



On the firm-level implications of the Bank Lending Channel of monetary policy

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ABSTRACT

Standard models of the Bank Lending Channel are unable to yield predictions on the differential impact of monetary policy shocks over heterogeneous borrowers. This inability has made researchers doubt about the role played by bank credit as a transmission mechanism of monetary policy. Moreover, it has made them reject those models in favor of the Balance Sheet Channel as a transmission mechanism. In this paper we show that an “augmented” version of the Bank Lending Channel that allows for firm heterogeneity (but without any role for firms’ balance sheets) reproduces well the dynamics of firm-level data. Our contribution is to show that it is not clear that the Bank Lending Channel should be rejected in favor of alternative theories on the basis of its inability to reproduce firm-level data. Thus, there is additional room for econometric tests that can provide support to the Bank Lending Channel.

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1. Introduction

The theory of the *Bank Lending Channel* holds that the transmission mechanism of monetary policy shocks operates through adjustments to the assets side of banks’ balance sheets (Bernanke and Blinder, 1988; see also Kashyap and Stein, 1993; Stein, 1998). The fall in bank reserves that follows a monetary policy contraction directly limits banks’ access to loanable funds, which makes the supply of bank credit fall. Two necessary conditions must be met for this channel to be operative. First, banks must find it costly to use alternative non-reservable sources of funds and/or to re-balance their asset portfolio after the change in reserves. Second, bank borrowers must not be able to perfectly substitute bank loans with alternative financing methods.

There are important reasons to believe that these two conditions hold in the US economy.^{2,3} However, some authors have raised the concern that the Bank Lending Channel hypothesis—in its standard formulation—cannot account for the

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² Kashyap and Stein (1993, 2000) offer evidence showing that although banks have access to alternative sources of loanable funds such as CDs, this is not enough for them to be able to completely overcome the liquidity shock caused by a monetary policy tightening. For that to be the case, banks should face a perfectly elastic supply of non-deposit funding. Bernanke and Gertler (1995) show that the interest rate spread between CDs and T-bills rises during a monetary policy contraction, which means that the marginal cost of funds must be increasing as banks start accessing the market for CDs (i.e. they show that the supply of non-deposit funding is not perfectly elastic).

³ Among others, Bernanke and Gertler (1995) contend that this mechanism is likely to have decreased in importance in the US after the 1980s. Financial deepening has increasingly allowed companies to access open-market credit at the same time that it has made easier for banks to raise non-deposit financing, such as certificates of deposit, not subject to reserve requirements. However, Kashyap and Stein (1993) show that in spite of the rapid

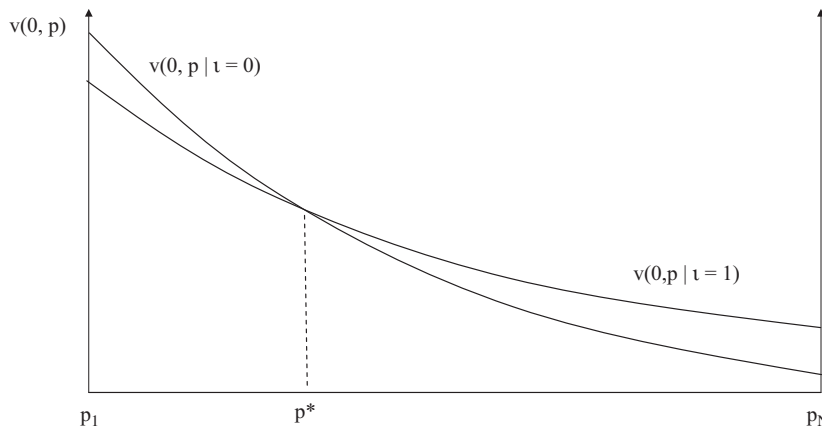


Fig. 1. Firms' choice of financing method. Note: v denotes the firms' value function as in Eq. (1). $v(0, p | \tau = 0)$ is the value of the firm when it chooses bond financing; $v(0, p | \tau = 1)$ is the value of the firm in the case of bank financing.

rich dynamics of firm-level data (see Gertler and Gilchrist, 1994; Oliner and Rudebusch, 1995, 1996a). This standard formulation of the bank lending channel (as in Bernanke and Blinder, 1988; Stein, 1998 and the literature that followed) assigns a role to banks'/lenders' heterogeneity, but not to borrowers' heterogeneity in the transmission of monetary policy.

On the contrary, an alternative credit-based explanation of the real effects of monetary policy, the *Balance Sheet Channel*, has been shown to match well the dynamics of firm-level data on sales, short-term debt and financing choices between open-market credit and bank credit (see Gertler and Gilchrist, 1994; Oliner and Rudebusch, 1996a, 1996b; Bernanke et al., 1996).

Therefore, the empirical literature on the credit channels of monetary policy transmission has recently changed its focus of attention towards the Balance Sheet Channel. This theory assigns no special role to bank credit in the transmission of monetary policy. Rather, it is borrowers' balance sheets that limit their access to external financing. Due to informational asymmetries between borrowers and lenders, borrowing usually requires the former to pledge their net worth as collateral. As a result, a contractionary monetary policy that adversely affects firms' balance sheet positions also limits their access to all forms of credit.

Furthermore, if one believes that small firms have a weaker net worth position in their balance sheets compared to larger firms, then the following key predictions of the Balance Sheet Channel have been confirmed in the data:

1. The financing mix used by firms (defined as the ratio of bank credit to total short-term external financing) does not respond to monetary policy shocks, for neither small nor large firms (see Oliner and Rudebusch, 1996a, Fig. 1, p. 306 and Gertler and Gilchrist, 1994, Fig. 3, p. 322).
2. The financing mix for the economy as a whole does change after a monetary policy shock, but only due to compositional effects: small firms that rely disproportionately more on bank credit are more severely affected by the policy shock than large firms (see Oliner and Rudebusch, 1996a, Fig. 1, p. 306).
3. After a monetary contraction there is a "Flight to Quality", i.e. a general redirection of all forms of credit from small firms towards large firms (see Gertler and Gilchrist, 1994, Fig. 5, p. 330; Bernanke et al., 1996, Fig. 1, p. 8).
4. The "Flight to Quality" phenomenon holds even within the group of bank-dependent borrowers (Gertler and Gilchrist, 1994; Oliner and Rudebusch, 1995).
5. There is an asymmetric response over the business cycle of small firm variables to a monetary policy contraction, with a stronger effect during recessions. Large firm variables do not display such an asymmetry (see Gertler and Gilchrist, 1994, Fig. 4, p. 333).

To summarize, the criticism to the Bank Lending Channel is that, in its standard formulation, it cannot account for the dynamics of firm-level data described in 1–5 above.

However, the argument we pursue in this paper is that with the Bank Lending Channel being *silent* about the dynamics of firm-level variables, it would be misleading to use firm-level evidence to reject it. That is, the empirical evidence summarized in 1–5 would provide a test to the bank lending view only in relation to an appropriate falsifiable hypothesis of the Bank Lending Channel that can yield predictions on the dynamics of firm-level variables. Since the lending view

(footnote continued)

pace at which the disintermediation process has been unfolding during the last years, bank credit still accounts for a significant share of firms' total external financing. In US around 60% of firms external financing is represented by bank loans, while the rest is bonds and stocks. Moreover, approximately half of the bonds and almost all of the stock are sold to some kind of financial intermediary (Dewatripont and Tirole, 1994). During the 1990's this share has remained around 80% for Germany and close to 90% for Japan (Mishkin, 2007). These overall averages still mask the real importance of bank credit for small and medium sized companies that cannot easily access direct financing.

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