



Financial stability and bank supervision



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ABSTRACT

We analyze the joint effect of inflation target and banking supervision policies on financial stability. We provide evidence that price stability (along with greater accountability) and stronger banking supervision is positively related to banking stability. Furthermore, systematically important banks also appear to be more resilient under IT and higher levels of supervision.

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1. Background and research questions

In the aftermath of the 2008 financial crisis, there has been a fierce debate about the role of the central bank and monetary policy, considering particularly the influence of inflation target regimes and the strength of banking supervision on financial system stability.

While inflation target policies ensure long term price stability and greater credibility and predictability of the monetary policy, Blanchard et al. (2010) and Cukierman (2013) defend that inflation target policies may have been the cause of financial fragility. They point that central banks may have relegated financial stability and prudential to the background, overlooking changes that occurred in the banking system, such as the emergence of asset bubbles. Nevertheless, Fazio et al. (2015) seeking to respond if the inflation target can be blamed for the lack of response of the authorities to the financial imbalance, they conclude that inflation target alone cannot be blamed for contributing to the financial fragility and, on average, national banking systems and systemically important banks are more stable under inflation target regimes. Similarly, Svensson (2009) argues the crisis was mainly caused by conditions that had very little to do with monetary policy and were mostly due to regulatory failures.

With regard to banking supervision, while White (2006) defends that the best instruments to achieve financial stability are supervision and regulation, Barth et al. (2004), Barth et al. (2008) and Barth et al. (2012) found that one cannot affirm an improvement in financial performance resulting from increased supervision. They argue that strengthening official supervision increases corruption in bank lending and lowers bank development, reducing the efficiency of financial intermediation.

In this letter, we provide empirical evidence on this debate highlighting the joint effect of inflation target regimes and supervision on financial stability. Our model tries to answer the following questions: (Q1) If the effect of inflation targeting

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on bank soundness depends on banking supervision. To answer this question, we regress a financial stability variable (the natural logarithm of the Z-Score) against a dummy variable that equals to one if country where bank operates is an inflation target regime, against the degree of Supervisory Power based and against the interaction between the IT dummy and the degree of Supervisory Power. The results show the positive (and mostly Significant) interaction between IT and Bank Supervisory Power, indicating a positive relationship between inflation targeting and bank supervision in the financial stability. (Q2) Does bank supervision matter in times of global illiquidity? To answer this question we interact the IT dummy, the degree of Supervisory Power and the TED Spread. We observed a positive but not significant interaction among IT, TED Spread and Banking Supervisory Power. (Q3) Does supervision matter for systemically important financial institutions? We interact a dummy that equal to one if the bank has total assets and total wholesale funding higher than the country's 90th percentile, that we call to SIFI, the IT dummy, and the degree of Supervisory Power. The result shows a positive and significant triple interaction between these three variables and a negative and significant interaction between SIFI and IT. This means that systemically important banks are more stable under IT only under high (above average) bank supervision.

2. Data and methods

We extract our bank-specific data from Bankscope, a financial database distributed by BVD-IBCA. In order to compare banks from different countries, we follow the methodology of Fazio et al. (2015). To ensure accounting uniformity among different countries, we convert it to US dollars. We only consider the population of banks that behavior as a commercial bank. We work with trienniums in order to avoid problems with missing data, i.e., we average relevant balance sheet data by triennium. Observations with missing data (missing data, zero or negative) in all the years of the triennium or with only one observation per triennium are not considered. We remove from our database country-triennium observations whose banking system aggregate market share is less than 70% of the original data. We also remove from our database countries with less than 10 different banks (too small) or with missing country-specific variables.

The variables used in our model are:

Dependent variable

Our proxy for individual bank financial stability and soundness is the natural logarithm of the Z-score:

$$\text{Financial Stability}_{it} = \ln(\text{Z-score}_{it}) = \ln\left(\frac{\overline{\text{ROA}_{it}} + \overline{\text{Capital Ratio}_{it}}}{\sigma(\text{ROA})_{it}}\right) \quad (1)$$

Independent variables

One of the fundamental independent variables for the analysis presented here is a dummy variable that equals to 1 if the bank operates in an inflation targeting country k during triennium t (IT_{kt}). Currently, 26 countries have adopted inflation targets. This information about whether or not a bank is operating in a inflation target regime comes from Roger (2010) and Fazio et al. (2015).

Another fundamental independent variable is Supervisory Power $_{kt}$ that equals to the degree of Supervisory Power based on the answers to a questionnaire from the new World Bank survey (Survey IV).¹ This index ranges from 0 to 1, where 0 means low supervision and 1 high supervision.

Our measure for global illiquidity is proxied by the TED spread, which equals the difference between the 3-month LIBOR rate and the 3-month Treasury bill rate. Periods in which this variable is large are marked by turmoil in world financial markets.

We derive a systemically important financial institution (SIFI) dummy that equals one if the bank claims both total assets and wholesale funding higher than the 90th percentile of the country's banking system.

We also include several control variables in our model that can be classified as: (1) balance sheet variables, (2) economic activity and freedom variables and (3) financial depth variables. These controls are carefully summarized in Table 1.

3. Empirical results

In this Section, we present the results from our estimations. In all tables, column [1] provides the results without financial depth or economic activity controls. In column [2], we include only the former, while the latter are included in column [3]. Finally, column [4] displays the results including the entire set of control variables. In all specifications, we drop observations in which the dependent variable is higher than the 99th percentile and lower than the 1st percentile to avoid outliers.

¹ This database presents new and official survey information on bank regulations in over 125 countries and covers data since 2008. The data includes information about the implementation of Basel II, questions relating to capital, provisioning, and supervision. More information is found in Barth et al. (2004), Barth et al. (2008), Barth et al. (2012) and Barth et al. (2013).

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