economies

Article

Contagion of the Subprime Financial Crisis on Frontier Stock Markets: A Copula Analysis

Wahbeeah Mohti [1], Andreia Dionísio [1,2], Paulo Ferreira [2,3] and Isabel Vieira [2,4,*]

1 Department of Management, Universidade de Évora, 7000-812 Évora, Portugal; beeah_awan@yahoo.com (W.M.); andreia@uevora.pt (A.D.)
2 CEFAGE, Universidade de Évora, 7000-812 Évora, Portugal; pferreira@ipportalegre.pt
3 VALORIZA—Research Center for Endogenous Resource Valorization, 7300-110 Portalegre, Portugal
4 Department of Economics, Universidade de Évora, 7000-812 Évora, Portugal
* Correspondence: impvv@uevora; Tel.: +351-266740800

Received: 13 December 2018; Accepted: 10 February 2019; Published: 26 February 2019

Abstract: This study assesses contagion from the USA subprime financial crisis on a large set of frontier stock markets. Copula models were used to investigate the structure of dependence between frontier markets and the USA, before and after the occurrence of the crisis. Statistically significant evidence of contagion could only be found in the European region, with the markets of Croatia and Romania being affected. The remaining European markets in our sample and the others, located in America, Middle East, Africa, and Asia, appear to have been isolated from the subprime crisis impact. These results are useful for international investors interested in enlarging the geographical diversification of their portfolios, but also for the considered countries' policymakers who should attempt to improve the attractiveness of stock markets for domestic and foreign investors while simultaneously attempting to maintain their relative level of insulation against future foreign crises.

Keywords: copula models; financial contagion; financial crises; frontier markets

JEL Classification: F30; G01; G15

1. Introduction

In this study, we used copulas to investigate financial contagion from the USA subprime crisis to frontier markets. Academic interest in financial contagion emerged in the last decade of the 20th century, with the advance of globalization and the increasing interconnectedness of financial institutions across borders. Nevertheless, financial crises have largely preceded such interest. In fact, with the exception of the first two decades following the end of the Second World War, crises have been rather frequent events. Relevant examples since 1980 are the 1987 USA stock market crash, the 1994 Mexican crisis, the 1997 Asian crisis, the 1998 Russian crisis, the 2007/08 USA subprime crisis, and the 2011 sovereign debt crisis in the European Union.

The subprime financial crisis has been considered the most severe event in recent history, only comparable to the stock market crash of 1929. The common attribute of all these episodes is that they caused dramatic drops in asset prices and increases in market volatility, firstly in the country of origin and subsequently in a number of other financial markets, with different sizes and structures. Such spreading of crises' effects led researchers to investigate whether cross-market co-movements provide evidence of contagion.

Although there is no consensus in the literature concerning the definition of financial contagion, one of the most often adopted concepts (which we also follow) was proposed by Forbes and Rigobon (2002, pp. 2223, 2224), according to whom contagion is a "significant increase in the cross market