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Capital flows, push versus pull factors and the global financial crisis ☆

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ABSTRACT

The causes of the 2008 collapse and subsequent surge in global capital flows remain an open and highly controversial issue. Employing a factor model coupled with a dataset of high-frequency portfolio capital flows to 50 economies, the paper finds that common shocks – key crisis events as well as changes to global liquidity and risk – have exerted a large effect on capital flows both in the crisis and in the recovery. However, these effects have been highly heterogeneous across countries, with a large part of this heterogeneity being explained by differences in the quality of domestic institutions, country risk and the strength of domestic macroeconomic fundamentals. Comparing and quantifying these effects show that common factors ("push" factors) were overall the main drivers of capital flows during the crisis, while country-specific determinants ("pull" factors) have been dominant in accounting for the dynamics of global capital flows in 2009 and 2010, in particular for emerging markets.

1. Introduction

The 2007–08 global financial crisis had been preceded for many years by substantial global imbalances in trade and capital flows. It is in particular the United States which was not only the origin of the financial crisis, but which had been among the economies globally relying most heavily on capital inflows to finance a growing trade deficit. Many observers argued before the crisis that such a status quo was unsustainable and that ultimately deficit countries, such as the United States, would see capital inflows dwindle and exchange rates and asset prices fall during an adjustment process. However, the crisis played out very differently, with capital of domestic and foreign investors flowing massively into US assets between July 2008 and April 2009, and in particular after the collapse of Lehman Brothers. Yet what has been striking about the crisis was not only its global reach, but also the high degree of heterogeneity with which it affected different countries, both among advanced economies as well as among emerging market economies.

Moreover, it was not only the global transmission of the 2007–08 crisis, but also the recovery period since 2009 that has sparked a controversy about the drivers of global capital flows. Some emerging market economies (EMEs) have experienced massive portfolio capital inflows over the past two years, raising concerns about their viability and effects on domestic economies, exchange rates and capital markets. EME policy-makers have stressed the importance of "push" factors, i.e. in particular monetary and fiscal policies in advanced economies, as the main culprits behind this surge in capital flows. By contrast, others have emphasized "pull" factors, such as real divergences between EMEs and advanced economies (AEs), as the main driver of the current pattern of capital flows. In fact, this controversy has become one of the core issues of debate in international fora, such as the G20 which is considering a code of conduct for capital flow management, including the imposition of capital controls to deal with volatile capital flows.

The objective of the paper is to analyze the role of different drivers of global capital flows during the crisis and the subsequent recovery. The focus is on two questions: first, how important have been common, global shocks for capital flows? And second, how relevant have been macroeconomic policies, institutions and financial policies in helping countries shield themselves from such global shocks? The first of the questions is informative about push factors — if common global shocks explain a large part of the dynamics of global capital

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flows, then push factors are important. The second question allows gauging the relevance of pull factors — if capital flows are highly heterogeneous across countries, and if this differential pattern is accounted for by country-specific characteristics, then pull factors are relevant.

The paper's focus is at the micro level, i.e. at the level of individual mutual funds across a broad geographic coverage of 50 countries and markets worldwide. The paper uses a novel dataset which stems from EPFR Global, which contains weekly portfolio investment flows by more than 14,000 equity funds and more than 7000 bond funds, with USD 8 trillion of capital under management. The strength of EPFR data is not only its disaggregated information at the fund level, but crucially also the high time frequency. Compared to the pre-crisis period, the data shows remarkably strong divergences in capital flows across countries during the crisis, and more precisely a massive reallocation of capital from emerging markets (and a few advanced economies) to the US.

The second part of the paper aims to explain this heterogeneity of global capital flows during the financial crisis and the subsequent recovery. A factor model for the determinants of capital flows is formulated, distinguishing between different factors as well as allowing for a distinction of drivers during non-crisis times and those during the crisis. The focus is on the effect of a set of common global shocks – with a specific emphasis on liquidity and risk shocks as well as macro news shocks – as well as a set of idiosyncratic, country-specific shocks on capital flows. The findings show that the global factors account for a large share of the global capital flow pattern during the crisis. Importantly, the signs of the model parameters change substantially during the crisis episode. For instance, while an increase in risk before the crisis was associated with capital flows out of AEs and into EMEs, this effect reversed during the crisis inducing a substantial reallocation of capital from many EMEs into a few AEs. This evidence is thus consistent with the hypothesis that the dynamics of capital flows was primarily driven by safe-heaven flows during the crisis.

Another key finding of the analysis is the large degree of heterogeneity with which different countries were affected by the same global shocks, in particular during the crisis and also the subsequent recovery. The findings indicate that it has been the institutional quality, country risk together with the strength of macroeconomic fundamentals and policies that explain a large share of the heterogeneity of capital flows during the crisis. By contrast, countries' external (real and financial) exposure appears to have largely been irrelevant for understanding the global capital flow dynamics, including the retrenchment of capital during the crisis, in particular for emerging economies.

The final part of the paper attempts to quantify the relative importance of common shocks ("push" factors) and country-specific determinants ("pull" factors). The findings indicate that common factors were more important overall as a driver of net capital flows during the 2007–08 financial crisis. However, in the recovery period since March 2009, common factors appear to have become less important as drivers of global capital flows, whereas it is domestic pull factors that have come to dominate in explaining capital flows, in particular for countries in Emerging Asia and Latin America.

Putting these findings into perspective, the analysis of push factors versus pull factors as drivers of global capital flows in the present paper focuses on a relatively short period of time – a time span of about five years between end 2005 and end 2010 – while the discussion of push and pull factors has traditionally been made with reference to much longer cycles of capital flows. It is also important to highlight that this period of 2005 to 2010 has been in many ways extraordinary throughout for the dynamics of global capital flows, as a period of a sharp contraction of capital flows, in particular to some EMEs, during the 2007–08 crisis was followed by an equally extraordinary surge in capital flows to EMEs. Hence an important open issue is whether the current dynamics of global capital flows will continue well into the future, and what it implies for the risk of sudden stops and capital flow reversals with all its adverse implications for global growth and financial stability. But in particular because it is so important to understand better the dynamics and risks of periods of financial stress, the findings of the current paper may be instructive about how future crises may play out.

The paper has a number of implications for economic policy and for policy-makers. On the one hand, financial globalization and the exposure to common global factors have made countries more vulnerable to external and global shocks. Yet, on the other hand, the exposure to domestic risks has also been a relevant factor during the crisis and in the global capital flow surge thereafter, in particular those domestic risks related to poor macroeconomic fundamentals, policies and institutions. This implies that countries are far from innocent bystanders that are powerless in being exposed to volatile global markets, and that indeed they have tools to insulate to some extent their economies from adverse global shocks.

These findings have a bearing in particular on the current debate on how EMEs should deal with volatile capital flows. To the extent that capital flows are driven by global factors, some EME policy-makers have argued that this would justify the use of capital controls as well as policy interventions e.g. in FX markets. However, such policies may be misguided if the drivers of capital flows are mainly found in idiosyncratic, country-specific policies and conditions, which calls for policy-makers to rather focus on making their domestic economies more resilient by improving institutions, deepening financial markets and enhancing macroeconomic and macroprudential policies.

The paper is related to various strands of the literature. First, it relates to a growing literature on the 2007–2008 financial crisis, which has partly focused on the US and its policy responses (e.g. Calomiris, 2008), while the literature on the global transmission of the crisis has been more limited (e.g. Blanchard et al., 2010; Rose and Spiegel, 2011). Second, it links to the literature on capital flows during crises and other periods of extreme changes in capital flows, such as sudden stops, surges, retrenchments and capital flight.[1] A recent focus in this literature has been on gross capital flows. Forbes (2010) distinguish between the four different types of extreme capital movements (surges, stops, flights and retrenchments), separating the activity by domestic and foreign residents, and their determinants. Milesi-Ferretti and Tille (2011) and Broner et al. (2010) analyze the link between gross capital flows and crises, in particular the 2007–08 episode.

While recent work has underlined the importance of analyzing gross flows and distinguishing across asset classes, relatively little work so far has been undertaken on investment decisions and capital flows at the micro level of individual investors and funds. Notable exceptions are Calvet et al. (2009), Froot and Ramadorai (2005), Hau and Rey (2008), and Jotikasthira et al. (2009).

A third related strand of the literature is the work on determinants of capital flows, and in particular the distinction between global factors and domestic factors and their transmission channels. There is a large literature on the global transmission of past financial crises, with a strong interest in the role of different channels (e.g. Forbes and Rigobon, 2002; Bekaert et al., 2005; Bae et al., 2003; Karolyi, 2003; Bekaert et al., 2011). Some of this work analyzes the role and mostly finds strong evidence for the transmission of global shocks to financial markets and capital flows (Bacchetta and van Wincoop, 2010), including shocks to liquidity (Brunnermeier, 2009; Calvo, 2009; Kalemli-Ozcan et al., 2010).

[1] Examples of recent key papers on capital flow surges are Reinhart and Reinhart (2009) and Cardarelli et al. (2009); on sudden stops are Calvo (1998) and Calvo et al. (2008); and on capital flight are Dooley (1988) and Rothenberg and Warnock (forthcoming).