Journal of Financial Stability 18 (2015) 78–90

Contents lists available at ScienceDirect

Journal of Financial Stability

journal homepage: www.elsevier.com/locate/jfstabil

Monetary policy and financial stability in a banking economy: Transmission mechanism and policy tradeoffs

Emanuel Barnea[a], Yoram Landskroner[b,*], Meir Sokoler[c]

[a] Research Department, Bank of Israel, Israel
[b] College for Academic Studies and Hebrew University of Jerusalem, Israel
[c] IMF External Advisor, Israel

ARTICLE INFO

Article history:
Received 13 February 2014
Received in revised form 2 October 2014
Accepted 10 March 2015
Available online 19 March 2015

Keywords:
Inflation target
Financial stability
Policy tradeoffs and monetary policy transmission mechanism

ABSTRACT

The 2008 global financial crisis demonstrated that monetary policy and financial stability policy are more highly interrelated than previously thought. This paper analyzes the interactions between these policies using a non-linear overlapping-generations model with financial frictions in the form of banking financial intermediation. The paper embeds negative externalities due to contagion effects in physical investments which creates the need for financial stability policy. We show how the monetary policy transmission mechanism depends on financial stability policy tools as well as on regulatory and institutional constraints.

We find policy tradeoffs in trying to accomplish both monetary and financial stability targets. The central bank must take these tradeoffs into account when selecting the tools in its policy toolbox. Another important finding is the interchangeability of price stability and financial stability policy tools.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

The 2008 global financial crisis refuted views held prior to the crisis on the goals and tools of monetary policy and their relationship to financial stability. The key policy interest rate (KPR) was regarded to be *orthogonal* to financial stability policy tools, such as liquidity and capital adequacy requirements. The conventional view prior to the crisis was also that "there is no general tradeoff between monetary and financial stability" (Issing, 2003). Similarly, it was argued that a central bank "that was able to maintain price stability would also incidentally minimize the need for lender-of-last-resort" intervention (Schwartz, 1998).

The motivation for this paper stems from the global financial crisis which demonstrated the need to deepen the understating of the complex connections between monetary policy and the financial system stability (Adrian and Shin, 2010). The words of Volcker (2010) echo what is now the prevailing position currently held by economists and financial regulators: "Monetary policy and concerns about the structure and condition of banks and the financial system more generally are inextricably intertwined".

A second motivation for exploring the intricacies of the interaction of monetary and financial stability policies is the reported significant weakening of the pass-through between the short-term central bank rate and banks' rates in many counties (e.g. Aristei and Gallo, 2014). For a review of the literature on the interaction between macro-prudential and monetary policies see Angelini et al. (2012). We analyze the interchangeability of the policy tools in implementing the policies. To that end we construct a general equilibrium model with financial frictions in the form of a banking system, where endogenous systemic risk exists.

In this paper we study the interaction of monetary and financial stability policies where central bank operations are carried out solely through the banking channel.[1]

The groundbreaking works by Bernanke and Bilnder (1988) and Bernanke et al. (1999) introduced credit market frictions into monetary policy models. More recently, Curdia and Woodford (2011), Gertler and Kiyotaki (2011), to mention a few, incorporated financial intermediation into a general equilibrium model, along with spreads between lending and borrowing rates, analyzing their

---

* Corresponding author at: School of Business Administration, Hebrew University of Jerusalem, Mt. Scopus, Jerusalem 91905, Israel. Tel.: +972 522632369; fax: +972 25341604.
E-mail address: Yoram.l@huji.ac.il (Y. Landskroner).

[1] Two variants of the credit channel of monetary policy transmission can be distinguished: a narrow bank lending channel, measured in terms of the supply of bank loans, and a broad credit channel focusing on the external finance premium in credit markets (Hendricks and Kempa, 2011).

http://dx.doi.org/10.1016/j.jfs.2015.03.002
1572-3089/© 2015 Elsevier B.V. All rights reserved.

impact on optimal monetary policy. Our framework enables us to highlight the tradeoffs between monetary policy and financial stability policy and derive the effects of financial stability tools on the effectiveness of monetary policy. While they may be complementary, conflicts often exist.

At times, financial stability instruments, such as capital requirements, may become an effective substitute for the KPR in affecting the price and availability of credit (Cecchetti and Kohler, 2014). At the same time, situations may arise in which the fine tuning of the KPR in response to adverse bank liquidity shocks is a more appropriate financial stability policy response than bank recapitalization (Diamond and Rajan, 2012).

In the spirit of the New Monetarist approach (see Lagos and Wright, 2005; Williamson, 2012, to mention few),[2] we employ a non-linear overlapping-generations model (OLG) model with agent heterogeneity which enables us to examine intertemporal exchange.[3] The OLG model enables us to derive analytical solutions, facilitating comparative static analysis and simulations in the face of non-linearities.[4] Our framework shares features found in Diamond and Dybvig (1983). In our model, however, market interest rates are determined endogenously.

In our model, the central bank simultaneously pursues both price and financial stability. It implements monetary policy by using the KPR as its primary policy instrument. Financial stability policy is implemented primarily through capital adequacy requirements. We explicitly take into account the constraint that central bank resources are limited.

The banking system in our model is subject to policy constraints imposed by the central bank. The latter provides collateralized loans and partial deposit insurance to the banks. In our economy there are two types of households ("rich" and "poor"), which can take advantage of two channels to transfer purchasing power to next period: nominal bank deposits and physical investment.

Our paper fills several gaps left in the literature. Due to its rich set up we can address some unresolved issues encountered in previous papers dealing with the interaction of monetary policy and financial stability. First and foremost our model provides a detailed structure of the banking system. This structure includes constraints imposed by the central bank, a bank-initiated leverage (risk management) constraint and specification of the market structure. To the best of our knowledge no previous paper has simultaneously modeled these factors. This allows us to more thoroughly explore the "black box" of the transmission mechanism from the KPR to bank interest rates and to explicitly identify the interaction between monetary and financial stability policy. Previous papers have opted for more simplistic frameworks, lacking detail in their description of the financial sector, rendering them unsuitable for a comprehensive policy analysis.[5]

Second, is the way systemic risk is integrated in the system via a negative externality arising from the expected return on the physical investment. This externality is a result of contagion associated with the scale of investment projects. It creates a wedge between the risk of investment as perceived by individuals and banks and the actual aggregate level of risk. It is this aggregate risk which defines the systemic risk taken into account by the central bank when implementing its policies. We specify an explicit measure of financial stability that is endogenous and measured by the probability of failure of the banking system. Previous papers have either ignored systemic risk entirely in their models or have incorporated it in an indirect and not fully satisfactory way. For example, the spread between the KPR and the lending rate has been used as a proxy for financial friction as well as a measure of financial stability to which the central bank reacts (Curdia and Woodford, 2011; Woodford, 2012; Cecchetti and Kohler, 2014) do not consider deposit interest rates at all.

Third, our structured model is well suited to analyze the policy reactions of the central bank to shocks and the differential interactions of monetary and financial policies in wake of different types of shocks. Angelini et al. (2011) also analyze the policy implications of supply versus financial shocks in a less detailed model.

These features enabled us to derive results that contribute to the literature and have important policy implications. Our main contributions are: (i) we trace and specify a tradeoff between monetary and financial stability policies. (ii) We find the extent to which monetary and financial stability tools are interchangeable in pursuing their respective objectives. (iii) Our model enables us to untangle the various links of the monetary transmission mechanism. These findings deepen our understanding of how the monetary transmission mechanism operates, and enables us to suggest ways to mitigate impairments to it. The plan of the paper is as follows: Section 2 presents the stochastic OLG model, followed by an analysis of the equilibrium characteristics of the model in Section 3. The following section deals with the effectiveness of monetary policy and the transmission mechanism and in Section 5 we simulate our model to study the interaction between monetary policy and financial stability policy under various shock scenarios. Conclusions are drawn in Section 6. The derivation of the consolidated budget constraints of individuals in our model appears in Appendix A, followed by the specification of the banks' expected profit functions (Appendix B). The next appendix illustrates the characteristics of the model when a semi-log linear utility function is assumed. Proofs of the propositions and lemmas are provided in Appendix D.

2. The model

We consider an OLG model in an economy consisting of households, commercial banks and a central bank (henceforth CB). There exists a storable good where in each period this good can either be consumed at a price of p_t or be stored as a capital good. In each period t, there are markets for the consumption good, commercial banks deposits and loans, capital goods, and CB collateralized loans to commercial banks.

2.1. Households

A new generation of N young people is born every period t and lives for two periods. There are two types of individuals who are identical except for their initial endowments. Half of the young individuals are of type-1 and the other are of type-2. Young individuals of type j, $j = 1, 2$, are each endowed with w_j units of the storable good, where $w_1 < w_2$. Old individuals (in their second period of life), rely in their consumption on the returns on assets that they had accumulated when they were young as well as on commercial bank dividends that are evenly distributed among them at the beginning of the period.

---

[2] These models assume heterogeneity among economic agents and multiple sub-periods within each time period, in which restrictions are placed on undertaking exchange activities within a given sub-period.

[3] Non-linear models are crucial in current research-based policy regarding the link between macro-prudential and monetary policies.

[4] Although OLG models have been used to explain long-term issues, such as intergenerational transfers and social security arrangements, they have also been used to explain shorter-term phenomena, such as transient bubbles (Martin and Ventura, 2012) and the affects of noise trading on stock prices (DeLong et al., 1990).

[5] See for example Brunnermeier and Sannikov (2011).

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات