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Explaining ERM realignments: Insights from optimising models of currency crises

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Abstract

This paper attempts to provide empirical evidence on the determinants of the realignments throughout the European exchange rate mechanism (ERM). Motivated by the implications of optimising currency crisis models, we relate the probability of "crises" to a set of macroeconomic fundamentals. By using a conditional binominal logit model we show that regime switches are strongly influenced by movements in industrial production, foreign interest rates, competitiveness and imports as well as in foreign exchange reserves. These findings are consistent with the general propositions of recent currency crises models.

JEL classification: F31; F32
Keywords: Currency crisis; Parity changes; Probability of devaluations; ERM

1. Introduction

This paper attempts to provide more insights into the understanding of the determinants of currency crises following the recent turmoil in international financial markets. Currency and financial crises experienced by Mexico in 1994–1995, by Indonesia, Korea, Malaysia, the Phillippines and Thailand in 1997 and more recently by Turkey in 2001 and Argentina in 2002 all revived the interest in understanding the roots of currency collapses. The issue of currency crises has already been a lively research area and has been a subject of investigation in international finance literature

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since the seminal paper by Krugman (1979). The main proposition of the early literature (generally referred to as *first generation models*) is that balance of payments crises are precipitated by policy imbalances such as lax monetary and fiscal policies. In addition, the level of foreign exchange reserves is argued to be the main determinant of the duration of a fixed exchange rate regime.

The events in the European exchange rate mechanism (henceforth the ERM) in 1992 and 1993 posed serious problems for the propositions of the early models. Although the crises which preceded the exit of the Pound and the Italian Lira from the ERM involved some loss of reserves reserve adequacy was clearly not an issue for these countries which could borrow almost unlimited amounts of foreign exchange due to the provisions of the European exchange rate system. In addition, it might have been possible for these governments to raise interest rates to whatever level necessary to avoid the crises. The fact that these countries chose to leave the system instead was widely interpreted as an indication that the authorities' objective functions included some other key variables. [1] These observations might indicate that the decision to leave the ERM was to some extent an optimising decision on the part of those countries rather than an action only forced upon them by either policy imbalances or speculators. This has been at the centre of the new approach to the currency crises. These so-called optimising models of currency crises view regime changes as conscious decisions taken by policy makers who continuously weigh the marginal costs versus benefits of being in a fixed exchange rate regime. Main examples of these are Obstfeld (1994, 1996a), Ozkan and Sutherland (1995, 1998), Davies and Vines (1995), Bensaid and Jeanne (1997) and Andersen (1998) among others. These *second generation models* all share the common feature of modelling policy makers as having well-defined utility functions and thus clear preferences in terms of being in a particular exchange rate regime. The main implication of these models is that a fixed exchange rate regime lasts as long as the policy maker derives more utility from being in it than in either changing the rate or leaving the regime altogether. In other words, a country's commitment to the fixed exchange rate regime is not state-invariant (see, for example, Flood and Marion, 1998).

Motivated by the implications of these new currency crises models, this paper empirically investigates the roots of 'currency crises' during the ERM period by extending the set of potential determinants, as suggested by this recent literature. Our data set covers the ERM experience between 1979 and 1992. The reasons for constraining the panel to the ERM members and leaving out the Latin American and East Asian experiences are two-fold. First of all, in the case of recent Latin American and East Asian crises, currency collapses can not be analysed in isolation from financial and banking crises (see, for example, Radelet and Sachs, 1998; Kaminsky and Reinhart, 1998). Secondly, although empirical studies on the ERM abound most of the existing research on the European experience focuses on the determinants of *expected*

[1] High interest rates are a huge political cost in Britain due to the fact that a large proportion of mortgages are at variable rate. In the case of Italy, repayments on public borrowing soar as a result of rising interest rates.