



The impacts of standard monetary and budgetary policies on liquidity and financial markets: International evidence from the credit freeze crisis



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ABSTRACT

This paper evaluates the domestic and international impacts of lowering short-term interest rates and increasing budget spending on several indicators of liquidity, volatility, credit and economic activity. Data from the 2003–2011 period in the United States, the Euro zone and Canada were used to develop two SVAR models for assessing the national effectiveness and the international spillovers of monetary and budgetary policies during the credit freeze crisis. While monetary policies caused a temporary decrease in volatility and increase in liquidity in North American stock markets, the shocks were mainly domestic and ineffective at generating liquidity in the banking sector. In contrast, government spending shocks had a positive impact on credit and consumption, especially in Europe and Canada. Moreover, budgetary policies also had a positive international spillover effect on consumption and credit, especially for smaller economies such as Canada.

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1. Introduction

The recent credit freeze crisis provoked a global economic recession. The financial literature documents several causes for the crisis, namely low interest rates (Brunnermeier, 2009; Taylor, 2009), the perverse effects of securitization (Mian and Sufi, 2008; Brunnermeier, 2009) and misallocation of investment created by asymmetries of information (Diamond and Rajan, 2009). The effects of the mortgage crisis in the United States were limited at first, but soon all financial markets and the real economy were infected. By 2008, the credit freeze crisis had spread internationally, causing a dramatic global decrease in stock markets and a fall in consumer and firm confidence (Blanchard, 2009). Monetary and budgetary expansionary policies were adopted in order to stabilize the economies (Almunia et al., 2010). Central banks decided to decrease their interest rate² and the government implemented a fiscal

stimulus order³ to limit the real impacts of the financial crisis (Blanchard et al., 2010; Woodford, 2011). The objective was three-fold. First, governments supported the banking sector by buying illiquid assets, recapitalizing banks that could survive the crisis, and merging or closing banks that could not (Blanchard, 2009; Diamond and Rajan, 2009). Second, restore confidence in financial markets by injecting liquidity into the banking sector and other distressed sectors (Spilimbergo et al., 2009). Finally, interventions were designed to stimulate consumption and growth (Woodford, 2011; Coenen et al., 2012).

This paper investigates whether such standard monetary and budgetary policies have been effective in mending the financial meltdown caused by the credit freeze crisis, by looking at the impact of lowering interest rates and increasing government budget on key economic and financial indicators of liquidity, economic recovery and financial market stability. An autoregressive (SVAR) methodology that relies on Bayesian identification (Sims and Zha, 1998, 1999) is used to study and compare three countries/regions: the United States, the Euro zone and Canada during the 2003–2011 period. First, the performance of standard monetary and budgetary

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² For example, on 8th October 2008 six central banks worldwide (including the FED, the EBC and the Bank of Canada) reduced their interest rates by 0.5% in an unexpected shift.

³ This fiscal stimulus was esteemed as 2% of the G-20 GDP during 2009 by the World Economic Outlook.

domestic policies is evaluated. Second, the cross-country spillover effects of these economic policies in each of the three countries on the others' economies of the sample are identified.

This paper makes two main contributions to the financial literature. First, the existing economic literature on SVAR models and on the impact of monetary and budgetary policies focuses mainly on macroeconomic variables. However, it is important to consider the efficiency of these policies to restore the “credit channel,” especially in the first stage of the crisis – the illiquidity period (Blanchard et al., 2010). Consequently, this paper extends the existing empirical literature using the Structural Vector Autoregression model (SVAR) approach by considering the impact of standard economic policies on financial variables. We introduce measures of the banking sectors' liquidity as well as liquidity and volatility indicators for the financial markets. Banking and financial variables are still rarely incorporated into analyses, though doing so could help in evaluating a government's ability to stabilize the financial sector as well as the real economy. Our objective is to bridge this gap by introducing well-known financial indicators from the financial and asset pricing literature. This paper pays particular attention to international channels of transmission of liquidity in the banking sector and their modeling implications. Second, the impact of monetary and budgetary policies is not restricted to the domestic market. This paper examines whether a “remedy” consisting of standard monetary and budgetary policies can have an effect beyond its domestic market and “immunize” others as well. Another possible dynamic is a zero-sum game, where liquidity injected into one market prevents similar injections into other markets due to a worldwide shortage of funds. Thus, another aim of this paper is to assess whether a country's foreign policies have a positive, negative or neutral impact on the recovery of other countries, not only on their macroeconomic situation (Auerbach and Gorodnichenko, 2012a,b).

Our main results are as follows. First, lowering short-term interest rates proved ineffective in creating liquidity in the banking sector in all countries/regions considered. However, despite the low short-term interest rates during the study period, stock market volatility decreased and stock market liquidity increased when interest rates were lowered in North American stock markets. No such positive effect of monetary policy was found in Europe. Second, increasing government spending can have a positive effect on credit and consumption. While private consumption increased after budgetary shock in all countries/regions considered, the ratio of credit to GDP increased in Europe and Canada, but not in the United States. Finally, budgetary policies appear to have especially significant positive international spillovers in smaller countries such as Canada.

2. Literature review

In terms of monetary policies, the international evidence in the literature focuses on the macroeconomic effects of monetary policy often associated with variations in US interest rates. In particular, the analyses are concentrated on the effects of domestic and external monetary shocks on macroeconomic variables such as exchange rates, the CPI index and industrial production (Cushman and Zha, 1997; Kim and Roubini, 2000; Kim, 2001; Mongelli, 2002; Canova, 2005; Mackowiak, 2007). Concerning the international spillover of monetary policies, the real impact of the U.S. interest rates shock in the more advanced economies is limited even if these countries generally respond with the same policy (Kim and Roubini, 2000; Mackowiak, 2007).

The recent literature suggests that budgetary policies could be effective to ease the credit freeze crisis, even if increasing credit is primarily believed to be the job of monetary policy. Tax breaks

can strengthen consumers' and companies' financial health, which would in turn increase their access to credit as well as their credit score (Spilimbergo et al., 2009). Moreover, Blanchard et al. (2010) argue that the crisis forced governments and central banks to extend their liquidity support to non-depository institutions by intervening directly (with repurchase) and indirectly (by acting as collateral) in a broader range of markets than their traditional role as a last-resort lender with banks. Eggertsson and Krugman (2012) show that expansionary fiscal policy should be effective because it needs only to be temporary given that the deleveraging shock is inherently transitory. The impact of the fiscal stimulus and the multiplier effect is typically assessed via several macroeconomic variables, including private consumption, industrial production, GDP and unemployment (Blanchard and Perotti, 2002; Asdrubali and Kim, 2008; Mountford and Uhlig, 2009; Almunia et al., 2010; Auerbach and Gorodnichenko 2012a,b). With respect to the recent credit freeze crisis, the budgetary measures undertaken were different according to the countries that used spending increases and/or tax decreases. The evaluation of the direct real effects of the fiscal multipliers is the subject of considerable debate (Blanchard and Leight, 2013) and results depend on the type of fiscal measures implemented (Blanchard and Perotti, 2002; Almunia et al., 2010; Auerbach and Gorodnichenko 2012a,b; Coenen et al., 2012). Moreover, the literature presents evidence of international spillovers for fiscal policies depending on the trading links distance and size of the economies. Positive spillovers are particularly important for the nearer and smaller commercial partners and the Euro area (Bénassy-Queré and Cimadomo, 2012; Corsetti et al., 2010; Auerbach and Gorodnichenko, 2012c; Hebous and Zimmermann, 2013).

While this literature recognizes the importance of the banking and financial sectors in the context of the credit freeze crisis, the empirical assessment of policies relies almost exclusively on macroeconomic variables. Though the effects of liquidity and volatility are extensively reported in microstructure literature,⁴ empirical assessment of the relationship between financial liquidity, volatility, government policies and the real economy is still not well-developed. In general, a negative relationship between illiquidity and expected asset returns has been found (Amihud, 2002; Pastor and Stambaugh, 2003; Acharya and Pedersen, 2005; Bekart et al., 2007). In terms of government intervention, Afonso and Martins (2012) document changes in the US yield curve shape following a budgetary shock. Tirole (2008) shows it is possible for governments to provide outside liquidity to the financial sector, but doing so may accentuate the perverse effects of information asymmetries. Given that the connections between governments, central bank policies and liquidity are still not fully understood, we argue that the flexibility of the SVAR model is advantageous because it allows for a multivariate system where these variables interact together.

3. The structural vector auto-regression (VAR) model

The reduced form representation of VAR (q), where q is the number of lags and e_t is a white noise, is:

$$Y_t = \sum_{i=1}^q A_i Y_{t-i} + e_t \quad (1)$$

The variance-covariance matrix of the error vector has no restrictions, that is to say $E(e_t, e_t') = \Omega$ and $E(e_t) = 0$. Standard notation is used and L is the lag operator. Consequently, the VAR(q) model can be written as:

⁴ See for example, Kyle (1985), Easley and O'Hara (1987), Glosten and Harris (1988), Brennan and Subrahmanyam (1996) and Bernardo and Welch (2004).

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