Available online at www.sciencedirect.com
ScienceDirect
Journal of Banking & Finance 30 (2006) 2893–2910
Journal of BANKING & FINANCE
www.elsevier.com/locate/jbf

Bank loan supply and monetary policy transmission in Germany: An assessment based on matching impulse responses

Oliver Hülsewig [a], Eric Mayer [b], Timo Wollmershäuser [a,*]

[a] Ifo Institute for Economic Research, Poschingerstr. 5, 81679 München, Germany
[b] University of Würzburg, Department of Economics, Sanderring 2, 97070 Würzburg, Germany

Received 2 February 2005; accepted 7 December 2005
Available online 6 March 2006

Abstract

This paper addresses the credit channel in Germany by using aggregate data. We present a stylized model of the banking firm in which banks decide on their loan supply in the light of expectations about the future course of monetary policy. Applying a VAR model, we estimate the response of bank loans to a monetary policy shock taking account of the reaction of the output level and the loan rate. We estimate our model to evaluate the response of bank loans by matching the theoretical impulse responses with the empirical impulse responses to a monetary policy shock. Evidence in support of the credit channel can be reported.

JEL classification: E44; E51

Keywords: Monetary policy transmission; Credit channel; Loan supply; Minimum distance estimation

* Corresponding author.
E-mail addresses: Huelsewig@ifo.de (O. Hülsewig), eric.mayer@mail.uni-wuerzburg.de (E. Mayer), Wollmershaeuser@ifo.de (T. Wollmershäuser).

0378-4266/$ - see front matter
doi:10.1016/j.jbankfin.2005.12.001

1. Introduction

The credit channel assigns banks a pivotal role in the transmission of monetary policy, which stems from the notion that financial markets are characterized by imperfections.[1] Banks are special in extending credit to borrowers – that cannot access other types of credit – because of their expertise in mitigating financial frictions. If banks adjust their loan supply following a change in the stance of monetary policy, this has a bearing on real activity, since some borrowers have to rearrange their expenditure decisions.[2]

As Bernanke and Gertler (1995) and Hubbard (1995) point out, the credit channel is working in addition to the interest rate channel, according to which monetary policy affects the level of investment and consumer spending by inducing changes in the cost of capital and yield on savings. Although, the credit channel and the interest rate channel diverge in assessing the relevance of financial considerations, they are deemed complementary, with the implication that monetary policy can be effective through these transmission channels simultaneously.

Following Bernanke and Blinder (1992), a number of studies based on vectorautoregression (VAR) analysis have examined whether the credit channel is operating alongside the interest rate channel by using aggregate data. Many studies have shown that bank loans decline after a monetary policy shock, but these findings are plagued by a severe identification problem, as it remains unclear whether the drop is driven by loan supply or loan demand effects. While the credit channel emphasizes a shift in loan supply, the interest rate channel stresses a shift in loan demand, which stems from a policy-induced decline in real activity. Distinguishing between these predictions is a difficult task, as "*it is not possible using reduced-form estimates based on aggregate data alone, to identify whether bank balance sheet contractions are caused by shifts in loan supply or loan demand*" (Cecchetti, 1995, p. 92).

In light of this ambiguity, several studies have explored heterogeneity across agents by moving from aggregate data to disaggregated data. For the US, Gertler and Gilchrist (1993), Gilchrist and Zakrajsek (1995) and Oliner and Rudebusch (1995) use panel data of a large number of business firms. From this research it appears that firms of different size encounter different financial constraints after a monetary tightening. Kashyap and Stein (2000) investigate panel data at the individual bank level. They observe that monetary policy particularly affects the lending behavior of small banks with less liquid balance sheets. Kishan and Opiela (2000) report a similar finding by approximating bank lending activities on the basis of bank size and bank capital.

So far, much work on the credit channel in Germany – implemented by Barran et al. (1997), De Bondt (2000), Ehrmann (2004), Ehrmann and Worms (2004), Holtemöller (2003), Hülsewig et al. (2004), Kakes and Sturm (2002), Von Kalckreuth (2003) and Worms (2003) – has employed aggregate and disaggregated data but reported contrary results. While some of these studies find evidence in support of the credit channel, others

[1] See Bernanke and Gertler (1995), Cecchetti (1995) or Hubbard (1995) for a survey of the credit channel of monetary policy transmission.

[2] This idea centers on the assumption that some borrowers – in particular small and medium-sized firms – cannot issue corporate bonds at reconcilable terms because of information problems or high costs associated with launching debt securities. Banks as financial intermediaries specialize in gathering and distilling information, which enables them to make loans to these borrowers at more favorable terms.