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# The role of financial intermediaries in monetary policy transmission <sup>☆</sup>



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## ABSTRACT

The recent financial crisis has stimulated theoretical and empirical research on the propagation mechanisms underlying business cycles, in particular on the role of financial frictions. Many issues concerning the interactions between banking and monetary policy forced policy makers to redefine economic policies, and motivated macroeconomists to focus on the implications of financial intermediation constraints for asset price fluctuations, the behavior of non-financial firms, households, governments and in turn for real macroeconomic performance. This paper surveys research on the role of financial intermediaries and financial frictions in the transmission of monetary policy and discusses how to design both the new banking regulatory and supervisory structures and monetary policy in order to stabilize the economy. It also serves as an introduction to this special issue.

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## 1. Introduction

The recent crises have reignited the discussion on the role of financial intermediaries in monetary policy transmission, both in the presence of weak and fragile banks as in light of monetary policy at the zero-interest bound. While a growing theoretical and empirical literature has shown the relevance of financial frictions and consequently financial intermediaries in propagating monetary policy decisions to the real economy, the recent crisis has provided impetus for additional research, both explaining the build-up of risks during the Great Moderation as well as the functioning of monetary policy during crises and the recovery. One of the lessons of the recent experience is that financial and monetary stability cannot necessarily be targeted independent of each other and that monetary policy transmission mechanisms very much depend on the state of the banking system.

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This special issue brings together a set of theoretical and empirical papers that advance the literature on financial intermediaries as a monetary policy transmission channel. The theoretical papers extend existing Dynamic Stochastic General Equilibrium (DSGE) models, explicitly modelling financial frictions, and use the analysis to gauge the interaction between monetary and financial stability. The empirical papers use an array of different data sources and methodologies to explore the role of financial frictions in the run-up to and during the crisis.

While the traditional literature on financial intermediaries as monetary transmission channel has focused on the impact of monetary policy decisions on overall loan supply (exploiting frictions on banks' funding models or agency problems between lenders and borrowers) the post-crisis literature has focused on the risk-taking channel of monetary policy, which postulates that low interest rates lead to lending to riskier borrowers and lower risk premiums. This channel most clearly highlights the close interaction between financial and monetary stability. The macroeconomic literature using DSGE models has modelled the financial sector mostly as a pass-through mechanism, not taking into account financial frictions and their role as amplifier of monetary policy decisions. Post-crisis, there has been an attempt in this literature to incorporate endogenous financial intermediation and thus model the interaction between financial frictions and monetary policy. Most importantly, the recent crisis experience has incentivized financial and macro-economists to bridge the gap between the two strands of economics, where the former have traditionally focused on financial institutions but without explicitly considering the interaction with macroeconomic developments, while the latter have focused on macroeconomic policies while ignoring their interaction with the financial system. While macro- and financial economists will continue using different methodologies and techniques, as can also be seen in this special issue, there are attempts to bring these two strands of economics closer together.

This introductory chapter sets the stage by surveying the recent theoretical and empirical literature on banking and its role in monetary policy transmission and recent theoretical and empirical advances in DSGE models with a banking sector. Specifically, we discuss both the traditional literatures and how recent advances, motivated and informed by the crisis, have pushed this literature forward. We link the discussion on papers included in this special issue to the different strands of literature they contribute to and link them to other recent studies. [Gertler and Kiyotaki \(2010\)](#), [Shin \(2010\)](#), [Quadrini \(2011\)](#), [Brunnermeier et al. \(2012\)](#), and [Smets \(2013\)](#), inter alia, also provide extensive surveys about the role of the financial system and of financial frictions for economic outcomes. [Brunnermeier et al. \(2012\)](#) discuss how financial frictions can propagate and amplify shocks at the macro-level, while [Quadrini \(2011\)](#) takes a different perspective and discusses the role of credit and financial shocks as a source of business cycle fluctuations in general equilibrium models. [Shin \(2010\)](#) focuses on the link between securitization, financial innovation and financial stability. [Gertler and Kiyotaki \(2010\)](#) study the real consequences of a breakdown in financial intermediation and [Smets \(2013\)](#) discusses the joint design of monetary and macro-prudential policies.

The remainder of this paper is structured as follows. [Section 2](#) reviews the theoretical literature on banking and its role in the transmission of monetary policy, including recent advances, while [Section 3](#) focuses on empirical contributions in this literature. [Section 4](#) discusses theoretical developments of DSGE models with financial frictions, while [Section 5](#) discusses the empirical performance of DSGE models with banking. [Section 6](#) relates this recent literature to the current policy debate and looks forward to new research challenges.

## 2. Recent theoretical literature on banking and its role in the transmission process of monetary policy

The traditional view of monetary policy transmission has focused on the interest rate channel and the substitutability of different asset classes by investors, including banks, as discussed, for example, by [Tobin \(1969\)](#). Through open market operations, the central bank can influence reserve holdings by banks. A tightening of reservable deposits will result in an increase in the interest rates on accounts not subject to reserve requirements, which in turn translates into higher lending interest rates and thus affects the real economy. The condition for this channel to work is that prices do not adjust immediately to changes in money supply. The traditional view of monetary policy transmission views financial intermediaries more as a pass-through mechanism but not as an actor in itself.

The credit channel of monetary policy focuses on interest rate changes affecting loan supply through credit market frictions with an amplifying effect. It thus builds on a very rich literature on the role of financial frictions and financial intermediaries in the real economy and over the business cycle. Starting with [Bernanke and Gertler \(1989\)](#), this literature has shown that information asymmetries between borrowers and lenders and the resulting agency problems translate into a wedge between the cost of external and internal finance. The size of the external finance premium depends on the quality of the balance sheet of the borrower and varies with the level of interest rates as set by monetary authorities. Amplification comes through a financial accelerator effect. Namely, as the balance sheet quality improves, due to better economic conditions, the external finance premium declines. This allows the increase in borrowing and investment, which feeds the boom. In this setting a crisis can be generated by a decline in asset values, which deteriorates the conditions of the balance sheet of borrowers, leading to an increase in the external finance premium and hence to lower investment and to reduced economic activity.

The credit channel literature distinguishes between two different mechanisms, the firm balance sheet and the bank lending channels. Through their impact on borrowers' profitability, asset value and thus collateral, interest rate changes directly affect borrowers' ability to borrow (balance sheet effect). The supply of loanable funds is affected if banks cannot

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