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Sudden stops and financial frictions: Evidence from industry-level data[☆]

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The nature of the microeconomic frictions that transform sudden stops into output collapses is not only of academic interest, but also crucial for the correct design of policy responses intended to prevent and address these episodes. This paper uses industry-level data in a sample of 45 developed and emerging countries and a difference-in-difference methodology to provide evidence of the role of financial frictions for the consequences of sudden stops. The results show that, consistently with financial frictions being important, industries that are more dependent on external finance decline significantly more during a sudden stop, especially in less financially developed countries. The paper also provides novel results on the role of comparative advantages during sudden stops and evidence on the usefulness of popular ex-ante and ex-post policy responses aimed to attenuate the consequences of these shocks.

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1. Introduction

In the last three decades, episodes of sharp contractions in international capital flows to emerging markets, known as *sudden stops*, have become a common phenomenon. According to Edwards (2007), and Rothenberg and Warnock (2011), a typical emerging market country is affected by one of these episodes roughly once every decade. The increase in capital flows to “frontier” markets during the last

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decade and the renewed interest in emerging markets following the recent global financial crisis suggest that sudden stops are now likely to affect a broader set of countries and may do so in a deeper manner.

In addition to their prevalence, the academic and policy interest in these episodes arises from the fact that they are typically associated with collapses in real activity. Edwards (2007) finds that the current account reversals associated with sudden stops lead to an average drop in GDP growth of about four percent, and Calvo et al. (2006b) document a collapse in GDP associated with systemic sudden stops of about 10 percent. These collapses in real activity are also typically accompanied by large exchange rate depreciations and increased unemployment.

The simultaneous occurrence of sudden stops and output contractions is a stylized fact, but from a theoretical point of view, a sudden lack of access to international capital markets does not necessarily have to result in a decline in GDP, as noticed by Chari et al. (2005). They study a simple model of a small open economy that suffers a sudden tightening in its international collateral constraint, and show that, in absence of other shocks or frictions, this economy would increase its GDP in response to the sudden stop.¹ The intuition is straightforward: a (borrowing) economy that loses access to international capital markets needs to export goods to repay its initial debt. To reduce the negative impact of this shift on consumption, the representative consumer will work more and increase production. Therefore, this simple model shows that the correlation between sudden stops and output collapses results from other frictions that interact with the lack of access to international capital markets and counterweight the forces leading to an increase in output.²

Since additional frictions are required for sudden stops to have negative real consequences, the immediate question is what those frictions are. Most theoretical papers emphasize financial frictions at the firm level in the form of working capital financing constraints. For instance, in Neumeyer and Perri (2005), Mendoza (2008) and Christiano et al. (2004), firms must borrow to pay in advance a fraction of the wage bill or intermediate inputs facing some form of financial constraint that induces a wedge between the external and internal cost of funds and distort some of the investment margins. Other types of financial constraints are also present in the models of Calvo (1998), Mendoza (2002, 2008), and Mendoza and Smith (2002, 2006), among others. In most of this literature, the sudden tightening of the international borrowing constraint does not trigger a recession, but it is the recession (e.g. a negative productivity shock) that triggers the tightening of the constraint and enhances the initial effect of the shock under appropriate conditions. According to this view, a sudden stop, understood as a reversal of capital flows, is more likely to result in a recession in countries where financial frictions are more prevalent, and in a larger output decline in industries that are both more sensitive to financial frictions and less benefited by relative price changes favoring tradable sectors.

In parallel to the literature focusing on financial frictions, a smaller literature considers the role of labor market frictions that preclude the prompt reallocation of labor between tradable and non-tradable sectors required by the sudden stop of capital flows (Kehoe and Ruhl, 2009). This type of mechanism would result in a relation between the degree of labor market frictions in a country and its response to a sudden stop. In addition, Martin and Rey (2006) consider the role of international segmentation of financial and good markets, incomplete asset markets, and expectation shocks to produce capital flights and output collapses in developing countries. This model would suggest some relation between the segmentation of goods markets and the impact of the expectations shock, which may translate into less tradable sectors being relatively more affected.

¹ Chari et al. (2005) show that the impact of a sudden stop is equivalent to the impact of an increase in government consumption in a prototype closed economy, which absence of other frictions leads to an increase in output (Aiyagari et al., 1992).

² A slightly different view of sudden stops does not take the reversals as an external shock, but tries to derive them endogenously from the interaction of standard productivity or demand shocks and a series of market imperfections. Most of this literature focuses on financial market imperfections (Calvo, 1998; Mendoza, 2002, 2008; Mendoza and Smith, 2002, 2006). In this literature, the sudden tightening of the international borrowing constraint does not trigger a recession, but it is the recession (negative productivity shock) that triggers the tightening of the constraint and enhances the initial effect of the shock under appropriate conditions. According to this view, a recession would be more likely to result in a sudden stop in less financially developed countries, but it would still be the case that industries subject to stronger financial frictions and with smaller incentives to export would be the most affected.

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