



Central bank independence, financial supervision structure and bank soundness: An empirical analysis around the crisis



Michael Doumpos^a, Chrysovalantis Gaganis^b, Fotios Pasiouras^{c,d,*}

^a School of Production Engineering and Management, Technical University of Crete, Greece

^b Department of Economics, University of Crete, Greece

^c Surrey Business School, University of Surrey, UK

^d Financial Engineering Laboratory, Technical University of Crete, Greece

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ABSTRACT

Over the last fifteen years, many countries introduced reforms into the supervisory architecture of their financial sector. However, there is no evidence on whether specific supervisory arrangements were more successful than others during the crisis. Empirical evidence on the topic is in general scarce and there are reasonable theoretical arguments for and against alternative approaches. Similarly, while the effect of central bank independence on price stability has attracted a lot of attention, our knowledge with regards to its effect on bank soundness remains limited. Using a large sample of commercial banks operating in various countries over the period 2000–2011, this paper investigates whether and how bank soundness is influenced by central bank independence, central bank involvement in prudential regulation, and supervisory unification. We find that central bank independence exercises a positive impact on bank soundness, which in the case of smaller banks is enhanced during the crisis. Supervisory unification and the central bank involvement appear to mitigate the adverse effects of the crisis. The power of the supervisory authorities and bank size also appear to be conditional factors.

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1. Introduction

There are many studies examining the impact of regulations like capital requirements, restrictions on activities, deposit insurance and private monitoring on bank risk-taking and soundness (e.g. Laeven and Levine, 2009; Agoraki et al., 2011). However, research on the relationship between the architecture of the supervision system and bank risk-taking remains scarce. The main purpose of this paper is to add to this strand of the literature by investigating whether and how bank soundness is influenced by central bank independence, central bank involvement in prudential regulation, and supervisory unification.

Such an empirical analysis is not only timely but also necessary for various reasons. First, over the last fifteen years or so, several countries around the globe introduced reforms into the supervisory structure of their financial sector.¹ However, there is no evidence on whether specific supervisory arrangements were more successful than others during the crisis. Second, theory and limited

empirical evidence provide mixed results, and the financial crisis has re-opened a debate on the advantages and disadvantages of alternative arrangements. For example, the ones that support the involvement of central banks in micro-prudential supervision put forward arguments like access to better information, more effective crisis resolution, economies of scale, the ability to retain better equipped staff, etc. However, others argue that there are drawbacks like conflicts of objectives, reputational risk, scope diseconomies, etc. Additionally, despite the general belief that central bank independence is beneficial not only for price stability but also for financial stability, the theoretical model of Berger and Udell (2013) contradicts this view. Third, the delegation of powers among the regulatory agencies and the central bank involvement in supervision has recently gained considerable attention at the policy making level. For example, on July 2010 US President Barack Obama signed the Dodd–Frank Act into law, with one of its aims being to streamline banking regulation, and reduce competition and overlaps between different regulators. In Europe, the ECB is taking over the supervision of the largest banks, whereas in the UK the prudential supervision has been assigned back to the Bank of England. At the same time, the literature acknowledges the difficulties in determining the optimal level of financial supervision unification through a traditional cost–benefit analysis (Masciandaro, 2009), illustrating the need for

* Corresponding author at: Surrey Business School, University of Surrey, UK.

E-mail addresses: f.pasiouras@surrey.ac.uk, pasiouras@dpem.tuc.gr (F. Pasiouras).

¹ Masciandaro and Quintyn (2009a) highlight that between 1998 and 2009, 70 out of the 102 countries that were considered in their study have chosen to reform their financial supervisory structure.

empirical studies that will explicitly link the degree of unification with bank soundness. Fourth, while the spotlight is usually on specific regulatory rules, frameworks (e.g. Basel III) and approaches (e.g. micro- versus macro-prudential), it should be emphasized that the supervisory agencies are the ones that must develop and implement all these regulatory initiatives.

We use a sample of up to 1700 commercial banks operating in around 90 countries over the period 2000–2011, and we aim to extend the literature in various ways. First, earlier studies at the bank level examine profitability (Barth et al., 2003), efficiency (Gaganis and Pasiouras, 2013), and other bank attributes like non-performing loans or liquidity (Barth et al., 2002). In contrast to these studies we use the Z-score, an overall indicator of bank soundness, which is inversely related to the probability of bank insolvency (see e.g. Laeven and Levine, 2009).

Second, half of the existing studies – including both studies on financial stability (i.e. Klomp and de Haan, 2009; Dincer and Eichengreen, 2012) – are at the country level. This results not only on a limited number of observations, but most importantly on loss of information about important bank characteristics. For example, the literature suggests that the influence of monetary policy and micro-prudential regulations on banking outcomes varies across different levels of bank size and market power (Kashyap and Stein, 2000; Agoraki et al., 2011; Zaheer et al., 2013; Brissimis et al., 2014). Within this context, the use of bank-level data in the present study allows us to examine whether the effect of regulatory structures and central bank independence on risk-taking differs between banks of different size.

Third, all but one of the existing studies that focus on supervisory characteristics and aspects of bank risk and performance examine periods prior to the crisis (i.e. Dincer and Eichengreen, 2012).² In contrast, we make use of newly constructed databases on regulatory structures and central bank independence around the world, to provide evidence over a recent time period. Apparently, this is not just an issue of offering more recent evidence or updating a dataset. Rather, it allows us to consider reforms in the supervision regime. More importantly, it allows us to examine the impact of the supervisory architecture on bank soundness around the financial crisis, and determine what works and what does not work during difficult times. For example, Herring and Carmassi (2008) mention that during normal times, an integrated supervisor located outside the central bank has the potential to achieve economics of scope, and to mitigate conflicts of interests and moral hazard problems; however, the real question is how this framework will perform during a crisis. The authors also mention that there are a number of instances in which political interference (i.e. lack of independence) in macro- and micro-prudential supervision has precipitated or exacerbated crises.

The rest of the manuscript is as follows. Section 2 provides a background discussion. Section 3 describes the data and methodology. Section 4 presents the results, and Section 5 concludes the study.

2. Background discussion

As discussed in the previous section, policy makers must take decisions in relation to central bank independence, central bank involvement in prudential regulation, and supervisory unification. In all the cases, there are reasonable arguments for and against the alternative approaches, but relatively little empirical analysis. So,

² There are also recent studies that examine other issues like the assignment of banking supervision to central banks (Dalla Pellegrina et al., 2013), and the association between supervisory structure and GDP growth (Masciandaro et al., 2013).

in this section we discuss these issues in turn drawing where possible on the related literature.

2.1. Central bank independence

Contrary to the large literature on the relationship between central bank independence (CBI) and inflation, the work on financial stability is limited (Berger and Kießmer, 2013). Barth et al. (2003) highlight the importance of the independence of regulatory agencies for the well-functioning of the banks, mentioning that it allows the agencies to supervise the financial condition of banks in a professional and consistent fashion. Furthermore, Quintyn and Taylor (2002) argue that bank regulatory and supervisory independence matters for financial stability for the same reasons that CBI matters for monetary stability – i.e. among other things, it can be seen as a device for mitigating the economic costs that are associated with a time-inconsistency problem. In a similar manner, Cihák (2010) mentions that greater independence from outside pressures should translate in central banks that are less politically constrained in acting to prevent financial distress. In contrast, a central bank that is subject to a lower degree of independence could be captured by political interests associated with weak financial institutions. Along the same lines, Hutchison and McDill (1999) argue that “A “dependent” central bank closely aligned with the government may be more inclined to provide monetary finance to problem institutions, thereby creating an additional channel for the moral hazard problem”. (p. 160).

The above discussion, implies that CBI could have a direct impact on the well-functioning of the banks, in cases where the central bank is involved in prudential supervision. However, CBI may also have an indirect influence on bank soundness through monetary policy and price stability, regardless of whether prudential supervision is assigned to the central bank or not.³ In particular, most central banks have a mandate to pursue price stability as the primary objective of their monetary policy, with various studies suggesting that CBI will result in lower inflation.⁴ At the same time, there appears to be a negative association between inflation and individual bank soundness (e.g. Baselga-Pascual et al., 2013; Uhde and Heimeshoff, 2009) or banking crises (e.g. Demirgüç-Kunt and Detragiache, 1998; Boyd et al., 2014). Additionally, Boyd et al. (2014) highlight that economies that fail to decrease their inflation rates during and after a banking crisis have a much higher probability of experiencing subsequent crises.⁵ Nevertheless, focusing on inflation may also result in problems in the banking sector. For example, inflationary pressures may call for interest rate increases that could translate into lower financial stability. Mishkin (1996) argues that “The theory behind credit rationing can be used to show that increases in interest rates can be one factor that help precipitate a financial crisis”. (p. 19). Along the same lines, Cukierman (1992) mentions that when banks experience fast and substantial increases in interest rates, they cannot pass them to their assets as fast as they pass them to their liabilities. This increases interest rate mismatches and, thus, market risk.⁶ Others refer to the so called “paradox of credibility”. For instance, Borio (2013) argues that “the establishment of regimes yielding low and stable inflation, underpinned by central

³ We would like to thank an anonymous referee for an interesting comment that motivated us to distinguish between the direct and indirect impact discussed in this section.

⁴ See Arnone et al. (2006) for a review of the literature.

⁵ Inflation can also be a conditional factor as for whether the probability of a banking crisis may be higher either under competition or under monopoly (see the theoretical model of Boyd et al., 2004).

⁶ The idea that low levels of inflation and interest increases can have adverse effects is not new. Fisher (1933), in the debt-deflation theory of great depressions, also argues that an interest rise can lead to, among others, reduction in net worth, decrease in profits, more liquidation, and bank failures.

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