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Stock market linkages in emerging markets: implications for international portfolio diversification

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Abstract

This paper examines stock market linkages of a group of Pacific-Basin countries with US and Japan by estimating the multivariate cointegration model in both the autoregressive (AR) and moving average (MA) forms over the period 1980–1998. Recursive estimation helps identify the evolution of the linkages. The results for the 1980s indicate that the relaxation of foreign ownership restrictions was not sufficient to attract foreign investors' attention and that other factors must have affected the portfolio diversification decision. The results of the 1990s suggest that the relaxation of the restrictions might have strengthened international market interrelations. Country Funds have provided access to highly regulated capital markets.

JEL classification: F36; G15

Keywords: Capital market linkages; Emerging markets; Common stochastic trends; International portfolio diversification

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1. Introduction

There has been a considerable increase in interest on the interaction of international stock markets following the abolition of foreign exchange controls in both mature and emerging markets, the technological developments in communications and trading systems, and the introduction of innovative financial products, such as Country Funds and American Depository Receipts, which have created more opportunities for global international investments. Various approaches have been applied by the studies on international stock market linkages. For example, Longin and Solnik (1995) used cross-country correlations and found evidence of significant linkages between stock markets around the world. Bekaert and Harvey (1995) examined the conditional means and variances of stock returns by applying a one factor asset pricing model where expected returns in a country are affected by their covariance with a world benchmark portfolio when the market is perfectly integrated and by the variance of the country returns when it is completely segmented. Phylaktis and Ravazzolo (2002) measured financial linkages by analysing the covariance of excess returns on national stock markets of emerging economies.

Another group of studies has concentrated on examining financial links amongst stock markets by using either bivariate or multivariate cointegration methodology. Kasa (1992) was the first to apply multivariate cointegration to five well-established financial markets in order to examine the existence of a single common stochastic trend as a driver of the cointegrated system. A single common stohastic trend in a group of markets means that they are perfectly correlated over long horizons and limiting the gains from international diversification.

In the current study, we apply Kasa's (1992) approach and examine the potential interrelationships amongst the trending behaviour of the stock price indices of a group of Pacific-Basin countries, Japan and the US. These Pacific-Basin markets have attracted a substantial proportion of international capital flows to emerging markets in recent years. Earlier work, which has examined long-run comovements between these markets and the more developed ones, has found weak financial linkages e.g. Chung and Lin (1994) on Japan, US, Taiwan, Hong Kong and Singapore over the period 1985–92; Corhay et al. (1995) on Australia, Hong Kong, Japan, Singapore and New Zealand over the period 1972–92; and Masih and Masih (1999) on US, Japan, UK, Germany, Singapore, Malaysia, Hong Kong and Thailand over the period 1992–97. The above studies, however, suffer from two weaknesses. First, they assume that all Pacific-Basin Countries are at the same stage of integration with the world market; and secondly, they did not take care to select the correct order of VAR system.

Our analysis attempts to remedy these weaknesses and generally contributes to the literature in the following ways. First, it examines the financial links of these markets by estimating the multivariate cointegration model not only in the autoregressive (AR) form used in the previous studies but also in the moving average (MA) form, which allows one to examine the relative importance of each market to the common trend. In estimating the common stochastic trend we use the technique suggested by Gonzalo and Granger (1995), which makes possible the estimation of the transitory component of each market and highlights additional implications for international portfolio diversification to those of the autoregressive form.