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Central bank transparency and the interest rate channel: Evidence from emerging economies

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ABSTRACT

This paper highlights the essential role of central bank transparency in the transmission mechanism of monetary policy through the interest rate channel for emerging economies. It has been shown that when the central bank's monetary policy is more transparent, the transmission mechanism of that monetary policy is more effective. Highly transparent central banks do not need to be aggressive in their policy rate actions in order to more effectively produce output and price dynamics implied by monetary policy shocks.

1. Introduction

The transmission mechanism of monetary policy has attracted much attention in the last two decades, both from policymakers and those in the public sector, particularly because everyone realizes that an important relationship exists between monetary policy actions and the public's expectations. Despite the fact that every monetary policy impulse has a delayed impact on the economy, it is unclear exactly how monetary policy impulses are transmitted to the price level, or how real variables, such as output, develop in the short and medium terms. In this context, understanding how monetary policy affects the real economy is of great relevance, thus generating an important strand of literature that explores possible channels of monetary policy actions (inter alia: Brayton and Mauskopf, 1985; Bernanke, 1993; Gertler and Gilchrist, 1993; Kashyap and Stein, 1995; Reifschneider et al., 1999). More recent studies have focused mainly on the bank lending and housing market channels (Benito et al., 2006; Case and Shiller, 2003; Curdia and Woodford, 2009; Hatzius, 2005; Iacoviello and Minetti, 2008; Lown and Morgan, 2002; Papadamou and Siriopoulos, 2012).[1] Apart from the aforementioned studies, more attention has been given to how the level of bank competition may affect the transmission mechanism of monetary policy. In this context, Jeon et al. (2011) show that increased competition in the banking sector weakens the transmission of monetary policy. Gunji et al. (2009) examine the effect of the level of competition in the banking industry on monetary policy and, using disaggregated data, find that a positive monetary policy shock is inversely related to bank loans.

However, aside from the exploration of monetary policy transmission and its impact on inflation, as well as on output and the financial system, there are important policy implications for policymakers that have not yet been examined in the existing literature. In this paper, we attempt to highlight the essential role of central bank characteristics in the transmission mechanism of monetary policy. The discussion of how monetary policy transparency may affect economic efficiency through its possible transmission channels underlines an important issue that should be taken into account by policymakers when deciding how to set policy instruments in order to have an accurate assessment of the timing and effect of their policies on the economy. The investigation of such characteristics becomes more appealing to emerging economies' environment as such economies have shifted from less transparent to more transparent monetary policy actions and have consequently gained credibility.[2]

In this paper, using a vector autoregressive approach for panel data (PVAR), and by decomposing our sample of 23 emerging economies under low and high levels of central bank transparency, we emphasize the changes in the effects of monetary policy shocks on macroeconomic variables.

The remainder of the paper is organized as follows: Section 2 briefly describes the literature related to the problem investigated; Section 3 describes the methodology and data; Section 4 demonstrates how the transparency of the central banks affects the transmission mechanism

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[1] For a comprehensive survey, see Boivin et al. (2010).

[2] See Mohanty and Turner (2008) for recent developments concerning the monetary policy transmission mechanism in emerging market economies.

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of monetary policy through the interest rate channel; and Section 5 concludes.

2. The relevant literature & the economic issue investigated

The apparent move toward greater transparency in monetary policymaking practices has been supported by the fact that more transparency in policy actions is consistent with a stronger anchoring of inflation expectations (van der Cruijsen and Demertzis, 2007), with one exception: the achievement of accountability by delimiting the democratic deficit of having unelected officials in contact with monetary policy. In this context, a large strand of the related empirical literature emphasizes the beneficial role of transparency for macroeconomic performance (Cecchetti and Krause, 2002; Chortareas et al., 2002; Demertzis and Hughes-Hallet, 2007; Dincer and Eichengreen, 2007; Fatás et al., 2007; Kuttner and Posen, 1999; Spyromitros and Tuysuz, 2012), and asset price variability (Papadamou et al., 2014), but ignores its effect on the timing of the transmission mechanism, which is usually characterized by long, variable, and uncertain time lags.[3]

Liu et al. (2008) first studied an aspect of monetary policy transparency, namely policy transparency, and specifically examined how transparency affects the pass-through of official rates to retail rates. They found evidence that increased transparency can reduce the volatility of official policy rates and lead to more competition in the banking industry. As a result, future short-term rates become less uncertain, thereby enhancing the degree of the pass-through of official rates to retail rates. In this vein, Papadamou (2013) argues for the beneficial role of central bank transparency in the pass-through from policy rate to Treasury bond rates in the USA.

Our study takes a step forward by using a broader index of transparency (Eijffinger and Geraats, 2006), which is available for a large number of central banks, and attempts to shed light on the transmission mechanism of a transparent monetary policy in the real economy. We will base our analysis on the transmission channel of the interest rate. This channel can be explained through the effect of monetary policy on the real interest rate, assuming sticky prices over the short run period. In fact, a decrease in the central bank's policy rate translates into lower short-term real interest rates. As a result, the decline in real interest rates lowers the opportunity cost in terms of consumption and investment, which causes private domestic demand and therefore GDP to expand. Even if we do not assume sticky prices, the interest rate channel may still be active, since a decrease in the central bank policy rate leads to higher price levels and lower real interest rates, resulting in more spending and output. To summarize, central bank transparency could provide central banks with greater flexibility to stabilize economic shocks without risking higher short nominal rates. In this context, it is obvious that central bank transparency improves the effectiveness of the monetary policy transmission mechanism through the interest rate channel.

In this study, we consider that the effectiveness in the transmission mechanism of monetary policy can be summarized in three aspects: a) the size of the impact, b) the standard deviation (SD) around the mean response, and c) the time it takes to return to the baseline. By utilizing the recent development of quantitative measures for transparency, we show that the transmission mechanism of monetary policy through the interest rate channel is more effective when the central bank's monetary policy is more transparent.

3. Methodology and data

In order to investigate the traditional interest rate channel under periods of high versus low transparency in central banks, we used a panel-data vector autoregression (PVAR) methodology. Our sample consists of annual data for 23 countries[4] over the period 1998–2010, a period with significant changes in the level of central banks' transparency.

Firstly, we estimate the PVAR model, without decomposing periods, under high and low transparency. Impulse response analysis and variance decomposition are applied. Secondly, we apply the same analysis on a PVAR model that treats interest rate shock differently in periods of low versus high transparency. Therefore, our general first order PVAR model is defined as follows:

$$Z_{i,t} = \Gamma_0 + \Gamma_1 Z_{i,t-1} + f_i + p_t + e_{i,t}, \quad (1)$$

wherein the first version of the model $Z_{i,t}$ is a four variable vector {GDP, CPI, SR, LR}. GDP is the logarithm of the Gross Domestic Product in constant prices; CPI is the logarithm of the consumer price index; LR is the bank lending rate that usually meets the short- and medium-term financing needs of the private sector; and SR (the money market overnight rate) is our proxy for the monetary policy rate.

In our model, we apply the VAR procedure to panel data, allowing for 'individual heterogeneity' in the levels of the variables by introducing fixed effects, as denoted by f_i in Eq. (1). The well-known 'Helmert procedure' (see Arellano and Bover, 1995) is applied to remove only the forward mean (i.e., the mean of all the future observations available for each country-year).[5] Our model allows for country-specific time dummies p_t, which are added to Eq. (1) to capture aggregate global shocks (e.g., an oil shock) that may affect all countries in the same way. Subtracting the means of each variable calculated for each country-year eliminates these dummies. An impulse response analysis may reveal useful information about the transmission mechanism in our sample. More specifically, the impulse-response functions describe the reaction of one variable to the innovations in another variable in the system, while holding all other shocks equal to zero. The standard errors of the impulse response functions are calculated, and confidence intervals generated, using Monte Carlo simulations. Our attention is focused on all the variables' reactions to an interest rate shock. Therefore, it is assumed that the central banks have full control over the money market rate in that they can give an isolated, random shock to this variable, along with the shock identified by the Cholesky decomposition (Carlstrom et al., 2009). This is equivalent to transforming the system in a 'recursive' VAR for identification purposes. A major advantage of this methodology is that it does not impose theoretical priors on the model. However, some authors (Cooley and Leroy, 1985; Canova and Pina, 2005) argue that identification based on the Cholesky decomposition is not consistent with the DSGE models[6] commonly used by central banks. In order to address this weakness, a robustness test using different orderings in the Cholesky decomposition is employed in our baseline model.

Following the previous literature concerning monetary policy transmission mechanism, we assume that money market rate affects economic activity and prices with a lag, and these two variables affect it simultaneously. Output measured by GDP is likely to be the most exogenous country-level variable, while prices are likely to become flexible with some delay. The lending rate is assumed to be the most endogenous variable in the system, thus capturing all available information (i.e., all the contemporaneous shocks to other variables).[7]

Variance decompositions may also present useful information about our model. More specifically, this methodology shows the percentage of the variation in one variable explained by the shocks received by

[3] For a more detailed survey of the existing empirical literature on central bank transparency, see Eijffinger and Cruijsen (2007).

[4] The countries studied are: Argentina, Brazil, Bulgaria, Chile, China, Czech Republic, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Philippines, Poland, Russia, Slovak Republic, Slovenia, South Africa, Thailand, and Ukraine.

[5] This procedure is followed in order to avoid the mean-differencing procedure commonly used to eliminate fixed effects that would create biased coefficients. A Helmert procedure preserves the orthogonality between transformed variables and lagged regressors, and the latter can be used as instruments. The coefficients are estimated by system GMM.

[6] Sign restrictions have been adopted in a wide range of DSGE models by Canova and De Nicolo (2002), Benati and Surico (2009), and in the context of GVAR by Chudik and Fidora (2011), while in the PVAR context by De Graeve and Karas (2012).

[7] The order of LR and SR variables in our PVAR model does not affect our results.

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