Factors influencing bank risk in Europe: Evidence from the financial crisis

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ABSTRACT

We use a dynamic panel data model to analyze bank-specific and macroeconomic determinants of bank risk for a large sample of commercial banks operating in the euro area. The selected time span, from 2001 to 2012, considers the impact of the on-going financial and economic crisis on the Eurozone banking system. Our results indicate that capitalization, profitability, efficiency and liquidity are inversely and significantly related to bank risk. However, the recourse to wholesale funding by banks seems to increase their risk. We also find that less-concentrated markets, lower interest rates, higher inflation rates and a context of economic crisis (with a falling GDP) increase bank risk.

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1. Introduction

The recent financial crisis has demonstrated the need for a better regulation and supervision of the EU financial sector, particularly in the euro area. Although banking regulation in the EU was initially harmonized following successive directives (especially after the Financial Services Action Plan of 1999), most policy instruments in the Eurozone remained at the national level. As the financial crisis progressed and turned into the Eurozone debt crisis in 2010–2011, it became clear that greater interdependency for those countries sharing the euro required a deeper integration of the banking

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system. Contradictory national solutions led to fragmentation of the single market in financial services, which in turn contributed to disruptions in lending to the real economy. This effect on the real economy, triggered by the problems in the banking sector, was extremely severe, producing record levels of unemployment and giving way to what is now referred to as the Great Recession (Altunbas, Manganelli, & Marques-Ibañez, 2011).

Consequently, in 2012, EU authorities agreed to the creation of an integrated financial framework (the so-called banking union) to restore confidence in banks and the euro. The banking union relies on common rules that all financial institutions in the EU must comply with. These rules include the establishment of more adequate capital requirements (the EU Capital Requirements Directive was approved in 2013), better protection for all EU depositors (the EU Directive on Deposit Guarantee Schemes was adopted in 2014), and common tools to effectively address failing credit institutions (the EU Directive on Bank Recovery and Resolution was published in 2014). Moreover, in 2013, the EU adopted the regulations establishing the Single Supervisory Mechanism (SSM), which places the European Central Bank (ECB) as the central prudential supervisor of financial institutions in the euro area. The ECB will directly supervise the largest banks, while the national supervisors will continue to monitor the remaining banks. Finally, to ensure an orderly resolution of failing banks with minimal costs to taxpayers and the real economy, a Single Resolution Mechanism (SRM) will be applied to banks covered by the SSM. By moving responsibility for potential financial support—and the associated banking supervision—to a shared level, the banking union would reduce financial fragmentation and weaken the vicious circle of rising sovereign and bank borrowing costs in many countries (Goyal et al., 2013).

This article analyzes several factors that the literature suggests influence bank risk, including bank-specific variables and macroeconomic variables. The global financial crisis has highlighted the importance of the early identification of riskier banks, as this allows for solving the problems at a lower cost. The bank bailout costs associated with the current global financial crisis and the large output losses experienced in several European countries clearly indicate the need for a better understanding of the determinants of bank risk. We focus on the Eurozone because these countries must coordinate their economic and fiscal policies closely—much more so than other EU member states. As stated by Poghosyan and Čihak (2011), an important motivation in favor of a more centralized banking regulation in the EU is the notion that risks in the banking sectors of EU members have become increasingly homogenous. An improved understanding of the determinants of bank risk in the euro area is important for regulators and supervisors interested in benchmarking and validation issues related to the new EU banking rules, but they may also be of interest to a wide range of financial market participants, including borrowers, shareholders and bondholders.

Because policymakers are mainly concerned about bank failures, we consider bank risk related to the bank's probability of default. In this vein, we use two popular accounting-based proxies of bank risk: the non-performing loan ratio (NPLr) and the Z-score. The NPLr, defined as the proportion of non-performing loans to gross loans, has been commonly used in the literature as a measure of bank soundness (Berger & DeYoung, 1997; Delis & Kouretas, 2011; Festic, Kavkler, & Repina, 2011). Because NPLr expresses the quality of a loan portfolio, we can expect that a higher (lower) value for this ratio will denote a higher (lower) probability of the bank defaulting. There is broad consensus concerning the inverse relationship of asset quality to bank risk. Poghosyan and Čihak (2011) go even further and advocate considering asset quality in addition to bank capitalization when designing pan-European benchmarks for sound banking conduct. These authors conclude that bank earnings and asset quality have a greater economic impact on bank distress than capitalization, which reinforces our choice of the NPLr as a measure of bank risk. As a complementary indicator, we use the Z-score, which has also been frequently used in the empirical literature to reflect a bank's probability of insolvency (Demirgüç-Kunt & Huizinga, 2010; Köhler, 2015; Laeven & Levine, 2009). This metric is defined as the number of standard deviations that a bank's return on assets must fall below the mean for the bank to become insolvent. A higher Z-score indicates that a bank is farther from default (Delis & Staikouras, 2011). The Z-score is considered a better measure of bank risk than the NPLr because non-performing loans are traditionally backward looking and highly pro-cyclical (Bikker & Metzemakers, 2005; Laeven & Majnoni, 2003). This is a criticism that does not