Available online at www.sciencedirect.com
SCIENCE DIRECT
International Review of Financial Analysis
13 (2004) 333–347

IRFA
INTERNATIONAL REVIEW OF
Financial Analysis

European foreign exchange market efficiency: Evidence based on crisis and noncrisis periods

Raj Aroskar[a], Salil K. Sarkar[b], Peggy E. Swanson[b,*]

[a] *Department of Accounting and Finance, University of Wisconsin-Eau Claire, Schneider Hall 456, Eau Claire, WI 54702-4004, USA*
[b] *Department of Finance and Real Estate, The University of Texas at Arlington, UTA Box 19449, Arlington, TX 76019-0449, USA*

Abstract

This study investigates the impact on foreign exchange market efficiency of the 1992 European financial market crisis by studying precrisis, crisis, and postcrisis periods. Long-term relationships among European currency values are identified during the three periods, although the relationships are not stable during the precrisis and the postcrisis periods. These results may be due to one or more of the following: (1) market inefficiency, (2) a risk premium, or (3) common policy guidelines for European monetary system (EMS) members. Evidence of market inefficiency is strong. Forecasting results demonstrate better performance by an error correction model (ECM) than by a random walk model (RWM) for the British pound and German mark, while results for the French franc and Italian lira are mixed. Dominance tests using Granger causality indicate only weak German mark dominance both in the short and long run.

JEL classification: F31; G15
Keywords: Foreign exchange markets; Currency crisis; European exchange rates; Cointegration

1. Introduction

In the limited span of the three decades since the European currencies were allowed to float, considerable research has been done to study exchange rate characteristics. Researchers have argued both for and against foreign exchange market efficiency, and the question has not yet been resolved. The findings of market efficiency tests are often ambiguous, as

* Corresponding author. Tel.: +1-817-272-3841; fax: +1-817-272-2252.
E-mail address: swanson@uta.edu (P.E. Swanson).

1057-5219/$ - see front matter
doi:10.1016/j.irfa.2004.02.011

researchers are unable to discern whether the rejection of market efficiency is due to irrationality, misspecification of expected returns, or a risk premium (Nguyen, 2000).[1]

Foreign exchange market efficiency is an important consideration for all currency market participants. An investment in a foreign security has two components: a security gain or loss and a foreign exchange gain or loss. Investors and traders in global markets frequently hedge their currency exposures, while speculators take positions in foreign currencies based on their own expectations. For these participants, foreign exchange risk is an important component of their decision making. Any risk reduction through the identification of intercurrency relationships would be highly beneficial. This study is based on this important dimension of foreign exchange market behaviors.

In addition, most earlier market efficiency research has not distinguished between crisis and noncrisis periods. Because currencies may show different levels of efficiency relationships during a crisis period, these differences need to be identified. Forecasting models for both crisis and noncrisis periods can contribute to this identification. Lastly, the dominance of a single currency in a region can lead to causal effects from that currency to other regional currencies and would in turn help predict relative future currency movements. Thus, regional dominance is included in the study.

While there exists an extensive literature relating to both market efficiency and financial market crises, primary emphasis has been on emerging markets and the 1997 Asian crisis. Lesser attention has been paid to the numerous crises that have occurred before (e.g., the Mexican peso crisis) or after 1997 (e.g., the Russian crisis). Even less attention has been given to developed markets, where foreign exchange market crises also occur. This study investigates crisis period effects for developed countries, using as its base the 1992 Western European currency crisis. The advantage of this period is that it allows the examination of the precrisis, crisis, and postcrisis periods.

Thus, the purposes of this study are to (1) understand the impact of currency crises and the implications of such crises on efficiency of foreign exchange markets for developed countries and (2) investigate the role of regional dominance on Western European market efficiency.

These issues are important for cross-border investors and multinational firms, central banks, and foreign exchange market participants. Additional information aids central banks in policy decisions and multinationals and international investors in risk management. Furthermore, speculators and hedgers can take appropriate currency positions, and policy makers can attempt to dampen undesired exchange rate swings.

2. The European currency crisis

The German unification and the simultaneous abandonment of capital controls by member countries of the European monetary system (EMS) were major factors contributing to the European currency crisis (Abu-Rashed, Cameron, & Rankin, 1995). Higgins (1993)

[1] Other relevant efficiency studies include Baillie and Bollerslev (1989), Hakkio and Rush (1989, 1991), Dwyer and Wallace (1992), Diebold, Gardeazabal and Yilmaz (1994), Crowder (1994, 1996), Engel (1996), Christodoulakis and Kalyvitis (1997), Chan and Chiu (2002), and Wang and Jones (2002).