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Dilemma: Regional or international interdependencies in Central and Eastern European stock markets

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Abstract

This paper examines the interdependencies between Emerging Europe (i.e. Bulgaria, the Czech Republic, Hungary, Poland, and Romania) and developed markets over the periods before and after the global crisis. A study of market integration is important, since the previously results in the literature are contradictory. Using a Vector Error Correction Model we tested two hypotheses, namely, regional integration in the pre-crisis period and international contagion in the post-crisis period. We find support for an increasing international interdependencies in all Central and Eastern European countries except Bulgaria. It follows that the results of the study can be employed to formulate optimal portfolio diversification.

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Keywords: Interdependencies; Contagion; VECM; Stock market indices; Crisis

1. Introduction

It is well known that globalization is associated with relatively high correlations among markets and with increasing investment opportunities. In the last five years, the negative shocks have ranked the phenomenon called contagion as one of the central elements of theoretical and political debates. However, the economist’s attention was mainly focused on the causes of volatility propagation from one market to another. The pioneer was Grubel (1968) who stood that portfolio efficiency could be improved through international diversification. In such context, the aim

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of the paper is to investigate the mutations within the links between emerging and developed stock markets, before and after the global crisis.

European Union accession’s result intensifies market integration, a fact that generally leads to an increased correlation between national stock markets. Although, at the theoretical level, there is a distinction between interdependence and contagion, de facto, the last concept does not find application outside the first one. Therefore, for purely theoretical reasons, related to empirical analysis’ ease, we will consider in this study two hypotheses. The first assumption that we want to validate is the increasing interdependencies between capital markets in Central and Eastern Europe (CEE) and those developed in the region. The second hypothesis has the current economic crisis as basis. Thereby, we want to confirm the presence of contagion in Central and Eastern European markets. The importance of this analysis derives from the fact that it provides information about both, portfolio diversification strategy and volatility determinants.

The motivations of this research are multiple. First, CEE markets are closely related in terms of trade and geographical proximity. Second, European Union members are aspiring to join the euro area. The emerging countries in the sample joined EU in 2004 and 2007, respectively. This could highlight the possible difference in the integration degree of the two groups. Third, the need of the study is induced also from the perspective that researches in this field are contradictory. While, some of them emphasize the presence of a strong links between CEE markets and world leaders (e.g. Olgun and Ozdemir (2008)), others underline the existence of a strong regional linkage (e.g. Li and Majerowska (2008)).

Our results generally support the increasing internationally integration of Emerging European countries, Bulgaria being an exception. We highlight the presence of interdependencies between Czech, Polish and Hungarian markets, on one side, and American market, on the other side. After the collapse of Lehman Brothers, our empirical results emphasize international contagion in the Czech Republic, Hungary, Poland and Romania. This evidence may suggest that portfolio diversification in CEE countries is limited, except in Bulgaria where the stock market seem to be more segmented at regional and international level.

The remainder of this paper is structured as follows. Section 2 describes the literature review. Section 3 presents the data and the methodology used. Section 4 reports on our empirical results. Section 5 concludes.

2. Literature review

It is well known that globalization is associated with relatively high correlations among markets and with increasing investment opportunities. In the last five years, the negative shocks have ranked the phenomenon called contagion as one of the central elements of theoretical and political debates.

The studies about interdependencies features in Central and Eastern European stock markets can be divided in two antagonistic groups. The first one postulates the existence of strong linkages between Emerging Europe and developed markets, while the second one claims the presence of comovements inside the emerging markets from the area.

Of the group that demonstrates the presence of international integration we highlight the work of Syriopoulos (2007). He emphasized the fact that markets from Central Europe tend to display strong connections with their mature counterparts, most of all after a crisis episode. Also, Syllignakis and Kouretas (2011) have demonstrated that financial linkages between CEE and global markets have increased with the beginning of EU accession. Yang et al. (2006) found that long and short run relationships were consolidated between 1999 and 2002, after the Russian crisis. In addition, Voronkova (2004) pointed out that emerging markets from Central Europe have become increasingly integrated with global markets, i.e., United Kingdom, Germany and France.

Of the group that considers the existence of a regional integration we first mention Syriopoulos and Roumpis (2009). They highlighted the fact that Balkan markets exert strong correlations between them, while those with mature markets remain relatively modest. Li and Majerowska (2008) emphasized limited interactions between Polish and Hungarian markets and the developed ones, namely, United Kingdom, USA and Germany. On the same line, Gilmore et al. (2008) and Egert and Kocenda (2011) concluded that there are positive correlations between advanced and emerging markets from European area, but this are insignificant in magnitude. Büttner and Hayo (2010) have demonstrated that the biggest correlations are registered between Polish and Hungarian markets. Moreover, Harrison et al. (2010) have identified in their work several commune features in the case of ten emerging
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