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Pablo Garofalo y Jorge M. Streb

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Broken promises: regime announcements and exchange rates around elections

Pablo Garofalo
New Jersey City University

Jorge M. Streb[*]
Universidad del CEMA

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Abstract We study the relationship between exchange-rate regime announcements and exchange-rate dynamics around government changes by combining the IMF de jure and the Reinhart and Rogoff de facto exchange-rate regime classifications. Using monthly data from Latin American democracies, we do not identify significant exchange-rate depreciations before the change of government in any of the regimes, but we do identify a gradual exchange-rate overvaluation when regimes are fixed inconsistent (i.e., the de jure regime announcement is fixed and differs from the de facto behavior). After the change of government, the overvaluation under fixed-inconsistent regimes is abruptly corrected through significant devaluations. We thus identify a pattern of broken promises by which incumbents delay devaluations until after the change of government under fixed-inconsistent announcements, but not under fixed-consistent ones. Controlling for conditional volatility, we also detect significant "fear of floating" in flexible-inconsistent regimes before the change of government, when electoral stakes are highest.

JEL classification codes: D72, D78, E00
Key words: exchange-rate regimes, exchange-rate overvaluations, electoral cycles

I. Introduction

Reneging on exchange-rate regime announcements occurs quite often. Calvo and Reinhart (2002) show that many Latin American countries that claim to be floating are not doing so, a phenomenon known as "fear of floating". This occurs for instance when a country classified as floating in reality is pegging its exchange rate to, say, the US dollar. Conversely, Alesina and Wagner (2006) show that some countries

[*] Pablo Garofalo: New Jersey City University, School of Business, Department of Economics, 160 Hudson St # 205H, Harborside Plaza 2 – 2nd floor, Jersey City, New Jersey, 07311, USA; pgarofalo@njcu.edu. Jorge M. Streb: Universidad del Cema, Av. Córdoba 374, 1054 Buenos Aires, Argentina; jms@ucema.edu.ar. We appreciate the comments made by Juan Pereyra and participants at the Jornadas Anuales de Economía of the Banco Central del Uruguay at Montevideo, in 2017, the 45th Annual Conference of the Eastern Economic Association at New York City, NY, in 2019, the 56th Annual Meeting of the Public Choice Society at Louisville, KY, in 2019, and the 55th Annual Meeting of the Asociación Argentina de Economía Política in Buenos Aires, Argentina, in 2020. The authors' viewpoints are personal and do not represent any institution.

often break commitments to pegging and end up floating more than what they announce, a phenomenon they call "fear of pegging". We analyze how this behavior may be particularly acute around elections.

Exchange-rate regimes can be tracked with the IMF de jure exchange-rate classification that reports what countries claim to be doing. Most exchange-rate regimes are mere announcements.[1] Indeed, the IMF de jure classification has been criticized for representing words, not deeds (Reinhart and Rogoff 2004, Levy-Yeyati and Sturzenegger 2005). Among the de facto classifications proposed, Reinhart and Rogoff (2004) reclassify exchange-rate arrangements by developing an algorithm based on the observed behavior of exchange rates, while parallel exchange rates are used if multiple markets are present.[2]

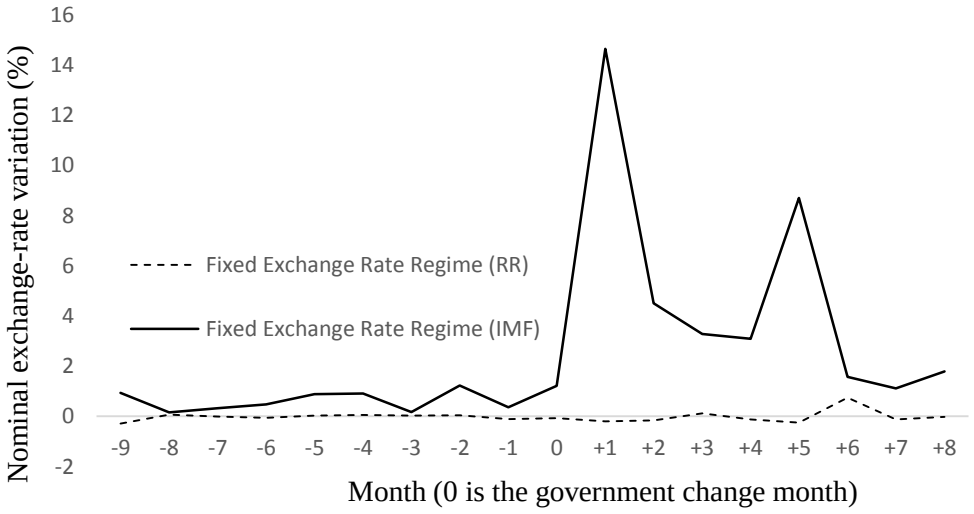
While Reinhart and Rogoff (2004: 1) claim that the IMF exchange-rate classification is "a little better than random", we have reasons to suspect otherwise. Based on the IMF and RR classifications (henceforth, RR refers to Reinhart and Rogoff 2004), Figure 1 shows nominal exchange-rate variations around constitutional government changes (when an incumbent's term ends and a new administration is inaugurated) in Latin American countries, conditional on a fixed exchange-rate regime. Devaluations are similar under both classifications up to the month of government change, but they increase considerably afterwards under the IMF classification. This indicates the existence of announcements that are sustained in the prelude to elections and government changes, but not afterwards.

Though there is ample evidence on the delay of exchange-rate adjustments when elections are coming up (e.g., Edwards, 1994; Stein and Streb, 2004; Stein, Streb, and Ghezzi, 2005; Cermeño, Grier, and Grier, 2010), they imply broken promises only if the government has announced a fixed exchange-rate regime. Our first contribution is to study the behavior of exchange rates conditional on exchange-rate announcements, and, more specifically, on the consistency of the exchange-rate regimes, i.e., on whether the de jure classification that relies on announcements coincides or not with the de facto one that relies on market-based behavior. To the best of our knowledge, nobody has analyzed this issue before. Our second

[1] Exchange-rate regime announcements are here distinguished from firmer monetary commitments like dollarization, in which the country relinquishes an independent currency, e.g., Panama since 1904, Ecuador since 2000, and El Salvador since 2001.
[2] In the next section we discuss the Levy-Yeyati and Sturzenegger (2005) classification.

contribution is to show that previous studies suffer from downward bias due to the fact that they do not control for either the exchange-rate announcement or its consistency: their results are a weighted average of devaluations in inconsistent fixed exchange-rate regimes, where all the variability is concentrated, and all the other regimes, where no pattern is found. Our third contribution is to point out that, observationally, consistent and inconsistent fixed exchange-rate regimes are very different, because inconsistent regimes are typically characterized by dual markets or high inflation before elections.

Figure 1. Exchange-rate devaluations around government changes



Note: The average exchange-rate variation during 21 [24] complete episodes in 21 Latin American countries (Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Trinidad-Tobago, Uruguay and Venezuela) within the 1980-2005 period is computed using the RR [IMF] fixed exchange-rate classifications. Both fixed exchange-rate classifications are invariant throughout the 18 month window. Dollarization episodes were excluded.

We first study the determinants of the exchange-rate regimes around elections using ordered logit models for both the IMF and RR regime classifications. As found, among others, by Klein and Marion (1997) and Gavin and Perotti (1997), we do not find evidence that regime announcements change before the government change date, but the probability that the actual regime is flexible increases. Altogether, this evidence indicate that the inconsistency of fixed-regime announcements tends to increase before

government changes, given that the market-based classification starts departing from what the incumbent claims to be doing. After the new administration is inaugurated, the announcement tends to catch up with the market-based regime, since the probability of abandoning a fixed exchange-rate regime increases, as in Klein and Marion (1997) and Gavin and Perotti (1997). Studying regime consistency, rather than just focusing either on the announcements or the de facto behavior, is something novel in the literature on exchange-rate regimes.[3]

We then study the dynamics of the real exchange rate during electoral months conditional on consistent and inconsistent exchange-rate regime announcements (i.e., whether the announcements match the actual exchange-rate regime or not) using a dynamic distributed lag model and a difference-in-difference strategy.[4] We find that exchange-rate behavior during fix-inconsistent and fix-consistent exchange-rate announcements are not statistically different until the month of the government change, but they differ significantly in the first quarter after that. Our results are robust to an alternative estimation method that lets the variance of the exchange rate be autoregressive and conditional on exchange rate regimes around government changes. This also allows us to study the behavior of exchange-rate volatility. Fixed-inconsistent announcements tend to be associated with episodes of "poor macroeconomic performance and inability to maintain monetary and fiscal stability" (Alesina and Wagner, 2006: 774).[5] We can directly test this claim around government changes by treating the variance of the exchange rate as an indicator of macroeconomic instability, observing whether it increases during fixed-inconsistent announcements. Though we find that the exchange rate volatility is higher during fixed-inconsistent regimes, the result is not significant. For flexible regimes that are inconsistent (i.e., claiming to float while fixing the exchange rate), volatility is considerably and significantly lower before government changes, and slightly lower –and insignificant– afterwards. This result adds a political economy perspective to the

[3] Blomberg, Frieden, and Stein (2005) find that the duration of pegs increases before elections and decreases afterwards. This is consistent with a pattern of increasing inconsistency of pegs before elections that is corrected afterwards.
[4] We explain in Section III how we identify consistent and inconsistent announcements, and in Section IV how we tackle the endogeneity problem of regime announcements.
[5] Fixed-inconsistent announcements are a slight modification of what Alesina and Wagner call "fear of pegging". We develop the rationale of this modification in section III.

Calvo and Reinhart "fear of floating" finding, where exchange rates are claimed to be floating while they don't: fear of floating is stronger before government changes.

The paper also contributes to the literature on real exchange-rate appreciations and their reversions. Goldfajn and Valdés (1999) show that real exchange-rate appreciations are usually reverted by nominal exchange-rate devaluations rather than by smooth inflation differentials. This nominal adjustment through sharp exchange-rate devaluations leads overvaluation to last longer during the buildup stage than during the reversion stage. In our sample of Latin American countries, the overvaluation of the real exchange rate occurs only for the fixed-inconsistent regime announcements. Such overvaluation begins ten months before the government change date and lasts until two months after the government change (about one year of overvaluation), with a peak of 31% in the government change month. Reversion starts abruptly the next month and is completed in three months. This corroborates the Goldfajn and Valdés (1999) findings on the asymmetry between the buildup and reversion stages due to sudden nominal exchange-rate adjustments. While they did not characterize and describe the context in which these appreciation episodes take place, we identify one particular context where they occur: poor macroeconomic performance before elections and government changes.

The rest of the paper is organized as follows. In Section II, we review the exchange-rate classification literature. In section III, we explain the methodology followed to identify consistent and inconsistent exchange-rate regime announcements. In Section IV, we present the econometric models and results. In Section V, we analyze the appreciation of the real exchange rate and its reversion. Section VI concludes.

II. Exchange-rate regime classifications

The IMF provides a traditional exchange-rate regime classification.[6] Until early 2000, it asked country members to self-declare their arrangement as belonging to one of four categories: float, manage, crawl

[6] *Annual Report on Exchange Arrangements and Exchange Restrictions*.

and fix. If a country announced the adoption of a floating regime in a specific year, the IMF classified this country-year as floating even if in practice it pegged its currency to, say, the US dollar. There are many reasons to seek a better approach to classifying exchange-rate regimes. For instance, empirical work on the cost and benefits of alternative exchange-rate arrangements can be misleading when there are significant deviations of the actual behavior from the announced behavior; as pointed out by Reinhart and Rogoff (2004), Baxter and Stockman (1989) found there are no significant differences in business cycles across exchange arrangements.

Reinhart and Rogoff (2004) provide a "natural classification" of exchange-rate regimes that relies on a broad variety of descriptive statistics to group episodes into a grid of regimes based on market-determined exchange-rate behavior. They provide detailed analyses to posit the importance of market-determined exchange rates as the best indicator of the underlying monetary policy. They first do so by showing that the market exchange rate consistently anticipates devaluation of the official rate, and not vice-versa. Second, they find that the market-determined exchange rate keeps up with inflation while the official rate does not as much. Additionally, they remark that "it is not unusual for dual or parallel markets (legal or otherwise) to account for the lion's share of transactions with the official rate being little more than symbolic." (Reinhart and Rogoff 2004: 10).

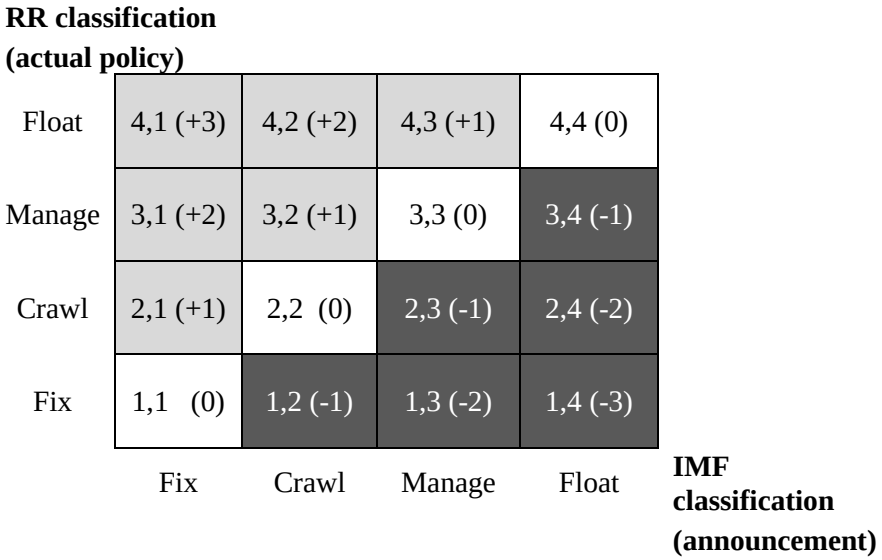
To create the natural classification, they first check whether there is a unified rate instead of dual or parallel (black) markets. If there is a dual or parallel market, given the relevance of the market-determined rate explained above, they classify the regime as de facto using market-determined exchange rate. If there is no parallel market, they examine summary statistics to verify an official preannounced arrangement, if any, going forward from the date of the announcement. If the regime is verified, it is then classified as de jure accordingly. If the announcement fails verification, they seek a de facto statistical classification based on the behavior of the exchange rate if the rate of inflation is below 40 percent. When annual inflation is above 40 percent, the exchange rate is classified as "freely falling". A similar statistical classification is conducted when there is no preannounced path for the exchange rate.

Levy-Yeyati and Sturzenegger (2005) also provide a de facto classification of exchange-rate regimes. Besides exchange rates, their algorithm uses base money and international reserves. While both classifications have their merits, the RR classification suits our analysis better because it provides a monthly classification that allows us to observe switching regimes, if any, around elections and government change dates which is important to determine the endogeneity of the regime. Moreover, Levy-Yeyati and Sturzenegger (2005) use the official exchange rate in their algorithm, rather than market rates. This may be problematic since the former is way more likely to change at the whim of the executive, which may create endogeneity problems when using regime classification based on official rates.

III. Consistency of exchange-rate regime announcements

In order to identify consistent and inconsistent announcements (whether the announcement matches the actual policy or not) we follow an approach similar to Alesina and Wagner (2006). They use a simple way to quantify "broken promises". They take the difference between the coarse RR and IMF classifications. If the announcement is, say, manage [float], when the IMF classification equals 3 [4], while the natural classification is, say, float [manage], when the RR classification equals 4 [3], then the difference is positive [negative] and called "fear of pegging" ["fear of floating"]. In Figure 2 all the possible combinations that form either fear of pegging or fear of floating are depicted. The upper left shaded area represents fear of pegging, while the lower right, fear of floating. Each cell has three numbers $X, Y(Z)$, where X represents the RR classification, Y the IMF classification, and $Z = X - Y$. Note that $Z < 0$ represents fear of floating, $Z > 0$, fear of pegging, and $Z = 0$, consistent announcements.

Figure 2. Classification of broken promises. Alesina and Wagner (2006)

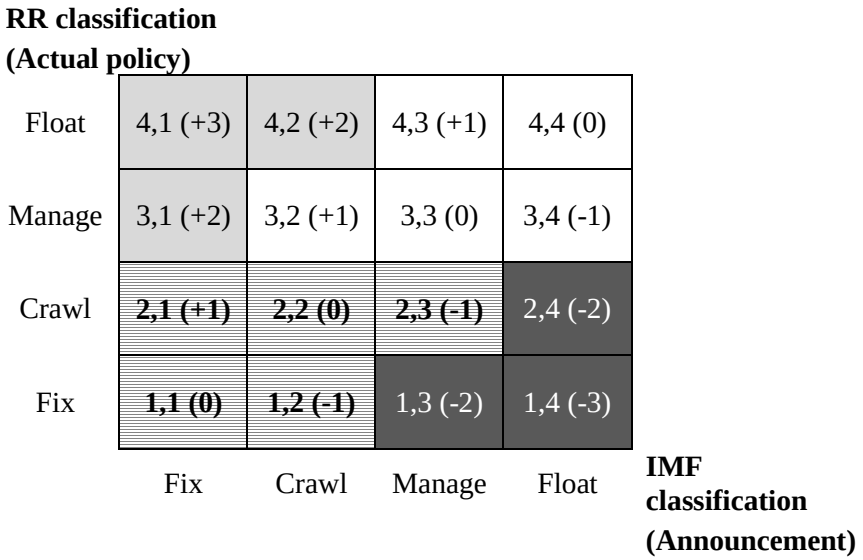


Note: Each cell contains three numbers, $X, Y(Z)$. X represents the RR classification (4 is float, 3 manage, 2 crawl, and 1 fix), Y the IMF classification (4 is float, 3 manage, 2 crawl, and 1 fix), and $Z = X - Y$. Fear of floating, with more managing than announced ($Z < 0$) in dark gray shaded area. Fear of pegging, with more floating than announced ($Z > 0$), in light gray shaded area. Source: Alesina and Wagner (2006).

This classification does not control for the intensity of the differences between the RR and IMF classifications. It applies equally to $Z = -3$ and $Z = -1$, without distinguishing between strong and weak fear of floating (an analogous observation holds for $Z > 0$ regarding the different intensities of fear of pegging). This issue is the starting point for our regime classification. Our main innovation lies in dividing "consistent" announcements into fixed (fix or crawl) and flexible (manage or float). We create the categories using a two-dimensional classification system: fix-flexible, and consistent-inconsistent. Our approach is depicted in Figure 3. There we observe four categories: (1) fixed-consistent, the striped area at the bottom left, (2) flexible-consistent, the unshaded area at the top right, (3) fixed-inconsistent or fear of pegging, the light gray area at the top left, and (4) flexible-inconsistent or fear of floating, the dark gray area at the bottom right. Note that in our case $Z = 0$ or $Z = \pm 1$ correspond to a consistent category, when there is either a match between the actual policy and the announcement ($Z = 0$) or a weak departure

($Z = \pm 1$). This is how we differentiate the intensity of the episodes in our analysis, i.e., $Z \leq abs(1)$ belongs to consistent announcements, while $Z > abs(1)$ belongs to inconsistent ones.

Figure 3. Classification of consistent and inconsistent announcements



Note: Each cell contains three numbers, $X, Y(Z)$. X represents the RR classification (4 is float, 3 manage, 2 crawl, and 1 fix), Y the IMF classification (4 is float, 3 manage, 2 crawl, and 1 fix), and $Z = X - Y$. Flexible-inconsistent announcements ($Z < -1$) in dark gray area. Fixed-inconsistent announcements ($Z > 1$) in light gray area. Fixed-consistent announcements in striped area. Flexible-consistent announcements in unshaded area.

IV. Data, econometric specifications and results

We collect monthly data on exchange rates and inflation from seventeen Latin American countries from the *IMF International Financial Statistics* covering the period 1980-2005. These countries are Argentina, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Trinidad and Tobago, Uruguay, and Venezuela.[7] We construct the series of multilateral real exchange rate, which is a trade-weighted average of bilateral real exchange rates. We follow the Goldfajn and Valdés (1999) approach of using only trading partners above 4 percent

[7] We have to drop Chile, Guyana, Jamaica and Paraguay due to missing observations in the control variables.

of overall trade. Also, as in Goldfajn and Valdés (1999), we fixed trade weights using trade flows of an intermediate year (1995 in our case) from the UN *International Trade Statistics Yearbook*, a middle point in our time frame.[8] The RR "natural" monthly exchange-rate regime classification comes from Carmen M. Reinhart's website.[9] The IMF "traditional" annual exchange-rate regime classification comes from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*. We conducted a country-by-country study to transform the IMF annual classification into monthly series (details and sources can be found in Appendix A).

Our main focus is the study of the real exchange-rate dynamics around government change dates conditional on the consistency of the regimes. However, we first study the determinants of the exchange-rate regime policies and to what extent they are sensitive to the electoral window. This is an important question to answer since regime types will be used as controls in the study of exchange-rate dynamics. Therefore, netting out covariates, we would like to see how endogenous regimes are around government changes, if at all. Afterwards, we proceed to study the dynamics of the real exchange rate conditional on consistent versus inconsistent exchange-rate regime announcements.

A. Determinants of exchange-rate regimes

We estimate the following ordered logit model:

$$\mathrm{P}(regime\ Y_{it} = y|\ \mathbf{X_{it}}, \mathbf{govch}(\mathbf{q}^{-})^{\boldsymbol{q}}_{\mathbf{it}}, \mathbf{govch}(\mathbf{q}^{+})^{\boldsymbol{q}}_{\mathbf{it}}) = \mathrm{o.logit}\left(\mathbf{X_{it}}\boldsymbol{\beta} + \mathbf{govch}(\mathbf{q}^{-})^{\boldsymbol{q}}_{\mathbf{it}}\boldsymbol{\delta} + \mathbf{govch}(\mathbf{q}^{+})^{\boldsymbol{q}}_{\mathbf{it}}\boldsymbol{\gamma}\right), \quad (1)$$

where *i* and *t* stand for country and month, respectively. The dependent variable is the exchange-rate regime announcement (when the IMF classification is used) or the market-determined exchange-rate

[8] Identical qualitative results were found using only the bilateral real exchange rate with the U.S. This may be because the U.S is the main trade partner for almost all Latin American countries. We therefore conclude that our results should not be sensitive to the year of weights used. These alternative results are available upon request.
[9] http://www.carmenreinhart.com.

regime (when the RR classification is used). *y* takes value 1 (2) [3] {4} if the regime is fix (crawl) [manage] {float}. $\mathbf{govch(q^-)^q_{it}} = \left(govch(-3)^q_{it}\ govch(-2)^q_{it}\ govch(-1)^q_{it}\ govch(0)^q_{it}\right)$ is a matrix of four dummy variables. $govch(0)^q$ takes value of 1 in the months 0 to 2 before the government change month (month 0 is when the government changes), $govch(-1)^q$ takes value of 1 in the months 3 to 5 before the government change month, $govch(-2)^q$ and $govch(-3)^q$ are defined similarly. Note that although the data is monthly, we are defining dummy variables per quarters (the superscript "*q*" stands for quarter). Analogously, $\mathbf{govch(q^+)^q_{it}} = \left(govch(+1)^q_{it}\ govch(+2)^q_{it}\ govch(+3)^q_{it}\ govch(+4)^q_{it}\right)$ is constructed for the 12 months following the month of the change of government using four quarterly dummy variables.

X is a matrix composed by the following time-varying controls: (i) *Portfolio*, the sum of the absolute value of inward and outward flows of portfolio investment and financial derivatives as a percentage of GDP, from the IMF *International Financial Statistics*. This variable is used by Levy-Yeyati, Sturzenegger, and Reggio (2010) as a proxy variable for capital mobility. Based on the "impossible trinity" argument, policymakers should give up on either monetary policy or exchange-rate policy in environments with high capital mobility. Thus, intermediate regimes are less viable. Alternatively, given the "currency mismatch" argument, we should expect more commitments to pegging. (ii) *Foreign.Liab.pc*, foreign liabilities per capita, from the IMF *International Financial Statistics*. Countries with important foreign liabilities may be more prone to fix their currency since sharp nominal depreciation of the currency impact on the solvency of the non-tradable sector's balance sheets. Alesina and Wagner (2006), and Levy-Yeyati, Sturzenegger, and Reggio (2010) used foreign liabilities over monetary aggregates instead. The problem with this variable is that for Latin American countries, money demand was extremely unstable during the 80's and beginning of the 90's due to high inflation regimes. In crisis episodes during high inflation, money demand falls while the monetary authority lets the exchange rate float, creating a positive relation between foreign liabilities and flexible regimes, totally

opposed to the currency mismatch hypothesis.[10] (iii) *Size*, real GDP in dollars, from the IMF *International Financial Statistics*. As noted in Levy-Yeyati, Sturzenegger, and Reggio (2010), smallness favors a more stable exchange rate through the higher propensity of small economies to trade internationally, and by limiting the scope for the use of a national unit of account. (iv) *ToT*, terms of trade. When terms of trade are high, Latin American countries tend to fix their exchange rates as a device for accumulating international reserves in their central banks, probably to be insured against sudden stops (Jeanne, 2007; Jeanne and Rancière, 2011). (v) *U.S.interest*, the U.S. interest rate in real terms, from the IMF *International Financial Statistics*. Calvo et al. (1993) and Fernandez-Arias and Montiel (1996) found that the U.S interest rate is a determinant for capital inflows in Latin America.[11] When U.S interest rate increases, capital outflows may be stopped by letting the exchange rate float. This effect should be exacerbated when economies keep more open capital accounts. (vi) *Openness*, exports plus imports over GDP, from the IMF *International Financial Statistics*. The decision of pegging could be correlated with trade openness since highly open economies are in favor of a more stable exchange rate, as noted by Levy-Yeyati, Sturzenegger, and Reggio (2010). Finally, (vii) *Default*, a dummy variable that takes value 1 if the country has defaulted the external debt and 0 otherwise, from Carmen M. Reinhart's website, is used to control for the fact that these economies cannot sustain their currency given a high macroeconomic instability, so they let their currency float or, more precisely, freely fall.

Among the seven controls describe above, five are available only at annual frequencies. These are *Portfolio*, *Foreign.Liab.pc*, *Size*, *ToT*, and *Default*. For the first four, we use the log differential method to construct within-year imputation with constant monthly percentage change within each year. *Default* is left at its annual frequency given that it is a dummy variable. The rest, *U.S.interest* and *Openness* are available at monthly frequencies so interpolation is not necessary. Given the possibility of reverse causality, we decided to use 1-month lagged values of the variables available at monthly frequency. For

[10] We indeed find a significant positive coefficient when foreign liabilities over money are used, so the probability of a flexible regime increases when foreign liabilities to money increase. There is instead a negative coefficient with our transformation of foreign liabilities normalized with population. The latter is consistent with the currency mismatch hypothesis, as found in Levy-Yeyati, Sturzenegger, and Reggio (2010) for their regime classification. Results are shown below.

[11] When the U.S. Treasury Bill rate is used instead, results are qualitatively the same.

the variables available at annual frequency that were interpolated using log differences, we adopt 12-months lagged value instead. Except for *Default* and dummy variables for government change, the rest of the variables are expressed in natural logs.

Table 1. Probability of exchange regimes. Ordered logit models

	(1)	(2)	(3)	(4)
Dep Var: Regime Classification	IMF	RR	IMF	RR
	x: quarterly dummies (q)		x: annual dummies (a)	
$ln\ Portfolio_{t-12}$	-0.003	-0.098***	-0.003	-0.098***
	[0.018]	[0.017]	[0.018]	[0.017]
$ln\ Foreign.Liab.pc_{t-12}$	0.067***	-0.014	0.067***	-0.014*
	[0.008]	[0.009]	[0.008]	[0.009]
$ln\ Size_{t-12}$	0.326***	0.281***	0.326***	0.281***
	[0.028]	[0.026]	[0.028]	[0.026]
$ln\ ToT$	-0.531***	-0.839***	-0.533***	-0.847***
	[0.193]	[0.194]	[0.193]	[0.194]
$ln\ U.S.Interest$	-0.205***	-0.034	-0.205***	-0.031
	[0.050]	[0.047]	[0.050]	[0.047]
$ln\ Openness_{t-1}$	0.408***	-0.111	0.408***	-0.106
	[0.088]	[0.085]	[0.088]	[0.085]
$Default_{t-12}$	0.342***	1.838***	0.342***	1.841***
	[0.087]	[0.093]	[0.087]	[0.093]
$govch(-3)^x$	0.079	0.238*		
	[0.141]	[0.138]		
$govch(-2)^x$	0.012	0.319**		
	[0.142]	[0.139]		
$govch(-1)^x$	-0.071	0.271*		
	[0.143]	[0.139]		
$govch(0)^x$	0.008	0.251*	0.007	0.267***
	[0.143]	[0.139]	[0.080]	[0.077]
$govch(+1)^x$	0.175	0.347**	0.160**	0.147*
	[0.143]	[0.140]	[0.079]	[0.076]
$govch(+2)^x$	0.193	0.238*		
	[0.141]	[0.137]		
$govch(+3)^x$	0.157	0.057		
	[0.139]	[0.134]		
$govch(+4)^x$	0.115	-0.033		
	[0.140]	[0.135]		
Observations	3,590	3,638	3,590	3,638

Notes: Estimation of Equation (1) with ordered logit models. Dependent variable takes value 1 (2) [3] {4} if the regime is fix (crawl) [manage] {float}. Countries in the sample are Argentina, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Trinidad and Tobago, Uruguay, and Venezuela, covering the 1980-2005 period. Non-democratic episodes were excluded based on Polity IV Project. Dollarization episodes were excluded as well. Robust standard errors in brackets. (*) [**] {***} stands for significance at (10%) [5%] {1%}, respectively.

As we mentioned, we estimate Equation (1) for both the exchange regime announcements and the market-determined exchange-rate regime. Results are shown in Table 1 for ordered logit models. In Column 1 we observe the estimation of Equation (1) for exchange-rate announcement (IMF classification), where *y*

takes value 1 (2) [3] {4} if the regime is fix (crawl) [manage] {float}. Column 2 produces the same estimation for the de facto regime RR classification, where the classification follows exactly the same order. For the RR de facto classification, the probability of observing fix regimes increases as the de facto capital account openness increases (i.e., *Portfolio* is negative for both estimation results). This is consistent with the "currency mismatch" hypothesis in Levy Yeyati, Sturzenegger, and Reggio (2010). *Size* and *ToT*, as explained above, have the predicted signs in the de facto classification of Column 2 (i.e., positive for the former, and negative for the latter). The announcement accompanies the market exchange-rate behavior in both cases. *Foreign.liab.pc* has the predicted –but insignificant– negative sign in the de facto classification of Column 2, consistent with the currency mismatch hypothesis, while it is significantly positive for the regime announcement classification of Column 1, indicating altogether that *Foreign.liab.pc* may be a determinant of inconsistent flexible regimes (or fear of floating). Though *U.S.interest* does not have the predicted sign for the de facto classification, it is insignificant. Regarding the announcement, we observe a strong increase in the likelihood of announcing a peg as *U.S.interest* increases since it is significant and negative in Column 1. Altogether, this evidence shows the increase of fixed announcements that cannot be sustained in the medium/short run, that is to say, inconsistent fixed announcements (or fear of pegging). This seems to occur given that an increase in the U.S. interest rate produces capital outflows from the Latin American region, as found in Calvo et al. (1993) and Fernandez-Arias and Montiel (1996). The regime announcement may try to signal stability as an attempt to control the market instability with mere words. Similarly, we observe that the market-based exchange rate tends to float when economies default on their debt (i.e., $Default = 1.838^{***}$ in Column 2), while the announcement keeps up with the market behavior but to a lesser extent (i.e., $Default = 0.342^{***}$ in Column 1, considerably smaller in comparison to Column 2), which again increases the likelihood of fear of pegging. *Openness* possesses the predicted sign in the de facto classification of Column 2, although insignificant (i.e., more open economies are in favor of a more stable exchange rate). However, the announcement on Column 1, significantly positive, indicates that more open economies present fear of floating.

Turning now the discussion to the exchange-rate regime around government change date, we observe that for the four quarters leading up to a government change date, the announcement does not seem to change (i.e., $govch(-3)^q$, $govch(-2)^q$, $govch(-1)^q$ and $govch(0)^q$ are not significant in Column 1); the same holds after government change (i.e., $govch(+1)^q$, $govch(+2)^q$, $govch(+3)^q$ and $govch(+4)^q$ are not significant in Column 1 either). On the other hand, given the de facto classification, the exchange rate tends to be more flexible before the government change date (i.e., $govch(-3)^q = 0.238^*$, $govch(-3)^q = 0.319^{**}$, $govch(-2)^q = 0.271^*$ and $govch(-1)^q = 0.251^*$). Overall, these indicate that although the exchange-rate regime announcement does not change before government changes (something crucial to claim that our results of the exchange-rate dynamics are not likely to be strongly affected by the endogeneity of regime announcement), the consistency of a peg before government change decreases as the currency tends to float more given the de facto setting. However, when annualized dummy variables of government changes are used instead of quarterly ones, we discover that after government changes announcements tend to "catch up" with the de facto classification.[12] We display the results for the annual dummies in Columns 3 and 4. For the de jure classification, we observe that for the year before government change the probability of announcing a flexible regime does not increase significantly while the probability of observing a currency float increases given the de facto classification (i.e, $govch(0)^a = 0.007$ in Column 3 and $govch(0)^a = 0.267^{***}$ in Column 4). The announcement tends to catch up with the de facto classification after the government change, letting the currency float and announcing so (i.e, $govch(+1)^a = 0.160^{**}$ in Column 3, higher than $govch(+1)^a = 0.147^*$ in Column 4).

B. The dynamics of the real exchange rate

After exploring the determinants of the exchange-rate regime announcements and finding that there is no statistical evidence that they vary before government changes, we study the dynamics of the real

[12] This is similar to the findings in Klein and Marion (1997), Gavin and Perotti (1997).

exchange rate around government changes conditional on consistent/inconsistent announcements. We use a dynamic distributed lag model of the form:

$$\Delta \ln(RER_{it}) = \sum_{k=1}^{3} a_k \, \Delta \ln\left(RER_{i,t-k}\right) + \Delta \mathbf{W_{it}} \boldsymbol{\beta} + \sum_{i=0}^{3} govch(-i)_{it}{}^{q} \cdot \delta_{(-i)} + \sum_{i=1}^{4} govch(+i)_{it}{}^{q} \cdot \gamma_{(+i)} + \sum_{i=0}^{3} govch(-i)_{it}{}^{q} \cdot FI_{it} \cdot \delta_{FI(-i)} + \sum_{i=1}^{4} govch(+i)_{it}{}^{q} \cdot FI_{it} \cdot \gamma_{FI(+i)} + \sum_{i=0}^{3} govch(-i)_{it}{}^{q} \cdot FEI_{it} \cdot \delta_{FEI(-i)} + \sum_{i=1}^{4} govch(+i)_{it}{}^{q} \cdot FEI_{it} \cdot \gamma_{FEI(+i)} + \sum_{i=0}^{3} govch(-i)_{it}{}^{q} \cdot FEC_{it} \cdot \delta_{FEC(-i)} + \sum_{i=1}^{4} govch(+i)_{it}{}^{q} \cdot FEC_{it} \cdot \gamma_{FEC(+i)} + e_{it} \quad (2)$$

where, as before, *i* and *t* stands for country and time (month), respectively. The dependent variable is the log difference of the real exchange rate. We control for three distributed lags to capture persistency.[13] $govch(-3)^q, govch(-2)^q,\ govch(-1)^q,$ and $govch(0)^q$ are quarterly dummy variables, as defined above for pre-government change episodes, while $govch(+1)^q, govch(+2)^q,\ govch(+3)^q,$ and $govch(+4)^q$ are for post-government change episodes. $(FI)[FEI]\{FEC\}$ is a dummy variable that takes value of one if a (fixed) [flexible] {flexible} exchange-rate regime announcement is (inconsistent) [inconsistent] {consistent}, as explained in Section III and depicted in Figure 3 above. Note that the omitted category in Equation (2) is the fixed-consistent announcement.[14] **W** is a matrix of time-varying controls that attempt to control for both determinants of exchange-rate dynamics and regime announcement. In that regard, we use a set of variables almost identical to the ones employed in the estimation of Equation (1) to control for determinants of regime announcement: *Porfolio*, *Foreign.Liab.pc*, *ToT*, *U.S.interest*, *Openness*, *Default*, *Size*. Additionally, following the importance of government size in the determination of the real exchange rate, i.e., an expansion in the size of

[13] Results are totally invariant to the inclusion of one lag instead. Results with one lag are available upon request.

[14] For the entire two-year window around government change, we keep the exchange-rate regime classification invariant, using the value one month before elections. Results are virtually unchanged when we use the value six months before elections instead. Results under the latter are available upon request.

government will induce an appreciation of the real exchange rate when government demand is biased towards non-tradable goods, as stressed in Goldfajn and Valdés (1999), we decided to add government expenditure as a ratio of GDP, *Govsize*, in the estimation of the RER dynamics of Equation (2). Given that we could not corroborate that our regressors produce a co-integrating vector,[15] we decided to estimate the model in first differences, as done in Cermeño, Grier, and Grier (2010). However, our results do not change significantly once we study Equation (2) in levels.[16] Finally, given the possibility of reverse causality, we decided to use 1-month lagged values of the variables in **W**. For the variables available at annual frequency that were interpolated using log differences, we adopted 12-months lagged value instead. Except for *Default* and dummy variables for government change, the rest of the variables are in natural logs.

During fixed-inconsistent announcements, macroeconomic instability could be higher than in the other exchange-rate categories, as noted by Alesina and Wagner (2006). We are not identifying such instability when the OLS method is used to estimate Equation (2) because the underlying assumption is that the variance or volatility of the exchange rate remains constant before and after government change. To estimate macroeconomic instability, we allow the variance to be conditional on government change and exchange-rate regimes. This is a straightforward way to model macroeconomic instability through the volatility of the exchange rate. The estimation of Equation (2) is complemented by estimating simultaneously the variance equation conditional on exchange-rate regimes around government changes as follows:

$$\sigma_{it}^2 = \alpha_0 + \gamma\, e_{it-1}^2 + govch(0)_{it}^a \cdot \beta_0 + govch(+1)_{it}^a \cdot \beta_1 + govch(0)_{it}^a \cdot FI_{it} \cdot \beta_{FI0} + govch(+1)_{it}^a \cdot FI_{it} \cdot \beta_{FI1} + govch(0)_{it}^a \cdot FEI_{it} \cdot \beta_{FEI0} + govch(+1)_{it}^a \cdot FEI_{it} \cdot \beta_{FEI1} + govch(0)_{it}^a \cdot FEC_{it} \cdot \beta_{FEC0} + govch(+1)_{it}^a \cdot FEC_{it} \cdot \beta_{FEC1} \quad (3)$$

[15] We ran Engle-Granger tests for each country and in almost all the countries the hypothesis of co-integration was rejected. Only Argentina, Bolivia, Guatemala, Honduras and Uruguay showed evidence of co-integration at 5% significance or higher. Tests results are available upon request.

[16] Results are available upon request.

In Equation (3) we observe how the variance is set to be conditional on government change and regime announcements. We decided to decrease the amount of dummy variables of government change by a factor of 4 by collapsing pre and post government change quarterly dummy variables to annual frequency (e.g., $govch(0)_{it}^{a}$ [$govch(+1)_{it}^{a}$] takes value one in the last [first] 12 months until [after] the government change takes place, 0 otherwise) since the likelihood function may not reach convergence when too many variables are used as explanatory variables in the variance equation. Equations (2) and (3) are identified simultaneously under the Maximum Likelihood Estimation method.

Results are displayed in Table 2. Column 1 shows the results of the estimation of Equation (2) under OLS, while Column 2 shows the results of the estimation of Equations (2) and (3) respectively, estimated simultaneously under Maximum Likelihood. In Column 1, for fixed-inconsistent announcements, we observe that the real exchange rate decreases (i.e., appreciates) moderately during the last quarter up to the government change but the result is not significant ($govch(0)^{q} \times FI = -3.990$). Although attenuated, similar results are found in Column 2, where the estimation under Maximum Likelihood of the mean equation is displayed ($govch(0)^{q} \times FI = -1.004$, also insignificant). After the government change, we observe a 15% depreciation of the real exchange rate during the first quarter (i.e., $govch(+1)^{q} \times FI = 14.781^{*}$) under the OLS estimation of Column 1, while such depreciation is 9% at 1% significance in the mean equation of Column 2, but during the second quarter (i.e., $govch(+2)^{q} \times FI = 8.733^{***}$).

Table 2. Exchange rate variation and volatility around government changes

	(1)		(2)			
Method	OLS		MLE-ARCH			
Dependent Var.	$\Delta \ln RER$		$\Delta \ln RER$		Conditional Variance	
	x: quarterly dummies (q)		x: quarterly dummies (q)		x: annual dummies (a)	
$govch(-3)^x$	-0.429	[0.380]	-0.217	[0.330]		
$govch(-2)^x$	0.095	[0.255]	0.312*	[0.169]		
$govch(-1)^x$	-0.320	[0.293]	0.112	[0.242]		
$govch(0)^x$	0.172	[0.462]	-0.172	[0.364]	0.383	[0.653]
$govch(+1)^x$	0.212	[0.394]	0.391**	[0.179]	-0.541	[0.388]
$govch(+2)^x$	0.385**	[0.172]	0.502	[1.059]		
$govch(+3)^x$	0.267	[0.184]	0.321**	[0.147]		
$govch(+4)^x$	-0.287	[0.328]	0.321*	[0.172]		
$govch(-3)^x \times FI$	-2.169	[2.298]	0.185	[0.502]		
$govch(-2)^x \times FI$	-1.949	[2.325]	-0.677	[0.415]		
$govch(-1)^x \times FI$	0.105	[0.750]	0.030	[1.448]		
$govch(0)^x \times FI$	-3.990	[5.800]	-1.004	[1.235]	-0.039	[1.262]
$govch(+1)^x \times FI$	14.781*	[7.763]	0.611	[1.182]	2.400	[1.568]
$govch(+2)^x \times FI$	6.945	[4.577]	8.733***	[1.878]		
$govch(+3)^x \times FI$	-0.876	[0.818]	-1.350***	[0.325]		
$govch(+4)^x \times FI$	-0.165	[0.820]	-0.224	[0.466]		
$govch(-3)^x \times FEI$	0.731	[0.595]	0.426	[0.391]		
$govch(-2)^x \times FEI$	-0.276	[0.325]	-0.043	[0.195]		
$govch(-1)^x \times FEI$	0.413	[0.484]	0.214	[0.227]		
$govch(0)^x \times FEI$	-0.788	[0.484]	-0.036	[0.348]	-2.536***	[0.784]
$govch(+1)^x \times FEI$	-0.683	[0.452]	-0.596**	[0.258]	-1.224	[1.257]
$govch(+2)^x \times FEI$	-1.166*	[0.611]	-0.793	[1.055]		
$govch(+3)^x \times FEI$	-0.795***	[0.236]	-0.503*	[0.283]		
$govch(-3)^x \times FEI$	0.062	[0.509]	-0.318	[0.210]		
$govch(+4)^x \times FEC$	-0.788	[0.929]	0.476	[0.523]		
$govch(-3)^x \times FEC$	-0.351	[1.163]	1.694	[1.039]		
$govch(-2)^x \times FEC$	1.318	[1.640]	1.466	[0.938]		
$govch(-1)^x \times FEC$	-0.401	[0.939]	2.569	[3.881]	1.129	[0.939]
$govch(0)^x \times FEC$	0.337	[1.431]	-0.144	[0.578]	1.441	[1.664]
$govch(+1)^x \times FEC$	-1.123**	[0.464]	0.562	[1.517]		
$govch(+2)^x \times FEC$	-0.046	[0.488]	-0.164	[1.696]		
$govch(+3)^x \times FEC$	0.586	[0.462]	-0.495*	[0.262]		
e_{it-1}^2					2.929***	[0.403]
Constant	0.118*	[0.063]	-0.159	[0.108]	0.285	[0.177]
Observations	2,970		2,970			
Number of Countries	17		17			
R-squared	0.065					
Log likelihood			-7202.401			
Linear Combination 1	18.770	[12.960]	1.615	[1.681]		
Linear Combination 2	12.810*	[6.577]	5.159***	[1.388]		

Notes: Estimation of Equation (2) reported in Column 1, and estimation of Equations (2) and (3) reported in Column 2. Countries in the sample are Argentina, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Trinidad and Tobago, Uruguay, and Venezuela, covering the 1980-2005 period. *FI*, *FEI*, and *FEC* stands for fixed-inconsistent, flexible-inconsistent, and flexible-consistent regimes, respectively. Flexible-consistent is the omitted category. Non-democratic episodes were excluded based on Polity IV Project. Dollarization episodes were excluded as well. Controls used, but not reported, are listed under Equation (2). OLS was used for estimations of Column 1, and MLE for the estimation of the mean and variance equations of the ARCH model of Column 2. Robust standard errors are reported in brackets at the right of each estimator for both the OLS and ARCH models of Columns 1 and 2, respectively. Linear Combination 1 is $govch(+1)^q \times FI - govch(0)^q \times FI$, while Linear Combination 2 is $^1/_2\,(govch(+2)^q \times FI + govch(+1)^q \times FI - govch(0)^q \times FI - govch(-1)^q \times FI)$. (*) [**] {***} stands for significance at (10%) [5%] {1%}.

We use the estimation results of Table 2 to study the differential effects of the fix-consistent and fix-inconsistent announcements on the real exchange rate by constructing linear combination of estimates. In the last quarter before the government change month, the differential appreciation of the exchange rate in the fixed-inconsistent category (i.e., $govch(0)^q \times FI$) is not statistically different from zero for both estimation methods. When the government changes, the real exchange rate depreciation differential becomes statistically significant for the OLS method only (i.e., $govch(+1)^q \times FI$ equals 14.781^* for the OLS estimation of Column 1 and 0.611 for the mean equation of Column 2). The difference between the two differences is not statistically significant for any of the methods (i.e., Linear Combination 1, $(govch(+1)^q \times FI - govch(0)^q \times FI)$ equals 18.770 in Column 1 and 1.615 in Column 2,). However, when we consider two quarter average difference in difference (i.e., Linear Combination 2, $\frac{1}{2}(govch(+2)^q \times FI + govch(+1)^q \times FI - govch(0)^q \times FI - govch(-1)^q \times FI)$), results become significant: 12.810^* for the OLS estimation of Column 1 and 5.159^{***} for the ARCH model of Column 2. This indicates that, comparing the six months after the government change to the six previous months, the real exchange rate has an average depreciation rate of 13% and 5% for the OLS and ARCH estimation methods, respectively.

Regarding the estimation of the conditional variance in Column 2, we do not observe significant changes in the volatility under fixed-consistent announcements (i.e., $govch(0)^a = 0.383$ and $govch(+1)^a = -0.541$). For fixed-inconsistent announcements, although changes in volatility are not significant either, the year after government change shows a large and positive coefficient (i.e., $govc(+1)^a \times FI = 2.400$), suggesting an increase in volatility after government changes when announcements are fixed-inconsistent. This points in the direction of the observation of Alesina and Wagner (2006) that fear of pegging (fix-inconsistent for us) corresponds to scenarios of poor macroeconomic performance and instability. For flexible-inconsistent announcements (or fear of floating), the volatility decreases significantly before government changes (i.e., $govch(0)^a \times FEI = -2.536^{***}$), while it is also somewhat lower, but

insignificant, after government changes (i.e., $govch(+1)^a \times FEI = -1.224$). This is an interesting finding: the fear of floating that Calvo and Reinhart (2002) point out is significantly more intense before government changes, which places fear of floating in a political economy perspective. Finally, for flexible-consistent regimes, volatility is not statistically higher either before or after the government change date. This indicates that electoral uncertainty does not affect exchange-rate volatility, perhaps because flexible consistent announcements are associated with episodes of macroeconomic consistency.

V. Real exchange-rate misalignments around government changes

In the previous section we studied the short term dynamics of the real exchange rate and found that there is a slight and insignificant appreciation quarter to quarter during the year leading to the government change, and a strong and significant depreciation after the change of government (in the first quarter for the OLS method, in the second for the ARCH model). In this section we explicitly study the real exchange-rate misalignment consequences of pegging the exchange rate when it is not consistent given the market exchange-rate behavior. The exchange-rate movements before and after, in combination with the inconsistency of the fixed regime, indicate that the real exchange rate may not be in its predicted equilibrium. We study here explicitly the degree –if any– of the appreciation and depreciation and whether it is corrected following the analysis in Goldfajn and Valdés (1999). We control for the stochastic trends of the exchange rate by filtering the series country by country with a Hodrick-Prescott filter.[17] Then the series is decomposed in two components:

$$\ln(RER_{it}) = \ln(RER_{it})_{cycle} + \ln(RER_{it})_{trend}. \quad (4)$$

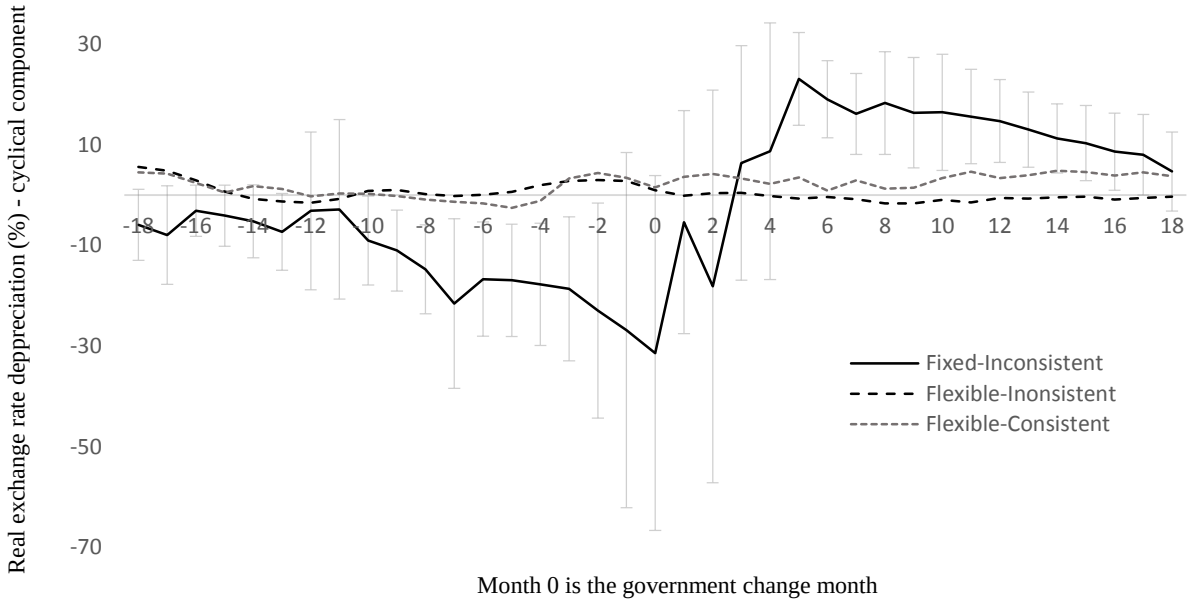
We identify the trend component as the long run RER equilibrium, and the cycle as departures from that equilibrium. When the cyclical component is positive, the RER is overvalued; when it is negative, it is undervalued. Goldfajn and Valdés (1999) identified four appreciation phases of the real exchange rate:

[17] To filter the RER series, we use a smoothing parameter of 129,600, which is the value Ravn and Uhlig (2002) suggest to use with monthly data.

history, when the appreciation hits 5%; *start*, when the appreciation hits a threshold (e.g., 10%, 15%); *peak*, when the appreciation reaches the highest value; and *end*, when the appreciation is back to the 5% history stage, which is considered as a statistical reversion of the appreciation process. We use this classification in order to identify when an appreciation represents a significant overvaluation of the exchange rate, in this case, 5% and above. The advantage of using logs is that $\ln(RER_{it})_{cycle}$ already represents the percentage of overvaluation (below the trend) or undervaluation (above the trend). We then estimate the following equation using OLS methods,

$$\ln(RER_{it})_{cycle} = \alpha + \sum_{i=0}^{17} govch(-i)_{it}{}^{m} \cdot \beta_{(-i)} + \sum_{i=1}^{18} govch(+i)_{it}{}^{m} \cdot \beta_{(+i)} + \sum_{i=0}^{17} FI_{it} \cdot govch(-i)_{it}{}^{m} \cdot \beta_{FI(-i)} + \sum_{i=1}^{18} FI_{it} \cdot govch(+i)_{it}{}^{m} \cdot \beta_{FI(+i)} + \sum_{i=0}^{17} FEI_{it} \cdot govch(-i)_{it}{}^{m} \cdot \beta_{FEI(-i)} + \sum_{i=1}^{18} FEI_{it} \cdot govch(+i)_{it}{}^{m} \cdot \beta_{FEI(+i)} + \sum_{i=0}^{17} FEC_{it} \cdot govch(-i)_{it}{}^{m} \cdot \beta_{FEC(-i)} + \sum_{i=1}^{18} FEC_{it} \cdot govch(+i)_{it}{}^{m} \cdot \beta_{FEC(+i)} + \epsilon_{it}. \quad (5)$$

Figure 4. Real exchange rate misalignments around government changes



Notes: Graphic representation of the estimators of Equation (5) for the cyclical component of the RER, estimated by detrending the RER series with the Hodrick-Prescott filter technique (smoothing parameter of 129,600, advised for monthly frequency data). Results are relative to fixed-consistent episodes. Vertical bars represent 95% confidence intervals of estimators based on robust standard errors for the fixed-inconsistent estimators around the government change date.

In this particular case, we use monthly, rather than quarterly, dummy variables to identify precisely the months at which the overvaluation begins, and when it is reverted. For the sake of presentation, results are shown in a figure (Figure 4), rather than in a table. We observe that a significant overvaluation occurs only for the inconsistent fixed regimes announcement. The 5% history threshold is hit at month 10 before the government change, and a peak of 31% is reached at the government change month, i.e., the history/peak stage last ten months, while the peak/end period lasts only three, being completed mostly in the first month. We observe that after the government change date, there is a process of undervaluation, which is significant at month 5 (undervaluation of 23%), but the process reverts smoothly in 14 months, when the real exchange rate reaches its equilibrium (i.e., back to below 5% of undervaluation). Here, there is something important to stress: when the exchange rate is overvalued, a quick one-month correction is observed, which indicates that this is done through a strong nominal devaluation, as highlighted in Goldfajn and Valdés (1999). However, when the exchange rate is undervalued, as we observe in month +5, the correction takes place smoothly through either a gradual correction of the nominal exchange rate that corrects the initial overshooting that brings about an undervaluation, or an organized correction of inflation differentials. This difference between real exchange-rate reversion in the appreciation and depreciation phases is not treated in Goldfajn and Valdés (1999). Hence, our paper highlights the large asymmetries of the reversions that occur during both the overvaluation and undervaluation phases. Furthermore, Goldfajn and Valdés (1999) identified appreciation dynamics without characterizing and describing the context in which these appreciations take place. We identify one particular context where these appreciations occur: elections in which there is poor macroeconomic performance.

VI. Conclusions

We are interested in understanding the behavior of exchange-rate announcements around elections. Our first step is to classify regime announcements around elections using the IMF de jure classification, and identifying a regime as inconsistent when it differs from the Reinhart and Rogoff (2004) de facto one.

We then study the determinants of both de jure and de facto exchange-rate regimes, employing in our ordered logit regressions several time-varying controls used in the literature (among others, Juhn and Mauro, 2002; Alesina and Wagner, 2006; Levy-Yeyati, Sturzenegger, and Reggio, 2010) to isolate the impact of dummy variables for government changes. Comparing their behavior, we find that the probability of fix-inconsistent announcements increases in countries in default or when the U.S. interest rate rises. As to the specific behavior around elections, the probability of a fix-inconsistent regime increases in the year up to the government change month, because the market-determined regime tends to shift to a float regime while the announcement continues as fixed. After the government change month, the de jure classification tends to catch up with the de facto one with the announcement of a float. Thus, the results suggest an increase in the probability of fix-inconsistent regimes before government changes and a decrease afterwards. The study of the consistency of the announcement, rather than of either the announcement or the de facto regime independently from each other, is something new in the literature of exchange-rate regimes.[18]

We use this classification to study the dynamics of the real exchange rate around elections conditional on consistent and inconsistent exchange-rate regime announcements. We employ a dynamic distributed lag model and a difference-in-difference strategy. This allows us to pinpoint that the pattern found in the earlier political economy literature of incumbents that postponed depreciations until the inauguration of the new administration (e.g., Edwards, 1994; Stein and Streb, 2004; Stein, Streb, and Ghezzi, 2005; Cermeño, Grier, and Grier, 2010) is specifically due to fix-inconsistent regimes. We find that during fix-inconsistent exchange-rate announcements, the devaluation rate is not statistically different from fix-

[18] Alesina and Wagner (2006) provided the first study on the subject. We produce a slightly different classification of the consistency of the announcement, and we also include the behavior around elections. For details, see discussion in Section III.

consistent announcements until the government change date, but it increases and differs from the latter significantly afterwards. This is what we call "broken promises".

Finally, our paper contributes to the literature of real exchange-rate appreciations and their reversions. Goldfajn and Valdés (1999) show that real exchange-rate appreciations are reverted usually by nominal devaluations rather than through smooth inflation differentials. We identify that the episodes where the real exchange rate suffers an overvaluation correspond to regime announcements that are fixed and inconsistent. This starts 10 months before the government change date, reaching its peak the month of government change with an overvaluation of 31%. The overvaluation is mostly reverted in a month through a sudden nominal devaluation. This process leads to a sharp undervaluation of the exchange rate, which is gradually corrected over the course of more than a year. We thus identify a precise timing for the macroeconomic scenario where exchange-rate overvaluation occurs: before the change of government. Additionally, a significant undervaluation takes place in its aftermath, in line with exchange-rate overshooting.

In our sample, what Alesina and Wagner (2006) call "fear of pegging", i.e., countries that break commitments to pegging and end up floating more than what they announce, shows up before the incumbent's term ends, though the adjustment of the official exchange rate only takes place *after* the change of government. Alesina and Wagner (2006) find that fear of pegging (for us, fix-inconsistent) occurs in scenarios where there is "an inability of poor quality governments to maintain macroeconomic stability" (pp. 771-772).[19] Furthermore, when we let exchange-rate volatility be conditional on government change episodes and regime announcements, our evidence shows that volatility decreases significantly before government changes when the regime is flexible inconsistent, which corresponds to fear of floating. Thus, what Calvo and Reinhart (2002) call "fear of floating" has a political economy angle, since we find that it is only significant *before* government changes.

[19] We also find that the volatility of the real exchange rates is higher after the government change date, though the coefficient is insignificant. This suggests that exchange rates may become a bit less predictable due to higher macroeconomic instability.

Our interpretation of broken promises is that sustaining a peg before the government change date could be used as a signal of macroeconomic strength that could increase the probability of being reelected. Incompetent incumbents may attempt to mimic competent ones by sustaining the peg announcement before elections (Stein and 1998; 2004).[20] Exchange rates can be stabilized in the short run by using international reserves and debt. However, in our sample the postponement of exchange-rate adjustments is not systematically linked to either fixed-consistent or flexible-inconsistent regimes. Rather, they are specifically linked to fixed-inconsistent regimes. Hence, an additional mechanism is at play: dual markets, and an exchange-rate premium before elections. Thus, our results during fixed-inconsistent regimes also suggest the presence of a channel of distributive politics: an "official" appreciated exchange rate before elections hurts the concentrated export sectors to the benefit of the general population that consumes those goods, and hence the median voter. Afterwards, the new administration devalues given the impossibility (or inconvenience) of sustaining it any longer. This resembles the logic behind the Bonomo and Terra (2005) model, which emphasizes the distributive consequences of appreciated exchange rates, though they do not consider the channel of dual markets. This could be an interesting topic for further research.

More generally, it may be interesting to study how the institutional setup affects the consistency of exchange-rate regime announcements. The literature on central bank independence mainly focuses on outcomes like inflation and economic performance (e.g., Alesina and Summers, 1993; Garriga and Rodriguez, 2020), or on exchange-rate manipulation and volatility (e.g., Cermeño, Grier, and Grier, 2010). Higher degrees of central bank independence might increase the likelihood of consistent exchange-rate regime announcements (fix and flexible) during the electoral window and beyond.

[20] Following the approach to political budget cycle under asymmetric information in Rogoff and Sibert (1988) and Rogoff (1990), Stein and Streb (1998; 2004) show that a low rate of devaluation can be used before elections by office-motivated incumbents to signal higher competence. In a two-sector model, the postponement of devaluations provokes an appreciated exchange rate (Stein, Streb, and Ghezzi, 2005). In these models where nominal devaluation acts as a tax on consumption, tax smoothing is optimal from a welfare perspective, but incumbents are tempted to exploit the trade-off between present and future devaluation for electoral reasons. In a setting with adaptive expectations, van der Ploeg (1989) derives a similar pattern where the government appreciates the exchange rate before election, to increase the real income of voters and boost its popularity, and depreciates it afterwards. However, his prediction that all incumbents engage in this electoral manipulation is at odds with the evidence.

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Table A1. Adjusting the IMF annual regime classification.

Country	Date of regime switching	Description	Source
Argentina	February 1989	On the 6th, due to the inability to sustain the managed float regime because of the lack of international reserves, the Central Bank announced a total floating regime.	Canales and Fairlie (1991), pp 59
Bolivia	August 1985	The NPE's decision to float the peso against the dollar caused an immediate devaluation to $b1.5 million=US$1 in August 1985	U.S Library of Congress
Brazil	March 1990	The Plano Brasil Novo (The New Brazil Plan) was implemented on March 1990. It consisted on a managed float regime.	Ferreira (2003)
Brazil	July 1994 January 1999	Real Plan was introduced in July 1994. It consisted on a Manage float regime. It lasted until January 1999, when the currency was allowed to float.	Hamann, Arias and Zhang (2005)
Chile	September 1999	The central bank formally switched to a "pure" floating regime and eliminated the encaje.	Frenkel and Rapetti (2010)
Colombia	September 1999	The terms of trade shocks and the "sudden stop" of 1998-99 forced the abandonment of the exchange-rate bands in September 1999.	Vargas (2005)
Dominican Republic	August 1991	On August 1991 a dirty floating regime was adopted.	Stein et al. (1999)
Dominican Republic	September 1994	Monetary and fiscal restrictions were imposed on September 1994. A managed floating regime was also stablished.	Escuder et al. (----)
Ecuador	February 1988	In February 1988 a fixed exchange-rate regime was announced. But the managed floating regime was re-established in September of that year.	Roberts (1998) & Lara (----)
Ecuador	June 1998	On February 1999, the moving band was eliminated and a freely floating was announced.	Banco Central de Ecuador
El Salvador	May 1989	A fixed regime was sustained until May 1989, a managed floating was stablished afterwards.	Stein et al. (1999)
Honduras	February 1990 February 1992	On February 1990 a managed floating regime replaced the fixed regime. On February 1992 a freely floating was established.	Stein et al. (1999)
Honduras	July 1994	The freely floating above was abandoned on July 1994 to reestablish the managed floating regime.	Stein et al. (1999) & CEPAL(1)

Jamaica	November 1983	In November 1983 the Jamaican government introduced an exchange auction as a means of allowing the market to determine the rate (considered as freely floating).	Worrell et al. (2000)
Mexico	November 1991	From November 1991 to December 1994 the exchange-rate regime was a managed floating, and a freely falling afterwards.	Banco de Mexico (2)
Paraguay	February 1989	The government eliminated the multiple exchange rates in February 1989, letting the currency to float with some government interventions (i.e., managed floating).	Bruneau (1991)
Peru	August 1985	Exchange rate was fixed to the US dollar in August 1985.	Hamann, Arias and Zhang (2005)
Peru	August 1990	In August 1990, newly elected president Fujimori launched a comprehensive stabilization program. Unlike other successful stabilization programs in the region, the exchange rate was not pegged. On the contrary, the rate was allowed to float with a certain degree of intervention.	Pasco-Font and Ghezzi (2000)
Venezuela	February 1989	Within a few days of assuming power February 2nd, 1989) President Andrés Pérez spoke to the nation and announced a program of macro-economic reforms, which included letting the exchange rate to float.	SocialistWorld.net
Venezuela	July 1993	A new fixed exchange rate of 170 bolivares = $1 was set, and all foreign exchange trading were restored.	Box (1999)

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