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Dennis Reinhardt[1] and Salvatore Dell'Erba[2]

Abstract

We examine episodes of large gross foreign direct investment (FDI) inflows — surges — at the sectoral level in emerging market economies. We find that surges in the financial sector, unlike surges in the non-financial sectors, are associated with boom-bust cycles in GDP and expansions of credit in foreign currency. In terms of the determinants of surges, we find that global and contagion factors have a stronger effect in the financial than the non-financial sectors. We also document a role for policies related to capital account openness: restrictions on other forms of capital inflows tend to increase the likelihood of surges in financial sector FDI.

Key words: Foreign direct investment, surges, capital flow determinants, sectoral level, emerging market economies.

JEL classification: F21, F32.

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Summary

After the global financial crisis capital flows started pouring back into emerging markets. This phenomenon is not new: capital flows often come in waves and have a strong cyclical component, as an extensive literature has documented. Capital inflows can bring many benefits such as compensating for limited domestic savings, increasing the extent of risk-sharing, and contributing to the development of financial markets. There is, however, a wide literature documenting the risks associated with the cyclical nature of capital inflows, showing that they can contribute to amplifying economic cycles, fuel credit booms, appreciate the real exchange rate, and can be subject to sudden reversals.

The perceived wisdom is that there is a pecking order among capital flows, with foreign direct investment (FDI) perceived as 'good' as it promotes growth in the receiving countries, while portfolio investment (PI) is seen as 'bad' as it is more volatile and can lead to excessive business cycle fluctuations. While the theoretical literature shows the superiority of FDI over PI in a world of asymmetric information, the evidence from the empirical literature is mixed. Evidence from the latest financial crisis shows that large FDI flows in the financial sector appear to be related to greater macroeconomic instability in the receiving countries, suggesting that there exists heterogeneity across flows at the sectoral level, which is an aspect so far neglected in the literature.

Motivated by this evidence, this paper examines episodes of large gross capital inflows (which we will call surges) from a sectoral perspective. Specifically, we focus on surges in gross FDI at the sectoral level for emerging market economies during the period 1994-2009, employing a new data set for gross sector-level FDI inflows. The paper focuses on FDI because it has been the most important source of foreign capital for many emerging economies since the beginning of the 1990s.

We make three contributions. First, we show that while FDI surges occur across all sectors, only surges in FDI in the financial sector are accompanied by a boom-bust cycle in GDP growth. A possible explanation for this may be the expansion of credit in foreign currency that typically accompanies these flows, which might amplify the transmission of external shocks under the presence of collateral constraints.

Second, we document substantial sectoral heterogeneity in the explanatory power of the various global, contagion, and domestic factors identified by the literature as important determinants of capital flows. Global factors, chiefly global growth, have a particularly strong and positive impact on the emergence of FDI surges in the financial sector. We also find that contagion plays a stronger role in surges in the financial than non-financial sectors: countries are more likely to experience a surge in financial sector FDI (but not in the other sectors) if countries in the same region have experienced a recent surge in financial FDI.

Third, we document a role for policies related to the capital account. Restrictions on instruments that may constitute alternative sources of funding for subsidiaries of foreign banks (such as bonds) tend to *increase* the likelihood of FDI surges. We also find some tentative evidence that

regulations restricting lending and borrowing in foreign currencies reduce the probability of surges in financial sector FDI. These findings may have implications for the design of future prudential regulation policies.

1. Introduction

After the global financial crisis capital flows started pouring back into emerging markets. This phenomenon is not new: capital flows often come in waves and have a strong cyclical component and an extensive literature has documented "surges" and "bonanzas" in capital flows (Kaminsky et al. (2005); Reinhart and Reinhart (2009); Cardarelli et al. (2010)). Capital inflows can bring many benefits such as complementing limited domestic savings, risk-sharing, and contributing to the development of financial markets. A wide literature has also documented the risks associated with periods of large inflows of capital showing how they can contribute to amplifying economic cycles, fuel credit booms, appreciate the real exchange rate, and are potentially subject to sudden reversals (Adalet and Eichengreen (2007); Calvo et al. (2004, 2008); Calvo (1998)).

The perceived wisdom is that there is a pecking order among types of capital flows, with foreign direct investment (FDI) perceived as a 'good' type of flow as it promotes growth in the receiving countries while portfolio investment (PI) is seen as a 'bad' type of flow as it is more volatile and can lead to excessive business cycle fluctuations. While the theoretical literature shows the superiority of FDI over PI in a world of asymmetric information (Razin et al. (2001)), the evidence from the empirical literature is so far mixed.[3] Evidence from the latest financial crisis shows how among FDI, larger flows in the financial sector appear to be related to larger macroeconomic instability in the receiving countries (Ostry et al. (2010)) suggesting there exists heterogeneity across flows at the sectoral level, which is an aspect so far neglected in the literature.

Motivated by this evidence, this paper examines episodes of large gross capital inflows (which we will call surges) from a sectoral perspective. Specifically, we focus on surges in gross FDI at the sectoral level for emerging market economies (EMEs) during the period 1994-2009, employing a new data set for gross sector-level FDI inflows. The paper focuses on FDI because it is the most important source of foreign capital for many emerging economies since the beginning of the 1990s.[4]

We make three contributions. First, we show that FDI surges occur across all sectors, but we find that surges in FDI in the financial sector are accompanied by a boom-bust cycle in GDP growth. A possible explanation for this result may be the observed expansion of credit in foreign currency associated with these flows, which might amplify the transmission of external shocks under the presence of collateral constraints (Mendoza (2010)).

[3] For example, Fernandez-Arias and Hausmann (2000) find that economies with lower volatility receive a larger share of PI over FDI. Daude and Fratzscher (2008) show that FDI is more sensitive to information frictions than PI, but that PI is more sensitive than FDI to the degree of market development and the economic and institutional quality.

[4] According to WEO BOP data, in the 1980s, 20% of total gross capital inflows into emerging markets (FDI, portfolio, other investment) had been gross FDI inflows whereas this number was 55% in the 1990s and 60% from 2000 to 2007. Furthermore, data on the sectoral allocation of other types of capital flows are limited as capital flows are often intermediated by the domestic banking system and it is hard to track their sectoral destination.

Second, we document substantial sectoral heterogeneity in the explanatory power of the various global, contagion, and domestic factors identified by the literature as important determinants of capital flows. Global factors, chiefly global growth, have a particularly strong and positive impact on the probability of FDI surges in the financial sector. We also find a stronger role for contagion: countries are more likely to experience a surge in financial sector FDI (but not in the other sectors) if their neighbours have themselves experienced a surge in financial FDI the year before.

Third, we document a role for policies related to the capital account. Restrictions on instruments (in particular bonds) which may constitute alternative sources of funding for subsidiaries of foreign banks tend to *increase* the likelihood of FDI surges. We also find some tentative evidence for regulations restricting lending and borrowing in foreign exchange to reduce the probability of surges in financial sector FDI. These findings may have implications for the design of future prudential regulation policies.[5]

This paper relates to the literature on the determinants of capital flows with a special focus on extreme movements in capital flows such as Reinhart and Reinhart (2009), Cardarelli et al. (2010), Forbes and Warnock (2011), or Ghosh et al. (2012). The literature on the determinants of capital flows has distinguished between factors that are external to the economies receiving the capital flow and those that are internal i.e. global and contagion push factors as well as domestic pull factors (see for example Calvo et al. (1996)).[6] While global factors feature prominently in the recent theoretical literature (see for example Bacchetta et al. (2010), Devereux and Yetman (2010), Kamin and Pounder (2010) or Blanchard et al. (2010)) the importance of global factors for FDI flows was already highlighted by Albuquerque et al. (2005): they show that the importance of their measure of globalization (based on, among other factors, US interest rates and growth of world per capita GDP) in explaining the variation in FDI has steadily increased - both for industrial and developing countries. We show that this result may be driven by the increasing importance of financial sector FDI.

The papers most closely related to ours are Cardarelli et al. (2010) and Forbes and

[5] We focus on EMEs because (i) capital account policies show little or no variation in advanced economies (AEs), (ii) we are interested in the relation between financial sector FDI and foreign exchange credit, but the latter plays a more limited role in AEs, and (iii) FDI forms a far smaller share of GDP in AEs than in EMEs (around 20% of gross total capital inflows versus 55-60% in the 90s and early 2000s). A previous version of the paper (Dell'Erba and Reinhardt (2011)), which focused on a larger sample that contains both EMEs and AEs, arrived at qualitatively similar results to the ones for EMEs reported above. But we found for the limited subset of AEs no evidence for surges in financial sector FDI to be more driven by global or contagion factors than surges in other sectors; they are also not more strongly related to the economic cycle. The results are available on request.

[6] Most contributions in this literature focus on one of these three sets of factors; notable exceptions include Calvo et al. (1996) or Chuhan et al. (1998). See Forbes and Warnock (2011) for a thorough literature review concerning the role played by global, contagion, and domestic factors in explaining capital inflows. See Claessens and Forbes (2001) for an overview of the literature on contagion. See Glick and Rose (1999) for a paper emphasizing contagion through trade and Caramazza et al. (2000) or Broner et al. (2006) for examples of papers that focus on financial linkages.

Warnock (2011, 2012) who focus on episodes of large movements in capital flows. With Cardarelli et al. (2010) we share the methodological approach in the identification of "surges", although we do not share with them the focus on policy responses to these episodes. As in Forbes and Warnock (2011, 2012) we try to explain the determinants of *gross* large capital inflows and the role of capital controls. They argue that it is important to focus on gross flows instead of net flows as the latter can mask dramatic changes in gross flows (justification for focusing on gross flows is also provided in Rothenberg and Warnock (2011) and Milesi-Ferretti and Tille (2011)). Contrary to the authors, we keep a focus on sectoral FDI and we also try to assess the macroeconomic outcomes of sectoral "surges".

Forbes and Warnock (2011) find an important role for global risk, liquidity and growth (and less evidence for domestic factors) in explaining episodes of surges in gross inflows across all types of capital flows. Furthermore, they find little evidence for contagion factors and capital controls impacting the likelihood of experiencing surges in gross capital flows. In Forbes and Warnock (2012), they show that global factors have a stronger impact on debt-driven and hardly any impact on equity-driven surge episodes. Our results on surges in non-financial sector FDI conform with their results on equity-driven surges: global factors play a limited role. Conversely, the results on financial sector FDI appear to be more closely in line with their results on debt-driven surges in gross capital flows, where global growth is the dominant global factor for financial FDI. Furthermore, we find that (regional) contagion and capital controls appear to play an important role for FDI in the financial sector.

According to Magud et al. (2011), the literature that attempts to understand the impact of controls on capital flows has arrived at the conclusion that capital controls affect the reported composition of capital inflows, but have less impact on the volume of inflows (see Ostry et al. (2010) for a discussion of policy considerations with regard to capital controls and some evidence on how controls on debt inflows in Chile appear to have increased the share of FDI in total foreign liabilities). Our results are suggestive of leakages: financial sector FDI may have been used as a substitute to debt inflows. To the extent that financial sector FDI is a less safe capital flow than other types of FDI, this puts an interesting twist on the potential policy implication based on this literature that a shift in the composition towards FDI has been beneficial with respect to the riskiness of a country's external balance sheet. More generally, the results on financial sector FDI caution against a simplistic view on what constitutes 'good' capital flows and suggest that any surveillance on capital inflows may need to be more granular.

This paper proceeds as follows. Section 2 presents the data and the methodology used to identify episodes of surges in FDI inflows. In section 3, we present descriptive statistics on the incidence of surges in FDI across sectors and move on to examine the heterogeneity of outcomes around these episodes using an event-study methodology. Section 4 explores the cross-sectoral heterogeneity in the explanatory power of global, contagion and domestic

factors in causing surges in sector-level FDI. Section 5 concludes.

2. Measuring surges in sectoral FDI inflows

2.1. Data

We construct a data set containing information on sectoral FDI inflows, global and domestic factors for 69 emerging economies over the maximum period 1985-2010; the data are at the annual frequency. The sample coverage is largely determined by the availability of sectoral FDI data (see Appendix B); we exclude countries for which we have less than 6 years of data on FDI inflows. The sample is strongly unbalanced for the earlier years. Hence, we consider only surges in sectoral FDI inflows for the period 1994-2009 as 1994 is the first year where we have wider regional coverage. Summary statistics are provided in Table A1 and A2.[7] The sector-level FDI database (which is described in greater detail in the Appendix A and Reinhardt (2011)), contains data on all ISIC Rev. 3 sub-sectors. We do not show separate results for the utilities (E according to the ISIC Rev. 3 classification) and construction sector (F) because firstly FDI inflows into these sectors are skewed with only a few countries receiving large amounts of FDI inflows (the median is at 0.04/0.03% of GDP respectively) and secondly the data availability is worse than for the other sectors. Furthermore, we aggregate non-financial and non-business services sub-sectors into the 'other services' sectors (consisting of trade and tourism (GH) and transport, storage and communication (I)). Finally, FDI into the aggregate 'non-financial sector' is calculated by subtracting financial intermediation sector (J) FDI from total aggregate FDI. As data on financial intermediation FDI are not available for all 69 countries, the regressions are performed on a more limited sub-set of 56 countries; the sample is the same for the 'financial' and 'non-financial' sector, which ensures the comparability of the results.

Table A2 presents summary statistics for sectoral FDI inflows to GDP. On average, all sectors received similar amounts of FDI inflows, slightly below 1% of GDP. There are however large differences in the size of FDI inflows across countries with a few countries receiving FDI of up to 38.7% in the financial sector. The distribution of FDI flows is more even for the manufacturing sector and the other services sector, as witnessed by a smaller deviation of the mean and median of the distribution than for the financial sector.

2.2. Methodology

There is a vast literature analyzing the macroeconomic effects of large capital inflows. The different studies employ various criteria to define inflows as 'large'.[8] In this paper

[7] Details on the data sources are provided in Appendix A; an overview on the sample coverage can be found in Appendix B. The variables used to explain surges are described in the appendix. As a preliminary screen on the data we exclude observations for which variables deviate by more than 4 standard deviations from their sample mean. In order to identify episodes of large capital inflows as precisely as possible, we use all available data on sectoral FDI flows for countries with better data availability.

[8] For example, Reinhart and Reinhart (2009) define episodes of capital flows 'bonanzas' by looking at the deviation of current account to GDP from a country-specific threshold. Mendoza and Terrones (2008)

we follow a methodology that is similar in spirit to the one proposed by Cardarelli et al. (2010). We identify sectoral FDI surges according to the following two main criteria. We classify a sectoral inflow as large if (i) it exceeds a country-specific historical trend and/or (ii) exceeds, by a pre-specified threshold, the historical distribution of the sectoral FDI inflows within a region.

To be more specific, we first compute the historical trend as the moving average of the sectoral FDI inflows to GDP in a country over a backward-looking 5-year window. We then characterize an inflow in year t for country i and sector j as a surge if it exceeds the historical trend by one standard deviation (which is also calculated over a backward-looking 5-year window). When we cannot compute the trend,[9] we classify an inflow of sectoral FDI to GDP as large if it exceeds the 80^{th} percentile of the distribution of sectoral FDI to GDP in the region over the whole sample. In both cases, we do not classify an inflow of sectoral FDI to GDP as a surge if it is smaller than 0.3 % of GDP.

To better understand the working of the methodology, it is instructive to look at an example. Figure 1 shows the identified episodes for the FDI inflows in the financial intermediation sector in South Korea. Since the sample for the country begins in 1985, we are able to calculate the trend starting from 1990. We see that according to the first criterion, there would be an identified episode in 1995; however, this is not recorded as a surge by our methodology because it does not comply with our absolute size constraint (0.3 % of GDP). Nonetheless, we subsequently identify two episodes, in 1997 and in 2004, even though, overall, the flows in the sector are smaller than the 80^{th} percentile of the distribution of the flows in the financial intermediation sector in the region.

3. Characteristics and macroeconomic outcomes

3.1. Characteristics of sectoral FDI surges

We now turn to some descriptive statistics on the number of identified surges in sectoral FDI. We start with Figure 2, which shows the share of countries in the sample experiencing surges over time. We find two main FDI 'waves': the first one starting in 1996 and the second one starting in 2005. The first wave is characterized by a higher share of surges in the manufacturing sector, which subsequently retrench after the Asian crisis (1997-1998); we also observe a higher number of surges in the 'other services' sector. Since the latter sector includes telecommunication services, it is not surprising that the peak occurs during

focus instead on credit 'booms' in the private sector by focusing on deviation of the logarithm of real per capita credit from a stochastic trend. Cardarelli et al. (2010) define instead a measure of net capital inflows to GDP and focus on deviation of this measure from either a country-specific trend or a regional threshold.

[9] For some countries there are in fact not enough observations to compute the rolling trend. In principle, we could replace the rolling trend with the overall sample trend as suggested by Cardarelli et al. (2010). We prefer instead, in these cases, to keep the regional threshold as a defining criterion for sectoral surges. This choice reduces the number of identified episodes in our sample. This underestimation is however related to countries with more limited information, so we believe it allows us to keep consistent results across countries.

the late 1990s, a period characterized by a wave of privatizations. After 2000, there is a generalized retrenchment in sectoral inflows. The number of countries experiencing surges start to significantly increase around 2005. This second wave of FDI inflows is mostly characterized by surges in the services sectors: financial intermediation, business & real estate and other services. The increase in the number of surges across countries is almost synchronous for these three sectors. We can see that the primary and manufacturing sectors do not register significant flows starting from 2005. More generally, capital inflows in these last two sectors appear to be less cyclical. In Figure 3 we show the median value of the sectoral flows scaled by GDP around surges. There is no difference with respect to the median size of the inflows during surges across sectors in the whole sample. The magnitude of the flows is similar also in the upper tail of the distribution across sectors, with the exception of the manufacturing and other service sectors, for which the size of the flows are around 4% of GDP as compared to 6% of GDP in the remaining sectors.

We now look at the size of the sectoral inflows during surges across regions. Figure 4 reports the median value of the cumulated FDI inflows during surges across Latin America and the Caribbean (LAC), Africa and Middle East (AME), Central and Eastern Europe and Central Asia (ECA) and East and South Asia (ESA). We distinguish the flows between the 'first wave' and the 'second wave' of capital flows. The first thing to notice is that the LAC and the AME regions are the highest recipients of inflows in the primary sectors, measured as a share of GDP. The size of the cumulated inflows typically exceeds 3% of GDP in the LAC region, while it does so in the AME region only in the second wave. In the manufacturing sectors, FDI inflows are in general more homogeneous in size across regions. Their size is typically between 1.5% and 2.5% of GDP. We find more regional variation among the services sectors. For example, in the other service sectors we find strong inflows in ECA and LAC regions across both 'waves' and a substantial increase in the flows to ESA region in the second wave. These inflows might be associated with strong efforts toward privatization in these regions which began in the 90s and are still ongoing. For the financial sector, an interesting feature is also the high share of FDI to GDP in the ESA region during the first wave and the substantial reduction in the second wave. This might be associated with the strong increase in foreign currency borrowing which happened in this region before 1997. A similar story has occurred in the ECA region during the second wave, when private households and corporation have increased their exposure to debt denominated in foreign currency. The amount of financial FDI in the second wave in the ECA region thus exceeds, not surprisingly, 2% of GDP.

3.2. Macroeconomic outcomes during surges

The previous section has shown three main facts about sectoral FDI surges: 1) FDI surges come in cycles; 2) FDI in the services sectors show a bigger cyclical component; 3) the size of FDI inflows during surges in the primary and manufacturing sector are more stable across time. To conclude with the stylized facts, in this section we investi-

gate whether these different characteristics by sectors are also associated with different macroeconomic outcomes. We thus proceed with an event study, in which we analyze the behaviour of some main macroeconomic indicators around episodes of sectoral FDI surges. The indicators chosen are: real GDP growth; sectoral value added growth: the current account balance in percent of GDP; growth in the real effective exchange rate; the private credit to GDP ratio and the foreign exchange credit, both in terms of GDP and as a share in total loans.

The event study is conducted in the following way. After having identified the sectoral surges, we construct a window of two years before and after the event. We then express variables in variation from their long-run trend.[10] Next, we compute the average value of the deviation from trend across all observations in the two years before, during surges, and in the two years after, where we control for outliers by excluding observations which deviate by more than 4 standard deviation from their respective sample average.[11] We finally test whether the values of each indicator are statistically different across event windows using a t-test for equality of means.

Before discussing the result, it is important to remark that this type of study is not meant to infer any causal link between FDI flows and macroeconomic outcomes. It is instead a useful methodology to see how the heterogeneity observed in terms of inflows during surges is also accompanied by different macroeconomic outcomes.

The results are reported in Figures 5 to 6. We start with the analysis of real GDP and sectoral value added growth. The deviation of real GDP from trend growth during surges in services sector FDI ranges from 0.3 to above 1 percentage point. The deviation of GDP growth from trend after the surges shows more heterogeneity, ranging from positive territory (manufacturing) to mildly negative (aggregate non-financial sector) to close to -1 percentage point in the financial sector. We find this latter decline in GDP growth after a surge in financial sector FDI to be significant at the 1% level. Notice that, as shown in Figure 3, the results are not driven by the size of the flows across sectors. While it could be argued that the higher GDP volatility is caused by the size of the sectors in terms of GDP, we do not find evidence for that: the financial sector, for which surges are accompanied by the most pronounced cycles in real GDP is in fact - at the mean and at the median across countries - the smallest sector of the economy in terms of its share in total value added, as its share never reaches above 16% (see Table A2). Regarding sectoral value added growth, we find evidence that confirms the notion of FDI surges in the financial sector being more associated with economic volatility than FDI surges in the non-financial

[10]Specifically, to calculate the long-run trend, we apply a Hodrick-Prescott filter with a smoothing parameter equal to 1600 to the whole series and calculate the deviation of the variable from trend within each window. Data on foreign exchange credit are often too short to calculate a long-run trend so we use the raw data for these series.

[11]The results presented in this section are qualitatively similar when we choose a three- or four-year window instead of a two-year window (they are available on request).

sectors: we observe a marked decline of value added growth after surges in the financial intermediation sector, with a deviation of above 2 percentage points from trend growth.

What can explain the observed pattern in GDP growth during surges? We now turn our attention to the level of external borrowing, changes in competitiveness or changes in private borrowing. For external borrowing, we take the current account to GDP ratio as an indicator. The results in Figure 5 show a deterioration of the current account to GDP during surges across all sectors, but the results are statistically significant only for the 'other services' and financial sectors. The deviation from trend is negative and around half a percentage point, with a significant reversal after surges in the financial sector. As an indicator of competitiveness, we look at growth in the real effective exchange rate (REER). We observe some appreciation pressure after sectoral FDI surges in the non-financial sector, but below trend REER growth in the financial sector. However none of the results are significant.

Foreign banks play an important role in the provision of credit to the domestic economy in many EMEs. We hence examine - in Figure 6 - how surges in financial sector FDI are associated with changes in private credit. Specifically, we look at changes in the domestic credit to GDP ratio as well as changes in foreign exchange credit, both in terms of GDP and as a share in total loans.[12] We see that domestic credit generally increases during episodes of surges in financial FDI, but the increase is not significant with regard to the two-year period before the surge, neither is the drop in the rate of change in domestic credit to GDP after the surge. Patterns are more pronounced when we look specifically at credit denominated in FX: we observe a significant increase in the change of the FX credit to GDP ratio during surges as well as a significant decline in the share of FX credit in total credit after the surge. This indicates that expansions and subsequent reductions in FX credit may be one factor behind the observed volatility in GDP. As the theoretical literature has shown, the presence of small financial frictions may amplify the transmission of external shocks to the domestic economy when the level of private borrowing increases (Mendoza, 2010). For the specific case of financial FDI inflows, they might contribute to macroeconomic instability as they "may be disguising a buildup in intragroup debt and will thus be more akin to debt in terms of riskiness" as argued by Ostry et al. (2010). We show in fact that the level of foreign exchange credit changes significantly during surges in financial sector FDI. Since this type of credit has the highest risk in terms of hedging, it provides a further indication of why financial FDI inflows may be associated with higher macroeconomic volatility.

The results of this section have highlighted some important differences in terms of

[12] We prefer to look at changes in credit rather than growth rates (i) to avoid the creation of outliers by dividing by small values that occur in the FX credit series and (ii) because changes in the stock of FDI to GDP (approximated by gross inflows) should be conceptually most related to changes in the stock of credit to GDP.

macroeconomic outcomes between surges in financial and non-financial sector FDI inflows. In the following section we will try to shed more light on the determinants of these two types of FDI.

4. What explains surges in financial and non-financial FDI?

4.1. Empirical Approach

We estimate the following model for each of the sectors separately:

$$Prob(Surge_{i,s,t} = 1) = F(B_1\Gamma_t + \beta_2\varphi_{i,s,t-1} + B_2\Theta_{i,s,t-1})$$

where $Surge_{i,s,t}$ is a dummy that takes the value of 1 if country i is experiencing a surge in FDI inflows in sector s in year t; Γ_t is a set of global factors; $\varphi_{i,s,t-1}$ is a contagion variable that captures either regional or trade contagion; and $\Theta_{i,s,t-1}$ is a set of domestic factors (which are usually in lagged terms). We estimate the model using the conditional logit model including country fixed effects; this assumes that the distribution of $F(\cdot)$ is logistic. Standard errors are clustered at the country level.

4.2. Choice of Variables

The theoretical and empirical literature we briefly discussed suggests to focus both on factors that are external to the economies receiving the capital flows and those that are internal- i.e. global and contagion push factors as well as domestic pull factors (see for example Calvo et al. (1996)). While there are a variety of measures that can be used to measure each of these, we decide to focus on measures for our baseline which are available over the full sample period for most countries in the sample (in robustness tests we explored other measures which are available only for a smaller sample). The variables are discussed in turn.

Global Variables

We consider three types of global factors: volatility, growth and interest rates. Our baseline measure for volatility is the VIX index calculated by the Chicago Board Options Exchange. It measures implied volatility using prices for a range of options on the S&P 100 index and is widely used in the literature to capture volatility, risk and economic uncertainty. Global growth is taken from the World Bank's World Development Indicators. Due to the importance of South-South FDI in our sample, we regard this as the more appropriate global factor than growth in advanced countries only (which we will use in robustness checks). Global interest rates are measured as the average of yields on American, German, British, and Japanese long-term government bonds. We prefer to focus on long-term rates (in our baseline) as short-term rates reflect to a greater extent policy reactions to the state of the business cycle and are hence more highly correlated with our growth measures. In the robustness section we will discuss results for alternative measures of these global factors.

Contagion Variables

Contagion factors - a spill-over of capital flows from one country to the other - are conceptually in between the global and the domestic factors: they are external to the countries that receive capital inflows; their strength depends however on the country's characteristics with respect to the various transmission channels identified by the literature - such as its trade ties with the rest of the world and regional location.

Here, we measure contagion by focusing both on regional contagion and contagion through trade linkages. Regional contagion is measured as the share of countries in the same region that experienced a surge in the preceding year. Trade contagion is calculated as follows:

$$TC_{i,s,t-1} = \sum_{j=1}^{n} \left(\frac{Exp_{i,j,t-1}}{TE_{i,t-1}} * Surge_{j,t-1} \right)$$

where Exp_{ijt-1} is the value of exports from country i to country j in the previous year and n is the maximum number of trading partners for which trade data is available and TE_{it-1} is total exports.

Domestic Variables

In choosing the domestic variables for our baseline, we include income per capita (taken from Heston et al. (2009)) to control for the possibility that capital is attracted into poorer countries as predicted by the neoclassical growth model. Similarly, the same model predicts capital to flow into countries during phases of high productivity growth: we hence include GDP growth into the regressions. To control for a country's fiscal positions, we use public debt to GDP taken from Abbas et al. (2010). Macroeconomic stability and the credibility of the macroeconomic framework is captured by the level of inflation, measured using an inflation index from the International Country Risk Guide (ICRG). We measure financial openness with the index provided by Chinn and Ito (2008); this index is - contrary to most other indices - available up to 2009. We refer to this set of variables as "baseline" domestic variables. Data on privatization proceeds (taken from the World Bank), trend value added growth by economic sector and variables capturing the depth and quality of regulation of the financial system are only available for a subset of countries and are hence included in turns.

4.3. Regression Results

Table 1 presents the results for the baseline estimation. Column 1 reports the results for surges in aggregate non-financial sector FDI; Column 2 presents the results for surges in financial intermediation FDI. Among global factors, global growth is the dominant variable in explaining surges in sector-level FDI: it is significant for both sectors, whereas volatility and interest rates do not seem to have an independent effect. Global factors have a particularly strong impact on FDI surges in the financial sector, as witnessed by

the size of the coefficient on global growth as well as the test for joint significance of the global factors. For regional contagion, we find the variable to be significant in explaining FDI surges in financial FDI; conversely it is not significant in explaining surges in the non-financial sector.

With regard to the domestic variables, we find that per-capita income increases the likelihood of surges in both the non-financial and financial sector, but the effect is non statistically significant. The literature points to an important role of economic growth in pulling in capital flows. We find evidence for this channel only for the aggregate sector: GDP growth increases the likelihood of surges in non-financial FDI, but the effect is statistically insignificant.[13] GDP growth is negatively associated with the probability of surges in the financial sector. Remarkably, financial openness has a negative impact in both columns, meaning that the more financially open countries are, the lower the likelihood of experiencing an FDI surge. The effect is significant only for surges in financial sector FDI. Next we turn to the effect of countries's fiscal positions: higher stocks of public debt to GDP decrease the probability of FDI surges in both specifications. With regard to indicators like inflation and per-capita income, we do not find any significant effect in any of the two specifications.

To assess the economic significance of the results, it is useful to consider exponentiated values of the regression coefficients. This is called the odds ratio and is defined as the ratio between the probability of a positive outcome (ie experiencing a surge) and the probability of a negative outcome. It gives the marginal effect in multiplicative terms after controlling for the baseline odds of a country experiencing a surge. For example, it follows that the odds of a country experiencing a surge in financial sector FDI is 46.7% higher when global growth increases by 1 percentage point; the figure is 27.3% for the manufacturing sector. The impact of contagion is also sizable: the odds of a country experiencing a surge in financial sector FDI is 33.2% higher if the share of countries that experienced a surge in the preceding year increases by 10 percentage points.[14]

In Table 2, we examine the transmission channels of contagion. In particular, we test first whether contagion is indeed driven by the shared regional location or by the share of countries experiencing a surge in the year before across *all* regions (ie global contagion). We find that the regional component dominates the global one. Next we examine contagion via trade ties; the latter have a strong regional component, but are present also across regions. The findings reveal that regional location is the dominant factor behind contagion in the financial intermediation sector, while contagion is not a

[13]Table A3 shows however that GDP growth is positively related with the probability of experiencing a surge in sectoral FDI in the manufacturing and primary sector.

[14]To estimate the marginal effects at the means of the explanatory variables would require assuming that the fixed effects are all zero; this assumption is rejected in a test of joint significance of all the country dummies (results available on request). We therefore consider only the marginal effects in multiplicative terms (i.e. odds ratio).

dominant variable in explaining surges in the aggregate FDI sector.

In Table 3, we add various domestic factors one by one. First, we include a sector-specific growth measure, i.e. trend growth in value added by sector.[15] Results remain robust and the coefficient on value added growth turns out insignificant. FDI surges may be driven by the large-scale sale of state-owned companies that may drive FDI waves. We hence control for privatization proceeds in the different economic sectors. Privatization proceeds to GDP have a strong and significant (at the 5% level) impact on FDI surges in the financial sector; the coefficient is not significant for privatization in the aggregate sector. Comparing these results to the previous regressions appears to suggest a weaker role of global factors in the non-financial and financial sectors; this is however driven by the narrower sample rather than by the inclusion of privatization. Incidentally, the results also suggest that the baseline results are not driven by the equity component of FDI but rather by one of the other two components (i.e. reinvested earnings or intracompany loans).[16]

The next column shows that the size of a country's financial system (measured by stock market capitalization to GDP) is positively related with the probability of FDI surges in the financial sector, the coefficient is however not significant. The quality of financial regulation (and degree of financial development) may impact FDI surges in the financial sector in various ways. Better financial regulation may enable companies to tap different sources of capital. In addition, the strong association of FDI with foreign currency lending suggests that regulations on the use of foreign currency may impact financial FDI. Our results (Table 3) appear to point into this direction. An aggregate measure of the quality of financial regulation (Abiad et al. (2008)) is associated negatively, however not significantly, with the probability of experiencing surges in financial sector FDI. A more specific measure on restrictions on the financial sector's use of foreign exchange (including forex lending), taken from Ostry et al. (2011), impacts the probability of surges in FDI negatively and significantly at the 10% level.[17]

4.4. A Closer Look at Capital Control Measures

Financial sector FDI surges are more likely in economies that are less financially open - ie economies that have more stringent capital controls. What specific control measures drive this result? To shed light on this question, we expand the analysis of the role of capital controls by looking at controls on different types of capital inflows. Specifically, we substitute our aggregate control measure (Chinn and Ito (2008)) with controls on bonds,

[15]The trend is calculated using an HP filter with a smoothing parameter of 6.5 for annual data. The results are robust to using different parameters.

[16]Data that would allow to disaggregate sectoral FDI into the three components is only available for a limited set of countries.

[17]The weaker significance of the contagion variable in column 10 is due to the narrower sample; all results are available on request.

equity and money market instruments respectively taken from Schindler (2009).[18] We keep on lagging all control measures by one year.

Turning to the results given in Table 4, we first note that controls on direct investment itself do not seem to have a significant effect on the probability of experiencing a surge in FDI.[19] But capital controls on instruments which may constitute alternative sources of funding for subsidiaries of foreign banks (such as bonds, portfolio equity and money market instruments) tend to increase the likelihood of FDI surges. The results are strongest for controls on bond inflows. This fits with our priors as (i) equity issuance, which is usually more expensive than bond issuance, may be less attractive to finance short-term expansions in credit and (ii) money market funding is less prevalent than bond funding in most EMEs. More research is needed to understand the precise channels for these results; they nonetheless indicate that financial sector FDI in EMEs may have partly been used as a close substitute to other forms of capital inflows, in particular debt inflows. Foreign subsidiaries appear to be more likely to retain profits when faced with (bond inflow) controls to fund domestic credit. More generally, there appear to exist important interrelations between different sources of funding of subsidiaries of foreign banks.

4.5. Robustness

In this section, we check whether the found impact on financial FDI surges of global and contagion factors as well as of capital controls is robust to using different variables and different specifications.

We start by including lagged values of the global factors into the regression. This is important in the face of potential timing mismatches: for example, Lehman Brothers collapsed, and volatility spiked, in late 2008; the impact on surges in FDI inflows in 2008 may have been muted, particularly for green-field FDI, which has a longer planning horizon. Table A4 confirms however our previous results: lagged volatility and volatility overall (confirmed by a test for the joint significance of lagged and current volatility) does not appear to be a significant determinant of surges in sectoral FDI; the same holds for global (long-term) interest rates. The results on growth lends support for choosing to use current instead of lagged values of the global factors in our baseline: in the financial sector it is current rather than lagged growth, which is the more important determinant of FDI surges. The remaining results are robust to the inclusion of the lagged global factors.

Next, we assess - in Table A5 - the robustness to using different definitions of the global factors. First, we use the spread between Moody's BAA-AAA corporate bond yields as an alternative measure of global risk. The results remain unchanged. Second, we use growth in advanced countries as an alternative measure for global growth. Again,

[18] Specifically, we employ the indicator 'restrictions on the purchase of the respective instruments locally by nonresidents' as this matches data on gross FDI inflow surges (i.e. nonresidents buying assets in the respective economy) most closely.

[19] This is subject to the caveat that we do not have data on direct investment controls by sector.

with no noteworthy effect on the results. Finally, we substitute our measure of global interest rates (global long-term government bond yields) with a measure of global short-term interest rates, specifically the US T-bill rate. While results remain the same in the financial sector, we observe that the US T-bill has a significant impact on surges in the aggregate non-financial sector.

In Table A6, we check whether the baseline results on the global factors hold for different samples and different ways to identify surges in FDI. First, we exclude Eastern European and Central Asian economies (ECA) from the sample. Whereas results on global factors and capital controls remain robust, we observe a weaker coefficient on the regional contagion variable: it remains however significant at the 10% level. Second, we increase the regional threshold used to identify FDI surges from 80 to 90%. Results remain unchanged. Third, we double the size threshold below which we do not consider 'surges' as large enough (specifically to 0.6% of GDP). We find that all results are robust to this alternative classification of surges in FDI.[20]

Finally, we rerun all the robustness checks above for the results on bond inflows and money market controls in Table 4. They remain to have a significantly positive impact on surges in financial sector FDI in all cases.

To be more specific, we first compute the historical trend as the moving average of the sectoral FDI inflows to GDP in a country over a backward-looking 5-year window. We then characterize an inflow in year t for country i and sector j as a surge if it exceeds the historical trend by one standard deviation (which is also calculated over a backward-looking 5-year window).

5. Conclusion

In this paper, we examine episodes of large FDI flows from a sectoral perspective. Specifically, we look at the heterogeneity of macroeconomic outcomes associated with surges in different sectors and the different explanatory power of global, contagion and domestic factors in causing these episodes. We document that surges appear more cyclical in the financial than the non-financial sector. When we conduct a type of event-study analysis, we find that surges in FDI in the financial sector are accompanied by a significant decrease in GDP growth in the aftermath.

Attempting to understand the causes of FDI surges, we document substantial sectoral heterogeneity in the explanatory power of the various global, contagion, and domestic factors identified by the literature as important determinants of capital flows. In particular,

[20] We also decreased and increased the length of the window used to calculate the historical trend and historical standard deviation (to 4 and 6 years). Further, we increased the number of standard deviations an observation for current gross FDI inflows needs to exceed the historical trend for the method to identify a surge (to 1.5 and 2 standard deviations). None of this has a significant bearing on the key results. Finally, we also find that results are robust when we re-ran the regressions without a GDP threshold. All results are available on request.

we find that global and contagion factors, chiefly global growth and regional contagion, have a strong and positive impact on the probability of FDI surges in the financial sector.

Finally, we document a role for policies related to the capital account. Restrictions on instruments (bonds) which may constitute alternative sources of funding for subsidiaries of foreign banks tend to *increase* the likelihood of FDI surges. We also find some tentative evidence for regulations restricting lending and borrowing in foreign exchange to reduce the probability of surges in financial sector FDI. These findings may have implications for the design of future prudential regulation policies.

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Tables and figures

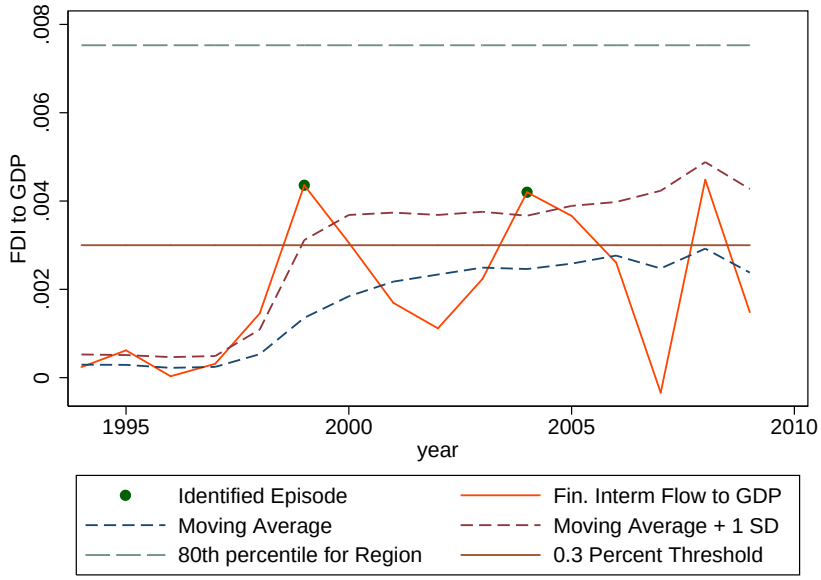

Figure 1: Identification of Sectoral FDI surges. The figure shows how we identify large sectoral FDI inflows in the financial intermediation sector for the case of South Korea. The moving average and the standard deviation (SD) are calculated over a backward-looking 5-year window (including the current year). See section 2 for a precise description of the data and the methodology used to identify a surge.

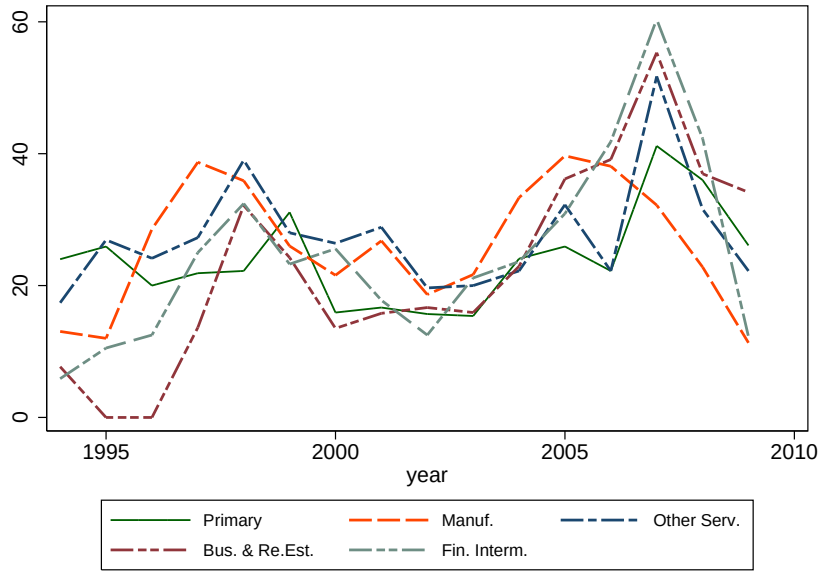

Figure 2: Share of countries experiencing surges. The figure reports for each sector and year the number of identified surge episodes normalized by the number of countries available in the sample.

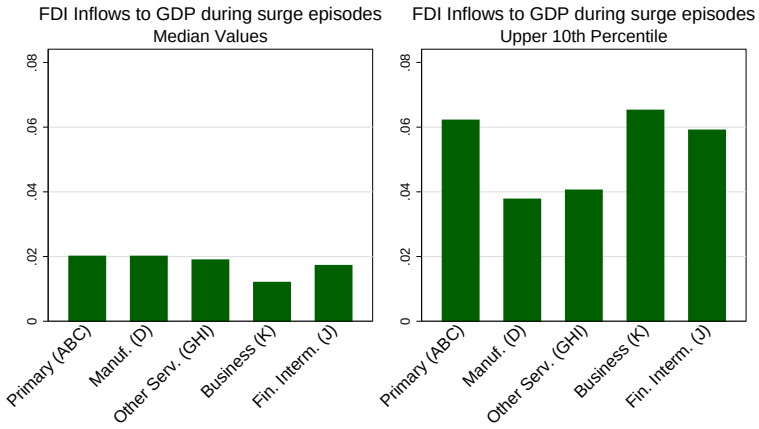

Figure 3: Size of Sectoral FDI Surges. The figure reports for each sector the median and upper 10th percentile values of FDI inflows to GDP ratio during surge episodes.

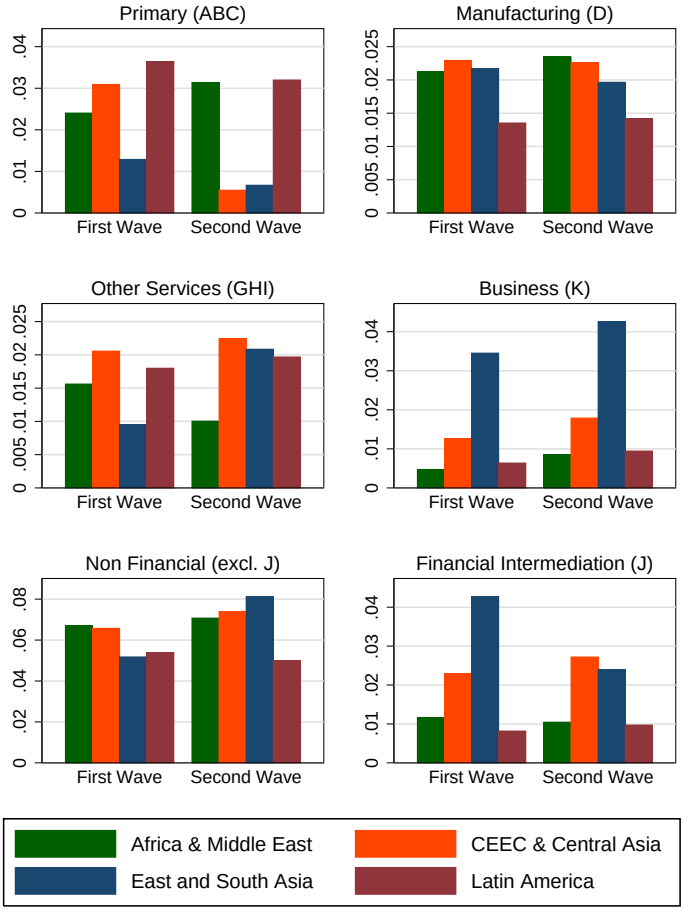

Figure 4: Two waves of FDI surges by region. The figure reports for each sector and region the median values of FDI inflows to GDP ratio during surge episodes for the period 1994-2001 (First wave) and the period 2002-2009 (Second wave). The letters in brackets refer to the ISIC Rev. 3 classification.

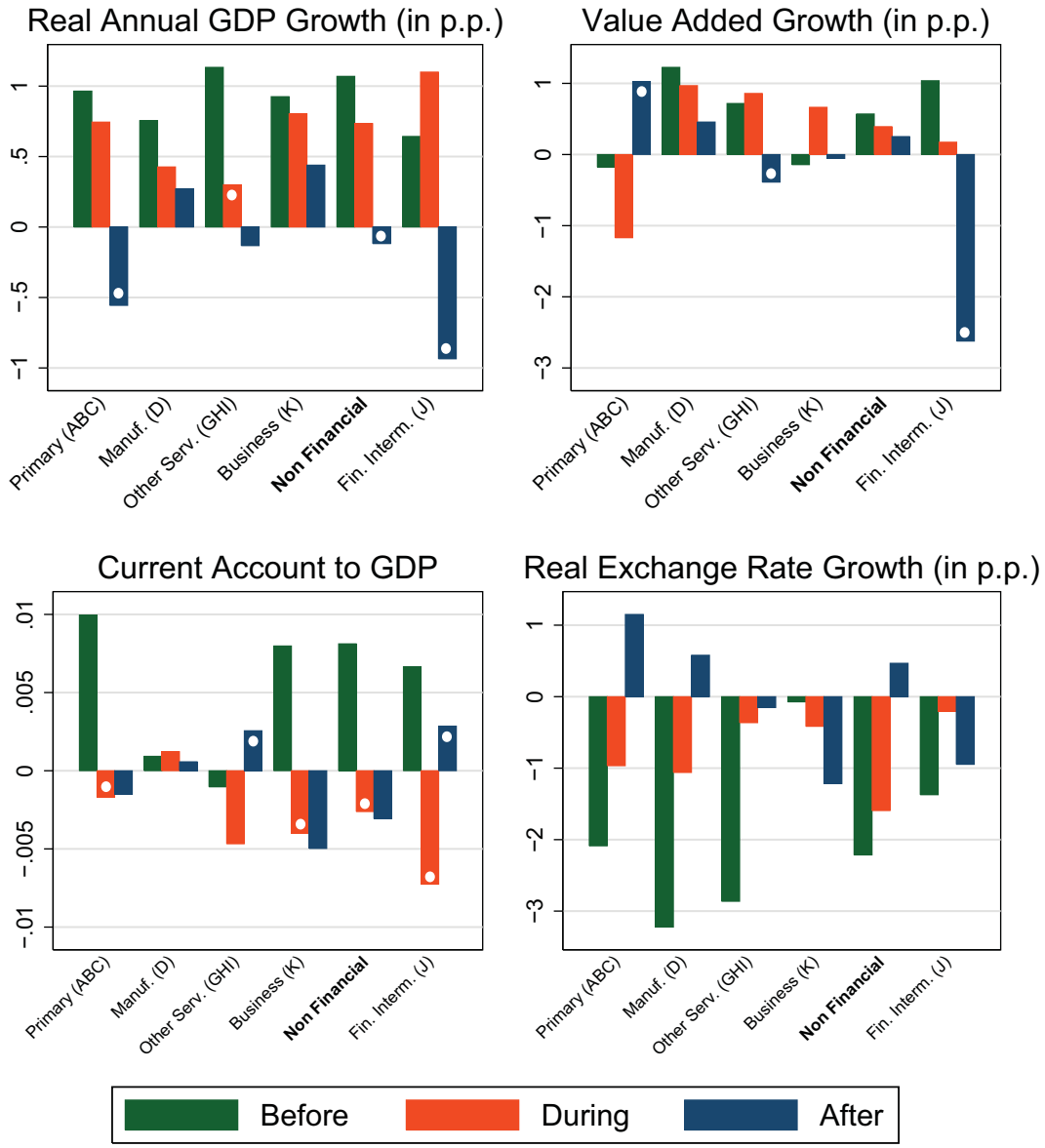

Figure 5: Event Study: Sectoral FDI surges and macroeconomic outcomes. The figure reports the mean values of the respective variables 2 years before, during booms, and 2 years after the identified episodes. For two consecutive events, we attribute the period after the first event and before the second to the aftermath of the first event; it is not used to calculate the median prior to the second event. All variables are in deviations from their trend (see section 3.2 for further details on the event study and the appendix for a definition of the variables). The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at least at the 10% level.

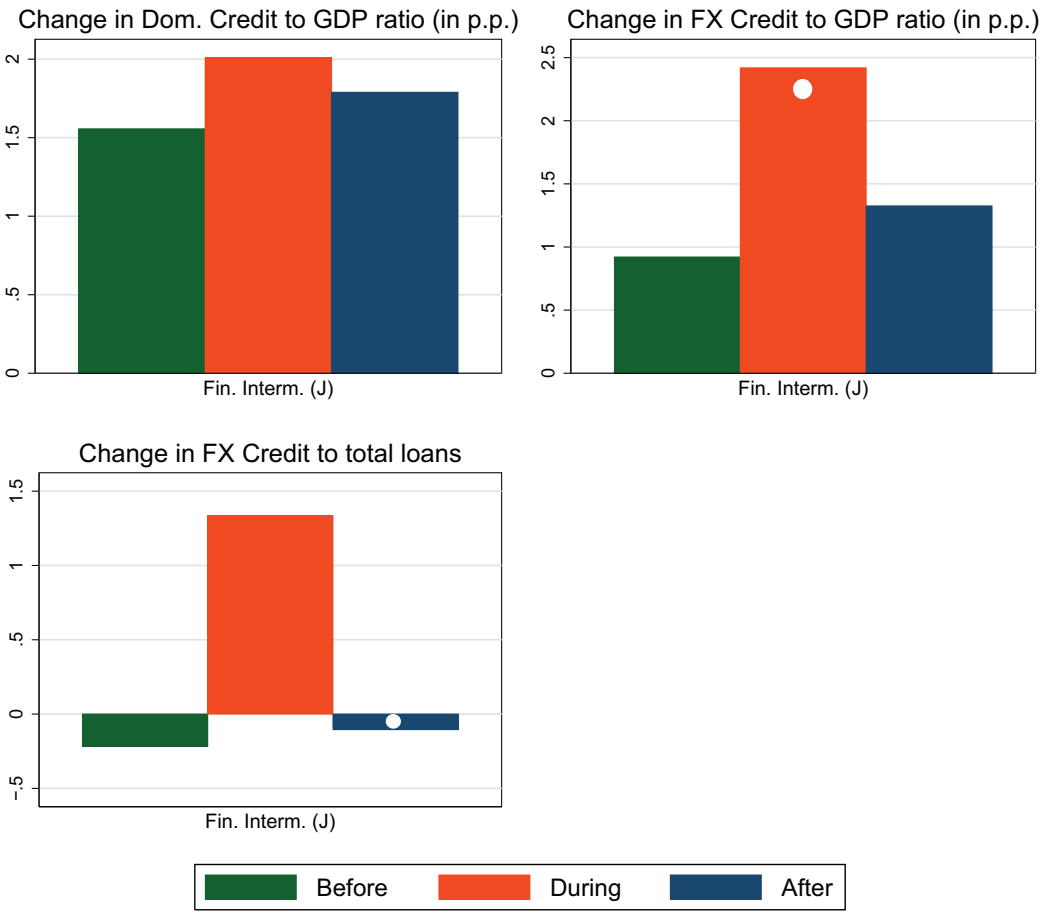

Figure 6: Event Study: Domestic Credit. The figure reports the mean values of the respective variables 2 years before, during booms, and 2 years after the identified episodes. For two consecutive events, we attribute the period after the first event and before the second to the aftermath of the first event; it is not used to calculate the median prior to the second event. See the appendix for sources and the definition of all variables. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at least at the 10% level.

Sector:	Non Financial (excl. J)	Financial Interm. (J)
Global Factors		
Volatility	-0.0169	-0.0247
	(0.0244)	(0.0275)
Global Growth	0.2413*	0.3833***
	(0.1240)	(0.1112)
Global Interest Rates	0.0015	0.0433
	(0.2505)	(0.2538)
F-Test for joint significance	*11.93****	*26.81****
Contagion		
Regional Contagion	0.0057	0.0327***
	(0.0103)	(0.0106)
Domestic Factors		
Per-capita Income	1.2836	1.7365
	(1.0764)	(1.2766)
GDP growth	0.0757	-0.0171
	(0.0518)	(0.0342)
Financial Openness	-0.2469	-0.4215***
	(0.1853)	(0.1636)
Debt to GDP	-2.6605**	-2.3140*
	(1.2131)	(1.2650)
Low Inflation Index	0.0180	0.0768
	(0.0635)	(0.0985)
Observations	531	518
Countries	56	56
no changes in dep. var.	6	6
Pseudo R2	0.0783	0.139
Likelihood Ratio	-201.3	-188.6
Share of 1's	0.301	0.313

Table 1: Determinants of sectoral FDI surges. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector (see section 2 for the methodology used to identify a surge). All domestic variables are lagged by one year unless noted otherwise. Regional contagion is measured by the share (in p.p) of countries in the same region which also experienced a surge in the respective sector in the preceding year. See the appendix for sources and the definition of all variables. The letter behind the respective sector refer to the ISIC Rev. 3.1 classification. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

Sector:	Non Financial	Financial Interm.	Non Financial	Financial Interm.
Global Factors				
Volatility	-0.0431	-0.0350	-0.0477*	-0.0306
	(0.0274)	(0.0325)	(0.0289)	(0.0353)
Global Growth	0.1751	0.3472***	0.1749	0.3736***
	(0.1227)	(0.1111)	(0.1301)	(0.1281)
Global Interest Rates	-0.0431	0.0738	0.0120	0.0872
	(0.2509)	(0.2587)	(0.2706)	(0.2767)
F-Test for joint significance	*13.93****	*27.95****	*15.67****	*27.52****
Contagion				
Regional	-0.0051	0.0302**	-0.0129	0.0258*
	(0.0119)	(0.0126)	(0.0148)	(0.0136)
Global	0.0222	0.0089	0.0175	0.0041
	(0.0170)	(0.0163)	(0.0171)	(0.0164)
Trade			0.0082	0.0085
			(0.0068)	(0.0052)
Domestic Factors				
Per-capita Income	1.0016	1.5145	1.3845	1.7702
	(1.0516)	(1.1989)	(1.2574)	(1.3310)
GDP growth	0.0790	-0.0204	0.0593	-0.0168
	(0.0532)	(0.0349)	(0.0529)	(0.0366)
Financial Openness	-0.2555	-0.4268**	-0.2912	-0.4852***
	(0.1848)	(0.1657)	(0.1807)	(0.1526)
Debt to GDP	-2.5739**	-2.2458*	-2.9587**	-2.3282*
	(1.2009)	(1.2275)	(1.2762)	(1.2921)
Low Inflation Index	0.0131	0.0753	0.0060	0.0546
	(0.0646)	(0.0982)	(0.0654)	(0.0952)
Observations	531	518	511	501
Countries	56	56	56	56
no changes in dep. var.	6	6	6	6
Pseudo R2	0.0831	0.140	0.0920	0.156
Likelihood Ratio	-200.3	-188.4	-185.6	-178.5
Share of 1's	0.301	0.313	0.294	0.313

Table 2: Regional vs. global and trade contagion. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. All domestic variables are lagged by one year unless noted otherwise. Global Contagion is measured by the share (in p.p) of countries across all regions which also experienced a surge in the respective sector in the preceding year. Trade Contagion is measured by the export-weighted share (in p.p.) of trading partners which experienced a surge in the respective sector in the preceding year (see section 4.1). See the appendix for sources and the definition of all variables. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

	(1) Non Financial	(2) Financial Interm.	(3) Non Financial	(4) Financial Interm.	(5) Non Financial	(6) Financial Interm.
Global Factors						
Volatility	-0.0295	0.0015	-0.0039	-0.0422	-0.0368	-0.0259
	(0.0313)	(0.0330)	(0.0314)	(0.0380)	(0.0312)	(0.0339)
Global Growth	0.1627	0.4575***	0.2478	0.1833	0.1316	0.5290***
	(0.1478)	(0.1611)	(0.2009)	(0.2238)	(0.1573)	(0.1356)
Global Interest Rates	-0.0111	0.0754	-0.1279	0.3350	0.3182	0.1526
	(0.3011)	(0.3155)	(0.3114)	(0.2616)	(0.3104)	(0.3044)
F-Test for joint significance	*6.16*	*15.81****	*4.61*	*10.67***	*7.95***	*32.58****
Contagion						
Regional	0.0090	0.0273**	0.0082	0.0341**	-0.0034	0.0250*
	(0.0105)	(0.0127)	(0.0120)	(0.0145)	(0.0148)	(0.0139)
Domestic Factors						
Per-capita Income	0.3608	3.9464**	0.3999	2.6825	2.1509	2.4999*
	(1.4682)	(1.7126)	(1.3801)	(1.6372)	(1.9679)	(1.4928)
GDP growth	0.0402	-0.0441	0.1008*	-0.0162	0.0147	-0.0526
	(0.0564)	(0.0414)	(0.0597)	(0.0446)	(0.0516)	(0.0384)
Financial Openness	0.1254	-0.4926**	-0.1975	-0.4108**	-0.3866*	-0.6072***
	(0.1699)	(0.2268)	(0.2017)	(0.1661)	(0.1992)	(0.2018)
Debt to GDP	-1.8342	-2.2344	-2.3569	-1.1291	-1.4265	-2.1621
	(1.8496)	(1.7156)	(1.5377)	(1.5987)	(1.2890)	(1.5029)
Low Inflation Index	0.0738	0.0969	-0.0144	-0.0432	-0.0567	0.0229
	(0.0812)	(0.1187)	(0.0677)	(0.0971)	(0.0860)	(0.1290)
Value added growth	-0.0056	0.0063				
	(0.0982)	(0.0269)				
Privatization (Proceeds to GDP)			0.1014	1.2309**		
			(0.1364)	(0.5307)		
Financial System					-0.1328	1.0791
					(0.6288)	(0.6825)
Observations	363	341	421	405	345	341
Countries	41	41	48	48	35	35
no changes in dep. var.	6	7	5	5	3	3
Pseudo R2	0.0477	0.134	0.0615	0.156	0.0632	0.177
Likelihood Ratio	-135.7	-122.5	-159.2	-144.1	-127.8	-116.0
Share of 1's	0.270	0.317	0.306	0.321	0.284	0.308

Table 3: Other domestic factors. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. All domestic variables are lagged by one year unless noted otherwise. Value added growth is smoothed using an HP Filter with a smoothing parameter of 6.25 for annual data. Privatization proceeds (not lagged) are from the World Banks privatization data base. See the appendix for sources and the definition of all variables. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

	(7) Non Financial	(8) Financial Interm.	(9) Non Financial	(10) Financial Interm.
Global Factors				
Volatility	-0.0337	-0.0388	-0.0337	0.0056
	(0.0480)	(0.0446)	(0.0397)	(0.0481)
Global Growth	0.1582	0.1568	0.1195	0.5656***
	(0.2165)	(0.2576)	(0.1829)	(0.1773)
Global Interest Rates	-0.1557	0.1264	0.3126	-0.1148
	(0.4421)	(0.3612)	(0.3672)	(0.4573)
F-Test for joint significance	*2.02*	*5.33*	*7.33**	*33.60****
Contagion				
Regional	0.0226	0.0431**	0.0083	0.0186
	(0.0169)	(0.0168)	(0.0132)	(0.0139)
Domestic Factors				
Per-capita Income	0.7223	4.4028**	1.5124	2.3686*
	(2.9578)	(1.9242)	(1.2254)	(1.4043)
GDP growth	0.0598	-0.0498	0.0472	-0.0366
	(0.0516)	(0.0378)	(0.0525)	(0.0348)
Financial Openness	-0.4213**	-0.9505***	-0.4224*	-0.5691***
	(0.1712)	(0.2086)	(0.2337)	(0.2141)
Debt to GDP	-0.7305	-1.4031	-0.3708	-1.2279
	(1.4912)	(1.4537)	(1.2655)	(1.6231)
Low Inflation Index	-0.1081	-0.0096	-0.0361	0.0794
	(0.0982)	(0.1483)	(0.0765)	(0.1233)
Financial Reform	-0.0937	-3.3825		
	(3.6064)	(3.4340)		
FX Restrictions			-1.6942*	-1.7438*
			(0.9413)	(0.9752)
Observations	279	265	365	350
Countries	42	42	37	37
no changes in dep. var.	10	10	3	5
Pseudo R2	0.0813	0.172	0.0825	0.146
Likelihood Ratio	-99.88	-86.69	-135.4	-122.8
Share of 1's	0.297	0.287	0.288	0.303

Table 3 Continued. Financial Reform is from Abiad et al. (2008). FX restrictions records restrictions on borrowing and lending in foreign exchange and is taken from Ostry et al. (2011).

Capital Control Var.:	(1) Direct Inv. Controls	(2) Bond Inflow Controls	(3) Equity Inflow Controls	(4) Money Market Infl. Controls.
Coefficient	0.1183	1.9312***	1.7968	1.6414**
	(0.8683)	(0.745)	(1.147)	(0.820)
Baseline Controls	Yes	Yes	Yes	Yes
Observations	267	242	267	267
Countries	40	40	40	40
no changes in dep. var.	6	6	6	6
Pseudo R2	0.0726	0.119	0.0914	0.103
Likelihood Ratio	-97.52	-81.61	-95.55	-94.27
Share of 1's	0.281	0.285	0.281	0.281

Table 4: The role of capital controls. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in financial FDI inflows in the respective sector. The regression includes all the baseline controls except for the index of capital account openness. The capital control indices are taken from Schindler (2009) and lagged by one year. See the appendix for sources and the definition of all variables. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

Appendices

A. Sectoral FDI Inflows

Sector-level data on FDI inflows stems from several sources. The UNCTAD FDI country profiles include data on various countries; the level of sectoral disaggregation is quite high (data is present for most of the ISIC Rev. 3.1 or ISIC Rev. 2. level-two sub-sectors). For more recent years, these are extended using data from the International Trade Center (ITC). The Association of Southeast Asian Nations (ASEAN) provides data for its member states starting in 1999. The Organisation for Economic Co-operation and Development (OECD) gives detailed data for its member states starting from 1985. Some data for Eastern and Central European economies are taken from the Vienna Institute for International Economic Studies (WIIW) FDI database. Various country sources are used to increase the country coverage, fill the gaps, and increase the length of the data base. Overall, sectoral FDI inflows data of different degrees of aggregation between 1985 and 2009 are obtained for 91 countries from Latin and North America, Asia, Africa and Western, Eastern and Central Europe.

While building the data base various issues had to be confronted. First, as a quality check on the sectoral data, we exclude countries for which deviations between total (realized) FDI inflows given by our sectoral FDI data source and the IMF's international financial statistics (IFS) data are too large. These differences may have several reasons: subsequent updates of the data (incorporated in IFS but not in older sectoral data sets), different data issuers, differences between approved and realized FDI, the fact that for some countries a component of FDI - such as intra-company loans or reinvested earnings - is missing, and finally to the fact that, for some countries, FDI inflows had to be backed out from stock data, for which valuation effects might play a role.[21] Specifically, we exclude countries for which the ratio between FDI inflows from IFS and total FDI flows from the sectoral data source is above 1.5 or below 0.66; this drops Algeria, Azerbaijan, Botswana, Brunei, Congo (Dem. Rep.), Malawi, Mongolia, South Africa (only stock-based data is available), Ghana, Namibia, Peru (stocks), India (only a subset of FDI data available), Macao, Taiwan, Mauritania, Nigeria and Yemen from the sample.

Second, we close gaps not larger than one year by substituting missing values with zero if unspecified flows are small (specifically, if they are below 0.5% of GDP). If this is not the case, we drop the flows before or after the gap (maximizing the length of the series).

Third, if data are missing across all sectors for a maximum period of 2 years (and unspecified flows are small), we estimate the missing flows data using aggregate IFS data and the shares of the respective sectors in aggregate FDI in the 2 years before and after the gap. We think that the alternatives of (i) setting flows in the gap years to zero or (ii)

[21] Note that the method yields negative inflows for some observations (when the stock of FDI declines); however, data which are based on inflows can also contain negative numbers due to profit repatriation etc.

of dropping all years before the gap (despite unspecified flows being low) are less desirable; this procedure is applied for Egypt (1 year), Kyrgyz Republic (2 years) and Paraguay (2 years).

The final data set used in this study - taking into account the adjustments described above and excluding data for 22 industrial countries (World Bank classification, i.e. Western Europe, North America and Japan) - contains data for 69 emerging and developing economies (see Appendix B for an overview of the sample).[22]

B. Sample

Albania (2002–2009), Argentina (1992–2009), Armenia (1998–2009), Bangladesh (1998–2009), Bolivia (1990–2009), Bosnia & Herzegovina (2004–2009), Brazil (1996–2009), Bulgaria (1998–2009), Cambodia (2000–2009), Chile (1985–2009), China (1997–2009), Colombia (1994–2009), Costa Rica (1992–2009), Croatia (1993–2009), Czech Republic (1993–2009), Dominican Republic (1993–2009), Ecuador (1992–2009), Egypt (2001–2009), El Salvador (1998–2009), Estonia (1994–2009), Ethiopia (1992–2000), Guyana (1992–1999), Honduras (1993–2009), Hong Kong (1998–2009), Hungary (1999–2009), Iceland (1988–2009), Indonesia (1999–2009), Israel (1998–2007), Jamaica (1999–2009), Kazakhstan (1993–2009), Kyrgyz Republic (1995–2009), Laos (1999–2006), Latvia (1993–2009), Lithuania (1997–2009), Macedonia (1997–2008), Madagascar (2003–2009), Malaysia (1999–2009), Mauritius (1990–2009), Mexico (1985–2009), Morocco (1996–2009), Mozambique (2001–2009), Myanmar (1999–2006), Nicaragua (1991–2009), Oman (2004–2009), Pakistan (2001–2009), Panama (1998–2009), Paraguay (1990–2009), Philippines (1999–2009), Poland (1994–2009), Romania (2003–2008), Russia (1999–2009), Saudi Arabia (1999–2009), Serbia (2004–2009), Singapore (1999–2006), Slovak Republic (1998–2009), Slovenia (1995–2009), South Korea (1985–2009), Sri Lanka (2001–2009), Swaziland (2002–2009), Tajikistan (2003–2009), Thailand (1990–2009), Trinidad and Tobago (1990–2009), Tunisia (1990–2009), Turkey (1992–2009), Uganda (1993–2009), Ukraine (2002–2009), Uruguay (2001–2008), Venezuela (1990–2009), Vietnam (1999–2006)

Maximum availability of FDI inflows data in brackets.

[22] We include Iceland into the sample despite being part of the World Bank industrial region because the IMF includes it into its VEE (vulnerability exercise for EMEs) sample for which we have foreign exchange credit data.

C. Other Data

Variable	Description
Global Factors	
Volatility (VIX)	We measure volatility using the VIX index calculated by the Chicago Board Options Exchange. It measures implied volatility by using prices for a range of options on the S&P 100 index.
Volatility (Moody's)	Alternatively, we measure volatility/risk as the spread between Moody's BAA-AAA corporate bond yields. It is obtained from the St. Louis FED.
Global Growth (World real GDP growth)	Real GDP growth of the aggregate world economy is taken from the World Bank (WDI).
Growth in advanced countries	Growth in advanced economies taken from the IMF's IFS.
Global (long-term) interest rate	Global long-term interest rates are measured as the average of the long-term government bond yields of British, German, Japanese and US bonds. The data are taken from IFS (Line 61 ZF).
US T-Bill	IMF (IFS).
Contagion	
Regional/Global Contagion	Regional and global contagion is based on surges in sectoral FDI inflows identified using the sectoral FDI data as described in section 4. The variables measures the share (in percentage points) of countries in the same region/or globally which also experienced a boom in the respective sector in the preceding year.
Trade Contagion	Trade contagion is built using bilateral export data from WITS (World Integrated Trade solution) database. Trade Contagion is measured by the export-weighted share (in percentage points) of trading partners which experienced a surge in the respective sector in the preceding year (see section 4 on further details).
Domestic Factors	
Current Account	Data on the current account are taken from IFS (BoP statistics).
Real GDP Growth	The annual percentage change of constant price GDP is taken from IMF's WEO data base.
Domestic Credit to GDP	Private credit of deposit money banks and other financial institutions to GDP is taken from Beck et al. (2000)(updated to 2010).
Financial System	We measure the quality and depth of the financial system as stock market capitalization to GDP (ie the value of listed shares to GDP) taken from Beck et al. (2000).
Sectoral Value Added Growth	Disaggregated value added data are taken from the United Nations Statistics Division (UNSD). We employ both the UNSD estimates of gross-value by kind of economic activity in constant (2005) as well as the UNSD data that are based on official national accounts country data. Data for USD for the agricultural (AB), manufacturing (D) and other services (GHI) sector are from the former data base and data for the mining (C), financial intermediation (J) and business and real estate sector (K) are from the latter data base. Specifically, we obtain disaggregated value added data for C, J and K both in constant and current local currency. We transform this data into constant 2005 USD using the average dollar exchange rate (from IFS) of the respective base year.

Variable	Description
Real Effective Exchange Rate	The REER data are based on the CPI-based real effective exchange rate from IFS (line RECZF).
Foreign currency loans	The data on the ratio of foreign currency loans to total loans and the ratio of foreign currency loans to GDP are from the IMF (Ostry et al. (2011)).
Income per capita (PPP)	PPP Converted GDP Per Capita (Chain Series), at 2005 constant prices, is taken from the Penn World Tables 7.0.
Public Debt to GDP	The data on gross government debt-to-GDP ratio is taken from Abbas et al. (2010).
Low Inflation Index	To measure the soundness of macroeconomic policies, we build an index based on inflation data from WEO, which assigns a value between 0 and 12 to different inflation intervals. The lower the value, the lower the inflation rate (0 for inflation rates below 2% and 12 for inflation rates above 120%.)
Privatization Proceeds to GDP	For emerging markets, the World Bank's and the International Finance Corporation's privatization database contains data on the proceeds of privatizations in USD for the *primary*, *energy*, *manufacturing and services*, *infrastructure* and *financial sector*. In order to achieve the best possible match with the sectoral FDI data, we combine proceeds in the primary and energy to obtain the relevant privatization variable for the primary sector (ABC). Manufacturing and services refers primarily to the manufacturing sector (D). *Infrastructure* is dominated by privatization in the transport and communication sector and therefore matched with the other services (GHI) sector. ABC+D+GHI gives privatization proceeds in the aggregate non-financial sector. Finally, we match the entry *financial sector* with our data on the financial sector (J) (however, proceeds in the *financial sector* may contain proceeds from privatization in the real estate sector).
Financial Openness	To measure financial openness, we employ the index of capital account openness (KAOPEN) from Chinn and Ito (2008). The index runs from -1.85 to 2.5, where higher values imply fewer restrictions on the capital account or fewer financial restrictions on the current account.
Capital inflows controls by type of flow	Data on capital flow specific capital controls is taken from Schindler (2009). Specifically, we use direct investment inflow restrictions and measure bond, equity, money market inflow controls using restrictions on the purchase of bonds/equity and money market instruments locally by nonresidents. All variables are 0/1 dummies that indicate whether restrictions are in place.
Financial Reform Index	The financial reform index is taken from Abiad et al. (2008) and records financial policies along six different dimensions: credit controls and reserve requirements, interest rate controls, entry barriers, state ownership, policies on securities markets, banking regulations; we recoded their index to exclude restrictions on the capital account.
FX restrictions	This variable records restrictions on financial sector's lending locally in foreign exchange, purchase of locally issued securities denominated in forex, differential treatment of deposit accounts in foreign exchange, and restrictions on open FX positions; it is taken from Ostry et al. (2011).

Appendix tables

Variable	Mean	Median	Std.Dev.	Min	Max	Obs.
Global Factors						
Volatility	20.243	19.759	6.504	12.389	32.693	1,242
Global Growth	2.699	3.099	1.428	-1.948	4.284	1,242
Global Interest Rates	4.675	4.135	1.394	2.868	7.815	1,242
Domestic Factors						
Current Account to GDP	-0.028	-0.028	0.075	-0.306	0.278	1,167
Per-capita Income (PPP, log)	8.606	8.759	0.999	5.813	10.820	1,204
GDP growth	4.276	4.800	4.538	-14.460	18.290	1,202
Debt to GDP	0.546	0.459	0.368	0.037	2.362	1,129
Inflation	40.692	6.885	278.537	-7.220	5,273.450	1,204
Inflation Index	3.380	2.500	3.045	0	12	1,204
Domestic Credit to GDP (GDF)	0.401	0.297	0.322	0.000	1.703	1,195
Financial System (Stock Market)	0.327	0.228	0.328	0.000	1.803	545
FX Credit to GDP	0.143	0.081	0.181	0.000	1.936	359
FX Credit to GDP (Change)	0.011	0.004	0.033	-0.128	0.149	324
FX Credit to total loans	2.410	0.352	14.137	0.000	100	439
FX Credit to total loans (Change)	0.002	0.000	0.057	-0.231	0.235	405
Privatization proceeds to GDP (Non Financial)	0.441	0.006	0.961	0.000	6.632	984
Privatization proceeds to GDP (Financial)	0.045	0.000	0.165	0.000	1.395	984
Capital Controls						
Financial Openness (Chinn & Ito Index)	0.422	0.097	1.452	-1.844	2.478	1,150
Direct Investment Controls	0.362	0	0.481	0	1	506
Bond Inflow controls	0.184	0	0.388	0	1	414
Equity Inflow Controls	0.241	0	0.428	0	1	506
Money Market Inflow Controls	0.243	0	0.429	0	1	506
Financial Regulation						
Financial Reform Index	0.645	0.667	0.191	0.048	1	685
FX Restrictions	0.574	0.500	0.322	0	1	531

Table A1: Summary Statistics I. All growth rates are in percentage points. See the appendix for a definition of the variables. Summary statistics are given for the period 1992-2010.

Sector		Mean	Median	Std.Dev.	Min	Max	Obs.
Primary (ABC)	FDI Inflows to GDP	0.008	0.001	0.017	-0.027	0.165	699
	Value Added Growth	2.363	2.692	6.749	-40.564	33.113	721
	Share of VA in total VA	0.177	0.151	0.125	0.000	0.698	749
	Regional Contagion	22.602	20.000	13.951	0.000	66.667	683
	Trade Contagion	16.217	8.111	19.383	0.000	99.022	944
Manufacturing (D)	FDI Inflows to GDP	0.009	0.006	0.013	-0.074	0.153	780
	Value Added Growth	4.682	4.734	8.044	-34.586	40.959	1,096
	Share of VA in total VA	0.176	0.174	0.074	0.026	0.438	1,104
	Regional Contagion	25.086	23.529	11.935	0.000	75.000	765
	Trade Contagion	28.728	24.874	23.087	0.000	98.386	944
Other Services (GHI)	FDI Inflows to GDP	0.008	0.004	0.013	-0.032	0.108	780
	Value Added Growth	5.382	5.805	6.059	-23.729	37.089	1,099
	Share of VA in total VA	0.243	0.245	0.057	0.068	0.403	1,104
	Regional Contagion	26.086	25.000	12.033	0.000	75.000	765
	Trade Contagion	22.182	16.401	20.439	0.000	99.975	944
Business (K)	FDI Inflows to GDP	0.008	0.002	0.026	-0.006	0.296	567
	Value Added Growth	4.279	3.823	4.525	-19.300	23.838	608
	Share of VA in total VA	0.108	0.108	0.048	0.022	0.242	635
	Regional Contagion	24.739	25.000	15.258	0.000	75.000	542
	Trade Contagion	26.089	18.040	25.902	0.000	95.118	944
Non Financial (excl. J)	FDI Inflows to GDP	0.038	0.028	0.041	-0.128	0.417	675
	Value Added Growth	4.456	4.673	3.749	-11.273	17.736	606
	Share of VA in total VA	0.955	0.961	0.027	0.841	0.992	636
	Regional Contagion	28.777	29.412	14.102	0.000	80.000	657
	Trade Contagion	27.464	22.276	23.294	0.000	99.431	944
Financial Interm. (J)	FDI Inflows to GDP	0.009	0.003	0.023	-0.022	0.387	675
	Value Added Growth	6.970	6.704	10.830	-33.961	50.594	606
	Share of VA in total VA	0.045	0.039	0.027	0.008	0.159	636
	Regional Contagion	25.732	23.077	16.862	0.000	81.818	657
	Trade Contagion	23.733	16.381	22.724	0.000	98.020	944

Table A2: Summary Statistics II. All growth rates and the contagion variables are in percentage points. See the appendix for a definition of the variables. Summary statistics are given for the period 1994-2009.

Sector	(1) Primary (ABC)	(2) Manuf. (D)	(3) Other Serv. (GHI)	(4) Business (K)
Global Factors				
Volatility	0.0369	-0.0487*	0.0339	-0.0370
	(0.0321)	(0.0276)	(0.0304)	(0.0262)
Global Growth	0.2457*	0.1787	0.2918**	0.1523
	(0.1374)	(0.1129)	(0.1371)	(0.1549)
Global Interest Rates	-0.0300	-0.2677	0.0253	-0.2699
	(0.2597)	(0.2320)	(0.2141)	(0.4172)
F-Test for joint significance	*3.91*	*12.72****	*8.04***	*9.51***
Contagion				
Regional	0.0004	-0.0020	-0.0135	0.0069
	(0.0117)	(0.0103)	(0.0100)	(0.0146)
Domestic Factors				
Per-capita Income	2.0312	-0.5399	2.1192**	2.3456
	(2.1335)	(1.4796)	(0.8716)	(1.7081)
GDP growth	0.0717*	0.0805**	0.0348	0.0426
	(0.0428)	(0.0379)	(0.0389)	(0.0675)
Financial Openness	0.1736	-0.2728	-0.0960	0.2798
	(0.2695)	(0.1750)	(0.1692)	(0.3043)
Debt to GDP	-0.2033	-1.2750	-1.4187	-4.6242**
	(0.6344)	(0.8506)	(1.2222)	(1.8583)
Low Inflation Index	0.2118**	0.0644	0.1468**	0.0455
	(0.0977)	(0.0886)	(0.0742)	(0.1242)
Observations	401	563	549	328
Countries	56	64	63	48
no changes in dep. var.	17	13	14	16
Pseudo R2	0.0538	0.0736	0.0467	0.168
Likelihood Ratio	-144.2	-219.1	-217.0	-120.3
Share of 1's	0.349	0.288	0.322	0.387

Table A3: Other Sectors. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. All domestic variables are lagged by one year unless noted otherwise. Regional contagion is measured by the share (in p.p) of countries in the same region which also experienced a surge in the respective sector in the preceding year. See the appendix for sources and the definition of all variables. The letter behind the respective sector refer to the ISIC Rev. 3.1 classification. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

Sector	Non Financial (excl. J)	Financial Interm. (J)
Global Factors		
Volatility (L)	-0.0332	-0.0270
	(0.0385)	(0.0429)
Volatility	-0.0062	-0.0154
	(0.0245)	(0.0315)
F-Test for joint signif.	*0.99*	*1.20*
Global Growth (L)	0.2545	0.0022
	(0.1710)	(0.2382)
Global Growth	0.0061	0.5140***
	(0.1753)	(0.1780)
F-Test for joint signif.	*2.32*	*9.66****
Global Interest Rates (L)	-0.6646	0.7793
	(0.4507)	(0.5425)
Global Interest Rates	0.5490	-0.8565
	(0.4704)	(0.6639)
F-Test for joint signif.	*2.20*	*2.06*
Contagion		
Regional	-0.0015	0.0305***
	(0.0107)	(0.0117)
Domestic Factors		
Per-capita Income	-0.0094	2.0743
	(1.2271)	(1.5219)
GDP growth	0.0652	-0.0474
	(0.0544)	(0.0394)
Financial Openness	-0.2847	-0.4225***
	(0.1930)	(0.1621)
Debt to GDP	-2.7300**	-2.1642*
	(1.1930)	(1.2691)
Low Inflation Index	0.0182	0.0693
	(0.0652)	(0.0991)
Observations	531	518
Countries	56	56
no changes in dep. var.	6	6
Pseudo R2	0.0908	0.152
Likelihood Ratio	-198.6	-185.7
Share of 1's	0.301	0.313

Table A4: Lagged Global Factors. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. "L" indicates that the variable is lagged by one year. All domestic variables are lagged by one year unless noted otherwise. Regional contagion is measured by the share (in p.p) of countries in the same region which also experienced a surge in the respective sector in the preceding year. See the appendix for sources and the precise definition of all variables. The estimates are obtained using the conditional logit framework with fixed effects. Robust standard errors are clustered at the country level. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)
	Alternative Vol. Measure		Growth in Advanced		US T-Bill	
	Non Financial	Financial Interm.	Non Financial	Financial Interm.	Non Financial	Financial Interm.
Global Factors						
Volatility	-0.6014	-0.6851	-0.0215	-0.0403	-0.0057	-0.0214
	(0.4481)	(0.6572)	(0.0251)	(0.0259)	(0.0261)	(0.0275)
Global Growth	0.1962	0.3491***	0.2290*	0.3079***	0.1237	0.3281***
	(0.1285)	(0.1283)	(0.1219)	(0.0965)	(0.1174)	(0.1156)
Global Interest Rates	-0.0525	-0.0277	-0.0232	0.0417	0.2276**	0.0924
	(0.2555)	(0.2712)	(0.2547)	(0.2466)	(0.1099)	(0.1041)
F-Test for joint significance	*14.85****	*26.83****	*12.96****	*23.99****	*14.82****	*27.50****
Contagion						
Regional	0.0060	0.0318***	0.0054	0.0343***	-0.0055	0.0312***
	(0.0102)	(0.0099)	(0.0103)	(0.0107)	(0.0111)	(0.0107)
Domestic Factors						
Per-capita Income	1.7895*	2.3920*	1.7853	2.2637	2.0693**	1.9160
	(1.0856)	(1.3041)	(1.2116)	(1.3960)	(0.9958)	(1.1795)
GDP growth	0.0742	-0.0176	0.0782	-0.0134	0.0758	-0.0185
	(0.0512)	(0.0353)	(0.0519)	(0.0342)	(0.0513)	(0.0346)
Financial Openness	-0.2262	-0.4020***	-0.2322	-0.4076**	-0.2170	-0.4114**
	(0.1849)	(0.1534)	(0.1811)	(0.1595)	(0.1703)	(0.1624)
Debt to GDP	-2.5853**	-2.1930*	-2.5947**	-2.1344*	-2.1544*	-2.0333
	(1.2144)	(1.2566)	(1.2216)	(1.2792)	(1.2444)	(1.2392)
Low Inflation Index	0.0162	0.0729	0.0175	0.0641	-0.0211	0.0623
	(0.0645)	(0.1010)	(0.0626)	(0.0968)	(0.0666)	(0.0925)
Observations	539	526	539	526	539	526
Countries	56	56	56	56	56	56
no changes in dep. var.	6	6	6	6	6	6
Pseudo R2	0.0830	0.132	0.0818	0.126	0.0922	0.131
Likelihood Ratio	-204.0	-194.3	-204.2	-195.6	-201.9	-194.5
Share of 1's	0.297	0.308	0.297	0.308	0.297	0.308

Table A5: Robustness to alternative measures. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. In columns (1) and (2), volatility is measured using the spread between Moody's BAA-AAA corporate bond yields. In columns (3) and (4), global growth is measured using growth in advanced countries. In columns (5) and (6), global interest rates are measured using the US T-bill rate. See the appendix for sources and the precise definition of all variables.

	(1)	(2)	(3)	(4)	(5)	(6)
	Excluding ECA Countries		Higher Regional Threshold		Higher GDP Threshold	
	Non Financial	Financial Interm.	Non Financial	Financial Interm.	Non Financial	Financial Interm.
Global Factors						
Volatility	-0.0225	-0.0021	-0.0463*	-0.0332	-0.0148	-0.0297
	(0.0312)	(0.0324)	(0.0268)	(0.0293)	(0.0247)	(0.0276)
Global Growth	0.2077	0.4007***	0.1467	0.3437***	0.2422*	0.3968***
	(0.1532)	(0.1466)	(0.1194)	(0.1259)	(0.1239)	(0.1370)
Global Interest Rates	0.1146	0.3556	-0.1278	0.1433	0.0441	0.1724
	(0.3634)	(0.3053)	(0.2667)	(0.3047)	(0.2391)	(0.3001)
F-Test for joint significance	*6.71**	*19.81****	*8.56***	*23.18****	*11.55****	*24.22****
Contagion						
Regional	0.0125	0.0261*	0.0078	0.0243**	0.0050	0.0301***
	(0.0145)	(0.0152)	(0.0108)	(0.0112)	(0.0100)	(0.0111)
Domestic Factors						
Per-capita Income	3.2302	5.2556**	0.7870	2.7580*	1.4250	3.2552*
	(2.2781)	(2.3862)	(1.1986)	(1.4461)	(1.0484)	(1.7691)
GDP growth	0.0565	-0.0664	0.0805*	-0.0197	0.0764	0.0126
	(0.0676)	(0.0427)	(0.0471)	(0.0434)	(0.0522)	(0.0385)
Financial Openness	-0.1658	-0.4845**	-0.3589	-0.3902**	-0.2570	-0.5941***
	(0.3168)	(0.2077)	(0.2516)	(0.1744)	(0.1817)	(0.1760)
Debt to GDP	-1.5614	-1.4609	-3.1589***	-1.3947	-2.6506**	-3.7039**
	(1.6692)	(1.4198)	(1.1791)	(1.4359)	(1.2174)	(1.5113)
Low Inflation Index	-0.0071	0.1972	0.0180	0.0852	0.0195	0.0333
	(0.0849)	(0.1424)	(0.0595)	(0.0918)	(0.0635)	(0.1233)
Observations	306	299	496	512	531	455
Countries	35	35	56	56	56	56
no changes in dep. var.	5	5	9	7	6	13
Pseudo R2	0.0840	0.141	0.0879	0.136	0.0784	0.190
Likelihood Ratio	-110.3	-105.9	-186.3	-172.5	-200.0	-149.1
Share of 1's	0.288	0.298	0.260	0.250	0.299	0.305

Table A6: Robustness to alternative specifications. The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflows in the respective sector. In columns (1) and (2), the sample does not include Eastern European and Central Asian economies (ECA). In columns (3) and (4), the regional threshold used to identify FDI surges is 90%. In columns (5) and (6), we double the size threshold below which we do not consider "surges" as large enough (i.e. to 0.6% of GDP). See the appendix for sources and the precise definition of all variables.