0.03 [1.53]
U.S. real money market rate (t-1)	7.01 [0.54]	3.28 [0.25]	6.75 [0.57]	16.69 [0.84]	9.36 [0.84]
Duration of spells	-0.30 [2.27]**	-0.30 [2.13]**	-0.31 [2.09]**	-0.51 [3.39]***	-0.19 [1.45]
Constant	-5.00 [4.51]***	-2.58 [2.55]**	-2.04 [2.04]**	-1.54 [1.73]*	-3.07 [3.81]***
Observations	9757	9757	9757	4386	11437
p-value of a Wald test	0.023	0.363	0.208	0.548	0.008
(H ₀ : Orderly and disorderly exits are indistinguishable)					

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, and authors' calculations.

Note: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 5. Multinomial Logit Estimation Results (Orderly as Base Category)

	Benchmark Specification			Stricter Peg	Looser Peg
	1 Month	6 Month	12 Month	6 Month	6 Month
<i>Tranquil times</i>					
Appreciation of real exchange rate (t-1)	-0.61 [0.37]	-1.31 [0.87]	-1.69 [1.18]	-2.96 [3.55]***	-1.89 [1.43]
Trade openness (t-1)	0.21 [0.21]	0.83 [0.96]	0.74 [0.84]	1.78 [1.06]	1.63 [0.89]
Annual private credit growth (t-1)	0.33 [0.31]	1.45 [1.29]	1.88 [1.76]*	0.01 [0.01]	2.94 [2.83]***
Annual gov'n't borrowing growth (t-1)	-0.51 [3.35]***	-0.49 [3.01]***	-0.48 [2.64]***	-0.74 [0.72]	-0.55 [2.22]**
Changes in scaled reserves (t-1)	0.29 [0.47]	0.23 [0.74]	0.02 [0.07]	0.51 [1.58]	0.20 [0.67]
Annual real export growth (t-1)	0.98 [1.75]*	1.01 [1.70]*	0.63 [1.47]	0.16 [0.37]	0.62 [0.97]
Real GDP per capita (USD) (t-1)	0.06 [1.69]*	0.04 [1.40]	0.03 [1.23]	0.61 [1.25]	0.00 [0.04]
U.S. real money market rate (t-1)	-24.51 [1.85]*	-20.39 [1.72]*	-18.92 [1.72]*	-44.80 [3.79]***	-42.79 [4.04]***
Duration of spells	0.14 [0.69]	0.12 [0.53]	0.10 [0.41]	0.71 [4.85]***	0.06 [0.35]
Constant	6.04 [4.92]***	3.92 [3.10]***	3.31 [2.50]**	0.40 [0.42]	5.11 [4.92]***
<i>Disorderly exits</i>					
Appreciation of real exchange rate (t-1)	1.58 [0.73]	1.39 [0.76]	1.04 [0.61]	0.02 [0.01]	-0.41 [0.25]
Trade openness (t-1)	0.02 [0.01]	0.22 [0.14]	0.28 [0.19]	1.26 [0.67]	0.53 [0.26]
Annual private credit growth (t-1)	0.27 [0.20]	1.94 [1.46]	2.76 [2.12]**	0.56 [0.36]	3.56 [2.40]**
Annual gov'n't borrowing growth (t-1)	-0.19 [0.97]	-0.23 [1.05]	-0.22 [0.90]	-1.68 [1.04]	-0.15 [0.54]
Changes in scaled reserves (t-1)	-2.19 [2.53]**	-0.32 [0.71]	-0.21 [0.65]	0.42 [1.15]	-0.52 [1.25]
Annual real export growth (t-1)	0.81 [1.16]	0.51 [0.75]	0.14 [0.25]	-0.08 [0.13]	0.26 [0.39]
Real GDP per capita (USD) (t-1)	0.04 [1.10]	0.01 [0.38]	0.01 [0.20]	0.47 [0.94]	-0.03 [0.80]
U.S. real money market rate (t-1)	-17.50 [0.96]	-17.12 [1.00]	-12.17 [0.78]	-28.11 [1.20]	-33.43 [2.21]**
Duration of spells	-0.15 [0.71]	-0.18 [0.72]	-0.21 [0.74]	0.20 [1.07]	-0.13 [0.63]
Constant	1.04 [0.64]	1.34 [0.82]	1.27 [0.75]	-1.14 [0.86]	2.04 [1.55]
Observations	9757	9757	9757	4386	11437

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, and authors' calculation
 Note: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 6. Multinomial Logit Results: Gains and Losses in Reserves

	Benchmark Specification			Stricter Peg	Looser Peg
	1 Month	6 Month	12 Month	6 Month	6 Month
<i>Orderly exits</i>					
Appreciation of real exchange rate (t-1)	0.62 [0.38]	1.30 [0.86]	1.69 [1.17]	2.78 [3.35]***	1.97 [1.47]
Trade openness (t-1)	-0.15 [0.14]	-0.86 [0.96]	-0.74 [0.83]	-2.11 [1.28]	-1.42 [0.77]
Annual private credit growth (t-1)	-0.31 [0.30]	-1.46 [1.31]	-1.89 [1.78]*	-0.11 [0.09]	-2.90 [2.83]***
Annual gov'n't borrowing growth (t-1)	0.51 [3.35]***	0.50 [3.01]***	0.48 [2.65]***	0.72 [0.67]	0.54 [2.16]**
Gains in scaled reserves (t-1)	0.08 [0.07]	-0.41 [0.55]	-0.01 [0.02]	-2.42 [1.82]*	0.62 [0.91]
Losses in scaled reserves (t-1)	0.58 [0.80]	0.08 [0.12]	0.03 [0.04]	-0.61 [0.65]	0.94 [1.70]*
Annual real export growth (t-1)	-0.96 [1.74]*	-1.02 [1.69]*	-0.63 [1.47]	-0.15 [0.34]	-0.62 [1.00]
Real GDP per capita (USD) (t-1)	-0.06 [1.64]	-0.04 [1.37]	-0.03 [1.20]	-0.63 [1.20]	0.00 [0.01]
U.S. real money market rate (t-1)	24.79 [1.86]*	20.26 [1.73]*	18.91 [1.73]*	43.91 [3.75]***	43.67 [4.17]***
Duration of spells	-0.14 [0.68]	-0.12 [0.54]	-0.10 [0.41]	-0.72 [4.87]***	-0.05 [0.30]
Constant	-6.17 [5.04]***	-3.86 [3.20]***	-3.32 [2.52]**	0.13 [0.13]	-5.48 [4.76]***
<i>Disorderly exits</i>					
Appreciation of real exchange rate (t-1)	2.22 [1.69]*	2.71 [2.69]***	2.74 [2.75]***	2.88 [3.25]***	1.53 [1.50]
Trade openness (t-1)	-0.05 [0.04]	-0.42 [0.37]	-0.28 [0.25]	-0.69 [0.58]	-0.97 [0.92]
Annual private credit growth (t-1)	-0.04 [0.05]	0.53 [0.63]	0.91 [0.98]	0.50 [0.52]	0.64 [0.66]
Annual gov'n't borrowing growth (t-1)	0.32 [2.15]**	0.26 [1.30]	0.25 [1.07]	-0.93 [0.70]	0.40 [2.14]**
Gains in scaled reserves (t-1)	-0.52 [0.54]	0.45 [0.96]	0.63 [1.45]	-0.88 [1.45]	-0.02 [0.04]
Losses in scaled reserves (t-1)	2.77 [4.32]***	1.22 [2.22]**	0.98 [1.87]*	-0.68 [0.89]	1.13 [2.34]**
Annual real export growth (t-1)	-0.16 [0.36]	-0.48 [1.43]	-0.48 [1.35]	-0.23 [0.47]	-0.36 [0.89]
Real GDP per capita (USD) (t-1)	-0.02 [1.06]	-0.03 [1.34]	-0.03 [1.32]	-0.14 [3.67]***	-0.03 [1.49]
U.S. real money market rate (t-1)	7.53 [0.57]	3.62 [0.28]	7.09 [0.60]	16.30 [0.83]	9.79 [0.87]
Duration of spells	-0.29 [2.21]**	-0.29 [2.09]**	-0.30 [2.06]**	-0.51 [3.43]***	-0.18 [1.42]
Constant	-5.29 [4.56]***	-2.92 [2.81]***	-2.37 [2.33]**	-1.28 [1.42]	-3.30 [4.10]***
Observations	9757	9757	9757	4386	11437

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, and authors' calculations.

Note: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Table 7. Binomial Logit Estimation Results

	Benchmark Specification			Stricter Peg	Looser Peg
	1 Month	6 Month	12 Month	6 Month	6 Month
<i>Exits</i>					
Appreciation of real exchange rate (t-1)	1.47 [1.41]	2.07 [2.38]**	2.27 [2.68]***	2.78 [4.38]***	1.59 [1.99]**
Trade openness (t-1)	-0.28 [0.40]	-0.69 [0.96]	-0.55 [0.75]	-1.17 [1.08]	-1.24 [1.29]
Annual private credit growth (t-1)	-0.19 [0.28]	-0.36 [0.49]	-0.29 [0.36]	0.13 [0.17]	-0.65 [0.88]
Annual gov'n't borrowing growth (t-1)	0.40 [3.47]***	0.38 [2.61]***	0.36 [2.11]**	-0.03 [0.04]	0.47 [2.92]***
Changes in scaled reserves (t-1)	-1.66 [3.17]***	-0.40 [1.80]*	-0.14 [0.85]	-0.30 [1.43]	-0.53 [2.61]***
Annual real export growth (t-1)	-0.53 [1.44]	-0.76 [2.20]**	-0.57 [1.90]*	-0.19 [0.57]	-0.47 [1.20]
Real GDP per capita (USD) (t-1)	-0.04 [2.00]**	-0.03 [2.09]**	-0.03 [1.97]**	-0.21 [4.06]***	-0.02 [1.08]
U.S. real money market rate (t-1)	15.35 [1.59]	11.51 [1.27]	12.37 [1.47]	30.79 [2.75]***	23.18 [2.83]***
Duration of spells	-0.23 [1.79]*	-0.22 [1.72]*	-0.22 [1.63]	-0.58 [4.82]***	-0.15 [1.41]
Constant	-4.66 [5.88]***	-2.44 [3.13]***	-1.84 [2.39]**	-0.48 [0.71]	-3.08 [4.96]***
Observations	9757	9757	9757	4386	11437
Total exits	40	229	437	135	258
Correctly predicted exits	25	146	265	110	155
Prob. of correctly predicting exits	0.63	0.64	0.61	0.81	0.60
Total tranquil times	9717	9528	9320	4251	11179
Correctly predicted tranquil times	6664	6093	5879	3041	7412
Prob. of correctly predicting tranquil times	0.69	0.64	0.63	0.72	0.66

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, and authors' calculations.

Note: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent

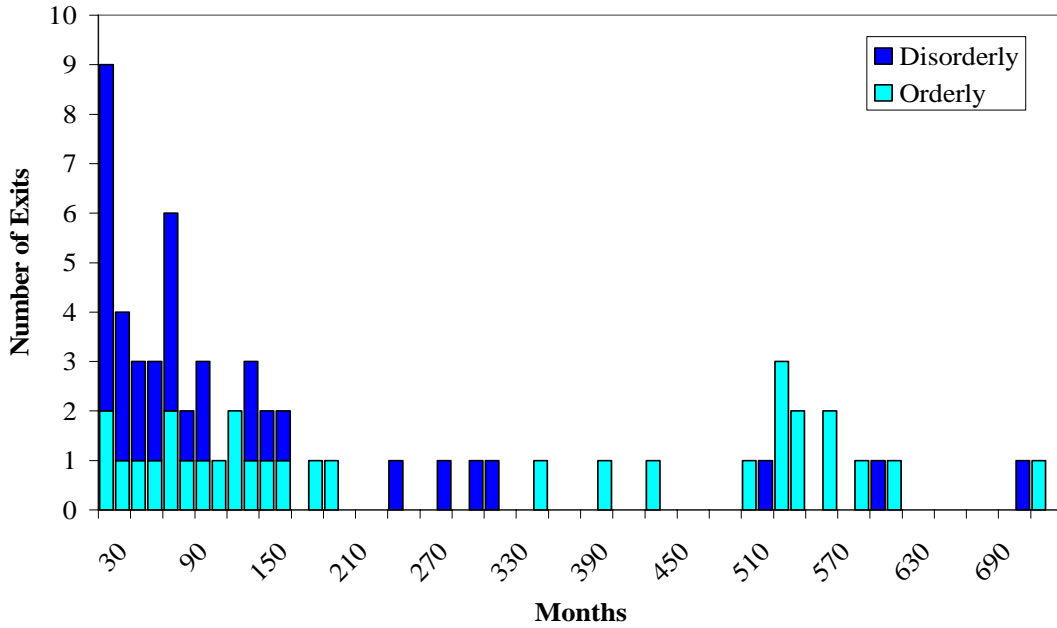
Table 8. Binomial Logit Estimation Results–Robustness

	Includes High Inflation 6 Month	Real Effective Exchange Rate 6 Month	Country Group Dummies 6 Month	Political Changes 6 Month
<i>Exits</i>				
Appreciation of real exchange rate (t-1)	1.72 [1.98]**	1.35 [0.95]	2.02 [2.29]**	2.17 [2.50]**
Trade openness (t-1)	-1.03 [1.35]	0.12 [0.21]	-0.62 [0.90]	-0.65 [0.88]
Annual private credit growth (t-1)	0.28 [0.35]	0.42 [0.53]	-0.57 [0.77]	-0.3 [0.41]
Annual gov'n't borrowing growth (t-1)	0.42 [3.14]***	0.07 [0.63]	0.37 [2.64]***	0.37 [2.53]**
Changes in scaled reserves (t-1)	-0.31 [1.66]*	-0.45 [1.73]*	-0.39 [1.81]*	-0.4 [1.78]*
Annual real export growth (t-1)	-0.73 [2.22]**	-0.45 [1.09]	-0.81 [2.25]**	-0.71 [2.18]**
Real GDP per capita (USD) (t-1)	-0.03 [1.64]	-0.03 [1.59]		-0.03 [1.79]*
U.S. real money market rate (t-1)	13.45 [1.57]	-1.38 [0.13]	11.83 [1.31]	12.58 [1.37]
Duration of spells	-0.3 [2.71]***	-0.26 [1.86]*	-0.22 [1.68]*	-0.24 [1.85]*
MSCI emerging markets			0.87 [1.72]*	
Other developing countries			0.6 [1.33]	
Politically unstable periods				0.78 [2.22]**
Constant	-2.06 [3.22]***	-2.5 [3.22]***	-3.2 [3.40]***	-2.55 [3.27]***
Observations	9957	9208	9769	9757

Source: Reinhart and Rogoff (2004), International Financial Statistics, World Development Indicators, Polity IV Project, and authors' calculations.

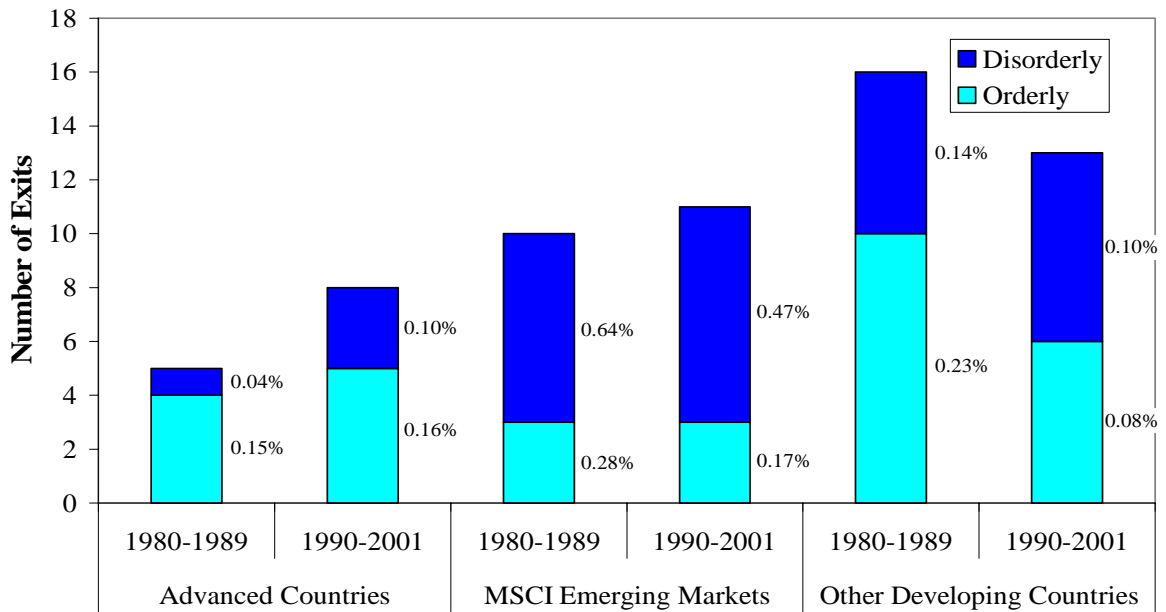
Note: * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Figure 1. Exits by Duration



Source: Reinhart and Rogoff (2004) and authors' calculations.

Figure 2. Exits by Country Group and Period



Note: percentages are sample frequencies measured as the number of exits divided by the total observations of spells in the country group during the period.

Source: Reinhart and Rogoff (2004) and authors' calculations.