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Asian financial integration: Global or regional? Evidence from money and bond markets

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ABSTRACT

This paper investigates the degree of global versus regional financial integration in Southeast Asia during the period 2004–2012. We examine integration in the money and bond markets in Asia by employing a covered-interest-parity-based measure of financial integration. The impact of the 2008 financial crisis as well as the recent regional bond initiatives on the integration process of Asian money and bond markets respectively are specifically investigated. Empirically, we adopt the Phillips and Sul (2007) convergence methodology that has not been previously employed to examine the integration process in Asian money and bond markets. We find evidence of both global and regional integration in the money market pre 2008 but once the crisis hit, the process of global integration comes to an abrupt halt. However, regional integration, albeit at a slower pace, is still clearly evident in the post-crisis period. As for the Asian bond market, evidence of both global and regional integration is found but, in comparison, the latter is more convergent post 2008. Regional integration is stronger when interest rates with longer maturity are considered. In addition, we identify some convergent subgroups of countries and this suggests that a multi-tiered style of convergence is present.

1. Introduction

Since the financial crisis in the late 1990s, financial cooperation within the Asian region is primarily centred around regional financial forums, including the Association of Southeast Asian National Plus Three (ASEAN + 3)[1] and the Executive Meeting of East Asia-Pacific Central Banks (EMEAP). Several regional initiatives, including the Chiang Mai initiative (CMI) and the Asian Bond Market Initiative (ABMI) were put in place in 2000 and 2003 respectively to strengthen regional cooperation and integration. Under the CMI, a regime of regional emergency liquidity provision through bilateral swap arrangements was established whilst since the endorsement of the ABMI, local currency-dominated bond markets in the region have achieved remarkable growth in terms of size and diversity of issuers. The ASEAN + 3 Finance Ministers' meeting in May 2008 agreed on a new ABMI Roadmap setting out tasks to further develop the regional bond market in Southeast Asia. At the same time, cross-border trade and investment within the Asian region have developed at an astonishing pace since the 1990s, which, in turn, have spurred on cross-border financial activities. However, despite the efforts of the regional financial forums and a favourable economic environment, researchers have reached varying conclusions in terms of the degree of financial integration within Asia. The debate rests on whether Asia countries are, in fact, more integrated with the world rather than with each other.

Given that financial integration is a multi-faceted and dynamic issue, existing studies have employed various indices to measure the extent of financial integration. Among existing literature that examining financial integration within Asia, price-based measures have been widely employed, although many alternative measures have also been examined.[2] A review of existing literature employing price-based measures reveals the following five issues that we intend to address in our study. First, very few studies employ the covered interest parity (CIP) condition, despite the fact that it requires fewer underlying assumptions than uncovered interest parity (UIP) and real interest parity (RIP). Specifically, as suggested by Kim and Lee (2012), the CIP-based measure of financial integration allows one to examine whether the

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[1] ASEAN + 3 includes the 10 members of the Association of Southeast Asian Nations (Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam) plus the People's Republic of China, Japan, and South Korea.

[2] See Section 2 Literature Review for a discussion of price-based measures and alternative measures of financial integration.

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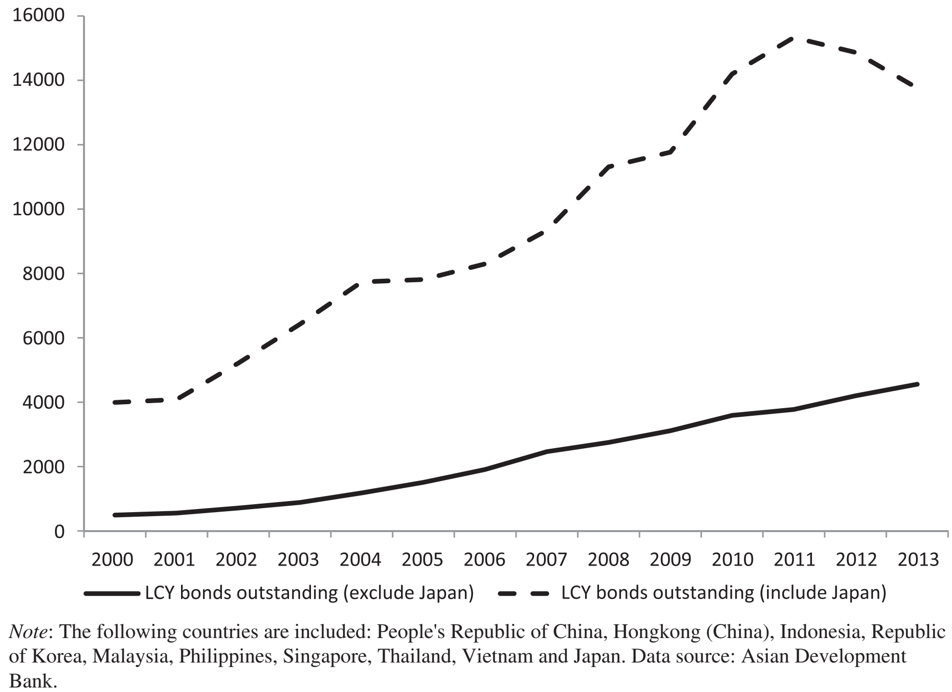

Fig. 1. Absolute amount of local currency (LCY) bonds outstanding in USD billions in Southeast Asia. *Note*: The following countries are included: People's Republic of China, Hong Kong (China), Indonesia, Republic of Korea, Malaysia, Philippines, Singapore, Thailand, Vietnam and Japan. Data source: Asian Development Bank.

rate of return of comparable financial assets across countries are equalised after factoring in exchange rate. As such, it is generally a more appropriate measure of financial integration. A second worth noting fact is that, although the Asian bond market has grown substantially in the past decade (see Fig. 1) and it is an important part of Asia's integration process, very few empirical studies have been conducted on this market to analyse the issue of financial integration in Southeast Asia. Third, we find that there is lack of comparison on the level of financial integration among markets where interest rates are of different maturities. Often the short-term interest rates are more responsive to changes in liquidity whilst longer-term interest rates are more responsive to economic fundamentals. Therefore, it would be interesting and informative to examine whether maturity duration affects the level of financial integration. Fourth, the 2008 global financial crisis and recent regional bond initiatives are likely to affect the level of liquidity in the money market and promote the development of Asian bond market, respectively. However, there is no empirical paper that analyses the impact of these two events on the process of Asian financial integration in the context of global versus regional integration. Last but not least, from a methodological perspective, we find that existing studies often employ methods that do not fully capture the dynamics of the integration process in the sense that it is unknown whether countries within the Asian group are forming sub-groups that are integrating at different speeds, irrespective of whether integration exists for all group members as a whole.

Therefore, our study intends to address the above gaps in the literature by examining the CIP condition in both the short-term money market and the medium-term bond market.[3] The bond market is our prime interest due to its fast expansion in recent years and the lack of relevant existing empirical literature. We consider interbank lending rates in the money market as indicators of the short-term rates. The interbank lending rate is chosen not only due to its short-term characteristic, but also because it is typically the most liquid and well-developed in emerging markets (Cheung, Chinn, & Fujii, 2005). We employ the recently developed panel convergence methodology by Phillips and Sul (2007) to provide fresh evidence on the impact of the recent financial crisis as well as the 2008 new ABMI Roadmap on the process of 1) global integration and 2) regional integration of the Asian financial markets. It is worth pointing out that the P&S methodology is aptly suited for our analysis as it provides an empirical modelling of long run equilibria within a heterogeneous panel. This method would not only reveal whether any convergence is present within the Asian financial markets or globally but the clustering methodology will, in turn, detect whether any specific sub-groups of countries are converging or diverging.

The rest of the paper is organised as follows. Section 2 provides a literature review and highlights several issues in existing studies. Section 3 introduces the CIP condition. Section 4 outlines the P&S convergence tests. Section 5 presents data source and variable measurement. Section 6 reports and analyses the empirical findings whilst the final section concludes and discusses policy implications.

2. Literature review

Existing literature has employed various indices to measure the extent of financial integration. Generally speaking, there are three categories of financial integration measures. The first involves price-based measures. These measures are largely embodied in the interest parity conditions in the money market, including covered interest rate parity (CIP), uncovered interest parity (UIP) and real interest rate parity (RIP), as well as co-movements in assets returns of stock and bond markets. The CIP relationship is a popular measure of testing for financial integration as in the absence of risk differences and market shocks, there should be equality between the interest rate differential and the forward exchange rate premium, hence signalling financial integration. Kearney and Lucey (2004) refer to the price-based measures as a direct measure since it invokes the law of one price whereby unrestricted international capital flows would lead to an equalisation of the rates of return across countries. The second category refers to volume-based

[3] Initially we intended to also include long-term (e.g. three-, five-, and ten-year) government bond yields in our investigation. However, data for the corresponding forward rates are not available for most countries included in our sample. Hence our study focuses on the medium-term (i.e., one year and two year) bond yields.