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Some new evidence on exchange rates, capital controls and European Union financial integration

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Abstract

We tested for financial integration among the major European Union countries using a new test, developed by Im, Pesaran, and Shin (1997), that allowed us to confirm or reject covered interest rate parity depending on whether a panel data set comprising covered interest differentials is stationary or not. Employing a panel data unit root test offers substantial advantages over the univariate Augmented Dickey Fuller tests that might accept the null of nonstationarity on account of low test power. Despite the turbulence in the exchange rate mechanism during the early 1990s, we find evidence of onshore covered interest parity and therefore of financial interdependence of domestic interest rates. © 2001 Elsevier Science Inc. All rights reserved.

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1. Introduction

Financial integration can be defined as the extent to which financial markets are connected (Kenen, 1976). Financial markets may be connected vertically, through the term structure of interest rates, or horizontally, over a geographical area at each maturity. Horizontal integration is the more relevant concept in the context of global or European financial integration, and this is further defined by Cooper (1985) as where the price of assets, denominated in different currencies, with similar risk and maturity characteristics tend toward equality easily and

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quickly. A sufficient condition for the law of one price to hold for each particular asset market is when domestic and foreign bonds are close substitutes and exhibit high cross elasticities of demand. This interdependence, however, is not necessary for high-horizontal integration since efficient markets with full information may clear instantaneously without foreign residents holding domestic bonds. Horizontal integration, therefore, only requires domestic and foreign asset prices to be closely related. For this reason most tests of asset market integration have concentrated on onshore interest rates across countries.

The early empirical tests, due to Logue et al. (1976), White and Woodbury (1980), and Nellis (1982), were based on principal components analysis whereby an increase in financial integration is captured by fewer significant principal components explaining the covariation of nominal interest rates. These studies found that the breakdown of the Bretton Woods fixed exchange rate regime in 1971 had given rise to less financial integration and hence more monetary policy independence between countries. More recently, the widespread abolition of exchange controls, most especially in Europe, has led to a resurgence of interest in the degree of financial integration. A large number of papers have been produced showing increased financial integration (see, inter alia, Karfakis & Moschos, 1990; Koedijk & Kool, 1992; Katsimbris & Miller, 1993; Hafer & Kutan, 1994; and Holmes & Pentecost, 1996) using a variety of econometric techniques, including principal components, cointegration, and time-varying parameter methods. These papers show that there has been a general increase in financial integration, captured by various measures of onshore interest rates and interest rate differentials, such that integration is stronger between the European Union (EU) countries, due in part to the fixed exchange rate system and the abolition of exchange controls.

This paper differs from the earlier literature in two principal ways. First, following Frankel (1992), covered interest parity (CIP) is used as the most appropriate indicator of the degree of financial integration across national boundaries. Second, a new technique is employed, developed by Im et al. (1997), whereby panel data unit root tests are conducted on covered interest differentials. Rather than relying upon conventional Augmented Dickey Fuller (ADF) unit root tests, which suffer from power deficiency, the data sets for the EU countries are pooled, and the null hypothesis that deviations from CIP contain a unit root is tested against the alternative hypothesis that these deviations from CIP are a stationary series. This panel approach uses more observations and exploits the cross-country variations of the data in estimation, thereby yielding higher test power than standard unit-root tests based on individual time series. Critical values of the test statistic are simulated tailored to the specific panel sizes and time periods. As a basis of comparison, this test is also applied to a sample of non-EU countries and to eurocurrency rates.

Such a study is of interest for a number of reasons. First, this is a study of CIP, which is based on a new method of testing for unit roots in data. Second, this is an up-to-date study of CIP that takes us up to the introduction of the Euro and focuses on the structural changes experienced in the EU capital markets during the early 1990s, in particular, the abolition of capital controls and the widening of the permitted bands of exchange rate fluctuations. Third, this study is of relevance in assessing financial integration in the EU. Confirmation of CIP will suggest that a more stable exchange rate regime, arguably facilitated by the exchange rate mechanism (ERM), can bring nominal interest rates into line and hence increased financial integration among member states. Rejection of CIP may imply that EU members are