Int. Fin. Markets, Inst. and Money 36 (2015) 36–52

Contents lists available at ScienceDirect

Journal of International Financial Markets, Institutions & Money

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

The unique risk exposures of Islamic banks' capital buffers: A dynamic panel data analysis☆

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ARTICLE INFO

Article history:
Received 27 August 2014
Accepted 24 February 2015
Available online 7 March 2015

JEL classification:
G21
G28

Keywords:
Islamic banks
Capital buffers
Risk management
Bank regulation
Capital adequacy

ABSTRACT

The growing relevance of Islamic banking from a prudential perspective warrants the need to investigate the susceptibilities of Islamic banks' capital buffers to unique risks emanating from their operating environments. We employ a panel model using two-step dynamic Generalized Method of Moments (GMM) on a data set comprising 128 conventional and Islamic banks. Our results tend to indicate privately owned Islamic banks, unlike their state owned counterparts, attempt to safeguard shareholders by independently mitigating the effects of displaced commercial risk through higher capital buffers. The relation between equity investment risk and bank capital buffers also seems to vary by region.

1. Introduction

The promotion of a more resilient banking sector in a challenging global environment has recently shifted the attention of policy makers and scholars towards Islamic banking as a viable alternative-banking model (Hasan and Dridi, 2010; Bourkhis and Nabi, 2013; Beck et al., 2013). Theoretically, the nature of transactions and investment activities of Islamic banks differ as compared to the lending activities of conventional banks.[1] Supervisory and competitive pressures in the market place, however, result in significant divergences in the current practices of Islamic banks from the theoretical models initially envisaged (Rosly, 1999; Archer et al., 2010; Farook et al., 2012). The ensuing risks for Islamic banks in dual banking system economies include rate of return (ROR) risk and displaced commercial risk (DCR) arising from balance sheet mismatches. Equity investment risk also emanates from their profit and loss sharing (PLS) based financing activities. The current capital adequacy guidelines for Islamic banks however do not seem to incorporate effective techniques for the estimation of ROR risk and DCR (Archer et al., 2010). They also seem to ignore Islamic banks' agency roles with regards to unrestricted profit

☆ This paper is a revised version of some core chapters of the first author's successful completion of his Ph.D. dissertation which was awarded the best Ph.D. work-in-progress prize by the 16th Malaysian Finance Association Annual Conference held on June 4–6, 2014 in Kuala Lumpur and also subsequently presented at the 4th Islamic Banking and Finance Conference held on June 23–24, 2014 at Lancaster University, UK. The authors are grateful to the editor, the anonymous reviewer and the participants of the two conferences for their valuable comments that certainly improved the quality of the paper immensely.

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[1] Unrestricted profit sharing investment accounts (UPSIAs) based on Mudarabah contracts represent a significant funding source for Islamic banks (Sundararajan, 2008). The use of profit and loss sharing (PLS) based financing is also unique to Islamic banking operations.

http://dx.doi.org/10.1016/j.intfin.2015.02.012
1042-4431/

sharing investment accounts (UPSIA) holders (Hall et al., 2000). Investigating the inherent linkages between capital buffers and these unique risk exposures is therefore critical from a prudential perspective.

In the banking literature, a prevalence of studies examine the effects of business cycle fluctuations (Ayuso et al., 2004; Stolz and Wedow, 2011; Shim, 2013) as well as to a lesser degree the influence of market discipline, market power, and portfolio risk adjustments (Nier and Baumann, 2006; Fonseca and González, 2010; Jokipii and Milne, 2011) on banks' capital buffers. To the best of our knowledge, comparable research for Islamic banks is lacking. This paper aims to fill the gap in the Islamic banking and finance literature by providing insight into the overall susceptibilities of Islamic banks' capital buffers to unique risks emanating from their operating environments (when compared to conventional banks). Within this context we examine in particular the influence of ROR risk, DCR, and equity investment risk exposures on Islamic banks' capital buffers. This study is also the first to examine this issue for Islamic and conventional banks in the 18 countries where both bank types co-exist.

To accomplish this objective, we employ a two-step dynamic panel estimation by using the generalized method of moments (GMM) estimator developed by Arellano and Bond (1991) (i.e. the difference GMM) and the system-GMM estimator developed by Blundell and Bond (1998). Both estimators handle important modelling concerns, namely the fixed effects and endogeneity of regressors, whilst avoiding dynamic panel bias (Nickell, 1981). We apply these estimators on an unbalanced panel data set comprising 128 commercial banks of which 44 are Islamic banks in the aforesaid 18 countries over the period 2005–2012. It is important to note that the flexible GMM framework accommodates unbalanced panels, a characteristic of our micro panel data set, as well as multiple endogenous variables (Roodman, 2009).

Our findings tend to corroborate the presence of capital guideline deficiencies for Islamic banks, as they seem to mitigate the effects of ROR risk and DCR exposures independently through higher capital buffers. The results however do not extend to state owned Islamic banks that seem to manage unrestricted profit sharing investment accounts (UPSIAs) in line with their inherent risk absorbent features. Our findings also suggest in regions where participatory forms of financing are more prevalent, complexities from monitoring PLS arrangements might lead to rising adverse selection and moral hazard problems, and hence higher capital buffers. This paper raises distinct policy implications with regards to the regulation and supervision of Islamic banks in dual banking system economies.

We proceed in the next section with a brief overview of the relevant banking literature. In Section 3 we present the empirical model and data, followed by the methodology in Section 4. We present our main empirical findings and final remarks in Sections 5 and 6 respectively.

2. Theoretical and empirical literature

The theoretical literature suggests the generosity of deposit insurance schemes plays a prominent role in providing a moral hazard for excessive risk taking by banks' shareholders (Merton, 1977; Cubillas et al., 2012). The implications of moral hazard theory are however contested in practice as banks maintain capital in excess of the regulatory minimum in order to cushion potential negative shocks as they occur (Milne and Whalley, 2001; Elizalde and Repullo, 2007). The influence of costs of deposits on banks' capital buffers is widely investigated and seems to be contingent on the strength of market discipline (Gropp and Vesala, 2004; Nier and Baumann, 2006). Marcus (1984) and Keeley (1990) also bring forth the various anti-competitive restrictions that endow banks with market power (monopoly rents) making banking charters valuable. Banks along these lines are expected to maintain higher capital buffers in order to preserve their valuable charters (Milne and Whalley, 2001; Elizalde and Repullo, 2007). Hellmann et al. (2000) moreover suggest a negative relationship between the level of financial liberalization and capital buffers. Discussions on banking pro-cyclicality also advocate a negative relationship between capital levels and economic cycles (Bliss and Kaufman, 2002).

Within the Islamic banking literature, Rosly (1999) suggests a higher susceptibility to interest rate risk for Islamic banks based on the nature of their operations relative to conventional banks. This arises as Islamic banks struggle to manage an overall reliance on fixed profit rate (deferred payment sale) financing on the asset side of the banks' balance sheet coupled with the mismatch risk that results due to fluctuating returns to UPSIA holders on the liability side of the banks' balance sheets. ROR risk and consequently DCR ensue as balance sheet risks are shifted from UPSIA holders to shareholders. This occurs as Islamic banks are forced to subsidize returns to UPSIA holders in order to avoid massive deposit withdrawals in a rising price environment.[2] It is also important to note Islamic banks set up two kinds of reserves in order to smoothen returns actually paid out to UPSIA holders, namely profit equalization reserves (PER), and investment risk reserves (IRR). As indicated by Archer et al. (2010), the PER and IRR are in essence mechanisms whereby banks mitigate DCR. They further explain that the accumulation and draw down of these reserves that serve as equity of UPSIA holders, the willingness to accept cuts in the mudarib's share, and the transfer of current income or other shareholder funds to UPSIA holders if needed and permissible, can all alter the magnitude of risk exposures for the shareholders of Islamic banks. Having said that, publicly available information on Islamic banks' practices with regards to PERs and IRRs are rather limited, and furthermore, there are no specific supervisory disclosure requirements with regards to these reserves. Regulators often leave their calculation and use at the discretion of Islamic banks (Sundararajan, 2008; Farook et al., 2012).

[2] In contrast to contractual obligations, competitive forces pressure Islamic banks to provide distributions similar to market based deposit rates. This impacts bank riskiness (Farook et al., 2012).