IMF Staff Papers
Vol. 55, No. 3

Fear of Declaring: Do Markets Care What Countries Say About Their Exchange Rate Policies?

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Beginning with the papers by Calvo and Reinhart (2002) and Levy Yeyati and Sturzenegger (2001), there has been growing recognition of a disconnect between what emerging economies say they do in exchange rate policy (words), and what they do in practice (deeds). More specifically, a "fear of floating" behavior has been identified, whereby countries that classify themselves as floating exchange rate regimes intervene quite vigorously over time. While many persuasive arguments have been offered as to why countries intervene, the question remains as to why intervening countries continue to classify their regimes as floating. Thus, concurrently with fear of floating, there seems to be a "fear of declaring." This paper examines one possible reason for fear of declaring: that international capital markets might reward countries that are classified toward the flexible end of the spectrum. Based on the JPMorgan Emerging Market Bond Index spread, we use a panel data approach that exploits both time and cross-country variability. With some qualifications, we find that spreads are lower in countries that have a fixed exchange rate regime, whether de jure or de facto, implying that there is no evidence that markets punish fear of floating. One possible explanation for this puzzle—that is, countries intervene but say that they do not, even though markets appear to be,

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at a minimum, indifferent to intervention—arises from the fact that there is evidence that de jure floating regimes may fare better in crisis situations.
[JEL F31, F33, G15, O16]
IMF Staff Papers (2008) **55**, 445–480. doi:10.1057/imfsp.2008.14

Following a large body of theoretical work on the pros and cons of adopting different exchange rate regimes, in the past decade a prominent literature arose that aimed to classify exchange rate regimes in a systematic manner and to explore empirically to what extent these classifications could be linked to economic outcomes. Although the IMF, in conjunction with its member countries, produces a taxonomy of exchange rate regimes since 1944, many researchers began to suspect that this official, or de jure, classification scheme did not always adequately represent what countries did in practice. Thus emerged attempts in the literature to use measurable information to produce de facto classifications that would more closely reflect the actual exchange rate policies of different countries.

Early efforts at reclassifying exchange rate regimes included Obstfeld and Rogoff (1995) and Ghosh and others (1995). Also, starting in 1998 the IMF began to move away from a classification that relied solely on countries' formal announcements and toward one that would take into account exchange rate variability as well as policy actions that affected the exchange rate. Bubula and Ötker-Robe (2002) applied this methodology retroactively to 1990.

More recently, two studies have produced comprehensive cross-country data sets of de facto exchange rate regimes, based on an analysis of actual policy behavior. These extensively cited studies are those of Levy Yeyati and Sturzenegger (LYS) (2002 and 2003), and Reinhart and Rogoff (RR) (2004). LYS provided a new classification of exchange rate regimes for 156 countries from 1974 to 2000. By use of cluster analysis, countries were grouped according to relative importance of the monthly changes in (1) the nominal exchange rate, (2) the variability of the nominal exchange rate, and (3) international reserves. Thus, regimes were classified into four main categories (flexible, dirty float, crawling peg, and fixed), in addition to a category for inconclusive results. RR also took into account the likely existence of parallel exchange rate markets, noting the distinction between dual (or multiple) markets, which are typically legal, and parallel markets, which may or may not be legal. Their taxonomy included 14 refined and five coarse classification regimes, with monthly observations for 153 countries over 1940–2001.

Other notable studies aimed at producing de facto classifications include Shambaugh (2003), which used an intermediate methodology between RR—which based their classification solely on analyzing the behavior of the exchange rate—and LYS, which also looked at the evolution of international reserves. More recently, Dubas, Lee, and Mark (2005) modeled regimes as

the outcomes of a multinomial logit choice problem conditional on the level and volatility of both the exchange rate and international reserves. Observations (per country and per year for 1971–2002) were then assigned to that regime which exhibited the highest predictive probability.

All of these studies of exchange rate regimes share one common result: a disconnect between de jure and de facto classifications, or between words and deeds. LYS (2002) note that, for any given country at any given point in time, de jure classifications coincide with the LYS de facto classification in only about half of the observations. RR express this idea slightly differently, saying that countries' official classification of exchange rates are only "a little better than random" in terms of adequately reflecting the reality of exchange rate policy. Identified trends in exchange rate regimes over time differ depending on which classification is used. LYS (2002) point out that, while de jure classifications show a substantial drop since the mid-1970s in the share of developing countries choosing fixed rates, their de facto classification shows much greater stability in regimes over time, particularly since the 1980s. Finally, the "hollowing out" phenomenum, whereby intermediate regimes tend to disappear in favor of the fixed or flexible extremes, is not reflected in the LYS classification, which, on the contrary, shows that the share of intermediate regimes is relatively stable and, if anything, somewhat increases toward the end of the 1990s.[1]

Thus, disconnect between what countries say and what they do in terms of their exchange rate policy is now widely recognized and some studies have sought to explain how this behavior comes about. Focusing on emerging economies, the influential work of Calvo and Reinhart (2002) identified a particular type of disconnect, labeled "fear of floating," whereby countries classify themselves as having floating exchange rate regimes, yet intervene quite vigorously over time, resisting market forces on the determination of their exchange rates. These authors argued that there are strong reasons to behave this way, related to the particularly high costs that exchange rate variability imposes on emerging economies. On the one hand, devaluations tend to lead to lost access to capital markets, highly disruptive balance sheet effects when key sectors of the economy have built up liabilities in foreign currency, pass-through effects on inflation, and possible adverse effects on trade (Hausmann, Panizza, and Stein, 2001). On the other hand, appreciations could cause Dutch disease-type of phenomena, which might hinder growth in the tradable sectors. Along these lines, LYS (2007) recently revisited exchange rate policy in the current-decade and updated their de facto classifications, finding that interventions to resist currency *appreciations* have become more prevalent than those aimed at preventing depreciations.

[1]It must be noted that discrepancies also arise among alternative de facto classification schemes. For example, the IMF (2006) has recently estimated a correlation coefficient of 0.54 between the RR and LYS classifications during 1990–2000, which is not much higher than the one observed (0.48) between RR and the IMF's de jure classification. Dubas, Lee, and Mark (2005), on the other hand, report a 0.53 correlation between theirs and the RR classification.

Furthermore, they found this policy to be relatively effective, in the sense that there was a measurable effect on the real exchange rate, and also preliminary evidence pointing to positive effects on economic growth.

Although the fear of floating literature certainly explained why an emerging economy with the label of floater might opt to intervene under certain circumstances, it sheds no light on why a country that finds it in its best interest to intervene would insist on maintaining a label of floater. Alesina and Wagner (2003) came closer to addressing this issue, linking exchange rate policies to overall institutional quality. The premise of their analysis is that sustaining an exchange rate peg is extremely demanding and countries with strong institutions are more likely to be able to sustain a fixed exchange rate once they have announced it. By contrast, countries with weaker institutions would be more likely to announce a fixed regime and then be forced to float, in essence reneging on the promise of monetary stability. Thus, fear of floating arises as a signaling device, whereby countries intervene to raise credibility and distinguish themselves from the poor-institution countries that are forced into frequent and costly depreciations. Why not announce a fixed regime as well? The authors argued that floating provides some flexibility, particularly in calm times.

A related argument was made by Genberg and Swoboda (2005) regarding the benefits of announcing a float while intervening actively. For the aforementioned reasons, a country might value exchange rate stability, and therefore see the need for frequent and sizable intervention. However, it may not be willing to make a commitment—to a specific value, or range for the exchange rate—and therefore, announces a float. Thus, this announcement should not be viewed as a commitment *not to intervene*, but rather, as a *lack of commitment* to a particular exchange rate. The announcement here also serves as a signaling device, intended to distinguish the country from those who commit to a fixed regime (and run the risk of having to abandon it in the future).

If fear of floating is indeed a signaling device, then to whom is the signal directed? According to Alesina and Wagner, this behavior serves to "signal to an imperfectly informed market about some characteristics of that country," namely its strong institutions and competent macroeconomic management. Thus, the next logical question is whether markets are indeed receiving this signal and interpreting it as countries would hope. Do markets in fact reward the countries that announce floating, regardless of whether flexibility is in fact allowed to prevail? Do they reward countries that tend to intervene more to resist exchange rate volatility? This is the starting point for our study, in which we estimate the impact of the de jure regimes and of policy actions—intervention—on sovereign spreads.

Our study is closely related to an earlier literature concerning the international capital markets' response to adherence to the gold standard in the late 19th and early 20th centuries. Based on a sample of nine "important peripheral countries," Bordo and Rockoff (1996) examined whether those

who adhered more closely to the gold standard during 1870–1914 faced lower borrowing costs than those who did not. After controlling for monetary and fiscal policy, they found that, indeed, adherence was reflected in a lower spread of government bond interest rates over that of the U.K. Treasury. Thus, adherence acted as a "good housekeeping seal of approval."

In our study, however, several differences emerge. First, we focus on a sample of emerging economies, albeit those with ample access to international capital markets; second, our data set is richer, with quarterly information and a wider set of domestic policy controls; and third, the question itself has shifted, from one in which the initial suspicion was that markets rewarded fixed exchange rates (the gold standard) to one in which presumably markets now reward de jure floating exchange rates and might reward de facto intervention as well.

Our focus on emerging markets is especially germane given that, although discrepancies between words and deeds can also occur in developed and in low-income countries, the notion that "fear of floating" can impact sovereign spreads is particularly relevant for countries that have access to international financial markets—which low-income countries generally do not—and in which issues such as liability dollarization and pass-through tend to be present which is generally not the case in developed countries. Furthermore, it is in emerging markets where signaling issues associated with "fear of floating" should become key.

In short, we examine one possible reason why countries might fear to declare what their true exchange rate policy: that international capital markets reward countries that are classified toward the flexible end of the spectrum. In addition to the Alesina and Wagner arguments that rely on institutional quality, there may be other reasons why markets prefer floating regimes: (1) a "flexible" classification may signal to markets that the likelihood of an ill-advised defense of an unsustainable peg would be lower, and thus speculative attacks less likely; (2) markets might not always distinguish effectively between words and deeds, so countries that signaled a certain macroeconomic policy framework when they switched to a floating regime are keen to insist that this policy framework is still in place; and (3) although floating regimes per se may not have appreciable advantages over other regimes, markets could have a subjective bias against fixed exchange rates. Such bias might stem in part from the experience of the more recent international crises generally erupting in countries with fixed exchange rates, or from the current proliferation of inflation targeting strategies,[2] which presuppose that the exchange rate is allowed to float.

[2]Rose (2007) reports that as of June 2006, inflation targeting countries accounted for over a quarter of world GDP. These include 14 of the 30 OECD countries, plus 10 developing countries.

I. Empirical Approach and Data Description

Our specification can be summarized as follows:

$$EMBIG_{it} = \gamma_i + \alpha De\,Jure_{it} + \lambda INTERV_{it} + \beta FUND_{it} + \theta VXO_t + \delta YEAR_t$$

Thus, we regress the sovereign debt spreads against a set of explanatory variables that reflect exchange rate policy, domestic fundamentals, and global financial conditions. Exchange rate policy is represented by de jure exchange rate regimes (*De Jure*) and a measure of the extent of intervention (*INTERV*), both of which can vary by country and over time. We then incorporate a set of domestic fundamentals (*FUND*) commonly used in studies of sovereign spreads and/or credit ratings,[3] which include inflation, the external current account balance, the general government balance, the level of international reserves (minus gold), and the external public debt ratio.[4] We proxy global financial conditions with the VXO volatility index as well as with year dummies. Finally, we control for additional country-specific characteristics through country fixed effects.

Our dependent variable is the spread of the Emerging Market Bond Index Global (EMBIG), which measures the premium above U.S. Treasury securities in basis points for dollar denominated sovereign debt. The period observed runs from 1997:Q4 to 2006:Q2. These spreads are observed, end of period, both quarterly and monthly. In order to match the frequency of the majority of the explanatory variables, we only make use of the quarterly observations. In the initial period the sample includes 22 countries, with further countries being added and dropped to the series over time, culminating in 31 countries at the end of the period.[5]

To capture de jure regimes, we use the IMF classification, which has evolved over time. In fact, six taxonomies have been in place since 1944. Prior to 1998, countries were classified according to the regimes they formally announced, whereas starting in 1998 the classification system began to move closer to a de facto set of criteria in which both actual exchange rate variability and policy actions affecting the exchange rate are considered.

[3]See Cantor and Packer (1996), Eichengreen and Mody (2000), Kamin and von Kleist (1999), Herrera and Perry (2000), Glennerster and Shin (2004), and Ciarlone, Piselli, and Trebeschi (2007), for studies of sovereign borrowing costs. Kaminsky and Schmukler (2002) and Powell and Martínez (2007) focus on the determinants of credit ratings.

[4]Unfortunately, we did not have access to comparable data on total public debt for our group of countries during the entire sample period.

[5]Countries included in the EMBIG are Algeria, Argentina, Brazil, Bulgaria, Chile, China, Colombia, Côte d'Ivoire, Croatia, Dominican Republic, Ecuador, Egypt, El Salvador, Greece, Hungary, Indonesia, Iraq, Korea, Lebanon, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Panama, Peru, Philippines, Poland, Russia, Serbia, South Africa, Thailand, Tunisia, Turkey, Ukraine, Uruguay, and Venezuela. Several of these countries were dropped from our analysis due to lack of observations for certain key macroeconomic fundamentals that serve as explanatory variables.

A country's exchange rate regime is now frequently assessed based on both quantitative and qualitative analysis and, when in the opinion of the IMF there is a deviation between the prevalent classification and the actual exchange rate and/or the authorities' intervention policy, a reclassification ensues. Once undertaken, reclassifications are communicated through a variety of channels, including the *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER).[6]

For each country in each quarter, we turn to two different IMF de jure classification systems. The first is the 1982 taxonomy (IMF, 1982), which comprised the following categories: (1) pegged to a single currency, (2) pegged to a composite (including the standard drawing right), (3) flexibility limited vis-à-vis a single currency, (4) flexibility limited vis-à-vis a cooperative arrangement, (5) adjusted according to a set of indicators, (6) other managed floating, and (7) independently floating. This system covered all countries in our sample from January 1982 to March 1998. The second system is the 1998 taxonomy and covers the period from June 1997 to the present (see IMF, 1997 and 1998). The categories for this system are (1) exchange arrangement with no separate legal tender, (2) currency board arrangement, (3) conventional pegged arrangement, (4) pegged exchange rate within horizontal bands, (5) crawling peg, (6) crawling band, (7) managed floating with no predetermined path for the exchange rate, and (8) independently floating. In addition, categories (1) and (2) are considered hard pegs, (4) to (6) are considered soft pegs, and the last two categories are considered floating regimes. This latter taxonomy was extended back to years prior to 1997, but the exercise did not cover the entirety of our sample. In order to have a consistent measure across the whole sample, we created three aggregated categories, assigning each category in the two taxonomies to one of three broader classifications. A *Fixed* category encompasses categories (1)–(5) of the 1982 taxonomy and categories (1)–(6) of the 1998 taxonomy. A *Managed Floaters* category encompasses category 6 in the 1982 taxonomy and category 7 in the 1998 taxonomy. Finally, a *Free Floaters* category encompasses category 7 in the 1982 taxonomy and category 8 in the 1998 taxonomy.

As a proxy measure of policy intervention in the exchange market, we construct the index *INTERV*, which is closely related to the criteria used by different studies on de facto regimes. It must be emphasized that our intent is not to construct a new de facto classification, nor is it to provide a complete and precise measure of the full extent of exchange rate intervention. Rather,

[6]It is important to bear in mind that the revised taxonomy still does not amount to a de facto classification. The IMF might not always find itself in a position to actually reclassify a country's regime, particularly if the member country has strong reasons to object to such reclassification. Furthermore, reclassifications, even if opportune, are by their nature more concerned with the present than with the past. Indeed, as Poirson (2001) shows, significant disconnect persists between the revised IMF classification and de facto measures based entirely on the relative variability of international reserves and nominal exchange rates.

our goal is to construct a simple measure of intervention based on variables that are highly visible to markets on a timely basis,[7] As in LYS and Poirson (2001), our index relies on the relative variabilities of international reserves and nominal exchange rates.

$$INTERV_{it} = \frac{|(\Delta IR_{it} e_{it})/BM_{it-1}|}{|\Delta E_{it}/E_{it-1}| + |(\Delta IR_{it} e_{it})/BM_{it-1}|},$$

where *IR* are gross international reserves (denominated in U.S. dollars), *BM* is the base money, and *e* is the nominal U.S. dollar exchange rate for country *i* in month *t*. Thus, the numerator measures the monthly change in international reserves converted to domestic currency and scaled by the previous end-month stock of base money, but the first term of the denominator is simply the monthly rate of (positive or negative) nominal depreciation of the exchange rate *E* expressed in relation to a reference currency. For many countries in the sample, the U.S. dollar served as the reference currency, but in some cases either the French franc, the German deutsche mark, or the euro were deemed more appropriate, according to the country's exchange rate policies as described in the AREAER.

The intervention index is thus a rough measure of the degree to which the monetary authorities intervene in the foreign exchange markets. In the case of a country with a completely pure float the numerator will be zero, and thus the index will be zero.[8] Alternatively, a fully fixed regime should have zero variation in its exchange rate, and *INTERV* will equal one. All countries in the sample fall somewhere between these two extremes; the higher the index, the more intervention it reflects. *INTERV* is constructed on a monthly basis, and then incorporated into the regressions either as its average over the given quarter, or as the average over the previous eight quarters.

As described earlier, *FUND* includes country-specific macroeconomic fundamentals that are presumed to be related to markets' assessments of overall performance and repayment capacity. Included in this group are: year-on-year CPI inflation; real exchange-rate volatility, calculated as the standard deviation of monthly percentage changes in the real bilateral exchange rate vis-à-vis the reference currency over the previous two years;[9]

[7]This index does not capture other modes of intervention, such as the use of capital controls, purchases or sales of foreign currency debt, operations in derivative markets, use of credit lines, and moral suasion on the banking system. While recognizing this limitation, we believe that due to profound problems in measuring these types of interventions on a cross-country sample and the potential difficulty of markets to perceive these interventions, our analysis is better served by using the relatively simple and clean measure described above.

[8]Strictly speaking, since *IR* can change because of valuation changes (other than those in the exchange rate vis-à-vis the reference currency), it is likely that in practice even a fully floating exchange rate regime will in fact be characterized by an intervention index higher than zero.

[9]We also constructed real exchange rate volatility from multilateral real effective exchange rate measures, with similar results in the regressions. We report the results from the bilateral measures because these were available for a larger sample of countries.

and the ratios to GDP of the external current account, overall general government balance, international reserves minus gold, and external government debt. These variables were taken from the IMF's *International Financial Statistics* (IFS), with the exception of debt, which was taken from the World Bank's *Global Development Finance* database. It covers public and publicly guaranteed external debt, outstanding and disbursed, is in U.S. dollars and is recorded annually.[10]

In situations of extreme stress, in which spreads go up significantly, an emerging market economy might switch from one exchange regime to another—generally, from pegged to floating. In order to capture the possible effect of such extreme events on emerging market spreads without ascribing them to one exchange rate regime or another, we construct two alternative indicators of "crisis." Following the methodology of Kaminsky, Lizondo, and Reinhart (1998) and Eichengreen, Rose, and Wyplosz (1994), we define a currency crisis as an extreme observation for exchange market pressure (*EMP*), a weighted average of reserve losses and real exchange rate depreciation. We consider two alternative *EMP* measures for the 1980–2006 period:

$$EMP_{it}^{\frac{\partial IR}{IR}} = \alpha\left(\frac{\Delta RE_{it}}{RE_{it-1}}\right) - (1-\alpha)\left(\frac{\Delta IR_{it}}{IR_{it-1}}\right)$$

$$EMP_{it}^{\frac{\partial IR}{BM}} = \alpha\left(\frac{\Delta RE_{it}}{RE_{it-1}}\right) - (1-\alpha)\left(\frac{\Delta IR_{it}E_{it}}{BM_{it-1}}\right),$$

where *RE* is the real exchange rate.[11] The weights of the two components, α and 1–α, were chosen such that the sample variance of both is equalized: $\alpha^2\sigma^2_{(\partial RE/RE)} = (1-\alpha)^2\sigma^2_{(\partial IR/IR)}$ in the first case, and $\alpha^2\sigma^2_{(\partial RE/RE)} = (1-\alpha)^2\sigma^2_{(\partial IR/BM)}$, in the second.[12] We then constructed dummy variables *CRISIS*, which take a value of one if the respective *EMP* index exceeds a threshold of two standard deviations above the mean within a five-quarter window centered around quarter *t*. In other words, if the threshold is exceeded within two quarters before and two quarters after the current period, *CRISIS* takes a value of

[10]In order to include this variable in our quarterly regressions, we imputed the quarterly values of the debt stock as follows: the annual debt measured in dollars multiplied by the exchange rate prevailing end-of-quarter, then divided by annual GDP measured in national currency.

[11]We also calculated these indices using the nominal exchange rate, but in the regressions we only report those using the real exchange rate, as this measure deals more appropriately with episodes of hyperinflation.

[12]The variance, σ^2, may be calculated in two different ways. First, observations for all countries and periods can be considered together and the variance calculated on the entire sample. Second, different variances can be calculated over the sample period for each individual country, with αs chosen as above, but each only applied to its corresponding country. For brevity, we only report estimations in which the variance is calculated for the entire sample.

one.[13] The variable *CRISIS1* is constructed using $EMP_{\partial IR/IR}$, while *CRISIS2* is constructed using $EMP_{\partial IR/BM}$.

In consideration of the manner in which the *CRISIS* variable is constructed, the public debt variable is lagged. Specifically, the public debt ratio tends to be sensitive to the exchange rate, particularly so in times of turbulence. Therefore, it was necessary to separate the volume effect of the stock of public debt from that arising from exchange rate fluctuations. Indeed, for estimations in which debt and crises are measured contemporaneously, we find the two variables to be collinear and rarely both significant. Lagging public debt—outside the five-quarter window defining the crisis variable—would allow the stock effect to have an impact on spreads while reducing its sensitivity to current exchange rate fluctuations. Thus, the regressions reported in the following section use a lag of three quarters for public debt.[14]

Finally, we include variables that capture global conditions that vary over time only. Namely, we include the Chicago Board Options Exchange (CBOE) S&P 100 Volatility Index (VXO), which measures expectations of future volatility in U.S. equities markets, as a proxy for overall world market volatility,[15] as well as year dummy variables.

II. Summary Statistics and Results

Some general patterns emerge when observing the de jure exchange rate variables. Table 1 reports the percentage of observations in our sample which lie in each aggregated category: fixed, managed floaters, and free floaters. There appears to be a modest trend toward more flexible exchange rates during the sample period; from the 1990s to the current decade, the free floating category has gained about 4 percentage points at the expense of the other two categories. Table 2 reports the number of de jure regime switches, showing that switches in either direction—toward a more fixed or a more flexible regime—occurred with similar frequency throughout the past two decades, and that virtually all switches at a disaggregated level also occurred at the aggregate level. That is, countries very rarely made small changes in their regime that kept them within the same aggregate category (only five of the 68 switches observed since the 1980s).

Table 3 reports the mean intervention indices, both over the whole sample period and by decade, for all of the countries in the sample, and ranks countries from lowest mean intervention (flexible) to highest (fix). Figure 1 plots the average intervention index of all the countries in each aggregated de

[13]It seems reasonable that spreads would begin to widen during the run-up to a currency crisis. Indeed, the crisis measures based on a centered window perform better in the regressions than the measures based solely on lagged episodes.

[14]In unreported estimations we also used longer lags (four quarters) for public debt, with similar results.

[15]For data and detailed description, see www.cboe.com/VXO.

Table 1. Percentage of EMBIG Countries in Aggregated Exchange Rate Categories

	1980s	1990s	2000s	Whole Period
Fixers	41.11	30.25	28.50	32.18
Managed floaters	39.50	44.67	42.07	42.66
Free floaters	19.39	25.07	29.44	25.18

Note: This table displays the average percentage of countries falling into each of the de jure regime categories for each period. The sample of countries comprises 37 emerging economies for which the EMBIG is available.

Table 2. Switches Between Exchange Rate Regimes, 1985–2006

	Switches at an Aggregate Level			Switches at a Disaggregate Level		
	Toward flex	Toward fix	All	Toward flex	Toward fix	All
1980s	11	6	17	12	7	19
1990s	16	17	33	18	18	36
2000s	7	6	13	7	6	13
Whole period	34	29	63	37	31	68

Note: This table displays the number of times that EMBIG countries switched from one type of regime to another, for each period indicated above. Switches at an aggregate level refer to moves from among the three larger categories (fixed, managed floating, or free floating), while switches at a disaggregate level refer to moves to and from any of the IMF's disaggregated de jure categories.

jure category. As one would expect a priori, in our sample of countries the intervention index for the de jure fixers is consistently higher than that for the managed floaters, and that of the managed floaters tends to be consistently higher than that of the free floaters. However, as panels b and c show, the differences in mean intervention between categories exhibit considerable variability over time and, particularly when comparing managed floats to free floats, intersect and even cross in various periods. Thus, there are periods in which managed floaters intervene about the same on average as free floaters, and there are periods in which they intervene *less*. Comparing fixers and free floaters reveals that, while the former undoubtedly intervene more on average throughout the sample period, the positive difference between the two varies noticeably over time.

Basic Regression Results

In Table 4 we report the results for the basic specifications. Overall, the controls for domestic fundamentals behave as expected. The general government balance, level of international reserves, public debt (lagged by

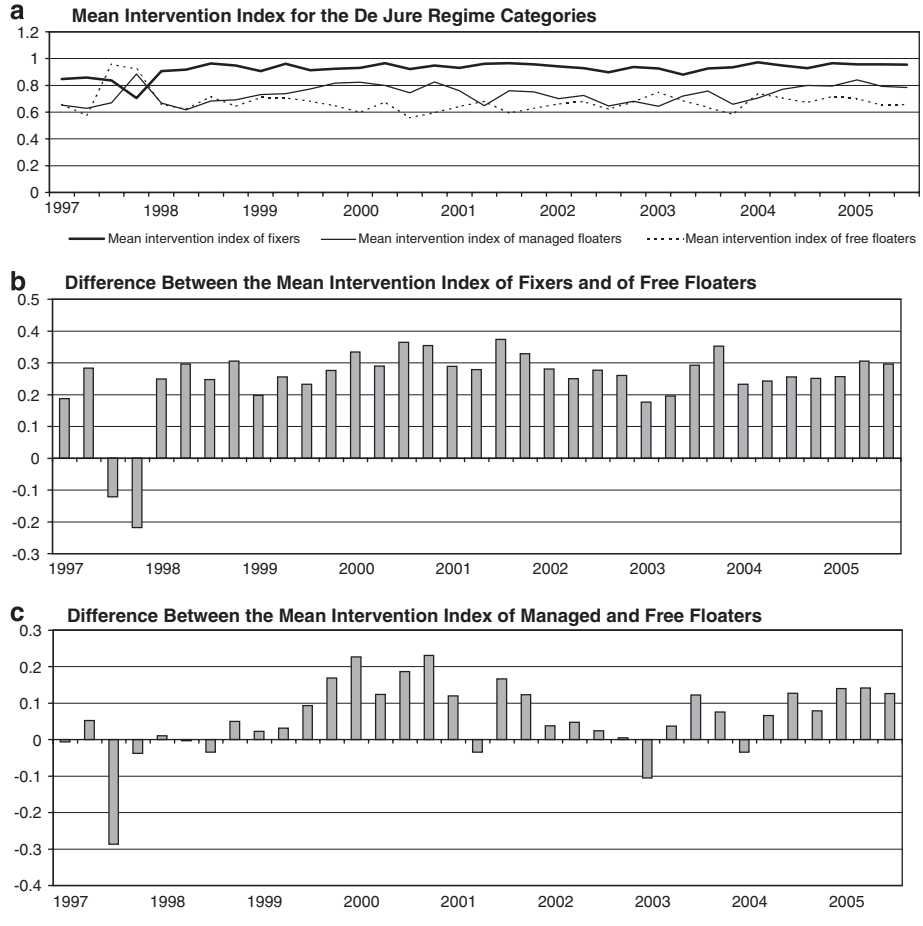
Table 3. Intervention Index

Whole period		1970s		1980s		1990s		2000s	
Brazil	0.496	Turkey	0.508	Poland	0.211	Uruguay	0.467	South Africa	0.387
Turkey	0.547	Brazil	0.621	Brazil	0.395	Brazil	0.474	Brazil	0.494
Poland	0.587	Lebanon	0.646	Turkey	0.438	Algeria	0.562	Indonesia	0.563
Uruguay	0.589	Argentina	0.664	Algeria	0.461	Colombia	0.593	Dominican Republic	0.567
Colombia	0.632	Uruguay	0.717	Argentina	0.465	Ukraine	0.601	Croatia	0.611
Croatia	0.635	Colombia	0.725	Uruguay	0.491	Poland	0.602	Colombia	0.621
South Africa	0.636	Chile	0.729	Mexico	0.492	South Africa	0.611	Poland	0.629
Algeria	0.639	Algeria	0.741	Peru	0.544	Turkey	0.615	Turkey	0.652
Peru	0.690	Tunisia	0.745	Lebanon	0.576	Peru	0.658	Mexico	0.677
Indonesia	0.698	Malaysia	0.760	South Africa	0.581	Croatia	0.660	Chile	0.687
Argentina	0.702	Morocco	0.771	Colombia	0.582	Dominican Republic	0.665	Tunisia	0.710
Morocco	0.706	Peru	0.855	Morocco	0.629	Morocco	0.679	Thailand	0.719
Tunisia	0.707	Mexico	0.888	Nigeria	0.660	Indonesia	0.687	Uruguay	0.720
Mexico	0.717	Korea	0.892	Tunisia	0.667	Bulgaria	0.700	Peru	0.728
Hungary	0.746	South Africa	0.906	Pakistan	0.740	Russia	0.701	Korea	0.736
Lebanon	0.758	Philippines	0.907	Hungary	0.758	Tunisia	0.706	Philippines	0.737
Serbia	0.764	Nigeria	0.936	Malaysia	0.769	Ecuador	0.709	Hungary	0.755
Russia	0.784	Pakistan	0.948	Korea	0.787	Philippines	0.714	Morocco	0.757
Dominican Republic	0.785	Côte d'Ivoire	0.959	Indonesia	0.813	Hungary	0.726	Serbia	0.764

Chile	0.786	Egypt	0.984	Ecuador	0.815	Korea	0.741	Egypt	0.777
Ukraine	0.788	Thailand	0.989	Philippines	0.827	Malaysia	0.771	Argentina	0.780
Korea	0.792	Ecuador	0.992	Chile	0.857	Venezuela	0.776	Pakistan	0.795
Philippines	0.797	Venezuela	0.997	Dominican Republic	0.858	Pakistan	0.791	Russia	0.834
Malaysia	0.805	Dominican Republic	1.000	China	0.863	Mexico	0.801	Algeria	0.853
Pakistan	0.819	El Salvador	1.000	Thailand	0.895	Thailand	0.816	Venezuela	0.875
Nigeria	0.841	Panama	1.000	Venezuela	0.964	Chile	0.838	Nigeria	0.887
Bulgaria	0.854			Egypt	0.983	Lebanon	0.850	Malaysia	0.955
Thailand	0.863			El Salvador	0.992	China	0.861	China	0.958
Ecuador	0.871			Côte d'Ivoire	1.000	Nigeria	0.897	Ukraine	0.961
Venezuela	0.905			Panama	1.000	Argentina	0.914	Bulgaria	0.974
China	0.919					El Salvador	0.923	Côte d'Ivoire	1.000
Egypt	0.927					Egypt	0.934	El Salvador	1.000
El Salvador	0.977					Côte d'Ivoire	1.000	Lebanon	1.000
Côte d'Ivoire	0.989					Panama	1.000	Ecuador	1.000
Panama	1.000							Panama	1.000

Note: This table displays the average intervention index (*INTERV*) for a given country and for each of the periods indicated above, and also ranks countries by their average intervention over each period. As defined in the text, *INTERV* is equal to the ratio of $\delta IR/BM$ (the monthly percentage change in international reserves, scaled by base money) to the sum of $\delta IR/BM$ and $\delta E/E$ (the monthly percentage change in the nominal exchange rate). For each country, a single reference currency is chosen in order to calculate the nominal exchange rate. By construction, *INTERV* lies between 0 and 1, with 0 corresponding to a fully floating exchange rate, and a value of 1 corresponding to a completely fixed rate.

Figure 1. Intervention Index Across De Jure Regime Categories



three quarters), and global volatility conditions have an impact on sovereign spreads, which is statistically significant and of the expected sign. In particular, spreads decline with improvements in the fiscal balance and with the level of reserves, and increase with expectations of volatility in U.S. markets and with increases in the stock of debt. The two exceptions are inflation, which has the expected positive coefficient but is not significant, and the current account balance, which is paradoxically positively related to spreads, although not significantly so.[16] The results also show that currency

[16]This result has arisen in previous studies. Powell and Martínez (2007), for example, interpret it is as a possible case of reverse causality: a country facing lower spreads (and hence, lower borrowing costs) could afford to sustain a weaker current account over time. Thus, a positive relationship between the two would emerge.

Table 4. Determinants of EMBIG Spreads, All Countries

	Dependent Variable: EMBIG Spread							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inflation	0.95	1.20	0.44	1.06	−0.87	−0.70	−0.30	0.38
	[0.54]	[0.62]	[0.23]	[0.59]	[0.53]	[0.44]	[0.18]	[0.25]
Current account	2,718.18	3,927.55	3,484.11	3,912.98	1,120.41	1,295.93	1,228.18	1,638.98
	[0.93]	[1.24]	[1.19]	[1.30]	[0.54]	[0.63]	[0.62]	[0.80]
General government balance	−7,576.78	−6,927.93	−7,228.15	−6,531.38	−6,215.77	−5,930.04	−5,471.81	−4,764.67
	[1.86]*	[1.88]*	[2.01]*	[1.91]*	[2.28]**	[2.17]**	[2.19]**	[1.99]*
Reserves minus gold	−2,027.10	−3,279.34	−2,966.62	−3,033.03	−2,749.39	−2,667.33	−1,688.89	−1,978.41
	[1.62]	[2.70]**	[2.63]**	[2.60]**	[2.66]**	[2.62]**	[1.85]*	[2.01]*
Public debt (t–3)	2,955.10	2,441.14	2,128.19	2,438.56	1,495.71	1,598.75	2,708.90	3,004.07
	[2.87]***	[3.83]***	[3.81]***	[4.11]***	[3.18]***	[3.32]***	[3.47]***	[3.52]***
Volatility index	14.60	10.18	10.15	10.84	10.05	10.43	8.80	9.51
	[4.15]***	[3.90]***	[3.97]***	[4.23]***	[4.30]***	[4.37]***	[4.20]***	[4.43]***
De jure fixed		−668.71	−487.22	−476.37	−292.47	−237.22	−448.89	−465.36
		[2.23]**	[1.72]*	[1.75]*	[1.51]	[1.19]	[1.87]*	[1.86]*
De jure managed floaters		3.03	118.00	73.80	416.70	417.67	79.02	24.03
		[0.03]	[0.87]	[0.53]	[1.78]*	[1.72]*	[0.75]	[0.26]
Intervention index								
Average over previous eight quarters			−1,161.24		−320.00		−1,362.18	
			[3.19]***		[0.76]		[2.82]***	
Current quarter average				−618.24		−362.54		−596.74
				[2.68]**		[2.93]***		[2.63]**

Table 4 *(concluded)*

Real exchange rate volatility					7,705.74 [2.08]**	7,527.84 [2.22]**		
CRISIS1 (t–2, t+2)							1,282.22 [2.33]**	1,221.15 [2.23]**
Constant	−930.70 [1.79]*	−316.95 [0.86]	544.29 [1.20]	42.60 [0.13]	−352.06 [0.67]	−377.07 [1.11]	539.28 [1.33]	196.00 [0.65]
Joint significance test for year dummies (Ho: γ_t, for all t)								
Test statistic	2.33	2.03	2.49	2.24	2.56	2.35	1.73	1.21
p-Value	0.047	0.081	0.036	0.056	0.033	0.047	0.140	0.335
Number of observations	739	705	705	704	680	679	670	669
Number of countries	25	25	25	25	24	24	24	24
R^2	0.38	0.43	0.45	0.44	0.49	0.5	0.53	0.52

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are the external current account, general government balance, and three-quarter lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, an index of exchange intervention (as defined in the text), the standard deviation of the monthly percentage change in the bilateral real exchange rate over the previous eight quarters, and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t-statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

crises themselves cause spreads to rise above and beyond the levels explained purely by changes in domestic fundamentals, accounting for an additional increase of more than 1,200 basis points.

Now we turn to the effect of exchange rate policy. Interestingly, spreads tend to be lower in countries with a de jure fixed regime, but de jure managed floating regimes have spreads that are roughly comparable to those in countries that claim to float. Similarly, the coefficient on intervention index is always negative, thereby reinforcing the view that, if anything, exchange rate fixity—either de jure or de facto—brings about lower spreads. Presumably, one main benefit of intervention from the viewpoint of capital markets is that it brings about greater stability in the real exchange rate. Indeed, real exchange rate volatility over the previous two years is seen to be positively related to spreads,[17] and causes the impact of intervention over the same period to lose significance (column 5). However, intervention over the current quarter continues to have a negative significant effect even when real exchange rate volatility is included (column 6). Finally, one could argue that the negative relationship between de jure fixed regimes and spreads might simply be the result of countries exiting fixed regimes during periods of turmoil, and therefore the regressions could falsely attribute to floating regimes the higher spreads that arise during these difficult times. However, when we control for these episodes with our *CRISIS* variable, we find that the negative impact of exchange rate fixity on spreads persists (columns 7 and 8)—that is, the negative relationship does not appear to be driven by exits from fixed to floating regimes in the aftermath of currency crises.

The basic results also show that, once crisis episodes are accounted for, the year dummies cease to add explanatory power to the regressions. That is, there are no longer significant common time-varying effects that are not already being reflected in *VXO* or in crisis episodes.

Extensions and Robustness Checks

Our previous results show that, ceteris paribus, countries that claim to be fixers and also intervene more heavily in the foreign exchange market by buying and selling international reserves will have lower spreads on average. However, although we control for crisis episodes, it may be that different regimes are not given equal treatment by markets when a crisis does erupt. Thus, in Table 5 we introduce interaction terms between the crisis dummies

[17]Some other recent empirical studies find support for potential benefits of exchange rate intervention. Powell and Martínez (2007) find that real exchange rate volatility tends to lower country ratings and these, in turn, have a significant upward effect on spreads. Using an asset pricing approach to jointly estimate the return on bank deposits, bonds, and equity in emerging markets, Diez de los Ríos (2007) finds evidence that currency risk premia demanded by foreign investors is lower for countries that intervene more heavily in foreign exchange markets.

and the de jure regimes. We find that, although spreads are generally higher for de jure floating regimes during tranquil or normal times, there is evidence that during crises these regimes are punished significantly less by capital markets. Depending on the precise measure of *CRISIS* used, either both fixed and managed floating regimes (*CRISIS1*, columns 1 and 3) or managed

Table 5. Determinants of EMBIG Spreads, All Countries

	Dependent Variable: EMBIG Spread			
	(1)	(2)	(3)	(4)
Inflation	−0.34	−0.46	−0.94	−1.00
	[0.21]	[0.32]	[0.72]	[0.83]
Current account	1,935.87	730.58	530.37	−647.26
	[0.99]	[0.43]	[0.32]	[0.38]
General government balance	−4,125.01	−4,536.65	−3,662.19	−3,823.93
	[2.20]**	[2.04]*	[2.36]**	[2.01]*
Reserves minus gold	−2,010.46	−1,261.72	−1,813.44	−1,092.21
	[2.06]*	[1.35]	[1.98]*	[1.24]
Public debt ($t-3$)	2,686.84	3,032.59	2,289.15	2,629.42
	[2.95]***	[3.63]***	[2.85]***	[3.87]***
Volatility index	7.95	7.89	8.56	8.34
	[4.05]***	[4.33]***	[4.62]***	[4.65]***
De jure fixed	−692.37	−395.18	−527.15	−239.54
	[2.71]**	[1.90]*	[2.96]***	[1.22]
De jure managed floaters	−166.38	19.44	39.20	208.58
	[1.41]	[0.15]	[0.26]	[1.13]
Intervention index				
Average over previous 8 quarters	−1,359.46			
	[2.86]***			
Current quarter average			−439.95	−448.51
			[3.11]***	[3.09]***
Real exchange rate volatility			5,911.18	5,399.62
			[2.52]**	[2.35]**
CRISIS1 ($t-2$, $t+2$)	1,952.93		1,941.13	
	[6.47]***		[6.55]***	
CRISIS2 ($t-2$, $t+2$)		543.12		524.52
		[0.84]		[0.83]
Interactions between *de jure* regimes and the respective crisis definition				
De jure managed Floaters · CRISIS	99.64	1,424.26	−170.41	1,203.83
	[0.18]	[2.30]**	[0.42]	[1.98]*
De jure floaters · CRISIS	−1,570.98	122.61	−2,017.99	−587.42
	[4.80]***	[0.23]	[5.66]***	[0.85]
Constant	1,071.11	423.20	−47.53	−430.45
	[2.72]**	[0.99]	[0.15]	[1.14]

Table 5 *(concluded)*

	Dependent Variable: EMBIG Spread			
	(1)	(2)	(3)	(4)
Joint significance test for year dummies (Ho: γ_t, for all t)				
Test statistic	2.68	3.82	2.15	2.12
p-Value	0.027	0.005	0.687	0.076
Number of observations	673	670	647	644
Number of countries	24	24	23	23
R^2	0.56	0.56	0.59	0.58

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are the external current account, general government balance, and three-quarter-lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, an index of exchange intervention (as defined in the text), the standard deviation of the monthly percentage change in the bilateral real exchange rate over the previous eight quarters, and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. Finally, interaction terms are included between the crisis and de jure regime dummies. The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t-statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

floating regimes only (*CRISIS2*, columns 2 and 4) are punished more harshly than floating regimes in the event of a crisis.

In Table 6 we account for a sharp and discrete fall in Argentina's reported EMBIG spread (from close to 5,000 to around 450), associated with what appears to be a recalculation of the spreads for Argentina in the wake of its debt restructuring and the issuing of new debt instruments. We do this in two ways: (1) by including a dummy variable for Argentina during 2005:2 (columns 1–4); and (2) and by excluding Argentina from the sample (columns 5–8). The dummy variable turns out to be highly significant, and the most salient results from Tables 4 and 5 continue to hold: among country fundamentals, public debt, reserves, and the government balance are all significant explanatory variables for spreads; the volatility index continues to have a positive and significant coefficient; de jure fixity is associated with lower spreads; and de facto fixity in the form of greater intervention is also associated with lower spreads. As before, once crises have been accounted for, year dummies cease to be significant. The results on fundamentals and on de jure and de facto fixity also continue to hold when Argentina is dropped from the sample.

Table 6. Determinants of EMBIG Spreads, Accounting for Argentina, June 2005

	Dependent Variable: EMBIG Spread							
	Including a dummy variable for Argentina June 2005				Excluding Argentina from the sample			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inflation	1.15	1.45	−0.28	−0.29	1.84	1.93	1.03	1.01
	[0.64]	[0.72]	[0.16]	[0.17]	[0.96]	[0.94]	[0.62]	[0.61]
Current account	3,215.62	4781.8	2673.35	2344.49	827.75	1616.32	83.02	−202.75
	[0.98]	[1.29]	[1.05]	[0.89]	[0.45]	[0.84]	[0.09]	[0.24]
General government balance	−7,319.49	−6,456.38	−4,308.34	−5,490.75	−3,450.27	−2,951.25	−1,731.61	−2,303.29
	[1.90]*	[2.07]**	[2.15]**	[2.41]**	[1.88]*	[2.16]**	[2.32]**	[2.80]**
Reserves minus gold	−1,879.97	−3,546.56	−2,478.91	−1,893.92	−2,645.89	−2,784.30	−2,815.79	−2,457.27
	[1.49]	[2.59]**	[2.49]**	[2.05]*	[1.78]*	[2.19]**	[2.54]**	[2.44]**
Public debt (t–3)	3,044.41	2,395.29	2,314.05	2,465.67	1,246.76	1,244.87	1,140.80	1,269.23
	[2.86]***	[4.56]***	[4.21]***	[4.77]***	[3.60]***	[4.33]***	[2.75]**	[2.98]***
Volatility index	14.33	9.67	7.61	8.28	15.47	11.21	9.51	9.91
	[3.96]***	[3.34]***	[3.09]***	[3.42]***	[4.41]***	[4.50]***	[4.41]***	[4.73]***
Argentina June 2005 dummy	−2,363.20	−2,898.93	−3,007.63	−2,969.10				
	[21.08]***	[8.39]***	[8.65]***	[8.91]***				
De jure fixed		−818.35	−642.46	−604.56		−348.27	−246.65	−214.21
		[1.86]*	[1.71]	[1.60]		[2.14]**	[1.89]*	[1.75]*
De jure managed floaters		60.66	157.04	162.98		−132.52	−87.18	−80.26
		[0.40]	[1.05]	[1.10]		[1.10]	[1.07]	[0.95]

Intervention Index								
Average over previous eight quarters			−1,938.28 [2.45]**	−1,777.87 [2.38]**			−623.95 [1.97]*	−536.14 [1.75]*
CRISIS1 (t–2, t+2)			1,361.82 [2.51]**				748.81 [1.69]	
CRISIS2 (t–2, t+2)				1,163.71 [2.59]**				652.64 [1.91]*
Constant	−975.06 [1.75]*	−248.29 [0.69]	1,710.63 [2.56]**	974.56 [1.76]*	140.89 [0.55]	6.20 [0.02]	636.96 [2.66]**	398.92 [1.41]
Joint significance test for year dummies (Ho: γ_t, for all t)								
Test statistic	2.62	2.04	1.55	1.64	2.53	3.69	10.13	7.76
p-Value	0.029	0.079	0.190	0.162	0.352	0.006	0.000	0.000
Number of observations	739	705	673	670	703	670	638	635
Number of countries	25	25	24	24	24	24	23	23
R^2	0.45	0.53	0.65	0.64	0.4	0.42	0.5	0.5

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are the external current account, general government balance, and three-quarter lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, an index of exchange intervention (as defined in the text), and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. These regressions also control for a discrete fall in Argentina's spread between May and June 2005, by including a dummy variable (columns 1–4) and by excluding Argentina from the sample (columns 5–8). The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

So far, the results indicate that our measure of exchange rate intervention is associated with lower spreads. However, a related and key question is whether this is true for all de jure regimes. For de jure fixed regimes, intervention can be viewed as the action required to maintain whatever exchange rate commitment the authorities have made, whereas in floating regimes intervention can be viewed as a measure of disconnect between words and deeds, that is, a measure of fear of floating. It is quite possible that markets would view intervention differently in the two cases. For this reason, in Table 7 we show the results of regressions in which only the two de jure floating regimes are included (columns 1–4), or where only the free floating regimes are included (columns 5–7). Indeed, in both cases, although the relation between intervention and spreads continues to be negative, it ceases to be statistically significant. It then follows that only for de jure fixers does intervention produce lower spreads. However, it is also worth noting that intervention under de jure floating regimes—fear of floating—is not punished by markets. Finally, the results indicate that for the smaller sample of de jure free floating regimes, most country fundamentals cease to be significant, the sole exception being the current account, which now enters with the expected negative sign. Interestingly, the effect of the level of reserves on spreads continues to be significant when managed floating regimes are included, but not when the sample is restricted to free floating regimes only.

As a further robustness check, we run regressions in which we include the Reinhart-Rogoff de facto classification scheme in place of *INTERV*. For each of the RR aggregated categories[18] j, we create a dummy variable labeled *RRj*, with $j = 1.5$, increasing with the degree of flexibility. We report these regressions in Table 8, for the full sample of countries (columns 1–3), de jure managed and free floating regimes (columns 4–5), and for free floating regimes only (columns 6–7). One consequence of this specification is that the sample size is reduced dramatically, as the RR regime classification is available only through 2001. The results are less clear than in previous estimations. For the full sample of countries, the coefficient signs on the de jure regimes are the opposite of what was observed earlier, with fixed and managed floating regimes now associated with higher spreads relative to free floating regimes. However, the RR regimes continue to reveal a preference by markets for fixity; in comparison to free floating (*RR4*), the full sample results show lower spreads for all three of the more fixed regimes, *RR1–RR3*, but the free falling category (*RR5*) displays the highest spreads of any category.

[18]RR initially created 14 separate regime classifications, which were then consolidated into six. In terms of our dummy variables (which equal one if the country-quarter belongs to a given category, and zero otherwise): *RR1* encompasses four fixed categories, from no separate legal tender to a de facto peg; *RR2* corresponds to three crawling peg or narrow band categories; *RR3* includes four wider crawling or moving bands as well as managed floating; *RR4* corresponds to freely floating; *RR5* corresponds to freely falling; and *RR6* refers to a dual market in which parallel market data are missing. In our sample there is a negligible number of observations for *RR6*, so this category is dropped.

Table 7. Determinants of EMBIG Spreads, *De Jure* Floating Regimes Only

	Dependent Variable: EMBIG Spread						
	De jure managed floaters and free floaters				*De jure* free floaters		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inflation	14.05	13.70	11.90	11.07	4.20	4.15	4.33
	[1.37]	[1.37]	[1.30]	[1.25]	[1.05]	[0.87]	[1.09]
Current account	−217.59	−71.35	−931.06	−850.26	−3,100.08	−3,107.92	−3,195.40
	[0.17]	[0.05]	[0.77]	[0.78]	[2.52]**	[2.79]**	[2.42]**
General government balance	−368.21	−757.97	−80.94	−694.88	−86.78	−78.75	−161.52
	[0.62]	[1.19]	[0.11]	[0.98]	[0.05]	[0.04]	[0.08]
Reserves minus gold	−5,016.28	−4,710.43	−4,717.06	−4,008.54	−175.83	−187.92	−103.86
	[5.91]***	[6.20]***	[6.11]***	[4.87]***	[0.19]	[0.17]	[0.09]
Public debt (*t*–3)	745.01	692.10	894.13	1,181.30	801.57	808.53	825.26
	[1.69]	[1.58]	[2.40]**	[2.69]**	[1.31]	[1.42]	[1.37]
Volatility index	11.70	11.62	10.83	10.63	12.36	12.37	12.43
	[3.58]***	[3.61]***	[3.91]***	[3.78]***	[2.35]**	[2.41]**	[2.36]**
Argentina June 2005 dummy	−4,359.33	−4,349.96	−4,286.70	−4,212.40			
	[30.40]***	[31.18]***	[34.93]***	[30.93]***			
Intervention Index							
Average over previous eight quarters		−592.53	−758.12	−741.44		19.59	
		[1.28]	[1.40]	[1.41]		[0.05]	
Current quarter average							−36.63
							[0.46]

Table 7 *(concluded)*

Real exchange rate volatility							−368.64 [0.61]
*CRISIS*1 (t–2, t+2)			536.17 [1.92]*				
CRISIS2 (t–2, t+2)				662.14 [2.20]**			
Constant	185.73 [0.93]	611.63 [1.99]*	900.51 [2.82]**	728.41 [2.46]**	−152.00 [0.59]	−166.64 [1.19]	−132.28 [0.53]
Joint significance test for year dummies (Ho: γ_t, for all t)							
Test statistic	4.07	3.84	4.50	3.43	65.75	29.77	76.73
p-Value	0.004	0.006	0.003	0.011	0.000	0.000	0.000
Number of observations	466	466	462	459	221	221	221
Number of countries	21	21	20	20	9	9	9
R^2	0.77	0.78	0.83	0.84	0.50	0.50	0.50

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are the external current account, general government balance, and three-quarter lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, an index of exchange intervention (as defined in the text), the standard deviation of the monthly percentage change in the bilateral real exchange rate over the previous eight quarters, and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. These regressions also control for a discrete fall in Argentina's spread between May and June 2005, by including a dummy variable. The sample is limited to those observations with de jure managed floating and free floating regimes (columns 1–4) and free floating regimes only (columns 5–7). The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t-statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

Table 8. Determinants of EMBIG Spreads Using Reinhart-Rogoff Classifications of Exchange Rate Regimes

	Dependent Variable: EMBIG Spread						
	All countries			*De jure* managed and free floaters		*De jure* free floaters	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inflation	0.23	−0.14	−0.17	13.30	8.36	5.50	2.00
	[0.81]	[1.00]	[1.46]	[1.80]*	[0.98]	[0.98]	[0.29]
Current account	5,260.16	707.62	527.62	930.09	821.42	−1,818.70	−1,538.09
	[1.18]	[0.75]	[0.56]	[1.03]	[0.99]	[0.88]	[0.83]
General government balance	−2,838.52	−3,274.13	−3,421.80	−1,769.83	−2,124.82	−3,029.51	−2,892.38
	[3.08]***	[2.16]**	[2.21]**	[1.21]	[1.26]	[1.81]	[1.64]
Reserves minus gold	−3,909.86	−4,011.02	−4,088.03	−6,546.42	−6,654.66	−494.60	−336.77
	[3.13]***	[3.36]***	[3.38]***	[6.80]***	[8.45]***	[0.78]	[0.54]
Public debt ($t-3$)	2,430.97	1,798.38	1,841.24	1,595.75	1,945.02		
	[8.47]***	[3.65]***	[3.80]***	[3.33]***	[3.02]***		
Volatility index	12.59	12.42	12.91	12.07	13.24	5.93	6.41
	[6.44]***	[5.85]***	[6.23]***	[4.41]***	[4.49]***	[5.43]***	[4.79]***
De jure fixed	495.50	343.93	295.30				
	[1.90]*	[2.28]**	[1.99]*				
De jure managed floaters	283.88	318.12	263.82				
	[1.99]*	[2.51]**	[2.12]**				
Reinhart-Rogoff de facto classification[1]							
RR1	−509.59	−886.19	−874.34	−341.88	−477.74	52.30	58.29
	[4.31]***	[3.07]***	[3.02]***	[2.24]**	[2.54]**	[1.04]	[1.09]
RR2	−309.76	−759.02	−736.05	−116.02	−246.99	0.00	0.00
	[2.18]**	[2.75]**	[2.65]**	[0.69]	[1.25]	[.]	[.]
RR3		−226.92	−270.29	−76.65	−176.81	−94.70	−49.66
		[2.18]**	[2.66]**	[0.96]	[2.09]*	[1.28]	[0.61]
RR5	379.09					−106.94	−17.53
	[7.39]***					[1.12]	[0.22]

Table 8 *(concluded)*

Real exchange rate volatility	−644.20						
	[0.45]						
CRISIS1 (t–2, t+2)		257.95		374.14		256.70	
		[2.84]**		[4.72]***		[4.89]***	
CRISIS2 (t–2, t+2)			248.72		290.76		185.22
			[2.30]**		[6.50]***		[5.41]***
Constant	−88.46	471.84	480.83	570.86	661.35	173.01	164.74
	[0.26]	[1.79]*	[1.85]*	[2.54]**	[2.91]**	[1.08]	[1.01]
Joint significance test for year dummies (Ho: γ_t, for all t)							
Test statistic	4.04	2.78	2.90	11.55	9.94	4.76	4.52
p-value	0.015	0.055	0.483	0.000	0.000	0.029	0.033
Number of observations	280	272	272	178	178	111	111
Number of countries	21	21	21	17	17	9	9
R^2	0.41	0.64	0.63	0.72	0.70	0.36	0.31

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are: the external current account, general government balance, and three-quarter lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, the Reinhart-Rogoff classifications (as defined in the footnote), the standard deviation of the monthly percentage change in the bilateral real exchange rate over the previous eight quarters, and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. These regressions also control for a discrete fall in Argentina's spread between May and June 2005, by including a dummy variable. The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t-statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

[1]The Reinhart-Rogoff classification used above corresponds to a condensed version of the 14 regime categories originally created. RR1 encompasses four fixed categories, ranging from no separate legal tender to a de facto peg; RR2 corresponds to three crawling peg or narrow band categories; RR3 includes four wider crawling or moving bands as well as managed floating; RR4 corresponds to freely floating; RR5 corresponds to freely falling; and RR6 refers to a dual market in which parallel market data are missing. In our sample there is a negligible number of observations for RR6, so this category is dropped. As in the case of de jure classification, we drop the RR4 category and compare all regimes relative to free floating.

When focusing on the subsample comprising the de jure managed and free floating categories, the RR classification can also be used to measure the impact of fear of floating on spreads, and again there is evidence of a preference for fixity, as *RR1* in particular is associated with significantly lower spreads. Once the sample is restricted to the de jure free floating regimes, however, the differences across RR regimes cease to be statistically significant.

In these specifications the RR classifications replace *INTERV* as a measure of de facto exchange rate policy. To shed some light on the relationships between de jure and de facto classification schemes, as well as with *INTERV*, we correlate three variables: *RR*, which takes the values 1–5, going from less to more flexibility; *De Jure*, which varies between 1 and 3 and is also increasing in the degree of flexibility; and quarterly *INTERV*, which is decreasing in the degree of flexibility. The correlation matrix shown in Table 9 echoes the general observation from Figure 1 that de jure floating is generally associated with less intervention, although the correlation (−0.435) is far from perfect. On the other hand, there is greater correlation between *RR* and *De Jure* (0.506) and between *RR* and *INTERV* (−0.589). Thus, it is evident that the latter two variables, while both providing a measure of de facto exchange rate policy, are not equivalent.

We also construct intervention indices that take account of domestic interest rates as a possible additional channel for intervention in the exchange market. Indeed, it is conceivable that in emerging economies some degree of defense of exchange rates is conducted through interest rates, without ever being reflected in movements in international reserves. Our working hypothesis is that these interventions would be manifested as deviations of domestic real interest rates from their long-run equilibrium levels. Thus, if a country's real interest rate is driven above (below) its long-run level at any given time, we interpret this as intervention to prevent depreciation (appreciation). Using two alternative proxies for the long-run real interest rate r^{lr},[19] its sample means and its Hodrick-Prescott trend, both over the 1995–2007 period, our "interest-rate-enhanced" intervention measure, *INTERVI* is then defined as

$$INTERVI_{it} = \frac{|(\Delta IR_{it} e_{it})/BM_{it-1}| + |r_{it} - r_i^{lr}|}{|\Delta E_{it}/E_{it-1}| + |(\Delta IR_{it} e_{it})/BM_{it-1}| + |r_{it} - r_i^{lr}|}.$$

When we included *INTERVI* in place of *INTERV* in our regressions, we found that the observed negative relationship between spreads and exchange rate intervention continued to hold.

A final robustness check involves running regressions in which the dependent variable is the international investor credit rating (IICR), which consists of an overall score assigned to countries based on assessments by

[19]To measure the domestic real interest rate, we used the money market rate reported to the IFS and deflated it either by the past or forward 12-month CPI inflation rate. Both backward and forward-looking measures gave similar results.

Table 9. Correlation between *De Jure* and *RR* Classifications, and *INTERV*

	De jure	*RR*	*INTERV*
De jure	1.000		
RR	0.506	1.000	
	[0.00]		
INTERV	−0.435	−0.589	1.000
	[0.00]	[0.00]	

Note: This table shows the correlation matrix between: De Jure, a variable denoting the IMF de jure classification varying from 1 (fixed) to 3 (free floating); RR, a variable which denotes the Reinhart-Rogoff classification, and which varies between 1 (fix) and 5 (free falling); and *INTERV*, the exchange market intervention index described in the text. *p*-values of the significance test on the correlations are shown in brackets.

economists and sovereign risk analysts of global banks and money management firms.[20] These assessments cover not only economic and financial factors, but also political and institutional dimensions as well. Although the IICRs are reported semiannually[21] rather than quarterly as is the case for the majority of variables in our data set, they do permit a wider coverage over time (with ample pre-1997 observations) and countries. After rescaling the IICR to facilitate comparability with our earlier regressions,[22] we found that our main results continued to hold:[23] ratings improved with strong fundamentals—in particular, with high levels of reserves and low levels of debt—and with lower real exchange rate variability, and, ceteris paribus, ratings were more favorable for de jure fixed regimes. We also found that these fixed regimes were punished most during crisis episodes. Finally, IICRs were less sensitive to *INTERV* than the EMBIG; although they did tend to improve with greater intervention, this relationship never achieved statistical significance.

Endogeneity

We now consider whether the determinants of exchange rate regimes themselves might present endogeneity problems for our specifications. Exchange rate regimes may be affected by (1) other known variables, (2) omitted variables, which may also determine spreads, and (3) spreads

[20]This indicator is used extensively by the Reinhart, Rogoff, and Savastano (2003) study on debt intolerance. We are grateful to the authors for providing us with their data set of IICR.

[21]The IICR is reported in March and September of each year.

[22]The IICR ranges from zero to 100, with the latter denoting the lowest risk of default. We transformed it by subtracting it from 100. In this way, just as with the EMBIG, greater risk is associated with a higher value of the index. This rescaled index was found to have a significant correlation of 0.596 with the EMBIG.

[23]The results of the IICR regressions are available upon request.

themselves. We account for (1) by including a range of potential explanatory variables in our specifications. Should there exist omitted variables that affect both regimes and spreads (2), this might change our interpretation of our results, but (3) would present a more serious challenge.

We turn first to de jure regimes. These tend not to change much over time, making it highly unlikely that endogeneity of type (3) holds, because spreads vary with high frequency. Of course, extreme movements in spreads may lead to a change in regime, but we have accounted for this effect with the *CRISIS* variables, both alone and interacted with the de jure regime. Nonetheless, it could be that the long-run average level of spreads could have a direct effect on long-run de jure regime choice. However, we find ourselves unable to imagine how such an effect could occur without operating through other variables, which leads us to examine potential long-run determinants of de jure regime.

There exists a fairly extensive literature attempting to explain long-run de jure regimes, notably Poirson (2001). The literature models regime choice as a function of traditional optimum currency area criteria, other economic fundamentals (many of which we have included in our specifications) and institutional variables. The most complete survey of this empirical work is that of Juhn and Mauro (2002), which concludes that no variables appear to be robust predictors of de jure regimes. However, the authors note that the strongest candidate from a weak set of explanatory variables would be country size; larger economies are more likely to float. Thus, if de jure regime choice merely reflects country size, then our results showing a negative relation between fixed regimes and spreads would imply that markets prefer smaller countries. We do not find this interpretation to be particularly plausible. More recently, Singer (2008) has shown that regime choice may be influenced by remittances, with countries receiving greater remittances being more likely to adopt fixed exchange rates. Our results might then be interpreted as markets rewarding countries that receive more remittances. Although this is possible, it is difficult to imagine how remittances would affect spreads above and beyond their effect on the current account, for which we already control.

The arguments are similar for actual intervention. The empirical studies cited above also attempt to explain some de facto regime choice—usually with a measure comparable to our measure of intervention, *INTERV* —and obtain similar results as with de jure regime choice. Therefore, we are equally confident that the relationship between spreads and *INTERV* is not contaminated with omitted variable bias.

Of greatest concern would be a scenario in which there is a direct causal link from spreads to intervention. Suppose countries during specific periods experience ''good times'' in which markets perceive them to be of higher credit worthiness than during other periods. Suppose further that the monetary authorities take advantage of these good times to accumulate international reserves, believing that they can do so without jeopardizing the stability of their exchange rates. They may also take this action to avoid an

appreciation of their currency: fear of floating in reverse, in the terminology of LYS (2007). The accumulation of reserves would, in our specifications, be reflected in greater measured intervention; that is to say, increasing *INTERV*. Thus, ''good times'' would lead to lower spreads, which would in turn lead to higher intervention. In the specifications discussed so far, the coefficient on the intervention index has been consistently negative, which we have interpreted as evidence that higher intervention leads to lower spreads. If the ''good times'' hypothesis is correct, then in fact lower spreads are causing greater intervention. However, the negative correlation between spreads and *INTERV* should only hold in good times; in times of adverse conditions, we would expect an *increase* in spreads simultaneously with an increase in *INTERV*, consistent with the classic fear of floating to prevent depreciation. It is important to emphasize that, in order to invalidate our results, this effect would almost certainly have to operate directly. It could not operate through one of our included control variables, nor could it operate through other variables that the studies cited above have rejected as drivers of de facto regime choice.

To see if this ''good times'' hypothesis is driving our results, we need to identify when countries are experiencing such good times. To do so, we construct a variable that measures when the spreads were lowest during our sample period. We divide the observations of EMBIG for each country into quartiles. Because different countries have different underlying risk premia, we construct the quartiles country-by-country rather than over the whole sample of countries. We then construct a dummy that takes the value of 1 for those observations in which the EMBIG spreads fall into the lowest quartile (or lowest two quartiles) of the distribution and 0 otherwise. We include this new dummy variable (*GTIMESQ* for the lowest quartile, *GTIMESH* for the lowest two quartiles) in our specifications. If our results are driven by monetary authorities accumulating reserves when spreads are low, then they should not be robust to the inclusion of this variable. Specifically, if the ''good times'' hypothesis accounts for our results, then the coefficient on intervention should be negative only during ''good times.'' As seen in Table 10, this is not the case. The coefficient on intervention alone is negative and significant—that is, even during bad times—but the coefficient on the ''good times'' dummy interacted with intervention is positive and not significant. Thus, the observed negative relationship holds regardless of whether the country in question is experiencing good or bad times. As Table 10 also shows, these results are robust to including *GTIMESH*, referring to the two lowest quartiles of EMBIG spreads for each country.[24] Also, note that the coefficients on both good times dummies alone are not

[24]We also tested whether the ''good times'' effect might be due to world market conditions not picked up by the year dummies or other control variables, by constructing a ''good times'' dummy that measures the lowest observations for world EMBIG spreads, with similar robust results. The results are available upon request.

Table 10. Determinants of EMBIG Spreads, including a Dummy Variable Indicating "Good Times"

	Dependent Variable: EMBIG Spread							
	All countries				*De jure* managed floaters and free floaters			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inflation	0.58	−0.18	0.52	−0.18	13.61	11.82	13.86	11.99
	[0.29]	[0.10]	[0.25]	[0.10]	[1.33]	[1.27]	[1.42]	[1.33]
Current account	4,046.17	2,528.06	3,863.16	2,275.26	−141.10	−988.08	−132.96	−920.91
	[1.19]	[0.98]	[1.21]	[0.96]	[0.11]	[0.80]	[0.10]	[0.68]
General government balance	−6,649.20	−4,224.85	−6,380.14	−4,070.68	−733.80	−69.31	−579.70	−7.59
	[2.35]**	[2.19]**	[2.34]**	[2.13]**	[1.13]	[0.10]	[0.99]	[0.01]
Reserves minus gold	−2,717.88	−2,216.63	−2,442.77	−2,058.15	−4,645.93	−4,685.66	−4,385.34	−4,520.39
	[2.26]**	[2.13]**	[2.11]**	[2.00]*	[5.63]***	[6.01]***	[5.47]***	[6.07]***
Public debt ($t-3$)	1,804.63	2,195.72	1,656.82	2,062.30	657.08	868.54	553.01	793.11
	[5.57]***	[4.35]***	[4.59]***	[4.02]***	[1.49]	[2.24]**	[1.38]	[2.25]**
Volatility index	8.85	7.13	4.97	4.40	10.98	10.32	8.06	8.21
	[2.95]***	[2.68]**	[1.40]	[1.46]	[3.53]***	[3.88]***	[2.52]**	[2.89]***
Argentina June 2005 dummy	−3,296.71	−3,133.89	−3,495.51	−3,303.36	−4,409.83	−4,333.04	−4389.95	−4315.06
	[7.24]***	[7.67]***	[7.12]***	[7.57]***	[29.33]***	[31.34]***	[34.74]***	[36.91]***
De jure fixed	−597.31	−645.53	−456.58	−529.23				
	[1.58]	[1.74]*	[1.42]	[1.62]				
De jure managed floaters	194.79	144.86	258.78	197.53				
	[1.07]	[1.01]	[1.38]	[1.28]				

Table 10 *(concluded)*

Intervention Index								
Average over previous eight quarters	−1,462.18 [2.76]**	−1,873.42 [2.55]**	−1,288.30 [3.33]***	−1,726.82 [2.96]***	−641.57 [1.30]	−804.07 [1.37]	−593.67 [1.31]	−799.22 [1.42]
"Good times" dummy variable								
Bottom quartile of spreads: *GTIMESQ*	205.17 [0.51]	142.72 [0.40]			−159.95 [0.58]	−149.22 [0.57]		
Bottom half of spreads: *GTIMESH*			−40.19 [0.13]	−92.82 [0.35]			−225.9 [1.13]	−234.29 [1.20]
Interaction of *GTIMES* with intervention index	−509.99 [0.85]	−343.5 [0.68]	−429.62 [0.76]	−246.43 [0.54]	89.04 [0.23]	104.12 [0.28]	27.98 [0.10]	115.08 [0.40]
CRISIS1 (t–2, t+2)		1,337.07 [2.56]**		1,272.09 [2.53]**		535.62 [1.92]*		
Constant	914.37 [1.75]*	1,755.18 [2.70]**	994.14 [2.29]**	1,804.09 [3.24]***	687.70 [2.19]**	960.68 [2.73]**	831.56 [2.84]**	1,088.50 [3.32]***
Joint significance test for year dummies (Ho: γ_t, for all t)								
Test statistic	1.53	1.73	1.61	1.83	3.42	4.05	2.37	2.50
p-value	0.194	0.139	0.169	0.117	0.011	0.005	0.516	0.045
Number of observations	705	673	705	673	466	462	466	462
Number of countries	25	24	25	24	21	20	21	20
R^2	0.57	0.65	0.59	0.66	0.78	0.83	0.79	0.84

Note: This table shows the results of fixed-effects regressions of country-specific EMBIG spreads for quarterly observations during the 1997–2007 period. The explanatory variables are the external current account, general government balance, and three-quarter lagged public debt (all expressed as a ratio to GDP), the average 12-month inflation rate, the VXO market volatility index, dummy variables for de jure fixed and managed floating regimes, an index of exchange intervention (as defined in the text), and crisis dummy variables (see below). In addition, year dummies are included, for which only the results of a test for the joint significance are reported. These regressions also control for a discrete fall in Argentina's spread between May and June 2005, by including a dummy variable (columns 1–4) and by excluding Argentina from the sample (columns 5–8). The crisis dummy variable equals one when an exchange market pressure indicator (EMP) exceeds a threshold determined by its mean plus two standard deviations within a five-quarter window centered at t. That is, when EMP exceeds the threshold at any time between two quarters before and two quarters after the current period. Robust t-statistics are shown in brackets, with * denoting significance at 10 percent; ** at 5 percent; and *** at 1 percent.

significant, indicating that all meaningful effects driving spreads to their low levels have already been incorporated in the set of explanatory variables.

III. Conclusion

This paper has examined why countries appear to exhibit a "fear of declaring," that is, a disconnect between their declared exchange rate policy and their actual level of exchange-rate intervention. We have considered one possible reason for fear of declaring: that international capital markets might reward countries that are classified toward the flexible end of the spectrum. We have used the spreads of country's sovereign debt over U.S. treasury bills as our measure of market perceptions of each country. Using a panel data approach that exploits both time and cross-country variability, we have considered the effect on these spreads of de jure regime choice and the actual degree of exchange rate intervention, employing a range of variables to control for underlying fundamentals.

Our basic results reach the opposite conclusion; spreads tend to be lower in countries that have a fixed exchange rate regime, whether de jure or de facto. We find that above and beyond the performance of a country's fundamentals, markets tend to punish countries that are approaching, experiencing, and coming out of a currency crisis, and that markets value real exchange rate stability. However, even when controlling for these preferences, we find the de jure fixed regimes exhibit lower spreads and that exchange rate intervention is associated with lower spreads as well. Importantly, when interacting the crisis variable with the de jure regimes, we find that free floating regimes tend to be punished the least in times of extreme turbulence. Our results are robust to the inclusion of alternative intervention indices that incorporate possible intervention through interest rates. Finally, we explore the implications of endogeneity of the exchange rate policy variables, focusing on a potentially serious type: that the negative relationship between spreads and intervention could simply reflect reverse causality during times of particularly favorable external conditions. We find that, for a reasonable specification of this "good times" hypothesis, our results do not appear to be driven by this type of reverse causality.

However, our results also must be qualified as we incorporate extensions to the basic specifications. First, when we consider only de jure floating regimes, we find that intervention, while still associated with a reduction in spreads, is no longer significant. Second, when considering the RR classification as an alternative measure of actual exchange-rate policy, the results point more strongly to markets rewarding fear of floating; a preference for de jure floating combined with de facto (as measured by RR) fixing. However, we also observe that the RR classification tends to be more highly correlated with the de jure classification than is our *INTERV* measure.

Thus, this paper identifies a puzzle: why are countries that intervene reluctant to openly declare that they are doing so, given that markets do not

generally reward either de facto or de jure floaters? One possible reason may be reflected in our findings that de jure floating may be advantageous in times of crisis. It might be conceivable that countries opt for declaring flexibility even though it may entail costs during normal times in order to reap the benefits of lower spreads in turbulent times. Thus, flexibility may act as an insurance policy. Furthermore, once this "flexibility" is announced, there appears to be no punishment for fear of floating. In this regard, our results are consistent with the Alesina-Wagner hypothesis that through intervention emerging economies are sending imperfectly informed markets a signal about their good institutions and competent macroeconomic management, a signal that may not be completely contained in information regarding the macroeconomic fundamentals. Our study shows that, for the most part, markets are indeed receiving this signal and acting upon it.

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