



# Banking and interest rates in monetary policy analysis: A quantitative exploration<sup>☆</sup>

Marvin Goodfriend<sup>\*</sup>, Bennett T. McCallum

*Carnegie Mellon University, Tepper School of Business, Pittsburgh, PA 15213, USA*

Received 1 May 2007; received in revised form 15 May 2007; accepted 6 June 2007

Available online 20 June 2007

---

## Abstract

The paper reconsiders the role of money and banking in monetary policy analysis by including a banking sector and money in an optimizing model otherwise of a standard type. The model is implemented quantitatively, with a calibration based on US data. It is reasonably successful in providing an endogenous explanation for substantial steady-state differentials between the interbank policy rate and (i) the collateralized loan rate, (ii) the uncollateralized loan rate, (iii) the T-bill rate, (iv) the net marginal product of capital, and (v) a pure intertemporal rate. We find a differential of over 3% p.a. between (iii) and (iv), thereby contributing to resolution of the equity premium puzzle. Dynamic impulse response functions imply pro- or counter-cyclical movements in an external finance premium that can be of quantitative significance. In addition, they suggest that a central bank that fails to recognize the distinction between interbank and other short rates could miss its appropriate settings by as much as 4% p.a. Also, shocks to banking productivity or collateral effectiveness call for large responses in the policy rate.

© 2007 Elsevier B.V. All rights reserved.

*Keywords:* Money and banking; External finance premium; Collateral; Interest rates; Equity premium

---

<sup>☆</sup> This paper was prepared for presentation at the Carnegie–Rochester Conference meeting of November 10–11, 2006, in Pittsburgh, PA. The authors are grateful to Stephen Cecchetti, Simon Gilchrist, Allan Meltzer, and Huw Pill for helpful comments.

<sup>\*</sup>Corresponding author.

*E-mail address:* [marvingd@andrew.cmu.edu](mailto:marvingd@andrew.cmu.edu) (M. Goodfriend).

## 1. Introduction

Recent years have seen great changes in monetary policy analysis, as economists in central banks and academia have come together on an analytical approach of the general type discussed by Rotemberg and Woodford (1997), Goodfriend and King (1997), Clarida et al. (1999), Woodford (2003), and many others. This approach is characterized, as argued by McCallum (2002), by investigations of alternative rules for monetary policy conducted in models that are based on private-agent optimizing behavior but with specifications that include features designed to lend empirical veracity, thereby aspiring to be structural and accordingly usable (in principle) for policy analysis. Despite a widespread belief that this approach is fundamentally sound, and that recent work represents a major improvement over the practice typical 15 or 20 years ago, there are some reasons for unease. Prominent among these are the absence from the standard framework of any significant role for monetary aggregates, financial intermediation, or distinctions among various short-term interest rates that play different roles in the transmission mechanism.

A recent paper by Goodfriend (2005, p. 277) develops a qualitative framework designed to overcome these particular weaknesses. Specifically, it “... integrates broad money demand, loan production, asset pricing, and arbitrage between banking and asset markets” and illustrates the logical necessity (in principle) for monetary policy to take account of—among other things—the difference between the interbank rate of interest (used as the policy instrument) and other short rates including the government bond rate, the collateralized bank loan rate, the (nominal) net marginal product of capital, and a shadow nominal intertemporal rate—each of which differs from the others. As noted by Hess (2005), however, Goodfriend (2005) provides no evidence or argument concerning the quantitative importance of these features and distinctions. The primary objective of the present paper, accordingly, is to formulate a quantitative version of Goodfriend’s model, develop a plausible calibration, and utilize this model to assess the magnitude and policy relevance of the effects and distinctions just mentioned for steady state interest rates and aggregate variables, and for dynamic monetary policy simulations. Among other things, the paper will investigate the role of the “external finance premium—EFP” that is emphasized in the prominent work of Bernanke et al. (1999). It will do so using a model in which the EFP is endogenously determined by no-arbitrage relationships in an environment in which loan production depends upon both collateral and loan-monitoring inputs, with capital serving less efficiently as collateral than bonds, while bank-deposit money is crucial for facilitating transactions. In this setting, the EFP may move either procyclically or counter-cyclically in response to shocks, depending upon parameters of the model.

How does the present paper compare with previous efforts to outline and quantify the role of financial intermediation (banking) in monetary policy? Probably the most prominent line of work of this type is that begun by Bernanke and Gertler (1989, 1995) and continued by Bernanke et al. (1999), but the literature also includes notable contributions by Kiyotaki and Moore (1997), Carlstrom and Fuerst (1997), Kocherlakota (2000), Cooley et al. (2004), and others. It is apparently the case, however, that in all of these studies the models are fundamentally non-monetary—i.e., do not recognize the existence of a demand for money that serves to facilitate transactions.<sup>1</sup> This omission could

---

<sup>1</sup>Diamond and Rajan (2006) is a noteworthy qualitative study of the role of banking in monetary policy.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

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