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# How important can bank lending shocks be for economic fluctuations?



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### ABSTRACT

We analyze the quantitative importance of bank lending shocks on real activity fluctuations in Norway and the UK, using structural VARs estimated on quarterly data from 1988 to 2010. We find that an adverse bank lending shock causes output to contract, and that such shocks can account for a substantial share of output volatility. This suggests that financial intermediation is an important source of shocks. The empirical analysis comprises the Norwegian banking crisis (1988–1992) and the recent period of banking failures in the UK. However, the results are also non-trivial when omitting periods of systemic banking distress from the sample.

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## 1. Introduction

“Credit creation [is] the monetary complement of innovation. This relation (...) is at the bottom of all the problems of money and credit.” [Schumpeter \(1939\)](#)

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The global financial crisis of the late 2000s has drawn a considerable amount of attention towards financial intermediation and its influence on real activity. It has also brought a renewed focus to older models of the business cycle, in which credit creation and destruction played a central role as a source of shocks. Leading up to the crisis, the banking system underwent substantial changes, particularly due to extensive securitization. The result may have been a decline in lending standards that helped to fuel the housing market frenzy, and the bursting of the US house price bubble is generally seen as the trigger of the crisis. Hence, changes in banks' lending behavior may have been a central driving force of the recent economic turmoil.

Regardless of the financial crisis, banks in general play a vital role in the system of financial intermediation: They specialize in overcoming informational problems and are the predominant source of intermediated credit. Furthermore, there seems to be an accepted view that bank credit is procyclical and that banks' loan supply can amplify business cycles. This could be due to bank-specific behavior such as shifts in risk perceptions, but regulatory changes can also matter. Bank capital can be scarcer in downturns, and risk-sensitive capital requirements (as in the Basel II Accord) may have strengthened procyclical effects. Moreover, such effects can be reinforced if the external finance premium that banks face moves with the cycle. The inherent procyclicality of bank lending is also addressed in the Basel III Accord, in which countercyclical measures are proposed. As such, it is widely held that bank lending can have a bearing on economic activity.

However, there are relatively few analyses that examine the importance of bank lending shocks on business cycles. Older studies have included credit aggregates, but such volumes are determined jointly by demand and supply, and as emphasized by [Bernanke and Gertler \(1995\)](#), loan-supply shocks are not identified. In this paper, we address the prospective importance of bank lending shocks in explaining economic fluctuations, and the variable we apply to capture bank lending disturbances is the ratio of bank lending to the sum of bank and non-bank lending. The borrowers are households and non-financial firms. Other fairly recent studies that do analyze loan-supply shocks typically require more than one variable to identify such innovations (see e.g. [De Nicolò & Lucchetta, 2011](#); [Helbling, Huidrom, Kose, & Otrok, 2011](#)). With only one variable accounting for bank lending shocks, we can also readily control for asset price shocks in addition to shocks commonly included in vector autoregressive (VAR) models.

Because time series for all lending sources comprising several cycles are difficult to obtain, our attention is restricted to Norway and the UK.<sup>1</sup> We apply structural VAR models based on data from 1988 Q1 to 2010 Q4, so the sample therefore includes both the Norwegian banking crisis (1988–1992) and the fairly recent period of banking failures in the UK. The Norwegian banking crisis coincided with a severe economic downturn, and the scope of that recession bears a resemblance to the impact of the financial crisis in the UK.

The ratio of bank lending to total lending has been used to study the existence of a bank lending channel of monetary policy [Iacoviello and Minetti \(2008\)](#), [Kashyap, Stein, and Wilcox \(1993\)](#), [Ludvigson \(1998\)](#). In this literature, it is assumed that a general change in loan demand should leave the ratio of bank credit to total credit fairly unaltered. Following a monetary policy shock, an observed significant change in this variable is therefore interpreted as a stronger reaction in banks' loan supply than in other forms of credit supply. However, the primary objective of this paper is to identify bank lending shocks and their potential impact on real activity. In addition to the ratio of bank credit to total credit, the VAR model then controls for several key macro variables and the short-term money market rate. The identified bank lending shocks will therefore comprise changes in bank lending that are not driven by macroeconomic conditions or monetary policy. Such shocks are thus expected to embrace banks' misestimation of the state of the economy and distinctive disturbances in banks' funding conditions. Furthermore, the shocks can include structural changes related to regulations, competition and financial innovations. We also discuss bank lending disturbances more thoroughly in Section 2.

In addition to illuminating the effects of bank lending shocks, we also examine the existence of a bank lending channel of monetary policy. Accordingly, we seek to identify two shocks: A bank lending

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<sup>1</sup> To justify a similar model specification for a number of countries, we attempted to obtain time series for several small open economies. For Norway and the UK, it was possible to attain time series for various credit sources from the late 1980s. The choice of the two countries reflects the requirements we set for the data.

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