ARTICLE IN PRESS

Journal of Economic Dynamics & Control ∎ (∎∎∎∎) ∎∎∎–∎∎∎

Contents lists available at ScienceDirect

Journal of Economic Dynamics & Control

journal homepage: www.elsevier.com/locate/jedc

In search for yield? Survey-based evidence on bank risk taking

Claudia M. Buch [a,b,c,*], Sandra Eickmeier [d], Esteban Prieto [d]

[a] University of Magdeburg, Germany
[b] IWH Halle, Germany
[c] CESifo, Germany
[d] Deutsche Bundesbank, Germany

ARTICLE INFO

Article history:
Received 22 March 2013
Received in revised form
12 November 2013
Accepted 1 January 2014

JEL classification:
E44
G21

Keywords:
FAVAR
Bank risk taking
Macro-finance linkages
Monetary policy

ABSTRACT

Monetary policy can have an impact on economic and financial stability through the risk taking of banks. Falling interest rates might induce investment into risky activities. This paper provides evidence on the link between monetary policy and bank risk taking. We use a factor-augmented vector autoregressive model (FAVAR) for the US for the period 1997–2008. Besides standard macroeconomic indicators, we include factors summarizing information provided in the Federal Reserve's *Survey of Terms of Business Lending* (STBL). These data provide information on banks' new loans as well as interest rates for different loan risk categories and different banking groups. We identify a risk-taking channel of monetary policy by distinguishing responses to monetary policy shocks across different types of banks and different loan risk categories. Following an expansionary monetary policy shock, small domestic banks increase their exposure to risk. Large domestic banks do not change their risk exposure. Foreign banks take on more risk only in the mid-2000s, when interest rates were 'too low for too long'.

© 2014 Elsevier B.V. All rights reserved.

1. Motivation

Monetary policy decisions might affect risk taking of banks (Borio and Zhu, 2011; Rajan, 2005).[1] A reduction in the policy rate reduces returns especially on low risk investments. To keep the average return on assets constant, bank managers have incentives to shift into riskier credit market segments. Expansionary monetary policy might thus induce a "search for yield" by banks and impair financial stability.

We use a factor-augmented vector autoregressive model (FAVAR) for the US to analyze the reaction of banks to monetary policy shocks. Our empirical model comprises GDP growth, GDP deflator inflation, the monetary policy interest rate, and banking factors. The banking factors summarize information on business lending provided in the Federal Reserve's *Survey of Terms of Business Lending* (STBL). The STBL questionnaire asks banks to rate the risk of new loans based on a borrower's credit history, cash flow, credit rating, access to alternative sources of finance, management quality, collateral, and quality of

---

[*] Corresponding author at: IWH Halle, Germany. Tel.: +49 345 7753 700.

E-mail addresses: claudia.buch@iwh-halle.de (C.M. Buch), sandra.eickmeier@bundesbank.de (S. Eickmeier), esteban.prieto@bundesbank.de (E. Prieto).

[1] The link between low policy rates, risk taking, and "search for yield" has been described as follows: "*[…] These behaviors can be compounded in an environment of low interest rates. Some investment managers have fixed rate obligations which force them to take on more risk as rates fall. Others like hedge funds have compensation structures that offer them a fraction of the returns generated, and in an atmosphere of low returns, the desire to goose them up increases. Thus not only do the incentives of some participants to "search for yield" increase in a low rate environment, but also asset prices can spiral upwards, creating the conditions for a sharp and messy realignment.*" (Raghuram G. Rajan, The Greenspan Era: Lessons for the Future, Saturday, August 27, 2005, Jackson Hole, Wyoming).

0165-1889/$ - see front matter © 2014 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jedc.2014.01.017

Please cite this article as: Buch, C.M., et al., In search for yield? Survey-based evidence on bank risk taking. Journal of Economic Dynamics and Control (2014), http://dx.doi.org/10.1016/j.jedc.2014.01.017

the guarantor. This information is used to classify loans into different risk categories *ex ante*. Shifts across categories thus reflect changes in bank risk taking. The survey also distinguishes small domestic, large domestic, and foreign banks.

We identify risk-taking effects following monetary policy shocks by exploiting heterogeneity across different banks and loan market segments. We distinguish responses of new loans and loan spreads across different types of banks and different loan risk categories. Our results suggest that, on average over the sample period, small domestic banks significantly increase new loans to high risk borrowers after expansionary monetary policy shocks. The composition of loan supply of small banks shifts towards riskier loans. Large domestic banks give out more new high risk loans, but the composition of their loan portfolio does not change significantly. Foreign banks increase risk only during the mid-2000s, when interest rates were particularly low for a prolonged period of time (too-low-for-too-long). Changes in the risk composition of loan portfolios are not compensated by higher risk premia. Banks rather shift their (new) loan portfolios towards higher risk loans and charge a lower risk premium. This is how the risk-taking channel is defined in Borio and Zhu (2011): banks are willing to take on more risk, and this is not compensated by an increase in the risk premium.

Our empirical research is motivated by theoretical work modeling the link between low policy interest rates and risks in banking. This research shows that, in the presence of asymmetries in information and agency problems, bank-specific features affect bank risk taking. Risk may increase as a consequence of additional availability of liquidity which lowers the risk aversion of banks (Diamond and Rajan, 2009; Acharya and Naqvi, 2012), because value-at-risk constraints are weakened (Adrian and Shin, 2010), or because adverse selection problems in the credit market are mitigated, thereby reducing banks' screening incentives (Dell'Ariccia and Marquez, 2006, Dell'Ariccia et al., 2013). From a theoretical point of view, lower policy rates should thus increase new loans to riskier borrowers. Moreover, banks which are prone to agency problems are affected more.

Our data allow modeling heterogeneity across banks and loan categories. In addition, our paper contains five features which we consider crucial for the identification of risk-taking effects.

First, the STBL provides information on *new* loans, not on outstanding loans. We can thus take account of the fact that the risk-taking channel as advanced by Borio and Zhu (2011) and Rajan (2005) describes the incentives to engage in *ex ante* riskier projects. Most previous studies do not distinguish between realized risk (on existing loans) and new risk (on new loans). Exceptions are the panel regressions by Ioannidou et al. (2009) and Jiménez et al. (forthcoming), who use (confidential) credit register data at the bank–borrower level. These studies tend to find evidence in favor of the risk-taking channel of monetary policy.

Second, the STBL provides information on volumes and prices of new loans by type of risk. This allows assessing whether loan supply or loan demand effects dominate in the transmission of monetary policy shocks: if loan volumes and lending rates increase, demand effects dominate; if loan volumes increase and lending rates fall, supply effects are more important. Ignoring systematic changes in the quality of borrowers following monetary policy shocks would flaw any separation of supply and demand effects. Our data allow "holding constant" the quality of borrowers.

Third, our data contain information on how banks *perceive* the risk of new loans. We consider this to be a crucial ingredient to cleanly identify the effects of monetary policy shocks on the attitudes of banks towards risk taking. Studies like Ioannidou et al. (2009) or Jiménez et al. (forthcoming) work under the implicit assumption that the *ex post* risk of borrowers, or observable risk characteristics of borrowers, are fully aligned with *ex ante* risk perceptions of banks. Our data allows us to side step such assumptions using information on ex ante risk taking *from the point of view of the bank manager*.

Fourth, the FAVAR model includes a large amount of information on banks and thus allows modeling mutual feedback between the banking sector and the macroeconomy. Previous papers using panel models allow modeling bank heterogeneity, but they are more restrictive in terms of the modeling of macroeconomic shocks (Altunbas et al., 2010; Ioannidou et al., 2009; Jiménez et al., forthcoming). By contrast, work using time series (VAR or FAVAR) models which do not exploit highly disaggregated banking information (Angeloni et al., 2010; Eickmeier and Hofmann 2013; or Lang and Nakamura, 1995) or univariate regressions (De Nicolò et al., 2010) cannot assess heterogeneity or at least not to the same degree.

Fifth, like other multivariate time series analyses, the FAVAR model captures interactions between macroeconomic factors and the banking system and looks at the impact of identified, mutually orthogonal, macroeconomic shocks. By contrast, panel studies typically regress risk measures on monetary policy interest rates and additional explanatory variables. These studies allow interest rates and other macroeconomic factors to affect banks, but they do not take into account feedback from banks to the macroeconomy. Yet, macroeconomic indicators are reduced-form constructs and a convolution of different types of shocks. The transmission may be different for different types of shocks, which we can account for. We also account for the fact that policy interest rates might have been "too low for too long" by allowing parameters to change across different regimes.

In Section 2, we describe our data. In Section 3, we explain the FAVAR methodology. In Section 4 we present and discuss our empirical results. In Section 5, we conclude.

2. Data

2.1. Macroeconomic data

Our set of macroeconomic variables is largely in line with typical small-scale macroeconomic VARs. The data comprise differences of the logarithms of GDP, of the GDP deflator, and the level of the effective Federal Funds rate. Data on the

Please cite this article as: Buch, C.M., et al., In search for yield? Survey-based evidence on bank risk taking. Journal of Economic Dynamics and Control (2014), http://dx.doi.org/10.1016/j.jedc.2014.01.017

Download English Version:

https://daneshyari.com/en/article/5098465

Download Persian Version:

https://daneshyari.com/article/5098465

Daneshyari.com