Surfing the Capital Waves: A sector-level examination of surges in FDI inflows

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Abstract

We examine episodes of large gross FDI inflows – surges – at the sectoral level between 1994 and 2009 for 95 emerging-market and industrial countries. We find that surges in the primary and manufacturing sectors are less cyclical and associated with lower macroeconomic volatility than surges in the business and finance sectors. The likely explanation for this result seems to be the expansion of credit associated with these flows. Turning to the determinants of surges, we find that global and contagion factors have a stronger effect in the services than the manufacturing sector; surges in financial sector FDI are particularly contagious in emerging market countries. With regard to domestic factors, we find that (i) high public debt reduces the likelihood of experiencing FDI surges in the manufacturing and trade/transport sector, that (ii) high growth pulls in FDI in the manufacturing sector and that (iii) privatization is strongly associated with FDI surges in the manufacturing and financial sector. Finally, we document a role for capital controls: they tend to increase the likelihood of FDI surges in the manufacturing, other services, and financial sector.

JEL Classification: F21, F32
Key Words: Foreign Direct Investment, Surges, Capital Flow Determinants, Sectoral Level

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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 the causes and effects of "surges" and "bonanzas" in capital flows.[2] Capital inflows bring many benefits such as complementing limited domestic savings, risk sharing, and contributing to the development of financial markets. A wide literature has however documented the risks associated with periods of large inflows of capital as they contribute to amplifying economic cycles, fuel credit booms, appreciate the real exchange rate and are potentially subject to sudden reversals.[3]

This paper is – to our knowledge – the first to examine episodes of large gross capital inflows (which we will call surges) from a sectoral perspective. Specifically, we focus on surges in foreign direct investment (FDI) at the sectoral level. This focus is motivated by several reasons: first, as shown by Forbes and Warnock (2011), capital flows through FDI are characterized by similar patterns of surges and stops as other types of capital flows. Our study can shed light on which sectors are driving this volatility. Second, not all FDI flows appear equal. During the global financial crisis, Ostry et al. (2010) find that countries with higher stocks of financial sector FDI suffered sharper growth declines and that – vice versa – higher stocks of non-financial FDI were associated with smaller declines. They point to a strong association of financial sector FDI with credit denominated in foreign currency as a potential channel. Third, Alfaro and Charlton (2007) and Aykut and Sayek (2007) document the importance of controlling for the sectoral composition of FDI when examining the growth effects of FDI. Finally, there is evidence from various crises episodes that the overheating of economies is often driven by the services sectors, such as construction, finance or real estate; capital flows in these sectors can contribute to overheating by fueling

[2] For cyclicality of capital flows see Kaminsky, Reinhart and Végh (2005). For the literature on surges/bonanzas, see for example Reinhart and Reinhart (2009) and Cardarelli, Elekdag and Kose (2009).

[3] For the literature on sudden stops and current account reversals see for example Adalet and Eichengreen (2007), Calvo (1998), and Calvo, Izquierdo and Meijía (2004, 2008).

investment booms.[4] For example, in Estonia, the share of FDI in construction, finance and real estate in total FDI rose from 54% in 2000 to 71% in 2007; in Colombia, a country with a notably different crisis experience, the share of FDI in these sectors actually fell from 31% to 16% in the same period. Our analysis can shed light on whether capital inflows into these sectors contribute to amplifying the macroeconomic cycle. While data on the sectoral allocation of other types of capital flows is limited as capital flows are often intermediated by the domestic banking system and it is thus hard to track their sectoral destination, for FDI this problem holds to a lesser extent and a sectoral analysis of the determinants of capital flow surges is therefore more promising.

To identify episodes of abnormally large (gross) inflows in sector-level FDI, we employ a dataset that covers sector-level FDI flows for 95 emerging and industrial countries. Surges are identified as episodes in which FDI inflows increase substantially above their historic level or a regional threshold (Cardarelli et al., 2009, Calvo et al., 2004, Gourinchas et al., 2001 employ similar methodologies). We document that surges occur across all sectors and are similar in size (measured as a ratio to GDP); but they appear more cyclical in the services than in the manufacturing or primary sector. Perhaps unsurprisingly, we find - using an event study methodology - that the different degrees of cyclicality are also associated with different macroeconomic outcomes: whereas primary and manufacturing sector FDI surges are not accompanied by significant increases in aggregate GDP volatility, the same conclusion does not hold for the services sectors. In particular, we find a significant boom-bust cycle of GDP across episodes of surges in the financial sector. The likely explanation for this result seems to be the expansion of credit associated with these flows, which might amplify the transmission of external shocks under the presence of collateral constraints (Mendoza, 2010).

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. We show that strong global growth is the dominant factor in predicting surges in FDI in the manufacturing and services sectors with the effect being stronger in the latter sectors. While there is some evidence that volatility matters in the manufacturing and other

[4] See for example Brixiova et al. (2009) for the case of Estonia. Aizenman and Jinjarak (2009) find a strong association between current account deficits and real estate prices.

services[5] and business and real estate sectors of emerging markets, global interest rates are usually not significantly related to FDI surges. We find that FDI surges are only contagious in the services sectors – primarily in the financial intermediation sectors of emerging markets. Domestic factors have the strongest impact in the manufacturing sector: surges are more likely in periods of high GDP/value-added growth, for countries with high stock market liberalization, and during phases of significant privatization programs; surges are less likely for countries with high stocks of public debt. Public debt has the same effect in the other services and business sector; privatization is also a key pull factor in the financial sector. Finally, we document an important role for capital controls: they tend to increase the likelihood of FDI surges in the manufacturing, other services, and financial sector; disaggregating by type of capital controls, we find that this seems to be driven by restrictions on bond inflows and on shorter-term money market instrument inflows – i.e. on instruments that may form substitutes to investment or funding via inflows of direct investment. This finding might have important implications for the design of future prudential regulation policies.

This paper proceeds as follows. Section 2 discusses the literature. Section 3 presents the data and the methodology used to identify episodes of surges in FDI inflows. In section 4, 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 5 explores the cross-sectoral heterogeneity in the explanatory power of global, contagion and domestic factors in causing surges in sector-level FDI. Section 6 concludes.

2. Literature

This paper relates to the wide theoretical and empirical literature of the determinants of international capital flows - with a special focus on contributions that attempt to explain extreme movements in capital flows (such as Reinhart and Reinhart, 2009, or Cardarelli, Elekdag and Kose, 2009). This literature has often divided factors that determine capital flows in those 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

[5] Other services consist of the trade, tourism, transport, storage and communication sector (see the appendix).

pull factors (see for example Calvo, Leiderman and Reinhart, 1996). Most contributions in this literature focus on one of these three sets of factors;[6] we will briefly discuss the literature relating to each factor in turn.[7]

Global factors – such as global risk, interest rates and growth – feature prominently in the recent theoretical literature - most notably the role of global risk (see for example Bacchetta, Tille, and van Wincoop (2010), Devereux and Yetman (2010) or Blanchard, Das and Faruqee (2010)). With regard to interest rates and global growth, Calvo et al. (1996) show that a recession in developed countries and low interest rates in the U.S. were important factors behind the capital flow boom to emerging markets in the early 90s; they suggest that an important channel was the reduction in default risk brought about by low interest rates (see also Kim, 2000 and Fernandez-Arias, 1996). The importance of global factors for FDI flows is highlighted by Albuquerque, Loayza, and Serven (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. The focus on global factors is supported by the finding of Kamin and Pounder (2010) that the international transmission of the crisis is hardly related with countries' exposure to losses on US mortgage securities.

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, regional location or financial linkages.[8]

The literature emphasizes several domestic factors: first, the degree of financial integration and capital account openness (i.e. capital controls) can be an important determinant of international capital flows.[9] Magud, Reinhart and Rogoff (2011) offer a recent overview of the literature on the effectiveness of capital controls. Second, the degree

[6] Exceptions include for example Calvo, Leiderman and Reinhart (1996) or Chuhan, Claessens, and Mamingi (1998).

[7] The following review borrows in parts from Forbes and Warnock (2011), who provide a thorough literature review concerning the role played by global and domestic factors in explaining surges across different types of aggregate capital inflows.

[8] 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. See Caramazza, Ricci, Salgado (2000) or Broner, Gelos, and Reinhart (2006) for examples of papers that focus on financial linkages.

[9] See for example Milesi-Ferretti and Tille (2010) or Reinhardt, Ricci, and Tressel (2010).

of financial market development constitutes another relevant factor;[10] its effect on capital flows is theoretically ambiguous as a more developed financial system facilitates investment, but might also raise the saving rate (Edwards, 1995). Third, fiscal variables are also of importance: high levels of debt can discourage foreign capital, especially when coupled with a high risk of expropriation (see Aguiar and Amador, 2009). Fourth, the literature has also emphasized the role of GDP and productivity growth in attracting capital flows – especially when surprise improvements in productivity generate lending booms (Aguiar and Gopinath, 2007); Gourinchas and Jeanne (2009) and others shed however doubt on the presumed positive relation between productivity growth and capital inflows.[11] Finally, within this literature, there are also some studies that focus specifically on FDI: in a related paper, Walsh and Yu (2010) examine the determinants of foreign direct investment for the three main sectors of the economy (primary, secondary, and tertiary) – they focus however only on domestic factors and on normal movements in FDI flows (as opposed to surges).[12]

The analysis in this paper contributes on the one hand to the empirical side of this literature by offering an examination of the causes of capital flow surges at the sectoral level at a high level of disaggregation. In this regard, the paper relates also to the literature on the effectiveness of capital controls by examining the impact of controls on various instruments on the probability of surges in FDI. On the other hand, this paper can – by evaluating the relative importance of global, contagion and domestic factors for capital flow surges at the sectoral-level – potentially inform theoretical approaches that attempt to take into account the heterogeneity across sectors when modeling the impact of the global, contagion and domestic factors on the patterns of global capital flows; notably, this paper suggests that the impact of push and contagion factors on capital flows (as emphasized by the recent theoretical literature on the global financial crisis) is strongest in the services sectors.

Finally, our focus on gross FDI inflows is supported by a recent related contribution of Forbes and Warnock (2011), who argue that it is important to focus on gross flows

[10] Caballero, Farhi and Gourinchas (2008), Buera and Shin (2010), Mendoza, Quadrini and Rios-Rull (2009).
[11] Reinhardt (2010) provides a sectoral approach to the "allocation puzzle" and shows that FDI flows behave according to the standard neoclassical theory.
[12] See Bloningen (2005) for a review on the empirical literature on FDI Determinants.

instead of net flows as the latter can mask dramatic changes in gross flows.[13] The authors find an important role for global factors and contagion (and less evidence for domestic factors) in explaining episodes of surges, stops, flight and retrenchment. Furthermore, they find little role of capital controls in reducing capital flow surges; we show that capital controls on alternative instruments can even *increase* the probability of experiencing a FDI surge in some of the sectors. This finding is in line with the literature on capital controls that often established an effect of controls on the composition of capital flows as opposed to an effect on their overall size (see Magud et al., 2011).

3. Data and Methodology

3.1 Data

We construct a dataset containing information on aggregate capital flows, sectoral FDI inflows, global and domestic factors for 95 emerging markets, developing, and industrial countries 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. As can be seen from Appendix B, the sample is strongly unbalanced for the earlier years. To balance the panel, we hence consider only surges in sectoral FDI inflows for the period 1994-2009[14] as 1994 is the first year where we have data for at least 5 countries for all but one of the 5 regions (i.e. Asia).[15] In order to identify episodes of large capital inflows as precisely as possible, we however use all available data on sectoral FDI flows for countries with better data availability.

Summary statistics are provided in table A1 and A2. This section provides a brief description of the sector-level FDI dataset; details on the data sources are provided in Appendix A; an overview on the sample coverage can be found in Appendix B.

[13] Milesi-Ferretti and Tille (2010) also emphasize the role of gross flows.
[14] Note that sectoral FDI data for 2010 is too preliminary to be included into the analysis.
[15] The 5 regions are defined based on the World Bank Classification (see Appendix B for more details): Africa and Middle East (AME), Europe and Central Asia (ECA), Asia and South-East Asia (ESA), Latin America and the Caribbean (LCA), and Industrial Countries (IND; i.e. North-America, Western Europe and Japan).

Sector-level FDI Inflows

Sector-level data on FDI inflows stems from several sources (see Appendix A for details on the sectors and Appendix B for an overview of the sample).[16] 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). These data are extended with data from the International Trade Center (ITC), which provides data for more recent years. 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. 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 95 countries from Latin and North America, Asia, Africa, 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 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 (where valuation effects might play a role).[17] Specifically, we exclude countries for which the correlation between IFS and total FDI flows from the sectoral data source is less than 70% or where their ratio is above 2 or below 0.5.[18] Data are (mainly or partly) based on stocks of FDI for the following countries: Albania, Latvia, Madagascar (only for two years), Slovenia, Sri Lanka, Swaziland, Thailand (only for two sectors) and Ukraine. Data for Taiwan refer to approved investment (but the correlation with IFS data is nonetheless 95%). Second, to compute FDI inflows into the primary sector (ABC according to the ISIC Rev.3 classification) and the trade,

[16] This section contains a brief description of the database; see Reinhardt (2010) for more details.

[17] 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.

[18] As our methodology for identifying booms relies primarily on the evolution of flows in time and only secondarily on their absolute size, we are stricter on the correlation than on the size criteria.

tourism and transport sector (GHI), we had to aggregate flows from the respective sub-sectors. If data is indicated as “missing" for one of these sub-sectors, we nonetheless compute data for the aggregated sector if unspecified flows are small, specifically, below 0.5% of GDP. In addition, if data are only missing for some years and the data for the remaining years indicate that the sub-sector with partially missing data receives generally much less FDI flows than the other sub-sectors, we create the aggregated sector even for higher values of unspecified flows.[19]

The database contains data on all ISIC Rev.3 sub-sectors. For the purpose of this study, we exclude the utilities (E) and construction sector (F) because (i) FDI inflows into the former two sectors are skewed with only a few countries receiving large amounts of FDI inflows (the median is below 0.04/0.03% of GDP respectively) (ii) FDI inflows are very small on average (below 0.3/0.1% of GDP respectively) and (iii) the data availability is worse than for the other sectors. Furthermore, we aggregate services sub-sectors which are not in the main interest of this study into the “other services” sectors (consisting of the trade (G), tourism (H) and transport, storage and communication (I) sector).

Table A2 presents summary statistics for FDI inflows to GDP for the 5 sectors that we will examine in this study - i.e. the primary (ABC), manufacturing (D), other services (GHI), financial intermediation (J) and business and real estate (K) sector. On average, all sectors received similar amounts of FDI inflows – slightly below 1% of GDP. FDI inflows into the primary sector are dominated by a few countries receiving large amounts of FDI. For the financial intermediation and business and real estate sector this holds to a lesser extent; however, a few countries received very sizable inflows: of up to 34% of GDP. Finally, the distribution of FDI flows is more even for the manufacturing sector and the other services sector. When we scale flows by the size of the sector (proxied by the sectoral value added), we still find that the size of FDI inflows is roughly similar across sectors; the notable exception is the financial intermediation sector where flows are on average almost 20% of sectoral value-added (and 7% at the median).[20]

[19] Specifically, if flows into the e.g. mining sector are 5 (10) times higher than flows into the agricultural sector, we choose to calculate FDI inflows into the aggregate primary sector despite the gap in agricultural FDI Inflows (up to values of unspecified flows of 1 (2) % of GDP).

[20] The observation with the maximum inflow of financial sector FDI (12 times sectoral value-added) is Hungary in the year 2008.

3.2 Methodology

There is a vast literature analyzing the macroeconomic effects of large capital inflows. In spite of the numerous studies, there is not yet a consensus with respect to the criteria that are used to define inflows as "large".[21] In this paper we follow a methodology that is similar in spirit to the one proposed by Cardarelli et al. (2009). We identify sectoral FDI surges according to the following two main criteria. We classify a sectoral inflow as large if it exceeds a country-specific historical trend. Alternatively, we classify an inflow as large if it 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 years 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 years window). Alternatively, when we cannot compute the trend,[22] we classify an inflow of sectoral FDI to GDP as large if it exceeds the 80th 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 percent 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 percent of GDP). Nonetheless, we subsequently identify two episodes, in 1997 and in 2004,

[21] For example, Reinhart and Reinhart (2008) 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) 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. (2009) 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.

[22] 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. (2009). 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

even though, overall, the flows in the sector are smaller than the 80th percentile of the distribution of the flows in the financial intermediation sector in the region.

4. Sectoral FDI surges: characteristics and outcomes

4.1 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 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.

We now look at the size of the sectoral inflows during surges. Figure 3 reports the median value of the cumulated FDI inflows during surges across the following regions: Latin America and the Caribbean (LAC); Africa and Middle East (AME); Industrial countries (IND); Europe and Central Asia (ECA); 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 5% of GDP in the LAC region, while it does so in the AME region only in the first wave. In the manufacturing sectors, FDI inflows are in general more homogeneous in size across regions. Their incidence on GDP is smaller in developed compared to developing countries, but the size is typically between 2% and 4% 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.[23] For the financial sector, an interesting feature is also the high share of FDI 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. The need for local banks (associated or owned by foreign banks) to refinance these debt flows is a likely cause for the surge in FDI at this stage. 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 sector in the second wave in the ECA region thus exceeds, not surprisingly, 4% of GDP. Finally, within the real estate sector, strong inflows of capital are registered only during the second wave, especially in the ESA and the IND regions.

4.2 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 investigate 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 behavior of some main macroeconomic indicators around episodes of sectoral FDI surges. The indicators chosen are: real GDP growth; the current account balance in percent of GDP; growth in the real effective exchange rate; the short term interest rate; the private credit to GDP ratio.

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 estimate the trend component of the macroeconomic variable of interest applying a Hodrik-Prescott filter to the whole series, with a smoothing value of 6.5, and we calculate the deviation of the variable from trend within each window. We then compute the median

[23] Privatization proceeds to GDP in the other services sector peaked in 2006 in the ECA region and in 2005 in the ESA region.

value of the deviation from trend across all observations in the two years before, during surges, and in the two years after.[24] We finally test whether the median values of each indicator are statistically different across event windows using a non-parametric test for equality of the medians. 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 an inspective method 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 4 to 10. We start with the analysis of real GDP growth, which is shown in Figure 4. The deviation of real GDP from trend growth during surges in services sector FDI ranges from 0.3 to 0.6 percentage points; the decline in growth after surges is above 0.3 percentage points. Whereas the decrease in GDP is significant in all sectors, we find a significant boom-bust cycle only in the financial sector. Are these results driven by the size of the flows? As shown in the previous section, this does not seem to be the case. Here we confirm the impression by showing in Figure 5 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. It is though possible that the higher GDP volatility is caused by the size of the sectors. Again, 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).

Possible explanations for this result may be found in the level of external and private borrowing associated with surges in financial FDI, or changes in competitiveness. For external borrowing, we take the current account to GDP ratio as an indicator. The results in Figure 6 show a deterioration of the current account to GDP during surges across all sectors, but the results are statistically significant only for the "other service" and financial sectors. The deviation from trend is negative and about two percentage points, with a significant reversal after surges in the financial sector. To analyze the level of private borrowing, we take the ratio of credit to private sector scaled by GDP (Figure 7). We see that private credit generally increases during episodes of large sectoral FDI inflows and that this result is

[24] While the identified episodes of surges exclude 2010 from the computation, observations for this year are included in the event study.

significant across all sectors (except for other services). What seems different is the amount of credit: the median value associated with surges in the financial and real estate sectors is almost 70% of GDP. As an indicator of competitiveness, we look at growth in the real effective exchange rate (REER). We observe, during and after sectoral FDI surges, an appreciation of the REER above trend across sectors, but the results are significant only for the primary, other services and real estate sectors (figure 8).

The results of this section have highlighted some important differences in terms of macroeconomic outcomes around large FDI inflows. The different macroeconomic environment during surges across sectors can also be gauged by looking at the monetary policy response. Figure 9 reports the deviation of the central banks' policy rate around surges. What we notice is a strong increase in the policy rate (up to 20 basis points) during periods of large inflows in the financial and real estate sector, but no significant change elsewhere. The latter result confirms the impression that large inflows in the services sectors are associated with higher growth volatility and higher level of borrowing in the economy, both external and domestic, features that may contribute to higher levels of "stress" in the economy. 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). In Figure 10, 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 are associated with higher macroeconomic volatility.

5. What causes surges in sectoral FDI Inflows?

The previous section identified surges in FDI Inflows and presented stark differences in their cyclical properties and associated macroeconomic outcomes across sectors. In this section, we attempt to assess the impact of global, contagion, and domestic factors on the probability of experiencing a surge in sectoral FDI flows. Before we move to the formal

regression analysis, we discuss the empirical approach and the baseline global, contagion and domestic variables.

5.1 Empirical Approach

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

$$Prob(Surge_{it} = 1) = F\left(\mathrm{B}_1\Gamma_{t/t-1} + \beta_2\varphi_{i,t-1} + \mathrm{B}_2\Theta_{i,t/t-1}\right) \quad (1)$$

where $Surge_{it}$ is a dummy that takes the value of 1 if country i is experiencing a surge in sectoral FDI inflows in year t; $\Gamma_{t/t-1}$ is a set of global factors (which can be in current and in lagged terms); $\varphi_{i,t-1}$ is a contagion variable that captures either regional or trade contagion; and $\Theta_{i,t/t-1}$ is a set of domestic factors. We estimate the model using the conditional logit model including country fixed effects; this assumes that the distribution of $F(\cdot)$ is logistic.[25] Standard errors are clustered at the country-level.

To measure contagion, we focus on two concepts: 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:

$$Trade\ Contagion_{it} = \sum_{j=1}^{n}\left(\frac{Exports_{ij,t-1}}{Total\ Exports_{i,t-1}} * Surge_{i,t-1}\right)$$

where $Exports_{ij,t-1}$ 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. Both measures are calculated for each country *i* and each sector.

Following the outlined literature, we consider three types of global factors: volatility, growth and interest rates. Our baseline measure for volatility is the VIX index calculated by

[25] In an analysis of surges and other episodes, Forbes and Warnock (2011) [FW] estimate the model using the complementary logarithmic framework (cloglog), which assumes that $F(\cdot)$ is the cumulative density function (cdf) of the extreme value distribution. This estimation methodology is appropriate for rare events (i.e. when episodes occur irregularly – 85% of the sample consists of zeros in the case of FW). In our case, however, surges in FDI are more frequent – the share of 1's in the total number of observations is always above 30%. We hence choose to estimate the model using the more standard logit approach (see for example Reinhart and Reinhart. 2009). Probit and cloglog estimations yield similar results, which are available on request.

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. For the primary sector, we will also include an index of prices for all primary commodities (taken from WEO). In the robustness section we will discuss results for alternative measures of these global factors.

An important question is whether to use lagged or current values of the global factors; this is especially relevant given that we use annual data. For our baseline, we decide to focus on current values because this specification is likely to give us the most reliable estimates on the contagion variable as well as global growth.[26] This is the case for the following two reasons: first, we observe – for all sectors - a strongly positive correlation between contagion and lagged (same-period) global growth, which we expect to be an important determinant of the contagion variable; it is therefore best to use the current value of global growth in order to isolate the effect of contagion and global growth. Second, global growth also embodies expected future growth, which is likely to be an important factor in FDI decisions and – given the difficulty in measuring it – an omitted variable in our regression. Insofar that lagged growth is a worse proxy for expected future growth than current growth (note that their correlation is only 36%), we prefer to focus on current global growth. We show below that our results are robust to including both lagged and current values of the global factors.

In choosing the domestic variables for our baseline, we focused on measures which are available for most of the countries in the sample. We include income per capita (taken from Heston et al., 2011) to control for the possibility that capital is attracted into poorer countries as predicted by the neoclassical growth model. Similarly, the same model predicts

[26] Volatility and global interest rates show a much higher persistence than global growth (see table A3), which makes – a priori - the choice between lagged and current values less important.

capital to flow into countries during phases of high productivity growth: we hence include GDP growth or sectoral value added 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 proxy institutional quality using the indicator "Investment profile" from ICRG, which should be of special relevance to foreign investors; it has three subcomponents: (Risks to) Contract Viability/Expropriation, Profits Repatriation and Payment Delays. Finally, 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; other domestic variables are included in turns.

All domestic variables are lagged by one year unless noted otherwise. This is done to address potential endogeneity concerns. It comes however at the cost of having a less precise estimate of the contagion variable as the lagged (same-period) domestic variables are, if they describe regional trends (e.g. a pick-up in the regional growth rate), likely determinants of the contagion variable. We will hence give the results on the contagion variable with and without including the (lagged) domestic variables. Moreover, to alleviate the effect of very large observations, we use public debt and per capita income (as well as privatization, financial integration and stock market capitalization to GDP) in log terms.[27]

5.2 Results: Explaining Surges in sectoral FDI

The global factors overlap considerably in terms of their economic content (see table A4 for the correlations). We therefore start by focusing only on one global factor - specifically, global growth, which is indeed - as we will show below – an important global factor in determining surges in sectoral FDI; for this initial examination, we will also abstract from specific domestic factors (but control for slow-moving country unobservables by using the fixed effects framework). In the second part of this section we will examine the global, contagion, and domestic factors jointly.

[27] Specifically, because some observations are very close to zero, we add one to the variable before taking logs. This transformation is neutral for small values, which gives a natural fix point (see the discussion in Levy Yeyati et al., 2007).

A first look at global growth and contagion

Table 1a presents the results for regressing sectoral FDI surges on global growth and the contagion variable using the discussed logit framework with fixed effects. In all but the primary sector, we observe a significantly higher probability of experiencing a surge in FDI when global growth is high. This effect is stronger for the services sectors than for the manufacturing sector: the coefficient on global growth is almost twice as large for the financial sector as for the manufacturing sector.[28] Noteworthy are the differences between sectors with regard to the strength of regional contagion: it has a significant impact on the probability of FDI surges only in the services sectors; the coefficients are significant at the 1% level with the business and real estate sector recording the largest coefficients. Finally, as expected, surges in the primary sector are more likely when commodity prices are high.

To assess the economic significance of the results, it is useful to consider the exponentiated coefficients, which are given in italics below the standard errors in table 1a. This value is called the odds ratio and is defined as the ratio between the probability of a positive outcome (i.e. 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 44.98% higher when global growth increases by 1 percentage point; the figure is 24.72% for the manufacturing sector. The impact of contagion is also sizable: the odds of a country experiencing a surge in financial sector FDI is 34.2% higher if the share of countries that experienced a surge in the preceding year increases by 10 pp.[29]

The ranking of the sectors with regard to the importance of the global factor and contagion remains when we use our baseline measure of global volatility (VIX index) as the global factor. Conversely, global interest rates do not turn out to be significant in any of the

[28] We show below that the ratio of coefficients corresponds roughly to the ratio of the marginal effects in this case.

[29] 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 – similarly to Forbes and Warnock (2011) – consider only the marginal effects in multiplicative terms (i.e. odds ratio).

sectors when they are used to measure the global factor (the results are available on request).[30]

Next, we examine whether the effects of the global and contagion factor differ across regions by disaggregating into industrial countries and emerging markets (see Appendix B for information on the sample). Table 1b suggests that global growth and contagion have a similar impact on FDI surges across regions in the manufacturing and business and real estate sector. Conversely, global growth appears to have a weaker effect in the other services and financial sectors of industrial than of emerging market countries. FDI surges appear relatively more contagious in the financial sectors of emerging markets, but less contagious in their other services sectors. More formal tests reveal however that the coefficients do not differ significantly across regions and we conclude that the impact of the global and contagion factor is similar across emerging markets and industrial countries.

Joint examination of global, contagion, and domestic factors

We now turn to a joint examination of the global, contagion, and domestic factors. Focusing first on the global and contagion factors, table 2a reveals that global growth is the dominant global factor in explaining surges in sector-level FDI: it is significant at least at the 5% level for all but the primary sector, whereas volatility does not seem to have an independent effect. The impact of global interest rates is also limited: they are a significant determinant of FDI surges only in the manufacturing sector (and only significant at the 10% level). For contagion, we arrive at results similar to above: the share of countries in the same region experiencing a FDI surge in the previous year in either the financial, business or other services sectors increases the probability of a "neighboring" country experiencing a surge in the same sector; conversely, FDI surges in the manufacturing or primary sector are not contagious. Notably, the coefficients on the contagion variable are stronger when we do not include domestic variables into the regression (see table 2a); this comes at no surprise as domestic factors are in lagged terms and hence likely co-determinants of the contagion variable.

With regard to the domestic variables, we arrive at a number of noteworthy results. Reflecting the presented statistics on the incidence of surges across time, countries that

[30] We discuss alternative measures of the global factors in the robustness section.

experience FDI surges in the finance or business sector are at later stages of their development – as witnessed by the positive and significant coefficient on per-capita income. The literature points to an important role of economic growth in pulling in capital flows. We find evidence for this channel only for the manufacturing sector: GDP growth increases the likelihood of surges in FDI at the 10% level; GDP growth does not impact the probability of surges in the other sectors. Financial openness has – at first sight – a puzzling effect: the more financially open countries are, the lower the likelihood of experiencing an FDI surge in the financial and the other services sector. Below, we disaggregate openness/capital controls by the type of capital flows they refer to and provide a potential explanation for this result. Next we turn to the effect of countries' fiscal positions: higher stocks of public debt to GDP decrease the probability of FDI surges in the manufacturing and other services sector. With regard to the quality of institutions, we find that a good investment environment makes FDI surges more likely in the primary sector but *less* likely in the manufacturing sector. The latter result may be driven by the fact that a good investment environment (as measured by our indicator) is also relevant for other types of investments (equity, debt, etc.) and that FDI - especially into special investment zones subject to direct negotiations with the government - is less susceptible to deficiencies in the investment laws than e.g. portfolio equity investment.[31]

Table 2b disaggregates the results by region. Noteworthy is the regional heterogeneity with regard to the impact of global factors in the manufacturing sector: for industrial countries, we find – controlling for the other global factors - that there is a higher likelihood of surges in manufacturing sector FDI in volatile times and during periods of high growth. Emerging markets, on the contrary, seem to not profit from large FDI inflows into manufacturing in volatile times. For this group of countries, we cannot discriminate between volatility and growth as the dominant global factor (both turn out to be insignificant although they are significant independent of each other);[32] the latter is also the case for the other services and business sectors. Conversely, in the financial intermediation sector, global growth dominates the effect of volatility in both emerging markets and industrial countries. With regard to global interest rates, there are no noteworthy

[31] This might be less relevant in the primary sector where a greater share of investments is direct. The difference in data quality and number of observations however stands in the way of a proper comparison.

[32] A test confirms that the difference between the coefficients on volatility and growth is significant across regions.

differences between regions. Further regional heterogeneity is revealed with regard to regional contagion: surges in financial sector FDI are contagious only in emerging markets (a test reveals that the region-specific coefficients differ significantly at the 10% level); this conclusion holds both for the specification including and excluding domestic factors. The latter is not the case for the business and real estate sector: when including the domestic factors, contagion is generally weak and turns out significant only for industrial countries (at the 10% level); it remains however strongly significant for both groups in the specification excluding the domestic factors. Finally, we do not find regional heterogeneity with respect to contagion in the other services sectors.

There are also noteworthy regional differences with regard to the impact of domestic factors. Notably, the results on GDP growth, public debt, financial openness, and investment profile are driven by the emerging markets in the sample: a high degree of financial openness in emerging markets strongly discourages FDI surges in the financial, other services and – contrary to the result for the whole sample - manufacturing sectors; similarly, high public debt discourages FDI surges also in the business and real estate sectors, which leaves only the primary and, remarkably, financial sector where public debt has no effect. For industrial countries it is worthwhile to note that financial openness has a positive impact on surges in industrial countries' business and real estate sectors.

What is the transmission channel of contagion? In table 3, we examine whether contagion is driven by the shared regional location or by trade ties; the latter have a strong regional component, but are also across regions. The findings reveal a noteworthy difference in the nature of contagion within the services sectors: trade contagion dominates regional contagion for the trade, transport, storage and communication (other services) sector, whereas the regional location is the dominant factor behind contagion in the financial intermediation and business and real estate sectors.

Are surges in FDI driven by the large-scale sale of state-owned companies that occur in waves? In table 4, we control for privatization proceeds in the different economic sectors to explore this possibility.[33] Privatization proceeds to GDP in the manufacturing and the financial sector have a strong (significant at the 5% level) impact on FDI surges in these

[33] Privatization proceeds data are taken from the World Bank's privatization database and the Privatization Barometer (for EU countries); as further described in the appendix, we match this data with the sectors of our analysis (except for business and real estate, where no disaggregated data is available).

sectors; the coefficient is not significant for privatizations in the primary and others services sectors.[34] By comparing these results to a regression on the same sample, but excluding privatization (see the framed coefficients in table 4), we find that privatization has almost no impact on the coefficients or significance of the global and contagion factors – waves of privatizations such as the privatizations in Eastern Europe in the 90s does not appear to be able to explain the observed regional contagion.[35]

In table 5, we add various additional control variables to the domestic baseline variables. Many theoretical models emphasize productivity shocks as an important driver of international capital flows. We hence substitute lagged growth with current GDP growth (in row A1). Though we cannot be sure about the direction of causality, the results are instructive: high GDP growth in the same year is positively related to the probability of countries experiencing FDI surges in the primary, financial, and business and real estate sector, there is no significant relation for the other services and manufacturing sector. In row A2, we replace GDP growth with a sector-specific growth measure, i.e. growth in value-added by sector.[36] We find that the result for GDP growth is amplified when using sector-level value-added growth as our growth measure: high growth phases significantly increase the probability of a surge in FDI only in the manufacturing sector (the coefficient is significant at the 1% level); again we can show that this result is driven the emerging markets. Moreover, we find that high value-added growth is associated positively with surges in business sector FDI in industrial countries and negatively with surges in other services sector FDI. In rows A4-A5, we check for the effect of having a large dominant lender by including the share of cross border banking flows from the US over total cross border bank flows (data are from the BIS) as a regressor. We find that being relatively more dependent on US banks increases the likelihood of recording a surge in other services FDI in industrial countries; this observation fits well to the perceived importance of US communication sector investments within the industrial countries. The coefficient on relative dependence on the US is positive but not significant in the financial sector. In row

[34] The results for the financial and manufacturing sector are driven by the emerging countries in our sample (results are available on request).

[35] Note however that the privatization data are limited and the number of observations drops markedly.

[36] As the value-added series – taken from the United Nations Statistics Division – is very volatile (see table A1) and we want to be sure that our results are not driven by very large observations, we exclude observations that deviate by more than 3 standard deviations from their sample mean (almost all of them are from the European and Central Asian transition region).

A6, we include stock market capitalization to GDP as a measure for the depth of the financial system.[37] A more highly developed stock market is associated with surges in primary and more strongly in the financial sector FDI. Disaggregating by region (in row A7) reveals that FDI surges in all services sectors are strongly associated with stock market development in industrial countries; for emerging markets, stock market development contributes significantly (at the 5% level) to the probability of surges in FDI in the manufacturing sector. Finally, we include an alternative, de-facto, measure of financial openness, – i.e. the sum of financial assets and liabilities to GDP, provided by Lane and Milesi-Ferretti (2007, updated to 2009) - instead of the de-jure measure we have used so far (i.e. the Chinn & Ito Index). A higher level of financial integration is however not associated with a higher likelihood of surges in FDI (this result remains when we disaggregate by region). The difference between the results for the de-jure and de-facto index for the manufacturing (for EM), other services and financial sector indicate that some specific (de-jure) capital control measures may play a role in explaining the negative association between de-jure financial openness and surges in FDI.[38]

We therefore expand the analysis of the role of capital controls by looking at controls on different types of capital inflows (specifically, bonds, equity and money market instruments; data are from Schindler, 2009); this analysis captures the years 1996-2006.[39] Turning to the results given in table 6, 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 in any of the sectors, but the other services sectors (where controls *increase* the likelihood of experiencing a surge); this is of course subject to the caveat that we do not have data on direct investment controls by sector. Remarkable are however the results presented in rows A2 to A3.2: restrictions on bond inflows and/or on shorter-term money market instrument inflows (both of which may form substitutes to direct investment inflows) significantly *increase* the probability of surges in FDI in the manufacturing, financial, and other services sectors – most strongly for bond inflow controls in the financial sector. For this sector, we find that the result is driven by restrictions on non-residents buying domestic bonds (e.g. funding domestic banks, which could be subsidiaries of foreign banks, from abroad via the

[37] This variable is not included into the baseline due to reasons of data availability.
[38] We also checked whether the insecurity surrounding election years, the exchange rate regime or exchange rate stability have an impact on surges in sector-level FDI; but our results suggests that this is not the case.
[39] The Schindler (2009) indices are available from 1995-2005, but we lag them by one year.

bond market). Conversely, for the other services sector, restrictions on residents raising funds via the money market abroad seem to be more relevant. Finally, both types of restrictions make FDI surges more likely in the manufacturing sector. More research is needed to understand the precise channels of these results; they nonetheless suggest that there are important interrelations between different sources of funding of subsidiaries of foreign companies - including via financial sector FDI. Policymakers should be aware of these when contemplating the design of future prudential regulations; especially with respect to the financial sector for which our analysis in section 3 suggests a greater association with macroeconomic vulnerabilities, such as a high-level of credit denominated in foreign exchange during surges in FDI.

5.3 Robustness

We performed several robustness checks. We start by assessing – in tables A5.1 to A5.3 - the robustness of our baseline results (tables 2a and 2b) by using different definitions of the global factor; we will focus on the results disaggregated by regions. First, we use growth in advanced countries as an alternative measure for global growth. The coefficients in bold give the results for including growth in advanced countries as the only global factor; we confirm our baseline results and find that the coefficients on the global factor are markedly higher in the financial than the manufacturing sector. With regard to the results for the joint examination of global factors, we find that, while results for the other sectors are qualitatively robust, contagion is not significant anymore for the business sectors of industrial countries (it remains significant for emerging markets in the specification that excludes domestic factors).

Second, we use the spread between Moody's BAA-AAA corporate bond yields as an alternative measure of global risk. In table A5.2, we find that, measured in this way, global risk plays a stronger role for industrial countries: for the services sectors we now cannot discriminate between global growth and global risk as the dominant global factor. Conversely, for emerging markets, we find that the importance of global growth relative to global risk rises in the manufacturing and business and real estate sector when using the alternative measure of risk: growth turns significant at the 10% and 1% level respectively. The results on the domestic and contagion factors are qualitatively robust.

Third, 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. For industrial countries, the US T-bill rate is positive and strongly significant in all but the manufacturing sectors; in the services sectors, global growth turns insignificant and volatility significantly positive; these results reflect the high correlation between the US T-bill rate and global growth (which is almost 60% for the US T-Bill rate and only 25% for global long-term interest rates). The US T-bill rate has only a muted effect in emerging markets: we find a significant and positive coefficient only in the other services sectors; in the financial sector of emerging markets, it is still global growth that constitutes the dominant global factor. Regional contagion is not robust for the business sector in industrial countries, but somewhat stronger in all services sectors in the specification that includes the domestic factors. Again, there is no noteworthy change in the coefficients of the domestic factors when we change the structure of the global factors. With regard to interest rates, we also substituted global long-term government bond yields with US government bond yields - they, too, are not a significant predictor of surges in sector-level FDI.

We also re-estimated the specifications where we focus only on one global factor (table 1a and 1b) using the different global factors discussed above (see the bold coefficients in the first row of tables A5.1 to A5.3). The ranking of the sectors with regard to the importance of the global factor remains the same for all the different variables discussed above;[40] the global factor has consistently the strongest impact in the financial sector.

Next, we include the 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 A6 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 support our argument for focusing on current instead of lagged values of the global factors: in the manufacturing, financial and

[40] Except for long-term interest rates that do not have an impact on FDI surges in general.

business sector it is current rather than lagged growth, which is the more important determinant of FDI surges; for the other services sector we instead observe that the impact of current growth is dominated by lagged growth. For contagion, we observe weaker coefficients - though still strongly significant for the finance as well as business and real estate sector. This does not come at a surprise: our analysis suggests that current global factors – above all global growth - are important determinants for (same-period) FDI surges; lagged values of the global factors will be hence important determinants of contagion (the share of countries in the same region that experienced a surge in the previous year). The robustness of the contagion coefficient to including lagged values in the financial and business sector lends hence strong support to the importance of this channel.

In tables A7.1 to A7.3 we check whether the baseline results on the global factors presented in tables 1a, 2a and 2b hold for different samples and different ways to identify surges in FDI.[41] First, we exclude the years of the global financial crisis (2008-2009). The first row of table A7.1 – corresponding to table 1a – shows that the global factor has still a stronger effect in the services sector. With regard to the specification that includes all three types of global factors (corresponding to tables 2a and 2b), a noteworthy change is that we now cannot discriminate anymore between growth and volatility as the dominant global factor for FDI surges in the financial sector - both in industrial and emerging markets. Regional contagion remains a robust features for FDI surges in the financial sector; this is not the case for the business and real estate sector: contagion is not significant anymore in the specification that includes domestic factors; furthermore, the data does not allow to discriminate between industrial and emerging markets as the source of contagion in the specification that excludes domestic factors (contagion remains strongly significant for the whole sample of countries). We do not find major changes with respect to the domestic factors.

Second, we estimate the sample without Eastern European and Central Asian economies (ECA). Whereas the results with regard to the global factors remain robust, we observe weaker coefficients on the regional contagion variable; it remains however significant for all services sectors in the whole sample (even in the specification that includes the domestic variables). Focusing in on the remaining emerging markets, we find

[41] Due to space constraints, we show only the results for our main sectors of interest. Results for the other services sectors are also qualitatively robust to the displayed robustness checks and available on request.

evidence for regional contagion in the financial sector in the specification without the domestic variables. With regard to the domestic factors, we observe a weakening of the role of public debt, financial openness and GDP growth in the manufacturing sector (the latter two variables are not significant anymore); this is also the case for value-added growth. Overall, it appears that Eastern European and Central Asian economies are both more strongly influenced by global and contagion factors and subject to greater scrutiny by foreign manufacturing sector investors with respect to their growth prospects.

Third, we double the size threshold below which we do not consider "surges" as large enough (i.e. to 0.6% of GDP). We find that all results are robust to this alternative classification of surges in FDI.

We also ran the regressions using current instead of lagged values of the domestic variables: the results are generally robust. One notable change is that the correlation of stock market capitalization with FDI surges is higher at current values, which might indicate that there is some reverse-causality.

Finally, we checked whether the results on public debt (in table 2a and 2b) might be driven by large observations by first including a quadratic term - its coefficient is positive, but not significant. Second, we excluded observations with debt above 100% of GDP (this excludes 57 of the 788 observations for the manufacturing sector) - the results remain robust.[42] We performed the same checks to assess potential non-linear effect of trend growth: the square term is close to zero for the manufacturing sector, but positive and significant (at the 10/5% level) for the financial intermediation as well as business and real estate sector – indicating that the link between growth and FDI surges is stronger for countries with very large growth rates in these sectors.

5.4 Other Types of Capital Flows

Before concluding, we explore the determinants of surges in different types of aggregate-level capital flows. Comparing these to the results above can yield interesting insights on the nature of sector-level FDI surges. We focus on private capital flows, i.e. FDI, portfolio equity and portfolio debt as well as other investment vis-à-vis banks and other sectors (all data is from IFS). To ease the comparison, the regressions are on the same

[42] In fact, we now observe significantly negative (at the 10% level) coefficients also for the financial and business sectors of emerging markets.

sample of countries and for the period 1994-2009. Based on table 7, we make three points. First, the results for aggregate-level FDI mirror the sector-level results: coefficients on volatility as well as global interest rates are insignificant whereas the coefficients on growth and contagion are positive and significant and an average of the sector-level coefficients. Second, surges in financial and business sector FDI seem to have most in common with other investment vis-à-vis banks: contagion and global growth are a strong determinant of surges in both types of capital inflows. Third, FDI inflow surges into all sectors - notably also the financial sector - are different from surges in other types of flows in that volatility does not have an independent effect (i.e. controlling for global growth). Conversely, surges in all other types of capital inflows (except for other investment vis-à-vis other sectors) are less likely in volatile times, even when conditioning on the other global factors. Overall, the results indicate both support and doubts with regard to the presumed conventional wisdom of FDI as being a more stable type of capital flow. Whereas it displays more stability in volatile times than other types of capital flows,[43] the similarity to debt-like flows in the banking system (loans) suggests that financial and business sector FDI also contain elements which are similar to debt/loans. In particular, financial sector FDI may be determined more by intra-company loans than by greenfield FDI.[44] The documented evidence on the strong impact of bond inflow controls on the probability of experiencing a surge in financial sector FDI points into a similar direction.

6. 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

[43] It is instructive to think about the potential reasons of why volatility does not reduce the likelihood of large inflows of financial sector FDI. We regard public and bank policies during financial crisis as an important factor: in the past crisis, the heavy dependence on foreign banking groups in some emerging markets (above all Emerging Europe) lead to efforts by public authorities to induce parent banks to maintain their exposure to subsidiaries at the height of the crisis (Vienna initiative); the retrenchment (including in financial sector FDI) was hence subdued. Furthermore, factors such as the importance of client relationships and reputation have tended to raise the costs of exiting a country and increased hence the permanence of financial sector FDI (BIS, 2004).

[44] Unfortunately, the data do not allow us to assess the composition of FDI inflows with regard to their three components (i.e. intra-company loans, reinvested earnings and equity).

among services than the manufacturing or primary sector. When we conduct a type of event-study analysis, we find that whereas primary and manufacturing sector FDI surges are not accompanied by significant increases in aggregate GDP volatility, the same conclusion does not hold for the services sectors. In particular, we find a significant boom-bust cycle of GDP across episodes of surges in the financial sector. The likely explanation for this result seems to be the expansion of credit associated with these flows. As argued by the recent theoretical literature (Mendoza, 2010), the presence of mild collateral constraints might amplify the transmission of external shocks and thus explain the higher volatility of real GDP.

Attempting to understand the causes of FDI surges, we document substantial sectoral heterogeneity in the likely causes of these episodes. We show that global growth is the dominant factor in predicting surges in FDI in the manufacturing and services sectors, with the effect being stronger in the latter sectors. While there is some evidence that volatility matters in the manufacturing and other services sectors of emerging markets, global interest rates are usually not significantly related to FDI surges. When we test for contagion, the likelihood that large capital inflows in other countries can explain domestic surges, we find that this is the case for the services sectors – primarily in the financial intermediation sectors of emerging markets. Domestic factors have the strongest impact in the manufacturing sector: surges are more likely in periods of high GDP/value-added growth, for countries with high stock market liberalization, and during phases of significant privatization programs; surges are less likely for countries with high stocks of debt. Public debt has the same effect in the other services and business sector; privatization is also a key pull factor in the financial sector. Finally, we document an important role for capital controls: they tend to increase the likelihood of FDI surges in the manufacturing, other services and financial sector; disaggregating by type of capital controls, we find that this seems to be driven by restrictions on bond inflows and on shorter-term money market instrument inflows – i.e. on instruments that may form substitutes to investment or funding via inflows of direct investment. This finding might have important implications for the design of future prudential regulation policies.

The results add and complement the literature that documents the importance of controlling for the sectoral composition of FDI when examining the impact that these capital flows have on growth (Alfaro and Charlton (2007), Aykut and Sayek (2007)). They in fact

suggest that a sound macroeconomic environment is a precondition to encourage FDI inflows, but that this is not enough if not complemented with a comprehensive macroprudential framework. This is especially the case when the country is a big recipient of FDI in the services sector. These flows seem in fact more driven by global rather than domestic factors and seem to be accompanied by an expansion of domestic and external credit. Policies oriented at macroeconomic stability then should also be complemented with measures aimed at monitoring the build-up of vulnerabilities, in particular domestic and external imbalances. The latter outcomes are in fact often complementary to surges in the services sector, particularly so for financial FDI flows. As argued by Ostry et al. (2010), these flows may in fact contain elements associated with a buildup of debt and an expansion of credit in the domestic economy via intracompany loans. Contrary to flows in primary and manufacturing sectors, there is no "real" transfer involved with these type of transactions (Rodrik and Subramanian, 2008) since their purpose is to be more similar to debt instruments; we suspect some components of FDI into the business and real estate sector to share these properties. The absence of a macroprudential framework that supervises over imbalances can end up wiping out the efficiency gains the FDI inflows bring in general. The proper design and implementation of these policies is a task we leave for future research.

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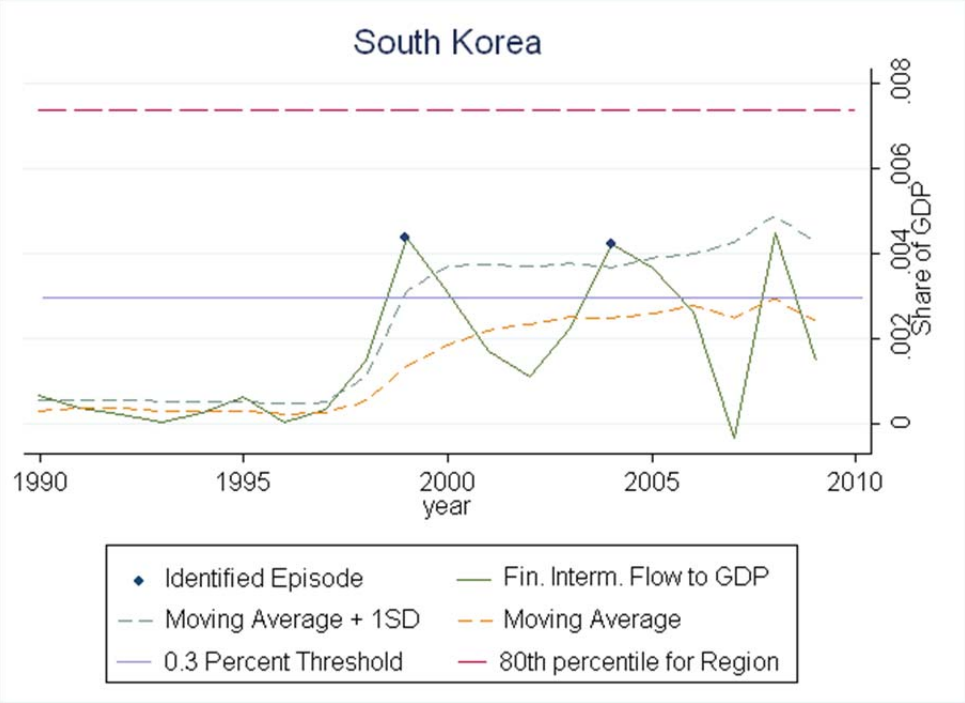
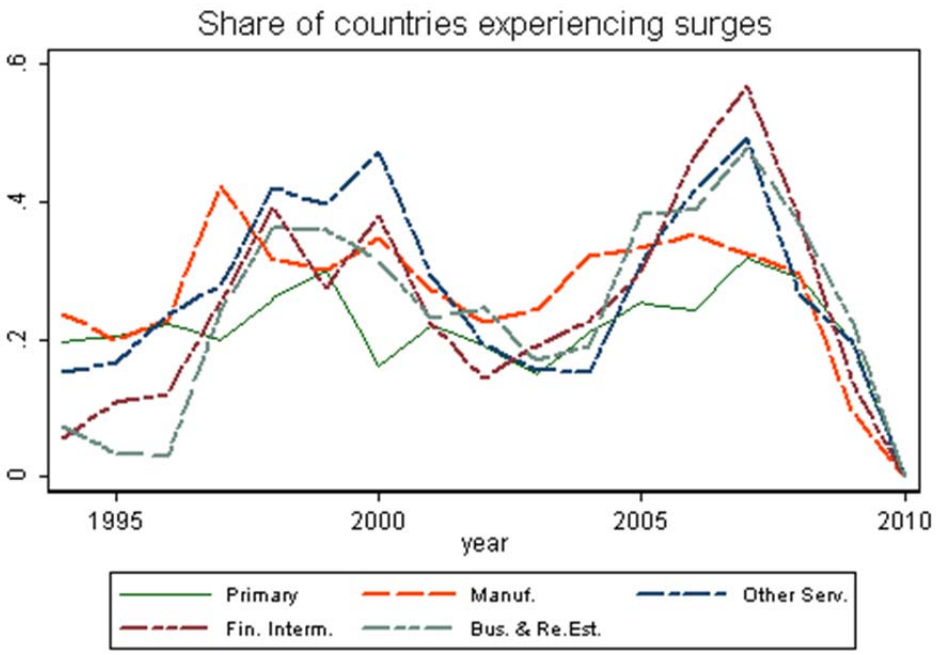
Figures

Figure 1



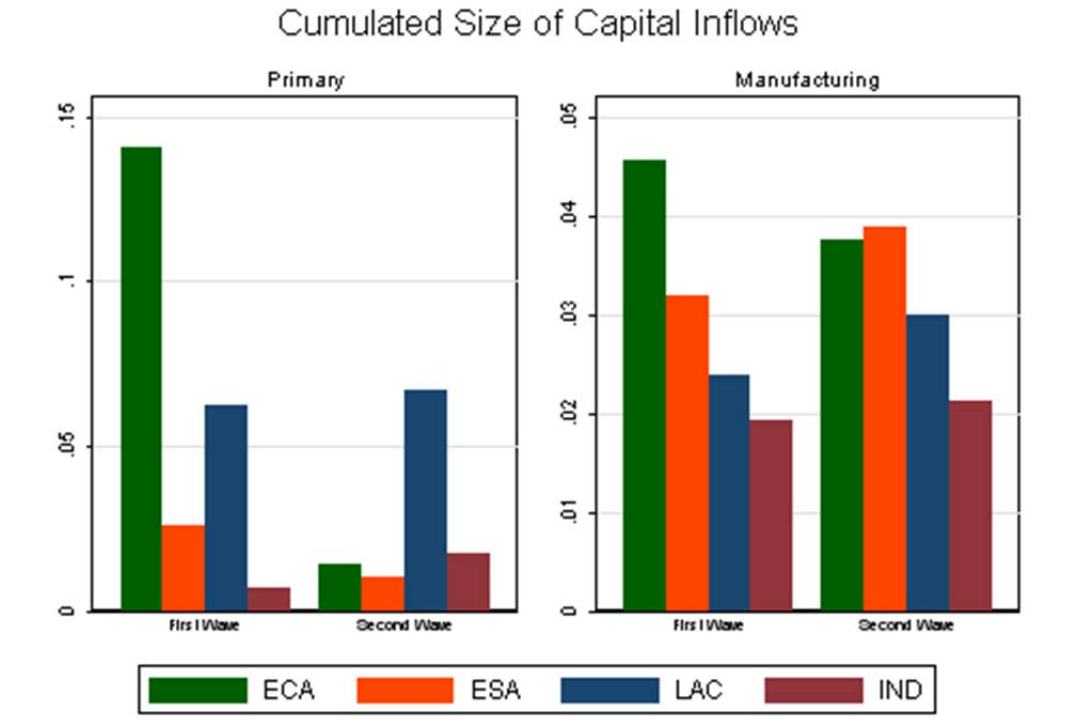
The graph shows the result of the identification of large sectoral FDI inflows in the Financial Intermediation sector for the case of South Korea. The moving average and the standard deviation are calculated over a 5 years window.

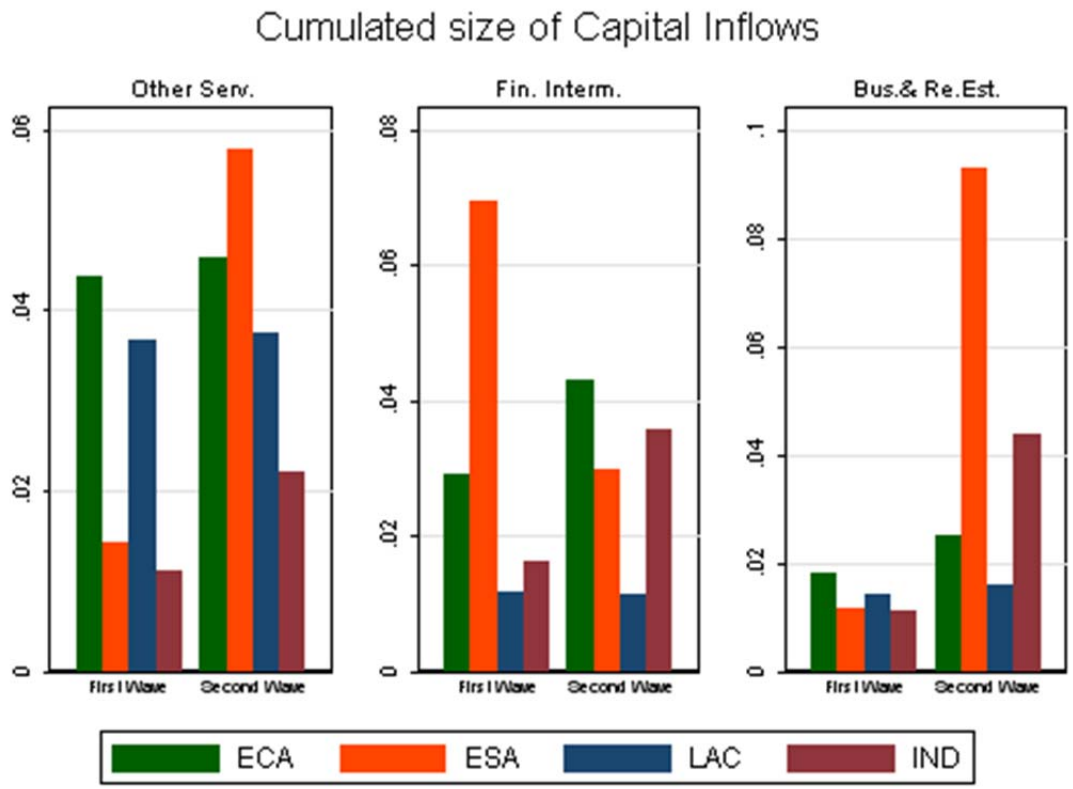
Figure 2



The graph reports the number of identified episodes normalized by the number of countries available in the sample.

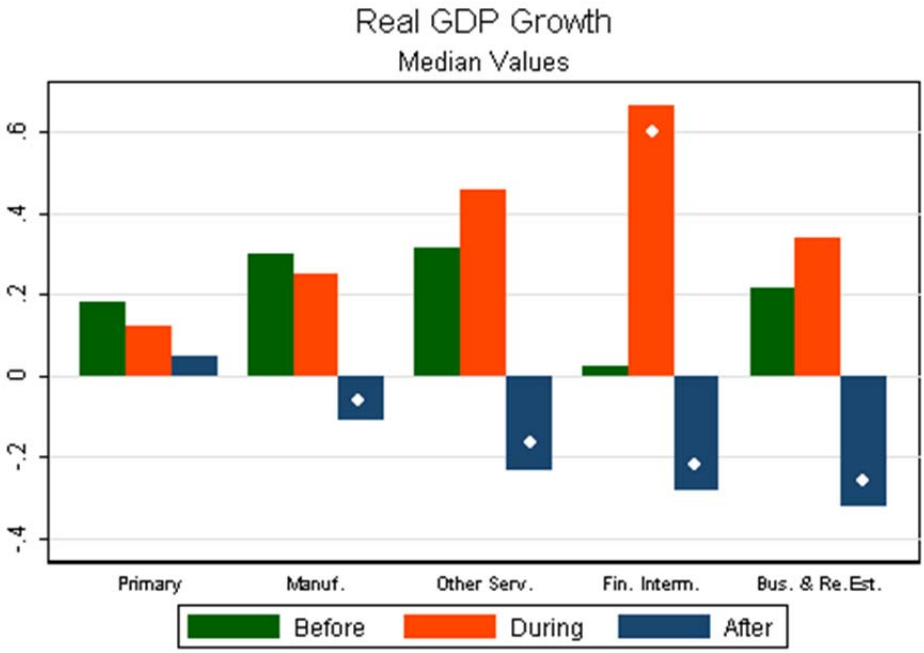
Figure 3





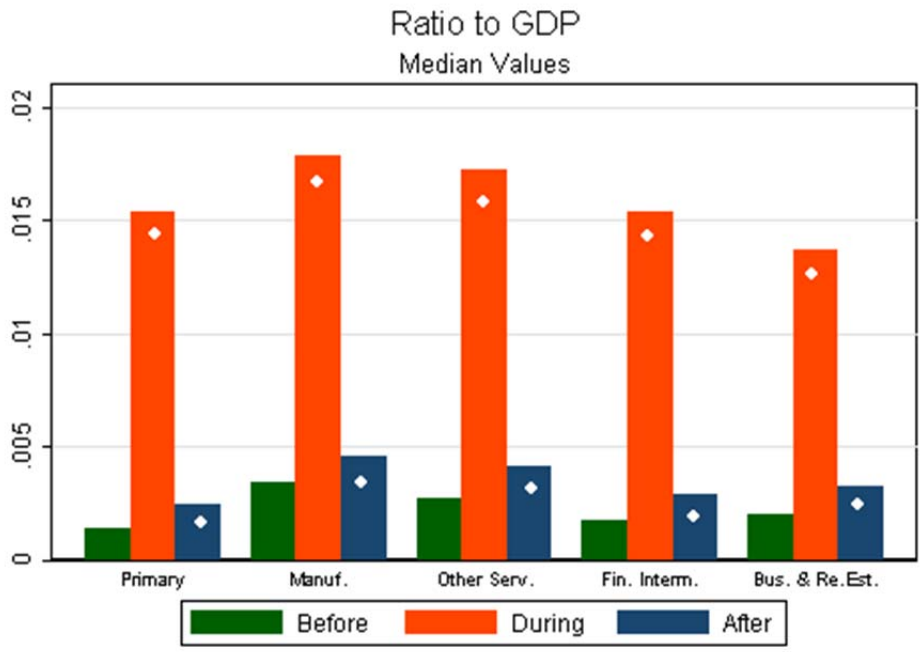
Note: Percentage of GDP

Figure 4



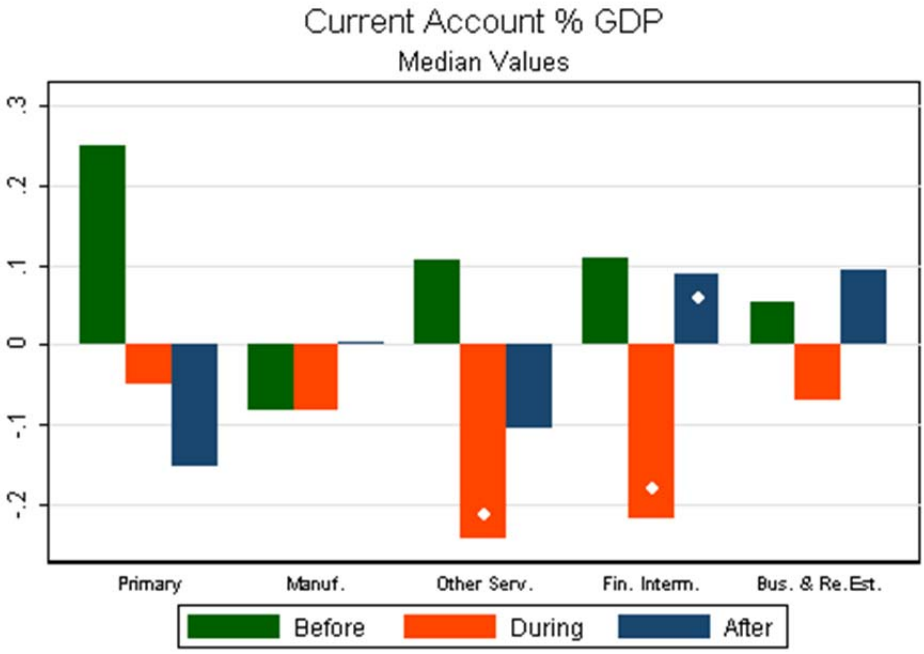
The graph reports the deviation of real GDP growth from trend 2 years before, during booms, and 2 years after the identified episodes. The trend value is measured with a Hodrik-Prescott filter calculated with smoothing value of 6.5. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Figure 5



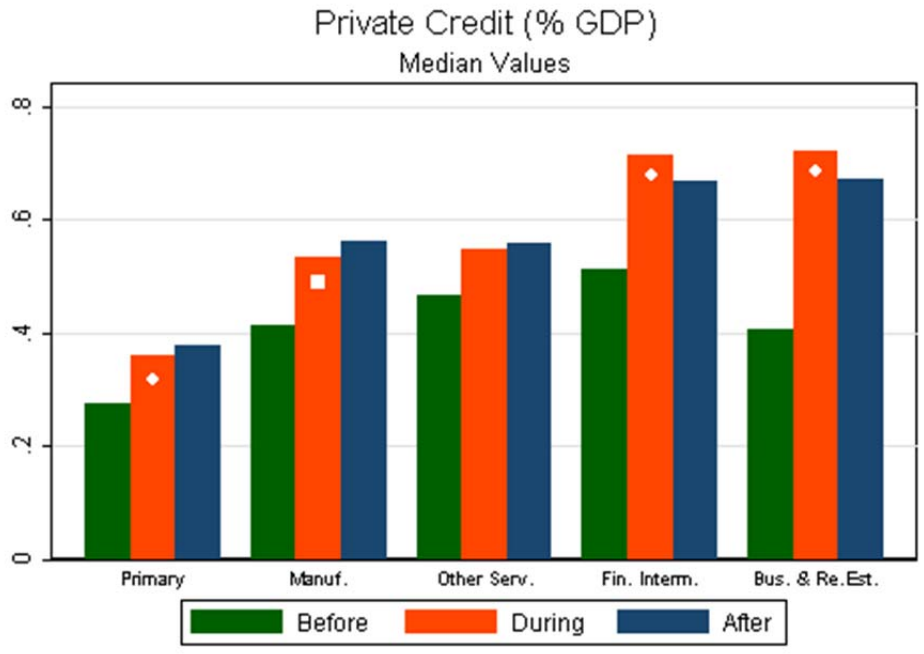
The graph reports the value of sectoral FDI flows to GDP 2 years before, during booms, and 2 years after the identified episodes. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level.

Figure 6



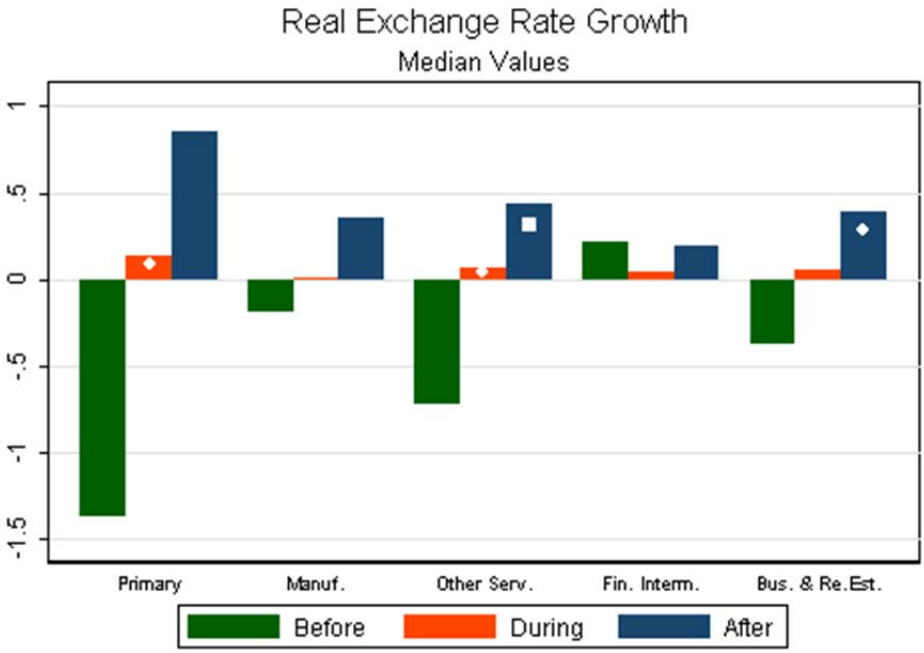
The graph reports the deviation of the current account to GDP from trend 2 years before, during booms, and 2 years after the identified episodes. The trend value is measured with a Hodrik-Prescott filter calculated with smoothing value of 6.5. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Figure 7



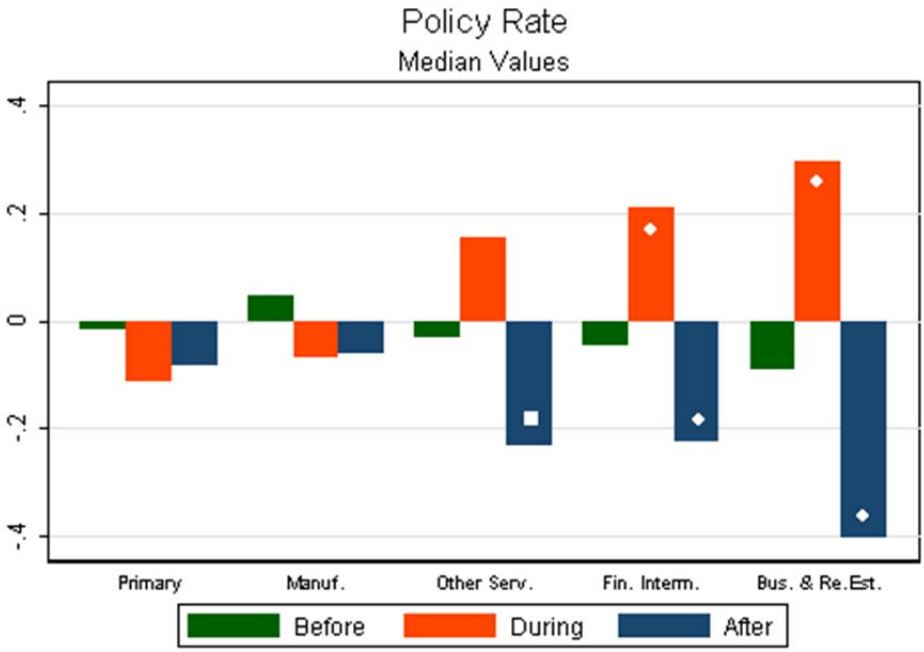
The graph reports the value of credit to the private sector to GDP 2 years before, during booms, and 2 years after the identified episodes. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Figure 8



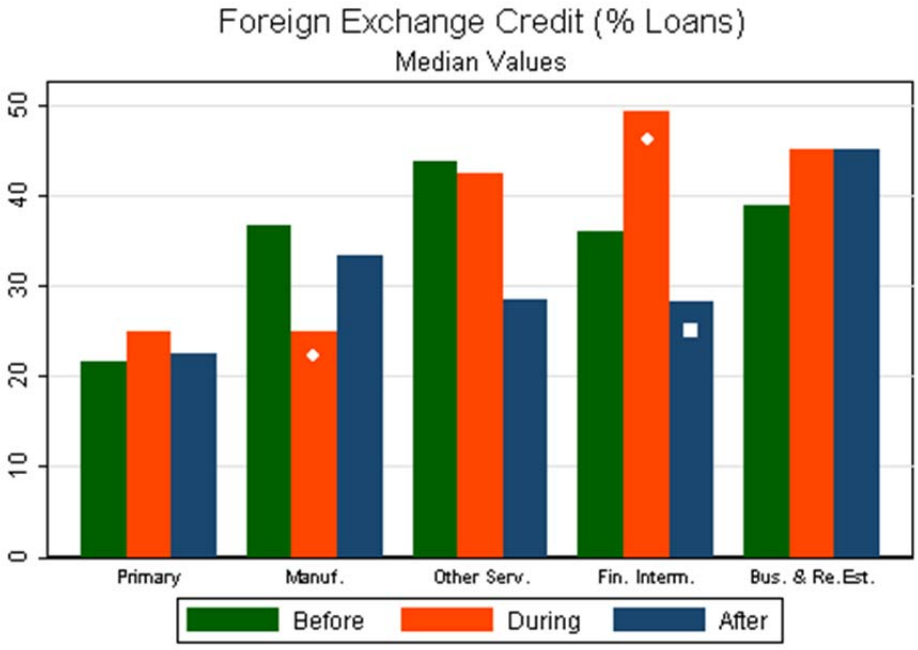
The graph reports the deviation of Real Exchange Rate growth from trend 2 years before, during booms, and 2 years after the identified episodes. The trend value is measured with a Hodrik-Prescott filter calculated with smoothing value of 6.5. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Figure 9



The graph reports the deviation of the policy rate from trend 2 years before, during booms, and 2 years after the identified episodes. The trend value is measured with a Hodrik-Prescott filter calculated with smoothing value of 6.5. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Figure 10



The graph reports the ratio of loans denominated in foreign exchange to total loans 2 years before, during booms, and 2 years after the identified episodes. The white dots on the bar indicate that the correspondent median value is significantly different from the median in the preceding period at the 5% level; the squares indicate significance at the 10% level.

Tables

Table 1a: Sectoral FDI Booms and Global Growth

Sector	(1) Primary (ABC)	(2) Manufact. (D)	(3) Oth.Services (GHI)	(4) Financial Interm. (J)	(5) Busi.& R.Estate (K)
Global Factors					
Global Growth	-0.0023	0.2209***	0.2642***	0.3714***	0.2514***
	(0.0748)	(0.0635)	(0.0856)	(0.0709)	(0.0582)
	0.9977	*1.2472*	*1.3024*	*1.4498*	*1.2858*
Commodity Prices	0.0099**				
	(0.0043)				
	1.0099				
Contagion					
Regional Contagion	-0.0046	0.0101	0.0208***	0.0336***	0.0421***
	(0.0106)	(0.0076)	(0.0066)	(0.0052)	(0.0074)
	0.9954	*1.0102*	*1.0210*	*1.0342*	*1.0430*
Observations	536	883	705	824	569
Countries	81	89	68	79	70
without changes in dep.	33	11	8	7	20
Pseudo R2	0.0271	0.0211	0.0405	0.0888	0.0968
Likelihood Ratio	-204.1	-370.6	-286.7	-318.9	-224.4
Share of 1's	0.369	0.305	0.302	0.325	0.355

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Odds ratio in italics.

Table 1b: Sectoral FDI Booms and Global Growth by Region

Sector	(1) Primary (ABC)	(2) Manufact. (D)	(3) Oth.Services (GHI)	(4) Financial Interm. (J)	(5) Busi.& R.Estate (K)
Global Factors*Region					
IND*Global Growth	-0.1221	0.2190**	0.3025	0.2929***	0.2638***
	(0.1067)	(0.1092)	(0.1998)	(0.1066)	(0.0857)
EM*Global Growth	0.0213	0.2284***	0.2357***	0.4255***	0.2436***
	(0.0857)	(0.0789)	(0.0843)	(0.0933)	(0.0781)
Contagion*Region					
IND*Regional Cont.	0.0082	0.0150	0.0283***	0.0256***	0.0440***
	(0.0294)	(0.0140)	(0.0105)	(0.0090)	(0.0116)
EM*Regional Cont.	-0.0066	0.0083	0.0139*	0.0391***	0.0408***
	(0.0113)	(0.0090)	(0.0080)	(0.0060)	(0.0097)
Observations	536	883	705	824	569
Countries	81	89	68	79	70
without changes in dep. var	33	11	8	7	20
R2	0.0290	0.0213	0.0429	0.0915	0.0970
Likelihood Ratio	-203.7	-370.5	-285.9	-318.0	-224.4
Share of 1's	0.369	0.305	0.302	0.325	0.355

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). Column (2) of table 1b includes and index of primary commodity prices (from WEO, results not shown). Global Growth is from the World Bank (WDI). 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 preceeding year. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 2a: Explaining Sectoral FDI Boom: Global, Contagion, and Domestic Factors

Sector	(1) Primary (ABC)	(2) Manu-facturing (D)	(3) Oth.Serv. (GHI)	(4) Financial Intermed. (J)	(5) Business& R.Estate (K)
Global Factors					
Volatility	0.0127	0.0216	0.0117	0.0052	0.0181
	(0.0251)	(0.0228)	(0.0274)	(0.0209)	(0.0277)
Global Growth	0.0013	0.3332***	0.3154**	0.4410***	0.3845***
	(0.1011)	(0.0928)	(0.1533)	(0.1132)	(0.1144)
Global Interest Rates	0.1110	-0.4067*	-0.1370	0.0831	-0.1706
	(0.2368)	(0.2235)	(0.2378)	(0.2182)	(0.3615)
Commodity Prices	0.0146**				
	(0.0057)				
Contagion					
Regional Contagion	0.0069	0.0083	0.0143*	0.0223***	0.0245**
	(0.0108)	(0.0084)	(0.0081)	(0.0078)	(0.0116)
Same regression, but excl. Domestic	*0.0013*	*0.0134*	*0.0204****	*0.0299****	*0.0364****
Domestic Factors					
Per-capita Income (PPP, log)	-1.1320	-0.0179	1.4037	2.3437**	2.0891*
	(1.5836)	(1.5177)	(1.1640)	(0.9623)	(1.2188)
GDP Growth	0.0398	0.0735*	0.0311	-0.0150	0.0326
	(0.0386)	(0.0424)	(0.0481)	(0.0370)	(0.0639)
Financial Openness	-0.1112	-0.2289	-0.5233***	-0.2950*	0.0671
	(0.2297)	(0.1522)	(0.1615)	(0.1610)	(0.2380)
Public Debt to GDP (log)	1.9774	-2.0466*	-1.9908*	-1.8328	-0.9563
	(1.3919)	(1.1629)	(1.1467)	(1.2328)	(2.2552)
Low Inflation Index	-0.0765	0.0393	0.2573*	-0.0464	0.0702
	(0.1418)	(0.1003)	(0.1364)	(0.1186)	(0.1984)
Investment Profile	0.2344**	-0.1781**	-0.1124	-0.0441	-0.0680
	(0.1032)	(0.0891)	(0.1051)	(0.0950)	(0.1485)
Observations	485	788	625	717	497
Countries	73	79	62	71	61
without changes in dep. var	29	9	8	8	17
Pseudo R2	0.0613	0.0450	0.0756	0.0951	0.108
Likelihood Ratio	-179.2	-320.5	-242.1	-270.0	-193.7
Share of 1's	0.363	0.310	0.306	0.311	0.376

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: 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 unless noted otherwise. Volatility is measured by the VIX. Global Growth is from WDI. Long-term Global interest rates are measured as the average of yields on American, German, British and Japanese long-term government bonds. Commoditiy prices are measured by an index of all primary commodities from the IMF (WEO). 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 preceeding year. Financial Openness is measured using the Chinna and Ito (2008) index. See the data appendix for the precise definition of the other variables. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 2b: Disaggregating by Region

Sector	(1) Primary (ABC)	(2) Manu-facturing (D)	(3) Oth.Serv. (GHI)	(4) Financial Intermed. (J)	(5) Business& R.Estate (K)
Global Factors*Region					
IND*Volatility	0.0120	0.1183***	0.0354	0.0216	0.0737
	(0.0594)	(0.0377)	(0.0505)	(0.0284)	(0.0484)
EM*Volatility	0.0020	-0.0321	-0.0007	-0.0162	-0.0282
	(0.0294)	(0.0294)	(0.0309)	(0.0304)	(0.0389)
IND*Global Growth	0.0178	0.6672***	0.6011**	0.4237**	0.3965**
	(0.1916)	(0.1571)	(0.3039)	(0.1730)	(0.1850)
EM*Global Growth	-0.0249	0.1304	0.2042	0.4621***	0.2930
	(0.1218)	(0.1117)	(0.1789)	(0.1415)	(0.1994)
IND*Global Interest Rate	-1.3944*	-0.0069	-0.6224	-0.3286	-0.0072
	(0.8068)	(0.5969)	(0.4705)	(0.5441)	(0.7731)
EM*Global Interest Rate	0.2148	-0.3438	0.0681	0.2080	-0.0003
	(0.2660)	(0.2341)	(0.2985)	(0.2453)	(0.5542)
Contagion*Region					
IND*Regional Cont.	0.0208	0.0190	0.0113	0.0107	0.0268*
	(0.0474)	(0.0178)	(0.0172)	(0.0134)	(0.0155)
Same sample, but excl. Domestic	0.0035	0.0105	0.0219*	0.0174	0.0322**
EM*Regional Cont.	0.0069	0.0100	0.0061	0.0300***	0.0077
	(0.0109)	(0.0101)	(0.0096)	(0.0110)	(0.0175)
Same sample, but excl. Domestic	-0.0021	0.0129	0.0155*	0.0383***	0.0338***
Domestic Factors*Region					
IND*PC Income (PPP, log)	-0.9628	0.3756	7.5246**	4.3633*	-2.4882
	(9.4600)	(3.0257)	(3.4375)	(2.5255)	(3.5366)
EM*PC Income (PPP, log)	-1.6023	-0.2207	1.0642	2.3413*	3.2388**
	(1.5429)	(1.7633)	(1.2023)	(1.3150)	(1.5756)
IND*GDP Growth	0.3236	-0.0239	0.0116	0.0043	0.1788
	(0.2247)	(0.1480)	(0.1950)	(0.1496)	(0.1221)
EM*GDP Growth	0.0291	0.0763*	0.0419	-0.0266	-0.0258
	(0.0395)	(0.0438)	(0.0500)	(0.0383)	(0.0712)
IND*Financial Openness	-1.1118*	0.2251	-0.4963	0.4306	0.7268**
	(0.6067)	(0.3037)	(0.6111)	(0.2919)	(0.3680)
EM*Finanical Openness	-0.0329	-0.3211**	-0.4882***	-0.4513***	-0.0889
	(0.2526)	(0.1616)	(0.1492)	(0.1637)	(0.3043)
IND* Public Debt/GDP (log)	6.6269	-0.7567	4.6342	-0.8086	2.9973
	(7.5753)	(2.3316)	(5.9398)	(1.7859)	(4.3743)
EM* Public Debt/GDP (log)	2.1524	-2.5394**	-3.0716***	-2.3844	-5.0105**
	(1.5299)	(1.2302)	(1.1626)	(1.6505)	(2.4142)
IND*Low Inflation Index	-0.1865	-0.6979*	0.5435	0.4299	0.4038
	(0.7313)	(0.3844)	(0.5347)	(0.4738)	(0.7820)
EM*Low Inflation Index	-0.0971	0.0921	0.2504*	-0.0593	0.0041
	(0.1542)	(0.1127)	(0.1404)	(0.1292)	(0.2191)
IND*Investment Profile	-0.2981	0.0193	-0.4107**	-0.2515	0.1594
	(0.4660)	(0.1910)	(0.1789)	(0.2072)	(0.2993)
EM*Investment Profile	0.3040***	-0.2537**	-0.0647	-0.0074	0.1124
	(0.1048)	(0.1101)	(0.1385)	(0.1179)	(0.2432)
Observations	485	788	625	717	497
Countries	73	79	62	71	61
without changes in dep. var	29	9	8	8	17
Pseudo R2	0.0858	0.0689	0.0974	0.112	0.155
Likelihood Ratio	-174.5	-312.5	-236.4	-264.9	-183.4
Share of 1's	0.363	0.310	0.306	0.311	0.376

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). See the data appendix and section 4 for the precise definition of the variables. The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 3: Regional Contagion vs. Trade Contagion

Sector	(1) Primary (ABC)	(2) Manufact. (D)	(3) Oth.Services (GHI)	(4) Financial Interm. (J)	(5) Busi.& R.Estate (K)
Global Factors					
Volatility	0.0060	0.0242	0.0063	0.0038	0.0166
	(0.0266)	(0.0246)	(0.0276)	(0.0213)	(0.0281)
Global Growth	-0.0180	0.3353***	0.3267**	0.4284***	0.3873***
	(0.0977)	(0.0959)	(0.1566)	(0.1137)	(0.1163)
Global Interest Rates	0.1530	-0.3445	-0.2800	0.1254	-0.1313
	(0.2605)	(0.2137)	(0.2309)	(0.2225)	(0.3752)
Contagion					
Regional Contagion	0.0063	0.0093	0.0042	0.0198**	0.0246*
	(0.0118)	(0.0089)	(0.0095)	(0.0087)	(0.0127)
Trade Contagion	0.0015	-0.0022	0.0140**	0.0046	0.0018
	(0.0188)	(0.0043)	(0.0058)	(0.0059)	(0.0063)
Domestic Factors: Included					
Observations	467	777	610	709	485
Countries	73	79	62	71	61
without changes in dep. var	30	9	9	8	18
Pseudo R2	0.0656	0.0446	0.0901	0.0959	0.106
Likelihood Ratio	-171.8	-316.6	-230.4	-268.3	-191.8
Share of 1's	0.362	0.310	0.302	0.315	0.365

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: 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. Column (1) includes and index of primary commodity prices (from WEO, results not shown). All variables are lagged unless noted otherwise. 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 preceeding year. See the data appendix and section 5 for sources and the precise definition of the other variables. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix).The estimates are obtained using the conditional logit framework with fixed effects. The robust

Table 4: Surges in sector-level FDI in emerging markets and privatization

Sector	(1) Primary (ABC)	(2) Manu-facturing (D)	(3) Oth.Serv. (GHI)	(4) Financial Intermed. (J)
Global Factors				
Volatility	0.0276	0.0271	0.0154	-0.0091
	(0.0289)	(0.0288)	(0.0319)	(0.0254)
Same Sample: Regression excl. privatization:	*0.0194*	*0.0256*	*0.0166*	*-0.0080*
Global Growth	0.1775	0.3135**	0.3289	0.3399**
	(0.1634)	(0.1411)	(0.2176)	(0.1552)
	0.0714	*0.3075***	*0.3433*	*0.3471***
Global Interest Rates	0.2484	-0.5429**	-0.0216	0.2234
	(0.2494)	(0.2425)	(0.2592)	(0.2358)
	0.2886	*-0.5688***	*-0.0364*	*0.1703*
Contagion				
Regional Contagion	-0.0016	0.0130	0.0109	0.0182*
	(0.0142)	(0.0094)	(0.0094)	(0.0101)
	-0.0027	*0.0151*	*0.0118*	*0.0176**
Domestic Factors				
Privatization proceeds in resp. sector to GDP	0.3040	0.9716**	0.1269	1.2225**
	(0.3299)	(0.4479)	(0.1090)	(0.5739)
Baseline Domestic Factors: Included				
Observations	406	627	516	541
Countries	64	65	51	57
without changes in dep. var	25	8	5	7
Pseudo R2	0.0770	0.0543	0.0669	0.109
Likelihood Ratio	-145.0	-249.9	-197.4	-206.2
Share of 1's	0.337	0.311	0.316	0.309

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: 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 variables are lagged unless noted otherwise. In Column (1), we include an index of primary commodity prices. Privatization proceeds (in current terms) are from the World Banks privatization data base and the privatization barometer. See the data appendix and section 4 for sources and the precise definition of the other variables. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 5: More domestic variables

Sector	(1) Primary (ABC)	(2) Manu-facturing (D)	(3) Oth.Serv. (GHI)	(4) Financial Intermed. (J)	(5) Business& R.Estate (K)
Regression incl. Global Factors, Cont., Baseline Dom. Factors, FE, and:					
A1) Current GDP Growth	0.0657**	-0.0232	-0.0106	0.0901*	0.1030*
	(0.0325)	(0.0333)	(0.0435)	(0.0520)	(0.0554)
A2) Sectoral VA Growth	0.0087	0.0479***	0.0228	-0.0110	0.0664
	(0.0256)	(0.0183)	(0.0370)	(0.0101)	(0.0515)
A3) Sectoral VA Growth*IND	-0.0330	0.0746	0.0099	-0.0464**	0.3083**
	(0.0515)	(0.0486)	(0.0807)	(0.0222)	(0.1273)
A3) Sectoral VA Growth*EM	0.0175	0.0410**	0.0315	-0.0081	0.0207
	(0.0305)	(0.0196)	(0.0414)	(0.0135)	(0.0473)
A4) Relative Dependence (USA)	-1.8195	-1.8664**	0.3796	1.7143	1.6492
	(1.3368)	(0.8946)	(0.9478)	(1.3931)	(2.3888)
A5) Relative Dependence (USA)*IND	-5.2419	-11.8139	13.5256*	10.2872	-3.0721
	(8.8577)	(7.9183)	(7.3959)	(6.4019)	(10.9859)
A5) Relative Dependence (USA)*EM	-1.6701	-1.5769	-0.2004	1.2075	2.9497
	(1.4716)	(0.9824)	(1.0090)	(1.4786)	(2.7313)
A6) Stock market capitalization (log)	2.7906*	1.4844	1.3420	2.5264***	1.4166
	(1.6011)	(0.9698)	(0.9110)	(0.7839)	(1.1270)
A7) Stock market cap.*IND	7.0544	-0.4692	2.2326**	4.9288***	3.7758**
	(5.3571)	(0.9520)	(0.9786)	(1.3672)	(1.9212)
A7) Stock market cap.*EM	1.5968	2.8007**	-0.1144	1.7658	0.0842
	(1.6844)	(1.3756)	(1.7755)	(1.3442)	(1.6689)
A8) Financial Integration (F. Assets + F. Liab to GDP)	-0.2017	0.6882	0.4213	0.7420	-1.2946
	(1.3580)	(0.6556)	(0.7117)	(0.5746)	(0.8839)
A9) Financial Integration*IND	-1.8722	-1.1056	-0.5448	1.0945	-1.5065
	(3.0736)	(1.0076)	(0.8341)	(0.9283)	(1.6026)
A9) Financial Integration*EM	1.2757	3.8460**	-0.2765	-0.3385	2.3507
	(1.7143)	(1.6040)	(1.4998)	(1.9510)	(2.2150)

Notes: 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 unless noted otherwise. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). In row A1, we replace GDP growth (lagged) with GDP growth in current terms. In rows A2 and A3, we replace GDP growth with VA growth; we exclude observations for VA growth that deviate by more than 3 standard deviations from their sample mean. In rows A8 and A9, we substitute the Chinn&Ito index with the financial integration measure by Lane and Milesi-Ferreti. In rows A3,5,7 and 9, all factors are disaggregated by region. Relative dependence on US Banks is defined as the share of cross border banking flows from US banks over total cross border bank flows. See the data appendix for the precise definition of the other variables. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 6: Exploring the role of capital controls

Sector	(1) Primary (ABC)	(2) Manu-facturing (D)	(3) Oth.Serv. (GHI)	(4) Financial Intermed. (J)	(5) Business& R.Estate (K)
Regression incl. Global Factors, Cont., Baseline Dom. Factors, FE, and:					
A1) Direct Investment Inflow Restrictions	-0.3104	0.2138	1.3397***	0.0067	0.3546
	(0.6029)	(0.5184)	(0.4033)	(0.8041)	(0.4778)
A2) Bond Inflow Restrictions	0.2273	1.3198*	0.0837	1.9120***	-0.7722
	(0.8611)	(0.6860)	(0.7677)	(0.7369)	(0.6177)
A2.1) Purchase locally by nonresidents (bond)	-0.8593	0.8220*	-0.3072	1.6962***	-0.5351
	(0.7133)	(0.4476)	(0.6709)	(0.6258)	(0.6654)
A2.2) Sale or issue abroad by residents (bond)	0.7818	1.1256*	0.3572	1.1063	-0.6966
	(0.7819)	(0.6515)	(0.5435)	(0.7016)	(0.4493)
A3) Money market inflow restrictions	-0.1220	1.5475***	1.4962***	1.4967*	-0.9615
	(0.7658)	(0.5509)	(0.5759)	(0.7806)	(0.6152)
A3.1) Purchase locally by nonresidents (money market)	-0.9187	1.5337***	0.7419	1.2755**	-1.3635**
	(0.8808)	(0.5477)	(0.4953)	(0.6330)	(0.6501)
A3.2) Sale or issue abroad by residents (money market)	0.6549	0.7280*	1.3973**	0.9811	-0.0727
	(0.6953)	(0.4331)	(0.5441)	(0.5970)	(0.4734)
A4) Equity inflow restrictions	0.7244	0.9640	0.5094	0.9768	-0.0775
	(0.6524)	(1.0111)	(0.7117)	(1.0745)	(1.1194)
A4.1) Purchase locally by nonresidents (equity)	0.0575	0.4899	0.4258	1.0348	0.4151
	(0.7762)	(0.7674)	(0.9400)	(1.0211)	(1.0435)
A4.2) Sale or issue abroad by residents (equity)	0.9220*	0.9803	0.2944	0.5242	-0.4009
	(0.4969)	(0.8453)	(0.5373)	(0.7202)	(0.7484)
Observations (Row A1)	208	459	364	440	288
Countries	54	63	49	58	50
without changes in dep. var	30	11	9	8	18

Notes: 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.The capital control indices are taken from Schindler (2009) and lagged by one year. See the data appendix for more information.The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table 7: Surges in different types of (aggregate-level) capital flows

Type of Capital Inflow	(1) FDI	(3) PF Equity	(5) PF Debt	(7) OI Banks	(9) OI Other Sectors
Global Factors					
Volatility	-0.0075	-0.0578***	-0.0707***	-0.0235*	-0.0210
	(0.0161)	(0.0215)	(0.0186)	(0.0134)	(0.0178)
Global Growth	0.2534***	0.0922	-0.0261	0.3676***	0.2647***
	(0.0605)	(0.0807)	(0.0819)	(0.0960)	(0.0938)
Global Interest Rate	0.0284	-0.5211	-0.6310***	0.1455	0.0495
	(0.1882)	(0.3329)	(0.2052)	(0.1533)	(0.1618)
Contagion					
Regional Contagion	0.0234***	0.0167**	-0.0032	0.0171***	0.0155***
	(0.0054)	(0.0078)	(0.0066)	(0.0052)	(0.0056)
Domestic Factors					
Per-capita Income (PPP, log	0.6618	1.0398	-1.5866	0.7024	-0.0355
	(0.8868)	(1.1054)	(0.9770)	(0.6899)	(0.7004)
GDP Growth	0.0406	0.0008	0.0468	0.0770**	0.0489
	(0.0300)	(0.0339)	(0.0316)	(0.0336)	(0.0309)
Financial Openness	-0.0263	-0.1545	0.0015	0.1356	-0.0853
	(0.1109)	(0.1403)	(0.1343)	(0.1430)	(0.1119)
Public Debt to GDP (log)	-1.1099	-1.2975	-2.7945**	-0.4331	-1.8986
	(0.9451)	(1.3640)	(1.3705)	(0.8929)	(1.2726)
Low Inflation Index	-0.0112	-0.0198	0.0020	0.0644	0.0032
	(0.1058)	(0.1197)	(0.0683)	(0.0983)	(0.0810)
Investment Profile	-0.0469	-0.2150*	0.0567	-0.0067	0.0556
	(0.0850)	(0.1139)	(0.0843)	(0.0705)	(0.0802)
Observations	1138	767	895	1012	1098
Countries	85	81	83	83	85
without changes in dep.	2	24	17	7	4
Pseudo R2	0.0684	0.0622	0.0721	0.122	0.0726
Likelihood Ratio	-523.2	-334.5	-391.5	-410.2	-458.5
Share of 1's	0.421	0.352	0.371	0.361	0.304

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in the respective type of capital inflow. Volatility is measured by the VIX. Global Growth is from the World Bank (WDI). Long-term Global interest rates are measured as the average of yields on American, German, British and Japanese long-term government bonds. 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 preceeding year. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Appendices

A. Data

A1. Sectors

The sectoral composition of the FDI inflows, value added and employment data is based on the ISIC Rev. 3.1 classification. In the tables, primary (ABC) refers to the sectors agriculture, hunting, forestry and fishing (AB) as well as mining and quarrying (C). Manufacturing (D) refers to the production sector. Trade & Tourism refers to wholesale and retail trade and repair of motor vehicles, motorcycles, personal and household Goods (G) and hotels and restaurants (H). Transport & Communication (I) refers to the transport, storage and transportation sector, which includes land (incl. pipelines), water and air transport as well as post and telecommunications. Financial Intermediation (J) refers to financial intermediation, insurance and pension funding (except compulsory social security). Business & Real Estate (K) refers to real estate activities, renting of machinery and equipment, computer and related activities, research and development and other business activities.

A2. Data

Global variables

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.

Alterative Measure of 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).

Alternative Measure of Global Growth (Growth in Advanced Countries): Alternatively, we measure global growth using the 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).

Global (short-term) Interest Rate (US T-Bill): The US T-Bill is taken from the IMF's IFS.

Contagion

Regional Contagion: Regional contagion is based on surges in sectoral FDI inflows identified using the sectoral FDI data as described in section 5. The variable measures the share (in percentage points) of countries in the same region which also experienced a boom in the respective sector in the preceding year.

Index of Trade Contagion: The index of 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 boom in the respective sector in the preceding year (see section 5 on further details).

Domestic variables

Current Account/Capital Flows: The current account, gross inflows of foreign direct investment (FDI), portfolio equity, portfolio debt and other investments vis-à-vis banks and other sectors 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.

Private Credit to GDP: Private Credit by Deposit Money Banks and Other Financial Institutions relative to GDP is taken from Beck et al. (2000, updated to 2009).

Foreign currency loans: The data on the ratio of foreign currency loans to total loans in the respective economy are taken from the IMF.

Real Effective Exchange Rate: The REER data are primarily based on the CPI-based real effective exchange rate from IFS (line RECZF). The remaining data are from Eurostat and also based on CPI deflators.

Discount rate (Policy rate): The discount rate is taken from the IMF's IFS data base.

Financial Openness: To measure financial openness, we employ the index of capital account openness (KAOPEN) from Chinn and Ito (2008). The index runs from -1.83 to 2.5, where higher values imply fewer restrictions on the capital and current account.

Financial Integration: De facto financial integration is proxied by the sum of foreign assets and foreign liabilities to GDP. The data are taken from Lane and Milesi-Ferretti (2007, extended to 2008). In the regressions, we use the deviation of the respective country's level of financial integration from its regional average (both in logs).

Restrictions on capital flows by type of flow: Data on restrictions on transactions with regard to direct investment and bonds is taken from Schindler (2009). *Direct Investment Inflow*

Restrictions, Purchase of bonds locally by nonresidents and *sale or issue of bonds abroad by residents* are 0/1 dummies that indicate whether restrictions are in place. The variable *Bond Inflow Restrictions* is built using the two sub-indices above and can take 4 values between 0 and 1. We also use the index on equity inflow restrictions and money market inflow restrictions.

Public Debt to GDP: The data on gross government debt-to-GDP ratio is taken from Abbas et al. (2010).

Income per capita (PPP): PPP Converted GDP Per Capita (Chain Series), at 2005 constant prices, is taken from the Penn World Tables 7.0.

Low Inflation Index: To measure the soundness of macroeconomic policies, we use an index from International Country Risk Guide (ICRG), which assigns a value between 0 and 10 to different inflation intervals. The higher the value, the lower the inflation rate (e.g. 10 for inflation rates below 2%)

Investment profile: To measure institutional quality, we use the indicator "Investment profile" from International Country Risk Guide (ICRG). It has three subcomponents: (Risks to) Contract Viability/Expropriation, Profits Repatriation and Payment Delays. The indicator ranges from 0 to 12; higher values stand for a better Investment Profile.

Stock Market Capitalization to GDP: Value of listed shares to GDP taken from Beck et al. (2000, updated to 2009).

Relative Dependence on US banks: Relative dependence is the defined as the share of cross border banking flows from US banks over total cross border bank flows. A higher value indicates higher dependence from US banks vs. dependence on German, British, Japanese banks. The data is taken from the Bank of International Settlements.

Privatization Proceeds to GDP: For emerging markets, the World Bank's and the International Finance Corporation's privatization database[45] contains data on the proceeds of privatizations in USD for the *primary*, *energy*, *manufacturing and services*, *infrastructure* and *financial* sector (wording as in database).[46] 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 privatizations in the transport and

[45] http://rru.worldbank.org/Privatization/

[46] The database contains also a category *services,* for which there is data only in the first part of the database (1988-1999). As it was not possible to clearly match this category with the sectors used in our study, we decided to not include these data.

communication sector and therefore matched with the other services (GHI) sector. We match the *financial* sector with the financial sector (J) in our dataset (however, proceeds in the *financial* sector contain also proceeds in the real estate sector).

For EU member states, we took data from the Privatization Barometer (2011)[47]. This database contains privatization proceeds (in Mn US$) for the *petroleum*, *transportation*, *telecommunication*, *manufacturing*, *finance & real estate*, *services*, *utilities*, and *construction* industry. We match with the sectors we focus on as follows: as above, we use finance & real estate as a measure for privatization in the financial industry; we cannot match *services* as it contains overlapping data (on business, tourism, trade and government services - *services* privatizations are however quantitatively small compared to *transportation* and *telecommunication* and we hence trust that our measure for the GHI sector is a reliable proxy for privatizations in this sector.

For both datasets, we assume – for the countries contained in the dataset – that there had been no further privatizations in the years without data.

Sectoral Value Added Data: 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 latte 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.

B. Sample

Industrial Countries (IND)[48]

Australia (1985-2008), Austria (1998-2009), Belgium (2002-2008), Canada (1985-2007), Cyprus (1997-2009), Denmark (1985-2009), Finland (1985-2009), France (1985-2009), Germany (1985-2007), Greece (2001-2008), Iceland (1988-2009), Ireland (1985-1997, 2003-2009), Italy (1985-2009), Japan (1985-2009), Netherlands (1985-2009), Norway (1994-2008) Portugal (1985-

[47] http://www.privatizationbarometer.net/database.php

[48] Availability of sectoral FDI data in brackets. The regional breakdown is based on the World Bank's classification.

2009), Spain (1985-2009), Sweden (1989-2009), Switzerland (1993-2009), United Kingdom (1985-2008), United States (1985-2009)

Emerging Markets (EM)

Middle East, North Africa & Sub-Saharan Africa (AME): Egypt (2001-2008), Ethiopia (1992-2000), Gabon (1999-2008), Israel (1998-2007), Madagascar (2003-2009), Mauritania (1999-2006), Mauritius (1990-2009), Morocco (1996-2008), Mozambique (2001-2009), Nigeria (1990-2005), Saudi Arabia (1999-2008), Swaziland (2001-2007), Tunisia (1990-2009), Uganda (1993-2008),

Europe & Central Asia (ECA): Albania (2002-2009), Armenia (1998-2009), Azerbaijan (1995-2004), Bosnia & Herzegovina (2004-2008), Bulgaria (1998-2009), Croatia (1993-2008), Czech Republic (1993-2008), Estonia (1994-2009), Hungary (1999-2008), Kazakhstan (1993-2009), Latvia (1993-2009), Lithuania (1997-2009), Kyrgyz Republic (1995-2008), Macedonia (1997-2008), Poland (1994-2009), Romania (2003-2008), Russia (1999-2008), Serbia (2004-2009), Slovak Republic (1998-2008), Slovenia (1995-2009), Tajikistan (2003-2009), Turkey (1992-2009), Ukraine (2002-2008),

East Asia, Pacific & South Asia (ESA): Bangladesh (1998-2008), Cambodia (2000-2009), China (1997-2008), Hong Kong (1998-2009), India (2000-2009), Indonesia (1999-2008), Lao PDR (1999-2006), Malaysia (1999-2008), Myanmar (1999-2006), Pakistan (2001-2009), Philippines (1999-2009), Singapore (1999-2006), South Korea (1985-2009), Sri Lanka (2000-2009), Taiwan (1980-2007), Thailand (1990-2009), Vietnam (1999-2006)

Latin America & Caribbean (LCA): Argentina (1992-2008), Bolivia (1990-2008), Brazil (1996-2009), Chile (1985-2009), Colombia (1994-2009), Costa Rica (1992-2008), Dominican Republic (1993-2009), Ecuador (1992-2009), El Salvador (1998-2008), Guyana (1992-1999), Honduras (1993-2008), Jamaica (1999-2008), Mexico (1985-2009), Nicaragua (1991-2009), Panama (1998-2007), Paraguay (1990-2008), Trinidad and Tobago (1990-2008), Uruguay (2001-2008), Venezuela (1990-2009)

C. Appendix Tables

Table A1. Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Min	Max	Obs.
Current Account to GDP	-0.018	-0.0195	0.0774	-0.3188	0.3958	1626
Real GDP Growth	3.7863	4.116	4.6137	-23.1	34.5	1701
Private Credit to GDP	0.5683	0.407	0.4712	0.0262	2.6976	1560
Foreign Currency Loans (ratio to total loans)	0.3581	0.3116	0.2785	0	1	475
Real Effective Exchange Rate (Growth)	1.2481	0.9897	8.8312	-56.768	85.667	1175
Discount Rate	16.4108	8.5	59.9064	0.05	1889.39	1213
Volatility (VIX)	20.5249	21.9829	6.5836	12.3888	32.6926	1666
Global Real GDP Growth	2.7333	3.3015	1.462	-1.9477	4.2838	1666
Global interest rate	4.4906	4.04	1.2006	2.8675	6.905	1666
Capital Account Openness (Chinn&Ito)	0.7805	1.167	1.5281	-1.8312	2.5	1457
Financial Integration (F. Assets + F. Liabilities to GDP)	2.1497	1.3385	2.5729	0.3312	25.7306	1541
Direct Investment Inflow Restrictions	0.3123	0	0.4637	0	1	759
Bond Inflow Restrictions	0.2166	0	0.3538	0	1	621
Restr. on purchases of bonds locally by nonresidents	0.1481	0	0.3555	0	1	621
Restr. on sale/issue of bonds abroad by res. (bond)	0.285	0	0.4518	0	1	621
Money Market Inflow Restrictions	0.2536	0	0.3919	0	1	759
Restr. on purchases of money market instruments locally by nonresidents	0.191	0	0.3934	0	1	759
Restr. on sale or issue of m. market instruments abroad by residents (bond)	0.3162	0	0.4653	0	1	759
Public Debt to GDP	0.5824	0.5177	0.4073	0.0374	4.4657	1540
Income per capita (PPP, in thousands of 2005 USD)	13.5393	8.7267	12.1144	0.3594	53.1246	1637
Inflation Index (ICRG)	8.1441	8.5417	1.8419	0	10	1426
Investment Profile (ICRG)	8.3114	8.3333	2.4151	2	12	1438
Stock Market Capitalization to GDP	0.5543	0.3266	0.6564	0.0002	7.425	1250
Relative Dependence on US banks	0.2674	0.1935	0.2427	0	1	1474
Privatization Proceeds to GDP (All, p.p.)	0.6097	0.0189	1.6026	0	22.4502	1173
Privatization Proceeds to GDP (Primary, p.p.)	0.0967	0	0.8545	0	20.6652	1173
Privat. Proceeds to GDP (Manuf.& Services, p.p.)	0.0956	0	0.3951	0	6.738	1173
Privatization Proceeds to GDP (Infrastructure, p.p.)	0.296	0	1.05	0	12.9867	1173
Privatization Proceeds to GDP (Financial, p.p.)	0.0649	0	0.2957	0	3.8333	1173
FDI Inflows to GDP (IFS)	0.041	0.0284	0.0507	-0.15	0.512	1453
Portfolio Equity Inflows to GDP (IFS)	0.0097	0.0006	0.0553	-0.1276	0.7564	1271
Portfolio Debt Inflows to GDP (IFS)	0.0174	0.0023	0.0642	-0.8898	1.0315	1296
Other Investment vis-à-vis Banks Inflows to GDP (IFS)	0.0262	0.0043	0.1134	-0.8904	1.546	1402
Other Inv. into Oth.Sectors Inflows to GDP (IFS)	0.0122	0.0072	0.0446	-0.2807	1.058	1424

Notes: All growth rates are in percentage points. See the data appendix for a precise definition of all the variables. Up to the discount rate (variables used also in the event study of section 4) summary statistics are for the period 1992-2010. 1994-2009 for privatization and IFS flows. 1993-2009 for the remainder.

Table A2. Descriptive Statistics (Sector-level Variables)

Variable		Mean	Median	Std. Dev.	Min	Max	Obs.
Whole econonmy (total)	FDI Inflows to GDP	0.0439	0.0304	0.0533	-0.1566	0.5059	1192
	Value Added Growth	4.0475	4.127	4.2315	-21.7266	30.8074	1178
	Regional Contagion	33.45	29.4118	16.8081	0	85	1183
	Trade Contagion	41.6282	36.0614	27.9225	0	99.8159	1121
Primary (ABC)	FDI Inflows to GDP	0.0092	0.0009	0.031	-0.0155	0.4709	983
	FDI Inflows to sec. VA	0.0428	0.0113	0.1125	-0.1744	1.7513	756
	Value Added Growth	2.5978	2.2032	7.6116	-23.2173	68.3283	771
	Share of VA in total VA	0.1538	0.11	0.1438	0.0005	0.818	1071
	Regional Contagion	20.9894	20	11.192	0	60	971
	Trade Contagion	10.8616	7.6607	11.2954	0	82.4556	934
Manufacturing (D)	FDI Inflows to GDP	0.0086	0.0052	0.0127	-0.0655	0.1935	1092
	FDI Inflows to sec. VA	0.0574	0.0347	0.0902	-0.6122	1.2317	1087
	Value Added Growth	4.1591	3.9344	7.2084	-44.4579	63.4573	1078
	Share of VA in total VA	0.1672	0.1671	0.0709	0.019	0.438	1552
	Regional Contagion	27.0117	28.5714	11.0182	0	75	1077
	Trade Contagion	33.3008	29.6715	20.521	0	94.3654	1039
Other Services: Trade, Tourism, Transport, Storage and Communication (GHI)	FDI Inflows to GDP	0.0088	0.0048	0.0126	-0.0288	0.1083	869
	FDI Inflows to sec. VA	0.0403	0.0223	0.0589	-0.1559	0.5534	857
	Value Added Growth	4.682	4.7938	5.3815	-36.8108	21.1614	848
	Share of VA in total VA	0.2335	0.2326	0.0565	0.0679	0.4034	1536
	Regional Contagion	27.1726	25	14.8537	0	83.3333	848
	Trade Contagion	24.6353	18.5526	21.6662	0	96.6236	838
Financial Intermediation (J)	FDI Inflows to GDP	0.0085	0.0032	0.0217	-0.1533	0.3473	977
	FDI Inflows to sec. VA	0.198	0.0691	0.6111	-0.9856	12.7681	732
	Value Added Growth	6.2599	5.5839	10.9781	-33.9612	157.699	736
	Share of VA in total VA	0.049	0.0454	0.0265	0.0076	0.1585	955
	Regional Contagion	27.0215	25	16.546	0	80.9524	953
	Trade Contagion	27.1829	23.2975	20.4175	0	94.1635	941
Business and Real Estate (K)	FDI Inflows to GDP	0.0083	0.0025	0.0224	-0.0354	0.295	831
	FDI Inflows to sec. VA	0.0679	0.019	0.2155	-0.2239	3.2466	582
	Value Added Growth	4.2211	3.8435	4.1641	-17.474	23.3404	590
	Share of VA in total VA	0.1316	0.1275	0.0594	0.022	0.2826	954
	Regional Contagion	26.3286	26.3158	16.1198	0	71.4286	803
	Trade Contagion	28.7387	26.8018	21.2075	0	97.0945	800

Notes: All growth rates and the contagion variables are in p.p. The summary statistics are for 1994-2009. See the data appendix and section 5 for data sources and a precise definition of the contagion variables. VA stands for value-added.

Table A3. Sectoral FDI flows by sector: number of non-missing observations by year and region

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Primary (ABC)	26/41	29/44	32/45	35/50	39/54	48/63	47/62	52/68	55/73	56/74	57/76	56/75	55/74	51/69	50/69	31/46
Manufacturing (D)	24/42	27/45	30/48	33/52	41/60	51/70	53/72	58/77	60/80	61/82	63/84	64/84	64/85	60/80	57/78	36/53
Oth.Serv. (GHI)	18/33	21/36	23/38	27/43	33/50	37/53	38/55	40/58	44/62	45/64	47/66	48/67	48/67	48/67	45/64	30/46
Financial Interm. (J)	18/35	20/37	24/41	29/47	37/56	43/62	44/63	47/67	49/70	51/73	53/75	55/77	55/77	53/74	50/72	33/51
Busi.& R.Est. (K)	13/27	16/29	19/33	22/37	28/44	34/50	38/54	39/56	43/61	46/65	49/68	49/68	48/67	49/67	46/65	28/40

Notes: The summary statistics are for 1994-2009. The table shows the total number of non-missing observations for sectoral FDI inflows into the respective sectors by year and both for emerging markest (first figure) and all countries (see the appendix for information on the sample).

Table A4. Correlations

	Volatility	Global Growth	Global IR	Volatility (L)	Global Growth (L)	Global IR (L)	Reg.Cont. Primary	Reg. Cont. Manuf.	Reg. Cont. GHI	Reg. Cont. Fin. Interm.	Reg. Cont. K
Volatility	1										
Global Growth	-0.5955 0.0000	1									
Global Interest Rates	-0.5206 0.0000	0.2661 0.0000	1								
Volatility (L)	0.7082 0.0000	-0.5574 0.0000	-0.5695 0.0000	1							
Global Growth (L)	-0.0711 0.0000	0.3649 0.0000	-0.1689 0.0000	-0.4208 0.0000	1						
Global Interest Rates (L)	-0.3913 0.0000	0.0450 0.0664	0.9253 0.0000	-0.4580 0.0000	-0.1391 0.0000	1					
Regional Contagion Primary (ABC)	0.1622 0	-0.0937 0.0043	-0.0487 0.1382	0.0136 0.6786	-0.0153 0.6422	-0.071 0.0307	1				
Regional Contagion Manufacturing (D)	0.0387 0.2164	-0.0272 0.3843	-0.1272 0.0000	-0.0989 0.0015	0.2796 0.0000	-0.0968 0.0019	-0.0727 0.0323	1			
Regional Contagion Oth. Services (GHI)	0.3745 0	-0.077 0.029	-0.0939 0.0077	-0.0135 0.7023	0.2561 0	-0.1194 0.0007	0.2596 0	0.3741 0	1		
Regional Contagion Financial Intermed. (J)	0.3785 0.0000	-0.2162 0.0000	-0.3476 0.0000	-0.0104 0.7554	0.2276 0.0000	-0.3410 0.0000	0.2526 0	0.3093 0	0.6545 0	1	
Regional Contagion Busi. and R. Estate (K)	0.311 0	-0.1876 0	-0.384 0	0.0491 0.1743	0.1146 0.0015	-0.4003 0	0.2557 0	0.4664 0	0.6069 0	0.7267 0	1

Notes: P-values in parenthesis. L indicates that the value is in terms of the preceding year. Contagion is in terms of the preceding year by default. See the data appendix and section 5 for sources and a precise definition of the variables.

Table A5.1: Alternative Definition of Global Factors: Growth in Advanced Countries

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only Adv. Growth:	**0.0202**	**0.1750*** **	**0.2290*** **	**0.3123*** **	**0.1991*** **
Volatility (whole sample regression)		*0.0186*	*0.0082*	*0.0095*	*-0.0022*	*0.0333*
IND*Volatility		0.0262	0.1017***	0.0377	0.0244	0.0937*
		(0.0541)	(0.0351)	(0.0489)	(0.0268)	(0.0523)
EM*Volatility		0.0050	-0.0404	-0.0012	-0.0301	-0.0277
		(0.0283)	(0.0288)	(0.0297)	(0.0284)	(0.0393)
Global Growth (whole sample reg.)		*0.0470*	*0.2683***	*0.3263***	*0.4299***	*0.5081***
IND*Global Growth (Adv.)		0.1235	0.5681***	0.6347**	0.4679***	0.5434***
		(0.1273)	(0.1374)	(0.2929)	(0.1606)	(0.2048)
EM*Global Growth (Adv.)		-0.0050	0.0826	0.2153	0.3996***	0.3198
		(0.1193)	(0.1098)	(0.1877)	(0.1315)	(0.2147)
Global Interest Rate (whole sample reg.)		*0.0918*	*-0.4168**	*-0.1722*	*0.0372*	*-0.3915*
IND*Global Interest Rate		-1.3788*	0.1630	-0.4308	-0.2283	-0.1062
		(0.8324)	(0.5731)	(0.4478)	(0.5126)	(0.7552)
EM*Global Interest Rate		0.2097	-0.3366	0.0344	0.1688	-0.1413
		(0.2710)	(0.2409)	(0.3161)	(0.2448)	(0.5610)
Contagion						
Regional Cont. (whole sample reg.)		*0.0066*	*0.0064*	*0.0122*	*0.0206***	*0.0168*
excl. Domestic factors		*0.0011*	*0.0124*	*0.0216***	*0.0327***	*0.0378***
IND*Regional Cont.		0.0148	0.0106	0.0063	0.0071	0.0163
		(0.0481)	(0.0179)	(0.0181)	(0.0136)	(0.0157)
Same regression, but excl. Domestic		*-0.0038*	*-0.0017*	*0.0220**	*0.0181*	*0.0197*
EM*Regional Cont.		0.0070	0.0101	0.0049	0.0302***	0.0075
		(0.0109)	(0.0101)	(0.0091)	(0.0111)	(0.0178)
Same regression, but excl. Domestic		*-0.0024*	*0.0134*	*0.0169**	*0.0421***	*0.0367***
Domestic Factors						
IND*PC Income (PPP, log)		0.1483	2.5231	11.1667***	7.4358***	0.8351
		(9.4599)	(2.8790)	(3.8051)	(2.8577)	(3.8196)
EM*PC Income (PPP, log)		-1.5695	-0.0887	1.5183	3.2533**	3.8531**
		(1.5846)	(1.8688)	(1.3634)	(1.5505)	(1.7504)
IND*GDP Growth		0.3011	-0.0343	-0.0190	-0.0294	0.1457
		(0.2322)	(0.1389)	(0.1952)	(0.1515)	(0.1254)
EM*GDP Growth		0.0286	0.0774*	0.0469	-0.0216	-0.0241
		(0.0392)	(0.0439)	(0.0485)	(0.0391)	(0.0691)
IND*Financial Openness		-1.1100*	0.2271	-0.5579	0.4766*	0.6932**
		(0.6259)	(0.2967)	(0.6601)	(0.2681)	(0.3466)
EM*Finanical Openness		-0.0333	-0.3200**	-0.4713***	-0.4305***	-0.0341
		(0.2538)	(0.1626)	(0.1491)	(0.1591)	(0.3088)
IND* Public Debt/GDP (log)		6.4103	-0.0170	4.9674	-0.2503	3.4158
		(7.3797)	(2.2988)	(5.8509)	(1.7843)	(4.1979)
EM* Public Debt/GDP (log)		2.1507	-2.5231**	-3.0512***	-2.0593	-5.0923**
		(1.5334)	(1.2041)	(1.1629)	(1.6370)	(2.4717)
IND*Low Inflation Index		-0.2140	-0.6768*	0.5164	0.3637	0.3458
		(0.7581)	(0.3929)	(0.5676)	(0.4663)	(0.7423)
EM*Low Inflation Index		-0.0986	0.0967	0.2608*	-0.0325	0.0031
		(0.1535)	(0.1116)	(0.1388)	(0.1276)	(0.2166)
IND*Investment Profile		-0.3176	0.0917	-0.3570**	-0.2315	0.1452
		(0.4506)	(0.1789)	(0.1820)	(0.1949)	(0.2933)
EM*Investment Profile		0.3021***	-0.2537**	-0.0760	-0.0304	0.0978
		(0.1053)	(0.1100)	(0.1410)	(0.1194)	(0.2397)
Observations		485	788	625	717	497
Countries		73	79	62	71	61
without changes in dep. var		*29*	*9*	*8*	*8*	*17*
Pseudo R2		0.0863	0.0688	0.104	0.116	0.163
Likelihood Ratio		-174.4	-312.5	-234.7	-263.7	-181.7
Share of 1's		0.363	0.310	0.306	0.311	0.376

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). Bold coefficients refer to a regression on only global growth and reg. contagion (see table 1a); coefficients in the rows with the solid frame refer to the whole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (whole samlple/by region). See the data appendix and section 5 for the precise definition of the variables. The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table A5.2: Alternative Risk Measure (Moody's)

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only Volatility:	**-0.2403**	**-0.5722****	**-0.8221*****	**-1.1964*****	**-0.8063*****
Volatility (whole sample regression)		*-1.4392**	*0.1916*	*-0.5720*	*-0.8185**	*-1.2207**
IND*Volatility (Moody)		-3.7179*	1.5212*	0.0146	-0.5534	-1.9524*
		(2.1472)	(0.7798)	(0.7918)	(0.6471)	(1.1453)
EM*Volatility (Moody)		-1.1811	-0.2502	-0.6775	-0.9484	0.2718
		(0.9432)	(0.5488)	(0.6808)	(0.7433)	(0.8160)
Global Growth (whole sample reg.)		*-0.3049***	*0.2925****	*0.1762*	*0.2787***	*0.0832*
IND*Global Growth		-0.6400	0.6151***	0.4780	0.2524	-0.2430
		(0.4205)	(0.2050)	(0.2954)	(0.1950)	(0.1970)
EM*Global Growth		-0.2568	0.2051*	0.0932	0.3517**	0.4715***
		(0.1862)	(0.1180)	(0.1460)	(0.1455)	(0.1774)
Global Interest Rate (whole sample reg.)		*0.0038*	*-0.3943**	*-0.1593*	*0.0437*	*-0.0409*
IND*Global Interest Rate		-1.2316*	-0.3407	-0.6403	-0.2766	0.4630
		(0.6485)	(0.6081)	(0.4948)	(0.5448)	(0.6321)
EM*Global Interest Rate		0.1326	-0.4071	0.0116	0.1287	-0.1876
		(0.2865)	(0.2746)	(0.3204)	(0.2507)	(0.5826)
Contagion						
Regional Cont. (whole sample reg.)		*0.0101*	*0.0091*	*0.0174***	*0.0252****	*0.0317****
excl. Domestic factors		*0.0035*	*0.0136*	*0.0228****	*0.0313****	*0.0384****
IND*Regional Cont.		0.0567	0.0330	0.0176	0.0141	0.0431***
		(0.0428)	(0.0206)	(0.0141)	(0.0119)	(0.0130)
Same regression, but excl. Domestic		*0.0482*	*0.0311*	*0.0261***	*0.0210***	*0.0460****
EM*Regional Cont.		0.0078	0.0099	0.0083	0.0311***	0.0019
		(0.0109)	(0.0102)	(0.0111)	(0.0099)	(0.0164)
Same regression, but excl. Domestic		*-0.0031*	*0.0134*	*0.0172**	*0.0398****	*0.0217**
Domestic Factors						
IND*PC Income (PPP, log)		0.9826	-1.2973	7.0886*	5.0862**	1.5620
		(7.9174)	(3.3091)	(3.6296)	(2.5286)	(3.7078)
EM*PC Income (PPP, log)		-2.2606	0.0441	1.4372	3.0590**	3.2551*
		(1.5359)	(1.8124)	(1.1905)	(1.4540)	(1.6629)
IND*GDP Growth		0.1810	0.0254	0.0014	-0.0052	0.1390
		(0.2175)	(0.1486)	(0.1885)	(0.1496)	(0.1140)
EM*GDP Growth		0.0219	0.0795*	0.0378	-0.0284	-0.0278
		(0.0424)	(0.0437)	(0.0528)	(0.0392)	(0.0726)
IND*Financial Openness		-1.0886	0.1709	-0.4352	0.4146	0.6158*
		(0.7020)	(0.2768)	(0.5845)	(0.3015)	(0.3221)
EM*Finanical Openness		-0.0504	-0.2940*	-0.4851***	-0.4368***	-0.0450
		(0.2545)	(0.1630)	(0.1515)	(0.1486)	(0.3009)
IND* Public Debt/GDP (log)		5.7624	-1.4375	4.5906	-0.7739	3.8730
		(7.3178)	(2.1769)	(6.0254)	(1.8001)	(4.3431)
EM* Public Debt/GDP (log)		2.3836	-2.3448*	-3.0693**	-2.1822	-5.0842**
		(1.6088)	(1.2117)	(1.2268)	(1.6079)	(2.4351)
IND*Low Inflation Index		-0.2587	-0.4450	0.5317	0.4687	0.4444
		(0.7017)	(0.3620)	(0.5357)	(0.4850)	(0.7049)
EM*Low Inflation Index		-0.0853	0.0899	0.2570*	-0.0421	-0.0259
		(0.1572)	(0.1134)	(0.1385)	(0.1344)	(0.2133)
IND*Investment Profile		-0.1606	-0.1560	-0.4201**	-0.2339	0.2710
		(0.5072)	(0.2101)	(0.1918)	(0.2169)	(0.2604)
EM*Investment Profile		0.3366***	-0.2445**	-0.0549	-0.0122	0.1068
		(0.1129)	(0.1068)	(0.1394)	(0.1144)	(0.2372)
Observations		485	788	625	717	497
Countries		73	79	62	71	61
without changes in dep. var		*29*	*9*	*8*	*8*	*17*
Pseudo R2		0.0973	0.0513	0.0981	0.115	0.156
Likelihood Ratio		-172.3	-318.4	-236.2	-264.1	-183.4
Share of 1's		0.363	0.310	0.306	0.311	0.376

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). Bold coefficients refer to a regression on only global growth and reg. contagion (see table 1a); coefficients in the rows with the solid frame refer to the whole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (whole samlple/by region). See the data appendix and section 5 for the precise definition of the variables. The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table A5.3: Short-term Interest Rates (US T-Bill)

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only US T-Bill:	**0.0682**	**0.1155****	**0.2917*****	**0.2866*****	**0.1822*****
Volatility (whole sample regression)		*0.0166*	*0.0219*	*0.0441*	*0.0171*	*0.0281*
IND*Volatility		0.0629	0.1246***	0.1247**	0.0827***	0.1152**
		(0.0649)	(0.0394)	(0.0551)	(0.0295)	(0.0566)
EM*Volatility		0.0062	-0.0355	0.0240	-0.0138	-0.0199
		(0.0287)	(0.0280)	(0.0301)	(0.0298)	(0.0418)
Global Growth (whole sample reg.)		*-0.1256*	*0.3220***	*0.0748*	*0.2681***	*0.1717*
IND*Global Growth		-0.6028	0.5323***	0.1964	-0.0310	0.0862
		(0.4194)	(0.1807)	(0.2423)	(0.1403)	(0.1544)
EM*Global Growth		-0.0625	0.1403	0.0204	0.4410***	0.1734
		(0.1256)	(0.1248)	(0.1833)	(0.1465)	(0.1827)
Global Interest Rate (whole sample reg.)		*0.2157***	*-0.0548*	*0.4336****	*0.2798****	*0.2925****
IND*Global Interest Rate (US T-Bill)		0.9192**	0.2225	0.8578***	0.9102***	0.6385***
		(0.4177)	(0.2375)	(0.2703)	(0.2408)	(0.1975)
EM*Global Interest Rate (US T-Bill)		0.1126	-0.0940	0.3463**	0.0662	0.1867
		(0.0999)	(0.0965)	(0.1391)	(0.1106)	(0.1147)
Contagion						
Regional Cont. (whole sample reg.)		*0.0018*	*0.0120*	*-0.0035*	*0.0143**	*0.0159*
excl. Domestic factors		*-0.0030*	*0.0142*	*0.0142***	*0.0283****	*0.0404****
IND*Regional Cont.		-0.0266	0.0140	-0.0227	-0.0126	0.0136
		(0.0486)	(0.0169)	(0.0216)	(0.0146)	(0.0179)
Same regression, but excl. Domestic		*0.0014*	*0.0084*	*0.0197**	*0.0215***	*0.0365****
EM*Regional Cont.		0.0051	0.0144	-0.0081	0.0292***	0.0001
		(0.0113)	(0.0108)	(0.0083)	(0.0112)	(0.0189)
Same regression, but excl. Domestic		*-0.0042*	*0.0135*	*0.0059*	*0.0346****	*0.0371****
Domestic Factors						
IND*PC Income (PPP, log)		3.9479	-0.4408	9.7007***	4.1356	-4.7331
		(11.8153)	(2.8469)	(3.1211)	(2.8024)	(3.4381)
EM*PC Income (PPP, log)		-1.2662	0.0805	1.3732	2.1499	3.4598**
		(1.6108)	(1.7123)	(1.0961)	(1.3130)	(1.6164)
IND*GDP Growth		0.0021	-0.0815	-0.1234	-0.1835	0.0158
		(0.2214)	(0.1332)	(0.1469)	(0.1395)	(0.1291)
EM*GDP Growth		0.0339	0.0748*	0.0545	-0.0257	-0.0172
		(0.0414)	(0.0430)	(0.0586)	(0.0393)	(0.0725)
IND*Financial Openness		-1.1863*	0.2365	-0.4524	0.4434	1.0307**
		(0.6635)	(0.3303)	(0.4324)	(0.3787)	(0.4401)
EM*Finanical Openness		-0.0466	-0.3105*	-0.4266***	-0.4566***	-0.0130
		(0.2453)	(0.1708)	(0.1463)	(0.1635)	(0.3016)
IND* Public Debt/GDP (log)		7.8652	-1.0354	4.0311	-1.0117	2.2302
		(10.6924)	(2.4418)	(5.3679)	(1.7554)	(4.7037)
EM* Public Debt/GDP (log)		2.2057	-2.5853**	-2.1986*	-2.4307	-4.6021**
		(1.5447)	(1.1791)	(1.2318)	(1.6310)	(2.2919)
IND*Low Inflation Index		-0.8501	-0.8606*	0.4723	-0.1318	-0.1929
		(0.9789)	(0.4788)	(0.5415)	(0.4782)	(0.7853)
EM*Low Inflation Index		-0.0913	0.1084	0.3349**	-0.0732	0.0216
		(0.1409)	(0.1138)	(0.1442)	(0.1302)	(0.2000)
IND*Investment Profile		0.5327	0.1532	0.1215	0.3469**	0.5947***
		(0.4679)	(0.1662)	(0.2021)	(0.1406)	(0.2241)
EM*Investment Profile		0.2813***	-0.2336**	-0.0036	-0.0145	0.1950
		(0.0987)	(0.1123)	(0.1368)	(0.1072)	(0.2306)
Observations		485	788	625	717	497
Countries		73	79	62	71	61
without changes in dep. var		*29*	*9*	*8*	*8*	*17*
Pseudo R2		0.0997	0.0700	0.138	0.150	0.179
Likelihood Ratio		-171.8	-312.1	-225.8	-253.7	-178.2
Share of 1's		0.363	0.310	0.306	0.311	0.376

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). Bold coefficients refer to a regression on only global growth and reg. contagion (see table 1a); coefficients in the rows with the solid frame refer to the whole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (whole samlple/by region). See the data appendix and section 5 for the precise definition of the variables. The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table A6: Including lagged Global Factors

Sector	(1) Primary (ABC)	(2) Manufact. (D)	(3) Oth.Services (GHI)	(4) Financial Interm. (J)	(5) Busi.& R.Estate (K)
Global Factors					
Volatility	0.0582	0.0264	0.0231	0.0106	0.0132
	(0.0391)	(0.0224)	(0.0285)	(0.0230)	(0.0317)
Volatility (L)	-0.1233*	-0.0092	0.0172	0.0080	0.0142
	(0.0728)	(0.0286)	(0.0373)	(0.0282)	(0.0613)
Test for joint sig. (p-value)	*0.2291*	*0.498*	*0.5676*	*0.8004*	*0.8061*
Global Growth	-0.2534	0.3709***	0.1745	0.5618***	0.4991***
	(0.1762)	(0.1356)	(0.2061)	(0.1905)	(0.1678)
Global Growth (L)	0.1735	0.0619	0.3837*	0.2147	0.1427
	(0.2150)	(0.1469)	(0.1982)	(0.1749)	(0.2083)
Test for joint sig. (p-value)	*0.3403*	*0.0151***	*0.0656**	*0.0029****	*0.0117***
Global Interest Rate	0.2084	-0.6723*	0.5241	-0.4152	-0.6601
	(0.3842)	(0.3987)	(0.6303)	(0.5977)	(0.5113)
Global Interest Rate (L)	-0.5241	0.2306	-0.5992	0.5343	0.6801
	(0.5123)	(0.3221)	(0.4538)	(0.4806)	(0.5543)
Test for joint sig. (p-value)	*0.5528*	*0.1249*	*0.2774*	*0.3765*	*0.3724*
Contagion					
Regional Contagion	0.0094	0.0058	0.0043	0.0197**	0.0272**
	(0.0111)	(0.0086)	(0.0096)	(0.0087)	(0.0119)
Domestic Factors: Included					
Observations	485	788	625	717	497
Countries	73	79	62	71	61
without changes in dep.	29	9	8	8	17
Pseudo R2	0.0775	0.0475	0.0850	0.105	0.117
Likelihood Ratio	-176.1	-319.7	-239.6	-267.0	-191.7
Share of 1's	0.363	0.310	0.306	0.311	0.376

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: 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 variables is in terms of the preceding year with regard to the other variables.Volatility is measured by the VIX. Global Growth is from the World Bank (WDI). Long-term global interest rates are measured as the average of yields on American, German, British and Japanese long-term government bonds. Commoditiy prices are measured by an index of all primary commodities from the IMF (WEO). 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 preceeding year. The letter(s) behind the respective sector refer to the ISIC Rev. 3.1 classification (see the appendix for more details). The estimates are obtained using the conditional logit framework with fixed effects. The robust standard errors are clustered at the country level.

Table A7.1: Robustness - Excluding the Global Financial Crises (2008-2009)

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only growth:	**-0.1887**	**0.2609****	**0.3780*****	**0.3952*****	**0.3077****
Volatility (whole sample regression)		*0.0509*	*0.0136*	*0.0438*	*0.0182*	*0.0744**
IND*Volatility		0.0703	0.1226***	0.1337**	0.0447	0.1604***
		(0.0576)	(0.0443)	(0.0618)	(0.0383)	(0.0598)
EM*Volatility		0.0408	-0.0639*	0.0020	-0.0213	-0.0552
		(0.0433)	(0.0388)	(0.0436)	(0.0368)	(0.0606)
Global Growth (whole sample reg.)		*-0.1718*	*0.3339***	*0.5382****	*0.3534***	*0.4418****
IND*Global Growth		-0.4771	0.7958***	1.0935***	0.3677	0.4141
		(0.3181)	(0.2577)	(0.3140)	(0.2634)	(0.2610)
EM*Global Growth		-0.1040	0.0286	0.1996	0.2360	0.1712
		(0.2059)	(0.1738)	(0.2542)	(0.2270)	(0.2912)
Global Interest Rate (whole sample reg.)		*0.2595*	*-0.4639***	*-0.2390*	*0.0689*	*-0.2979*
IND*Global Interest Rate		-0.6968	-0.0916	-0.5337	-0.2379	-0.1425
		(0.8055)	(0.5502)	(0.5970)	(0.4909)	(0.7586)
EM*Global Interest Rate		0.3195	-0.4312*	-0.0780	0.1709	0.2253
		(0.2888)	(0.2308)	(0.3369)	(0.2908)	(0.6222)
Contagion						
Regional Cont. (whole sample reg.)		*0.0124*	*0.0071*	*0.0132*	*0.0241****	*0.0186*
excl. Domestic factors		*0.0136*	*0.0119*	*0.0184***	*0.0338****	*0.0344****
IND*Regional Cont.		0.0090	0.0161	-0.0003	0.0047	0.0077
		(0.0431)	(0.0214)	(0.0188)	(0.0141)	(0.0171)
Same regression, but excl. Domestic		*-0.0015*	*0.0118*	*0.0227**	*0.0176*	*0.0196*
EM*Regional Cont.		0.0129	0.0072	0.0014	0.0415***	0.0037
		(0.0165)	(0.0107)	(0.0118)	(0.0134)	(0.0189)
Same regression, but excl. Domestic		*0.0066*	*0.0083*	*0.0056*	*0.0510****	*0.0203*
Domestic Factors						
IND*PC Income (PPP, log)		11.2482	0.7590	9.1942	5.8981	4.7612
		(11.6453)	(4.2755)	(6.1115)	(3.9490)	(5.2274)
EM*PC Income (PPP, log)		0.8860	-1.4570	0.6701	3.7760*	4.0096*
		(2.1987)	(2.0070)	(1.4341)	(1.9987)	(2.2608)
IND*GDP Growth		0.1469	0.1091	0.3052**	0.0938	0.2001
		(0.1668)	(0.1396)	(0.1379)	(0.1257)	(0.1254)
EM*GDP Growth		-0.0137	0.0884*	0.0541	-0.0362	-0.0268
		(0.0408)	(0.0490)	(0.0573)	(0.0445)	(0.1025)
IND*Financial Openness		-1.1244	0.0875	-0.0339	0.0464	0.4140
		(0.7566)	(0.5257)	(0.4979)	(0.4276)	(0.5834)
EM*Finanical Openness		-0.1921	-0.2280	-0.5681***	-0.6569***	-0.2966
		(0.3194)	(0.1932)	(0.1883)	(0.1804)	(0.3077)
IND* Public Debt/GDP (log)		9.8859	1.1818	1.5295	-1.2097	4.2511
		(6.7182)	(3.9965)	(7.3686)	(2.3967)	(4.3692)
EM* Public Debt/GDP (log)		2.7363	-2.7093**	-3.2546*	-2.8923	-4.3941
		(1.8914)	(1.2944)	(1.8897)	(1.8197)	(2.9257)
IND*Low Inflation Index		0.2592	-0.8238**	0.1637	0.6278	0.3851
		(0.8833)	(0.4040)	(0.6289)	(0.4124)	(0.8194)
EM*Low Inflation Index		-0.1492	0.0894	0.2374*	-0.0556	0.0093
		(0.1406)	(0.1232)	(0.1262)	(0.1682)	(0.2466)
IND*Investment Profile		-0.4956	0.0234	-0.3324	-0.2230	0.0303
		(0.4709)	(0.2005)	(0.2129)	(0.2163)	(0.2854)
EM*Investment Profile		0.3259***	-0.2531**	-0.0772	-0.0616	0.1682
		(0.1181)	(0.1183)	(0.1371)	(0.1154)	(0.2675)
Observations		379	651	524	606	416
Countries		73	79	62	71	61
without changes in dep. var		*33*	*13*	*10*	*9*	*19*
Pseudo R2		0.0798	0.0375	0.0863	0.103	0.129
Likelihood Ratio		-139.0	-266.1	-202.7	-227.1	-162.0
Share of 1's		0.359	0.335	0.323	0.328	0.392

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). Bold coefficients refer to a regression on only global growth and reg. contagion (see table 1a); coefficients in the rows with the solid frame refer to the whole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (whole samlple/by region). See the data appendix and section 5 for the precise definition of the variables.

Table A7.2: Robustness – Excluding Eastern and Cent. European and Central Asian economies

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only growth:	**-0.0750**	**0.1787****	**0.2922****	**0.2886*****	**0.2274*****
Volatility (whole sample regression)		*0.0472*	*0.0297*	*0.0139*	*0.0227*	*0.0352*
EM*Volatility		0.0463	-0.0419	0.0048	0.0169	-0.0900
		(0.0344)	(0.0350)	(0.0411)	(0.0298)	(0.0569)
Global Growth (whole sample reg.)		*-0.0038*	*0.3116****	*0.3713**	*0.4422****	*0.4480****
EM*Global Growth		-0.0243	0.0143	0.2772	0.5028**	0.2166
		(0.1229)	(0.1287)	(0.2823)	(0.1982)	(0.2800)
Global Interest Rate (whole sample reg.)		*0.0831*	*-0.3819*	*-0.3321*	*0.0812*	*-0.2031*
EM*Global Interest Rate		0.2465	-0.2806	-0.2404	0.1951	0.0591
		(0.3508)	(0.2713)	(0.2872)	(0.2748)	(0.8133)
Contagion						
Regional Cont. (whole sample reg.)		*0.0046*	*0.0072*	*0.0173**	*0.0178**	*0.0315***
excl. Domestic factors		*-0.0020*	*0.0127*	*0.0208****	*0.0243****	*0.0326***
EM*Regional Cont.		0.0055	0.0127	0.0091	0.0177	0.0228
		(0.0119)	(0.0121)	(0.0120)	(0.0128)	(0.0250)
Same regression, but excl. Domestic		*-0.0055*	*0.0143*	*0.0149*	*0.0303****	*0.0306*
Domestic Factors						
EM*PC Income (PPP, log)		-1.3228	-1.2245	-1.3623	3.3707*	3.2385**
		(2.9757)	(2.8488)	(2.3635)	(1.9721)	(1.5101)
EM*GDP Growth		0.0216	0.0643	0.0474	-0.0341	-0.0001
		(0.0388)	(0.0496)	(0.0518)	(0.0432)	(0.1943)
EM*Finanical Openness		-0.1042	-0.1631	-0.3757**	-0.4348**	-1.3344***
		(0.2972)	(0.2177)	(0.1891)	(0.2051)	(0.4648)
EM* Public Debt/GDP (log)		3.6600**	-2.6920*	-3.3306***	-2.2855	-9.9470*
		(1.5792)	(1.5188)	(1.2278)	(1.8236)	(5.7118)
EM*Low Inflation Index		-0.0587	0.1162	0.1922	-0.2735	-0.7152
		(0.1660)	(0.1474)	(0.1991)	(0.1850)	(0.4816)
EM*Investment Profile		0.2316**	-0.3470***	-0.2030	0.0389	0.6222
		(0.1029)	(0.1256)	(0.1270)	(0.1306)	(0.4769)
Observations		400	622	456	549	343
without changes in dep. var		21	7	7	7	15
Pseudo R2		0.0896	0.0356	0.0747	0.0769	0.127
Likelihood Ratio		-144.9	-259.8	-184.2	-212.5	-130.7
Share of 1's		0.360	0.322	0.318	0.310	0.379

Notes: 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. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherwise. Column (1) includes and index of primary commodity prices (from WEO, results not shown). Bold coefficients refer to a regression on only global growth and reg. contagion (see table 1a); coefficients in the rows with the solid frame refer to the whole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (whole samlple/by region). See the data appendix and section 5 for the precise definition of the variables.

Table A7.3: Robustness – Doubling the Threshold (to 0.6% of GDP) for Identification of Surges

	Sector	Primary (ABC)	Manu-facturing (D)	Oth.Serv. (GHI)	Financial Intermed. (J)	Business& R.Estate (K)
Global Factors	Only grow th:	**-0.1301**	**0.2464*** **	**0.2264*** **	**0.4056*** **	**0.1946*** **
Volatility (whole sample regression)		*0.0254*	*0.0273*	*0.0172*	*0.0146*	*0.0303*
IND*Volatility		-0.0740	0.1360***	0.0676	0.0499	0.0803*
		(0.0841)	(0.0386)	(0.0539)	(0.0321)	(0.0460)
EM*Volatility		0.0404	-0.0251	-0.0110	-0.0174	-0.0311
		(0.0376)	(0.0327)	(0.0329)	(0.0326)	(0.0418)
Global Growth (whole sample reg.)		*-0.1342*	*0.3819***	*0.3008**	*0.4350***	*0.4001***
IND*Global Growth		-0.7098**	0.7165***	0.7237**	0.5058***	0.5043**
		(0.2853)	(0.2115)	(0.3340)	(0.1926)	(0.2218)
EM*Global Growth		-0.0783	0.1976	0.1513	0.4493***	0.1533
		(0.1378)	(0.1291)	(0.1857)	(0.1636)	(0.2132)
Global Interest Rate (whole sample reg.)		*0.0952*	*-0.4581**	*-0.0358*	*0.1655*	*-0.3863*
IND*Global Interest Rate		-1.2496	-0.3009	-0.6709	-0.6324	-0.5521
		(0.9701)	(0.5191)	(0.4719)	(0.6007)	(0.6898)
EM*Global Interest Rate		0.3081	-0.4247*	0.2069	0.4780	0.2483
		(0.3052)	(0.2349)	(0.3079)	(0.3014)	(0.7735)
Contagion						
Regional Cont. (whole sample reg.)		*0.0090*	*0.0150*	*0.0125*	*0.0177**	*0.0214**
excl. Domestic factors		*-0.0005*	*0.0168**	*0.0224***	*0.0338****	*0.0395****
IND*Regional Cont.		-0.0369**	0.0074	-0.0056	0.0014	0.0222
		(0.0185)	(0.0168)	(0.0201)	(0.0174)	(0.0140)
Same regression, but excl. Domestic		*-0.0375**	*0.0044*	*0.0106*	*0.0128*	*0.0228**
EM*Regional Cont.		0.0108	0.0182	0.0132	0.0284**	0.0090
		(0.0113)	(0.0113)	(0.0119)	(0.0115)	(0.0231)
Same regression, but excl. Domestic		*-0.0041*	*0.0181*	*0.0250***	*0.0437****	*0.0509****
Domestic Factors						
IND*PC Income (PPP, log)		-4.2451	-2.0421	13.7026***	6.9100***	-0.8516
		(13.7925)	(3.8391)	(2.9436)	(2.4689)	(3.9281)
EM*PC Income (PPP, log)		-1.7009	-1.2918	1.4211	3.3815*	3.1471*
		(1.7249)	(1.7187)	(1.1171)	(1.7459)	(1.8906)
IND*GDP Growth		1.0423**	0.0988	-0.0149	0.0263	0.1225
		(0.4070)	(0.1949)	(0.2198)	(0.1593)	(0.1347)
EM*GDP Growth		0.0278	0.0888**	0.0285	-0.0014	0.0246
		(0.0359)	(0.0435)	(0.0632)	(0.0442)	(0.0703)
IND*Financial Openness		-1.1653	-0.5889	-0.1733	0.2150	0.9846**
		(1.2209)	(0.8165)	(0.6302)	(0.2190)	(0.3959)
EM*Finanical Openness		-0.0146	-0.3413**	-0.5248***	-0.6025***	0.0776
		(0.3050)	(0.1686)	(0.1604)	(0.1595)	(0.4564)
IND* Public Debt/GDP (log)		7.1026	-3.1766	6.1418	-1.4528	0.9270
		(5.5764)	(3.0588)	(6.2624)	(2.8865)	(4.6765)
EM* Public Debt/GDP (log)		3.7545**	-3.2941***	-3.5111***	-3.1436	-8.8292***
		(1.5816)	(1.2192)	(1.2605)	(2.2511)	(3.2704)
IND*Low Inflation Index		0.6041	-0.7806*	0.3506	0.1009	0.0525
		(0.7752)	(0.4510)	(0.6421)	(0.5672)	(0.8380)
EM*Low Inflation Index		-0.0162	0.1075	0.2725*	0.1254	0.3288
		(0.1765)	(0.1120)	(0.1539)	(0.1776)	(0.2187)
IND*Investment Profile		0.6717	0.0426	-0.5668***	-0.3501	-0.0084
		(0.6107)	(0.1703)	(0.2130)	(0.2253)	(0.3178)
EM*Investment Profile		0.2819***	-0.1917	-0.0549	-0.0756	0.0276
		(0.0986)	(0.1174)	(0.1297)	(0.1422)	(0.3197)
Observations		373	700	588	620	459
Countries		73	79	62	71	61
w ithout changes in dep. var		40	17	11	17	20
Pseudo R2		0.159	0.0854	0.118	0.144	0.176
Likelihood Ratio		-126.6	-266.3	-205.6	-202.8	-161.2
Share of 1's		0.351	0.301	0.286	0.295	0.351

Notes: The dependent variable is a 0-1 variable that takes the value of 1 if a country experienced a surge in FDI inflow s in the respective sector. IND: Industrial Countries; EM: Emerging Markets (see the appendix for information on the sample). All domestic variables are lagged unless noted otherw ise. Column (1) includes and index of primary commodity prices (from WEO, results not show n). Bold coefficients refer to a regression on only global grow th and reg. contagion (see table 1a); coefficients in the row s w ith the solid frame refer to the w hole sample; the dashed/dotted frames refers to a regression on only global and contagion factors (w hole samlple/by region). See the data appendix and section 5 for the precise definition of the variables. The estimates are obtained using the conditional logit framew ork w ith fixed effects. The robust standard errors are clustered at the country level.