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## US monetary policy and global financial stability



Eric Tong

*New Zealand Treasury, New Zealand*

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### ABSTRACT

Using a panel of 257 banks across 26 countries, this paper documents the influence of US monetary policy on risk-taking attitudes of banks around the world. It finds that an easing of US monetary policy increases banks' default risk. It further finds that the impact of US monetary policy is channelled through capital flows, rendering a financial system with capital controls less susceptible to US monetary policy's influence than a system that welcomes capital mobility. The results echo the endorsement by IMF of capital controls as a valid tool for domestic macroeconomic management. They also support the preemptive application of contractionary monetary policy on US's part to curb global credit bubbles in advance.

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### 1. Introduction

The “trilemma” is a keystone of modern international finance.<sup>1</sup> It is impossible to have, at the same time, fixed exchange rates, independent monetary policy, and perfect capital mobility. In a recent contribution, [Rey \(2013\)](#) asks if the secular trend towards global financial integration and the increasing influence of the financial sector in the international financial system has repudiated the trilemma. She argues that financing conditions in the main centres of global finance set the tone for the rest of the world, regardless of the exchange rate regime. More specifically, through its effects on global investors' risk appetite, changes in US monetary policy trigger surges in capital inflows to peripheral countries, inducing local banks to take on extra risk. In short, there is a global financial cycle underpinned by the federal funds rate.

Rey's perspective is shared by [Bruno and Shin \(2015\)](#). They find that regional banks in the periphery play a key role in the transmission of US monetary stance. Regional banks intermediate US dollars from wholesale banks in US and Europe to local borrowers. When US interest rate declines, local currency appreciates, giving the impression that local borrowers have become safer (as their assets are denominated in local currency). Banks lend more as a result. The initial impetus is reinforced by a mechanism in which extra lending dampens volatility, eliciting further lending and risk-taking, and thereby completing the circle.

In this paper, I complement the work of [Rey \(2013\)](#) and [Bruno and Shin \(2015\)](#) by documenting a negative correlation between the stance of US monetary policy and the default risk of non-US banks. Existing analyses have focused on identifying the credit cycle and its channels, but the implications for default risk have yet to be taken into account. Controlling for macroeconomic conditions, risk appetite, and bank-specific heterogeneity, I estimate that an easing of US monetary policy increases banks' default risks. The estimation is based on a panel set of 257 banks across 26 countries, over the period 2001–2013. A novel aspect of my analysis is the use of the probability of default metric developed by the National University

*E-mail address:* [Eric.Tong@treasury.govt.nz](mailto:Eric.Tong@treasury.govt.nz)

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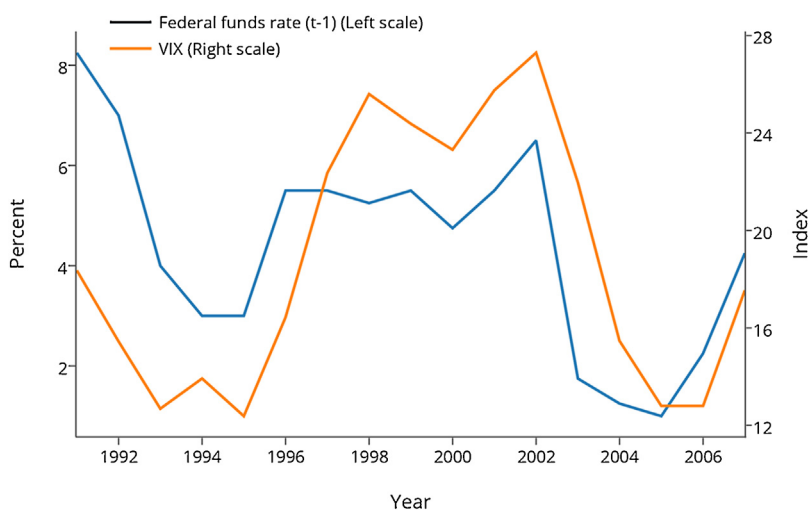


Fig. 1. Federal funds rate and VIX.

of Singapore Credit Research Initiative; the metric is shown to outperform credit ratings of other agencies, such as Moody's and Standard & Poor's (Duan and Van Laere, 2012).<sup>2</sup>

In the panel regression, I control for endogeneity among explanatory variables with the Arellano–Bover/Blundell–Bond dynamic panel estimators.<sup>3</sup> The negative relationship between US monetary policy tightness and default risks emerges as statistically significant across different set-ups, including alternative measures of banks' risk and monetary policy stance, different time-frames, and different subgroups as classified by the degree of capital controls. Since macroeconomic conditions and risk appetite – the two key factors that affect the measurement of default risks – are controlled for in the study, the negative correlation supports the notion that loose US monetary policy induces banks to take risks.

As a further exercise, I exploit the panel nature of the dataset, and perform a panel vector autoregression (PVAR). The impulse response functions reveal that impacts of US monetary policy are channelled through capital flows, which are themselves driven by the federal funds rate. A decrease in federal funds rate raises global risk appetite, increases capital inflows, and, ultimately, raises banks' default risk. In addition, I split banks by the degree of capital controls enforced in their countries, re-estimate the PVAR on both subgroups, and compare their impulse response functions. Capital controls appear effective in containing inflows, thus helping countries to preserve monetary independence. As such, these results corroborate the key insight of Rey (2013) on the changing nature of the trilemma.

The approach adopted in this paper closely follows that of Altunbas et al. (2014). These authors study how European banks' risk-taking is affected by changes in the monetary stance of the European Central Bank. While I use a similar estimation technique and independent variables, my dataset is different, as is my measure of banks' risk. Critically, I focus on the effects of US monetary policy, rather than those of regional monetary policies, as the authors have done. Indeed, in my analysis, local monetary policy loses statistical significance once US monetary policy is taken into account.<sup>4</sup>

The paper proceeds as follows. In Section 2, I document some stylised facts about the relationships among US interest rates, global risk appetite, capital flows, and banking crises. Section 3 describes the dataset and the econometrics methodology. Section 4 discusses the results. Section 5 describes points of contact with the literature, and a final section concludes.

## 2. Stylised facts

This section outlines a plausible causal relationship between the US policy interest rate, the risk appetite of global investors, capital inflows, and banking crises.

Fig. 1 plots the Volatility Index (VIX) compiled by the Chicago Board Options Exchange, and the 1-year lagged federal funds rate. VIX measures the implied volatility of the S&P 500 Index options. According to Bekaert et al. (2013), VIX reflects both the stock market uncertainty perceived by investors, as well as their aversion to it. Fig. 1 shows that the two series are positively correlated (correlation = 0.48). The correlation suggests that US monetary policy may have an influence over the risk appetite of investors.

<sup>2</sup> For example, in a sample that includes 4059 firms and 124 default events, the 1-year accuracy ratio of the S&P corporate rating is 77%, while that of the NUS's probability of default is 89%.

<sup>3</sup> Known also as system GMM.

<sup>4</sup> Our analysis is also related to the "hot money" flows hypothesis (Mckinnon, 2013; Korinek, 2011). The hot money hypothesis states that when other countries' interest rates are higher than that of the US, capital would flow from US towards these countries. As US dollar is the most popular currency and its circulation so wide, these US capital flows would lead to asset price appreciation in real estate and equities around the world.

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