

## Does U.S. macroeconomic news make emerging financial markets riskier?☆

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### Abstract

This study analyzes the impacts of US macroeconomic announcement surprises on the volatility of twelve emerging stock markets by employing asymmetric GJR-GARCH model. The model includes both positive and negative surprises about inflation and unemployment rate announcements in the U.S. We find that volatility shocks are persistent and asymmetric. Asymmetric volatility increases with bad news on US inflation in five out of the twelve countries studied and it increases with a bad news on U.S. unemployment in four out of twelve countries. Asymmetric volatility decreases with good news about US employment situation in eight countries out of twelve countries. Such markets become less risky with an unexpected decrease in unemployment rate in the US. Our findings are important for demonstrating that USA economic growth and employment situation has an impact on many emerging stock markets and that positive US macroeconomic news in fact make many emerging stock markets less volatile.

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### 1. Introduction

In the past two decades the world has witnessed great financial markets integration due to an overall globalized economic environment. Emerging financial markets have been

significantly influenced by changes occurring in developed economies.

On September 13, 2012 The Federal Reserve System (FED) announced that \$85 billion worth of treasury bonds and mortgage-backed securities will be purchased monthly to help the economy with the post-crisis recovery. On the next day foreign stock markets responded positively. The indexes of the British, Russian and Turkish stock markets, went up by 1.3%, 4.2%, and 1.3% respectively. The question is how much of these increases were due to the FED news.

The purpose of our study is to examine the impact of surprises about U.S. macroeconomic news announcements on emerging financial markets. More specifically, we measure the impacts of news' shocks on the conditional volatility of stock returns in twelve emerging economies, namely Brazil, India, Indonesia, Korea, Mexico, the Philippines, Poland, Russia, Singapore, Taiwan, Thailand and Turkey. To capture the

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asymmetric nature of the market impacts, we employ a joint asymmetric Generalized Autoregressive Conditional Heteroscedasticity (GJR-GARCH) model of daily stock returns and volatility incorporating with positive and negative surprises about US unemployment and inflation rate announcements.

Causes of stock market fluctuations have been a topic of great interest for researchers (Campbell & Shiller, 1988; Chen, Roll, & Ross, 1986; Fama & French, 1988). Economic news, particularly macroeconomic news, has been identified as one of the drivers of stock returns and causes of financial market fluctuations (Chen et al., 1986; Fama, 1981).

There are several studies that investigate the effect of macroeconomic announcements on the volatility of the domestic financial markets. Cutler, Poterba, and Summers (1988), who study the drivers of U.S. stock market, find that macroeconomic news does affect stock returns. Ederington and Lee (1993), on the other hand, find a significant effect of regularly scheduled US macroeconomic announcements on the volatility of the US treasury and foreign exchange futures. Andersen, Bollerslev and Chai (2000) in their study of the Japanese stock market volatility find that the Japanese macroeconomic news announcements explain only 0.1% of variation in the intraday volatility.

Given that most economies are integrated with each other, macroeconomic announcements of major economies such as European Union, Japan and the US do not only affect their domestic financial markets, but also the financial markets of other countries. There are several examples of empirical evidence in support of the above hypothesis. Hanousek, Kocenda, and Kutun (2009), who study the reaction of asset prices to macroeconomic announcements in Hungary, Czech Republic and Poland using intraday data<sup>2</sup> find that Czech stock market is impacted more by the U.S. macroeconomic announcements than by EU macroeconomic announcements. On the contrary, the Hungarian and the Polish stock markets are more affected by the EU macroeconomic news than US macroeconomic news.

Other studies investigate the impact of specific rather than general macroeconomic announcements. Hayo, Kutun, and Neuenkirch (2010) analyze the effects of Federal Open Market Committee (FOMC) communications about both, monetary policy and economic outlook, on European and Pacific equity market returns. Using a pooled GARCH model with country-specific fixed effects they find that both, changes in U.S. target rate and FOMC communications, significantly impact European and Pacific equity markets.

Continuing this line of research, Hanousek and Kocenda (2011) categorize EU and US macroeconomic announcements in four general classes, reducing the number from fifteen different classes previously analyzed, to study their impact on Czech, Hungarian and Polish stocks for the period from 2004 to 2007. The authors' findings suggest that the Czech, the Hungarian and the Polish stock markets have significant responses to EU macroeconomic news, but not to U.S.

macroeconomic news. However, these findings have been questioned by another study on the same stock markets. Using a GARCH model and data for the period 1999–2006, Buttner, Hayo, and Neuenkirch (2012) find that both EU and US macroeconomic news significantly affect financial sectors of the above three countries. The only difference in response of the three stock markets is that the impact of EU news dominates over the impact of US news on the Czech market.

Apart from the above listed country-specific studies, research on the impact of economic shocks of developed economies on stock prices of emerging markets has been limited. Various other studies are concerned with the globalized outreach of other macroeconomic changes. For example, Bekaert and Harvey (1997) study the role of economic integration as a cause for increasing volatility in emerging stock markets. They provide evidence of whether emerging market correlations with the world market increase after liberalization. De Santis and Imrahoglu (1997) add to the literature by studying emerging stock markets riskiness, quantified as stock market volatility, and find that except for Latin American emerging markets such as Brazil and Argentina risk is poorly reflected in stock market prices. Going beyond economic news, Onder and Mugan (2006) investigate the effect of unexpected political announcements in Turkey and Argentina. They analyze the impact of newspaper publications and find these do tend to increase the stock return volatility and trading volume on the Turkish and Argentinean stock markets. Basdas and Oran (2014) analyzed event studies on Turkey and found increased risk due to clustering of announcements.

Only a handful of studies differentiate between good and bad news. Cakan (2012) finds that there is a significantly positive relation between the long-term bond return and unemployment news during economic expansions in the US financial market. Both unemployment and inflation news surprises have impacts on volatility of the US stock market during economic recessions than during expansion. Meanwhile, Campbell and Hentschel (1992) and Engle and Ng (1993) establish for first time asymmetric effects by good and bad news. Recently Lee and Chang (2011) examine the asymmetric volatility in equity returns in response to monetary policy announcements on the stock market of Taiwan. They find that the significant asymmetric effects and asymmetric volatility movements could be due to an increase in financial leverage associated with declining firm market values. Further, differentiating between good and bad news, Hayo and Kutun (2005) are among the first researchers to examine the reaction of emerging countries stock market returns and volatility as a response to IMF stabilization measures during the Asian, Russian and Brazilian crises in the period 1997–1999. Their results suggest that both good and bad news affect stock returns. More specifically, the authors find that positive IMF news tends to increase stock returns and negative IMF news tends to decrease stock returns by roughly one percentage point.

One of closest studies to ours is Chiang and Doong (2001), who examine time-series behavior of stock returns for seven Asian stock markets. They find that higher average returns

<sup>2</sup> The period of the data is June 2, 2003–December 29, 2006.

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