

# Basel III impact on the Italian banking sector

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## Abstract

This paper examines the incentives and the effectiveness of tighter regulation of the Italian banks in terms of their profitability. Using balance and off-balance sheet data I focus on the capital requirements and the liquidity characteristics of the banking sector by the convenient Tier 1 ratio and the Basel III long-term Net Stable Funding Ratio (NSFR), respectively. The empirical findings of the paper underline the important role that the NSFR has as a preventive tool for potential bank failures while addresses the incentives behind the enforcement of higher Tier 1 ratios as a way for more risk averting profiles mainly during turbulent periods.

**JEL classifications numbers:** G21; E58

**Keywords:** Basel III; NSFR; banking efficiency; financial crisis

## 1 Introduction

While the notion of capital requirement is undoubtedly a necessary tool for managing systemic risk, there is a tendency from regulative authorities towards banks' liquidity through the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) proposals of Basel III (BIS 2012, BIS 2013, BIS 2014). This paper examines the potential effectiveness of the new banking regulation on liquidity.

The research question of the paper refers to the effects of tighter regulation on banks' performance and risk adjusted performance. Specifically, I examine the potential effects of complying with higher Tier 1 and NSFR on banks' performance and risk adjusted performance. The analysis accounts for the great financial crisis effect through an exogenous structural break.

Using data from Italian banks during 2000-2015 and by adopting a dynamic panel analysis I find strong evidence in favor of the role that NSFR could play for enhancing banks profitability. On the other hand, Tier 1 diminishes bank's risk adjusted returns.

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The remaining of the paper is organized as follows. Section 2 discusses briefly the extant literature while section 3 explains the data and the applied research methodology. Section 4 discusses our empirical findings and finally section 5 concludes the paper.

## 2 Literature Review

The literature on banking supervision and regulation is vast and the conclusions drawn in many papers are often conflict. Delis and Staikouras (2011) investigated the effectiveness of supervision and regulation practices and concluded that while supervision is a mechanism for reducing bank fragility, capital adequacy and disclosure requirements prove to be rather futile in controlling bank risk. Feess and Hege (2012) argue that the incentives for tightening the capital standards lie in the necessity to encourage banks to raise more equity and not to reduce loan supply. Most importantly, they account for the heterogeneity of banks and propose a theoretical rationale for recent policy proposals to differentiate capital requirements and regulatory oversight between systemically important banks and others.

Particular attention in the literature has been given on distress periods. More specifically, Demircuc-Kunt et al., (2013) found that high-capitalized banks perform better during distress periods. This evidence supports the view of emphasizing on higher quality capital in the form of Tier 1 capital and implies that well-capitalized banks have a privilege especially during a systemic crisis. Otter-Robe and Pazarbasioglu (2010) investigate the Basel II reforms on capital requirements and they claim that these represent a substantial improvement in the quantity and quality of capital compared with the pre-crisis situation. They also suggest that the Basel II capital standards have a significant impact on investment-banking-type activities which is a key parameter when investigating the trade-off between the reduction of systemic risk and the dampening of financial intermediation.

However, Valascas and Hagendorff (2013) provide evidence against the functioning of minimum capital requirements. Using data from international high-capitalized banks during 2000-2010 they found that the extant risk weights of the minimum capital requirements are not adequately determined implying that they should be revised upwards. Gaston and Schumacher (2013) examine the potential effects of adopting the Basel III liquidity proposals, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR), on monetary policy transmission channels. Using a highly detailed bank-level quarterly data from Luxembourg's banks over the period from 2003 to 2010 they found that the transmission channels work better for small banks contrary to big ones for which the loan supply is not affected by a tighter monetary policy significantly. More specifically, monetary policy will not be transmitted through intermediaries who comply with Basel III liquidity standards. Dietrich et al., (2014) examine the evolution historically of the Basel III liquidity accords for many Western European banks and found a very low rate for NSFR. Interestingly, the NSFR was increased during the Great Financial Crisis and reverted to lower levels afterwards.

### 3 Data and Research Methodology

For the purposes of this paper the banking regulation is represented by the tier 1 capital ratio and the net stable funding ratio. While the former variable is publicly available for most banks the latter variable needs to be constructed using balance and off-balance sheet data. The current Basel III proposal demands banks to hold a capital divided by total assets (CAR) of 3% ensuring that banks are able to cover a sufficient percentage of total assets with their own funds and constraining procyclicality by limiting the build-up of leverage. The current Basel III liquidity proposals refer to the Net Stable Funding Ratio (NSFR) and the Liquidity Coverage Ratio (LCR), BIS (2012, 2013, 2014). Both NSFR and LCR are designed to ensure financial institutions have the necessary assets on hand to ride out short-term liquidity disruptions, either in the long-term or in the short-term, respectively. As the research objective of the paper refers to the prudential regulation in the long-term the NSFR is more adequate measure for the analysis. The Net Stable Funding Ratio (NSFR) is a measure of maturity mismatch risk aimed at promoting more medium-term and long-term funding of the assets of a bank.

I use annual data for the banking sector of all Italian banks from Bankscope covering the period from 2000 to 2015. The sample consists of commercial, cooperative, real estate and mortgage, and savings banks. Using balance and off-balance sheet data I estimate an approximation of the NSFR following Dietrich et al., (2014).

The NSFR is calculated according to the formula:

$$NSFR_{i,t} = \frac{\text{available stable funding}_{i,t}}{\text{required stable funding}_{i,t}} \quad (1)$$

$$NSFR_{i,t} = \frac{\sum_j^{n_x} w_j \cdot x_{i,j,t}}{\sum_j^{n_{x'}} w'_j \cdot x'_{i,j,t}} \quad (2)$$

where  $NSFR_{i,t}$  is the NSFR at year t for bank i,

$x_{i,j,t}$  is the available stable funding variables for bank i at year t,

$w_j$  is the weighting of the  $x_j$  variable

$x'$  and  $w'$  are defined similarly for the required stable funding ratio.

The research question which is addressed in this paper is the effect of tighter regulation (tier 1 and NSFR) on banks' performance. I examine this hypothesis by adopting the Arellano-Bond (1991) dynamic panel analysis where the dependent factor is the return on asset (ROA) and the explanatory variables are the Tier 1 and the NSFR:

$$\Delta(ROA_{i,t}) = b_0 + b_1 \Delta(ROA_{i,t-1}) + b_2 \Delta(tier1_{i,t-1}) + b_3 \Delta(NSFR_{i,t-1}) + e_{i,t} \quad (3)$$

Following Arellano and Bover (1995), an alternative GMM estimator is used to overcome the requirement of an instrumental variable procedure to correct for the endogeneity as well as the correlation between the lagged difference of the dependent variable and  $e_{i,t-1}$ .

The regression of equation (3) is analyzed for the whole time period, i.e. between 2000-2015, and for two sub-periods with respect the current financial crisis, i.e. 2000-2007 and 2008-2015.

## 4 Empirical Findings

From a descriptive analysis it is shown that the return on asset is negatively associated with capital requirements while ROA and its standardized values are positively related with the NSFR. This argument is further strengthened when I analyze the model of equation (3). The results of the empirical analysis of equation (3) suggest that while tighter capital requirements diminish the performance and the efficiency of banks, higher liquidity requirements according to the NSFR promote a more efficient functioning of banks. These findings are pronounced especially during the post-crisis period.

## 5 Conclusions

While the notion of capital requirement is undoubtedly a necessary tool for managing systemic risk, there is a tendency from regulative authorities towards banks' liquidity through the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) proposals of Basel III. This paper examines the potential effectiveness of the new banking regulation on liquidity.

Using a sample of all Italian banks' balance and off-balance sheet data I focus on the capital requirements and the NSFR liquidity reform of Basel III. By adopting a dynamic panel analysis there is strong evidence in favor to the NSFR which provides the means for improving banks' performance. On the other hand, Tier 1 seems to be a way for more risk averted investment profiles as a response to the uncertainty during distressed periods.

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