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currency crises

This article describes models and empirical evidence on currency crises. The evidence from developed and developing countries indicates that crises are of different varieties. It also shows that crises do not occur in economies with sound fundamentals, with vulnerabilities far more widespread and profound in emerging economies. Vulnerabilities are associated with fiscal problems, loss of competitiveness and a deteriorating current account, external debt unsustainability, or problems in the financial sector – especially banks. Interestingly, those crises associated with bank fragility are the costliest in terms of output losses and loss of access to international capital markets.

A currency crisis occurs when investors flee from a currency en masse out of fear that it might be devalued. Currency crises are episodes characterized by sudden depreciations of the domestic currency, large losses of foreign exchange reserves of the central bank, and (or) sharp hikes in domestic interest rates.

There have been numerous currency crises since 1980. The so-called debt crisis erupted in 1982 following Mexico's default and devaluation in August. This crisis spread rapidly to all Latin American countries, and by the time it was over, most Latin American countries had devalued their currencies and defaulted on their foreign debts. The debt crisis was followed by a decade of negative growth and isolation from international capital markets. The output costs of this crisis were so large that the 1980s became known as the 'lost decade' for Latin America.

Crises are not just emerging-market phenomena. The 1990s opened with crises in industrial Europe – the European Monetary System (EMS) crises of 1992 and 1993. By the end of these crises, in the summer of 1993, the lira and the sterling had been driven from the Exchange Rate Mechanism (ERM); Finland, Norway, and Sweden had abandoned their unofficial peg to the European Currency Unit (ECU); the Spanish peseta, the Portuguese escudo and the Irish punt had devalued; and Europe's central bank governors and finance ministers had widened the ERM's intervention margins to ± 15 per cent from ± 2.25 per cent. Only then did the currency market stabilize.

Crises are hardy perennials. Within one year of the EMS crises, a currency crisis exploded in Mexico, with currency jitters spreading around the Latin American region. In 1997, it was Asia's turn. A new episode of currency turbulences started in July of that year with the depreciation of the Thai baht. Within a few days the crisis had spread to Indonesia, Korea, Malaysia and the Philippines. Turmoil in the foreign exchange market heightened in 1998 with the Russian default and devaluation in August. The Russian crisis spread around the world with speculative attacks in economies as far apart as South Africa, Brazil and Hong Kong. Currency crises have continued to erupt in the new millennium, with Argentina's crisis in December 2001 including the largest foreign-debt default in history.

The numerous financial crises that have ravaged emerging markets as well as mature economies have fuelled a continuous interest in developing models to explain why speculative attacks occur. Models are even catalogued into three generations. The first-generation models focus on the fiscal and monetary causes of crises. These models were mostly developed to explain the crises in Latin America in the 1960s and 1970s. In these models, unsustainable money-financed fiscal deficits lead to a persistent loss of international reserves and ultimately to a currency crash (see, for example, Krugman, 1979).

The second-generation models aim at explaining the EMS crises of the early 1990s. These models focus on explaining why currency crises tend to happen in the midst of unemployment and loss of competitiveness. To explain these links, governments are modelled facing two targets: reducing inflation and keeping economic activity close to a given target. Fixed exchange rates may help in achieving the first goal but at the cost of a loss of competitiveness and a recession. With sticky prices, devaluations restore competitiveness and help in the elimination of unemployment, thus prompting the authorities to abandon the peg during recessions. Importantly, in this setting of counter-cyclical policies, the possibility of self-fulfilling crises becomes important, with even sustainable pegs being attacked and frequently broken (see, for example, Obstfeld, 1994).

The next wave of currency crises, the Mexican crisis in 1994 and the Asian crisis in 1997, fuelled a new variety of models – also known as third-generation models – which focus on moral hazard and imperfect information. The emphasis here has been on 'excessive' booms and busts in international lending and asset price bubbles. These models also link currency and banking crises, sometimes known as the 'twin crises' (Kaminsky and Reinhart, 1999). For example, Diaz-Alejandro (1985) and Velasco (1987) model difficulties in the banking sector as giving rise to a balance of payments crisis, arguing that, if central banks finance the bail-out of troubled financial institutions by printing money, we have the classical story of a currency crash prompted by excessive money creation. Within the same theme, McKinnon and Pill (1995) examines the role of capital flows in an economy with an unregulated banking sector with deposit insurance and moral hazard problems of the banks. Capital inflows in such an environment can lead to over-lending cycles with consumption booms, real exchange rate appreciations, exaggerated current account deficits, and booms (and later busts) in stocks and property markets. Importantly, the excess lending during the boom makes banks more prone to a crisis when a recession unfolds. In turn, the fragile banking sector makes the task of defending the peg by hiking domestic interest rates more difficult and may lead to the eventual collapse of the domestic currency. Following the crisis in Argentina in 2001, the links between debt sustainability, sovereign defaults, and currency crises again attracted the attention of the economics profession. Finally, currency crises have also been linked to the erratic behaviour of international capital markets. For example, Calvo (1998) has brought to general attention the possibility of liquidity crises in emerging markets due to sudden reversals in capital flows, in large part triggered by developments in the world financial centres.

To summarize, all models suggest that currency crises erupt in fragile economies. Importantly, the three generations of models conclude that vulnerabilities come in different varieties. Still, the first attempts to study the vulnerabilities that precede crises have adopted 'the one size fits all' approach (see, for example, Frankel and Rose, 1996; and Kaminsky, 1998). That is, the regressions estimated to predict crises include all possible indicators of vulnerability. These indicators include those related to sovereign defaults, such as high foreign debt levels, or indicators related to fiscal crises, such as government deficits, or even indicators related to crises of financial excesses, such as stock and real estate market booms and busts. In all cases, researchers impose the same functional form on all observations. When some indicators are not robustly linked to all crises, they tend to be discarded even when they may be of key importance for a subgroup of crises. Naturally, these methods leave many crises unpredicted and, furthermore, cannot capture the evolving nature of currency crises.

The next step in the empirical analysis of crises should be centred on whether crises are of different varieties. The first attempt in this direction is in Kaminsky (2006). In this article, a different methodology is used to allow for *ex ante* unknown varieties of currency crises. To identify the possible multiple varieties of crises, regression tree analysis is applied. This technique allows us to search for an unknown number of varieties of crises and of tranquil times using multiple indicators. This technique was also applied to growth by Durlauf and Johnson (1995).

Interestingly, this method catalogues crises into six classes:

1. *Crises with current account problems*. This variety is characterized by just one type of vulnerability, that of loss of competitiveness, that is, real exchange rate appreciations.
2. *Crises of financial excesses*. The fragilities are associated with booms in financial markets. In particular, they are identified as crises that are preceded by the acceleration in the growth rate of domestic credit and other monetary aggregates.
3. *Crises of sovereign debt problems*. These crises are characterized by fragilities associated with 'unsustainable' foreign debt.
4. *Crises with fiscal deficits*. This variety is just related to expansionary fiscal policy.
5. *Sudden-stop crises*. This type of crisis is only associated with reversals in capital flows triggered by sharp hikes in world interest rates, with no domestic vulnerabilities.
6. *Self-fulfilling crises*. This class of crises is not associated with any evident vulnerability, domestic or external.

These estimations allow us to answer four important questions about crises.

1. *Do crises occur in countries with sound fundamentals?* Even though this estimation allows for the identification of self-fulfilling crises (crises in economies with sound fundamentals), the results indicate that basically all crises are preceded by domestic or external vulnerabilities. Only four per cent of the crises are unrelated to economic fragilities.
2. *How important are sudden reversals in capital flows in triggering crises?* While many have stressed that the erratic behaviour of international capital markets is the main culprit in emerging market currency crises, only two per cent of the crises in developing countries are just triggered by sudden-stop problems. While sudden-stop problems do occur, the reversals in capital flows mostly occur in the midst of multiple domestic vulnerabilities (see, Calvo, Izquierdo and Talvi, 2004).
3. *Are crises different in emerging economies?* Crises in emerging markets are preceded by far more domestic vulnerabilities than those in industrial countries. Overall, 86 per cent of the crises in emerging economies are crises with multiple domestic vulnerabilities, while economic fragility characterizes only 50 per cent of the crises in mature markets.
4. *Are some crises more costly than others?* It is a well-established fact that financial crises impose substantial costs on society. Many economists have emphasized the output losses associated with crises. But these are not the only costs of crises. In the aftermath of crises, most countries lose access to international capital markets, losing the ability to reduce the effect of adverse income shocks by borrowing in international capital markets. In most cases, countries have to run current account surpluses to pay back their debt. Finally, the magnitude of the speculative attack is itself im-

portant. For example, large depreciations may cause adverse balance sheet effects on firms and governments when their liabilities are denominated in foreign currencies. *Crises of financial excesses*, those also associated with banking crises – twin crisis episodes – are the costliest. Not only does the domestic currency depreciate the most, but also output losses are higher and the reversal of the current account deficit is attained via a dramatic fall in imports. In the aftermath of these crises, exports fail to grow even though the depreciations in this type of crises are massive. This evidence suggests that countries are even unable to attract trade credits to finance exports when their economies are mired in financial problems. In contrast, *self-fulfilling crises* and *sudden-stop crises* (but with no domestic vulnerabilities) have no adverse effects on the economies. Output (relative to trend) is unchanged or continues to grow in the aftermath of crises with no observed domestic fragility. In these crises, booming exports are at the heart of the recovery of the current account.

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See also

< xref = xyyyyyy > currency crisis models

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Index terms

budget deficits
currency crises
currency crisis models
deposit insurance
European Monetary System
Exchange Rate Mechanism
fixed exchange rates
foreign-debt defaults
imperfect information
international capital flows
international capital markets
moral hazard
regression tree analysis
self-fulfilling currency crises
sovereign defaults
sticky prices
sudden-stop currency crises

Index terms not found:

budget deficits
currency crisis models
international capital flows
self-fulfilling currency crises
sudden-stop currency crises