Trusting the bankers: A new look at the credit channel of monetary policy ☆

Matteo Ciccarelli [a,*], Angela Maddaloni [a], José-Luis Peydró [b,c,d,e,f]

[a] *European Central Bank, Germany*
[b] *ICREA-Universitat Pompeu Fabra, Spain*
[c] *Barcelona GSE, Spain*
[d] *Cass Business School, United Kingdom*
[e] *CREI, Spain*
[f] *CEPR, United Kingdom*

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ABSTRACT

Monetary policy has real effects through credit supply and demand, and since these changes are mostly unobserved, the complete identification of the credit channel is generally unfeasible. Bank lending surveys by central banks, however, contain reliable quarterly information on changes in loan conditions due to bank, firm and household balance sheet strength and on changes in loan demand. Using the U.S. and the unique Euro area surveys, we find that the credit channel amplifies a monetary policy shock on GDP and prices through the balance-sheets of households, firms and banks. For corporate loans, amplification is highest through the bank lending and the borrower's balance sheet channel; for households, demand is the strongest channel.

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"[...] extremely important outstanding questions for research. One is the [...] role of the credit channel in our understanding of economic fluctuations and monetary policy. The literature in this area remains thin, and this thinness reflects difficulty in specifying the relevant mechanisms and finding the supporting empirical evidence."

Boivin, Kiley and Mishkin, 2011, Handbook of Monetary Economics

1. Introduction

The events of the last few years suggest that the financial sector – the banking sector in particular – is a crucial determinant of business cycle fluctuations. The worst financial crisis in Europe and in the U.S. since the Great Depression was followed by a severe recession. Credit provided by banks is key to fund investment and consumption. During periods of crisis, a credit reduction may be the result of weaker demand, lower net worth of firms and households and, possibly, tighter credit supply due to banks' solvency and liquidity problems. In these circumstances, central banks support aggregate demand and credit provision through monetary policy. Identifying and quantifying the linkages between monetary policy, credit channels and business cycles is therefore of utmost importance.

The main objective of this paper is to test the theory of the credit channel of monetary policy as defined by Bernanke and Gertler (1995), which states that monetary policy (via monetary rates and reserve requirements) affect GDP and prices through credit. Fig. 1 reports a schematic representation of how monetary channels may affect the economy through credit (see, European Central Bank, 2011, page 59, for all the transmission channels of monetary policy). In the traditional "cost-of-capital" channel monetary policy affects investment and consumption decisions by determining the level of market interest rates and thus borrowing. Therefore, this channel determines the demand for credit from firms and households.

There are, however, other channels, which compose the so-called broad credit channel (as defined by Bernanke and Gertler, 1995). These channels work through the effect that changes in monetary policy have on the balance sheets of financial intermediaries (banks and other lenders) and of non-financial borrowers (households and firms). Changes in policy interest rates affect the external finance premium of lenders, constraining their ability to extend credit. This is the traditional bank lending channel (see Bernanke, 2007; Kashyap and Stein, 2000; Bernanke and Blinder, 1992; Bernanke and Gertler, 1987), where the supply of credit is impacted by changes of monetary policy. At the same time, though, changes in monetary rates affect the values of the assets held by households and firms that can be posted as loan collateral (housing for mortgage loans and also other assets for corporate loans) or in general the net worth of non-financial borrowers. These changes affect the ability of borrowers to get credit, since lending conditions depend also on the risk and the net worth of the borrowers, and therefore impact their credit availability. This is the firm and household (non-financial borrower) balance sheet channel (Bernanke and Gertler, 1989, 1995).

With this framework in mind, in this paper we address the following four questions: (i) Does monetary policy affect GDP and inflation through the credit channel? (ii) How important are the different transmission channels – the borrower balance-sheet channel, the bank lending and the cost of capital (demand) channels? (iii) Does the relative importance of these channels depend on whether the borrowers are households or firms? (iv) Do the effects depend on the financial structure of the economic area, in particular a bank (as in the Euro area) versus a market dominated system (as in the U.S.)?

The credit channel theory implies that monetary policy has real effects through credit supply and demand, by affecting the balance sheet of borrowers and lenders. These changes are however mostly unobserved, therefore the complete identification of the credit channel and its subchannels is challenging. The academic literature using both macro and micro data has not yet addressed this fundamental identification challenge in a satisfactory manner.

From a macro perspective, credit aggregates do not convey enough information to identify supply (Bernanke and Gertler, 1995): If the average borrower's quality did not change, average credit quantities and prices would suffice to isolate demand and supply; however, after a monetary tightening, a *flight to quality* of banks to borrowers of better quality occurs (Bernanke et al., 1996).[1]

Given these limitations, the literature has tried to improve identification using micro data, by testing the cross-sectional predictions from theory (see Bernanke and Gertler, 1995). However, the micro approach cannot fully identify the credit channel. As pointed out by Kashyap and Stein (2000), the micro identification cannot analyze the *total* effect of a monetary policy shock on real activity, but only a *difference-in-difference* effect by comparing banks (see e.g. Kashyap and Stein, 2000) or non-financial borrowers (see e.g. Gertler and Gilchrist, 1994) with different sensitivity to monetary policy. Moreover, financially constrained borrowers may obtain credit from constrained banks, thus making the firm balance-sheet channel difficult to disentangle from the bank lending channel (Gertler and Gilchrist, 1994). Furthermore, analyses based on micro data use actual credit granted and thus are forced to make restrictive assumptions on credit demand.[2] Kashyap and Stein (2000), for instance, assume that banks with different liquidity levels face similar changes in loan demand as a response to a monetary policy shock.

In this paper, we tackle the problem of unobserved credit channels by using the detailed answers of the confidential and unique Bank Lending Survey (BLS) for the Euro area and of the Senior Loan Officer Survey (SLOS) for the U.S. Euro

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[1] For the effects of business cycles on credit composition, see Matsuyama (2007). Note also that after a monetary tightening bank loan demand may increase to finance working capital and inventories, due to a limited access to market finance (Bernanke and Gertler, 1995; Friedman and Kuttner, 1993).

[2] An exception is Jiménez et al. (2012) who use loan applications; however, their objective is only to identify the bank lending (supply) channel.