

Policy coordination and risk premium in foreign exchange markets for major EU currencies

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Abstract

This study investigates cointegration, policy coordination and the risk premium in foreign exchange markets for major EU currencies since the inception of the EMU in January 1999. The results show that only the krone and the pound are cointegrated with the euro. Tests of inflation convergence and analyses of reduced-form and structural VARs indicate that the cointegration evidence reflects the relatively stronger degree of monetary policy coordination and at least the de facto fixed exchange rate regime of Denmark and the U.K. with the EMU. Additionally, cointegration of spot exchange rates can be considered one of the factors that represent the time-varying risk premium due to its explanatory power for the return to forward speculation.

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1. Introduction

The relationships among spot exchange rates have been of considerable interest to researchers, policymakers and foreign exchange market participants. The majority of prior studies (e.g., MacDonald and Taylor, 1989; Rapp and Sharma, 1999) find no evidence of long-run equilibrium relationships, as measured by cointegrating relationships, among spot exchange rates of various currencies over the modern float. However, as policymakers in different countries closely

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coordinate their monetary policies to considerably limit fluctuation of the exchange rate of one currency for another, a de facto fixed regime results.¹ Their spot exchange rates (expressed in terms of a numeraire currency such as the U.S. dollar) may be cointegrated because the currency prices cannot permanently diverge from each other.

An example of the de facto fixed regime is a group of European Union (EU) currencies prior to the inception of the European Economic and Monetary Union (EMU) in January 1999. Haug et al. (2000) and Rangvid and Sorensen (2002) detect cointegrating relationships among spot exchange rates of several EU currencies during the pre-EMU period. This finding is consistent with the fact that the Maastricht Treaty and the Exchange Rate Mechanism (ERM), among other measures, require considerable alignment and convergence of key economic variables of EU countries including inflation rates and exchange rates before they can become EMU members and adopt the euro as their currency.

To date, Denmark, the U.K. and Sweden are major EU countries which are not EMU members and hence still retain their national currencies. Denmark has been part of the ERM II since January 1999. The Danish krone is pegged to the euro at a central rate with a $\pm 2.25\%$ fluctuation band.² This very narrow band is indicative of a truly fixed exchange rate regime and implies strong monetary interdependence between Denmark and the EMU. The fixed regime also suggests that the cointegrating relationship between the krone and the euro is likely present. Further, the U.K. conducted the “Five Economic Tests” to evaluate its readiness for EMU membership. The test results published in 2003 indicate that significant progress had been made towards convergence in inflation rates, long-term interest rates and government deficits and debt. However, the U.K. decided that it was not ready to join the EMU because, among other reasons, the convergence might not be sustainable. Thus, the U.K. has adopted various policies and reforms to further improve the convergence and make its economic structures increasingly compatible with the EMU.³ Because of these efforts, the de facto fixed regime between the British pound and the euro may exist and the two currencies may be cointegrated even though the pound is officially under the floating regime. In contrast, the monetary policy of Sweden is based on its own inflation target under the floating regime and there is no specific mandate that prevents the divergence of the Swedish krona and euro prices.⁴ Thus, it is likely that a cointegrating relationship between the two currencies is not present.

Whether or not the three EU currencies are cointegrated with the euro, and more importantly, whether or not the presence/absence of long-run equilibrium relationships implied by cointegration actually reflects differences in the degree of monetary interdependence and the exchange rate regime with the EMU have not been jointly investigated by prior studies with post-EMU data. This investigation is of importance to EMU policymakers. According to the Maastricht Treaty, the monetary alignment or convergence helps ensure that price stability within the EMU area is maintained even with the inclusion of new member states.

The implications of the presence/absence of the cointegrating relationship are also of importance to market participants. The absence of cointegration and its error correction representation (Engle and Granger, 1987) implies that the price of one currency is not predictable based on common long-term dynamics. This unpredictability may be consistent with weak-form market

¹ Of course, if the allowable fluctuation is very close to zero, a truly fixed regime results.

² Other currencies under the ERM II are pegged to the euro at central rates with a much larger band of $\pm 15\%$. See details of the ERM II at <http://www.ecb.int/press/key/date/1999/html/sp990918.en.html> among others.

³ See details of the “Five Economic Tests” at <http://www.hm-treasury.gov.uk>.

⁴ See further information on the Swedish monetary policy at <http://www.riksbank.com>.

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