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## Currency crashes and bond yields in industrial countries

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This paper examines episodes of sudden large exchange rate depreciations (currency crashes) in industrial countries and characterizes the behavior of government bond yields during and after these crashes. The most important determinant of changes in bond yields appears to be inflationary expectations. When inflation is high and rising at the time of a currency crash, bond yields tend to rise. Otherwise—and in every currency crash since 1985—bond yields tend to fall. Over the past 20 years, inflation rates have been remarkably stable in industrial countries after currency crashes.

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### 1. Introduction

In recent years, many commentators have voiced concerns that the large U.S. current account deficit could lead to a crash of the dollar and a hard landing for the U.S. economy. The link most often cited between a sharp dollar depreciation and a hard landing is a rise in long-term U.S. interest rates that chokes off consumption and investment.<sup>1</sup> Such an outcome was highly visible in a number of emerging market crises in recent years, including Mexico in 1995 and East Asia in 1997 and 1998.

There are three economic mechanisms that could link currency crashes to bond market crashes.<sup>2</sup> First, exchange rate depreciations may be expected to push up domestic inflation through higher prices for imported goods and services. Investors are likely to demand a higher nominal rate of return to compensate for expected inflation. This is the “Fisher effect” or inflation expectations channel. Second,

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<sup>1</sup> See, for example, Bergsten (2007), The Economist (2005), Roubini and Setser (2005), and Volcker (2005).

<sup>2</sup> In the case of a contemporaneous jump in both prices and exchange rates that is not expected to continue, bond yields would not necessarily rise. However, the following analysis assumes that goods prices are stickier than exchange rates, and thus respond to currency crashes with a lag. In the case of pegged exchange rates, it is possible that prices and bond yields could rise in anticipation of a currency crash; this possibility is examined below.

investors may expect that the monetary authority will raise short-term interest rates even more than the increase in inflation in order to prevent higher inflation from becoming entrenched. This is the “monetary reaction” channel. Finally, the currency crash could cause investors to demand a higher risk premium on bonds because of heightened uncertainty about future inflation, future real interest rates, or even the possibility of a future default.<sup>3</sup> This is the “risk premium” channel.

This paper shows that currency crashes do not generally lead to higher bond yields in industrial countries. Indeed, over the past 20 years, currency crashes in industrial countries have always been followed by *falling* bond yields. Why has the response to currency crashes been so different in industrial countries compared to that in emerging markets? The primary answer appears to be that industrial countries—especially since the mid-1980s—have more stable monetary frameworks with greater anti-inflationary credibility.<sup>4</sup>

In particular, the change in the bond yield after a currency crash is strongly related to the level and change of the inflation rate after the crash. Since 1985, inflation rates have been low and stable after currency crashes, and these outcomes may help to explain the tendency of bond yields to decline or at least not to rise.<sup>5</sup> Moreover, bond yields do not appear to be particularly sensitive to changes in net purchases of a country's bonds by foreigners. Current account deficits appear to be associated with the occurrence of currency crashes, but the size of the deficit has only a small effect on the change in bond yields after a crash.

The next section presents a brief review of the literature on currency crises and crashes. Section 3 describes the data. Section 4 defines and identifies currency crashes. Section 5 introduces and estimates a simple model of bond yields, allowing for changes in behavior around currency crashes. Section 6 discusses interpretations, implications, and extensions of the empirical estimates. Section 7 offers some brief conclusions.

## 2. Previous studies

An extensive literature seeks to explain financial crises or to identify early warning indicators of such crises, particularly in emerging markets. This literature encompasses banking crises, sovereign debt crises, and currency crises, where “currency crisis” may be defined to include periods of sharp depreciation as well as periods in which a central bank successfully defends a currency peg from a speculative attack. A good review of the early warning literature on currency crises is Berg et al. (2004). Two studies that focus on sharp depreciations, or “currency crashes,” in emerging markets are Frankel and Rose (1996) and Milesi-Ferretti and Razin (1998). Both of these studies find that crashes are robustly associated with a running down of foreign exchange reserves and high industrial-country interest rates, with weaker evidence of an association with rapid domestic credit growth and an overvalued exchange rate. Somewhat surprisingly, neither study finds a robust correlation between crashes and the level of foreign debt or the current account balance. Milesi-Ferretti and Razin also study current account reversals, which are periods of significant narrowing of large current account deficits. They find that about one-third of current account reversals were accompanied or preceded by a currency crash and about one-third of currency crashes were accompanied or followed by a current account reversal.

In an interesting study that bridges the gap between emerging markets and industrial countries, Osband and van Rijckeghem (2000) search for ranges of relevant macro and financial variables which historically have been associated with extremely low probabilities of a currency crisis in the following year. They find that high foreign exchange reserves, low foreign debt, and a higher (more positive) current account balance imply a very low probability of a currency crisis. After estimating these

<sup>3</sup> A currency risk premium that is not related to these bond-market factors can affect the level of the exchange rate, but not the bond yield, because it affects all dollar-denominated assets equally, including risk-free cash.

<sup>4</sup> Another factor behind the adverse output effects of emerging-market currency crashes has been substantial stocks of foreign-currency debt on which the repayment burden grew more onerous. Industrial countries generally have low levels of foreign-currency debt.

<sup>5</sup> Gagnon and Ihrig (2004) document the decline in pass-through from exchange rates to consumer prices in the industrial countries over the past 35 years and link this decline to monetary policy credibility against inflation.

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