

# ROMANIAN FINANCIAL MARKET'S REACTION TO FED TAPERING TALK DURING 2013<sup>1</sup>

---

---

Iulian PANAIT, PhD\*

## Abstract

This paper examines the reaction of the Romanian financial markets to the changes of monetary policies in the US during 2013. Using daily data for Bucharest Stock Exchange main equity index, EURRON exchange rate, 5 and 2 year government bond price index and 5 year government CDS (USD) price, we found a statistically significant negative reaction to the tapering news, similar in many respects with the reactions of other financial developed and emerging markets in the region. Also, we found that the reactions only manifested on the short term and were reduced in amplitude.

**Keywords:** monetary policy, financial markets, developing countries, stability, volatility

**JEL Classification:** F21, G15, E58

## 1. Introduction

Financial stability, macroprudential policy and instruments are relatively recent themes in financial literature and still needs further development and scientific investigation.

The effects generated by the monetary policies of developed countries on the emerging economies had generated important debate among economists and researchers during the past years and will continue to be of high importance during the following years as result of accelerated globalization. The expressions of this phenomenon are still insufficiently known to the scientific community and the policy makers.

---

<sup>1</sup> This paper was presented in the Annual International Conference "Financial and monetary economics" – FME 2014, 24 October 2014, Romanian Academy, Bucharest

\* Institute for World Economy, Romanian Academy

So far there have been only few studies to address the reaction of capital market and foreign exchange market in Romania to the monetary policy decisions of the most important central banks.

This article studies the reaction of the Romanian financial market to the surprise announcement made by the US Federal Reserve officials on the 22<sup>nd</sup> of May 2013 regarding the begging and the pace of the transition from quantitative easing to monetary tightening. We investigated the behavior of the main stock market index, the EURRON exchange rate and the behavior of credit markets via CDS and government bond yields.

We concluded that the reaction was statistically significant but reduced in size and duration, similar with the one experienced by other emerging and developed financial markets in the European Union.

Our conclusions are relevant for money managers and investors since they show the importance of monetary policy events (surprises) for the financial assets performance and also because of their impact on financial markets stability as one of the important objectives of national interest in the current European and international economic and social context.

The rest of the paper is organized as follows: section 2 describes the data and the methodology that we have used; section 3 presents the results that we have obtained; and section 4 summarizes the most important conclusions.

## **2. Data and methodology**

For our research purpose we have collected all the available daily data during January 2007 – August 2014 for Bucharest Stock Exchange BET Index, EURRON exchange rate, Romania 5y USD CDS prices, and the 5y and 2y government bond indices calculated by Bloomberg.

Because the price time series are not stationary, we used the daily log returns for stock index and exchange rate series and the first difference for CDS and sovereign bond yields.

Also, for comparison, we have collected and analyzed similar data for other financial markets in EU: Bulgaria, Hungary, Poland, Czech Republic, Croatia, Austria, Spain, Portugal, Greece, Italy, Germany, France, United Kingdom, Norway and Denmark.

For all the above, we employed a number of methods in order to study the behavior of daily returns (or daily difference in prices), volatility and correlations.

First, we divided the sample period in two sub-periods: the investigated period from April 1<sup>st</sup> 2013 till August 31<sup>st</sup> 2013 (which includes the 22<sup>nd</sup> of May 2013, the day of the US FED first official announcement of tapering) and the observation period (for comparison) from January 1<sup>st</sup> 2007 till August 2014 but without the investigated period mentioned before. Subsequently, we studied the Kernel Density Estimate distributions (according to Epanechnikov) and the differences between the shapes of the distribution for each of the two sub-periods.

Second we modeled the conditional standard deviation of the stationarized series using GARCH(1,1) (according to Engle).

Third, we modeled the conditional correlations for each variable between Romania and other developed and emerging financial markets using DCC-GARCH(1,1) (according to Engle).

### **3. Results and interpretations**

We have studied the basic stylized facts of all the financial market variables included in our research, separately for the investigated period and the observation period. Table 1 presented below show that, at least for Romania, they don't present significant differences to the characteristics that are already documented by the financial literature (near zero average daily returns, and non-normal distributions with excess kurtosis). The only noteworthy difference is the positive skewness during the investigated period (heavy left tail distribution) in contrast with the predominantly negative skewness (heavy right tail distribution) during the observation period.

**Table 1**

**Descriptive statistics for the series**

	Avg.	Std. Dev	Skewness	Kurtosis
Investigated period (April 1 <sup>st</sup> 2013 – August 31 <sup>st</sup> 2013)				
BET Index daily log returns EURRON	0.000	0.007	0.139	2.831
daily log returns	0.000	0.004	1.244	8.090
Ro 5y sovereign bond yield first difference	0.005	0.086	1.686	12.803
Ro 2y sovereign bond yield first difference	-0.008	0.056	1.150	7.301
Observation period (January 1 <sup>st</sup> 2007 - April 1 <sup>st</sup> 2013 and August 31 <sup>st</sup> 2013 – September 15 <sup>th</sup> 2014)				
BET Index daily log returns EURRON	0.000	0.013	-0.129	18.134
daily log returns	0.000	0.003	0.466	11.065
Ro CDS 5y USD first difference	-0.729	5.149	-0.250	27.069
Ro 5y sovereign bond yield first difference	-0.006	0.068	-14.427	359.10
Ro 2y sovereign bond yield first difference	-0.004	0.042	-0.037	16.845

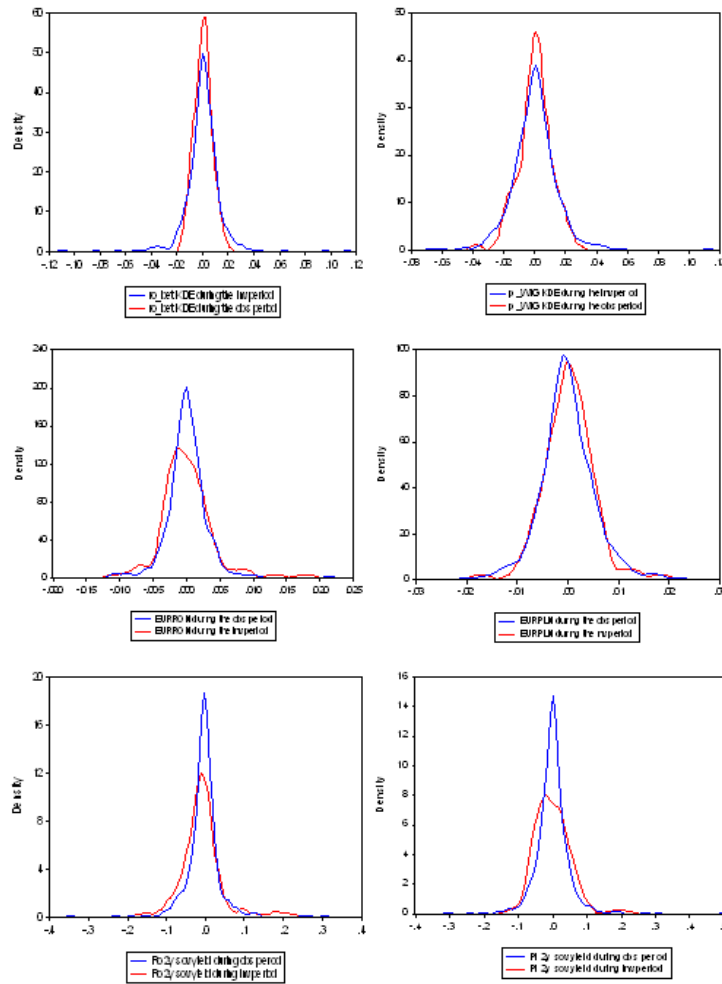
Source: Bucharest Stock Exchange, National Bank of Romania, Bloomberg, own calculations

A comparison between the distribution of daily returns (or daily differences in some cases) between the investigated period (April 1st 2013 till August 31st 2013 - which includes the 22nd of May 2013, the day of the US FED first official announcement of tapering) and the observation period (January 1st 2007 till August 2014, but without the investigated period mentioned before) show a similar behavior for all the Romanian financial market variables studied: in general heavier tails for the distributions of returns (or first differences) during the investigated period combined with lower kurtosis and higher positive asymmetry (the left tail is thicker in comparison with the right one).

Figure 1 presented bellow show that this finding is valid also for other financial neighboring financial markets (ex. Poland in the

figure below but the same finding was witnessed also for the other markets studied)

**Figure 1. Distributions of daily returns (daily differences) during the investigated and the observed period**



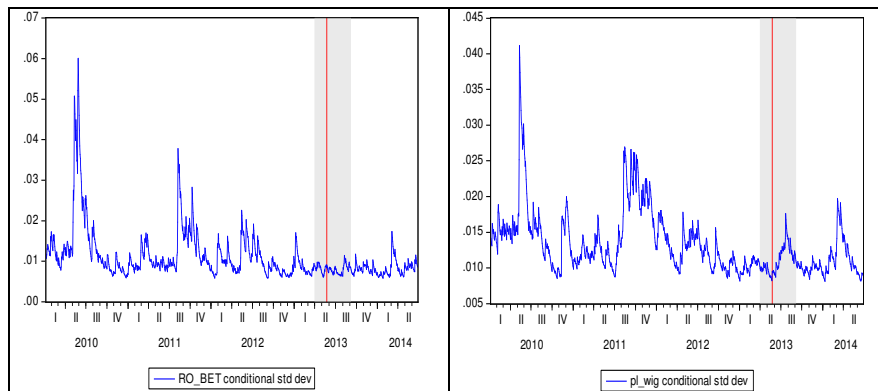
Source: Bucharest Stock Exchange, National Bank of Romania, Bloomberg, own calculations

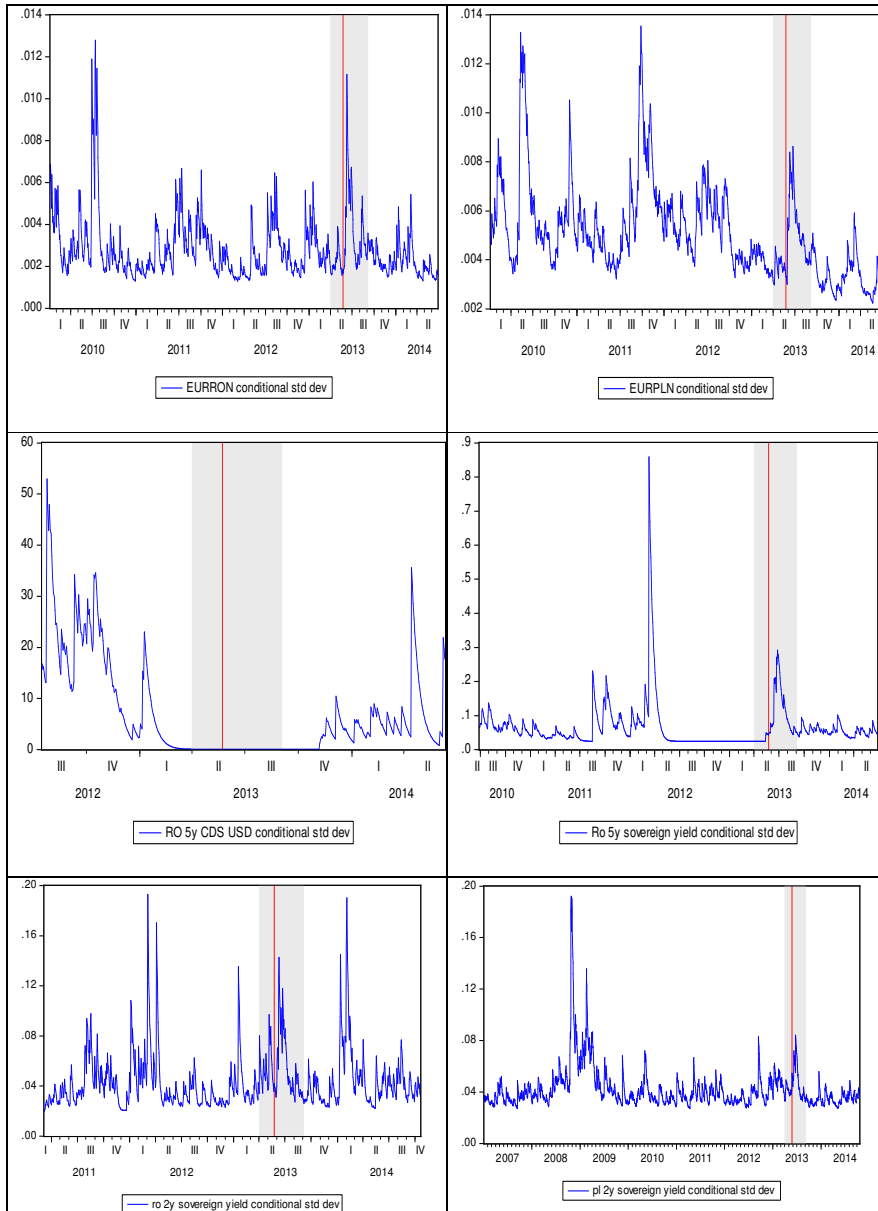
In order to highlight the behavior of volatility during the entire period studied, we used a Garch(1,1) model for the daily volatility of our time-series. In Figure 2 we present in parallel the behavior of various financial market variables for Romania and Poland. We have highlighted in gray the investigated period and we have marked with a red vertical line the exact moment of FED tapering announcement. It can be noticed that both in Romania and in Poland the FX market and the 2y sovereign bond market witnessed a significant increase in volatility during the investigated period, immediately after the tapering announcement.

It is also to be noticed that the behavior of the 5y Romanian sovereign market was not relevant due to its lack of liquidity.

Also, it is noticeably that the Bucharest Stock Exchange's volatility didn't show a significant increase during the investigated period, while the Warsaw Stock Exchange (and other emerging and developed markets) reacted significantly to the tapering announcement. The peculiar behavior of the Romanian stock exchange (not only from other exchanges in Europe but also in comparison with the Romanian FX and debt markets) can be explained by the fact that it has lower capitalization and liquidity and this could mean that foreign and institutional investors' participation is smaller and the capital outflows during the investigated period, as effect of the tapering announcement, was not significant and didn't influence market behavior.

**Figure 2. Evolution of the volatility during the investigated and the observed periods**

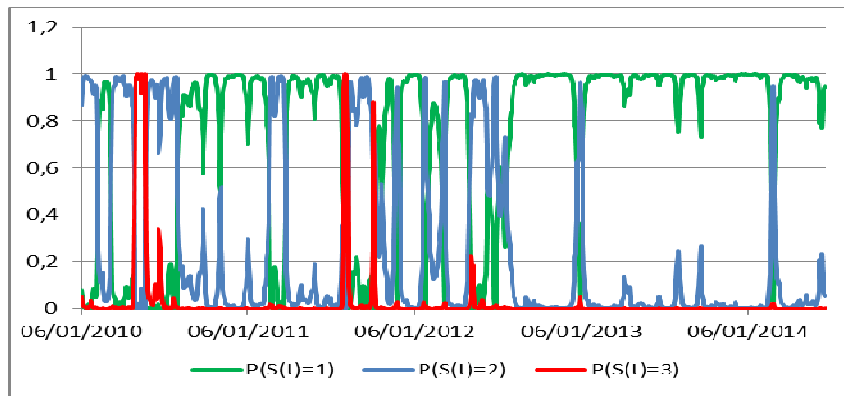




Source: Bucharest Stock Exchange, National Bank of Romania, Bloomberg, own calculations

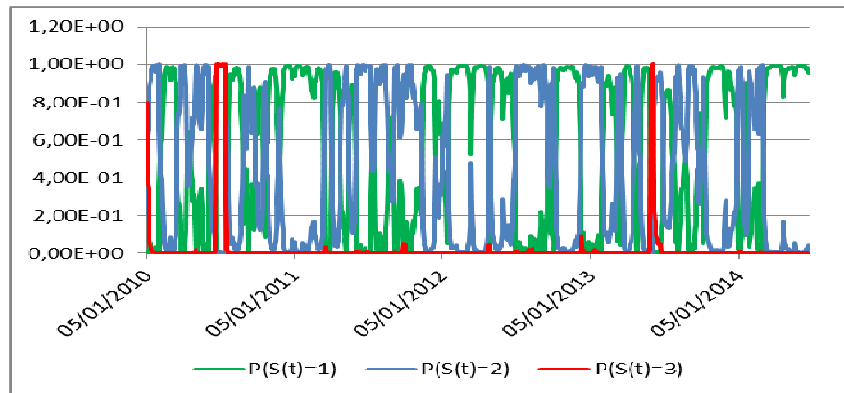
The same conclusions are also evidenced by the alternation of the Markov volatility regimes (Lam and Li, 1998). In Figures 3, 4 and 5 from below we show that Bucharest Stock Exchange main market index remained in a low volatility regime during all the investigated period, while the EURRON exchange rate and the 2y sovereign bond yield briefly entered a high volatility regime during the investigated period, in the immediate vicinity of the tapering announcement.

**Figure 3. BET Index volatility regimes (Markov)**



Source: Bucharest Stock Exchange, own calculations

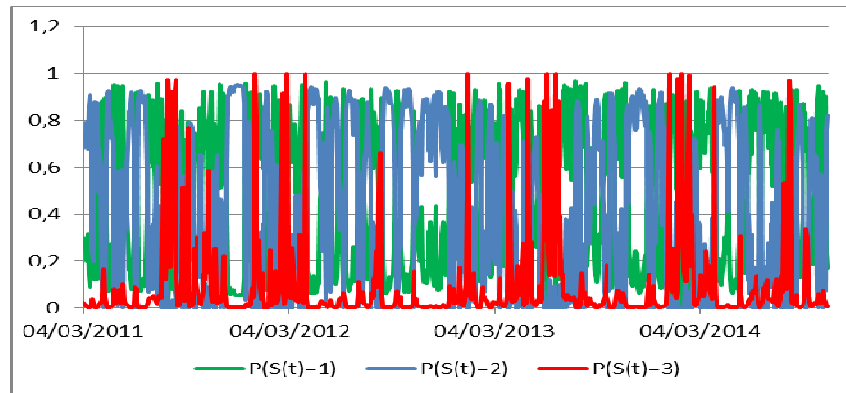
**Figure 4. EURRON volatility regimes (Markov)**



Source: National Bank of Romania, own calculations



**Figure 5. Romanian 2y sovereign bond volatility regimes (Markov)**

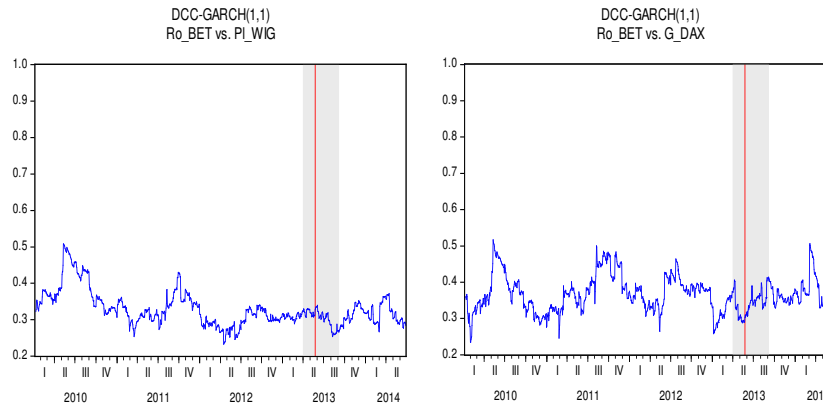


Source: Bloomberg, own calculations

We also studied the behavior of correlations between the Romanian market and other frontier, emerging and developed markets. In Figure 6 from below we show the evolution of the correlations between the main stock market indices of Romania and Poland, respectively between Romania and Germany. The correlations were modeled according with Chiang et al. (2007).

The results show that while the correlation between Romania and Poland stock markets decreased immediately after the tapering announcement, the correlation between Romania and Germany increased. The divergent behavior can be explained by the fact that usually the frontier and emerging markets are more correlated with developed markets (from where the foreign institutional investors are originating) than with similar or neighboring frontier or emerging markets. In other words our findings also show that size (capitalization) and liquidity matter when we are talking about the correlation between stock markets.

**Figure 6. Romania vs. Poland and Romania vs. Germany stock market correlations**



Source: Bucharest Stock Exchange, Bloomberg, own calculations

#### 4. Conclusions

We studied the behavior of the Romanian financial market to the tapering announcement made by the US Federal Reserve officials on the 22<sup>nd</sup> of May 2013, using daily data for the BET index, the EURRON exchange rate, the 5y CDS (USD) and the 2y government bond yields.

We concluded that FX and debt markets witnessed statistically significant reactions, but reduced in size and duration, similar with the ones experienced by other emerging and developed financial markets in the European Union. Also, the results showed that the Romanian equity market didn't had a significant reaction, probably because of its reduced size, liquidity and participation of the foreign investors.

The research can be extended during in order to also capture other FED monetary policy decisions and announcements that occurred during 2014 and later.

#### Acknowledgements

This paper has been financially supported within the project entitled "Horizon 2020-Doctoral and Postdoctoral Studies: Promoting the National Interest through Excellence, Competitiveness and Responsibility in the Field of Romanian Fundamental and Applied

Scientific Research", contract number POSDRU/159/1.5/S/140106. This project is co-financed by European Social Fund through Sectorial Operational Program for Human Resources Development 2007-2013. Investing in People!

### **References**

1. Ahmed, S., Zlate, A. (2014) "Capital flows to emerging market economies: A brave new world?", *Journal of International Money and Finance*, issue 48B, pp. 221-248.
2. Aizenman, J., Binici, M., Hutchison, M. (2014) "The Transmission of Federal Reserve Tapering News to Emerging Financial Markets", NBER Working Paper 19980, available online at <http://www.nber.org/papers/w19980>.
3. Arora, V., Cerisola, M. (2001) "How does U.S. monetary policy influence sovereign spreads in emerging markets?", *IMF Staff Papers*, vol 48, issue 3.
4. Basu, K., Eichengreen, B., Gupta, P. (2014) "From Tapering to Tightening: the Impact of the Fed's Exit on India", *India Policy Forum* 2014.
5. Chaiporn, V., Yaowaluk, T. (2013) "Emerging Equity market volatility", *Journal of Multinational Financial Management*, issue 23, 2013, pp. 446-469.
6. Chiang, T., Jeon, B. N., & Li, H. (2007) "Dynamic correlation analysis of financial contagion: Evidence from Asian markets", *Journal of International Money and Finance*, issue 26(7), pp. 1206-1228.
7. Eichengreen, B., Gupta, P., (2014) "Tapering Talk: The Impact of Expectations of Reduced Federal Reserve Security Purchases on Emerging Markets", *World Bank Policy Research Working Paper* no. 6754.
8. Fratzscher, M.I, Lo, D., M., Straub, R., (2013) "On the spillovers of US Quantitative Easing", *DIW Berlin, German Institute for Economic Research Discussion Paper Series*, available online at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2276855##](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2276855##).

9. Horobet, A., Lupu, R. (2005) "Expunerea la riscul valutar a firmelor românești: o analiză sectorială", *Oeconomica*, anul XIV 4 pp. 107-136.
10. Horobet, A., Lupu, R., Dumitrescu, S., Dumitrescu, D., G., Tintea, I. (2011), "Dynamic Trade-Offs in Financial Performances of Romanian Companies", *Analele Stiintifice ale Universitatii "Alexandru Ioan Cuza" din Iasi-Stiinte Economice*, pp. 85-100.
11. Prachi, M., Kenji, M., Papa, N., Lam, N. (2014) "Impact of Fed Tapering Announcements on Emerging Markets", *IMF Working Paper 14/109*.