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## Financial market stability: a quantile regression approach

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### Abstract

The topic of financial markets stability has received greater attention after the occurrence of the crises from the 90s. The testing of econometric models as well as the econometric analyses regarding the financial stability is scarce, also determined by the fact that there is no complete definition for financial market stability. In this paper, we take into consideration the definition of financial stability proposed by Baur D.G. and Schulze N. (2008) and we analyze the stability of financial markets in European Union countries. We took into consideration the stock exchange indices which are computed based on 95% of the stocks listed on the respective markets. The quantile regression used offers the possibility to study the stock markets under normal and extreme conditions. The results obtained confirm the instability of financial markets under analysis.

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### 1. Main text

The economic and financial crises from the 90s in East Asia, Russia and Brasil highlight the importance of continuous monitoring and analysis of financial stability. Even if it is an important topic for the decision-makers regarding the monetary and economic policies, the papers which analyze financial stability are scarce. The reason is that there is not a unanimously accepted definition for the financial stability.

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There are direct definitions of financial stability as those presented by Padoa-Schiopa (2002),Foot (2003) and, there are also indirect definitions presented by means of financial instability as that of Davis(2001),Ferguson (2003) and Schinasi (2004). In his turn, Issing (2003) identifies definitions of financial stability performed according to the approach of a system and the analysis of volatility of financial variables.

According to Albulescu (2013b, p. 51), financial stability represents “a concept associated with the stability of financial markets, of banking sector and exchange markets”.

Baur and Schulze (2009) define financial stability as “a constant impact of systematic shocks in normal and extreme market situations”.

The studies on the stability of financial markets have started to increase in the recent years. The causes of the increase in the importance of financial markets’ stability presented by Schinasi(2005) are the following: the expansion of the financial system in comparison with the real economy, the increase in the weight of non-monetary assets in comparison with the monetary assets, the increase in the integration of financial system which made possible the appearance of financial conglomerates and the increase in the complexity of the financial system.

The research on financial stability stop at the forecasting of financial stability Albulescu(2010), the impact of banks and monetary market on the stability of financial market Albulescu(2013a), Stiglitz(2002), CocrișandNucu(2013), as well as the influence of the different ways of listing on the stability of capital marketsAnufriev andTuinstra(2013).

A lot of papers written on the financial stability are performed prevalently for the banking system. This situation is justified by the fact that the policies of central banks ensure the financial stability. Padoa-Schiopa (2002) affirms that the central banks have started to have a role in ensuring financial stability “when they undertook the insurance of money as pear currency, which replaced previous metallic currencies”. The research that was conducted before the last economic and financial crisis presented the “incompatibility between the monetary policy and financial stability” Albulescu(2013a), anticipating the beginning of the crisis. Cassola and Morana (2004) draw the conclusion that the measures of monetary policy for long-term price stability can also contribute to the stability of stock market.

Baur and Schulze (2009) propose the testing of financial market stability through the impact of systematic and systemic risk on the capital markets. They define the financial market stability as “a constant impact under normal and extreme market conditions”.

The study they undertake proves that for the developed markets the shocks of the systematic risk are constant while the emerging markets are affected differently by the shocks of the systematic risk according to the conditions of normal or extreme market.

In this paper we analyze the stability of financial markets in some countries of the Central and East Europe: Czech Republic, Romania, Bulgaria, Cyprus, Estonia, Croatia, Greece, taking into consideration the definition of the stability of financial markets belonging to Baur and Schulze(2009). For comparison purposes we considered several countries with developed financial markets: France, Germany and USA.

The paper contributes to the development of the literature regarding the analysis of financial markets’ stability by means of the following elements. First of all, there are no studies which analyze the stability of financial markets in Central and East Europe. The papers written until now stop at the testing of the stability of stock markets in Asia in the paper ofBaurand Schulze (2009) and Africa in the paper of Ayinde and Yinusa(2013). By using the values of the stock market indices in the countries analyzed they reach the conclusion that the impact of systematic shocks under normal and extreme market conditions is different for the emerging countries in these geographical areas in comparison with the developed countries. The result which is obtained confirms that only the developed countries fulfil the necessary conditions for the stability of financial markets.

Secondly, the use of quantile regression offers the possibility to study the markets under normal and extreme market conditions. The paper adds to the increasing literature which uses this method in the financial sector.

## 2. Methodology

Testing the stability of stock markets will be performed by means of the methodology proposed by Baur and Schulze (2009).In order to estimate the systematic risk we will use regional stock exchange indices since the systematic risk affects several countries. In order to obtain unpredictable elements/the novelties or shocks of the systematic risk, we estimate the regression model between the regional index and a constant. The residual variable

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