Financial integration in the pacific basin region: RIP by PANIC attack?

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ABSTRACT

We exploit advances in panel data econometrics to test whether real interest parity holds in the Pacific Basin region. We test for a unit root in the difference between either the US, Japanese or Euro area real interest rate and the real interest rates from a panel of eleven Pacific Basin economies. Unlike extant studies that test for RIP using panel data, we use Bai and Ng's (2004) PANIC test which allows for a very general model of cross-section dependence, including the possibility of cross-unit cointegration. Ignoring the possibility of cross-unit cointegration can lead to severe size distortions and to an over-rejection of the null hypothesis of a unit root. We overturn earlier findings based on first-generation panel tests, and demonstrate that cross-unit cointegration leads to incorrect conclusions. We find that RIP holds in the Pacific region. Real interest rates converge to the US rate. We find no support for the hypothesis that Pacific Basin real interest rates converge to either the Japanese or Euro area rates.

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1. Introduction

The process of financial liberalization and integration in the Pacific Basin region began more than 30 years ago when Hong Kong, Malaysia and Singapore lifted their interest rate controls in the mid-1970s. Japan started its gradual process of financial liberalization with interest rate deregulation in 1979, followed by the Philippines, Australia, New Zealand and Indonesia in the early-1980s, and Korea,

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Taiwan and Thailand in the late-1980s (see for example de Brouwer, 2002). Even following the 1997 Asian financial crisis, efforts to further the financial integration of Pacific Basin economies continue. The restructuring of domestic financial institutions, proposals for an Asian bond market and the Chiang Mai initiatives are just a few examples (Das, 2005; Chap. 7).

Real interest parity (RIP) is often viewed as an indicator of macroeconomic and financial market integration. As early as Mishkin (1984, p. 1345), it has been recognized that the convergence of real interest rates across countries is "an important issue to policy makers. If it is true, then domestic monetary authorities have no control over their real rate relative to the world rate, limiting the impact of their stabilization policies. In addition, as Feldstein (1982) has pointed out, unless real rates can differ across countries, policies directed at increasing domestic savings cannot increase the rate of capital formation and hence productivity."

Much like the literature which tests for real interest parity in developed economies, research on Pacific Basin economies has produced mixed results. Early studies such as Glick (1987), Glick and Hutchison (1990) and Chinn and Frankel (1995) found little support for RIP in the Pacific region when U.S. real interest rates were used as the base rate. Yet, when Phylaktis (1999) divided the sample into pre- and post-liberalization periods, she found evidence supporting RIP in the latter period. Recently, Baharumshah et al. (2005, bereafter BHF) found that Asian real interest rate differentials vis-à-vis Japan are mean reverting, leading them to conclude that real interest parity holds in all Asian countries.

The purpose of this paper is to exploit advances in panel data econometrics to test whether real interest parity holds in the Pacific Basin region and to determine which economy, the US or Japan, exerts the greatest influence in the region. To test for convergence of real interest rates, we follow Wu and Chen (1998); Holmes (2002); Baharumshah et al. (2005); Singh and Banerjee (2006); and Ferreira and Leon-Ledesma (2007) and test for a unit root in the difference between either the US or Japanese real interest rate and the real interest rates from eleven Pacific Basin economies. Unlike earlier work, we use panel unit root tests that allow for cointegration among cross-section units. Ignoring the possibility of cross-unit cointegration can lead to severe size distortions resulting in an over-rejection of the null hypothesis of a unit root (i.e., over-support of RIP). Early studies that used panel methods based on the assumption of no cross-unit cointegration or even cross-sectional independence should be interpreted with caution (Banerjee et al., 2005).

We use Bai and Ng's (2004) Panel Analysis of Nonstationarity in Idiosyncratic and Common components (PANIC). Like other panel unit root tests, PANIC is more powerful than its univariate (i.e., country-specific) counterpart. Unlike second-generation tests due to Pesaran (2007) or Moon and Perron (2004), PANIC allows for a more general model of cross-sectional dependence, including the possibility that cross-sectional units are cointegrated. PANIC is particularly well suited to studying RIP as cross-unit cointegration seems particularly likely when studying hypotheses such as PPP, UIP or RIP. In fact, we find evidence of cross-sectional cointegration when either Japan or the Euro area is treated as the base country, implying that early panel tests of RIP are suspect.

We find that RIP holds in the Pacific region. Real interest rates do converge, and they converge to the US rate. Our results overturn the findings of BHF. Real interest rates in Pacific Basin economies do not converge to either the Japanese real interest rate or to the Euro real rate. When these two rates are used as the base rate, we find that cross-sectional units share a single nonstationary common factor. Early panel unit root tests are unable to detect this nonstationarity because the common factor accounts for a small fraction of the variation in the real interest rate differentials.

The remainder of the paper is organized as follows. Section 2 provides a discussion of RIP and a review of the literature. We explain the PANIC method in Section 3 and discuss the data in Section 4. The results are shown in Section 5. Section 6 concludes.

2. Real interest rate parity

The hypothesis that domestic and foreign ex-ante real interest rates are equal may be derived from two classical parity conditions—uncovered interest parity and ex-ante relative purchasing power parity. Uncovered interest parity (UIP) is an equilibrium condition between expected nominal returns