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# Journal of International Money and Finance

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## Financial integration, economic instability and trade structure in emerging markets

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### A B S T R A C T

#### JEL classification:

F15  
F36  
G11  
G15

#### Keywords:

Emerging markets  
Economic instability  
Stock market integration  
International trade

In this study, we estimate the level of financial integration using a multivariate GARCH(1,1)-M return generating model allowing for partial market integration as well as for the pricing of systematic emerging market risk. We find that emerging markets still remain to a large extent segmented and that financial integration has decreased during the financial crises of the 1990s. We next investigate the relationship between a country's trade concentration and its level of financial integration. We find that countries with an undiversified trade structure have more integrated financial markets. Finally, our results suggest that countries less open to trade are more segmented.

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### 1. Introduction

Emerging stock markets have been the subject of a large body of research in the literature on international asset pricing. In this paper, we analyze two main issues regarding the development of emerging stock markets' financial integration levels over the last decade. The first objective is to estimate the level of financial integration of these stock markets, by developing and testing a three factor asset pricing model, in the spirit of Chen et al. (1986). The asset pricing model assumes that emerging stock markets' excess returns are driven by a world stock market factor, a domestic stock market factor and a systematic emerging stock market factor. It allows us to investigate whether the level of stock market integration of a sample of 25 emerging market countries has been affected by the various financial crises of the 1990s. The main characteristic of this model is that it analyzes stock market integration and its time-series behavior while simultaneously accounting for the pricing

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of “systematic emerging market risk” by foreign investors. Indeed, we conjecture that by investing even in a diversified portfolio of those countries’ stocks, an investor will not be able to completely abstract from the economic instability prevailing in emerging markets. Hence, we introduce in our asset pricing model, a new factor, defined as the systematic emerging market risk proxy and account for the fact that investors may require higher expected excess returns to bear the economic instability inherent to a diversified portfolio of emerging markets’ stocks. Our proxy for systematic emerging market risk is the difference between the yield of J.P. Morgan EMBI Global and the 10-year US Treasury bond yield.

The empirical results are obtained by studying a sample of 25 emerging stock markets countries over the period January 1st, 1995 to June 30th, 2004. To our knowledge, there is in the literature only one other study by [DeJong and DeRoos \(2005\)](#) that covers such an extensive range of emerging markets. The results suggest that these countries still remain, to a large extent, segmented and that the level of integration, especially in Asian countries, has decreased following the various financial crises of the late 1990s. More recently, the level of stock market integration of several countries has been trending upwards but has also become more volatile. Moreover, the systematic emerging market risk exposure is significant for all countries in the sample and commands a time-varying risk premium.

Our second objective is to analyze the relationship between the level of financial integration in emerging markets and the real determinants of these countries’ economies, especially as far as their trade policy is concerned. Our contribution to this stream of literature is twofold. First, we examine the relationship between the level of financial integration and a country’s trade openness by relying on a refined decomposition of the variable trade openness into its “natural” – or geographical – and its “residual” openness along the lines of [Wei \(2000\)](#). We find that countries natural and residual trade openness are significantly and positively related to their level of financial integration. These results provide support to the international finance literature, in the spirit of [Aizenmann \(2003\)](#) and [Aizenmann and Noy \(2004\)](#) that views trade openness and financial integration as complements rather than substitutes. Second, we study the relationship between a country’s degree of financial integration and its trade structure. More precisely, to our knowledge, there has not yet been any attempt within the macro-finance literature, to explore the relationship between the degree of a country’s trade concentration and its level of financial integration. We conjecture that countries can use financial integration as a “natural hedge” against their lack of trade diversification. This substitution effect is motivated by the lower costs and the higher flexibility associated with the development of international financial trade. The empirical results obtained with our sample of countries over the last decade corroborate our null hypothesis: we obtain a significantly positive relationship between the level of financial integration and the imports – or exports – concentration variable used in our regressions to measure the lack of trade diversification prevailing in a given country. This result is robust to the introduction of other control variables in our regressions. Thus, our results are consistent with the fact that countries more open to trade are also more integrated but have to be qualified with respect to the more or less diversified structure of these countries’ trade policy. An open conceptual issue is to determine whether the “natural hedge” hypothesis tested in this study is the deliberate or involuntary consequence of these countries’ financial liberalization efforts undertaken during the last decade.

The structure of the paper is the following: In Section 2, we briefly review the concepts of emerging markets’ integration and liberalization in light of the relevant literature and describe the data used in the empirical study. In Section 3, we present the empirical three factor asset pricing model that captures the joint impact of stock markets’ segmentation and of systematic emerging market risk on emerging market stocks’ excess returns. The results associated with the empirical test of the model are presented in Section 4 both in the cases where the unitary risk premia and the level of financial integration are assumed to be constant and time-varying. In Section 5, we examine the impact of a country’s trade policy structure on its level of financial integration focusing in particular on how the latter independent variable is related to the degree of a country’s trade diversification. Section 6 concludes by highlighting the main results obtained as well as possible extensions of the study.

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