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Capital controls or macroprudential regulation?☆

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ABSTRACT

International capital flows can create significant financial instability in emerging economies. Does this make it optimal to impose capital controls or should policymakers rely on domestic macroprudential regulation in their quest for greater financial stability? This paper shows that it is desirable to employ both instruments to mitigate contractionary exchange rate depreciations: Macroprudential regulation reduces the amount and riskiness of financial liabilities, no matter whether they are financed by domestic or foreign lenders; capital controls increase the aggregate net worth of the economy by reducing net inflows. Both types of policy measures make the economy more stable and reduce the incidence and severity of crises. They should be set higher the greater an economy's debt burden and the higher domestic inequality. In a calibration based on the East Asian crisis countries, we find that it is optimal to impose both capital controls and macroprudential regulation that amount to a 2% tax on debt flows or equivalent quantity regulations. In advanced countries where the risk of contractionary exchange rate depreciations is more limited, the role for capital controls subsides. However, macroprudential regulation remains essential to mitigate booms and busts in asset prices.

1. Introduction

Fighting financial instability is one of the big policy challenges of our time. Many recent financial crises have been triggered in part by large reversals in international capital flows, even in countries that followed seemingly sound fiscal and monetary policies (see e.g. Reinhart and Rogoff, 2009). Policymakers have struggled with the question of whether to protect their economies from such instability by using macroprudential regulation on domestic financial transactions or whether to impose more heterodox policy measures such as capital controls.[1]

The defining feature of capital controls is that they apply exclusively to financial transactions between residents and non-residents, i.e. they discriminate based on the residency of the parties involved in a financial transaction.[2] For example, controls on capital inflows apply to transactions between foreign creditors and domestic debtors. Similarly, controls on capital outflows apply to transactions between domestic savers and international borrowers. Capital controls segment domestic and international financial markets, as illustrated in the left panel of Fig. 1. As a result of this segmentation,

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[1] See e.g. Ostry et al. (2011) for an overview of the use of capital controls and Galati and Moessner (2013) for a survey on macroprudential regulation. See also Ostry et al. (2016) for a detailed analysis of the policy considerations involved in choosing between capital controls and macroprudential regulation.

[2] More recently, the IMF (2012) has adopted the term capital flow management measures (CFMs) for capital controls to avoid the negative connotation that was attributed to controls in earlier years. Some papers, e.g. Gallagher et al. (2011), use the term capital account regulations (CARs) to hint at the close similarity to other types of financial regulation. We use the term capital controls in accordance with the tradition in the academic literature.

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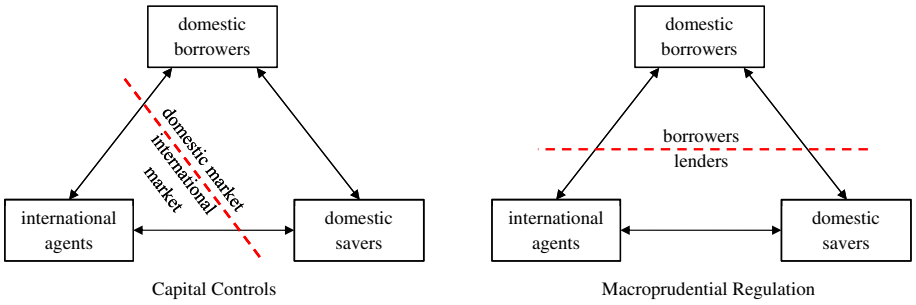

Fig. 1. Capital controls versus macroprudential regulation.

international lenders and domestic agents face different effective interest rates.

Macroprudential policies, by contrast, restrict borrowing by domestic agents independently of whether credit is provided by domestic or foreign creditors. They impose a segmentation between borrowers and all types of lenders, as illustrated in the right panel of Fig. 1. As a result, borrowers and lenders in the economy face different effective interest rates.[3]

Should countries use capital controls or macroprudential regulation when they experience capital flow-driven credit booms? Some have argued that capital controls should only be used as a measure of last resort (see e.g. IMF, 2012). Others, by contrast, have argued that capital controls are the more natural instrument when credit growth is mainly driven by capital flows from abroad (see e.g. Ostry et al., 2011). Should the two policy instruments be thought of as equivalent or close substitutes? Or alternatively, does each of the two have its own comparative advantage depending on specific circumstances?

We study these questions in a model of a small open economy with borrowers who are subject to a collateral constraint. Our key departure from the existing literature is that borrowers can access credit either domestically – from domestic savers – or from international lenders. This allows us to explicitly distinguish between capital controls and macroprudential measures. The key difference between domestic and foreign borrowing materializes when borrowers are forced to deleverage: repayments to domestic creditors remain in the domestic economy where they contribute to domestic aggregate demand, whereas repayments to international lenders reduce domestic aggregate demand; they lead to capital outflows and depreciate the country's exchange rate.

The level of the exchange rate matters because it determines how much foreign lenders value domestic collateral. When the collateral constraint on borrowers is binding, a depreciation reduces the value of collateral and triggers a feedback loop of tightening constraints, capital outflows and further exchange rate depreciations, as illustrated in Fig. 2. This describes the classic dynamics of sudden stops and financial amplification (see e.g. Korinek and Mendoza, 2014, for a summary and survey). A growing literature has shown that these dynamics give rise to excessive borrowing since private agents do not internalize that their collective actions contribute to the exchange rate declines and resulting sudden stop dynamics. This *pecuniary externality* has been proposed as a rationale for both

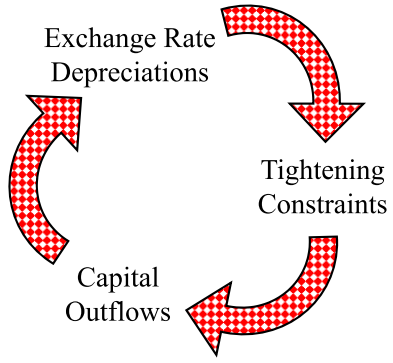

Fig. 2. Feedback loop of financial crises with exchange rate depreciations.

capital controls and macroprudential regulation.[4,5] However, in the existing literature, there is no difference between the two policy measures – both are simply restrictions on borrowing.

Our paper is the first to differentiate between macroprudential regulation and capital controls. We do so by distinguishing between domestic and foreign lending. This allows us to investigate the comparative advantages of the two types of prudential instruments and to provide policy lessons for their optimal use.

Our main result is that it is desirable to use both policy instruments in an emerging economy that is vulnerable to sudden stops. Macroprudential regulation plays the usual role of reducing the amount and riskiness of all financial liabilities, no matter whether domestic or foreign; capital controls aim to increase the aggregate net worth of the economy by reducing net inflows; they create an interest rate differential between the domestic and international credit market, which induces domestic savers to save more. This makes the economy more resilient to sudden stops, i.e. it implies that the exchange rate will depreciate less in times of crisis. Put differently, when borrowers are forced to deleverage, repayments

[3] In some instances, it is difficult to distinguish between capital controls and macroprudential regulation because regulators face a limited set of policy instruments and use one instrument as a substitute for the other. In the current paper, we assume that regulators have both an effective macroprudential instrument and effective capital controls at their disposal. For a more detailed analysis of targeting problems under incomplete instruments see e.g. Ostry et al. (2016).

[4] For a survey of this literature on capital controls see Korinek (2011a). For a survey on macroprudential regulation see Galati and Moessner (2013). A detailed analytic description of the case for capital controls is provided by Korinek (2007,2010) and Bianchi (2011) in a small open economy with a representative agent. Benigno et al. (2010,2012,2013a,b) analyze how the same inefficiencies can be addressed using alternative policy measures. Lorenzoni (2008), Jeanne and Korinek (2010a,2010b), Bianchi and Mendoza (2010) and Korinek (2011b) make the case for macroprudential regulation based on asset price movements that trigger feedback loops. Jeanne (2014) analyzes macroprudential regulation in a framework in which capital controls are by construction a second-best device.

[5] An alternative strand of the literature motivates macroprudential regulation and capital controls based on aggregate demand externalities in the presence of nominal frictions. See for example Farhi and Werning (2012,2013, 2014), Acharya and Bengui (2015), Schmitt-Grohé and Uribe (2016) and Korinek and Simsek (2016).

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