IDB WORKING PAPER SERIES Nº IDB-WP-851

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November 2017

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Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Cavallo, Eduardo A.
Domestic antidotes to sudden stops / Eduardo Cavallo, Alejandro Izquierdo, John J. León-Díaz ; editor, John Dunn Smith.
p. cm. — (IDB Working Paper Series ; 851)
Includes bibliographic references.
1. Financial crises-Econometric models. 2. Capital movements-Econometric models. 3. Foreign exchange rates. I. Izquierdo, Alejandro, 1964- II. León-Díaz, John J. III. Smith, John D., editor. IV. Inter-American Development Bank. Department of Research and Chief Economist. V. Title. VI. Series.
IDB-WP-851

http://www.iadb.org

Abstract[*]

Sudden Stops in net capital flows can be prevented when the actions of domestic investors offset a reduction in foreign lending. This paper presents evidence that while sudden stops in gross inflows—i.e., a tightening of the external borrowing constraint—are associated with global conditions and therefore, are largely outside of the control of local policymakers, domestic factors such as low levels of liability dollarization, exchange rate flexibility, inflation targeting regimes, and a solid institutional background are important to prevent these episodes from becoming sudden stops in net capital flows. Under these favorable local conditions, domestic investors may perceive reduced risk in bringing in resources at the time of an external shock, thus insulating the country from this shock.

JEL classifications: F30, F32, F40
Keywords: Gross capital flows, Sudden stops, Retrenchments, Domestic versus foreign investors

[*] A previous version of this paper was circulated under the name "Prevented Sudden Stops" and was published as Inter-American Development Bank Discussion Paper IDB-DP-539. We would like to thank Boragan Aruoba, Ana Lariau, Felipe Saffie and John Shea for useful comments; and Juan Andrés Espinosa for superb research assistance. All remaining errors are our own responsibility. The opinions expressed are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.

1 Introduction

The genesis of "sudden stops" in capital flows is an abrupt and unexpected cut-off in international credit, i.e., a sudden stop in capital inflows. When foreign creditors stop lending, borrower countries must adjust to a tighter financing constraint. Yet, not everybody in a country that is borrowing on net from abroad is a debtor vis-à-vis the rest of the world. In every country, there are agents who borrow and others who save. In open economies, a portion of the national savings goes to purchasing foreign assets through capital outflows of resident investors. Those accumulated foreign assets can potentially be repatriated, providing an alternative source of external financing. If repatriation of assets by residents happens when foreigners stop lending, then a sudden stop in net capital flows may be averted, or prevented. This paper studies under what conditions sudden stops in net capital flows can be prevented.

The notion of "antidotes to sudden stops" or "prevention" in this paper takes a specific meaning. It is not removing the risk that foreign lenders may abruptly and unexpectedly stop lending. This is usually outside the control of any given country. Instead, it refers to the conditions under which a sudden stop in capital inflows from foreigners (henceforth "foreigners' sudden stop") does not turn into a full-fledged sudden stop in net capital flows (henceforth "prevented sudden stop"). Net capital flows to a country is the difference between gross inflows (which is the lending provided by foreigners) and gross outflows (i.e., national savings allocated to purchasing foreign assets). A "prevented sudden stop" is a situation in which, given a large and unexpected reduction in gross capital inflows, gross capital outflows compensate so that net capital flows remain relatively stable, meaning that net capital flows do not enter into sudden stop mode.

The episodes that are the focus of this paper can be considered as the sequence of two transitions: first, the transition from normal times to periods of foreigners' sudden stop. And second, after experiencing a foreigners' sudden stop, the transition or not to a prevented sudden stop. We study the determinants behind each transition considering domestic and global (i.e., external) factors. Our empirical results show that, while external conditions are important in explaining the incidence of foreigners' sudden stops, favorable domestic conditions are the antidotes that explain why in some of these episodes net sudden stops are prevented. This is to say that in periods of global distress in capital markets, the ability of a country to build resilience against sudden stops in net capital flows relies heavily on the soundness of domestic conditions. We show that net sudden stops are more likely to be prevented in countries with a strong institutional background, and a

flexible exchange rate regime that is accompanied by inflation targeting. In contrast, prevented sudden stops are less likely in countries with high levels of foreign-currency liabilities and higher inflation.

It is important from a policy standpoint to know which are the determinants of prevention because sudden stops in net capital flows are significantly costlier in terms of GDP losses than foreigners' sudden stops (Cavallo et al. (2015)). This is so because a sudden stop in net capital flows demands an abrupt adjustment in any outstanding current account deficit, which is typically very costly to engineer, particularly in countries with foreign currency liabilities and low shares of tradable output. Instead, a foreigners' sudden stop that is offset by resident investors prevents the adjustment of external accounts and therefore, the associated output costs. Given that foreigners' sudden stops are largely outside the control of local policymakers, having effective antidotes to prevent them from becoming full-fledged sudden stops in net capital flows is welfare enhancing. This paper sheds light on the conditions that characterize a foreigners' sudden stop, as well as the role of domestic investors in increasing the likelihood of prevention, conditional on the materialization of such an episode.

Related Literature. This paper is part of the literature on the determinants of sudden stops, i.e., Calvo et al. (2004) and Calvo et al. (2008). It belongs to a relatively new strand that considers the distinct roles of gross capital inflows and outflows in the determination of net capital flows (see example, Forbes and Warnock (2012), Calderon and Kubota (2013) and Cavallo et al. (2015)).

Until the mid-1990s, the relative weight of capital outflows vis-à-vis inflows in emerging markets was negligible. Thus, discussions about capital flows in emerging markets focused exclusively on "net flows" and the potentially disruptive effects their volatility might impose on debtor countries.[1] As domestic investors started playing more sizable roles, the discussion shifted towards differentiating foreigners from resident investors. This distinction makes it possible to analyze sudden stops from different perspectives. On the one hand, sudden stops in net capital flows can be the consequence of a decline in inflows from foreigners; on the other hand, they can be the consequence of an increase in outflows by domestic agents (or "capital flight"). Moreover, the two types of investors can interact offsetting each other's actions, leading for example to "prevented sudden stops," which is the focus of this paper.

A stylized fact that has been established in the literature is that gross capital inflows and

[1]Since the global financial crisis of 2008/09, the scope of interest in sudden stops has extended to advanced countries.

outflows can co-move along the economic cycle. Broner et al. (2013) find that gross capital inflows and outflows increase during economic expansions and decrease during downturns. The authors also find that in periods of global crisis, total gross capital flows collapse due to the retrenchment from foreign markets everywhere. This is what is behind the observation that during the global financial crisis of 2008/09, large capital flow retrenchments compensated the fall in gross capital inflows (IMF, 2013).

Forbes and Warnock (2012) studied the determinants of foreigners' sudden stops and retrenchments of capital outflows separately. They highlight that during the global financial crisis there was an unprecedented number of countries experiencing both sudden stops and retrenchment episodes simultaneously. The authors find that global factors, especially global risk through changes in economic uncertainty, as well as changes in risk aversion and global growth, were key drivers of these extreme capital flows episodes.

Adler et al. (2014) quantify the dynamic impact of global financial shocks on both net and gross capital flows to emerging markets. They also analyze the role played by local investors in offsetting the behavior of foreign investors. Using vector autoregressions and impulse response functions, they find that local investors can neutralize the decline in inflows from foreign investors when facing global uncertainty and shocks to long-term interest rates. Using a different methodology, Cifuentes and Jara (2014) stress the role played by foreign assets holdings and exchange rate flexibility in shaping the probability that a retrenchment of capital outflows can occur when the economy is facing a foreigners' sudden stop.

The idea that resident investors can neutralize the actions of foreigners has been explored in other contexts, particularly in the aftermath of the global financial crisis. For example, Schmidt and Zwick (2015), using data for the Euro area, conclude that domestic volatility (i.e., uncertainty about the evolution of the economy and the economic policy being implemented) played an important role in determining the dynamics of gross capital flows and the increase in home bias observed in the Euro area during the crisis. Ghosh et al. (2014) in turn, postulate that global factors, such as U.S. interest rates and global risk, are important elements associated with capital flows surges in emerging markets. Moreover, the attractiveness of a country as an investment destination is largely driven by domestic factors. This does not imply that foreign investors do not react to local conditions. On the contrary, foreign investors consider local conditions as much as domestic investors do, but they are more sensitive to changes in global conditions. Fratzscher (2011) finds additional evidence on the role of global factors driving gross flows during the global financial crisis

of 2007-2009 and its aftermath. He finds that the rise in risk was the culprit for the reallocation of capital flows from many emerging to some advanced economies during the crisis. This is in contrast with the pre- and post-crisis periods in which favorable external factors had the opposite effect. Domestic factors were instead related to the observed cross-country heterogeneity in the pattern of capital flows.

Another strand of the literature has pointed to the existence of a "home bias" in capital flows. Milesi-Ferretti and Tille (2011) point out the existence of a generalized but heterogenous collapse in international capital flows during the financial crisis. Along the same lines, Giannetti and Laeven (2012) show that, during periods of crisis that involve higher uncertainty, investors become more risk averse and revert to domestic investments that can be evaluated at lower costs due to lower asymmetric information. Jochem and Volz (2011) in turn argue that the home bias observed in the Euro zone is associated with changes in the portfolio structure in favor of domestic assets, a behavior followed mainly by financial institutions in an effort to deleverage due to the inherent risk in their balance sheets.

The phenomenon studied in this paper, i.e., the fact that domestic investors may prevent a net sudden stop from occurring, can be rationalized in terms of two mechanisms involving those investors' behavior. The first is a knowledge mechanism. Caballero and Simsek (2016) provides a theoretical framework to understand how domestic investors provide a stabilizing counterforce to the "fickleness" in gross inflows due to their better expertise about local markets. The observed behavior of capital outflows in periods of distress is consistent with the behavior of investors who are specialists and have better information about potential projects in their own country. This assumption aims to capture the attitude of Knightian agents facing unfamiliar (foreign) situations relating to the work in Dow and Werlang (1992) and Caballero and Krishnamurthy (2008).

The second mechanism consists of higher investment incentives due to changes in relative prices. Domestic investors can benefit from changes in exchange rates. Periods of turmoil are accompanied by sharp currency depreciations that positively affect the return of investment in local currency, making it more attractive. This idea is consistent with the literature that links currency depreciation and investment incentives, such as the theoretical work in Froot and Stein (1991) and Blonigen (1997) and the empirical work of Klein and Rosengren (1994) and Goldberg and Klein (1997).

This paper builds on these earlier contributions and departs from them in several dimensions. First, this paper focuses on periods in which a foreigners' sudden stop has already materialized,

i.e., times when countries are vulnerable because a reduction in external financing has already occurred. This permits controlling for any bias stemming from nonlinearities in the behavior of domestic agents during normal and crisis times. Second, the methodology in this paper exploits cross-sectional variation (as opposed to only time series variation) in capital flows. Countries display heterogenous patterns in their capital flows dynamics, and the ability of domestic agents to prevent sudden stops depends on specific characteristics at home. Third, this paper emphasizes interactions between gross capital inflows and outflows rather than treating them independently. Thus, it defines a type of episode that has not yet been studied. In doing so, it uncovers some new facts, such as for example, that the occurrence of a retrenchment of capital outflows – defined as an extreme event of capital outflows – is neither a necessary nor a sufficient condition to prevent a sudden stop in net flows (more on this below). Finally, to the best of our knowledge, this paper uses the broadest panel data set available for a sample including emerging, frontier and advanced economies. By expanding the set of countries and the explanatory variables used, it provides a comprehensive analysis of the role of domestic and external factors in explaining how prevention can materialize.

This paper is structured as follows. Section 2 presents definitions and determinants of sudden stops. Section 3 provides a brief description of the methodology and presents the baseline results. Section 4 summarizes the results from the sensitivity and robustness checks. Section 5 analyzes the length of duration preventions. Section 6 concludes.

2 Definitions, Measurement and Data

2.1 Sudden Stops in Capital Flows

In Balance of Payments (BOP) accounting, gross inflows correspond to total liability transactions in the Financial Account (i.e., lending from non-residents). Gross outflows are defined as total asset transactions in the Financial Account (i.e., residents' purchases of foreign assets), excluding international reserves transactions.

Using quarterly data from the Balance of Payment Statistics (BOPS) developed and reported by the International Monetary Fund (IMF), we denote net flows of country j in period t as $N_{jt} = I_{jt} + O_{jt}$, where I_{jt} and O_{jt} represents gross inflows and outflows (excluding reserves) respectively.[2]

[2]We use the "+" sign in the equation because assets' transactions are recorded with a negative sign in the Balance

A foreigners' sudden stop is defined following Calvo et al. (2004) as an event in which the year-on-year change in gross capital inflows falls at least two standard deviations below its historical mean. In terms of measuring its length in time, an episode starts from the quarter in which the series falls one standard deviation below its historical mean, but conditional on the fact that it will eventually cross the two-standard-deviations threshold. The episode ends when the series goes back to one standard deviation below the historical mean.

A sudden stop in *net* capital flows is defined in an analogous way, using net capital flows, instead of gross inflows only.

To reduce the effects of seasonality in net and gross capital flow series, we apply a moving average filter to both series. In particular, for quarterly series we define $C^n_{jt} = \sum_{s=t}^{t-3} N_{js}$ and $C^i_{jt} = \sum_{s=t}^{t-3} I_{js}$ for $t = 4, 5, \ldots, T$. The year-on-year change is defined as $\Delta C^x_{jt} = C_{jt} - C_{j,t-4}$ with $x = \{n, i\}$.

A more detailed description of the series used to compute sudden stops is presented in Table 7 in Appendix C. After all the adjustments, we end with a dataset at quarterly frequency, from 1980 through 2014, which comprises 48 countries (Appendix B).

2.2 Episodes in the Sample

Based on the aforementioned definitions, a prevented sudden stop in economy j during period t is defined as an event in which a foreigners' sudden stop (determined using C^i_{js}) does not co-exist with a sudden stop in net capital flows (determined using C^n_{js}). "Prevention" can happen if gross capital outflows offset the fall in gross inflows either fully, or at least partially, so that a net sudden stop in capital flows does not take place in that period.

To get a better understanding of the dynamics behind prevention, consider Figure 1. It displays the dynamics of the smoothed series of capital inflows and outflows changes for the case of Germany, Thailand and Turkey. The dashed line corresponds to the 2 standard deviations threshold that defines a sudden stop. More specifically, when the solid black line falls below the dashed line the algorithm identifies a foreigners' sudden stop. The panels in the first column (labeled "prevented") show in shaded blue all episodes of foreigners' sudden stops that were prevented, and the panels in the second column (labeled "not prevented") present in shaded grey all episodes of foreigners' sudden stops that were not prevented.

In the case of Germany, which is presented in the first row of Figure 1, the changes in gross

of Payments accounting. See Appendix A for further details on the construction of the capital flows series.

capital flows exhibit a "diamond pattern." This implies that periods in which capital inflows decline have almost always coincided with periods in which capital outflows move in the opposite direction (and in similar magnitudes). These offsetting variations have allowed the country to prevent sudden stops, except for an episode in 2013 (shown in the second column).

Thailand and Turkey are different. Capital flows in Thailand do not display the same "diamond pattern" as in Germany. Few episodes over the last 20 years were fully prevented; in some cases, it was because variations in capital outflows were not large enough to compensate for the fall in inflows. Turkey presents a clearer example because all foreigners' sudden stops identified in the sample turned into net sudden stops (i.e., none was prevented). In this case, any offset from capital outflows appears to have been insufficient to compensate for variations in inflows.

Table 1 summarizes gross and net sudden stops in terms of the number of episodes, their average duration and the total number of quarters in which countries experienced these events in the sample. There is a total of 1,274 quarters that we identify as foreigners' sudden stops out of a total of 10,736 quarters in the dataset. This corresponds to 341 unique foreigners' sudden stops with an average duration of 3.74 quarters. Out of the 1,274 quarters that qualify as foreigners' sudden stops in the sample, 588 quarters are not contemporaneously identified as sudden stops in net capital flows. These are "prevented" episodes (column 8). This means that roughly half of all foreigners' sudden stops are prevented. This proportion is bigger if we only consider advanced economies, in which case around 63 percent of all foreigners' sudden stops become prevented (311 out of 486 quarters). Conversely, the fraction of prevented episodes diminishes to 32 and 17 percent, in emerging markets and frontier economies, respectively.[3]

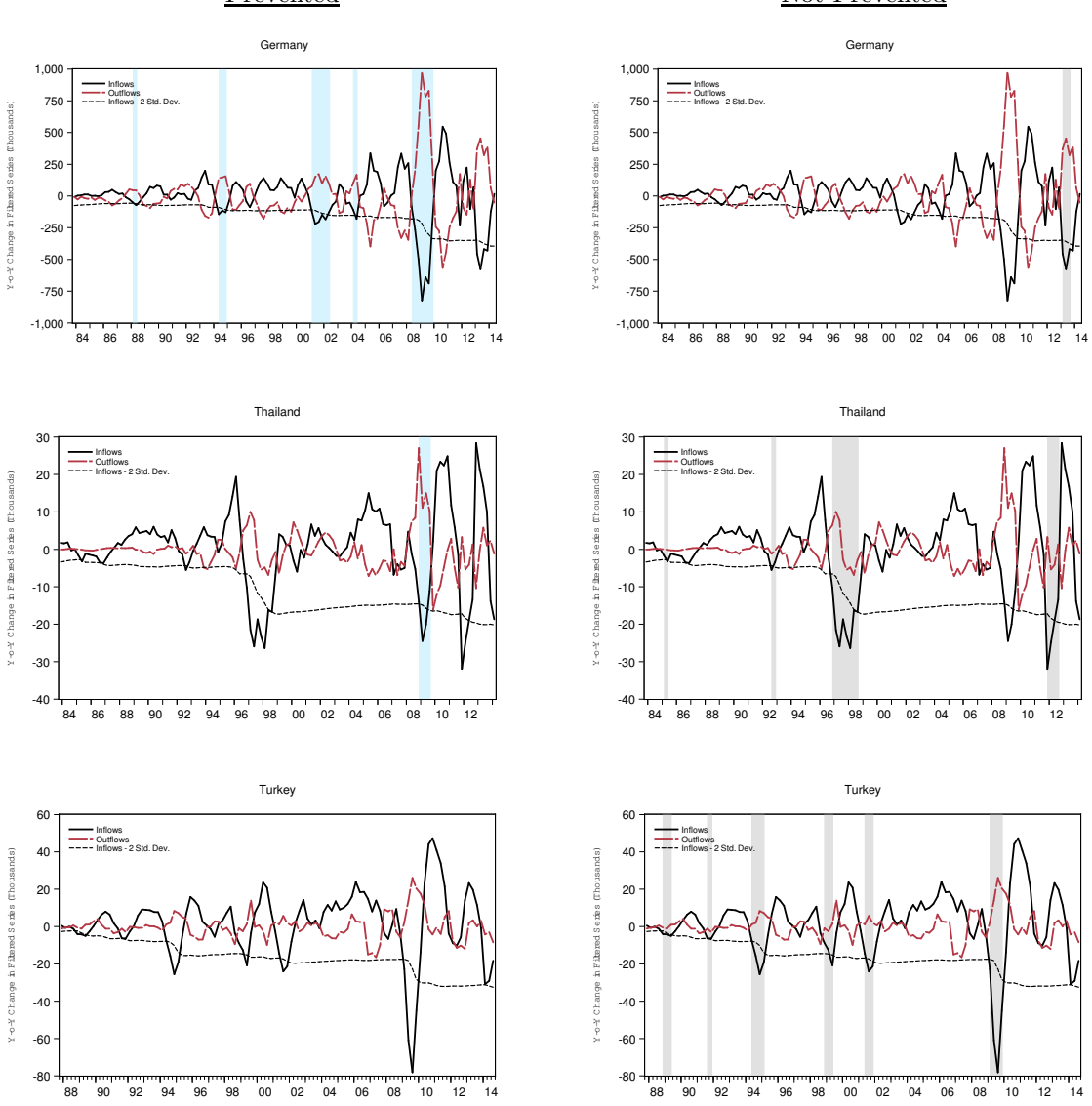
Prevented sudden stops are not exclusively related to a large decrease in gross capital outflows (or "retrenchments" as they are called elsewhere in the literature).[4] In other words, extreme events of capital outflows are neither necessary nor sufficient to avoid sudden stops in net flows. On the one hand, they are not sufficient: columns (6) and (7) in Table 1 show that 17 percent of all episodes (219 out of 1270) of sudden stops in net capital flows were accompanied by retrenchments; this percentage is around 22 percent for emerging economies. This suggests that even a very large repatriation of assets may not suffice to prevent a fall in net flows. This is likely to be the case when the underlying decline in gross inflows is very large, for example three or four standard deviations.

On the other hand, retrenchments are not necessary: dividing columns (8) and (9) in Table

[3]For a detailed description of country classification, see Appendix B.

[4]Forbes and Warnock (2012) define retrenchments as the mirror image sudden stops, i.e., episodes when there is decline in gross capital outflows that exceed two standard deviations of the sample mean.

Figure 1: Inflows, Outflows and Sudden Stops



Source Author's own calculations based on data from IMF-IFS. Grey shaded areas indicate episodes which are catalogued as sudden stops in capital inflows that also are net sudden stops, i.e., not prevented. Blue shaded areas indicate episodes which are catalogued as foreigner's sudden stops that are not net sudden stops, i.e., prevented episodes.

1 shows that 22 percent of the total periods of prevented sudden stops were not accompanied by periods of retrenchment of capital outflows. In the case of emerging economies this fraction is around 34 percent, which rises to 38 percent and 53 percent for emerging economies in Latin America and Eastern Europe, respectively.[5] This suggests that even a small repatriation of capital outflows may suffice to prevent a sudden stop in net capital flows.

Partially and Fully Prevented Episodes. Another fact is that quarters with prevention and quarters without prevention can coexist within the window of a single episode of foreigners' sudden stop. Therefore, from here on we distinguish between "fully" and "partially" prevented episodes. "Fully" prevented sudden stops are episodes that occur when a net sudden stop is avoided during the entire window of the foreigners' sudden stop. On the other hand, "partially" prevented episodes are those in which a net sudden stop occurs during at least one quarter of a foreigners' sudden stop window.

Figure 2 plots foreigners' sudden stops episodes by duration (in quarters) on the x-axis, against the number of quarters during which prevention was effectively achieved (y-axis). For example, there are 18 foreigners' sudden stops episodes that lasted one quarter, 30 episodes that lasted 2 quarters, 37 episodes that lasted 3 quarters, and so on up to the 3 episodes that lasted 10 consecutive quarters (the longest duration for sudden stops in gross inflows in the database). These add up to the 1,274 quarters that we identify as foreigners' sudden stops. For the 18 foreigners' sudden stops episodes with a 1-quarter duration that were prevented, prevention is complete; i.e., they are all "fully" prevented. Of the 30 foreigners' sudden stops episodes with a 2-quarter duration, 25 were "fully" prevented, and 5 were prevented only during 1 quarter. We denote the latter as "partially" prevented. Of the 37 foreigners' sudden stop episodes that lasted 3 quarters, 27 were "fully" prevented, 5 were "partially" prevented during 2 quarters, and 5 were "partially" prevented during 1 quarter only. Therefore, the episodes that align over the 45-degree line are the "fully" prevented episodes, while all the episodes below the 45-degree line are "partially" prevented. A complete list of fully-prevented sudden stop episodes in our sample is shown in Table 7.

The pattern that emerges from the chart is that the longer the underlying foreigners' sudden stop, the less likely that full prevention will prevail. In fact, none of the 8 foreigners' sudden stop episodes in the sample that lasted 9 or 10 quarters were "fully" prevented.

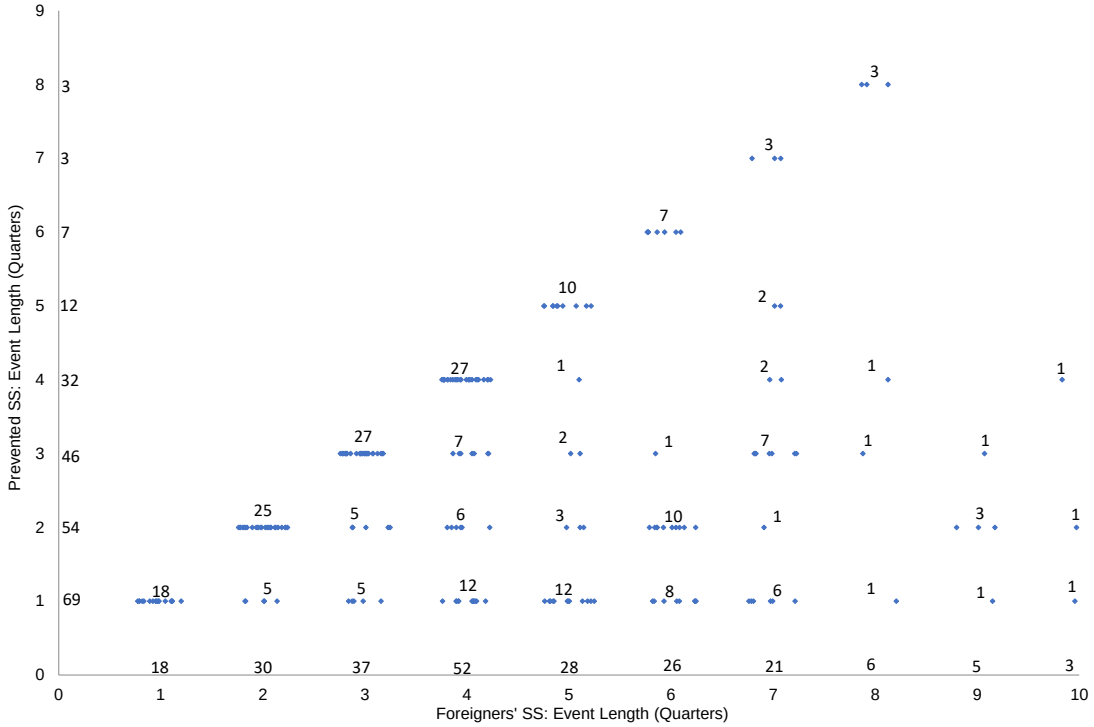
[5] In fact, as described in Section (4.2.4) episodes of retrenchment and prevented sudden stops are not necessarily driven by the same domestic conditions either.

Table 1: Sudden Stop Episodes

	Foreigners' SS			SS in net capital flows				"Prevented" SS	
	# Episodes	Average Duration	# Quarters (Total)	# Episodes	Average Duration	# Quarters (Total)	# Quarters (with Retrench)	# Quarters (Total)	# Quarters (No Retrench)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All countries	341	3.7	1274	347	3.7	1270	219	588	130
Advanced	118	4.1	486	116	3.7	426	82	311	30
Frontier	63	3.8	237	66	3.5	233	41	91	31
Emerging	64	3.6	228	67	3.6	239	54	74	25

Own calculations based on data on capital inflows and outflows from IMF-IFS. Some of these episodes may not be included in the econometric analysis due to lack of data availability for the regressors.

Figure 2: "Fully" and "Partially" Prevented Sudden Stops Episodes



Source Author's own calculations based on data from IMF-IFS. Episodes along the diagonal are "fully prevented" sudden stops, while the rest are "partially prevented" episodes.

The distinction between "fully" and "partially" prevented episodes is of interest from an analytical standpoint. Focusing on "fully" prevented episodes can help to pin down the factors that can be useful to successfully fend-off sudden stops. Instead, the analysis of "partially" prevented episodes is useful to evaluate the factors that determine the length of survival. We thus apply different methodologies to answer two different questions.

The first question is: what are the factors that determine "full prevention" conditional on a foreigners' sudden stop? To answer this question, we focus on "fully" prevented episodes. To study the factors that help fight against foreigners' sudden stops from becoming full-fledged sudden stops in net flows, we use an estimation strategy that exploits the sequential nature of the problem, which can be decomposed into two stages. First, the economy either experiences a foreigners' sudden stop or it does not. If it does, then it can transition either into a fully prevented sudden stop or into a sudden stop in net flows. Therefore, the transition into a prevented sudden stop can occur only after the economy is already in a foreigners' sudden stop. This is taken into account for estimation: we employ a sequential logit model, which entails the estimation of separate logit regressions for each step of the problem, restricting in the second stage the sample only to those countries "at risk" of making the transition. In other words, in the first stage, which we associate with the behavior of gross inflows, we estimate a logit using the full sample to explore the determinants of foreigners' sudden stops across countries and over time. In the second stage, in which we analyze determinants of prevention, we restrict the sample only to those episodes that in the previous stage experienced a foreigners' sudden stop. The identification assumption is that, besides temporal precedence, the "decision" in the first stage is independent from the decision in the second stage. This is the reason why it is valid to run separate regressions for each transition.

The second question is: what are the factors that prolong spells of prevention after a foreigners' sudden stop has materialized? To answer this question, we focus on "partially" prevented episodes, i.e., episodes of foreigners' sudden stops that were prevented during some, but not all, the subsequent quarters. Denote a prevented sudden stop in a given quarter as PSS. Denote a net sudden stop, i.e., a foreigners' sudden stop that is not prevented, as NSS. "Failed prevention" corresponds to the transition $PSS \rightarrow NSS$ within the window of a foreigners' sudden stop. Then, by means of duration models, we study the determinants of the hazard rate of transitioning to a NSS.

2.3 Determinants of Sudden Stops

The set of determinants of sudden stops to be used in the econometric exercise encompasses most explanatory variables that have been considered in the empirical literature analyzing net sudden stops (Calvo et al., 2008), gross sudden stops (Calderon and Kubota, 2013; Alberola et al., 2012), currency crisis (Frankel and Rose, 1996; Milesi-Ferretti and Razin, 1998), current account reversals (Edwards, 2007) and retrenchments (Forbes and Warnock, 2012).

We define a set of baseline explanatory variables, and we also consider additional variables for the sensitivity analysis. In all cases, we distinguish between global (i.e., external) and domestic determinants. All data are at quarterly frequency unless otherwise stated. A brief description of each variable is provided below; for further details refer to Table 6 in Appendix C.

Main Explanatory Variables

Regarding global factors, following Forbes and Warnock (2012) we consider four explanatory variables: global risk, global liquidity growth, global interest rates and global growth.

Global risk. We proxy global risk by stock market volatility in the US, measured as the VXO – the implied volatility index calculated by the Chicago Board Options Exchange – for the period $1986 - 2014$, extended back to 1980 based on Bloom (2009).

Growth in global liquidity is quantified using the yearly growth rate of global money supply; this measure is computed as the average growth rate of M2 in the United States, Eurozone and Japan and the growth rate of M4 for the UK.

Global interest rates are calculated as the average interest rates on long-term government bonds in the United States, core Euro Area and Japan.

Finally, *Global Growth* corresponds to the year-on-year growth rate in World real GDP. The source of the last three variables is the International Financial Statistics (IFS) database from the IMF.

Regarding domestic factors, we extend the set of explanatory variables used in previous papers.[6] The set of domestic explanatory variables are:

GDP growth. Defined as the year-on-year growth rate of real GDP.

Inflation. Defined as the country's average CPI inflation rate.

[6]Series were obtained mostly from International Financial Statistics (IFS) – complemented with Datastream and local sources whenever not available – unless otherwise stated.

Private credit by banks. Measured using "bank credit to the private sector as percentage of GDP," obtained from Beck et al. (2009).[7]

Foreign Liabilities. Proxied by "banks foreign borrowing as a share of GDP" from IFS and Bank of International Settlements (BIS).

Openness. Ratio of real exports plus real imports over GDP.

Current account/Absorption of tradable goods (CA/TA). Following Calvo et al. (2008), we use the ratio CA/TA as a proxy of potential changes in the real exchange rate were a sudden stop to materialize.[8] The absorption of tradable goods is computed as imports plus tradable output domestically consumed.[9]

Institutions. We use the composite risk rating index produced by the Political Risk Services Group. This index is composed of 12 components.[10] Given that individual indexes are also reported, we also consider a sub-index with the categories that are most relevant for this study: i.e., rule of law, investment profile, government stability, bureaucracy quality, and corruption.[11]

Flexible Exchange Rate (FER). Exchange rate flexibility is measured by the classification of exchange rate regimes constructed by Reinhart and Rogoff (2004) and updated by Iltzezky et al. (2009). Higher values of this indicator variable are associated with more flexible exchange rate regimes.

Inflation targeting (IT). An indicator variable taking the value of 1 if the country has an inflation targeting regime.

IT x FER. An interaction term comprising the explanatory variables IT and FER.

Contagion. Episodes of contagion are accounted for by a dummy variable that takes the value of 1 if a country reports a foreigners' sudden stop in t and there is one large trading partner that suffered a foreigners' sudden stop in $t-1$.

We construct a comprehensive panel dataset at quarterly frequency, from 1980 through 2014, which comprises 48 countries and includes all the variables detailed above. A more detailed

[7] Alternative measures considered are: our own measure of private credit to GDP constructed using IFS data, credit to the private sector by financial institutions as a percentage of total deposits in financial institutions, also constructed from IFS data, and bank credit to the private sector as a percentage of total deposits in banks obtained from Beck et al. (2009).

[8] See Calvo et al. (2008) for more details.

[9] The latter is calculated as the sum of agricultural and industrial output – obtained from the World Development Indicators (WDI) constructed by the World Bank – minus exports.

[10] These are: government stability, socio-economic conditions, investment-profile, internal conflict, external conflict, corruption, military and politics, religious tensions, law and order, ethnic tensions, democratic accountability and bureaucracy quality.

[11] This sub-index is the one we use in the baseline regression; the overall index, denoted "Political Risk," is considered in the robustness analysis.

description of the series used to compute sudden stops and the variables involved in the regressions are presented in Table 6 in Appendix C.

3 Fully Prevented Sudden Stops

3.1 Methodology

To study the factors that help preventing foreigners' sudden stop from becoming fully-fledged net sudden stops, we use an estimation strategy that exploits the sequential nature of the problem. First, the economy either experiences a foreigners' sudden stop or it does not. If it does, then it can transition towards either a fully prevented sudden stop or into a sudden stop in net flows. Therefore, the transition towards a prevented sudden stop occurs only after the economy is already in a foreigners' sudden stop. This is consistent with the idea of a foreigners' sudden stop acting as an external trigger, which may or may not turn into a sudden stop in net flows.

We resort to the *sequential logit model*, initially proposed by Mare (1981) to describe the process of educational attainment and then applied to many other issues in the orbit of empirical microeconomics. The sequential logit model entails the estimation of separate logit regressions for each event, restricting the sample only to those countries "at risk" of making the transition. In other words, we estimate in a first stage the likelihood of a "foreigners" sudden stop (fss) using the full sample of countries available as shown in equation (1):

$$Prob(fss_{it} = 1|\mathbf{w}, \mathbf{x}) = \Lambda\left(\mathbf{w}'\beta_1^G + \mathbf{x}'\beta_1^D\right) \tag{1}$$

Where Λ indicates the logistic cumulative distribution, $\mathbf{w}$ a set of global conditions, $\mathbf{x}$ a set of domestic conditions and $\left\{\beta_1^G, \beta_1^D\right\}$ are vectors of parameters. In a second stage, we restrict the sample only to those countries that in the previous stage experienced a sudden stop in gross inflows to compute the likelihood that these episodes are prevented as presented in equation (2):

$$Prob(ss_{it} = 1|\mathbf{w}, \mathbf{x}, fss_{it} = 1) = \Lambda\left(\mathbf{w}'\beta_2^G + \mathbf{x}'\beta_2^D\right) \tag{2}$$

3.2 Baseline Results

Following Forbes and Warnock (2012), all explanatory variables are lagged one period (quarter), except when stated otherwise. Many of the explanatory variables are exposed to extreme outliers

(observations which are 3 times higher (lower) than the interquartile range at the 75% (25%) percentile). To prevent these atypical observations from distorting coefficient estimates, we include interaction terms with dummy variables in the baseline regressions that capture extremes values. This procedure avoids reducing the number of observations available for the estimation while controlling for outliers.[12]

Results are presented in Table 2. Column (1), labeled "foreigners," presents the results of the determinants of foreigners' sudden stops (first stage logit). It shows that global conditions, in particular, global risk and economic growth, are significant determinants of foreigners' sudden stops. Coefficient estimates suggest that while larger volatility increases the likelihood of foreigners' sudden stops, higher economic growth reduces it. In addition, results reveal that some domestic factors are also determinants of foreigners' sudden stops. In particular, larger levels of foreign liabilities, higher credit to GDP ratios and exposure of trading partners to a foreigners' sudden stop increase a country's vulnerability to foreigners' sudden stops. Instead, higher domestic economic growth reduces that vulnerability.

Once the economy has experienced a foreigners' sudden stop, then it can transition either to a net sudden stop or into a fully-prevented episode. Column (2) in Table 2 labeled "Fully prevented," shows that global conditions do not influence the likelihood of prevention. Instead, only domestic characteristics seem to provide the antidotes for prevention: i.e., lower levels of foreign liabilities, lower levels of inflation and a better institutional background increase the probability of a prevented sudden stop conditional on a foreigners' sudden stop.[13]

In addition, results show that the degree of exchange rate flexibility (FER) per se is not relevant in explaining either transitions into foreigners' sudden stops or the subsequent likelihood of prevention in the second stage.[14] However, the positive and significant coefficient estimate of the interaction term IT x FER suggests that exchange rate flexibility increases the likelihood of prevention if it also involves a commitment to stabilize the price level in the economy through Inflation Targeting. We interpret this result as having a consistent Inflation Targeting regime that

[12] Interactions are not shown in the tables below but are available upon request.

[13] Adler et al. (2014) find that whether residents play a stabilizing role or not depends on the nature of the external shock. The seemingly different results that we get may be due to the nature of the problem analyzed in each case. In this paper results from the second stage regression capture the decisions of domestic investors conditional on a foreigners' sudden stop having already materialized. This approach is different from the one in Adler et al. (2014), who study the impact of global shocks on retrenchments by domestic investors without conditioning on a preceding foreigners' shock affecting inflows.

[14] This result is robust to the use of coarse classification in Iltzezky et al. (2009) and to differences with respect to mean as in Cifuentes and Jara (2014) (results are not shown here).

allows for exchange rate flexibility.

In Columns (3) and (4) we report results excluding outlier observations in the sample, instead of modeling them as in columns (1) and (2). There are no substantial differences in results.

4 Robustness and Sensitivity Analysis

We conduct an extensive set of robustness and sensitivity tests including additional control variables, alternative measures of the variables presented in the baseline regression, and different definitions of sudden stops.

4.1 Alternative Variables in the Baseline Regression

In columns (1) and (2) of Table 3 the lag structure of domestic variables is set to 4 periods (quarters) instead of 1. Introducing the fourth lag helps reduce endogeneity concerns. Results are unaffected by this change in lag structure.

In columns (3)-(6) we change the proxies used for credit depth. In columns (3) and (4), we replace the measure of private credit by banks as a percentage of GDP, by total bank credit as percentage of deposits (as used by Beck et al. (2009)). In columns (5) and (6), we introduce a broader measure of credit in the economy (total credit as % of GDP). In both cases results remain robust: domestic credit depth is a determinant of the probability of a foreigners' sudden stop, but it does not affect the probability of a fully-prevented sudden stop.

In columns (7) and (8), we change the measure of institutional quality. We evaluate the significance of this variable by introducing the overall index of political risk produced by the Political Risk Services Group (as opposed to specific subcomponents of the index used before). Baseline results are robust using this alternative measure of institutional quality.

4.2 Alternative Definition of Episodes

4.2.1 Bonanza-Related Episodes

We assess in this section the robustness of results considering alternative definitions of sudden stops that account for potential mitigating or reinforcing triggers. We introduce an extension to the standard definition of sudden stops through the concept of "bonanza-filtered sudden stops." Bonanza-filtered sudden stops capture the feature that favorable terms of trade shocks can add sources of financing without the need of resorting to domestic agents in order to offset a contraction

in foreigner capital inflows. Thus, we evaluate the determinants of fully-prevented sudden stops, but restricting the sample of fully-prevented episodes to those that occur when there is not an alternative funding mechanism stemming directly from the current account.

We construct bonanza-filtered episodes similarly to episodes of extreme capital flows variations. First, a bonanza is defined as a terms of trade window in which the seasonally adjusted terms of trade rise above two standard deviations from the historical mean. A bonanza episode starts when the terms of trade increase one standard deviation above the historical mean, and it ends when the terms of trade fall below the one standard deviation threshold.

Columns (1) and (2) in Table 4 depict results when bonanza episodes are excluded. There are no significant changes to the baseline results, except for the coefficient estimate for domestic growth which is now positive and statistically significant in the second regression (column 2) (in the baseline, the same coefficient was not statistically significant). This suggests that in the absence of terms of trade bonanzas, higher economic growth works as another domestic factor that helps increase the likelihood of prevention.

4.2.2 Preventable Episodes

The ability of a country to prevent a sudden stop in net capital flows can be influenced by the size of the stock of available foreign assets held by locals. In other words, the ability to repatriate hinges on the existing stock of foreign assets that can potentially be repatriated. Moreover, the ability to offset a foreigners' sudden stop can be the result of either capital repatriation or a reduction in the pace of outflows from domestic investors. Given data limitations, it is impossible to disentangle the two possibilities completely.

These restrictions notwithstanding, we can still proxy for the capacity to offset a reduction in capital inflows through capital repatriation making use of data on a country's stock of foreign assets. We define a "preventable episode" as one taking place in countries where locals hold a stock of foreign assets that is large enough so that, if repatriated, it would offset the fall in capital inflows from foreigners.[15] Next, we run regressions including only preventable episodes in the sample. Results are presented in columns (3) and (4) in Table 4. There is no significant variation compared with the baseline scenario, suggesting that the type of transactions of locals – whether

[15] Operationally, we identify episodes taking place in countries/periods in time where the ratio between the stock of foreign assets (during previous quarter) and the change in capital inflows during foreigners' sudden stop is two standard deviations below the mean. This measure accounts for the possibility that not all foreign assets are susceptible to repatriation. The results reported in this section are robust to the period in which foreign assets are measured.

repatriation or reductions in the pace of outflows – is not the main driver of the results.

4.2.3 Domestic Private Agents

Hitherto, the analysis has considered both private and public sector capital outflows (excluding reserves accumulation) and their roles in offsetting changes in capital inflows. Given that the drivers of private and public capital outflows may differ, in this section we focus on private agents' flows. For that purpose, we construct a modified series of capital outflows considering only private capital flows.[16] We then re-compute the episodes of fully-prevented sudden stops using this newly created capital outflows series. Finally, we re-estimate baseline regressions using the modified set of fully-prevented episodes identified with the new series.

Column (5) in Table 4 presents results for the second transition (i.e., note that the regression corresponding to the first transition is the same as in the baseline because the set of foreigners' sudden stops does not change). Results are similar to the baseline, except for the coefficient estimate on foreign liabilities, which in this case is not statistically significant.

4.2.4 Sudden Stops and Retrenchments

While the focus of this paper is on the determinants of prevented sudden stops in countries that are experiencing a foreigners' sudden stop, much of the rest of the literature has focused on two sets of distinct events: "sudden stops in capital inflows" and "retrenchments of capital outflows" (see, for example, Forbes and Warnock (2012) and Cifuentes and Jara (2014)).

Sudden stops in capital inflows (which we define as foreigners' sudden stops in the paper) and retrenchments of capital outflows may or may not coincide in time, and the latter may or may not be large enough to offset foreigners' sudden stops. Notwithstanding this, we compare our baseline results with those of others using retrenchments.

More specifically, we use the same set of sudden stops in capital inflows but now add retrenchment episodes that we identify in the sample as the dependent variable in the second-stage logit regressions. Note that some of these episodes may coincide with the set of fully-prevented episodes, while others do not. This is so because retrenchments of capital outflows are neither necessary nor sufficient for preventing sudden stops in net capital flows.

Following Forbes and Warnock (2012), a retrenchment of capital outflows is defined as the

[16] That is, the sum of FDI outflows, portfolio outflows, and other investment outflows corresponding to non-public entities in the balance of payments accounts

mirror image of a sudden stop in inflows: i.e., a large (more than 2 standard deviation) reversal in the direction of capital outflows. Therefore, retrenchment episodes are computed using the same algorithm of sudden stops applied to the gross capital outflows series.

Interestingly, results reported in column (6) of Table 4 suggest that the determinants of retrenchments of capital outflows are not the same as the determinants of fully-prevented sudden stops. Retrenchment of capital outflows appear to be more likely to occur when sudden stops are systemic, in the sense that it also affects a country's trading partners, and when the credit to GDP ratio is higher. The fact that results are different from the baseline reinforces our view that there is analytical value-added in focusing the analysis on fully-prevented sudden stops in net capital flows. This is the case because this set of episodes have not been analyzed before, and because they appear to be determined by different factors than retrenchment episodes studied elsewhere. Moreover, we think there is analytical value in understanding under which conditions sudden stops in net capital flows can be prevented, indeed a situation that can occur with or without simultaneous retrenchment of outflows.

5 Partially Prevented Sudden Stops: Failed Preventions

As discussed previously, not all quarters during a given foreigners' sudden stop episode are fully-prevented sudden stops. In some cases, the ability of a country to withstand the impact of a foreigners' sudden stop can be limited. In this section, we focus on "*partially*" prevented episodes, or more specifically, on "failed preventions."

Denote a prevented sudden stop in a given quarter as PSS, and a sudden stop in net capital flows in a given quarter as NSS. Then a "failed prevention" corresponds to the transition $PSS \rightarrow NSS$ within the window of a foreigners' sudden stop episode. In other words, we explore the determinants of "survival" (in this context, "prevention") conditional on the fact that a country has been able to remain alive (i.e., prevent a sudden stop in net capital flows) for at least one quarter since the beginning of the foreigners' sudden stop episode. In this context, "death" is the transition from the prevention state to the sudden stop in net capital flows state within the window of the foreigners' sudden stop episode in progress.

5.1 Methodology

To study the determinants of "failed preventions," we conduct a duration analysis. We estimate the impact of the same set of global and domestic factors used in the preceding sections, on the hazard rate of failed transitions. For a "failed prevention," we consider as failure/death the transition to a NSS once the country has been in a period of PSS; in other words, we consider as "survival" the ability to keep preventing a sudden stop in net capital flows when a foreigners' sudden stop is in place.

Notice that although there may be multiple transitions between PSS and NSS during different quarters of the same foreigners' sudden stop episode, we focus exclusively on the information condensed in the first transition. Thus, our concept of "death" materializes immediately after the first transition from PSS to NSS, independently of future transitions within a foreigners' sudden stop episode.

The baseline estimation is performed using the Cox regression model. However, we consider alternative scenarios including parametric distributions for the baseline hazard function. The Cox proportional hazard model is a semi-parametric method that allows for estimation of e, the impact of different variables on the hazard rate. If there are n episodes of foreigners' sudden stops in the sample, then the model has the form:

$$\lambda_i(t) = e^{X_i'\beta} \cdot \lambda_0(t), \quad i = 1, \ldots, n$$

where X_i is the vector of regressors, β is the vector of regression coefficients, λ_i is the hazard calculated for each episode and λ_0 is the baseline hazard. The baseline hazard function corresponds, in this case, to the probability of transitioning to a different state ($PSS \rightarrow NSS$) when all the explanatory variables are 0. It should be noted that, in a proportional hazard model, the unique effect of a unit increase in a covariate is assumed to be multiplicative with respect to the hazard rate.

Estimates are obtained using clustered standard errors at the country level to account for the fact that for each country there can be multiple unordered failure events of the same type. Efron's method is used to handle ties.

5.2 Results

Table 5 reports the results for this exercise. Column (1) presents baseline results using the Cox Model. Notice that global factors do not affect transition probabilities. In the preceding exercises, we had documented that global factors do not appear to be significant determinants of fully-prevented sudden stops either.[17] In this case, the factors that increase the hazard of transitioning to a net sudden stop given that it was prevented for a while are: i) higher levels of foreign liabilities and ii) the absence of exchange rate flexibility with an IT monetary anchor. In other words, keeping low levels of foreign liabilities and a consistent IT regime with a flexible exchange rate are key factors to prolong survival during a foreigners' sudden stop.

These results are robust to alternative assumptions on the shape of the baseline hazard. Columns (2)-(4) show results considering parametric functional forms for the baseline hazard: Weibull, Exponential and Gompertz. In all these cases, keeping low inflation enters as an additional significant determinant of the probability of survival.

In column (5), we isolate the potential effect of left-censoring of the data in the estimation.[18] We exclude all episodes for which the first quarter of a foreigners' sudden stop was also a sudden stop in net capital flows. In other words, we exclude episodes where the "patient" (i.e., the country suffering from the foreigners' sudden stop) was born "dead" (i.e., the sudden stop in net capital flows was not prevented starting from the first quarter of the episode). Under this characterization of the data, we find that (low levels of) foreign liabilities, (low levels of) inflation and exchange rate flexibility (in tandem with an IT monetary anchor) are important determinants of survival. Finally, in column (6) we report results after stratifying the baseline hazard for emerging economies. This does not change results.

6 Final Remarks

The global financial crisis of 2008/09 demonstrated that few countries are exempt from the risk of a foreigners' sudden stop (i.e., a sharp contraction in gross capital inflows). However, it also showed that some countries were successful in preventing a fall in gross capital inflows from turning into a sudden stop in net capital flows. This is important because countries that can avoid sudden

[17] Although they are significant in explaining the likelihood of a foreigners' sudden stop.

[18] Left-censoring occurs when the observed outcome of a country during a period of foreigners' sudden stop is also a sudden stop in net capital flows. It can be a result of the inability of a country to prevent a sudden stop in net capital flows at the very beginning, or it can be a result of the discrete nature of the data.

stops in net capital flows in the aftermath of a foreigners' sudden stop can also avoid the large output contractions and the concomitant banking and financial crises that are usually associated with those episodes.

Why are some countries more resilient than others? More specifically, what are the "antidotes" that enable some countries affected by foreigners' sudden stops to prevent them from experiencing full-fledged sudden stops in net capital flows? The answer provided in this paper is that antidotes are mostly domestic factors. Keeping low levels of liability dollarization, having a strong institutional background, keeping inflation in check, and having credible IT monetary anchors coupled with flexible exchange rates, are all factors that help increase the likelihood of preventing a sudden stop in net capital flows during a foreigners' sudden stop.

We believe that there is analytical value-added in focusing the analysis on fully-prevented sudden stops in net capital flows, not only because this set of episodes has not been analyzed before, but also because fully-prevented episodes seem to be determined by different factors than those that determine retrenchments. Moreover, we think there is analytical value in understanding under which conditions foreigners' sudden stops can be fully prevented, independently of whether episodes also qualify as retrenchment episodes, which may or may not be sufficient to ensure sudden stop prevention.

The methodology employed in this paper exploits the sequential nature of the sudden stop problem. First, countries may or may not experience a foreigners' sudden stop. Second, those that experience a foreigners' sudden stop can prevent it from becoming a sudden stop in net capital flows, or not. This particular structure, in turn, differentiates this paper from previous attempts that have focused on the empirical determinants of episodes of sudden stops in gross capital inflows and retrenchments in gross capital outflows.

In addition, the methodology employed in this paper allows for disentangling between "fully-prevented" sudden stops, and "partially-prevented" sudden stops. The former are episodes that are prevented during the entire window of the underlying foreigners' sudden stop, while the latter are prevented only during part of the foreigners' sudden stop episode. A duration analysis performed using the set of partially prevented episodes suggests that keeping low levels of liability dollarization and having flexible exchange rates combined with an inflation targeting monetary regime, are the main factors that help in prolonging survival (i.e., avoiding a sudden stop in net capital flows) during a foreigners' sudden stop.

The main message of this paper is that while it may not be possible for countries to insulate

themselves from the volatility of gross capital inflows, the choice of antidotes to prevent that volatility from forcing potentially costly external adjustments is in their own hands. In doing so, the role of domestic investors is critical. This is so because sudden stops in net capital flows can be prevented when the actions of domestic investors offset a reduction in foreign lending. It is only under favorable and safe domestic conditions that domestic investors may perceive reduced risk in bringing in resources at the time of a foreigners' sudden stop shock, thus insulating the country from that shock.

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Table 2: Determinants of Prevented Sudden Stops

	Baseline		No-Outliers	
	Foreigners	Fully Prevented	Foreigners	Fully Prevented
	(1)	(2)	(3)	(4)
Global Conditions				
Risk	0.033***	-0.014	0.043***	-0.041
(lagged)	(0.009)	(0.027)	(0.010)	(0.029)
Liquidity Growth	0.005*	0.007	0.002	0.013
(lagged)	(0.003)	(0.010)	(0.003)	(0.012)
Growth	-0.312***	-0.104	-0.335***	-0.081
(lagged)	(0.075)	(0.118)	(0.096)	(0.137)
Interest Rates	-0.040	-0.065	-0.018	-0.188
(lagged)	(0.046)	(0.131)	(0.048)	(0.130)
Domestic Conditions				
Foreign Liabilities	0.029***	-0.067**	0.038***	-0.065**
(lagged, % GDP)	(0.008)	(0.031)	(0.010)	(0.031)
CA/TA	-0.004	0.002	-0.003	-0.004
(lagged)	(0.004)	(0.013)	(0.004)	(0.015)
GDP growth	-0.117***	0.068	-0.096***	0.037
(lagged)	(0.026)	(0.055)	(0.033)	(0.062)
Inflation	0.015	-0.252***	-0.019	-0.245**
(lagged)	(0.025)	(0.084)	(0.028)	(0.096)
Openness	-0.001	0.014*	-0.001	0.012
(lagged)	(0.002)	(0.008)	(0.003)	(0.009)
Private credit by banks	0.006***	-0.005	0.007***	-0.005
(% of GDP, BDK)	(0.002)	(0.005)	(0.002)	(0.007)
Institutions	-0.000	0.048**	-0.008	0.052**
	(0.008)	(0.020)	(0.009)	(0.021)
Contagion	0.723***	0.415	0.736***	0.490
(lagged, land borders)	(0.166)	(0.436)	(0.181)	(0.479)
Flexible Exchange Rate (FER)	-0.169	-0.151	-0.243	-0.827
	(0.176)	(0.626)	(0.194)	(0.793)
Inflation Targeting (IT)	-0.801*	-2.485*	-0.885**	-2.488*
	(0.461)	(1.320)	(0.448)	(1.364)
IT X FER	0.639	4.017***	0.603	4.688***
	(0.455)	(1.499)	(0.443)	(1.562)
Observations	3,636	451	2,927	367

Notes: The dependent variable corresponds to a dummy that takes the value 1 if the country experienced a sudden stop in gross or net capital inflows, and zero otherwise. For details on the definitions of the dependent and independent variables see Table 6 in appendix C. Estimates are obtained using a logit model and robust standard errors clustered by country, unless otherwise stated. Interaction terms with dummies that capture extreme values for the regressors are included in the regression. An extreme value is defined as one that is three interquartile ranges above the 75th percentile or below the 25th percentile. Standard errors are reported in parenthesis. *** (**) [*] denotes significance at the 1 (5) [10] percent level.

Table 3: Robustness - Alternative Determinants of Sudden Stops in Gross and Net Capital Inflows

	Lag 4		Credit Conditions				Institutional Quality	
	Foreigners	Fully Prevented	Foreigners	Fully Prevented	Foreigners	Fully Prevented	Foreigners	Fully Prevented
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Global Conditions								
Risk (lagged)	0.034*** (0.008)	-0.005 (0.025)	0.036*** (0.010)	-0.010 (0.030)	0.037*** (0.010)	-0.013 (0.025)	0.033*** (0.009)	-0.011 (0.027)
Liquidity Growth (lagged)	0.004 (0.003)	0.002 (0.010)	0.006* (0.003)	0.003 (0.011)	0.006** (0.003)	0.004 (0.009)	0.005* (0.003)	0.007 (0.010)
Growth (lagged)	-0.468*** (0.064)	-0.083 (0.138)	-0.274*** (0.072)	-0.105 (0.136)	-0.286*** (0.072)	-0.066 (0.121)	-0.312*** (0.076)	-0.105 (0.106)
Interest Rates (lagged)	-0.031 (0.047)	-0.041 (0.127)	-0.051 (0.045)	-0.023 (0.140)	-0.036 (0.044)	-0.081 (0.128)	-0.038 (0.046)	-0.153 (0.139)
Domestic Conditions								
Foreign Liabilities (lagged, % GDP)	0.038*** (0.009)	-0.065** (0.029)	0.027*** (0.009)	-0.090** (0.035)	0.027*** (0.008)	-0.061** (0.030)	0.029*** (0.008)	-0.068** (0.031)
CA/TA (first lag)	0.002 (0.005)	-0.008 (0.013)	-0.002 (0.005)	0.000 (0.014)	-0.000 (0.005)	-0.002 (0.013)	-0.004 (0.004)	0.003 (0.013)
GDP growth (lagged)	0.017 (0.022)	-0.086 (0.078)	-0.134*** (0.024)	0.091 (0.061)	-0.126*** (0.025)	0.072 (0.059)	-0.117*** (0.026)	0.082 (0.053)
Inflation (lagged)	-0.023 (0.029)	-0.305*** (0.115)	-0.004 (0.026)	-0.213*** (0.078)	0.005 (0.025)	-0.211*** (0.075)	0.014 (0.027)	-0.251*** (0.084)
Openness (lagged)	-0.002 (0.002)	0.011* (0.006)	-0.001 (0.002)	0.018* (0.009)	-0.002 (0.002)	0.013* (0.007)	-0.001 (0.002)	0.013* (0.008)
Private credit by banks (% of GDP, BDK)	0.007*** (0.002)	-0.008 (0.006)					0.006*** (0.002)	-0.005 (0.005)
Bank credit (% of bank deposits, BDK)			0.006*** (0.002)	-0.010 (0.007)				
Credit (lagged, % GDP)					0.002*** (0.000)	0.001 (0.002)		
Institutions	-0.005 (0.007)	0.035* (0.019)	0.004 (0.009)	0.045** (0.022)	0.001 (0.009)	0.022 (0.021)		
Political Risk							-0.001 (0.010)	0.070*** (0.023)
Contagion (lagged, trading partners)	0.737*** (0.159)	0.355 (0.423)	0.631*** (0.164)	0.378 (0.510)	0.617*** (0.161)	0.224 (0.430)	0.723*** (0.166)	0.363 (0.427)
Flexible Exchange Rate (FER)	-0.222 (0.173)	-0.087 (0.607)	0.187 (0.210)	-0.559 (0.665)	0.101 (0.200)	-0.047 (0.571)	-0.172 (0.175)	-0.189 (0.590)
Inflation Targeting (IT)	-1.003** (0.449)	-1.691 (1.308)	-0.717 (0.445)	-2.628* (1.399)	-0.706* (0.408)	-1.952 (1.259)	-0.804* (0.461)	-2.280* (1.364)
IT X FER	0.730* (0.443)	2.975** (1.464)	0.219 (0.482)	4.411*** (1.571)	0.329 (0.453)	3.325** (1.316)	0.644 (0.455)	3.841** (1.527)
Observations	3594	480	3609	437	3644	463	3637	458

Notes: The dependent variable corresponds to a dummy that takes the value 1 if the country experienced a sudden stop in gross or net capital inflows, and zero otherwise. For details on the definitions of the dependent and independent variables see Table 6 in appendix C. Estimates are obtained using a logit model and robust standard errors clustered by country, unless otherwise stated. Interaction terms with dummies that capture extreme values for the regressors are included in the regression. An extreme value is defined as one that is three interquartile ranges above the 75th percentile or below the 25th percentile. Standard errors are reported in parenthesis. *** (**) [*] denotes significance at the 1 (5) [10] percent level.

Table 4: Robustness - Alternative Episodes of Gross and Prevented Sudden Stops

	Bonanza		Preventable Episodes		Private Episodes	Retrenchment Episodes
	Foreigners	Fully Prevented	Foreigners	Fully Prevented	Fully Prevented	SS+Retrench
	(1)	(2)	(3)	(4)	(5)	(6)
Global Conditions						
Risk	0.024***	0.002	0.034***	-0.015	-0.012	0.014
(lagged)	(0.009)	(0.029)	(0.010)	(0.027)	(0.025)	(0.025)
Liquidity Growth	-0.002	0.007	0.004	0.005	0.007	0.001
(lagged)	(0.003)	(0.010)	(0.003)	(0.011)	(0.010)	(0.009)
Growth	-0.231***	-0.185	-0.323***	-0.137	-0.065	0.012
(lagged)	(0.072)	(0.153)	(0.070)	(0.124)	(0.117)	(0.114)
Interest Rates	-0.067	0.051	-0.023	-0.055	-0.059	-0.038
(lagged)	(0.055)	(0.131)	(0.042)	(0.133)	(0.125)	(0.088)
Domestic Conditions						
Foreign Liabilities	0.019**	-0.071*	0.027***	-0.062**	-0.042	0.011
(lagged, % GDP)	(0.009)	(0.042)	(0.009)	(0.032)	(0.028)	(0.017)
CA/TA	-0.008	-0.003	-0.004	0.004	0.005	0.012
(lagged)	(0.006)	(0.015)	(0.005)	(0.014)	(0.012)	(0.010)
GDP growth	-0.117***	0.136**	-0.107***	0.087*	0.057	-0.037
(lagged)	(0.024)	(0.065)	(0.025)	(0.052)	(0.050)	(0.038)
Inflation	0.006	-0.261***	0.004	-0.235***	-0.262***	-0.040
(lagged)	(0.026)	(0.092)	(0.025)	(0.083)	(0.078)	(0.036)
Openness	-0.000	0.008	-0.002	0.018***	0.017***	0.004
(lagged)	(0.001)	(0.007)	(0.001)	(0.007)	(0.005)	(0.004)
Private credit by banks	0.004*	-0.005	0.005***	-0.004	-0.008*	0.013***
(% of GDP, BDK)	(0.002)	(0.006)	(0.002)	(0.005)	(0.005)	(0.003)
Institutions	-0.003	0.043*	0.004	0.045**	0.035*	0.016
	(0.009)	(0.022)	(0.009)	(0.023)	(0.020)	(0.013)
Contagion	0.869***	0.281	0.698***	0.504	0.143	0.835***
(lagged, land borders)	(0.175)	(0.405)	(0.172)	(0.457)	(0.412)	(0.304)
Flexible Exchange Rate (FER)	-0.112	-0.305	-0.148	-0.183	0.282	-0.476
	(0.200)	(0.688)	(0.172)	(0.587)	(0.542)	(0.431)
Inflation Targeting (IT)	-0.608	-2.551*	-0.767*	-2.630*	-2.388*	-0.325
	(0.480)	(1.348)	(0.466)	(1.354)	(1.249)	(0.581)
IT X FER	0.270	4.292***	0.587	4.137***	3.640***	1.111
	(0.525)	(1.543)	(0.457)	(1.513)	(1.391)	(0.756)
Observations	3,641	392	3,577	441	438	563

Notes: The dependent variable corresponds to a dummy that takes the value 1 if the country experienced a sudden stop in gross or net capital inflows, and zero otherwise. For details on the definitions of the dependent and independent variables see Table 6 in Appendix C. Estimates are obtained using a logit model and robust standard errors clustered by country, unless otherwise stated. Interaction terms with dummies that capture extreme values for the regressors are included in the regression. An extreme value is defined as one that is three interquartile ranges above the 75th percentile or below the 25th percentile. Standard errors are reported in parenthesis. *** (**) [*] denotes significance at the 1 (5) [10] percent level.

Table 5: Duration Analysis of Failed Preventions

	Cox	Parametric Models			Cox	Stratified
	Model	Weibull	Exponetial	Gompterz	Filtered	Emerging
	(1)	(2)	(3)	(4)	(5)	(6)
Global Conditions						
Risk	-0.020	-0.030	-0.026	-0.023	0.019	-0.020
(lagged)	(0.023)	(0.025)	(0.024)	(0.023)	(0.036)	(0.021)
Liquidity Growth	0.013	0.016	0.014	0.013	0.004	0.012
(lagged)	(0.010)	(0.011)	(0.011)	(0.010)	(0.017)	(0.010)
Growth	0.049	0.026	0.035	0.044	0.385*	0.064
(lagged)	(0.085)	(0.098)	(0.093)	(0.088)	(0.198)	(0.089)
Interest Rates	0.018	0.015	0.016	0.016	-0.159	0.026
(lagged)	(0.115)	(0.139)	(0.128)	(0.118)	(0.237)	(0.117)
Domestic Conditions						
Foreign Liabilities	0.036***	0.043***	0.041***	0.038***	0.058***	0.036**
(lagged, % GDP)	(0.014)	(0.014)	(0.014)	(0.013)	(0.021)	(0.014)
CA/TA	0.010	0.011	0.011	0.010	0.004	0.012
(first lag)	(0.010)	(0.011)	(0.010)	(0.010)	(0.015)	(0.011)
GDP growth	-0.008	-0.000	-0.003	-0.005	0.055	-0.040
(lagged)	(0.045)	(0.050)	(0.047)	(0.043)	(0.062)	(0.044)
Inflation	0.062	0.082*	0.076*	0.070*	0.161**	0.052
(lagged)	(0.041)	(0.042)	(0.039)	(0.037)	(0.075)	(0.036)
Openness	-0.006	-0.005	-0.005	-0.006	-0.006	-0.007
(lagged)	(0.005)	(0.006)	(0.005)	(0.005)	(0.014)	(0.004)
Private credit by banks	-0.004	-0.005	-0.004	-0.004	0.006	-0.004
(% of GDP, BDK)	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)	(0.003)
Institutions	-0.012	-0.016	-0.015	-0.014	-0.042	-0.004
	(0.016)	(0.018)	(0.017)	(0.016)	(0.031)	(0.016)
Contagion	-0.291	-0.375	-0.355	-0.327	-0.163	-0.340
(lagged, trading partners)	(0.326)	(0.336)	(0.323)	(0.314)	(0.627)	(0.331)
Flexible Exchange Rate (FER)	-0.112	-0.137	-0.113	-0.100	0.149	-0.134
	(0.428)	(0.520)	(0.479)	(0.444)	(0.917)	(0.422)
Inflation Targeting (IT)	0.614	0.834	0.778	0.707	1.115	0.717*
	(0.480)	(0.514)	(0.495)	(0.462)	(0.898)	(0.422)
IT X FER	-1.610*	-1.927**	-1.844**	-1.743**	-3.169*	-2.213**
	(0.839)	(0.948)	(0.894)	(0.833)	(1.853)	(0.881)
Observations	354	354	354	354	299	354

Notes: Denote a prevented sudden stop in a given quarter as PSS. Denote a net sudden stop in a given quarter, i.e. a sudden stop in inflows that is not prevented, as NSS. Then, "failed prevention" corresponds to the transition $PSS \rightarrow NSS$. For details on the definitions of the regressors see Table 6 in Appendix C. Interaction terms with dummies that capture extreme values for the regressors are also included in the regression. An extreme value is defined as one that is three interquartile ranges above the 75th percentile or below the 25th percentile. Estimates are obtained using clustered standard errors at the country level to account for the fact that for each country there can be multiple unordered failure events of the same type. The Efron's method is used to handle ties. Standard errors are reported in parenthesis. *** (**) [*] denotes significance at the 1 (5) [10] percent level.

A Construction of Capital Flows Series

In 2009 there was a methodological change in the construction of the Balance of Payments (BOP) statistics, from BPM5 to BPM6. The calculation of the series of direct investment were the most affected by this change. While BPM5 distinguishes between "Direct Investment Abroad" and "Direct Investment in Reporting Economy," BPM6 computes direct investment distinguishing between assets and liabilities. The IMF reports the BPM5 series up to 2008 and the BPM6 series from 2005.

Due to this methodological change, the subcomponents of the financial account of the BOP (direct investment, portfolio investment and other investment) are not comparable between BPM5 and BPM6, since BPM5 does not follow the asset-liability criterion for the calculation of direct investment. Despite not being able to use the subcomponents of the financial account prior to 2005, the total flows of capital – both inflows and outflows – can still be computed because BPM5 reports the aggregate series of asset and liability transactions.

The series of inflows and outflows are computed using the following series from the BOP statistics reported by the IMF:

- $1980 - 2004$ (BPM5)
  - Assets: Total Asset Transactions
  - Assets excluding reserves: Total Asset Transactions - Reserve Assets
  - Liabilities: Total Liability Transactions
- $2005 - 2014$ (BPM6)
  - Assets: Direct Investment, Assets + Portfolio Investment, Assets + Financial Derivatives, Assets + Other Investment, Assets + Reserve Assets
  - Assets excluding reserves: Assets - Reserve Assets
  - Liabilities: Direct Investment, Liabilities + Portfolio Investment, Liabilities + Financial Derivatives, Liabilities + Other Investment, Liabilities

The series of BPM5 and BPM6 are combined to generate assets and liabilities series for the full period. Based on them, capital outflows are computed as the negative of the assets excluding reserves, while the inflows correspond to the liabilities.

The series of assets were disaggregated into private and public. Assets of the public sector were computed by adding up all the asset transactions in the portfolio investment, financial derivatives and other investment categories corresponding to the general government and to the monetary authority. Asset transactions of the private sector were computed as the difference between total asset transactions (excluding reserves) and asset transactions of the public sector.

B Country Classification

We identify 4 groups of countries: advanced economies, emerging economies, frontier economies and developing economies. The groups of emerging and frontier economies are constructed based on the S&P Dow Jones classification. The group of *Non-Advanced Economies* is defined as the set of countries that are classified either as emerging, frontier or developing economies.

Advanced Economies: Canada, United States, Australia, Hong Kong, Japan, New Zealand, Singapore, Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Israel and South Korea.

Emerging Economies: Greece, Turkey, South Africa, Brazil, Chile, Colombia, Mexico, Peru, India, Indonesia, Malaysia, Philippines, Thailand, Russian Federation, Czech Republic, Hungary and Poland.

Frontier Economies: Argentina, Ecuador, Panama, Cyprus, Jordan, Lebanon, Bangladesh, Sri Lanka, Pakistan, Vietnam, Mauritius, Morocco, Namibia, Kazakhstan, Bulgaria, Ukraine, Slovak Republic, Estonia, Latvia, Lithuania, Croatia, Slovenia and Romania.

Developing Economies: Malta, Bolivia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, Uruguay, Venezuela, The Bahamas, Aruba, Belize, Netherlands Antilles, Suriname, Yemen, Myanmar, Cambodia, Laos, Nepal, Cabo Verde, Ethiopia, Lesotho, Mozambique, Seychelles, Sudan, Uganda, Fiji, Vanuatu, Papua New Guinea, Samoa, Tonga, Armenia, Azerbaijan, Belarus, Albania, Georgia, Kyrgyzstan, Moldova, Tajikistan, Macedonia, Bosnia and Herzegovina.

C Tables

Table 6: Description of Variables and Sources

Variable	*Definition*	*Source*
Sudden Stops		
Capital Flows	See Appendix A.	BOPS (BPM5 and BPM6), IMF.
Gross Sudden Stop Episode	Dummy that takes de value 1 if the year-on-year change in foreign capital *inflows* falls below two standard deviations from its historical mean. In terms of measuring its length in time, the sudden stop episode starts from the moment in which the series falls one standard deviation below its historical mean, but conditional on the fact that it will eventually cross the two-standard-deviations threshold. The episode ends when the series goes back to one standard deviation below the historical mean.	Constructed by authors.
Net Sudden Stop Episode	Dummy that takes de value 1 if the year-on-year change in foreign capital *net flows* falls below two standard deviations from its historical mean. In terms of measuring its length in time, the sudden stop episode starts from the moment in which the series falls one standard deviation below its historical mean, but conditional on the fact that it will eventually cross the two-standard-deviations threshold. The episode ends when the series goes back to one standard deviation below the historical mean.	Constructed by authors.
Sovereign Bond Spreads	*Emerging Countries*: From 1991, JPM EMBI Composite. Before 1991, effective Fed Funds rate. *Developing Countries*: Average Euro-area government bond spread over German 10-year government bond. *Developed Countries*: From 1995, G7 government bond spread over US Treasury bonds. Before 1995, German 10-year government bond spread over US Treasury bonds. **This measure is used to compute systemic sudden stop episodes.**	EMBI from Bloomberg. Effective Fed Funds rate from FRED. Government bond spreads for Euro area and G7 countries computed from bond yields obtained from Datastream.
Terms of Trade	100*(Price of Exports / Price of Imports). **This variable is used to compute sudden stop episodes associated with bonanzas.**	
Domestic Factors		
GDP Growth	Year-on-year growth rate of real GDP.	IFS.

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Table 6 – continued from previous page

Variable	*Definition*	*Source*
CPI Inflation	Year-on-year growth rate of CPI.	IFS. When note available, CPI inflation was obtained from local sources and from Datastream.
CAD	Current account deficit.	BOPS (both BPM5 and BPM6), IMF.
Absorption of Tradable Goods	Imports plus tradable output domestically consumed minus exports. Tradable output domestically consumed is constructed as the share of tradable output multiplied by GDP. The share of tradable output is computed as the ratio of agriculture plus industrial output to total GDP. The obtained series are deflated using the implicit GDP deflator.	Imports, exports and GDP in local currency at current prices from IFS (National Accounts). Agriculture and industrial value added as percentage of GDP, at annual frequency, from WDI (World Bank). Implicit GDP deflator from IFS.
Trade Openness	Exports plus imports as percentage of GDP.	Exports, Imports and GDP in local currency at current prices from IFS (National Accounts).
DLD	Domestic Liability Dollarization. *Emerging and Developing countries*: Bank foreign borrowing as a share of GDP. *Developed countries*: Banks' local asset positions in foreign currency (vis-a-vis the non-bank sector) as a share of GDP.	Bank foreign borrowing from IFS (line 26c). Banks' local asset positions in foreign currency from BIS. GDP in US dollars from WEO, IMF.
Private Credit I	Deposit money banks and other financial institutions claims on the private sector as a percentage of GDP.	Claims on the private sector from IFS (lines 22d and 42d). GDP in local currency at current prices from IFS.
Private Credit II	Bank credit to private sector as percentage of GDP.	Beck et al. (2009)
Private Credit III	Deposit money banks and other financial institutions claims on the private sector as a percentage of total deposits. Total deposits correspond to demand, time and saving deposits in deposit money banks and other financial institutions.	Claims on the private sector from IFS (lines 22d and 42d). Financial system deposits from IFS (lines 24, 25, and 45).
Private Credit IV	Bank credit to private sector as percentage of total bank deposits.	Beck et al. (2009)
Trade Contagion	Dummy variable that takes the value of 1 if a country reports a sudden stop in t and there is at least one *top 10 trading partner* with a sudden stop in $t-1$.	Constructed by authors.
Institutional Quality	Sum of the following components: rule of law, investment profile, government stability, bureaucracy quality, and corruption.	Political Risk Services Group.
Financial Risk-Taking Index	Index that measures a country's ability to finance its official, commercial, and trade debt obligations. Its components are: foreign debt as percentage of GDP, foreign debt service as percentage of exports of goods and services, current account as percentage of exports of goods and services, net international liquidity as months of import cover, exchange rate stability.	Political Risk Services Group.

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Table 6 – continued from previous page

Variable	*Definition*	*Source*
Depth of Financial System	Stock market capitalization as percentage of GDP. Annual frequency.	Beck et al. (2009)
Financial Openness Index	Index measuring a country's degree of capital account openness.	Chinn and Ito (2006)
Exchange Rate Regime	Monthly fine classification (1-15) of countries according to their exchange rate regime.	Reinhart and Rogoff (2004), updated by Iltzezky et al. (2009).
Public Debt	Public debt as percentage of GDP. Annual frequency.	Abbas et al. (2010)
International Investment Position	Stock of international assets and liabilities. Annual frequency.	BOPS (BPM5 and BPM6), IMF.
Global Factors		
Global Risk	US stock market volatility.	Bloom (2009). VXO index updated from CBOE website.
Growth Rate of Global Money Supply	Average of the year-on-year growth rate of M2 in the United States, M2 in the Eurozone, M2 in Japan and M4 in the UK.	IFS.
Global Interest Rates	Average rate on long-term government bonds in the United States, Euro area and Japan	IFS.
Global Growth	Year-on-year growth rate of World's real GDP.	IFS.

Table 7: "Prevented" Sudden Stop Episodes

Country	*Start*	*End*	*Country*	*Start*	*End*	*Country*	*Start*	*End*
Advanced Economies			Italy	1995q1	1995q1	United States	1998q2	1998q3
Australia	1990q1	1991q1	Italy	2000q4	2002q3	United States	1999q2	1999q2
Australia	1998q1	1998q1	Italy	2007q3	2009q2	United States	2001q3	2001q3
Australia	2001q4	2002q1	Japan	1990q4	1991q3	United States	2008q3	2009q1
Australia	2005q1	2005q4	Japan	1992q4	1993q1	United States	2012q1	2012q1
Australia	2008q3	2008q3	Japan	1996q3	1996q4	*Frontier, Emerging and Developing Economies*		
Australia	2009q1	2009q3	Japan	1998q3	1999q1	Albania	2012q3	2013q2
Australia	2012q2	2012q3	Japan	2008q3	2009q4	Argentina	1989q1	1989q1
Austria	1993q3	1993q3	Korea	1997q3	1997q3	Argentina	1998q4	1999q2
Austria	2001q1	2002q1	Korea	1998q4	1999q1	Armenia	2001q1	2001q3
Austria	2008q4	2009q4	Korea	2009q3	2009q3	Aruba	2012q4	2012q4
Belgium	2006q1	2006q3	Luxembourg	2008q2	2009q2	Azerbaijan	2009q1	2009q4
Belgium	2008q4	2009q4	Netherlands	1991q1	1991q4	Bahamas	1989q2	1990q1
Canada	2008q4	2009q2	Netherlands	1994q4	1994q4	Bahamas	1995q3	1996q2
Hong Kong	2008q3	2009q3	Netherlands	2002q1	2002q1	Bahamas	2003q2	2004q3
Denmark	1986q4	1987q2	Netherlands	2008q1	2009q3	Belarus	2008q4	2009q1
Denmark	1991q3	1991q3	Netherlands	2010q4	2011q3	Belarus	2013q1	2013q1
Denmark	1992q3	1993q2	New Zealand	2005q3	2005q3	Bolivia	2000q2	2000q2
Denmark	1994q3	1995q1	New Zealand	2008q2	2008q3	Bolivia	2004q4	2005q1
Denmark	2001q2	2002q2	New Zealand	2012q1	2012q3	Bolivia	2006q2	2006q2
Denmark	2008q4	2009q4	Norway	1983q4	1983q4	Bosnia and Herzegovina	2005q1	2005q1
Denmark	2011q3	2011q4	Norway	1988q3	1988q4	Bosnia and Herzegovina	2008q3	2008q4
Finland	1992q1	1992q2	Norway	1991q3	1991q4	Bosnia and Herzegovina	2010q2	2010q3
Finland	2001q1	2001q4	Norway	2002q1	2002q2	Brazil	1995q1	1995q2
Finland	2003q1	2003q3	Norway	2008q1	2008q2	Brazil	2002q3	2003q2
Finland	2005q3	2005q3	Norway	2009q3	2010q1	Brazil	2008q2	2008q3
Finland	2009q2	2009q3	Portugal	1983q4	1984q2	Cabo Verde	2009q3	2009q3
Finland	2012q3	2012q4	Portugal	1992q3	1992q3	Cabo Verde	2013q1	2013q3
France	2002q1	2002q3	Portugal	1996q2	1996q3	Cambodia	1997q4	1998q1
France	2008q2	2008q3	Portugal	2002q4	2003q1	Cambodia	2010q1	2010q1
France	2009q1	2009q1	Portugal	2004q4	2005q2	Chile	2000q2	2001q1
France	2011q4	2012q3	Portugal	2008q2	2009q3	Chile	2008q4	2009q2
Germany	1988q1	1988q2	Portugal	2010q4	2011q1	Chile	2013q4	2014q1
Germany	1994q2	1994q4	Singapore	1998q4	1998q4	Costa Rica	2008q4	2008q4
Germany	2001q1	2002q2	Singapore	2008q3	2009q3	Croatia	2005q1	2005q3
Germany	2004q1	2004q2	Spain	1994q2	1995q1	Croatia	2010q3	2010q3
Germany	2008q2	2009q4	Spain	2001q3	2002q2	Croatia	2011q1	2011q1
Germany	2013q4	2013q4	Spain	2008q2	2008q4	Cyprus	2008q2	2008q2
Iceland	1989q2	1989q4	Sweden	1991q2	1991q2	Cyprus	2010q1	2010q1
Iceland	2002q2	2002q2	Sweden	1996q4	1997q3	Cyprus	2010q4	2011q2
Iceland	2008q2	2009q1	Sweden	2001q1	2002q3	Czech Republic	2006q2	2006q4

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Table 7 – continued from previous page

Country	*Start*	*End*	*Country*	*Start*	*End*	*Country*	*Start*	*End*
Ireland	1991q4	1992q1	Sweden	2008q4	2009q2	Czech Republic	2008q4	2009q4
Ireland	1994q4	1994q4	Switzerland	2008q1	2009q1	El Salvador	2009q1	2009q1
Ireland	2008q2	2008q4	United Kingdom	1991q4	1992q2	Estonia	2008q2	2008q2
Israel	2001q1	2001q2	United Kingdom	1994q2	1994q4	Ethiopia	2005q3	2005q4
Israel	2002q1	2002q2	United Kingdom	1998q1	1998q4	Fiji	2005q1	2005q1
Israel	2007q3	2009q2	United Kingdom	2001q3	2002q4	Fiji	2012q1	2012q4
Israel	2011q4	2012q1	United Kingdom	2008q2	2009q3	Greece	2006q2	2006q3
Italy	1993q1	1993q3	United States	1990q2	1990q4	Greece	2010q2	2010q3
Greece	2014q1	2014q1	Malaysia	2008q3	2008q3	Russian Federation	1998q3	1999q4
Guatemala	2008q4	2008q4	Malta	2000q1	2000q3	Russian Federation	2009q4	2009q4
Hungary	2002q4	2002q4	Malta	2009q4	2009q4	Russian Federation	2014q1	2014q3
Hungary	2009q1	2009q3	Mauritius	2008q3	2009q2	Samoa	2010q1	2010q1
India	1992q2	1992q4	Mauritius	2012q2	2013q2	Samoa	2013q3	2013q3
India	1998q4	1998q4	Mexico	2008q4	2009q3	Seychelles	1987q3	1988q1
India	2001q4	2002q3	Morocco	2009q1	2009q3	Seychelles	2009q2	2009q2
Indonesia	2006q4	2007q1	Namibia	2002q4	2003q2	Slovak Republic	1998q2	1999q1
Jordan	1992q3	1992q3	Namibia	2008q1	2008q1	Slovak Republic	1999q4	1999q4
Jordan	2007q3	2007q4	Namibia	2010q3	2011q2	Slovak Republic	2010q2	2010q4
Jordan	2008q3	2008q4	Nepal	1986q4	1987q1	Slovak Republic	2012q2	2012q4
Jordan	2011q4	2012q1	Nepal	1990q2	1991q1	Slovenia	1997q3	1997q4
Jordan	2012q3	2012q3	Nepal	1995q4	1996q1	Slovenia	2008q3	2009q1
Kazakhstan	2009q1	2009q1	Nepal	2009q4	2010q1	South Africa	2008q3	2008q3
Kyrgyz Republic	2010q2	2011q1	Netherlands Antilles	2002q4	2003q1	Sri Lanka	1994q2	1994q3
Lao PDR	2008q3	2008q4	Netherlands Antilles	2009q2	2009q2	Sri Lanka	1995q4	1996q1
Lao PDR	2012q1	2012q1	Pakistan	2012q2	2012q4	Sri Lanka	1998q4	1999q1
Lao PDR	2013q2	2013q3	Panama	2002q1	2002q4	Sri Lanka	2013q3	2014q1
Latvia	1998q3	1999q2	Panama	2008q4	2009q1	Tajikistan	2009q3	2009q3
Lesotho	1989q3	1989q4	Papua New Guinea	1992q4	1992q4	Thailand	1996q3	1996q3
Lithuania	2000q4	2001q3	Paraguay	2007q3	2007q4	Thailand	2008q4	2009q3
Lithuania	2008q3	2008q3	Paraguay	2009q4	2009q4	Tonga	2008q3	2009q2
Lithuania	2013q1	2013q1	Philippines	1997q3	1997q3	Ukraine	2008q4	2008q4
Macedonia	2002q1	2002q2	Philippines	2008q2	2009q1	Ukraine	2010q1	2010q1
Macedonia	2002q4	2002q4	Poland	1991q4	1992q2	Vanuatu	2009q2	2010q1
Macedonia	2012q2	2012q2	Poland	2008q4	2008q4	Venezuela	2012q2	2012q4
Macedonia	2013q4	2014q2	Romania	2012q3	2012q3			

Note: A *"prevented"* sudden stop in economy j during period t in an event in which a sudden stop in gross inflows does not translate into a sudden stops in net flows due to the offsetting variation in capital outflows from domestic agents. A prevented sudden stop episode is conceived as one or more consecutive periods (quarters) in which a sudden stop in net flows does not coexist with a sudden stop in gross inflows. This implies that within an episode of sudden stop in gross inflows, there can be more than one prevented sudden stop episodes.