

The impact of monetary policy on BRIC markets asset prices during global financial crises



Giuseppe Galloppo^{a,b,*}, Viktoriia Paimanova^c

^a Deim Department of Economics and Business, University of Tuscia, Via del Paradiso 47, 01100, Viterbo, Italy

^b Ceis Foundation, University of Rome Tor Vergata, Via Columbia 2, 00133, Roma, Italy

^c Department of Economic Theory and Economic Management Methods, V.N. Karazin Kharkiv National University, Mironosyts'ka str., 1, 61002, Kharkiv, Ukraine

ARTICLE INFO

Article history:

Received 29 February 2016

Received in revised form

14 December 2016

Accepted 17 February 2017

Available online 18 March 2017

JEL classifications:

G140

G180

G150

E52

E58

Keywords:

Stock market reaction

Monetary policy

Event study

Emerging markets

Financial crisis

ABSTRACT

This paper investigates the influence of Central Authorities on emerging financial markets (BRIC area) by means of Monetary Policy. The sample period relates to financial crises. We suggest this work to be probably the first one dealing with external shocks across different economic sectors, and in Emerging Market economies. Hence, it enlarges the existing financial literature. On emphasizing contractionary and expansionary policies, we tried to get the most precise output, and aimed to investigate, whether there was some interdependence between stock price reaction and international trade flows. We found the predominance of positive reply and the most active response to contractionary policy. We found the largest amount of feedbacks to the Bank of Japan and the lowest—to the Bank of England. On considering these findings, our analyses revealed the highest number of responses from Utilities and Basic Materials' sectors and detected the existence of some unexpected and controversial reactions from certain countries.

© 2017 Board of Trustees of the University of Illinois. Published by Elsevier Inc. All rights reserved.

1. Introduction

The research of Monetary policy's effects is becoming more and more important, especially in financial crises times, when countries are trying to protect their economies and keep their interest rates at the decent level. Central Banks consider Monetary Policy as one of the main remedies to regulate price stability and economic growth, as well as the crucial tool to keep investors. It is worth of saying that monetary policy influences the cost of capital, cash flows and, thus, the stock price. When tighter, it leads to interest rate' increase, harder financial conditions, more sensitive assets and displays itself in a certain response of stock prices. Even though, there are already many literature sources on influence of monetary policy, the effects of monetary actions in Emerging Markets are barely explored. We

focus on BRIC area, because we revealed a lack of empirical papers about it. However, the attitude of this group of countries to global financial market is particularly interesting. BRIC are ranked among the most promising large Emerging Market economies and cover more than 25% of global GDP, representing one of the most relevant world investment area (see website <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>). They have strong trade connections inside and outside the group and they are growing much faster than the general world trade (see Tables 20 and 21). Everything mentioned above cannot but attract more and more investors and increase Central policies' attention to cooperation between BRIC and developed economies. The importance of the topic lies in the fact, that external fiscal and monetary policy shocks can strike economies of developing countries. In fact, the actions of the largest Central Banks impact on Emerging Markets through different channels. The most important transmission channel is connected to interest rates, that influence the cost of bank loans and the cost of the government financial funding through the issuance of bonds. Moreover, the interest rate also affects the intrinsic value of stocks

* Corresponding author.

E-mail addresses: giuseppe.galloppo@uniroma2.it (G. Galloppo), V.Paimanova@hotmail.com (V. Paimanova).

(acting as the denominator in the discount factor of future earnings cash flows) and cross rate level. Then, the impact on exchange rates is passed to the whole economy through the account balance of payments. Under this perspective, the undesired effects that might occur, are disincentive for new fixed investments and more expensive debt service. Therefore, they turn into hurdles in terms of public finance. Another important channel for development of spillover effects is related to unconventional measures, such as quantitative easing. It can cause raise of share prices in the interventions' target stock market. This way, some investors might be encouraged to increase the weight of certain securities to the detriment of others. We observed stock price reaction of BRIC countries (Brazil, Russia, India, China) to monetary policies of advanced Central Authorities (the US, the UK, the EU, Switzerland and Japan) during financial crises of 2007–2012. We are dealing with a very short-time stock price reaction, ranging between five days and one day (that is the day of news release). The sample period relates to financial crises in order to catch the immediate reaction to external interventions. We are aware of importance of long term reactions, but we decide to focus on a very short time period. In accordance with Baele (2005) and Christiansen (2007), to name a few, there is a sound cue referring volatility transmission between short and long terms in financial markets. Under this perspective, we think that analyzing policy drivers of short term volatility is something worth to investigate.

The main object of our article is to show the core role of external fiscal and monetary policies in formations and changes of stock prices on BRIC financial markets by means of international perspective on Central Authorities regulatory actions. It will help to show the level of market efficiency, the degree of policies' influence and discover a base for further scope of policy implementations and research.

Our paper is probably the first one dealing with external shocks on emerging financial markets in BRIC area, provided by Central Monetary Authorities. We managed to find only few empirical papers referring to economic sectors of BRIC, our research tries to enlarge the existing financial literature. To tell more, we try to upgrade the present literature in two ways. Firstly, we study stock market reactions of BRIC to monetary external shocks of Central Authorities. Secondly, we put stress on financial reactions across economic sectors.

Our observation considered monetary policy by dividing it into contractionary and expansionary measure in order to depict the most real picture of stock price reaction on emerging financial markets (BRIC area). With this in mind, we tried to draw a parallel between stock price reaction and international trade flows of Emerging Markets (BRIC area).

This paper has the following structure. Section 2 presents the recent literature review on the topic. Sections 3 and 4 explain Data and Methods used. Section 5 is for Empirical results, where effectiveness of Central Authorities' impact on BRIC stock prices is estimated and explained in overall and across the sectors. Section 6 presents our main findings and recommended policy implications to be done.

2. Literature review

We revealed a limited number of studies devoted to effects of monetary policy on stock prices, even though it is vital for policy makers and investors to understand the influence of policy and monetary decisions on financial side.

Hence, we started our research from observation of the latest works in our topic. Cetorelli and Goldberg (2011) talk about a significant role of Central Banks in Emerging Market economies during financial crises periods. They notice that policy interventions “influ-

enced the lending channel effects on Emerging Markets of head office balance sheet shocks”. Mishkin (2008) considers inflation as an important tool of basic monetary policy strategy in Emerging Markets and underlines the significant progress in many Emerging Market economies, especially in “more disciplined fiscal and monetary policy, greater flexibility of exchange rates”.

Shaghil, Coulibaly, and Zlate (2015) explored the importance of economic fundamentals in the transmission of international shocks to financial markets in different Emerging Markets and proved that “differences in economic fundamentals played a role in explaining the heterogeneous Emerging Market economies financial market during the global financial crises of 2008” and that role increased in 2011. Their findings concluded that “the source of the shock may matter in how much investors differentiate across Emerging Market economies based on their economic fundamentals”.

Chen, Mancini-Griffoli, and Sahay (2014) found the US monetary policy shocks on capital inflows and asset prices in Emerging Markets. They underline the necessity of Emerging Markets to “help dampen spillovers on their own countries by strengthening economic fundamentals, policy credibility and market liquidity”.

Unlike our research, the previous papers on Emerging Markets focus mainly on particular countries (not BRIC area, which represents the most significant economic area among developing regions), do their measure in another time frame, while we focus on financial crises period and in short-term spillover effects due to their nature to show immediate signal to external shocks. In addition, some works focus on unconventional measure only, however, it is not the standard model of a monetary policy and requires a very careful time selection due to risks of being done too early or too late. With this in mind, we think that our research updates the previous literature.

Furthermore, we discovered that there is a number of papers dealing with stock price reaction to monetary policy, however, without exact focus on Emerging Markets. Again, it underlines the unique character of our research. The conduct of monetary policy is said to have a counter-cyclical or procyclical way, which depends on country specific effects (Gomes da Silva & Vilela Vieira, 2014) and should be strongly coordinated especially in crises periods. Another research (Montoro, Takáts, & Yetman, 2012) revealed that “stronger fiscal positions are weakly associated with lower equilibrium real interest rates and smaller deficits with lower inflation”. They studied the tendency to follow the countercyclical policy on Emerging Markets and a positive response of monetary policy to improvements in fiscal policy. However, such character can become procyclical or cyclical/countercyclical on Emerging Markets, while countercyclical is common for advanced economies, which can be proved by the logit regression model (Coulibaly, 2012). In addition, Chatziantoniou, Duffy, and Filis (2013) with the use of VAR framework showed that monetary policy influences stock prices with direct or indirect channels and such interaction explains stock market developments.

It should be mentioned, that fiscal policy is an important tool to strengthen actions of monetary policy in the area of its influence on stock price reaction. According to a number of previous studies, it results in its ability to increase stock prices when boosting the economy due to aggregate demand; it reduces stock prices by sustaining the private sector and it can cause stock market efficiency (Afonso & Sousa, 2009; Aizenman & Jinjarak, 2011; Gomes da Silva & Vilela Vieira, 2014). Such estimation of empirical relationship between fiscal policy, monetary policy and stock market shows, that higher deficits increase the short-term interest rate due to higher government borrowing and prove a negative response of the stock market to innovations in inflation. To continue our literature analyses, Crowder's (2006) explains the effect of monetary policy on equity returns the following way: monetary tightening reduces stock returns. Such policy raises the federal funds' rate; therefore,

the discount rate is increased and stock prices declines. His VAR analysis reflects the dynamic relationship between equity returns and monetary policy, which allows interpreting the innovations in the policy variables as the unanticipated policy shocks. Kurov (2010) proves that monetary policy changes “have similar directional effects on the aggregate stock returns, investor sentiment and expectations of credit market conditions”. According to him, stock returns are influenced by policy decisions in a small degree, as the response of stocks to monetary policy depends on “sensitivity of stock returns to changes in credit market conditions and sentiment changes”. It all let speak about a strong impact of monetary policy shocks in investor sentiment, because such stocks react stronger to monetary policy news. Vithessonthi and Techarongrojwong (2013) confirm, that even though the effect of monetary policy decisions on stock prices is asymmetric, stock prices show positive reactions to policy rate announcements. Gomes da Silva and Vilela Vieira (2014) show that the smooth of interest rates is an important tool of monetary policy. Credit market might cause its effect on monetary policy, when central bank holds interest rates at the zero lower bound “beyond the time when the zero lower bound is actually binding”, or when there are “outright purchases of both privately-issued and publicly-issued debt” (Azariadis, Bullard, Singh, & Suda, 2016). When participants have an equity share in the income of the credit sector, monetary policy “replicates the complete credit market allocation from a risk-sharing perspective” (Azariadis et al., 2016). Therefore, it leads to maintenance of complete credit market by monetary policy. As for the effects of credit market on monetary policy, Bernanke and Gertler (1995) establish, that informational frictions in credit markets worsen during tight- money periods. Jiménez, Ongena, Peydró, and Saurina (2014) find that a lower short term interest rate induces lowly capitalized banks to commit larger loan volumes to ex ante risky firms and with fewer collateral requirements to these firms, yet with a higher ex post likelihood of default. Schularick and Alan (2012) find, that total credit has strongly increased relatively to output and money in the second half of the twentieth century, and that credit growth is a powerful predictor of financial crises. They suggest policymakers to correct unnecessary credit supply with ad hoc monetary policy interventions. Rey (2015) says, that monetary policy is one of the determinants of the global financial cycle in the center country. It affects leverage of global banks, capital flows and credit growth in the international financial system.

Getting further, the effect of monetary policy in Emerging Market Countries can be done by multi equation model and the VAR approach, where the event study method (MacKinlay, 1997) is used, in order to define the impact of news concerning fiscal variables and fiscal policy on sovereign spread and exchange rate daily movements in Emerging Market Countries (Zoli, 2005). Zoli (2005) mentions that fiscal policy does not have a direct influence on monetary policy, however, its impact is seen through “credit risks, sovereign spreads, interest rates, exchange rates and inflation”. Moreover, the author indicates, that fiscal dominance can lead to difficulties of monetary policy where financial markets suffer “fiscal sustainability”. Therefore, the author shows the significant influence of fiscal policy events on sovereign spreads and exchange rates more than monetary policy, and finds an indication that “fiscal policy might have pushed the economy into equilibrium in which monetary policy had an unconventional effect”. Zoli (2005) underlines that fiscal policy can cause its influence to monetary policy through the “impact of government inter-temporal budget constraint on monetary policy, the effect of monetary policy on monetary variables (interest rates, interest spreads, exchange rates)”. In addition, the fiscal policy’s influence on exchange rates depends on “the associated changes in sovereign default risk, on the openness of the capital account, on the exchange rate system” (Zoli, 2005). The market is very sensitive to fiscal policy changes, espe-

cially on Emerging Markets, where the mobility of capital is high, the situation on the government level is very shaky. Therefore, fiscal policy might cause currency pressures and default probability (Zoli, 2005). The influence of fiscal policy on exchange rates in Emerging Markets can also be seen through decisions made by Central Banks: limitation of shock-absorbing role of exchange rates due to domination of foreign currency in the economy and huge government debt. If the public debt is high, it might increase the credit default risk. Then, the effects of monetary policy can be seen in relation to interest rates, so to keep inflation and “raise the cost of debt service, debt level, default probability, depreciation of exchange rates” (Zoli, 2005).

The increased globalization of the world economy reflects in high Emerging Markets’ dependence on advanced economies, however, previous academic literature did not investigate this topic very much. For example, Eichengreen and Mody (1998a, 1998b) studied Latin American and East Asian countries during the early 1990s and found, that raise in the U.S. treasury interest rates tended to reduce spreads and probability of a bond issue at the same time. Arora and Cerisola (2001) quantifies the impact of changes in the U.S. monetary policy on sovereign Emerging Market bond spreads. They find, that the trend and predictability of the U.S. monetary policy are important for stabilizing capital flows and overall capital market conditions in Emerging Markets. Furthermore, developing economies’ local risk is influenced by the U.S. monetary policy and conditions in global capital markets. Gambacorta, Hofmann, and Peersman (2014) examine the impact of unconventional monetary policy measures of developed countries (the US, the UK, Euro Area and Japan) on developing economies (Brazil, China, India and Russia). They find, that quantitative easing by the FED, BoE, ECB and BoJ influences long term yields, equity prices, and exchange rates in developing countries. Some interesting considerations can be made regarding BRIC countries on their reference to commodities market and monetary policy actions. Frankel (2006) studied connections between monetary policy, agricultural and mineral commodities. Low real interest rates lead to high real commodity prices. Consequently, a spillover effect of advanced economies on Emerging Markets via interest rate channel could have strong effects on commodity price and current balance account. By considering all these evidences, it is clear, that spillover effects of monetary policy on BRIC countries are worth of investigation, particularly during Global Financial Crisis Period. BRIC economies seem to be very sensitive to exogenous shocks on interest rates. However, the interest rate level is crucial for many economic and financial variables: asset prices, bond market, public and private fixed investments, cross rate and commodities.

According to other research (Cheng & Sun, 2013) and our work as well, the event study methodology can be conducted in order to investigate the stock market response to policy announcements. It shows that the reaction among different countries is different because of their scale of economy and economic freedom. Cumulative abnormal returns are calculated by aggregating the abnormal return over the event window. Abnormal returns are the difference between the actual stock return and the return, predicted by the market model. They underline that the announcement about the base rate brings certain fluctuations on the market due to its belonging to credit market (Cheng & Sun, 2013). Boehmer, Musumeci, and Poulsen (1991) uses stochastic effects to prove if an event increases the variance at least a little bit, “the most commonly-used methods reject the null hypothesis of zero average abnormal return too frequently when it is true, although they are reasonably powerful when it is false”, while Kolari and Pynnonen (2010) studies the multiple-day cumulative abnormal returns in event studies. Harrington and Shrider (2007) uses the model of event effects and simulations to underline the resulting biases and the importance of test procedures, to “provide evidence of bias and

power for alternative tests for non-zero slopes in abnormal returns regression model". Rigobon and Sack (2004) define, whether "the stronger assumptions under the event-study approach are valid and the extent to which the event-study estimates are biased". They show the following reaction of asset prices on monetary policy. An increase in short-term interest rates leads to a decline in stock prices. Moreover, short-term interest rates react significantly to movements on broad equity price indexes, which shows the response of monetary policy to the "impact of stock price movements on aggregate demand".

3. Data and variables

In this section, we explain how we build the variable to measure the impact of policy interventions on BRICS' stock markets. We considered to get concentrated on a very short-time reaction in a sample period of financial crises, given the transmission mechanism of volatility between short and long term, and uncertainty of financial markets in a long run (Akyüz, 2008; Kenourgios, Samitas, & Paltalidis, 2007). So, we aim to catch the immediate reaction of Emerging Markets to external shocks from Central Authorities.

The variable, we observe, is the cumulative abnormal return, calculated in the following three event-windows: (1) a one day window (0; 0), i.e. the day of the announcement; (2) a two-day window (−1, 0), i.e. from day before the announcement and the announcement day (this case, we try to capture an anticipatory effect of announcement); and (3) five-day window (−1; +3), i.e. from day −1 to day +3 of policy announcement. A detailed explanation of the event window estimation procedure is reported in the Section 4.

In order to catch the effect on a large portfolio of companies, we focus on stock indices from the whole stock exchange (thereafter, labeled as the "market index") on four stock markets: Brazil, China, India and Russia. These countries are representatives of four currency areas: Brazilian Real, Chinese Yuan, Indian Rupee and Russian Ruble. The second step is to focus on sector indices in every country. Specifically, we selected economic sector industries from SIC10 code. We put Financials into Financials and Banks, Consumer Goods and Consumer Services—into Consumer, dropped IT and added Mining and Chemicals. It was done in attempt to select the largest number of common sectors among four economies, and consider the missing values in the database. After all these arrangements, we obtained eleven sectors as follows: Oil and Gas, Basic Materials, Consumer, Industrials, Health Care, Financials, Banks, Telecom and Communication Services, Mining, Chemicals and Utilities. We use the FTSE indices to measure the stock returns in these industries for each country (thereafter, labeled as the "industry index"). All data are taken from Bloomberg and DataStream. As such, our variable $CAR_{j,t}$ refers to the excess return on sector j at event date t for the following FTSE Stock Market sector indices.

Chosen policy interventions and Data are collected from various sources: for the period from June 2007 to March 2009, we used the database of the National Bureau of Economic Research (Aït-Sahalia, Andritzky, Jobst, Nowak, & Tamirisa, 2010, 2012), for the period from April 2009 to the end of June 2012, we collected data from official announcements (in the form of press releases) of the European Central Bank, the Bank of Japan, the Bank of England, the Federal Reserve and the Swiss National Bank.

We classify policy interventions in two macro-categories: (1) monetary policy expansionary measures; (2) monetary policy restrictions and unchanged measures. In particular, "Expansionary monetary measures" macro-category includes the following: interest rate cuts; liquidity support (provision of liquidity both in domestic currency (i.e. more frequent actions, longer maturities for refinancing operations or extensions of accepted collateral) and for-

eign currencies (through swap agreements between Central Banks or Central Banks' facilities for liquidity in a foreign currency)); monetary easing decisions. We considered two policy interventions in the second macro-category of policy actions (i.e. restrictions and unchanged monetary measures): (1) decisions to stop a monetary easing program, e.g. the Bank of England terminated some part of the asset purchase program on 15/11/2010 after determining, that it was no longer necessary due to improvements in financial market functioning, and, hence, restricted liquidity; (2) the decision to increase interest rate or make no change in target rates.

In line with Fiordelisi and Ricci (2015), we deal with the problem of overlapping events (i.e. press releases from same institutions, which occurred on the same day) by adopting the following criteria: (1) if different announcements belong to the same event-type category, we treat them as a single event; (2) if there is a decision to change the target interest rate, we consider it as the main event, and thus, we exclude other events from event study analysis; (3) if there is a decision to leave the current situation unchanged or to continue with a previously defined measure, we consider it less important than other announcements in the same press release; (4) if the aforementioned criteria are not sufficient to extrapolate a single event from a package of interventions, we identify the main event on the basis of its prominence in the financial press, as in Aït-Sahalia et al. (2012). At the end of selection process, our final sample (excluding overlapping announcements) includes 456 events.

4. Measuring stock market reaction

We measure market reaction by studying policy interventions at two levels. Specifically, we estimate abnormal returns (ARs), which is the forecast error of a specific normal return-generating mode, focusing on stock returns of single sectors. Regarding to the estimation procedure, we estimate the AR, adopting the market model (MacKinlay, 1997). Normal returns for every i -th observation (R_{it})—that is the broad equity index or a single bank index—are obtained as a function of the market portfolio return (RM_t), represented by a world equity index:

$$R_{it} = \alpha_i + \beta_i R_{Mt} + \varepsilon_{it} \quad E(\varepsilon_{it}) = 0, \quad \text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_i} \quad (1)$$

Market model parameters are obtained by daily log returns of sector and local stock market index (e.g. FTSE Stock Market Broad Index). As declared before, it is able to represent the market portfolio over a 252-day estimation period and it ends 20 days before the announcement. ARs are then obtained as the difference between the actual stock return and the return predicted by the market model:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{Mt}) \quad (2)$$

ARs are cumulated over a time period (Cumulative Abnormal Return, CAR) around the announcement date ($t = 0$). Following Aït-Sahalia et al. (2010, 2012), we focus on the following short event windows: five day (−1; +3), two day (−1; 0) and one day (0; 0). As a robustness check, we also estimate CARs on (0; +1) and (−1; 0). For each event window, CARs are obtained as follows:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \quad (3)$$

where t_1 and t_2 are the start and the end date of the considered window. ARs can be aggregated on a time or a cross-section basis for a portfolio of N observations. The Cumulative Average Abnormal Return (CAAR) is calculated as:

$$CAAR(t_1, t_2) = \frac{1}{N} \sum_{i=1}^N CAR_i(t_1, t_2) \quad (4)$$

After the calculation of CAARs, we test the hypothesis of a market reaction significantly different from zero. As noted in [Cummins and Weiss \(2004\)](#), various studies have documented a variance increase in ARs during the days near to the event, with respect to the estimation period, as an effect of announcement. If hypothesis testing is conducted without considering this increase in variance, results can be biased in the direction of too frequent rejection of the null hypothesis in favor of the alternative. In order to overcome this limitation and avoid considering null value creation or destruction significant, we follow the approach first proposed by [Mikkelsen and Partch \(1988\)](#) and then adopted in some recent studies (e.g. [Harrington & Shrider, 2007](#); [Mentz & Schiereck, 2008](#)). It suggests using the [Boehmer et al. \(1991\)](#) test statistic. First of all, we calculate a standardization factor:

$$SR_i = \frac{CAR_i(t_1, t_2)}{\sqrt{\hat{\sigma}_{\varepsilon_i} \left(T_s + \frac{T_s^2}{T} + \frac{\sum_{t=t_1}^{t_2} (R_{Mt} - \bar{R}_M)^2}{\sum_{t=1}^T (R_{Mt} - \bar{R}_M)^2} \right)}} \quad (5)$$

where $\hat{\sigma}_{\varepsilon_i}$ is the standard deviation of abnormal returns estimated with the market model; T_s is the number of days in the considered event window (t_1, t_2); T is the number of days in the estimation period; R_M is the market portfolio return and $\bar{R}_M$ is the average market portfolio return during the estimation period. Then, the Z statistic (with a t-distribution with $T-2$ degrees of freedom and converging to a unit normal) is determined as follows ([Mentz & Schiereck, 2008, p. 207](#)):

$$Z = \frac{\frac{1}{N} \sum_{i=1}^N SR_i}{\sqrt{\frac{1}{N(N-1)} \sum_{i=1}^N \left(SR_i - \frac{1}{N} \sum_{i=1}^N SR_i \right)^2}} \quad (6)$$

A recent paper by [Kolari and Pynnonen \(2010\)](#) proposes a new test statistic that modifies the one suggested by [Boehmer et al. \(1991\)](#) and considers possible cross-sectional correlation among abnormal returns. The adjusted test statistic is obtained applying the following correction factor to the above defined Z:

$$\sqrt{\frac{1 - \bar{r}}{1 + (N-1)\bar{r}}} \quad (7)$$

where there is the average of the sample cross correlations of the estimation period residuals and N is the number of observations in the sample.

We choose event study approach together with other several previous authors, who worked on the same topic, but with other country area and almost equal methodology. Among others, we cite [Fiordelisi and Ricci \(2015\)](#), who use event study to check GIFs banks stock reaction to monetary policy announcements. [Rigobon and Sack \(2004\)](#) investigate three US Equity Stock indexes in the same fashion. [Chen \(2007\)](#) approaches event study to assess the impact of policy news on SP500 index, while [Bredin et al. \(2007\)](#) do the same things with a reference to UK stock returns. Moreover, we want to investigate the short run effect of monetary policy announcements on financial markets and we believe that event study could be a good approach to face such kind of analysis. We are not confident that BRIC represent a homogenous group, therefore, we do not run pooled regression by mixing all country variables together. We prefer to work on different countries separately in order to save the specificity of their local characters.

GDP at market prices (constant US \$)

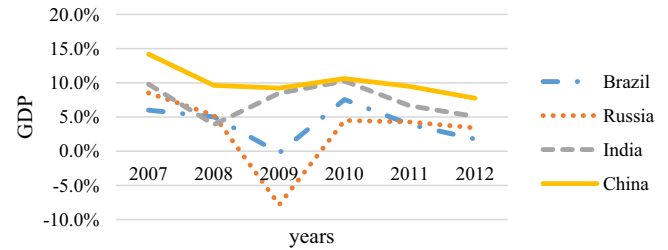


Fig. 1. GDP at market prices.

Source: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

5. Empirical results

In this section, we present our results in two steps. First, we discuss the reaction of financial market indices of BRIC countries to policy announcements of 5 Central Authorities. Second, we show the reaction of every selected economic sector of every observed BRIC country to both expansionary and contractionary policy actions of Central Authorities.

Due to running hundreds of regressions, our estimation of market indices of BRIC starts from overall results. Our results allow to present a short-time reaction on financial markets during the period of 2007–2012 (see [Table 1](#)).

Our work is supported by previous studies on stock market reaction and efficiency ([Afonso & Sousa, 2009](#); [Aizenman & Jinjarak, 2011](#); [Gomes da Silva & Vilela Vieira, 2014](#)). We revealed a certain reaction (see Panel A, [Table 2](#)) of Emerging Markets to external shocks, thus, a significant role of Central Banks in Emerging Markets, which is confirmed by previous papers as well ([Cetorelli & Goldberg, 2011](#); [Mishkin, 2008](#)).

We could evidence the existence of anticipation of stock market reaction to Central Authorities before the day of event (see [Table 1](#)). When analyzing the overall reaction (see [Table 1](#)), the anticipation is in a full accordance to the day of event. On looking more deliberately, we testify anticipation of future stock market's response in case of expansionary and contractionary policies, and evidence, that market reacted more than twice stronger in the day of event, comparing to what was expected for contractionary measure. It turned out to be less than predicted in case of expansionary. It signifies about very strong influence of Central Authorities on Emerging Markets. There is a mix effect of positive and negative signs, however, to be more precise, it has a slight predominance of positive reactions (see Panel B, [Table 2](#)). In order to assist the reader's better understanding and focus on main results, in [Table 2](#), we summarize main evidences in terms of results showing a statistical significance at the 90% confidence level or higher. Moreover, we revealed, that countries tend to answer Expansionary policy interventions more often in comparison with Contractionary (see Panel C, [Table 2](#)). That can be because of the general idea of Expansionary Policy, which is aimed to stimulate money supply by lowering interest rates and increasing the demand in order to boost growth and the GDP. Indeed, we tried to make a parallel between Central Authorities' actions and BRIC's reaction together with trade relationship among those countries. That is why we can suggest, that reaction of BRIC countries to Central Authorities could be related to growing indices of GDP (see [Fig. 1](#)) in the form of a tendency, in the meaning of an external shocks, to answer Expansionary policy and the predominance of positive reactions (see [Table 22](#)).

We tried to investigate external shocks on Emerging Financial Markets, provided by Central Monetary Authorities and found their significant effect on BRIC countries, when paying much attention to international mutual trade flows (see [Tables 20 and 21](#)).

Table 1
Overall.

		Overall			Exp	Cont		Contr	Exp	
		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0016	−0.0013**	−0.0016**	−0.0006	−0.0008	−0.0006	−0.0036	−0.0022**	−0.0036**
	St. dev.	0.0349	0.0168	0.0236	0.0289	0.0153	0.0212	0.0441	0.0193	0.0276
Russia	Coeff.	−0.0017	0.0003	0.0089	−0.0007	0.0000	−0.0094	−0.0037	0.0009	0.0461
	St. dev.	0.0350	0.0316	1.2025	0.0197	0.0202	0.9735	0.0541	0.0469	1.5677
India	Coeff.	0.0000	−0.0003	−0.0004	0.0001	0.0001	0.0003	−0.0003	−0.0013	−0.0018
	St. dev.	0.0238	0.0186	0.0332	0.0201	0.0155	0.0285	0.0298	0.0235	0.0409
China	Coeff.	0.0040	−0.0012	−0.0018	−0.0017	−0.0002	−0.0017	0.0154	0.0014	0.0039
	St. dev.	0.0536	0.0143	0.0213	0.0388	0.0166	0.0220	0.0736	0.0189	0.0284
US										
Brazil	Coeff.	0.0001	−0.0001	0.0001	0.0009	0.0002	−0.0003	−0.0004	−0.0003	0.0004
	St. dev.	0.0379	0.0162	0.0234	0.0281	0.0121	0.0173	0.0431	0.0183	0.0267
Russia	Coeff.	0.0007	0.0002	−0.0002	−0.0051	0.0009*	−0.0024	0.0046	−0.0003	0.0011
	St. dev.	0.0687	0.0378	0.0489	0.0563	0.0159	0.0261	0.0756	0.0469	0.0593
India	Coeff.	−0.0003	0.0000	0.0000	−0.0006	0.0000	0.0000	−0.0001	0.0001	−0.0001
	St. dev.	0.0319	0.0152	0.0204	0.0233	0.0099	0.0142	0.0365	0.0179	0.0235
China	Coeff.	−0.0007	0.0003	0.0002	−0.0043***	−0.0010**	−0.0011*	0.0016	0.0011*	0.0010
	St. dev.	0.0466	0.0201	0.0286	0.0353	0.0165	0.0231	0.0527	0.0221	0.0317
ECB										
Brazil	Coeff.	−0.0001	−0.0008	−0.0014*	0.0006	−0.0010	−0.0013	−0.0006**	−0.0006	−0.0014**
	St. dev.	0.0378	0.0172	0.0246	0.0311	0.0127	0.0195	0.0422	0.0199	0.0278
Russia	Coeff.	−0.0017	0.0002	0.0006	−0.0012	0.0012	−0.0012	−0.0021	−0.0006	0.0020
	St. dev.	0.0556	0.0244	0.0395	0.0485	0.0209	0.0336	0.0604	0.0266	0.0433
India	Coeff.	−0.0009	−0.0001	0.0002	−0.0005	0.0000	0.0006	−0.0012	−0.0001	−0.0001
	St. dev.	0.0317	0.0133	0.0203	0.0299	0.0126	0.0164	0.0331	0.0138	0.0228
China	Coeff.	0.0022**	0.0013**	0.0020**	0.0026*	0.0013*	0.0013	0.0019	0.0013**	0.0025***
	St. dev.	0.0491	0.0189	0.0277	0.0446	0.0185	0.0265	0.0523	0.0192	0.0285
JP										
Brazil	Coeff.	0.0004	0.0005	0.0008	−0.0024*	−0.0006	−0.0014	0.0030**	0.0015***	0.0028***
	St. dev.	0.0327	0.0146	0.0215	0.0331	0.0156	0.0217	0.0320	0.0135	0.0211
Russia	Coeff.	0.0025	0.0011	0.0021	−0.0040	−0.0002	0.0013	0.0084**	0.0023*	0.0028*
	St. dev.	0.0554	0.0271	0.0387	0.0540	0.0298	0.0447	0.0560	0.0243	0.0323
India	Coeff.	0.0001	−0.0002	−0.0003	−0.0012	−0.0007	−0.0009	0.0012	0.0002	0.0002
	St. dev.	0.0278	0.0130	0.0179	0.0285	0.0130	0.0186	0.0271	0.0129	0.0171
China	Coeff.	−0.0004	−0.0008**	−0.0018***	−0.0035**	−0.0020***	−0.0030***	0.0026**	0.0003	−0.0007
	St. dev.	0.0480	0.0179	0.0254	0.0572	0.0189	0.0267	0.0372	0.0169	0.0241
CH										
Brazil	Coeff.	0.0022	0.0007	0.0011	−0.0028	−0.0007	−0.0021	0.0097**	0.0027	0.0060**
	St. dev.	0.0411	0.0204	0.0283	0.0272	0.0127	0.0205	0.0551	0.0283	0.0366
Russia	Coeff.	0.0048	0.0036	0.0038	−0.0074	0.0003	−0.0005	0.0227	0.0087	0.0103
	St. dev.	0.0716	0.0326	0.0379	0.0490	0.0109	0.0187	0.0928	0.0492	0.0545
India	Coeff.	−0.0004	−0.0008	−0.0008	−0.0008	−0.0004	−0.0005	0.0002	−0.0014	−0.0014
	St. dev.	0.0333	0.0160	0.0217	0.0246	0.0115	0.0159	0.0432	0.0209	0.0283
China	Coeff.	−0.0056***	−0.0019**	−0.0013	−0.0056***	−0.0020**	−0.0014	−0.0043*	−0.0028***	−0.0022**
	St. dev.	0.0523	0.0241	0.0339	0.0523	0.0241	0.0339	0.0426	0.0204	0.0238
Total ^a		2	4	4	5	5	2	6	6	7

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

^a Summatory of reactions of five Central authorities.

We found, that no such research was done before. Therefore, it can bring strong novelty to financial literature, when considering the paramount importance of these new economies in the global economic scenario. We could suggest that Central policies' influence on stock price reaction on Emerging Markets might find some reflection in import-export operations. Our measure is done for monetary policy influence, by dividing it into contractionary and expansionary measure to get more correct and exact results.

The received results are raising more attention, if we look at Trade Flows within these five economic leaders (see Tables 20 and 21).

We focused on three years (2007, 2010, 2012), because the real picture of export-import operations in their response to the most active actions of Central Authorities is particularly interesting during that time (pre-crisis time, first and second financial crises periods).

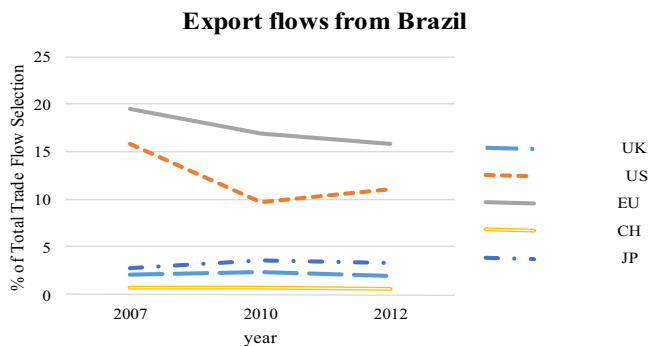
We discovered China to have the biggest number of reactions to our observed World Central Authorities (see Table 2), which is clear due to its huge import and export flows in the world, (see Tables 20 and 21), and main trade partners, such as the US, EU, JP (see Figs. 5 and 9, Tables 20 and 21).

However, we were surprised by not so many reactions of two competing and aggressively growing economies of Brazil and Rus-

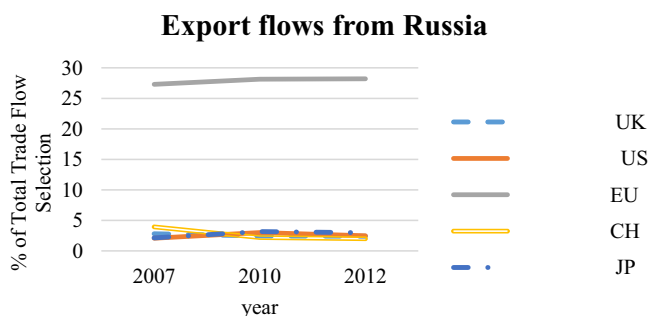
Table 2
Overall sign.

	UK		US		ECB		JP		CH		Total
	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	
Panel A											
Brazil		–				–		+		+	5
Russia			+					+			2
India											
China			–	+	+	+	–	+	–	–	8
Total		1	2	1	1	2	2	3	1	2	15
Panel B											
Type of interventions				Positive reactions			Negative reactions				
				8			7				
Panel C											
Type of reactions			Expansionary policy reactions				Contractionary policy reactions				
				9			6				

This table reports number and type of emerging markets' reactions (BRIC area) to Central Policies interventions. Based on Table 1 results, we considered just coefficients (e.g. CARs) according to which significance at 10% level or higher is satisfied. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (-1-, 0) i.e. from day previous of and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (-1; +3), i.e. from day -1 to day +3 around the policy announcement Stock Market General Index is proxied by FTSE broad Index.

**Fig. 2.** Export flows from Brazil.

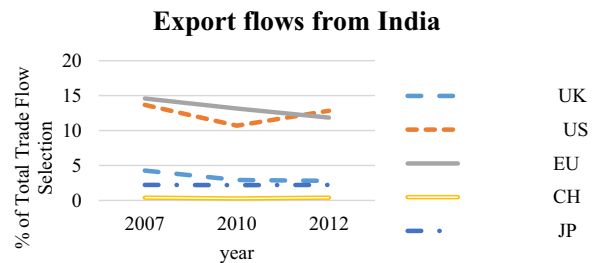
Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

**Fig. 3.** Export flows from Russia.

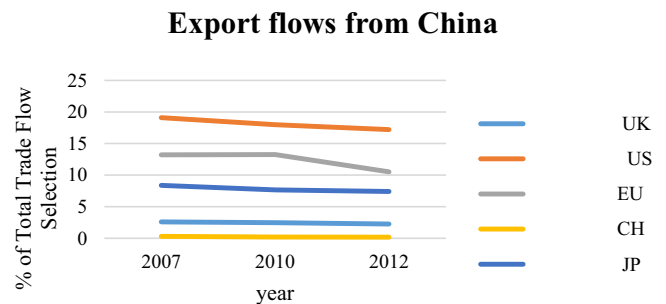
Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

sia (see Table 2). Indeed, having look at international trade flows (see Table 20 and 21), we can observe that the UK and the US rank among the first trade partners for these countries. As for Brazil, we should have expected the strongest reaction to its main export-import partners: the EU (EURO area) and the US (US dollar area) (see Figs. 2 and 6 Tables 20 and 21), as for Russia-EU (see Figs. 3 and 7 Tables 20 and 21).

In like manner, the results were absolutely astonishing to demonstrate no statistically significant reaction of India at all (see

**Fig. 4.** Export flows from India.

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

**Fig. 5.** Export flows from China.

Source: World bank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

Table 2), coupled with its progressive development based on GDP indices (see Table 22) and huge trade flows with the EU, the USA, Switzerland (see Figs. 4 and 8, Tables 20 and 21).

Everything mentioned above, made us think that probably, there is a close interdependence between countries' rank position (in relation to Central Authority) and Trade Flows (see Tables 20 and 21) and the expected sign received through our empirical measure. It allows us to consider an average value (see Tables 20 and 21). For example, it was very surprising to observe a positive reaction of China and Russia to ECB and US contractionary policy, respectively (see Table 2), which goes apart from the general conception of this policy. In reality, and as we can see

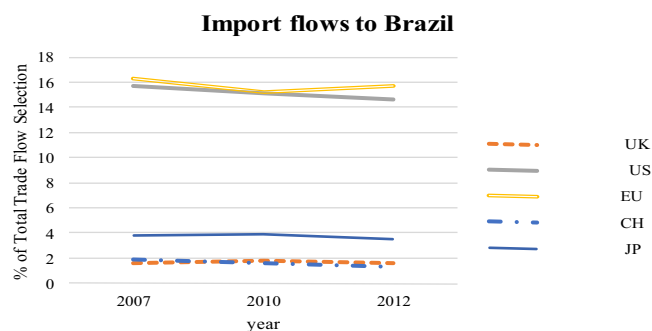


Fig. 6. Import flows to Brazil.

Source: World bank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

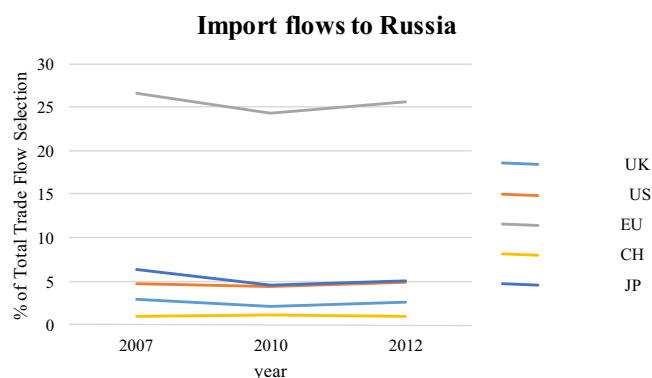


Fig. 7. Import flows to Russia.

Source: World bank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

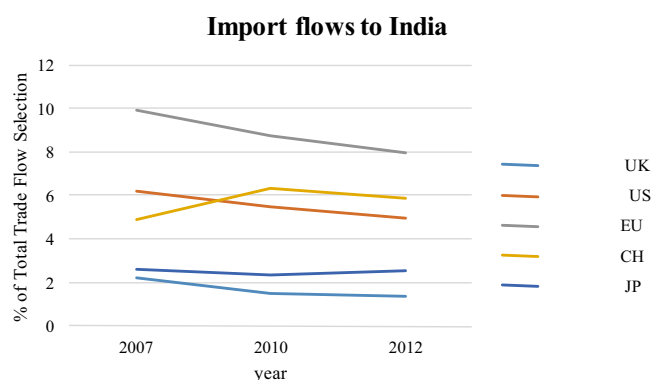


Fig. 8. Import flows to India.

Source: World bank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

from our results, BRIC countries do not always react to Central Policy Interventions, which doubts functioning of ruling basis in these countries and confirms their dependence on some external, uncontrolled effects.

To tell more about countries' reaction to Central Authorities, and underline the importance of considering the exiting Trade Flows, we assert that countries reacted the most actively to policy announcements of Bank of Japan, with predominance of expan-

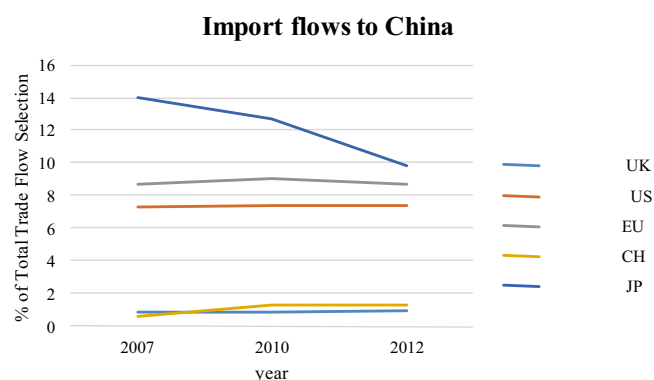


Fig. 9. Import flows to China.

Source: World bank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

sionary measure and the smallest number of reactions to Bank of England (see Tables 1 and 2). In reality, only Brazil (see Table 1) showed negative reaction to Monetary Policy Expansionary Measure at the 5% level on the day before the announcement and on the announcement day, while indices of other countries are found not statistically significant to Bank of England at all (see Table 1).

BRIC's reaction to Monetary Policy Contraction Measure of Federal Reserve Bank is seen in a positive statistical significance of Russia at 10% level, and in a negative one at the 10% level or less of China (see Table 1). However, China demonstrated a positive statistical significance to Monetary Expansionary Measure on the day of announcement at the 10% level (see Table 1). In addition, the US is the first export and the second import partner for China (see Table 20 and 21). We were surprised to get no reaction from Brazil and India to Federal Reserve Bank, granted that the US is one of the leading export and import partners for these countries (see Table 20 and 21). For example, India has exported 12,84% of its total trade flows to the US in 2012, and Brazil-11, 07% of its total trade flows (see Table 20).

As for ECB policy, it influenced indices of China in the five-day event window positively in response to contraction measure and demonstrated the statistical significance level of 5% and less on the day before and after announcement to expansionary measure (see Table 1). As a matter of fact, Brazil revealed a negative statistical significance at the 5% level before and after announcement (see Table 1). Nevertheless, there are many questions concerning the absence of any reaction from Russia and India, although, the EU (see Tables 20 and 21) is their main export (28,21% of total trade flows of Russia and 11, 86% of India) and import partner (25,59% for Russia and 7,96% for India).

Monetary Policy Contraction Measure for Bank of Japan revealed negative statistical significance of Brazil and China at the 10% level or less in a five-day event window for Brazil and in all event windows for China (see Table 1). Above all, Japan is the main import partner for China among the observed countries, and the negative reaction can be explained by the decrease of import of trade flows (see Table 21). At the same time, we mention a positive high statistical significance of Brazil, Russia and China to Monetary Policy Expansionary Measure in all event windows (except China) (see Table 1).

Only China (see Table 1) showed its negative and statistically significant reaction at the 5% level or less to contraction measure for Swiss National Bank, along with its negative significance to Expansionary measure in all event windows. Additionally, Brazil demonstrated a positive reaction at the 5% level before and after event (see Table 1). Surprisingly, there is no reaction of India, how-

ever, Switzerland is its third import partner among the observed countries (see Table 21).

All these findings bring some considerations about practical implementation of asset allocation processes. Both fund managers and private investors face similar aspects, when they decide how allocate their wealth. The relation between returns, fundamentals and macroeconomic conditions is of central importance to financial decision making. Investors need to know how returns and fundamentals are affected by changes in macroeconomic conditions for portfolio allocation, risk management and asset pricing purposes. There are only few studies to investigate the potential benefits of knowing this relationship. When making a portfolio, monetary shock can influence investors' risk attitude and force them to suspend or delay their investments. Our findings aim to enhance the investors understanding of systematic impact of a wide set of monetary actions on asset prices. To be specific, the results of contractionary and expansionary measures show, that two main considerations should be made not only by an average investor but also by a fund manager. Firstly, the results about expected returns show that portfolios of BRIC countries securities cause an impact in terms of abnormal returns in the announcement dates. This may provide some benefits in terms of carry trade, both for average traders and fund managers. It becomes more realistic in the light of intensified competition on global markets. Indeed, there is a specific, so called event driven, type of mutual fund. It aims to make performance by exploiting the inefficiencies of markets, related to different types of event announcements: M&A acquisitions, Monetary or Fiscal Policy actions, changes in the shareholder structure and much more. Secondly, the abnormal return can also be interpreted by Eqs. (2) and (4), volatility measure (indeed it measures dispersion from a normal return). Then, there are implications from the risk side, that must be taken into account, when observing the data of sectors reaction.

It is worth of saying, that trade connections inside BRIC countries are pretty strong. As the trade statistics confirms (see <http://brics.itamaraty.gov.br/about-brics/economic-data>), the largest amount of all Brazilian Export goes to China (more than 0,25% of all production), and nearly 1% to other BRIC countries. Chinese main export partners are Brazil (almost 40%) and Russia (almost 30%). For Russia, the main export partner is China (nearly 40% of all production), the same situation is for Indian export to China. All things considered, such connections explain, why countries with the closest relations between themselves react to the same Central Policy Interventions. For example, Brazil reacts always in a pair with China, Russia reacts to the same Central Authorities like its close partner China, with the same signs to Federal Reserve Bank and Bank of Japan (see Table 2). To emphasize, China is the biggest world exporter among other BRIC countries, then goes Russia, followed by India and Brazil (see <http://www.statista.com/statistics/254301/exports-of-the-bric-countries/>).

In the second part of our observation, we analyzed different economic sectors of BRIC countries, in order to see how they are effected by Central Authorities (Table 3).

We show, that the estimated coefficient of sector of basic materials of China is negative and is statistically significant on the announcement day for Monetary Policy Contraction Measure of Bank of England (see Table 4).

Our results of influence of Federal Reserve Bank showed a negative statistically significant reaction at the 10% level for China to Contraction Measure in the five-day event window, and a positive statistically significant response to Expansionary Measure (see Table 4). Moreover, such reaction can be confirmed by the decrease in export trade flows of metals from China to the US, from 15,45% in 2007 to 12,81% and minerals (see Table 19), from 13,45% to 12,12% in 2012 (see Tables 18 and 19), at the same time with increase of

imported US metals from 5,82% in 2007 to 7,68% (see Table 18) and imported minerals from 2,24% to 1,54%, both in 2012.

However, it was surprising to see no reaction from Brazil, Russia and India, where there is the highest percent of export trade flows of metals (see Table 18) to the US and the highest percent of import trade flows of metals to Brazil (see Table 18). As for reaction of BRIC countries to ECB, only Russia and India (see Table 4) demonstrated statistical significance at the 5% level or less, over the day of announcement and the five-event window simultaneously, but we can see, that the EU is one of the most important import-export partners for all the BRIC (see Tables 18 and 19). The response to the Bank of Japan for Contraction measure has a mixed effect over two short event windows for Russia, negative high statistical significance of China at 10% and less (see Table 4), where China has the biggest percent of its export of minerals (see Table 19) and metals (see Table 18) to Japan. We expected some reaction from India to the Bank of Japan policy, as India has the highest percent of export of minerals with Japan, ranging from 5,26% in 2007 to 6,57% in 2012 (see Table 19). In addition, no influence was seen in Brazil (see Table 4) with its significant export flows of metals to Japan, from 5,72% in 2007 to 5,26% in 2012 (see Table 18). Under those circumstances, we can assert confidently, that in sector of basic materials the most number of countries reacted to Swiss Central Bank (except India) (see Table 4): for Monetary Policy Contraction measure we can see a strong mixed effect reaction over two short event windows in Russia at 5% or less level, negative statistically significant reaction of China at 10% level in the day of the announcement (see Table 4). Brazil (see Table 4) demonstrated a strong negative reaction at the 5% level or less at the day before and at the day of announcement in response to Monetary Policy Expansionary Measure of Swiss Central Bank, while Russia reacted positively with statistical significance at the 10% level (see Table 4). Therefore, we can see the highest amount of responses of Basic Material sectors to Central Authorities from the side of Russia and China (see Table 4). All things considered, BRIC countries show the biggest number of signs in their response to Bank of Japan and Swiss Central Bank, with no statistically significant reaction of India to observed Central Authorities, which does not go along with our initial expectations.

We'd like to point out, that in sector of Chemicals, there is no reaction of India to any of Central Authorities, which is very unexpected because the US, for example, ranks as the first export and second import partner of this country (see Table 15).

With this in mind, we did not see any reaction from India to the Bank of England as well, where UK takes 5th place for Indian export (Table 15). We excluded Russia from this sector measure due to absence of Data. In fact, there is a negative statistically significant reaction at 10% level of Brazil indices to Monetary Policy Expansionary Measure (see Table 5) and negative statistically significant reaction of China to Monetary Policy Contraction Measure, both in relation to policies of Bank of England (see Table 5).

None of the countries demonstrated any statistical significance to Federal Reserve Bank policy (see Table 5), despite the fact that Brazil, for instance, is one of the main importers of American Chemical products and the US is the first trade partner for Brazil and Chinese export (see Table 15). Only Brazil (see Table 5) showed a negative statistical significance to Monetary Policy Expansion Measure in relation to ECB policy, in the light that the EU is one of its main trade partners for export of Chemical industry (see Table 15). In detail, we can see no statistical significance for other countries, which is surprising in case of large trade flows of chemicals to and from Russia, for example (see Table 15). Brazil and China are negatively statistically significant at the 5% level or less in response to Contractionary policy of Bank of Japan (see Table 5), where Japan ranks third for Chinese export (see Table 15), and second for its import (see Table 15). Furthermore, there is a negative, very high

Table 3

Reactions of all sectors to policy announcements.

	UK		US		ECB		JP		CH		Total
	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	
Chemicals											
Brazil		–				–					3
Russia											
India									–		1
China	–						–		–		3
Total	1	1				1	2		2		7
Basic_MATS											
Brazil										–	1
Russia						–	±		±	+	6
India						–					1
China	–			+			–	+	–		5
Total	1			1		2	3	1	3	2	13
Financials											
Brazil								+	–		2
Russia				+							1
India		–					+				2
China		–				+					2
Total		2		1		1	1	1	1		7
Healthcare											
Brazil											
Russia							–				1
India											
China								+	+		2
Total							1	1	1		3
Mining											
Brazil											
Russia		+	–					+		+	4
India											
China		+					–		–		3
Total		2	1				1	1	1	1	7
Oil and gas											
Brazil								–			1
Russia									+		1
India		+		–		–					3
China		+									1
Total		2		1		1		1	1		6
Telecom											
Brazil							–			+	2
Russia							–	+			2
India											
China	+				+			–		+	4
Total	1				1		2	2		2	8
Utilities											
Brazil							–	+			2
Russia		+				+		+		+	4
India	+		–		+	+	+				5
China	–	–	–	–		+	–			+	7
Total	2	2	2	1	1	3	3	2		2	18
Banks											
Brazil									–		1
Russia											
India		+					+				2
China											
Total		1					1		1		3
Consumer											
Brazil											
Russia								+			1
India					–			–			2
China	+										1
Total	1				1			2			4
Industrials											
Brazil								+			1
Russia											
India											
China			–			–		–			3
Total			1			1		2			4

This table reports number and type of emerging markets' reactions (BRIC area) to Central Policies' interventions. Based on Table 1 results, we considered just coefficients (eg. CARs) according to which statistical significance at 10% level or higher is satisfied. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (-1-, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (-1; +3), i.e. from day -1 to day 3 around the policy announcement.

Table 4
Sector of basic materials.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0010	0.0007	0.0005	0.0022	0.0014	0.0011	−0.0078	−0.0006	−0.0005
	St. dev.	0.0205	0.0082	0.0124	0.0182	0.0074	0.0114	0.0231	0.0094	0.0142
Russia	Coeff.	−0.0107	−0.0006	−0.0034	−0.0062	−0.0008	−0.0059	−0.0199	−0.0003	0.0018
	St. dev.	0.0647	0.0186	0.0324	0.038	0.0111	0.023	0.0998	0.0287	0.0462
India	Coeff.	0.0025**	0.0012	0.0034	−0.0014	−0.0006	0.0008	0.0103	0.0048	0.0086
	St. dev.	0.0189	0.0158	0.0286	0.0161	0.0144	0.0237	0.0219	0.0182	0.0366
China	Coeff.	0.0011	−0.0011	−0.0006	−0.0053	−0.0035*	−0.0029	0.0143	0.0041	0.0037
	St. dev.	0.0321	0.0142	0.0200	0.0294	0.0131	0.0191	0.0334	0.0150	0.0210
US										
Brazil	Coeff.	0.0004	−0.0005	0.0001	−0.0003	−0.0001	0.0006	0.0008	−0.0008	−0.0002
	St. dev.	0.0251	0.0097	0.0152	0.0168	0.0078	0.0102	0.0294	0.0108	0.0177
Russia	Coeff.	0.0026	0.0001	−0.0002	−0.0058	−0.0004	−0.0012	0.0081	0.0005	0.0004
	St. dev.	0.0683	0.0300	0.0400	0.0261	0.012	0.0158	0.0851	0.0375	0.05
India	Coeff.	−0.0011	−0.0005	0.0000	−0.0038	−0.0009	−0.0013	0.0006	−0.0002	0.0009
	St. dev.	0.0341	0.0145	0.0185	0.0232	0.0091	0.0138	0.0397	0.0172	0.0211
China	Coeff.	0.0043	0.0025	−0.0013	−0.0015*	0.0018	−0.0036	0.0081	0.0030*	0.0002
	St. dev.	0.0424	0.0164	0.0267	0.0355	0.0135	0.0185	0.0463	0.0182	0.0309
ECB										
Brazil	Coeff.	0.001	0.0008	0.0007	0.0009	0.0016	0.0018	0.0011	0.0002	−0.0001
	St. dev.	0.0218	0.0089	0.0137	0.0165	0.0071	0.0124	0.0252	0.0101	0.0147
Russia	Coeff.	−0.0082	−0.0027	−0.0035	−0.0132	0.0003	−0.0022	−0.0037	−0.0048*	−0.0044
	St. dev.	0.0692	0.0186	0.0341	0.055	0.0173	0.021	0.0771	0.019	0.0409
India	Coeff.	−0.0042	0.0003	0.0006	0.0028	0.0015	0.0051	−0.0095**	−0.0006	−0.0029
	St. dev.	0.0314	0.014	0.0213	0.0311	0.0107	0.0163	0.0308	0.0161	0.024
China	Coeff.	−0.0004	−0.0001	0.0009	−0.0032	−0.0016	−0.002	0.0017	0.0011	0.0032
	St. dev.	0.0302	0.0137	0.0202	0.0315	0.013	0.0214	0.0294	0.0142	0.0192
JP										
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
Brazil	Coeff.	−0.0022	−0.0016	−0.002	−0.0011	−0.0019	−0.0013	−0.0032	−0.0013	−0.0025
	St. dev.	0.0221	0.0106	0.0129	0.0235	0.0118	0.0118	0.0209	0.0094	0.0139
Russia	Coeff.	0.0018	0.0038	0.0048	−0.0076**	0.0048**	0.0039	0.0105	0.0029	0.0055
	St. dev.	0.0567	0.0175	0.0296	0.0557	0.0131	0.0288	0.0567	0.0209	0.0306
India	Coeff.	−0.0006	0	0.0008	−0.0025	0.0007	−0.0007	0.0011	−0.0007	0.0021
	St. dev.	0.024	0.0113	0.0145	0.0247	0.0081	0.0134	0.0233	0.0137	0.0155
China	Coeff.	−0.0011	−0.0005	−0.0011	−0.0108***	−0.0026	−0.0056*	0.0068*	0.0013	0.0024
	St. dev.	0.029	0.0152	0.0212	0.0284	0.0157	0.0215	0.0277	0.0147	0.0205
CH										
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
Brazil	Coeff.	−0.0027	−0.0023	−0.0024	0.0019	0.002	0.0017	−0.0096	−0.0087**	−0.0086*
	St. dev.	0.0248	0.0119	0.0143	0.0183	0.0066	0.0111	0.0318	0.0151	0.0167
Russia	Coeff.	0.0118	0.0101*	0.0107**	−0.018*	0.0033**	0.0021	0.0517*	0.0192*	0.0224
	St. dev.	0.0791	0.0285	0.0288	0.042	0.0068	0.0119	0.098	0.0418	0.0392
India	Coeff.	−0.0108	−0.0003	−0.0047	−0.007	−0.0009	−0.0043	−0.0164	0.0007	−0.0052
	St. dev.	0.0362	0.0183	0.0273	0.0197	0.0076	0.0131	0.0529	0.0282	0.0413
China	Coeff.	−0.0075	−0.0031	−0.0002	−0.0103	−0.0075*	−0.0048	−0.0034	0.0034	0.0068
	St. dev.	0.0286	0.0182	0.0247	0.0336	0.0166	0.0236	0.0197	0.0193	0.0257

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

statistical significance of Chinese indices in relation to Swiss Central Bank (see Table 5). At the same time, we did not find any reaction of Russia to Switzerland ranking among its main export partners (see Table 15). Generally, we can conclude by saying that, Chemical sector of BRIC countries reacted negatively to Central Authority Policies (see Table 5), with the most active reaction of Brazil and China and no reaction from India at all (see Table 5). Based on above, it can be explained by the well-known evidence that China and Brazil rank among the biggest world exporters of chemical products.

Financial sector of BRIC reacted in the following way. India demonstrates negative statistical significance at the 10% level in

response to contraction measure of Bank of England (see Table 6). At the same time, China has a statistically significant positive reaction at the 5% level or less in two event windows to Monetary Policy Expansionary measure (see Table 6).

To say more, only Russia (see Table 6) showed statistical significance at the 5% level at the day of announcement of Federal Reserve Bank policy and only China (see Table 6) revealed statistical significance at the 10% level to Expansionary Policy of ECB. Financial sector of Brazil reacted positively with statistical significance to expansionary policy in the five-event window to Bank of Japan, together with India's positive statistically significant reaction to Contraction Measure at the 5% level (see Table 6). As for

Table 5
Sector of chemicals.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0038	−0.0040*	−0.0059*	−0.0022	−0.0027	−0.0025	−0.0069	−0.0064	−0.0124*
	St. dev.	0.048	0.0195	0.0298	0.0395	0.0177	0.0277	0.0619	0.0228	0.0332
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0053*	−0.0043	−0.0083	−0.0054	−0.0048	−0.0073	−0.0053	−0.0032	−0.0103
	St. dev.	0.0272	0.0228	0.0376	0.0255	0.0207	0.0374	0.0308	0.027	0.0387
China	Coeff.	−0.0059	−0.001	−0.0042	−0.0132*	−0.0037	−0.0095**	0.0084	0.0047	0.0063
	St. dev.	0.0407	0.0175	0.0253	0.0392	0.0165	0.023	0.0396	0.0183	0.0263
US										
Brazil	Coeff.	0.0037	0.0011	0.0023	−0.0003	−0.0001	−0.0018	0.0064	0.0019	0.005
	St. dev.	0.0483	0.0189	0.0292	0.0428	0.0152	0.0241	0.0518	0.021	0.0319
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0015	−0.0001	−0.0018	0.0014	0.001	0.0012	0.0015	−0.0009	−0.0038
	St. dev.	0.039	0.0163	0.0257	0.0304	0.0122	0.0193	0.044	0.0185	0.0291
China	Coeff.	0.0000	0.0000	0.0002	−0.0008	0.0003	−0.0004	0.0005	−0.0001	0.0005
	St. dev.	0.0146	0.0061	0.0084	0.0098	0.0035	0.0053	0.0171	0.0074	0.0099
ECB										
Brazil	Coeff.	−0.0027	−0.0015	−0.0066*	0.0054	−0.0015	−0.003	−0.0089	−0.0015	−0.0092*
	St. dev.	0.0475	0.0217	0.0296	0.0380	0.0175	0.0263	0.0531	0.0245	0.0320
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0001	0.0006	0.0014	−0.0014	0.0004	0.0016	0.0012	0.0008	0.0011
	St. dev.	0.0375	0.0163	0.0282	0.0329	0.0137	0.0187	0.041	0.0182	0.0338
China	Coeff.	0.0015	0.0006	−0.0016	−0.0017	−0.0014	−0.0049	0.0039	0.0021	0.0009
	St. dev.	0.0444	0.0184	0.0281	0.0442	0.0198	0.0261	0.0449	0.0174	0.0295
JP										
Brazil	Coeff.	−0.0069*	−0.0030*	−0.0026	−0.0092*	−0.0056**	−0.0063*	−0.0047	−0.0007	0.0008
	St. dev.	0.0412	0.0175	0.0274	0.0354	0.0182	0.0261	0.0462	0.0167	0.0284
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0019	−0.0009	−0.0023	0.0002	−0.0026	−0.0048	0.0035	0.0006	0.0001
	St. dev.	0.0365	0.0175	0.0241	0.0321	0.0140	0.0225	0.0405	0.0203	0.0255
China	Coeff.	−0.0026	−0.0016	−0.0036	−0.002	−0.0037*	−0.0054	−0.0038	0.0001	−0.0021
	St. dev.	0.0399	0.0165	0.0252	0.0433	0.0156	0.0280	0.0368	0.0171	0.0223
CH										
Brazil	Coeff.	0.0038	0.0022	0.004	0.0039	0.0015	0.001	0.0036	0.0033	0.0086
	St. dev.	0.0496	0.0292	0.0366	0.0368	0.019	0.0309	0.0662	0.0411	0.045
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0068	−0.0028	−0.0051	−0.0107**	0.0000	−0.0033	−0.001	−0.007	−0.0079
	St. dev.	0.0407	0.0186	0.0189	0.0201	0.0146	0.0152	0.0606	0.0235	0.024
China	Coeff.	−0.012	−0.002	−0.0008	−0.0204*	−0.0100***	−0.0142***	0.0005	0.0102	0.0193
	St. dev.	0.0449	0.0228	0.0341	0.0376	0.0118	0.016	0.0534	0.0298	0.0441

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Russia are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

influence of policy actions of Swiss National Bank, we see negative statistical significance at the 5% level to Contraction Measure in Brazil (Table 6). With this in mind, we can assert the response of financial sector of BRIC countries to Main World Central Authorities to have a mixed effect with domination of a positive sign (see Table 6).

When measuring a Health Care sector, we revealed a very interesting picture. We excluded Brazil from our measure due to absence of Data. We discovered almost zero meanings for all Russian indices in their response to Central Authorities (see Table 7), providing that Russia declared a comprehensive reform “Healthcare through 2020” as one of its priority programs and has large trade connec-

tions with its main importers in the EU, the US and Japan (see Table 21).

Surprisingly, none of BRIC countries showed any statistical significance to policies of Bank of England, Federal Reserve Bank, European Central Bank (see Table 7). India has a negative statistical significance at the 5% level and more in all event windows in response to Monetary Policy Contraction Measure of Bank of Japan (see Table 7) and, there is a positive statistical significance of Chinese indices at the 10% level in two short event windows in response to Monetary Policy Expansionary Measure (see Table 7). In reality, only China reacted positively with statistical significance at the 5% level or less in response to Contraction Measure of Swiss National Bank (see Table 7). As our results show, Health Care sec-

Table 6
Financial sector.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0026	−0.0016	−0.0019	−0.0015	−0.0011	−0.0009	−0.005	−0.0025	−0.0038
	St. dev.	0.0242	0.0118	0.0163	0.0204	0.0094	0.013	0.03	0.0153	0.0211
Russia	Coeff.	−0.0031	−0.0012	0.1411	−0.0004	0.0018	0.1721	−0.0086	−0.0072	0.0779
	St. dev.	0.0249	0.0342	1.0615	0.0199	0.025	0.8877	0.0327	0.0480	1.3698
India	Coeff.	−0.0044	−0.0019	−0.0113**	0.0002	0.0027	−0.0095*	−0.0138	−0.0111	−0.0150
	St. dev.	0.0334	0.03	0.0451	0.0274	0.024	0.0401	0.042	0.0382	0.0545
China	Coeff.	0.0045	0.0001	0.0031	−0.0077	−0.0027	−0.0041	0.0288**	0.0057	0.0175**
	St. dev.	0.0533	0.0234	0.0291	0.0475	0.0203	0.0224	0.0569	0.0282	0.0356
US										
Brazil	Coeff.	0.0014	0.0005	0.0012	0.0009	0.0005	0.0000	0.0016	0.0005	0.0019
	St. dev.	0.0275	0.0118	0.0170	0.0152	0.0088	0.0110	0.0333	0.0135	0.0200
Russia	Coeff.	0.0054	0.0055**	0.0061	−0.003	0.0008	0.0014	0.0109	0.0085**	0.0092
	St. dev.	0.0590	0.0270	0.0430	0.0254	0.0171	0.0288	0.0728	0.0317	0.0502
India	Coeff.	0.0002	0.0004	−0.0015	−0.0001	−0.0003	−0.0011	0.0003	0.0009	−0.0017
	St. dev.	0.0220	0.0107	0.0132	0.0170	0.0081	0.0106	0.0248	0.0122	0.0148
China	Coeff.	−0.0024	0.0001	−0.0010	−0.0028	0.0009	−0.0005	−0.0019	−0.0004	−0.0013
	St. dev.	0.0214	0.0094	0.0136	0.0166	0.0067	0.0080	0.0241	0.0107	0.0161
ECB										
Brazil	Coeff.	−0.0008	−0.0007	−0.0011	0.0006	−0.0003	0.0006	−0.0019	−0.0010	−0.0025
	St. dev.	0.0289	0.0118	0.0166	0.0242	0.0077	0.0125	0.0322	0.0142	0.0192
Russia	Coeff.	−0.0012	−0.0011	−0.0014	−0.0019	−0.0035	−0.0053	−0.0005	0.0009	0.0022
	St. dev.	0.0470	0.0229	0.0265	0.0542	0.0208	0.0289	0.0403	0.0239	0.0240
India	Coeff.	0.0006	0.0004	0.0009	−0.0024	0.0000	−0.0001	0.0028	0.0007	0.0017
	St. dev.	0.0241	0.0083	0.0141	0.0212	0.0075	0.0109	0.0260	0.0090	0.0162
China	Coeff.	0.0077	−0.0001	0.0035	−0.0088	−0.0048	−0.0022	0.0201*	0.0034	0.0077
	St. dev.	0.0653	0.0277	0.0376	0.0530	0.0241	0.0363	0.0713	0.0300	0.0385
JP										
Brazil	Coeff.	0.0029	0.0001	0.0018	0.0008	0.0012	0.0006	0.0046*	−0.0009	0.0029
	St. dev.	0.022	0.0103	0.0152	0.025	0.0108	0.0131	0.0187	0.0097	0.0168
Russia	Coeff.	0.0044	−0.0016	0.0006	0.0085	−0.0023	−0.0019	0.0006	−0.001	0.0028
	St. dev.	0.0455	0.0228	0.0365	0.0457	0.0248	0.0441	0.0455	0.021	0.0279
India	Coeff.	0.0046**	0.0006	0.001	0.0058**	0.0011	0.0021	0.0034	0	−0.0001
	St. dev.	0.0198	0.0070	0.0107	0.0178	0.0074	0.0120	0.0216	0.0066	0.0093
China	Coeff.	0.0008	0.0012	0.0010	−0.0043	0.0008	0.0018	0.0047	0.0011	−0.0007
	St. dev.	0.0501	0.0285	0.0363	0.0506	0.0287	0.0357	0.0495	0.0284	0.0375
CH										
Brazil	Coeff.	0.002	0.0047	0.0017	−0.0057**	0.0014	−0.0018	0.0135	0.0096	0.007
	St. dev.	0.0378	0.0175	0.0226	0.0097	0.0056	0.0078	0.0581	0.0268	0.0347
Russia	Coeff.	−0.0015	−0.0051*	−0.0072	0.0036	−0.003	−0.0103	−0.009	−0.0083	−0.0025
	St. dev.	0.0464	0.0146	0.0284	0.0223	0.0112	0.0313	0.0693	0.0187	0.0240
India	Coeff.	0.0024	0.0010	0.0009	−0.0046	0.0003	−0.0007	0.0129	0.0020	0.0033
	St. dev.	0.0297	0.0111	0.0142	0.0182	0.0083	0.0111	0.0402	0.0148	0.0183
China	Coeff.	−0.0053	−0.0002	0.0011	0.0135	0.0000	0.0056	−0.0337	−0.0005	−0.0057
	St. dev.	0.0715	0.0372	0.0426	0.0473	0.0304	0.0266	0.0926	0.0472	0.0601

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index.

*** Denote that estimates are statistically significant at the 1% level. It is a standard notation showed also when no values in the table exhibit a similar statistical significant level.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

tor has a number of positive signs only in China (one of the largest healthcare sectors in the world, with its biggest competitors in the EU and Japan) and has almost no statistically significant reaction in other BRIC countries (see Table 7).

When checking the Mining sector for our research, we had to exclude Brazil and India due to lack of Data. As for Expansionary Monetary policy of Bank of England, both Russia and China show a positive statistically significant response at the 5% level in two short event windows (see Table 8). In fact, Russia reacted with a very low level of statistical significance to contraction policy of Federal Reserve Bank the day before the announcement (see Table 8).

Then, we revealed, that none of the countries reacted to the ECB policy (see Table 8). After observing the reaction of BRIC to the Bank

of Japan and the Swiss National Bank, indices of mining sector of Russia are found positive and statistically significant at the 5% level or less in response to expansionary policy (see Table 8). For China, this reaction is negative with statistical significance at the 10% level or less in response to contraction measure (see Table 8).

Oil and Gas sector of Russia and Brazil demonstrated no reaction to Monetary Policies of Bank of England, Federal Reserve Bank and European Central Bank (see Table 9), despite that it is one of Russian main industries with a huge market in Europe (see Table 16).

We can see no reaction of India and China to Bank of Japan (see Table 9), however, as we can observe from sector of fuels, for example, Japan is the main export partner for India and China (see Table 16). In particular, no reaction to Swiss National Bank policy

Table 7
Sector of healthcare.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	St. dev.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
India	Coeff.	−0.0007	−0.0029	−0.0015	−0.0006	−0.0025	−0.0015	−0.0008	−0.0037	−0.0013
	St. dev.	0.0370	0.0274	0.0608	0.0345	0.0227	0.0513	0.0424	0.0355	0.0775
China	Coeff.	0.0013	−0.0017	−0.0031	−0.0007	−0.0020	−0.0038	0.0056	−0.0014	−0.0015
	St. dev.	0.0305	0.0128	0.0180	0.0249	0.0128	0.0181	0.0390	0.0128	0.0177
US										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0002	−0.0001	−0.0002	−0.0005	−0.0003	−0.0005	0.0000	0.0000	0.0000
	St. dev.	0.0039	0.0018	0.0037	0.0062	0.0028	0.0059	0.0000	0.0000	0.0000
India	Coeff.	−0.0007	0.0000	−0.0008	0.0028	0.0005	0.0002	−0.0030	−0.0004	−0.0015
	St. dev.	0.0284	0.0140	0.0168	0.0220	0.0091	0.0121	0.0319	0.0165	0.0193
China	Coeff.	0.0024	0.0007	0.0001	0.0025	0.0006	0.0005	0.0023	0.0008	−0.0002
	St. dev.	0.0229	0.0097	0.0131	0.0222	0.0081	0.0106	0.0234	0.0106	0.0144
ECB										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0005	−0.0001	−0.0002	0.0000	0.0000	0.0000	−0.0009	−0.0003	−0.0003
	St. dev.	0.0047	0.0013	0.0015	0.0000	0.0000	0.0000	0.0063	0.0017	0.0020
India	Coeff.	−0.0015	−0.0005	0.0012	0.0016	0.0012	0.0007	−0.0038	−0.0018	0.0016
	St. dev.	0.0264	0.0094	0.0168	0.0220	0.0072	0.0112	0.0293	0.0107	0.0202
China	Coeff.	−0.0036	−0.0025	−0.0021	−0.0019	−0.0024	−0.0048	−0.0048	−0.0026	0.0000
	St. dev.	0.0372	0.0150	0.0200	0.0304	0.0164	0.0196	0.0419	0.0140	0.0202
JP										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0007	0.0000	−0.0002	−0.0010	0.0000	0.0000	−0.0005	−0.0001	−0.0004
	St. dev.	0.0056	0.0003	0.0022	0.0073	0.0000	0.0000	0.0034	0.0005	0.0030
India	Coeff.	−0.0021	−0.0012	−0.0019	−0.0076**	−0.0045***	−0.0062***	0.0030	0.0019	0.0020
	St. dev.	0.0248	0.0117	0.0159	0.0248	0.0120	0.0164	0.0240	0.0106	0.0145
China	Coeff.	0.0051	0.0025	0.0025	0.0029	0.0017	0.0009	0.007*	0.0033	0.0043*
	St. dev.	0.0302	0.0178	0.0223	0.0329	0.0194	0.0253	0.0275	0.0162	0.0193
CH										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0019	0.0000	0.0000	−0.0031	0.0000	0.0000	0.0000	0.0000	0.0000
	St. dev.	0.0103	0.0000	0.0000	0.0133	0.0000	0.0000	0.0000	0.0000	0.0000
India	Coeff.	0.0064	0.0002	0.0016	0.0095	0.0000	0.0036	0.0018	0.0004	−0.0015
	St. dev.	0.0282	0.0105	0.0207	0.0281	0.0065	0.0148	0.0289	0.0151	0.0278
China	Coeff.	0.0002	0.0013	0.0033	0.0074	0.0074***	0.0074**	−0.0060	−0.0065	−0.0029
	St. dev.	0.0502	0.0177	0.0233	0.0143	0.0143	0.0143	0.0689	0.0246	0.0325

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Brazil are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

actions (see Table 9) is very unusual, considering that China has the largest percent of export trade flows of fuels to Switzerland (see Table 16). Our further research discovered that India and China reacted with positive statistical significance at the 5% level in two-short event windows to Expansionary Policy of Bank of England (see Table 9). Moreover, we observed the negative statistical significance of Indian indices at the 10% level on event day in response to Federal Reserve and European Central Banks' Expansionary Monetary Policy (see Table 9). Brazil reacted negatively, but with statistical significance to Monetary Policy Expansionary measure of Bank of Japan at the 5% level before the event day, while other countries showed no statistical significance (see Table 9). Despite all expectations, Russian sector displayed a zero reaction

with statistical significance at the 5% level in response to Contractionary Policy of Swiss National Bank (see Table 9). Hence, in Oil and Gas sector, the most active response to Monetary Policy actions of Central Authorities is seen in India, while other BRIC countries did not show much reaction (see Table 9).

When checking the Telecom sector, we excluded India due to lack of Data. We found out that BRIC countries showed a very little reaction to Bank of England and European Central Bank policies (see Table 10). To be more precise, there is no statistical significance to Federal Reserve Bank from BRIC at all, with some positive statistical significance of China at the 10% level to Contraction measure policies of ECB and Bank of England (see Table 10).

Table 8

Sector of mining.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0018	−0.0013	−0.1576	−0.0003	−0.0019	−0.1982	−0.0048	0.0001	−0.0747**
	St. dev.	0.0545	0.0640	1.6563*	0.0240	0.0353	1.3898	0.0898	0.1010	0.1320
India	Coeff.									
	St. dev.									
China	Coeff.	0.0035	0.0002	−0.0008	−0.0023	0.0004	−0.0034	0.014**	0.0003	0.0040
	St. dev.	0.0390	0.0147	0.0253	0.0369	0.0145	0.0213	0.0406	0.0151	0.0311
US										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0052	−0.0028	−0.0033	−0.0253	0.0030	−0.0133*	0.0081	−0.0067	0.0032
	St. dev.	0.1279	0.0714	0.0954	0.1329	0.0306	0.0511	0.1237	0.0886	0.1156
India	Coeff.									
	St. dev.									
China	Coeff.	0.0047	−0.0024	−0.0009	−0.0037	−0.0013	−0.0013	0.0102	−0.0030	−0.0006
	St. dev.	0.0607	0.0333	0.0420	0.0400	0.0225	0.0316	0.0708	0.0389	0.0478
ECB										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	−0.0022	0.0014	0.0037	0.0043	0.0094	0.0001	−0.0071	−0.0045	0.0064
	St. dev.	0.0851	0.0513	0.0851	0.0761	0.0420	0.0713	0.0918	0.0571	0.0948
India	Coeff.									
	St. dev.									
China	Coeff.	−0.0021	0.0004	0.0012	−0.0002	0.0012	0.0046	−0.0032	−0.0005	−0.0008
	St. dev.	0.0484	0.0169	0.0266	0.0262	0.0124	0.0219	0.0595	0.0197	0.0295
JP										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	0.0092	0.0026	0.0088	−0.0050	0.0051	0.0166	0.0223*	0.0003	0.0017
	St. dev.	0.0925	0.0445	0.0717	0.0845	0.0393	0.0814	0.0982	0.0492	0.0611
India	Coeff.									
	St. dev.									
China	Coeff.	−0.0040	0.0002	−0.0016	−0.0172***	−0.0026	−0.0070	0.0082	0.0028	0.0034
	St. dev.	0.0470	0.0216	0.0314	0.0383	0.0222	0.0326	0.0512	0.0210	0.0297
CH										
Brazil	Coeff.									
	St. dev.									
Russia	Coeff.	0.0347	0.0149	0.0231	−0.0175	0.0025	0.0069	0.1130**	0.0335	0.0475
	St. dev.	0.1344	0.0751	0.0793	0.0839	0.0137	0.0183	0.1601	0.1180	0.1224
India	Coeff.									
	St. dev.									
China	Coeff.	−0.0232**	−0.0076*	−0.0051	−0.0184*	−0.0105*	−0.0092	−0.0303	−0.0033	0.0009
	St. dev.	0.0618	0.0248	0.0439	0.0408	0.0253	0.0348	0.0861	0.0245	0.0561

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Brazil and India are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

With this all in mind, the most active response is seen in relation to Bank of Japan (see Table 10), such as negative statistical significance at the 10% level of Brazil and Russia to its Monetary Policy Contractionary measure (see Table 10); positive statistically significant reaction of Russia the day before and on event day at the 5% level or less and negative statistically significant meanings at the 10% level and less in all event windows of China in relation to Monetary Policy Expansionary Measure (see Table 10). When considering the influence of Swiss National Bank, there is a positive statistical significance of Brazil and China at the 10% level or less (see Table 10). So, the Telecom sector of China was effected in a greater degree than others, it has a positive statistically significant

reaction (see Table 10), while there are mixed signs for Brazil and Russia and no reaction from the side of India at all (see Table 10).

Sector of Utilities of BRIC countries mostly revealed a positive statistically significant reaction with demonstration of a certain number of negative meanings (see Table 11).

To say more, there is a positive statistically significant reaction at the 10% level of India and positive statistical significance of Russia to Contractionary Policy along with negative statistical significance of China at the 10% level or less to Expansionary Policy of Bank of England (see Table 11). Under the influence of Federal Reserve Bank policy, India reacted negatively with statistical significance at the 10% level in a five-day event window to contraction measure, while China showed negative statistical significance of 5% in

Table 9
Sector of oil and gas.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0003	0.0010	0.0010	−0.0037	0.0007	0.0000	0.0073	0.0016	0.0027
	St. dev.	0.0324	0.0182	0.0225	0.0322	0.0203	0.0247	0.0323	0.0134	0.0175
Russia	Coeff.	0.0001	−0.0001	−0.0302	0.0001	0.0003	0.0099	0.0002	−0.0008	−0.1122
	St. dev.	0.0058	0.0070	1.1329	0.0052	0.0063	0.9428	0.0071	0.0083	1.4671
India	Coeff.	0.0003	0.0014	0.0020	−0.0010	0.0008	−0.0027	0.0030	0.0025	0.0115**
	St. dev.	0.0157	0.0120	0.0223	0.0145	0.0114	0.0203	0.0177	0.0133	0.0235
China	Coeff.	0.0069	−0.0011	0.0034	−0.0042	−0.0034	−0.0032	0.0292**	0.0036	0.0167**
	St. dev.	0.0587	0.0255	0.0327	0.0533	0.0224	0.0261	0.0638	0.0308	0.0405
US										
Brazil	Coeff.	−0.0015	0.0004	−0.0003	−0.0012	−0.0014	−0.0019	−0.0013	0.0015	0.0007
	St. dev.	0.0268	0.0122	0.0168	0.0199	0.0110	0.0136	0.0305	0.0127	0.0185
Russia	Coeff.	−0.0013	−0.0006	−0.0002	0.0015	−0.0004	0.0003	−0.0032	−0.0007	−0.0006
	St. dev.	0.0148	0.0074	0.0099	0.0095	0.0040	0.0052	0.0172	0.0090	0.0120
India	Coeff.	−0.0006	−0.0018	−0.0007	0.0023	0.0002	0.0023	−0.0025	−0.0031*	−0.0026
	St. dev.	0.0265	0.0130	0.0184	0.0164	0.0088	0.0125	0.0315	0.0151	0.0212
China	Coeff.	−0.0009	−0.0002	−0.0019	−0.0063	−0.0007	−0.0039	0.0026	0.0001	−0.0007
	St. dev.	0.0578	0.0174	0.0325	0.0363	0.0130	0.0214	0.0684	0.0198	0.0382
ECB										
Brazil	Coeff.	−0.0038	−0.0004	0.0001	−0.0006	−0.0014	0.0003	−0.0062	0.0004	0.0000
	St. dev.	0.0362	0.0198	0.0239	0.0251	0.0106	0.0169	0.0428	0.0246	0.0282
Russia	Coeff.	0.0012	0.0000	0.0000	−0.0001	0.0001	0.0008	0.0021	0.0000	−0.0005
	St. dev.	0.0131	0.0049	0.0065	0.0131	0.0060	0.0070	0.0132	0.0040	0.0062
India	Coeff.	−0.0006	−0.0001	−0.0003	0.0016	0.0029	0.0032	−0.0022	−0.0023*	−0.0029
	St. dev.	0.0233	0.0089	0.0157	0.0206	0.0090	0.0139	0.0252	0.0082	0.0166
China	Coeff.	0.0139	0.0005	0.0049	−0.0007	−0.0030	0.0017	0.0248	0.0031	0.0073
	St. dev.	0.0679	0.0278	0.0384	0.0581	0.0266	0.0411	0.0731	0.0287	0.0365
JP										
Brazil	Coeff.	−0.0002	0.0005	−0.0007	0.0045	0.0025	0.0036	−0.0039	−0.0013	−0.0045**
	St. dev.	0.0254	0.0118	0.0170	0.0288	0.0135	0.0191	0.0215	0.0098	0.0137
Russia	Coeff.	−0.0001	0.0004	0.0001	0.0004	0.0000	0.0001	−0.0005	0.0008	0.0001
	St. dev.	0.0130	0.0077	0.0088	0.0127	0.0048	0.0070	0.0135	0.0098	0.0102
India	Coeff.	0.0010	0.0003	0.0008	0.0058	0.0003	0.0014	−0.0035	0.0003	0.0002
	St. dev.	0.0285	0.0123	0.0196	0.0329	0.0151	0.0246	0.0232	0.0090	0.0135
China	Coeff.	0.0006	−0.0005	0.0006	−0.0029	−0.0010	0.0025	0.0038	0.0001	−0.0012
	St. dev.	0.0538	0.0313	0.0389	0.0539	0.0311	0.0371	0.0539	0.0318	0.0407
CH										
Brazil	Coeff.	−0.0036	−0.0013	0.0011	0.0019	−0.0032	0.0003	−0.0118	0.0014	0.0023
	St. dev.	0.0370	0.0148	0.0240	0.0201	0.0110	0.0173	0.0535	0.0193	0.0324
Russia	Coeff.	0.0019	−0.0013*	0.0005	0.0031	0.0000**	0.0016	0.0002	−0.0033	−0.0010
	St. dev.	0.0145	0.0039	0.0104	0.0115	0.0020	0.0061	0.0186	0.0052	0.0149
India	Coeff.	−0.0024	0.0010	0.0006	0.0029	0.0009	0.0021	−0.0102	0.0013	−0.0017
	St. dev.	0.0353	0.0143	0.0221	0.0222	0.0091	0.0137	0.0490	0.0203	0.0315
China	Coeff.	−0.0125	−0.0030	−0.0022	0.0036	−0.0033	0.0020	−0.0367	−0.0026	−0.0085
	St. dev.	0.0780	0.0415	0.0466	0.0572	0.0316	0.0296	0.0995	0.0547	0.0656

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index.

*** Denote that estimates are statistically significant at the 1% level. It is a standard notation showed also when no values in the table exhibit a similar statistical significant level.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

two short event windows to expansionary measure (see Table 11). Then, we found that Russia, India and China show positive statistical significance at 10% or less for all event windows, and no statistically significant reaction to contraction measure of European Central Bank Monetary Policy (see Table 11). As for reaction of utilities sector of BRIC countries to policies of Bank of Japan, we can see a negative statistical significance at the 10% level of Brazil and China, positive statistical significance of India in relation to Monetary Policy contraction measure (see Table 11). Brazil and Russia show positive statistical significance at the 10% level or less, which includes also the event day, in their reaction to Monetary Policy Expansionary Measure (see Table 11) of Bank of Japan. Russia and China appeared to have positive statistically significant reaction at

the 10% level or less in response to Monetary Policy Expansionary Measure of Swiss National Bank (see Table 11). Generally, we can assert Russian and Indian utility sectors to have the most number of positive signs, while for China it is mostly negative (see Table 11). However, the utility sector exactly of India and China has the most number of different reaction to Monetary Policies of Central Authorities (see Table 11).

Concerning Bank Sector, we excluded Russia from this measure due to lack of Data. We can see a very little number of reactions of BRIC countries to Monetary Policies of Central Authorities (see Table 12).

This case, India reacted with positive statistical significance at 10% to Monetary Policy Expansionary Measure relatively to Bank

Table 10
Sector of telecommunications.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	0.0057	0.0002	0.0001	0.0041	−0.0013	−0.0001	0.0086	0.0031	0.0005
	St. dev.	0.0301	0.0144	0.0223	0.0239	0.0136	0.0200	0.0399	0.0157	0.0264
Russia	Coeff.	0.0021	0.0032	0.0324	0.0018	0.0017	0.0319	0.0027	0.0062	0.0336
	St. dev.	0.0155	0.0195	1.1185	0.0106	0.0162	0.9631	0.0228	0.0251	1.4073
India										
China	Coeff.	−0.0021	0.0013	0.0026	0.0045	0.0037*	0.0061*	−0.0124	−0.0033	−0.0019
	St. dev.	0.0338	0.0186	0.0273	0.0266	0.0145	0.0222	0.0442	0.0241	0.0365
US										
Brazil	Coeff.	−0.0015	−0.0016	−0.0015	−0.0019	0.0002	0.0002	−0.0013	−0.0027	−0.0026
	St. dev.	0.0318	0.0151	0.0186	0.0237	0.0121	0.0149	0.0363	0.0167	0.0207
Russia	Coeff.	−0.0023	−0.0020	−0.0031	−0.0001	0.0004	−0.0013	−0.0037	−0.0035	−0.0043
	St. dev.	0.0643	0.0400	0.0440	0.0285	0.0105	0.0164	0.0797	0.0509	0.0552
India										
China	Coeff.	0.0004	0.0001	0.0027	0.0043	−0.0026	0.0008	−0.0022	0.0018	0.0039
	St. dev.	0.0325	0.0151	0.0232	0.0215	0.0128	0.0177	0.0379	0.0163	0.0262
ECB										
Brazil	Coeff.	0.0070*	0.0017	0.0025	0.0064	0.0013	0.0014	0.0075	0.0020	0.0034
	St. dev.	0.0348	0.0156	0.0246	0.0271	0.0118	0.0226	0.0399	0.0180	0.0262
Russia	Coeff.	−0.0066	0.0007	0.0004	0.0084	0.0028	0.0026	−0.0178	−0.0009	−0.0013
	St. dev.	0.0574	0.0173	0.0219	0.0366	0.0143	0.0201	0.0672	0.0193	0.0232
India										
China	Coeff.	−0.0024	0.0010	0.0007	−0.0010	0.0057	0.0093*	−0.0035	−0.0025	−0.0057
	St. dev.	0.0406	0.0226	0.0325	0.0327	0.0237	0.0320	0.0461	0.0212	0.0316
JP										
Brazil	Coeff.	−0.0003	−0.0010	−0.0024	−0.0024	−0.0028	−0.005*	0.0011	0.0004	−0.0003
	St. dev.	0.0336	0.0117	0.0175	0.0326	0.0127	0.0202	0.0345	0.0106	0.0143
Russia	Coeff.	−0.0046	−0.0020	−0.0028	−0.0161*	−0.0112	−0.0113	0.0060	0.0066***	0.005**
	St. dev.	0.0543	0.0425	0.0431	0.0686	0.0585	0.0591	0.0339	0.0138	0.0162
India										
China	Coeff.	−0.0034	−0.0005	−0.0023	−0.0009	0.0028	0.0001	−0.006*	−0.0037**	−0.0049**
	St. dev.	0.0276	0.0145	0.0184	0.0306	0.0158	0.0195	0.0244	0.0126	0.0172
CH										
Brazil	Coeff.	0.0162**	0.0010	0.0017	0.0062	−0.0023	−0.0033	0.0311*	0.0060	0.0091
	St. dev.	0.0398	0.0162	0.0237	0.0176	0.0104	0.0174	0.0574	0.0218	0.0302
Russia	Coeff.	−0.0070	0.0023	−0.0025	−0.0024	−0.0003	−0.0022	−0.0138	0.0063	−0.0030
	St. dev.	0.0451	0.0143	0.0317	0.0419	0.0102	0.0180	0.0507	0.0187	0.0463
India										
China	Coeff.	0.0101	0.0012	0.0000	0.0049	0.0006	−0.0009	0.0178**	0.0022	0.0015
	St. dev.	0.0335	0.0225	0.0330	0.0352	0.0176	0.0283	0.0305	0.0292	0.0403

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for India are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

of England and with positive statistical significance at the 5% level to Monetary Policy Contraction Measure to Bank of Japan in a five-event window (see Table 12). We would like to mention that Brazil showed its reaction with negative statistical significance at the 5% level to Contrary Measure of Swiss National Bank (see Table 12).

Observation of Consumer sector was made with exception of Russia (due to lack of Data). To sum up, BRIC countries reacted very weak to Central Authorities (see Table 13).

To say more, there is a 5% positive statistically significant reaction of China to Monetary Policy Contraction Measure at the day before and the event day only in response to Bank of England (see Table 13). None of the BRIC countries showed any statistical significance to Monetary policies of Federal Reserve Bank and

Swiss National Bank (see Table 13). There is a negative statistical significance of India (see Table 13) at the 5% level to Monetary Policy Contraction Measure of ECB. Monetary Policy of Bank of Japan affected consumer sector of Brazil with positive statistical significance at the 10% level or less in all three event windows of expansionary measure, and it got negative statistically significant response at the 10% level of India to expansionary measure in a five and two-day event windows (see Table 13).

Industrial sectors of BRIC countries (except Russia due to lack of Data) demonstrated no statistical significance to Monetary policies of Bank of England and Swiss National Bank (see Table 14), when we expected at least minimum reaction from India to the Bank of England (with its large export trade flow to the UK (see Table 17)

Table 11
Sector of utilities.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0005	−0.0006	0.0004	−0.0010	−0.0005	0.0004	0.0005	−0.0009	0.0005
	St. dev.	0.0267	0.0126	0.0185	0.0220	0.0088	0.0142	0.0344	0.0181	0.0250
Russia	Coeff.	0.0015	0.0018	0.0713	−0.0002	−0.0014	−0.0662	0.0050	0.0084	0.3519**
	St. dev.	0.0226	0.0319	1.5226	0.0125	0.0247	1.0828	0.0355	0.0430	2.1652
India	Coeff.	−0.0004	−0.0022	0.0042	0.0029	0.0021	0.0071*	−0.0069	−0.0106	−0.0018
	St. dev.	0.0281	0.0235	0.0412	0.0223	0.0166	0.0270	0.0369	0.0321	0.0608
China	Coeff.	−0.0048	−0.0037**	−0.0042*	−0.0022	−0.0017	−0.0017	−0.0098	−0.0076**	−0.0086*
	St. dev.	0.0359	0.0136	0.0204	0.0312	0.0101	0.0175	0.0432	0.0181	0.0245
US										
Brazil	Coeff.	−0.0035	−0.0018	−0.0019	−0.0028	0.0006	0.0014	−0.0041	−0.0034	−0.0041
	St. dev.	0.0308	0.0123	0.0194	0.0193	0.0081	0.0123	0.0365	0.0143	0.0228
Russia	Coeff.	0.0061	0.0011	−0.0007	−0.0023	0.0030	−0.0019	0.0116	−0.0001	0.0000
	St. dev.	0.0657	0.0402	0.0471	0.0463	0.0167	0.0265	0.0757	0.0501	0.0570
India	Coeff.	0.0003	0.0001	−0.0003	−0.0036*	0.0000	0.0000	0.0029	0.0002	−0.0005
	St. dev.	0.0242	0.0113	0.0175	0.0150	0.0065	0.0094	0.0285	0.0136	0.0212
China	Coeff.	−0.0060	−0.0016	−0.0039*	0.0032	0.0003	0.0007	−0.0121**	−0.0023	−0.0065**
	St. dev.	0.0426	0.0144	0.0192	0.0310	0.0104	0.0157	0.0480	0.0164	0.0206
ECB										
Brazil	Coeff.	0.0001	−0.0008	0.0005	−0.0023	−0.0006	−0.0010	0.0019	−0.0009	0.0017
	St. dev.	0.0358	0.0139	0.0193	0.0222	0.0076	0.0154	0.0435	0.0173	0.0219
Russia	Coeff.	0.0053	0.0028	0.0049	−0.0057	−0.0009	−0.0045	0.0136	0.0055*	0.0119**
	St. dev.	0.0649	0.0195	0.0376	0.0578	0.0175	0.0354	0.0693	0.0207	0.0380
India	Coeff.	0.0070**	0.0028**	0.0053***	0.0021	0.0023	0.0023	0.0108**	0.0032*	0.0075***
	St. dev.	0.0283	0.0117	0.0158	0.0218	0.0127	0.0155	0.0321	0.0110	0.0159
China	Coeff.	0.0081	−0.0003	0.0054	−0.0009	−0.0005	0.0025	0.0148*	−0.0002	0.0076
	St. dev.	0.0469	0.0181	0.0290	0.0328	0.0151	0.0254	0.0546	0.0202	0.0315
JP										
Brazil	Coeff.	−0.0037	0.0003	0.0002	−0.0081**	−0.0017	−0.0037*	0.0003	0.0022*	0.0038*
	St. dev.	0.0265	0.0091	0.0155	0.0284	0.0086	0.0149	0.0242	0.0091	0.0153
Russia	Coeff.	0.0075	0.0046**	0.0036	−0.0071	0.0024	0.0018	0.0209**	0.0067**	0.0053
	St. dev.	0.0674	0.0214	0.0348	0.0562	0.0193	0.0291	0.0743	0.0232	0.0396
India	Coeff.	0.0047*	0.0016*	0.0021	0.0058	0.0026*	0.0030	0.0036	0.0007	0.0011
	St. dev.	0.0256	0.0096	0.0162	0.0298	0.0109	0.0194	0.0212	0.0081	0.0127
China	Coeff.	−0.0025	−0.0011	−0.0013	−0.0083*	−0.0020	−0.0021	0.0029	−0.0005	−0.0010
	St. dev.	0.0332	0.0149	0.0217	0.0346	0.0160	0.0234	0.0308	0.0139	0.0204
CH										
Brazil	Coeff.	0.0043	0.0007	−0.0006	0.0029	0.0032	0.0013	0.0064	−0.0031	−0.0033
	St. dev.	0.0318	0.0201	0.0265	0.0141	0.0088	0.0136	0.0485	0.0303	0.0394
Russia	Coeff.	−0.0046	0.0046	0.0022	−0.0174	−0.0006	−0.0015	0.0145	0.0124*	0.0078
	St. dev.	0.0822	0.0218	0.0258	0.0754	0.0197	0.0243	0.0914	0.0233	0.0280
India	Coeff.	0.0031	0.0011	0.0023	−0.0050	−0.0017	−0.0031	0.0153	0.0053	0.0103
	St. dev.	0.0318	0.0138	0.0192	0.0213	0.0093	0.0107	0.0412	0.0183	0.0259
China	Coeff.	−0.0013	−0.0008	0.0019	−0.0026	0.0052	0.0103	0.0007	−0.0098	−0.0106
	St. dev.	0.0421	0.0217	0.0271	0.0316	0.0147	0.0206	0.0558	0.0277	0.0315**

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

and Russia (Switzerland takes the priority place in Russian export trade flows (see Table 17).

This measure made us assume a negative statistical significance response at the 5% level in all event windows of contraction measure of China to Federal Reserve Bank, negative statistical significance at 5% or less of China to Monetary Policy Expansionary Measure of ECB. However, for Machinery and Electronics sector, for instance, we can see that the US and the EU are main export-import partners of China (see Table 17). There is a positive statistical significance at 10% or less of Brazil to Bank of Japan in all event windows to Monetary Policy Expansionary measure (with Japan being one of its main partners for import (see Table 17), negative statistical significance of China at the 10% level to Monetary Policy Expansionary Measure of Bank of Japan (see Table 14). Our observations

revealed no reaction of India to Monetary Policies of Central Authorities, which is very surprising, because machinery and electronics sector have the main export partners in the US, the EU and the UK (see Table 17). In reality, there is the most number of negative reactions of industrial sector of China and the only one positive reaction of Brazil (see Table 14).

Policy responses to financial inflows might not act as expected by Central Authorities, given their sensitivity to investors' behavior and external shocks. At the same time, financial export and import flows are crucial elements to pay attention to, when catching the immediate reaction of stock prices to provided policy actions. Considering this, we were supposed to make a parallel of those financial flows with stock market reaction of BRIC countries and capture their effect. However, we managed to find the detailed sector and

Table 12
Bank sector.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0030	−0.0018	−0.0020	−0.0008	−0.0007	−0.0005	−0.0073	−0.0040	−0.0049
	St. dev.	0.0297	0.0132	0.0186	0.0264	0.0114	0.0171	0.0354	0.0163	0.0211
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0019	0.0010	−0.0001	−0.0034	0.0012	−0.0027	0.0125*	0.0006	0.0051
	St. dev.	0.0276	0.0094	0.0157	0.0232	0.0084	0.0134	0.0326	0.0114	0.0188
China	Coeff.	0.0018	0.0004	−0.0013	−0.0047	0.0008	−0.0037	0.0147	0.0007	0.0039
	St. dev.	0.0409	0.0147	0.0205	0.0371	0.0136	0.0206	0.0447	0.0174	0.0196
US										
Brazil	Coeff.	0.0008	0.0001	0.0012	0.0002	0.0004	0.0003	0.0012	−0.0001	0.0018
	St. dev.	0.0303	0.0135	0.0204	0.0183	0.0107	0.0139	0.0362	0.0151	0.0238
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0005	−0.0003	−0.0023	−0.0002	−0.0004	−0.0017	0.0010	−0.0003	−0.0028
	St. dev.	0.0280	0.0133	0.0175	0.0206	0.0105	0.0143	0.0322	0.0150	0.0194
China	Coeff.	−0.0008	0.0016	0.0010	−0.0059*	0.0029	0.0027	0.0025	0.0007	−0.0001
	St. dev.	0.0297	0.0149	0.0213	0.0240	0.0121	0.0154	0.0326	0.0166	0.0245
ECB										
Brazil	Coeff.	−0.0010	−0.0003	−0.0010	0.0021	0.0003	0.0012	−0.0033	−0.0008	−0.0027
	St. dev.	0.0332	0.0138	0.0201	0.0293	0.0094	0.0154	0.0360	0.0164	0.0231
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0011	−0.0004	0.0001	0.0007	0.0006	0.0003	0.0014	−0.0013	0.0000
	St. dev.	0.0287	0.0113	0.0184	0.0279	0.0101	0.0145	0.0296	0.0122	0.0210
China	Coeff.	0.0061	0.0053	0.0054	0.1074	0.0775	0.0577	0.0871	0.0599	0.0464
	St. dev.	0.0410	0.0180	0.0247	0.4684	0.4341	0.3192	0.4089	0.3761	0.2768
JP										
Brazil	Coeff.	0.0015	0.0000	0.0018	−0.0005	0.0014	0.0013	0.0034	−0.0013	0.0022
	St. dev.	0.0259	0.0124	0.0192	0.0281	0.0117	0.0150	0.0238	0.0130	0.0226
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0061**	0.0010	0.0012	0.0086**	0.0022	0.0035	0.0137	−0.0002	−0.0009
	St. dev.	0.0254	0.0096	0.0144	0.0248	0.0109	0.0162	0.0260	0.0082	0.0121
China	Coeff.	−0.0037	−0.0004	−0.0034*	−0.0014	−0.0002	−0.0022	−0.0058	−0.0006	−0.0046
	St. dev.	0.0312	0.0152	0.0210	0.0327	0.0167	0.0210	0.0299	0.0139	0.0212
CH										
Brazil	Coeff.	0.0029	0.0044	0.0018	−0.0062**	0.0015	−0.0026	0.0165	0.0088	0.0083
	St. dev.	0.0392	0.0208	0.0262	0.0122	0.0078	0.0100	0.0591	0.0318	0.0397
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0004	−0.0008	−0.0008	0.0027	−0.0006	0.0010	0.0006	−0.0035	−0.0025
	St. dev.	0.0333	0.0160	0.0217	0.0268	0.0129	0.0173	0.0419	0.0227	0.0302
China	Coeff.	0.0021	0.0038	0.0052	−0.0051	−0.0025	0.0025	0.0130	0.0132	0.0094
	St. dev.	0.0356	0.0270	0.0275	0.0289	0.0173	0.0178	0.0428	0.0360	0.0383

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Russia are represented in this table due to absence of Data for our calculations.

*** Denote that estimates are statistically significant at the 1% level. It is a standard notation showed also when no values in the table exhibit a similar statistical significant level.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

country's data of trade flows only, and used it in our research. We happened to reveal lack of necessary information, when analyzing such sources as World Bank, WTO, IMF databases. We clearly understand, that this is a limit of our study, nevertheless, we consider a huge part of financial flow reactions to be included in observations of overall market reactions.

The evidences got from estimation of sector reactions, confirm findings in general stock indices and confirm the importance of sectors reaction to policy action 'announcements. Indeed, when observing some sectors reactions in terms of large abnormal returns magnitude, we should reflect more than we do for general indices.

From one side, there is a chance for exploitation of monetary policy news in terms of carry trade. From other side, strong reaction must reflect the need to manage the risk aspect of these reactions. In fact, we have to make two considerations. The first one is related to the so-called track error. It is the likelihood that the portfolio underlying strategy deviates by the desired risk profile more than expected volatility. The second one is our consideration of large deviations from the mean. Both considerations are reflected in management of these events with risks in mind.

Table 13
Consumer sector.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0045	−0.0005	−0.0014	−0.0026	−0.0003	−0.0013	−0.0082	−0.0008	−0.0019
	St. dev.	0.0356	0.0173	0.0237	0.0309	0.0163	0.0215	0.0428	0.0191	0.0273
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0014	0.0012	−0.0008	0.0005	0.0004	−0.0013	0.0034	0.0030	0.0000
	St. dev.	0.0178	0.0121	0.0265	0.0146	0.0107	0.0238	0.0230	0.0146	0.0318
China	Coeff.	0.0012	0.0013**	0.0017**	0.0024	0.0013**	0.0022**	−0.0011	0.0014	0.0007
	St. dev.	0.0147	0.0049	0.0070	0.0129	0.0042	0.0067	0.0178	0.0063	0.0078
US										
Brazil	Coeff.	0.0004	−0.0005	−0.0007	0.0059	0.0014	0.0000	−0.0032	−0.0017	−0.0011
	St. dev.	0.0406	0.0150	0.0244	0.0293	0.0108	0.0175	0.0464	0.0172	0.0281
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0023	−0.0008	−0.0011	−0.0042*	−0.0004	−0.0018	−0.0011	−0.0010	−0.0006
	St. dev.	0.0228	0.0117	0.0163	0.0157	0.0091	0.0113	0.0264	0.0131	0.0190
China	Coeff.	−0.0003	0.0009	0.0008	−0.0081*	−0.0020	−0.0027	0.0049	0.0028	0.0031
	St. dev.	0.0435	0.0203	0.0272	0.0300	0.0099	0.0158	0.0500	0.0248	0.0325
ECB										
Brazil	Coeff.	−0.0014	−0.0003	−0.0028	−0.0002	−0.0012	−0.0026	−0.0024	0.0003	−0.0030
	St. dev.	0.0352	0.0157	0.0250	0.0317	0.0113	0.0203	0.0379	0.0184	0.0283
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0009	−0.0014	−0.0015	−0.0066	−0.0026**	−0.0060**	0.0033	−0.0005	0.0018
	St. dev.	0.0267	0.0093	0.0156	0.0257	0.0076	0.0143	0.0270	0.0103	0.0159
China	Coeff.	0.0006	0.0008	0.0002	0.0021	0.0004	0.0001	−0.0008	0.0010	0.0000
	St. dev.	0.0155	0.0061	0.0084	0.0125	0.0056	0.0088	0.0174	0.0064	0.0083
JP										
Brazil	Coeff.	0.0015	0.0022*	0.0020	−0.0060	−0.0002	−0.0016	0.0084*	0.0044***	0.0053**
	St. dev.	0.0364	0.0129	0.0205	0.0393	0.0143	0.0219	0.0324	0.0111	0.0187
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0025	−0.0009	−0.0024*	−0.0015	−0.0010	−0.0023	−0.0034*	−0.0008	−0.0025*
	St. dev.	0.0180	0.0084	0.0127	0.0214	0.0103	0.0151	0.0142	0.0064	0.0103
China	Coeff.	0.0004	−0.0001	0.0004	−0.0013	−0.0006	0.0000	0.0020	0.0003	0.0008
	St. dev.	0.0151	0.0063	0.0086	0.0161	0.0068	0.0085	0.0140	0.0058	0.0086
CH										
Brazil	Coeff.	−0.0015	0.0003	0.0013	−0.0123*	−0.0021	−0.0055	0.0148	0.0040	0.0115
	St. dev.	0.0423	0.0183	0.0279	0.0313	0.0101	0.0199	0.0521	0.0264	0.0353
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0072*	−0.0003	0.0007	0.0058	0.0014	0.0005	0.0092	−0.0030	0.0010
	St. dev.	0.0230	0.0131	0.0153	0.0205	0.0118	0.0121	0.0270	0.0149	0.0197
China	Coeff.	−0.0013	0.0006	−0.0003	0.0005	0.0001	−0.0004	−0.0041	0.0013	−0.0001
	St. dev.	0.0168	0.0079	0.0070	0.0138	0.0044	0.0059	0.0207	0.0116	0.0085

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Russia are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

6. Concluding remarks and policy implications

Emerging Market economies require more attention and control in financial crises time, especially due to their reaction to monetary policy actions of Central Authorities, which are used to regulate economic stability in the country.

We specified our paper on measuring short-time reaction of BRIC countries (Brazil, Russia, India, China) within five event days of financial crises time. It reflects a spillover effect and catch the immediate signal of Emerging Markets to Central Policy external shocks, because the market is not stable in a long-term and it does not allow to get the most accurate results for a concrete period of time.

Our paper is probably the first one dealing with external shocks on emerging financial markets in BRIC area, provided by several World leading Central Monetary Authorities. Hence, it enlarges the existing literature. We agree with main findings of previous studies on Emerging Markets, which underline the significant role of Central Banks in Emerging Market economies during the financial crises periods (Cetorelli & Goldberg, 2011), mention the significant progress in Emerging Market economies (Mishkin, 2008), evidence the importance of economic fundamentals, when dealing with international shocks in different Emerging Markets and their use to dampen spillovers in Emerging Markets (Chen et al., 2014; Shaghil et al., 2015). However, we agree with a number of papers dealing with effects of monetary policy and its dependence on coun-

Table 14
Industrial sector.

Type of interventions		Overall			Contractionary			Expansionary		
Event windows		1.3	0	1.0	1.3	0	1.0	1.3	0	1.0
UK										
Brazil	Coeff.	−0.0032*	−0.0040***	−0.0038*	−0.0011	−0.0028	−0.0023	−0.0072	−0.0065	−0.0067
	St. dev.	0.0248	0.0113	0.0175	0.0193	0.0107	0.0158	0.0331	0.0122	0.0203
Russia	Coeff.									
	St. dev.									
India	Coeff.	0.0010	0.0013	0.0016	0.0018	0.0020	0.0034	−0.0006	0.0000	−0.0020
	St. dev.	0.0135	0.0115	0.0175	0.0129	0.0109	0.0174	0.0148	0.0128	0.0175
China	Coeff.	−0.0021	−0.0014	−0.0026	−0.0018	−0.0019	−0.0023	−0.0032	−0.0006	−0.0040
	St. dev.	0.0258	0.0101	0.0161	0.0224	0.0101	0.0160	0.0316	0.0102	0.0166
US										
Brazil	Coeff.	0.0006	0.0009	0.0022	0.0020	0.0013	0.0006	−0.0004	0.0006	0.0033
	St. dev.	0.0346	0.0128	0.0192	0.0203	0.0095	0.0140	0.0415	0.0146	0.0220
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0003	0.0000	0.0000	−0.0006	0.0003	−0.0001	−0.0002	−0.0002	0.0001
	St. dev.	0.0197	0.0098	0.0123	0.0129	0.0063	0.0073	0.0232	0.0116	0.0147
China	Coeff.	−0.0063	0.0000	−0.0030	−0.0144**	−0.0051**	−0.0090**	−0.0009	0.0034	0.0010
	St. dev.	0.0532	0.0222	0.0341	0.0446	0.0178	0.0269	0.0579	0.0241	0.0378
ECB										
Brazil	Coeff.	0.0004	−0.0023	−0.0019	0.0001	−0.0022	−0.0039	0.0006	−0.0024	−0.0004
	St. dev.	0.0290	0.0134	0.0217	0.0198	0.0099	0.0164	0.0346	0.0156	0.0251
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0022	0.0009	−0.0007	−0.0018	−0.0003	−0.0015	−0.0024	0.0018	0.0000
	St. dev.	0.0216	0.0083	0.0117	0.0193	0.0077	0.0092	0.0234	0.0087	0.0133
China	Coeff.	−0.0009	−0.0028**	−0.0035*	−0.0005	−0.0012	0.0001	−0.0012	−0.0040***	−0.0061**
	St. dev.	0.0283	0.0103	0.0168	0.0247	0.0106	0.0153	0.0310	0.0101	0.0175
JP										
Brazil	Coeff.	0.0017	0.0016	0.0016	−0.0040	−0.0001	−0.0018	0.0070**	0.0033**	0.0049*
	St. dev.	0.0249	0.0110	0.0195	0.0224	0.0104	0.0168	0.0260	0.0112	0.0212
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0013	−0.0006	−0.0001	−0.0017	0.0001	0.0008	−0.0011	−0.0013	−0.0009
	St. dev.	0.0151	0.0076	0.0108	0.0152	0.0084	0.0121	0.0151	0.0069	0.0095
China	Coeff.	−0.0001	0.0003	−0.0002	0.0065	0.0016	0.0015	−0.0062*	−0.0009	−0.0018
	St. dev.	0.0288	0.0080	0.0125	0.0303	0.0076	0.0109	0.0261	0.0084	0.0137
CH										
Brazil	Coeff.	0.0055	−0.0005	0.0014	0.0018	−0.0017	−0.0009	0.0109	0.0013	0.0049
	St. dev.	0.0381	0.0185	0.0186	0.0200	0.0074	0.0114	0.0562	0.0286	0.0262
Russia	Coeff.									
	St. dev.									
India	Coeff.	−0.0043	−0.0002	−0.0009	−0.0021	−0.0010	−0.0017	−0.0075	0.0011	0.0003
	St. dev.	0.0241	0.0094	0.0130	0.0158	0.0092	0.0106	0.0335	0.0101	0.0164
China	Coeff.	0.0077	0.0028	0.0032	0.0050	0.0014	0.0022	0.0116	0.0048	0.0046
	St. dev.	0.0255	0.0096	0.0123	0.0209	0.0082	0.0117	0.0318	0.0115	0.0135

This table reports empirical results of Cumulated Abnormal Returns assess the reaction of stock markets around policy intervention announcements worldwide between June, 2007 and June, 2012. Cumulated Abnormal Returns calculated over various event windows for expansionary monetary policy and restriction and unchanged measures announcements from single Central Banks. We consider three event-windows: (1) a 1-day windows (0;0), i.e. the day of the announcement, (2) a two day windows (−1, 0) i.e. from day previous of announcement and the announcement day (in this case, we try to capture an anticipatory effect of the announcement itself); and (3) five day windows (−1; +3), i.e. from day −1 to day +3 around the policy announcement. Stock Market General Index is proxied by FTSE broad Index. No results for Russia are represented in this table due to absence of Data for our calculations.

* Denote that estimates are statistically significant at the 10% level.

** Denote that estimates are statistically significant at the 5% level.

*** Denote that estimates are statistically significant at the 1% level.

try specific effects (Gomes da Silva & Vilela Vieira, 2014; Montoro et al., 2012). To tell more, our research differs from other papers, because we cover a wider scope of Emerging Market Countries, pay attention to both conventional and unconventional measures, focus on a short-term spillover effects. We believe that such policy actions can catch an immediate reaction of emerging financial markets to external shocks.

We investigated monetary policy intervention from both sides: contractionary and expansionary measure, in order to get the most detailed picture of our results. Then, we tried to draw a parallel between stock price reaction and international trade flows of BRIC countries. We found that in its majority, the BRIC countries responded positively to monetary interventions and demonstrated

the most active reply to monetary policy contractionary measure. We revealed the most active reactions to announcements of the Bank of Japan and a very small feedback to the Bank of England.

Another specificity of our work is that our measure is done across different economic sectors, and it was not largely investigated before. We discovered the biggest amount of responses from sectors of Utilities and Basic Materials. Our results allow us to assert the existence of some unexpected and controversial reactions from certain countries to Central Authorities, such as negative reaction of Brazil to expansionary policies of the UK and the ECB, positive response of Russia to contractionary policy of the USA, positive reaction of China to contractionary measure of the ECB. Moreover, it was rather surprising to see no reaction from India to any of

Table 15
Trade flows of chemical sector.

Partner	UK		US		EU ^c		CH		JP	
	Trade(%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
Export of chemicals (2007) ^d										
Brazil	1.61	15	15.05	2	14.17		0.51	32	0	59
Russia	2.26	11	3.96	8	8.09		4.7	5	0.46	38
India	3.39	5	14.7	1	14.83		1.07	31	1.85	16
China	1.89	14	11.84	1	14.35		0.47	35	11.04	2
Average	2.29	11.25	11.39	3.00	12.86		1.69	25.75	3.34	28.75
Export of chemicals (2010) ^d										
Brazil	1.96	15	14.23	2	14.09		0.51	31	2.22	13
Russia	1.34	18	4.84	6	10.01		4.38	8	0.36	39
India	3.1	5	16.55	1	12.33		0.92	35	1.65	18
China	1.77	17	12.29	1	14.25		0.45	37	9.07	3
Average	2.04	13.75	11.98	2.50	12.67		1.57	27.75	3.33	18.25
Export of chemicals (2012) ^d										
Brazil	2.16	17	14.71	1	12.48		0.72	30	2.41	14
Russia	1	23	4.49	6	8.63		2.41	12	0.15	66
India	2.66	7	19.14	1	12.42		0.9	35	1.94	11
China	1.76	15	12.46	1	12.04		0.48	38	8.16	3
Average	1.90	15.50	12.70	2.25	11.39		1.13	28.75	3.17	23.50
Average export of chemicals ^d										
Brazil	1.91	15.67	14.66	1.67	13.58		0.58	31.00	1.54	28.67
Russia	1.53	17.33	4.43	6.67	8.91		3.83	8.33	0.32	47.67
India	3.05	5.67	16.80	1.00	13.19		0.96	33.67	1.81	15.00
China	1.81	15.33	12.20	1.00	13.55		0.47	36.67	9.42	2.67
Average	2.08	13.50	12.02	2.58	12.31		1.46	27.42	3.28	23.50
Import of chemicals (2007) ^e										
Brazil	3.19	8	23.29	1	20.99		5.36	5	1.8	16
Russia	4.56	5	5.88	3	40.12		3.35	10	0.71	26
India	1.68	19	13.1	2	11.66		2.49	7	3.01	6
China	1.28	16	10.88	4	10.67		0.98	20	18.17	1
Average	2.68	12.00	13.29	2.50	20.86		3.05	10.50	5.92	12.25
Import of chemicals (2010) ^e										
Brazil	3.89	6	21.65	1	25.36		4.81	5	1.82	17
Russia	4.13	7	6.27	3	42.69		4.52	6	0.97	24
India	1.32	21	10.72	2	10.67		2.61	10	2.95	8
China	1.25	18	12.12	3	12.61		1.3	16	16.03	1
Average	2.65	13.00	12.69	2.25	22.83		3.31	9.25	5.44	12.50
Import of chemicals (2012) ^e										
Brazil	3.17	9	19.34	1	24.3		3.93	6	1.64	18
Russia	3.89	6	6.26	3	40.8		2.93	12	0.96	26
India	1.12	25	9.81	2	10.61		2.18	11	2.54	9
China	1.46	16	11.13	3	13.39		1.48	15	14.23	2
Average	2.41	14.00	11.64	2.25	22.28		2.63	11.00	4.84	13.75
Average import of chemicals ^e										
Brazil	3.42	7.67	21.43	1.00	23.55		4.70	5.33	1.75	17.00
Russia	4.19	6.00	6.14	3.00	41.20		3.60	9.33	0.88	25.33
India	1.37	21.67	11.21	2.00	10.98		2.43	9.33	2.83	7.67
China	1.33	16.67	11.38	3.33	12.22		1.25	17.00	16.14	1.33
Average	2.58	13.00	12.54	2.33	21.99		3.00	10.25	5.40	12.83

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries. <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

^d Export from BRIC countries.

^e Import in BRIC countries.

Central Authorities in the overall measure. It evidences the dependence of internal policies of these countries on main world Central Authorities.

Globalization increased number of relations between advanced and developing economies, resulted in strong effects of policy actions of one country on another. The most obvious example recently, is the spillover effect of the US monetary policy on the rest of the world's sovereign nations, due to its current dominance in global financial markets. The Global Financial Crisis (GFC) demonstrated sovereign policymakers' sharp reactions to the US monetary and fiscal policy measures in order to deal with negative

external economic effects in times of extreme market volatility. Conventional and unconventional monetary policies (e.g. interest rate easing and quantitative easing) enacted by the US government, were adopted by Central Banks of all 'advanced' economies, both during and post-GFC. Ultimately, this led to various lively discussions between private and public policy makers, which could not but find reflections in academic research. Interestingly, when examining the previous literature, we found short terms on stock markets to be scantily investigated. For instance, the reaction of Emerging Market economies to external shocks between 1980s and 1990s had been always characterized by bad fundamentals, which

Table 16
Trade flows of fuels.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
Export of fuels (2007) ^d										
Brazil	0.93	19	27.63	1	9.11		0.04	33	0	59
Russia	3.48	6	1.06	22	33.32		3.38	7	2.05	14
India	3.47	7	2.88	11	9.29		0	88	3.19	9
China	0.98	19	6.19	5	5.33		0	140	13.99	1
Average	2.22	12.75	9.44	9.75	14.26		0.86	67.00	4.81	20.75
Export of fuels (2010) ^d										
Brazil	1.02	17	20.84	1	10.74		0	66	0.36	21
Russia	2.77	12	2.3	13	34.34		1.73	16	4.02	6
India	0.72	29	1.68	16	16.25		0	119	5.16	5
China	0.43	28.00	3.25	8.00	3.17		0.01	91.00	7.62	4.00
Average	1.24	21.50	7.02	9.50	16.13		0.44	73.00	4.29	9.00
Export of fuels (2012) ^d										
Brazil	0.02	30	21.67	1	14.25		0	46	0.12	23
Russia	1.97	12	1.64	16	32.75		1.66	15	3.45	8
India	0.19	32.00	2.25	14.00	13.27		0.15	37.00	5.18	6.00
China	0.78	21	4.22	8	3.62		10.08	52	7.97	3
Average	0.74	23.75	7.45	9.75	15.97		2.97	37.50	4.18	10.00
Average export of fuels ^d										
Brazil	0.66	22.00	23.38	1.00	11.37		0.01	48.33	0.16	34.33
Russia	2.74	10.00	1.67	17.00	33.47		2.26	12.67	3.17	9.33
India	1.46	22.67	2.27	13.67	12.94		0.05	81.33	4.51	6.67
China	0.73	22.67	4.55	7.00	4.04		3.36	94.33	9.86	2.67
Average	1.40	19.33	7.97	9.67	15.45		1.42	59.17	4.43	13.25
Import of fuels (2007) ^e										
Brazil	0.42	30	7.77	3	2.28		1.4	11	0.27	34
Russia	0.8	15	4.2	6	5.96		0.02	40	1.22	11
India	0.1	37	0.77	22	0.39		0	79	0.22	32
China	0.11	43	0.39	32	0.16		0	72	1.99	13
Average	0.36	31.25	3.28	15.75	2.20		0.36	50.50	0.93	22.50
Import of fuels (2010) ^e										
Brazil	1.45	15	15.78	2	3.48		0.23	37	0.44	26
Russia	2.16	10	7.3	3	12.94		0.02	42	1.22	12
India	0.08	45	0.95	20	0.42		0	79	0.1	43
China	0.09	50.00	0.87	24.00	0.48		0.00	81.00	1.23	21.00
Average	0.945	30	6.225	12.25	4.33		0.0625	59.75	0.7475	25.5
Import of fuels (2012) ^e										
Brazil	0.66	22	15.77	2	6.79		0.02	52	0.23	35
Russia	2.06	11	6.68	5	13.64		0.01	42	1.12	15
India	0.03	51.00	1.01	16.00	0.14		0.00	99.00	0.19	35.00
China	0.08	50	0.89	22	0.79		0	78	0.67	26
Average	0.7075	33.5	6.0875	11.25	5.34		0.0075	67.75	0.5525	27.75
Average import of fuels ^e										
Brazil	0.84	22.33	13.11	2.33	4.18		0.55	33.33	0.31	31.67
Russia	1.67	12.00	6.06	4.67	10.85		0.02	41.33	1.19	12.67
India	0.07	44.33	0.91	19.33	0.32		0.00	85.67	0.17	36.67
China	0.09	47.67	0.72	26.00	0.48		0.00	77.00	1.30	20.00
Average	0.67	31.58	5.20	13.08	3.96		0.14	59.33	0.74	25.25

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries. <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

^d Export from BRIC countries.

^e Import in BRIC countries.

are the following: high fiscal deficits, underdeveloped domestic bond markets, large currency and maturity mismatches. In those economic scenarios, modern Emerging Market economies had to tighten their monetary policies to defend the value of their currencies, contain capital flights and strengthen their policy credibility during the last financial crises.

With this in mind, the real picture showed a sharp decline of fiscal deficit and public debt in Emerging Market economies since early 2000s. The general state of Emerging Markets was significantly influenced by the 2008–2009 GFC. It loosened monetary policy (e.g. Interest rate raise made countercyclical policy' effects

closer to world leading economies). Therefore, on strengthening their fiscal policies, EMEs were able to use countercyclical and monetary policies in order to balance their economies in financial crises times. In line with others, [Coulibaly \(2012\)](#) showed a statistically significant linkage between type of economy and its reaction to monetary policy.

Overall, our results do not show a large sensitivity of reactions to external spillovers. We believe that there are several reasons for this evidence, and, in general, it can be understood under the light of recent innovations and development that have characterized emerging economies in the last 10 years. In previous literature,

Table 17
Trade flows of machinery and electronics.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
Export of machinery and electronics (2007) ^d										
Brazil	1.90	10	21.55	1	11.56		0.25	41	0.48	31
Russia	0.72	22	2.42	9	8.22		0.71	23	0.11	58
India	6.42	3	17.53	1	16.42		0.33	48	1.28	18
China	2.41	8	20.41	2	14.37		0.11	56	6.87	3
Average	2.86	10.75	15.48	3.25	12.64		0.35	42.00	2.19	27.50
Export of machinery and electronics (2010) ^d										
Brazil	1.23	20	16.03	2	12.99		0.68	24	0.54	27
Russia	0.72	22	2.42	9	8.22		0.71	23	0.11	58
India	3.87	4.00	13.94	1.00	16.41		0.42	47.00	0.92	30.00
China	2.12	9.00	19.04	2.00	14.16		0.13	54.00	6.78	3.00
Average	1.99	13.75	12.86	3.50	12.95		0.49	37.00	2.09	29.50
Export of machinery and electronics (2012) ^d										
Brazil	1.32	16.00	19.23	1.00	16.12		0.59	27.00	0.53	30.00
Russia	0.51	27	2.31	9	5.97		10.48	29	0.32	42
India	4.29	4.00	15.00	1.00	14.26		0.48	48.00	1.16	25.00
China	1.83	10.00	18.95	2.00	11.06		0.13	54.00	6.79	3.00
Average	1.99	14.25	13.87	3.25	11.85		2.92	39.50	2.20	25.00
Average export of machinery and electronics ^d										
Brazil	1.48	15.33	18.94	1.33	13.56		0.51	30.67	0.52	29.33
Russia	0.65	23.67	2.38	9.00	7.47		3.97	25.00	0.18	52.67
India	4.86	3.67	15.49	1.00	15.70		0.41	47.67	1.12	24.33
China	2.12	9.00	19.47	2.00	13.20		0.12	54.67	6.81	3.00
Average	2.28	12.92	14.07	3.33	12.48		1.25	39.50	2.16	27.33
Import of machinery and electronics (2007) ^e										
Brazil	1.3	17	18.22	2	20.18		1.46	14	6.72	4
Russia	2.43	11	4.68	5	30.77		0.84	22	4.53	6
India	2.74	10	8.84	3	20.64		1.74	14	6.49	4
China	0.69	15.00	6.11	5.00	9.39		0.64	15.00	17.66	1.00
Average	1.79	13.25	9.46	3.75	20.25		1.17	16.25	8.85	3.75
Import of machinery and electronics (2010) ^e										
Brazil	1.26	16	15.35	2	17.12		2.02	10	6.52	5
Russia	1.54	14.00	5.14	4.00	25.62		0.82	24.00	4.26	6.00
India	2.11	11.00	7.26	3.00	17.23		1.38	15.00	6.70	4.00
China	0.65	15.00	5.91	7.00	9.88		0.73	14.00	17.44	1.00
Average	1.39	14.00	8.42	4.00	17.46		1.24	15.75	8.73	4.00
Import of machinery and electronics (2012) ^e										
Brazil	1.2	15	15.35	2	17.47		1.32	14	6.38	5
Russia	2.63	11	4.69	4	25.47		1.02	23	3.87	5
India	2.03	11	7.29	4	16.89		1.18	14	7.49	3
China	0.65	15	5.08	7	9.12		0.6	16	14.44	2
Average	1.63	13.00	8.10	4.25	17.24		1.03	16.75	8.05	3.75
Average import of machinery and electronics ^e										
Brazil	1.25	16.00	16.31	2.00	18.26		1.60	12.67	6.54	4.67
Russia	2.20	12.00	4.84	4.33	27.29		0.89	23.00	4.22	5.67
India	2.29	10.67	7.80	3.33	18.25		1.43	14.33	6.89	3.67
China	0.66	15.00	5.70	6.33	9.46		0.66	15.00	16.51	1.33
Average	1.60	13.42	8.66	4.00	18.32		1.15	16.25	8.54	3.83

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries. <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

^d Export from BRIC countries.

^e Import in BRIC countries.

we could find a number of works supporting this hypothesis. We paid careful attention to some papers from the 17th Annual Meeting of Deputy Governors from major EMEs, held at the BIS in Basel on 16–17 February 2012, where studies about Emerging Markets policy reactions were centered.

A first possible explanation is derived from the work of Mitreska, Kadijevski Vojnovic, Georgievski, Jovanovic & Petkovska (2010). Authors show that the magnitude of the reaction was much stronger during the crisis, and that advanced countries appeared to have lower interest rates more often than emerging countries. It

might have reduced the responsiveness of domestic yield curve to interest rate shocks.

Furthermore, Coulibaly (2012) reviews the increasing ability of EMEs to use monetary policy as a tool for macroeconomic stabilization. Coulibaly (2012) suggests that this increased sophistication in wielding monetary policy might be able to explain the existing high level of resilience of Emerging Market economies to different shocks from the side of advanced economies, which goes together with an increase in mutual integration and cooperation between those two different types of economy. Sustaining countercyclical policy was notably supported by adoption of inflation targeting

Table 18
Trade flows of metals.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
Export of metals (2007)										
Brazil	0.95	22	21.61	1	20.74		3.18	7	5.72	4
Russia	1.18	18	6.79	4	29.12		10.54	2	3.59	10
India	3.47	8	12.6	1	17.72		0.11	78	1.24	21
China	2.35	13	15.45	1	14.79		0.07	88	6.04	3
Average	1.99	15.25	14.11	1.75	20.59		3.48	43.75	4.15	9.50
Export of metals (2010)										
Brazil	0.28	37	15.45	1	18.51		3.01	10	6.23	4
Russia	0.77	22	7.6	3	35.02		5.92	6	2.69	11
India	2.48	11.00	8.89	2.00	10.88		0.11	74.00	2.16	13.00
China	2.11	14.00	13.59	1.00	10.80		0.07	93.00	6.10	3.00
Average	1.41	21.00	11.38	1.75	18.80		2.28	45.75	4.30	7.75
Export of metals (2012)										
Brazil	0.46	30.00	25.43	1.00	18.00		1.89	11.00	5.26	5.00
Russia	1.89	13	6.88	4	36.69		0.89	20	2.93	10
India	2.54	8.00	12.80	1.00	12.79		0.13	76.00	1.45	17.00
China	1.98	16.00	12.81	1.00	8.94		0.07	100.00	5.67	3.00
Average	1.72	16.75	14.48	1.75	19.11		0.75	51.75	3.83	8.75
Average export of metals										
Brazil	0.56	29.67	20.83	1.00	19.08		2.69	9.33	5.74	4.33
Russia	1.28	17.67	7.09	3.67	33.61		5.78	9.33	3.07	10.33
India	2.83	9.00	11.43	1.33	13.80		0.12	76.00	1.62	17.00
China	2.15	14.33	13.95	1.00	11.51		0.07	93.67	5.94	3.00
Average	1.71	17.67	13.33	1.75	19.50		2.17	47.08	4.09	8.67
Import of metals (2007)										
Brazil	2.91	10	11.6	2	18.11		0.56	27	4.13	6
Russia	1.63	15	2.32	8	22.85		0.3	33	1.64	14
India	3.06	8	5.75	4	15.59		0.47	35	5.46	5
China	1.02	22	5.82	5	11.12		0.16	41	20.34	1
Average	2.16	13.75	6.37	4.75	16.92		0.37	34.00	7.89	6.50
Import of metals (2010)										
Brazil	1.75	16	8.58	3	14.61		0.54	26	4.72	5
Russia	1.52	14	3.08	7	24.06		0.46	26	3.25	6
India	4.35	7.00	5.25	5.00	14.03		0.38	38.00	7.31	3.00
China	1.13	19	6.35	5	11.67		0.2	40	19.06	1
Average	2.19	14.00	5.82	5.00	16.09		0.40	32.50	8.59	3.75
Import of metals (2012)										
Brazil	1.33	19.00	8.04	3.00	16.48		0.48	27.00	3.94	7.00
Russia	1.22	18	2.59	9	19.04		0.41	28	2.93	7
India	4.72	8	5.45	6	13.82		0.32	40	7.65	3
China	1.34	16	7.68	4	11.27		0.21	40	17.07	1
Average	2.15		5.94		15.15		0.36		7.90	
Average import of metals										
Brazil	2.00	15.00	9.41	2.67	16.40		0.53	26.67	4.26	6.00
Russia	1.46	15.67	2.66	8.00	21.98		0.39	29.00	2.61	9.00
India	4.04	7.67	5.48	5.00	14.48		0.39	37.67	6.81	3.67
China	1.16	19.00	6.62	4.67	11.35		0.19	40.33	18.82	1.00
Average	2.17	14.33	6.04	5.08	16.05		0.37	33.42	8.13	4.92

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries. <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

and financial reforms. In addition, the increase of domestic financing went along with a formidable decrease of foreign currency debt, albeit, the local domestic-currency debt market enlargement assumes public sector to seize its dependence from foreign markets concerning financing requirements. That means an abrupt fall of exchange-rate exposure and downturn in refinancing risks of government and private sectors.

There are three distinctive trends concerning the size, the issuance and the maturity of outstanding stocks of debt securities (Filardo et al., 2012). It includes official debt securities by EMEs (government and Central Banks), with their growth from 19% of GDP in 2000 to 29% of GDP in 2010; debt securities by Central Banks,

taking about 10–40% of GDP in some countries. It is worth saying, that many debt securities from Central Banks carry a short-term tenor and have less than one year as for an average maturity.

According to Mohanty (2012), transmission channels of monetary policy were reinforced with the help of existing recent initiatives to deepen bond markets. It shows that local authorities of EMEs tried to reduce the reliance on an indexed-debt and floating-rate debt, in another word, to raise financing through fixed rate debt and, hence, to diminish local economies' vulnerability to interest rate shocks. Moreover, improvements in market liquidity and the provision of a robust government yield curve take place. It can be seen in the growth of domestic corporate debt market, which can

Table 19
Trade flows of minerals.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
Export of minerals (2007)										
Brazil	1.95	12	2.78	8	24.76		0.41	30	10.38	2
Russia	0	64	0.3	30	9.22		0.67	21	0.41	26
India	1.5	4	0.72	12	3.19		0.11	38	5.26	2
China	0.51	27	13.45	3	29.63		0	124	9.29	4
Average	0.99	26.75	4.31	13.25	16.70		0.30	53.25	6.34	8.50
Export of minerals (2010)										
Brazil	2.21	9	0.96	20	17.64		0	94	10.5	2
Russia	0.18	32	2.94	8	15.74		0	79	0.37	27
India	0.76	5.00	0.46	11.00	1.92		0.06	43.00	3.48	2.00
China	0.32	39.00	9.71	4.00	18.35		0.00	138.00	15.30	1.00
Average	0.87	21.25	3.52	10.75	13.41		0.02	88.50	7.41	8.00
Export of minerals (2012)										
Brazil	1.72	11.00	0.88	22.00	16.26		0.00	73.00	8.81	2.00
Russia	0.07	48	0.39	31	3.99		0	79	0.61	20
India	1.75	6.00	2.21	4.00	5.73		0.01	84.00	6.57	2.00
China	0.45	34.00	12.12	3.00	10.70		0.00	130.00	16.49	1.00
Average	1.00	24.75	3.90	15.00	9.17		0.00	91.50	8.12	6.25
Average export of minerals										
Brazil	1.96	10.67	1.54	16.67	19.55		0.14	65.67	9.90	2.00
Russia	0.08	48.00	1.21	23.00	9.65		0.22	59.67	0.46	24.33
India	1.34	5.00	1.13	9.00	3.61		0.06	55.00	5.10	2.00
China	0.43	33.33	11.76	3.33	19.56		0.00	130.67	13.69	2.00
Average	0.95	24.25	3.91	13.00	13.09		0.11	77.75	7.29	7.58
Import of minerals (2007)										
Brazil	0.14	32	2.5	6	2.31		1.63	9	0.05	35
Russia	0.22	29	0.83	12	3.5		0.19	32	0.13	37
India	0.21	40	0.7	21	1.13		0.03	64	0.27	37
China	0.01	85	2.24	9	0.85		0	1.06	0.39	25
Average	0.15		1.57		1.95		0.46		0.21	
Import of minerals (2010)										
Brazil	0.19	38	6.43	3	3.93		0.02	52	0.24	36
Russia	0.54	25	1.66	13	8.43		0	64	0.08	46
India	0.12	46.00	0.87	22.00	1.48		0.02	70.00	0.37	34.00
China	0	88	1.48	10	0.6		0	117	0.25	28
Average	0.21	49.25	2.61	12.00	3.61		0.01	75.75	0.24	36.00
Import of minerals (2012)										
Brazil	0.20	36.00	9.53	3.00	7.38		0.06	45.00	0.33	30.00
Russia	0.19	36	0.52	21	2.95		0	70	0.01	59
India	0.11	46	1.36	18	1.81		0.01	79	0.15	43
China	0.02	76	1.54	14	0.6		0	117	0.25	28
Average	0.13	48.50	3.24	14.00	3.19		0.02	77.75	0.19	40.00
Average import of minerals										
Brazil	0.18	35.33	6.15	4.00	4.54		0.57	35.33	0.21	33.67
Russia	0.32	30.00	1.00	15.33	4.96		0.06	55.33	0.07	47.33
India	0.15	44.00	0.98	20.33	1.47		0.02	71.00	0.26	38.00
China	0.01	83.00	1.75	11.00	0.68		0.00	78.35	0.30	27.00
Average	0.16	48.08	2.47	12.67	2.91		0.16	60.01	0.21	36.50

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries. <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

price off the benchmark curve. That issue requires a lot of attention, because, when enlarging, the corporate debt market contributes to greater financial disintermediation towards direct financing (via financial markets) instead of indirect financing (via bank credit). It gives an avenue of matching savers and meets the demand in capital outside the banking system. Moreover, it leads to reduction of borrowing costs for domestic corporates. It should be mentioned, that increase in the number of asset values related to the GDP benefits firm funding, as such assets are subsidiary (collateral) for credit allocation.

Another reason for local bond markets to have such a great importance for monetary policy can be explained by their ability

to raise the scope for long-term domestic currency findings and reduce mismatches of currency and maturity. Issuing government bonds in domestic currency within local bond markets stimulates market infrastructure development and enhances liquidity. To say more, it can promote issuing more debt securities in domestic financial markets by a larger number of private firms. Being one of the few safe issuers of long-term debt, the government can provide some special benchmarks to encourage private issuance of longer-maturity debt securities. It can benefit the financing of long-gestation (infrastructure) projects' sake and involve more private firms into infrastructure development.

Table 20
General export.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
General export (2007) ^d										
Brazil	2.05	15	15.77	1	19.55		0.72	33	2.69	8
Russia	2.81	13	2.08	15	27.3		3.93	8	2.13	14
India	4.27	4	13.68	1	14.59		0.39	45	2.22	11
China	2.6	7	19.11	1	13.22		0.3	46	8.37	3
Average	2.93	9.75	12.66	4.50	18.67		1.34	33.00	3.85	9.00
General export (2010) ^d										
Brazil	2.34	7	9.75	2	16.95		0.75	33	3.61	6
Russia	2.44	15	3.01	11	28.15		2.17	17	3.15	10
India	2.92	7.00	10.70	2.00	13.15		0.28	50.00	2.18	11.00
China	2.46	8.00	17.99	1.00	13.26		0.19	55.00	7.67	3.00
Average	2.54	9.25	10.36	4.00	17.88		0.85	38.75	4.15	7.50
General export (2012) ^d										
Brazil	1.86	12.00	11.07	2.00	15.86		0.70	34.00	3.28	5.00
Russia	2.39	14	2.48	13	28.21		1.99	16	2.97	9
India	2.80	8.00	12.84	1.00	11.86		0.40	42.00	2.22	10.00
China	2.26	8.00	17.20	1.00	10.52		0.17	58.00	7.40	3.00
Average	2.33	10.50	10.90	4.25	16.61		0.82	37.50	3.97	6.75
Average general export ^d										
Brazil	2.08	11.33	12.20	1.67	17.45		0.72	33.33	3.19	6.33
Russia	2.55	14.00	2.52	13.00	27.89		2.70	13.67	2.75	11.00
India	3.33	6.33	12.41	1.33	13.20		0.36	45.67	2.21	10.67
China	2.44	7.67	18.10	1.00	12.33		0.22	53.00	7.81	3.00
Average	2.60	9.83	11.31	4.25	17.72		1.00	36.42	3.99	7.75

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

^d Export from BRIC countries.

Table 21
General import.

Partner	UK		US		EU ^c		CH		JP	
	Trade (%) ^a	Rank ^b	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank	Trade (%)	Rank
General import (2007) ^d										
Brazil	1.62	16	15.66	1	16.3		1.83	13	3.82	6
Russia	2.82	10	4.71	5	26.54		0.87	23	6.37	4
India	2.18	18	6.18	3	9.92		4.85	5	2.61	13
China	0.81	24	7.27	5	8.72		0.61	29	14.01	1
Average	1.86	17.00	8.46	3.50	15.37		2.04	17.50	6.70	6.00
General import (2010) ^d										
Brazil	1.75	13	15.07	1	15.17		1.59	15	3.86	6
Russia	2	13	4.3	7	24.29		1.06	25	4.48	4
India	1.48	21.00	5.46	5.00	8.71		6.34	3.00	2.36	13.00
China	0.81	26.00	7.36	5.00	9.02		1.23	20.00	12.66	1.00
Average	1.51	18.25	8.05	4.50	14.30		2.56	15.75	5.84	6.00
General import (2012) ^d										
Brazil	1.57	14.00	14.61	2.00	15.71		1.25	22.00	3.47	7.00
Russia	2.59	11	4.9	5	25.59		0.96	25	4.96	4
India	1.36	23.00	4.93	5.00	7.96		5.87	4.00	2.53	15.00
China	0.92	26.00	7.36	4.00	8.65		1.26	20.00	9.78	1.00
Average	1.61	18.50	7.95	4.00	14.48		2.34	17.75	5.19	6.75
Average general import ^d										
Brazil	1.65	14.33	15.11	1.33	15.73		1.56	16.67	3.72	6.33
Russia	2.47	11.33	4.64	5.67	25.47		0.96	24.33	5.27	4.00
India	1.67	20.67	5.52	4.33	8.86		5.69	4.00	2.50	13.67
China	0.85	25.33	7.33	4.67	8.80		1.03	23.00	12.15	1.00
Average	1.66	17.92	8.15	4.00	14.72		2.31	17.00	5.91	6.25

Source: Worldbank. WITS—World Integrated Trade Solution. Detailed Partner analyses: Partner's export or import to other countries, along with the various products exported to or imported from those countries <http://wits.worldbank.org/detailed-Partner-analysis-visualization.html>.

^a % of Total Trade Flow Selection along Partner Product Break down.

^b Rank of Trade Flow Selection along Partner Product Break down.

^c Germany, France, Italy, Spain, Netherlands, Belgium.

^d Import in BRIC countries.

Table 22
GDP in market prices (constant).

GDP at market prices (constant US \$)						
Country	2007	2008	2009	2010	2011	2012
Brazil	6.0%	5.0%	−0.2%	7.6%	3.9%	1.8%
Russia	8.5%	5.2%	−7.8%	4.5%	4.3%	3.4%
India	9.8%	3.9%	8.5%	10.3%	6.6%	5.1%
China	14.2%	9.6%	9.2%	10.6%	9.5%	7.8%

Source: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

This table reports GDP indices at market prices (constant US\$) for BRIC countries from 2007 to 2012. We tried to capture the dynamics of GDP indices and see the BRIC's development in the observed period.

Table 23
Policy announcements between June 2007 and June 2012—sample description by type of announcement.

	Expansionary monetary policy		Restrictive monetary policy		Monetary policy interventions
	IRC	LIQ+	CONTR	IRIU	Total
2007	4	17		24	45
2008	21	65	1	37	124
2009	8	55	7	42	112
2010	1	12	10	49	72
2011	4	12	7	45	68
2012		8	4	23	35
Total	38	169	29	220	456

This table lists all policy interventions collected over June 2007–June 2012. We report a sample description using the following microcategories: IRC indicates interest rate cuts; LIQ+ indicates liquidity provision, in both domestic or foreign currencies; CONTR indicates liquidity drain or end/reduction of monetary easing programs; IRIU indicates interest rates increased or unchanged.

Government securities markets' development can be reflected in investor base diversification, and lead to lower idiosyncratic shocks on bond prices. Such a base could bring more stability for institutional investors. The diminishing effect to interest rate can be caused by an increased appetite of foreign investors for government securities. The effect of foreign participation on interest-rate levels is studied by Pradhan et al. (2011) by means of a panel of emerging economies. He marks a better funding conditions for emerging economies and the existence of a high external demand in public debt. Moreover, domestic bond markets' development led to reduction in currency mismatches in many Emerging Market economies. According to Mehrotra, Miyajima, and Villar (2012), there was a sharp fall in currency mismatches with the most effect on Asia and Latin America since 2000. However, the majority of these countries are currently enjoying their net foreign currency asset positions. To say more, the more liquid and deeper the market is, the more it contributes to efficient resource allocation, when cutting its transaction costs and redirecting capital inflows for a more productive use. Focusing on our BRIC sample, there are other arguments under our results, strictly connected to specific local economic conditions.

We could observe a very interesting and dramatic turnaround in a very vulnerable economy as for crises and procyclical policies. Araújo et al. (2012), explain such flexibility of Brazil's policy by numerous critical policy reforms in 1990s and 2000s. According to Pesce (2012), Russia shows the lowest level of outstanding domestic government debt securities, as a percentage of GDP among emerging economies before 2010. Focusing on Asia, about 53% of official sector liabilities in China are short-term. India's public debt as percentage of GDP, has fallen sharply from 2008 to 2011. Lastly, the cost of public debt in Russia was particularly low in the same period and this inevitably entails a reduced sensitivity to short-term shocks. Danilova (2012) affirms that Russian Government borrowings are issued primarily via debt securities on domestic market. She suggests that in case of reorientation of public borrowings to the side of domestic markets, they will not bring a higher risk from external shocks and no additional risk to financial stability will be presented. Public debt market expansion will benefit the internal money market development. This is definitely another reason

that can justify the failure to react in the short term. PBC (2012) considers China's bond market as a growing one, including market liquidity increases and a great number of foreign investments, which can only positively influence the China's financial system. To be more precise, it all was done by getting from indirect to direct financing and risk diversification in banking system, financial costs reduction from the side of the real sector. Moreover, special tools to replenish Tier 2 capital were given to financial institutions, so their general conditions were improved. Due to a more diversified base, bond pricing mechanism became more market-oriented and it led to a better capital allocation and a higher financial market stability.

Generally speaking, BRIC countries are seen to improve their credit ratings and attract more investors in comparison with other countries and international asset allocation (Pesce, 2012). In summary, BRIC financial markets are capable to support their sustainability if improving market liquidity is maintained, supporting openness to trade and international capital flows, providing transparent and flexible monetary policies and control of countercyclical policy in order to stabilize their economies. When we consider the Central Banks' perspective, a shared responsibility in minimizing negative spillovers comes out. Financial literature concludes spillovers to be bigger if they are not truly anticipated. Indeed, any signaling channel have to be clearly understood by Central Banks, as they should be able to minimize the initial sources of global spillover shocks by means of clear communication of planned policy actions.

References

- Afonso, A., & Sousa, R. M. (2009). *Fiscal policy, housing and stock prices*. European Central Bank: working paper series (Vol. 990), pp. 1–45.
- Ait-Sahalia, Y., Andritzky, J., Jobst, A., Nowak, S., & Tamirisa, N. (2010). *Market response to policy initiatives during the global financial crisis*. National Bureau of Economic Research. Working paper 15809.
- Ait-Sahalia, Y., Andritzky, J., Jobst, A., Nowak, S., & Tamirisa, N. (2012). *Market response to policy initiatives during the global financial crisis*. *Journal of International Economics*, 87, 162–177.
- Aizenman, J., & Jinjarak, Y. (2011). *The role of fiscal policy in response to the financial crisis*. pp. 1–36. *World Economic Situation and Prospects*.
- Akyüz, Y. (2008). *Managing Financial Instability in Emerging Markets: A Keynesian Perspective*. pp. 1–61. *TWN Global Economy Series* 12.

- Araújo, C. H., Azevedo, C., & Costa, S. (2012). *Fiscal consolidation and macroeconomic challenges in Brazil*. pp. 91–102. BIS Papers, 91.
- Arora, V., & Cerisola, M. (2001). How does US monetary policy influence sovereign spreads in emerging markets? *IMF Economic Review*, 48(3), 474–498.
- Azariadis, C., Bullard, J., Singh, A., & Suda, J. (2016). *Incomplete credit markets and monetary policy*. http://www.pbcst.tsinghua.edu.cn/Upload/file/20160519/20160519131013_2949.pdf
- Baele, L. (2005). Volatility spillover effects in European equity markets. *Journal of Financial and Quantitative Analysis*, 40(02), 373–401.
- Bernanke, B. S., & Gertler, M. (1995). *Inside the black box: The credit channel of monetary policy transmission*. National Bureau of Economic Research 5146.
- Boehmer, E., Musumeci, J., & Poulsen, A. (1991). Event study methodology under conditions of event-induced variance. *Journal of Financial Economics*, 30, 253–272.
- Bredin, D., Hyde, S., Nitzsche, D., & O'Reilly, G. (2007). UK stock returns and the impact of domestic monetary policy shocks. *Journal of Business Finance & Accounting*, 34(5–6), 872–888.
- Cetorelli, N., & Goldberg, L. S. (2011). Global banks and international shock transmission: Evidence from the crisis IMF economic review. *IMF Economic Review*, 59(1), 41–76.
- Chatziantoniou, I., Duffy, D., & Filis, G. (2013). Stock market response to monetary and fiscal policy shocks: Multi-country evidence. *Economic Modelling*, 30, 754–769.
- Chen, J., Mancini-Griffoli, T., & Sahay, R. (2014). *Spillovers from United States Monetary Policy on Emerging Markets: Different This Time?* pp. 1–29. IMF Working Paper WP/14/240.
- Chen, S. S. (2007). Does monetary policy have asymmetric effects on stock returns? *Journal of Money, Credit and Banking*, 39(2–3), 667–688.
- Cheng, C., & Sun, M. (2013). *A financial crisis study: How fiscal and monetary policy affects the stock market returns considering the specific counties*. pp. 1–48. Lund University, Department of Economic Administration.
- Christiansen, C. (2007). Volatility-spillover effects in European bond markets. *European Financial Management*, 13(5), 923–948.
- Coulibaly, B. (2012). *Monetary policy in emerging market economies: what lessons from the global financial crisis?* International Finance Discussion Papers (Vol. 1042), pp. 1–29.
- Crowder, W. J. (2006). The interaction of monetary policy and stock market returns. *Journal of Financial Research*, 29, 523–535.
- Cummins, J. D., & Weiss, M. A. (2004). *Consolidation in the European insurance industry. Do mergers and acquisitions create value for shareholders?* pp. 217–258. Brookings-Wharton Papers on Financial Services.
- Danilova, E. (2012). *Fiscal policy, public debt management and government bond markets: Issues for Central Banks*. pp. 295–300. BIS Papers 67.
- Eichengreen, B., & Mody, A. (1998a). *What explains changing spreads on emerging-market debt: Fundamentals or market sentiment?* NBER Working Paper 6408. Cambridge, Massachusetts: National Bureau of Economic Research.
- Eichengreen, B., & Mody, A. (1998b). Interest rates in the North and capital flows to the South: Is there a missing link? *International Finance*, 1(1), 35–57.
- Filardo, A. J., Madhusudan, S. M., & Moreno, R. (2012). *Central bank and government debt management: Issues for monetary policy*. pp. 51–71. BIS Paper 67d.
- Fiordelisi, F., & Ricci, O. (2015). Whatever it takes: An empirical assessment of the value of policy actions in banking. *Review of Finance*, 1–27. <http://dx.doi.org/10.1093/rof/rfv053>
- Frankel, J. A. (2006). *The effect of monetary policy on real commodity prices*. National Bureau of Economic Research, 12713.
- Gambacorta, L., Hofmann, B., & Peersman, G. (2014). The effectiveness of unconventional monetary policy at the zero lower bound: A cross-country analysis. *Journal of Money, Credit and Banking*, 46(4), 615–642.
- Gomes da Silva, C., & Vilela Vieira, F. (2014). *Monetary and Fiscal Policy in the World Economy: Coordination Before and After the Financial Crisis*. pp. 1–21. Area macroeconomia aplicada 36, Encontro brasileiro de econometria.
- Harrington, S., & Shrider, D. (2007). All events induce variance: Analyzing abnormal returns when effects vary across firms. *Journal of Financial and Quantitative Analysis*, 42, 229–256.
- Jiménez, G., Ongena, S., Peydró, J. L., & Saurina, J. (2014). Hazardous Times for Monetary Policy: What Do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk-Taking? *Econometrica*, 82(2), 463–505.
- Kenourgios, D., Samitas, A., & Paltalidis, N. (2007). Financial crises and contagion: Evidence for BRIC stock markets. *EFMA Vienna meetings*, 1–36.
- Kolari, J. W., & Pynnonen, S. (2010). Event study testing with cross-sectional correlation of abnormal returns. *Review of Financial Studies*, 23, 3996–4025.
- Kurov, A. (2010). Investor sentiment and the stock market's reaction to monetary policy. *Journal of Banking and Finance*, 34, 139–149.
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35, 13–39.
- Mehrotra, A. N., Miyajima, K., & Villar, A. (2012). *Developments of domestic government bond markets in EMEs and their implications*. pp. 31–50. BIS Paper 67c.
- Mentz, M., & Schiereck, D. (2008). Cross-border mergers and the cross-border effect: The case of the automotive supply industry. *Review of Managerial Science*, 2, 199–218.
- Mikkelsen, W. H., & Partch, M. M. (1988). Withdrawn security offerings. *Journal of Financial and Quantitative Analysis*, 23, 119–133.
- Mishkin, F. (2008). Challenges for inflation targeting in emerging market countries. *Emerging Markets Finance & Trade*, 44(6), 5–16. Special Issue on Inflation Targeting Around the Globe: The Experience of Advanced and Emerging Market Economies.
- Mitreska, A., Kadievskaja Vojnovic, M., Georgievskaja, L., Jovanovic, B., & Petkovska, M. (2010). *Did the Crisis Change it All? Evidence from Monetary and Fiscal Policy*. National Bank of the Republic of Macedonia Working Paper (November 2010).
- Mohanty, M. S. (2012). *Fiscal policy, public debt and monetary policy in EMEs: An overview*. pp. 1–11. BIS Paper 67a.
- Montoro, C., Takáts, E., & Yetman, J. (2012). *Is monetary policy constrained by fiscal policy?* BIS Papers. Fiscal policy, public debt and monetary policy in Emerging Market economies (Vol. 67), pp. 11–30.
- People's Bank of China. (2012). *Monetary policy, fiscal policy and public debt management*. pp. 113–117. BIS Papers.
- Pesce, M. A. (2012). *Fiscal policy, public debt management and government bond markets: Issues for Central Banks*. pp. 1–352. BIS Paper 67e.
- Pradhan, M., Balakrishnan, R., Baqir, R., Heenan, G. M., Nowak, S., & Oner, C. (2011). *Policy responses to capital flows in emerging markets (No. 11/10)*. International Monetary Fund.
- Rey, H. (2015). *Dilemma not trilemma: The global financial cycle and monetary policy independence (No. w21162)*. National Bureau of Economic Research.
- Rigobon, R., & Sack, B. (2004). The impact of monetary policy on asset prices. *Journal of Monetary Economics*, 51(8), 1553–1575.
- Schularick, M., & Alan, M. T. (2012). Credit booms gone bust: Monetary policy, leverage cycles, and financial crises, 1870–2008. *The American Economic Review*, 102(2), 1029–1061.
- Shaghil, A., Coulibaly, B., & Zlate, A. (2015). *International Financial Spillovers to Emerging Market Economies: How Important Are Economic Fundamentals?* <http://dx.doi.org/10.17016/IFDP>. International Finance Discussion Papers 1135
- Vithessonthi, C., & Techarongrojwong, Y. (2013). Do monetary policy announcements affect stock prices in Emerging Market Countries? *Journal of Multinational Financial Management*, 23, 446–469.
- Zoli E. (2005). *How does fiscal policy affect monetary policy in Emerging Market Countries?* BIS Working Papers (Vol. 174), pp. 1–45.