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## Current account and real exchange rate changes: The impact of trade openness<sup>☆</sup>



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### ABSTRACT

This paper investigates the impact of trade openness on the relationship between current account and the real exchange rate, by focusing on event windows of significant balance of payments distress. We identify episodes of sudden stops in capital flows and of abrupt currency depreciations for a large sample of developed and emerging economies over the period 1970–2011, and we find that, during these episodes, currency depreciations are associated with larger improvements in the current account in countries that are more open to trade. Our results suggest that the magnitude of exchange rate depreciations over the adjustment process of current accounts is related to the degree of openness to trade.

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## 1. Introduction

Advanced and emerging economies alike have experienced a high growth in capital flows over the past twenty years. Throughout the 2000s, this growth was accompanied by large current account imbalances, raising many concerns with respect to the potential adverse consequences of abrupt interruptions of these capital flows. In particular, the magnitude of exchange rate depreciation over the adjustment process of current accounts has been a central element of discussion (Corsetti et al., 2013; Lane and Milesi-Ferretti, 2012; Obstfeld and Rogoff, 2007; 2005), reviving the famous debate between John Maynard Keynes and Bertil Ohlin over the payment of war debts in Germany during the 1920s, known as the “Transfer Problem”.

In the transfer problem debate, Keynes (1929) argued that, in order to pay for the war damages in foreign currency, Germany would have to raise resources through trade balance surpluses. The relative price of tradable goods would then have to increase, implying a real exchange rate (RER) depreciation. According to Ohlin (1929), however, the decline in Germany's disposable income due to the external payments would entail an increase in trade balance with lesser relative price

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changes. The mechanism is that, with lower income, Germany would buy less of, using Ohlin's words, "the goods which go easily between them", thereby improving its trade balance. Clearly, the efficiency of this mechanism depends on the share of those goods in the consumption basket, that is, on the degree of openness of the economy.<sup>1</sup>

The reversion of large current account imbalances brings about a similar adjustment mechanism, where the magnitude of RER depreciations may be mitigated by the income effect, particularly in more open economies. In this paper, we take this adjustment mechanism to the data. More specifically, we ask: are current-account reversals achieved with lesser RER depreciation in more open economies?

Clearly, many different factors can affect the relationship between exchange rates and the current account, such as changes in the terms of trade or in the relative productivity across sectors and across countries. We circumvent the daunting task of controlling for all these determinants by proposing a new empirical strategy. We focus our analysis on short-time windows during which economies experience extreme balance of payment shocks: either sudden stops in capital flows or abrupt exchange rate depreciations. It is reasonable to assume that, during these extreme events, other shocks affecting the current account would assume a lesser role, such that the observed change in exchange rates would be the most important variable associated to the change in current-account balances. We then investigate whether current-account reversals associated with this currency depreciation depend on the degree of openness to trade of an economy.

Previous research generally recognizes the importance of openness to trade in determining a country's vulnerability to sudden stops. For example, [Calvo et al. \(2004\)](#) and [Cavallo and Frankel \(2008\)](#) show that more open economies, defined by them as countries with a larger supply of tradable goods, are less prone to sudden stops in capital flows. The currency crises literature also stresses the importance of trade openness. For example, [Milesi-Ferretti and Razin \(2000\)](#) find that a higher degree of openness to trade decreases the probability that a country experiences an exchange rate crisis. Moreover, they show how more open economies tend to grow faster in the aftermath of a currency crisis. Similar findings are discussed in [Glick and Hutchison \(2011\)](#), who show that greater trade integration reduces a country's likelihood of experiencing a currency crisis. They argue that a greater openness ratio decreases the likelihood of sharp reversals of capital flows, as the country is more able to service its external obligations.

Overall, this literature establishes the importance of trade openness in mitigating a country's vulnerability to sudden stops and currency crises. In this paper, we take a novel approach by investigating the role of trade openness *during* these episodes. More specifically, we analyze the role played by trade openness on the relationship between current account and RERs during event windows that correspond to either sudden stops or abrupt RER depreciation episodes.

To that end, we first provide a simple theoretical framework to discuss the mechanism through which trade openness can impact the relationship between current account reversals and RER changes. We model a two-sector small open economy in which sudden stops can occur due to binding collateral constraints on the country's external debt. We show that the effect of sudden stops differs according to the degree of openness of the economy. In particular, more open economies experience a lower exchange rate depreciation in order to achieve the same change in the current account.

We then examine this mechanism empirically for a large sample of both advanced and emerging economies during the period 1970–2011. We extend a popular methodology of identifying sudden stops to also identify episodes of abrupt currency depreciation over this period. By focusing on the dynamics of exchange rates and current accounts around these extreme events, we find that trade openness has a significant impact on the relationship between the two. Specifically, we find that exchange rate depreciations are associated with larger improvements in the current account in countries more open to trade. This effect is also economically significant. In a country in the 75th percentile of openness to trade, a 1% depreciation of the RER is associated with a 2.5% improvement in the current account. However, a country in the 25th percentile will achieve the same variation of the current account with a depreciation of 6.5% of its currency. Thus, openness to trade enables more open economies to achieve a higher improvement in the current account for the same depreciation of the RER, thus mitigating the effect of external shock on the RER.

Current-account reversals are achieved mainly through improvements in the trade balance, given that trade balance is typically its largest component. We then also investigate the relation between the exchange rate and trade balance changes, as opposed to the current account changes, during sudden stops and abrupt currency depreciation episodes. Our empirical findings indicate that a country in the 75th percentile of openness can achieve a 2% improvement in trade balance with a 1.2% depreciation of the RER, while a country in the 25th percentile needs a depreciation of 4.4% of its currency to achieve the same improvement in the trade balance.

We employ two empirical methodologies to deal with the possible endogeneity of trade openness. First, our baseline specification is an event analysis where we look at the relationship between the RER and the current account during the specific event window corresponding to a sudden stop or abrupt exchange rate depreciation episode. We employ lagged measures of trade openness outside the event window, which are less likely to be correlated with the fluctuations during the extreme event. Second, as a robustness check, we instrument our measure of trade openness using a measure of openness estimated from a gravity model estimated using the Poisson distribution method proposed by [Santos Silva and Tenreyro \(2006\)](#). Furthermore, our results are also robust to different proxies for openness to trade, as well as different methodologies for identifying episodes of sudden stops and abrupt exchange rate depreciations.

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<sup>1</sup> This debate has also been related to the experience of Greece during the European Sovereign Debt crisis in 2011, since its inability to depreciate its currency might have impeded a current account reversal.

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