Pricing Beliefs: Empirical Evidence from the Implied Cost of Deposit Insurance for Islamic Banks

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Abstract

Using a large international sample of 348,899 year-firm observations covering 352 Islamic banks and 30,572 conventional banks in 213 countries over the 1999-2013 period, we estimate the deposit insurance premiums of *Islamic banks* and *conventional banks*. We find that the premiums for *publicly listed Islamic banks* are 28% lower than those for *publicly listed conventional banks*. Moreover, we show that the premiums of *privately held banks* are significantly higher than those of *publicly listed banks*. Finally, we show that *publicly listed Islamic banks* did not record an increase in the level of deposit insurance premiums during the 2007-2009 financial crisis.

Keywords: Islamic Banks, Deposit Insurance, Risk-based Premium, Systemic Risk

1. Introduction

Deposit insurance has become increasingly important in the last decades, even more after the recent financial crisis following the subprime credit crisis, for its crucial role in preventing banks runs and its ability to provide liquidity in case such shocks occur (Anginer et al. (2014)). Since 1980, the number of countries adopting explicit deposit insurance schemes almost tripled (Demirgüç-Kunt and Sobaci (2001), Demirgüc-Kunt et al. (2014)). These ranges from well-established deposit insurance systems (e.g. USA in 1934, India in 1961, Germany in 1966, and Canada in 1967) to deposit insurance schemes at their infancy (e.g., Cost Rica, Mauritius, Syria, and Zambia[1]). As pointed out in Demirgüç-Kunt et al. (2008), these existing deposit insurance schemes differ from a country to another and often present their own characteristics in order to offer adequate guarantees to banking depositors (e.g., different guarantee products, applicable coverage limits, explicit vs. implicit, existence of co-insurance or not, public vs. private fund management…).

At the same time, the continuously growing size of the Islamic banking system that operates in parallel to the conventional banking system raised the interest of regulators and policymakers regarding the adequacy of its financial safety net (Soumaré, 2009). Except Turkish and Malaysian Islamic banks whose depositors benefit from having guarantees on their savings/deposits, most of the Islamic banks' depositors in other countries have no such explicit guarantees. In case of a serious liquidity shock, insured depositors (mainly from conventional banks) will receive their money back from the deposit insurance fund, at least the guaranteed portion of it, whereas Islamic banks' depositors (other than in Turkey and Malaysia) will not necessarily benefit from such a reimbursement mechanism since their banks are not members of an explicit deposit insurance system[2].

The objective of this paper is to assess the deposit insurance premiums for *all* Islamic banks, both *publicly listed* and *privately held*, and to compare them to those of conventional banks. Regulatory requirements and operational characteristics differ for publicly listed banks

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[1] www.iadi.org

[2] Government intervention, generally used as implicit deposit insurance in this case, allows for a reimbursement process to take place. Such an intervention is less welcomed by taxpayer whose money is used to fund government intervention.

compared to privately held ones (Falkenheim and Pennacchi (2003)). Accounting for these differences in our model allows for a full coverage of the Islamic banking system. The comparison with the conventional banking system is used as a benchmarking tool and provides important insights to regulators, policymakers, as well as investors.

The underlying principles of Islamic banking prevent Islamic banks from the membership in the conventional deposit insurance system[3]. Islamic banks have then to implement their own deposit insurance system in compliance with the Islamic finance principles in order to provide to their depositors guarantees for their savings. In that sense, designing and implementing a universal Islamic deposit Insurance system urges. Such a system may be adopted by different countries and customized to fit the specific features of each national Islamic finance system. In addition to the very limited coverage of Islamic depositors compared to the guarantees provided by the conventional deposit insurance systems and to the fast growing size of Islamic finance, our interest in Islamic deposit insurance (IDI) is motivated by the following three considerations. First, most of the current conventional banking systems are heavily subsidized since their deposit insurance services are underpriced (Leaven (2002) and Pennacchi (2006)). This creates a competitive advantage against the Islamic banks since the latters do not benefit from such subsidized services. Furthermore, Economides et al. (1996) find that small banks benefit more from explicit deposit insurance because large ones tend less to default. Since Islamic banks have relatively small and medium sizes and they are not member of an IDI system (except for the Turkish and Malaysian cases), they suffer from a significant disadvantage when they compete with their conventional peers.

Second, the current regulatory framework focuses more on the capitalization and supervisory mechanisms of banks and ignores the deposit insurance dimension as an important part of the financial safety net (Pennacchi (2005)), this is even more prevalent in the Islamic banking system. Indeed, the financial literature reported that features of country's regulatory

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[3] In fact, receiving and paying *interest rates* charges (so-called "*riba*" in Islamic finance) such as investing in high yield bonds is not permitted. Also, making *risk-free* profit (so-called "*maysir*" in Islamic finance) such as having arbitrage strategies is not allowed. Making money from *uncertainty* (so-called "*gharar*" in Islamic finance) as it is the case with the conventional insurance is not compliant to the Islamic principles. Finally, doing *illicit* investments or operations (so-called "*haram*" in Islamic finance) such as investing in tobacco or alcohol firms are not permitted.

environment are important in deposit insurance schemes adoption and design (Anginer et al. (2014) and Demirgüç-Kunt and Kane (2002)).

Third, as stated in Anginer et al. (2014), there is consensus in the literature that deposit insurance exacerbates moral hazard problems by incentivizing banks to take on excessive risk. As argued by Kroszner (1998) and Pennacchi (2006), these banks extract a net subsidy from deposit insurance at the expense of safer banks in the presence of an insufficiently risk-sensitive premium structure. In the absence of a coherent risk-based deposit insurance framework, Houston et al. (2012) argue that large banks may have incentives to engage in regulatory arbitrage, then transferring funds from markets with restrictive regulations to those with relaxed regulations, hence altering financial stability. Having Islamic deposit insurance protections with adequate risk-based premium would mitigate these effects, especially in case of robust supervisory mechanisms whose characteristics are consistent with the deposit insurance features (e.g. Anginer et al. (2014) and Pennacchi (2006) in the context of conventional banks).

Our work aims to contribute to the above debate and to provide guidance to policymakers in the design of a sound Islamic deposit insurance system. Hence, using a sample of 348,899 year-bank observations covering 352 Islamic banks and 30,572 conventional banks over the 1999-2013 period, we estimate the implicit risk-based premiums for deposit insurance of Islamic banks, publicly listed as well as privately held, and compare them to those estimated for conventional banks. We use a unified assessment framework of the cost of deposit insurance for both Islamic and conventional banks populations by using the conceptual option pricing settings of Merton (1977) and Ronn and Verma (1986) for publicly traded banks, and the market comparative approach of Falkenheim and Pennacchi (2003) for privately help banks. We find, first, that the deposit insurance premiums for publicly listed Islamic banks are lower than those for publicly listed conventional banks, suggesting that publicly listed conventional banks are riskier than their Islamic peers. Second, we show that the deposit insurance premiums of privately held banks, either Islamic or conventional, are significantly higher than those of publicly listed banks, suggesting the importance of the economies of scale and cost efficiencies related to banks' size, since publicly listed banks are usually larger than privately held ones. Finally, we show that publicly listed Islamic banks did not record an increase in the level of deposit

insurance premiums during the 2007-2009 financial crisis, suggesting, first, the importance of the Islamic banking paradigm as an interesting alternative that exhibits a lower exposure to systemic risk compared to the conventional banking system, and, second, the necessity to move from a replication and compliance-based approach to a risk-based and financial engineering approach, specifically for the smaller, privately held Islamic banks. This is consistent with the finding described in Kammer et al. (2015) "*its [Islamic finance] risk-sharing features and prohibition of speculation suggest that Islamic finance may, in principle, pose less systemic risk than conventional finance*.".

Our study contributes to the literature in several ways. First, while previous studies focused on the cost of deposit insurance for the conventional banking system (e.g., Anginer et al. (2014), Demirgüç-Kunt et al. (2008), Falkenheim and Pennacchi (2003), Goedde-Menke et al. (2014), Lee et al. (2015), Morrison and White (2011), and Pennacchi (2006); among many others), our study covers both Islamic and conventional banking systems and sheds more light on the specificities of Islamic banks in terms of risk-taking and deposit insurance pricing. Second, our study complements the existing literature related to privately-held versus publicly listed banks and illustrates the implications of a higher access to capital markets from the one hand and the obligation to comply to the banking regulation from the other hand in both conventional and Islamic banking settings. Third, we extend prior researches on Islamic banking and contribute to the debate related to the need to strengthen the financial safety net of the Islamic banking system. Finally, we use a unified assessment framework of the cost of deposit insurance for both Islamic and conventional banks populations by using the option pricing approach of Merton (1977) and Ronn and Verma (1986) for publicly-listed banks, and the market comparable approach of Falkenheim and Pennacchi (2003) for privately-held banks.

The remainder of the paper is organized as follows. Section 2 presents the literature related to the Islamic banking and deposit insurance in comparison to the conventional banking system and motivates our hypothesis. Section 3 discusses the pricing models, describes our sample, and presents the empirical results. Section 4 provides more insights on the assumptions underlying the modeling framework and discusses the potential ideas for future research. Finally, section 5 concludes.

2. Background and Emerging Hypothesis

a. Background on Islamic deposit-insurance

The Islamic financial model works on the basis of risk sharing contracts. *Mudarabah* is such a contract. *Mudarabah* is a profit-and-loss sharing income or revenue bond contract. It offers specialist investment in which the project-owner and the investor share any profits. It does not guarantee any fixed rate of return, instead, the investor receives a share of the profit or bears the losses generated by the business venture, and the principal is paid at the termination of the contract.

Advocates of Islamic finance have repeatedly argued for its adoption primarily because it can promote higher real investment and growth rates by encouraging risk and return sharing. However, Islamic financial institutions have so far mainly focused on debt financing rather than equity financing precisely because of: (1) high uncertainty of return to financial institutions since returns depend on project performance; and (2) in addition to credit risk, they involve business risk (Hassan and Soumaré (2015)).

Although Islamic finance has grown rapidly all over the world, the concept of deposit insurance in Islamic finance is quite new. So far, there are three models of Islamic deposit insurance adopted by Islamic countries. The first one keeps Islamic deposits under a conventional deposit insurance scheme. The second one develops an Islamic deposit-insurance system that runs with the conventional system. The third one develops a complete Islamic deposit insurance system.

The implementation of Islamic deposit insurance system depends on how governments of these countries allow deposit insurance from an Islamic principles perspective[4]. There are several arguments advocating the permissibility of deposit insurance in Islamic finance. A first argument is that as deposit insurance contains the greater public interest, it should then be permissible under Islamic principles. In fact, deposit insurances protect people from losing their money, and prevent any financial difficulties that may arise because of the failure of Islamic banks. Otherwise these people who have limited financial resources will be exposed to social problems, which is not desirable for a society. Moreover, Islam urges its followers to prepare for any possible difficulties and to find a means to prevent them. Thus, the deposit insurance acts

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[4] Islamic principles designated what is called by Islamic scholars as *Shari'ah.*

as a mechanism that protects their money and prevents any future cataclysms. Furthermore, Muslims are also urged to help each other in good activities. Deposit insurance mechanism helps the depositors in protecting their wealth and the insurer earns a premium as fee. Second, deposit insurance can build the confidence among the general people about the safety of their bank deposits which in turn, reduce the likelihood of panic among depositors when bank run occurs. Therefore, deposit insurance can help to maintain a stable economy by preventing the bank failure and contagion to the entire financial and economic system. However, there is another major factor that could oppose the permissibility of deposit insurance, because Islamic banks receive deposits under Islamic principles and there are certain issues which should be considered while adopting Islamic deposit insurance system.

According to Islamic requirements, Islamic financing contracts have to be designed in such a way that they avoid risk-free return and money from money such as interest (*riba*), uncertainty (*gharar*) and gambling (*maysir*). They should be cautiously created so that money can be created from goods and services, and profit sharing arrangements for money over time. First, under the ex-ante deposit insurance system, a bank pays premium to the deposit insurer and, if the bank is wound up, the deposit insurer will reimburse the insured depositors. As deposit insurance does involve the exchange of money for money and the exchange occurs with different values and at different times, some Islamic scholars would argue that it is an interest-based transaction and therefore non-permissible. The interest element could also exist in deposit insurance when the deposit insurer is involved in interest-based transactions or activities. This can happen when the deposit insurer protects deposits, invests the deposit insurance funds, lends to troubled banks, and obtains external funds when in deficit, in which all these activities are based on interest. Therefore, interest (*riba*) is a major factor that should be considered and eliminated while designing an Islamic deposit insurance system.

Second, all transactions including deposit insurance may contain the element of uncertainty (*gharar*). The uncertainty element exists in respect of the failure of a bank. Nevertheless, such uncertainty (*gharar*) may not be prohibited as it is unavoidable and naturally embedded in deposit insurance. Third, gambling (*maysir*) arises from uncertainty when there is a chance that one party will suffer a loss while another will make a profit from an event. As discussed above, the only uncertainty in deposit insurance is the event of a bank's failure but this is unavoidable

and embedded in deposit insurance. Furthermore, no party will gain in the event that a bank fails. Therefore, the gambling (*maysir*) element is irrelevant in deposit insurance.

There are several approaches that a government could take in order to design a *Shari'ah* compliant deposit insurance system[5]. In this paper we will discuss and consider an Islamic-based contract for our mathematical formulation, which is "guarantee with fee" (*kafalah bil ujr*). This contract of guarantee with fee is a contractual guarantee given by a guarantor to assume the responsibilities and obligations of the party being guaranteed should claims arise. As consideration for the guarantee, a fee is paid by the guaranteed party to the guarantor, which is similar to deposit insurance premium in conventional finance, but comply with Islamic rules.

The whole "guarantee with fee" (*kafalah bil ujr*) process works as follows: Islamic banks accept *mudarabah* deposits from the investors in a profit-loss sharing *mudarabah* contract and make loans in profitable and *Shari'ah*-compliant projects. In this financing agreement, project-owners share the project after tax net-income with Islamic banks if the project is successful, but lose their investment in case of project defaults. To reduce the default risk and enhance the creditworthiness of the project, the guarantor intervenes by providing financial *mudarabah* deposit guarantees. If the project turns out to be successful, the guarantor gains the deposit guarantee fee, and Islamic banks and project-owners share the after-tax net-income according to their profit sharing agreements. Figure 1 describes the relationships between the *mudarabah* depositors, Islamic banks and the guarantor. We argue that by appropriate risk sharing and/or financial *mudarabah* deposit guarantee, Islamic banks can enhance the creditworthiness and increase the attractiveness of their loans and attract more *mudarabah* deposits.

Insert Figure 1 here

In view of the above, there is a need for policies and interventions to help both depositors and Islamic banks to reduce investment risk in *mudarabah*. Thus, the paper addresses an important issue and presents a model that justifies insurer's guarantees of deposits from an economic and social viewpoint. As the paper explains, the insurer has an incentive to provide deposit

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[5] For more information, see "Deposit Insurance from the Shariah Perspective", Discussion Paper Prepared by the Islamic Deposit Insurance Group of the International Association of Deposit Insurers in February 2010. Available at:
http://www.iadi.org/docs/DP-DI_From_Shariah_Perspective_(Final)_Sep2011_to_IADI.pdf

guarantee since successful investments will lead to continuous guarantee fee. Borrowers will have greater access to finance with insurer's deposit guarantees and Islamic banks will be willing to finance more projects. Insurer's deposit guarantee is justified as far as the return exceeds the cost of providing the guarantee.

b. Hypothesis

Several studies in the existing literature compare the risk of Islamic banks to conventional banks. For example, the literature shows that Islamic banks are better capitalized and have better asset quality than conventional banks (Beck et al. (2013) and Rosman et al. (2014)). The likelihood of insolvency for Islamic banks is consequently lower than the likelihood of insolvency for conventional banks, *ceteris paribus*. Cihak and Hesse (2010) find that small Islamic banks are more stable than small conventional banks and large Islamic banks. Baele et al. (2012) show that default rates for Islamic banks portfolios are lower than for conventional banks. Khan (2010a) finds that Islamic banks enjoy higher deposit growth rates than conventional banks during normal as well as distress time periods. On the profitability side, prior research show that Islamic banks achieve higher returns than conventional banks (Samad and Hassan (1999), Iqbal (2001), and Hassoune (2002)). Furthermore, Islamic banks recorded superior performance during the financial crisis (Belanes et al. (2015), Cihak and Hesse (2010), and Hasan and Dridi (2010))[6].

As pointed out in Ibrahim (2015), recent studies have extended the analysis of Islamic banks to cover lending/financing schemes, loan loss provisions, capital buffers, profitability, cost effectiveness, capitalization, asset quality, and intermediation ratio (Abedifar et al. (2013), Abdul Karim et al. (2014), Khediri et al. (2014), Farook et al. (2014), and Daher et al. (2015)). However, previous studies didn't highlight the well-documented distinction between publicly listed banks and privately held ones, , either Islamic or conventional. In fact, the literature (e.g. Falkenheim and Pennacchi (2003)) found different risk-taking behavior adopted by publicly traded banks and privately-held banks. We therefore divide our sample of Islamic and conventional banks into two categories: publicly-listed banks versus privately-held banks. The

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[6] While the Islamic banking literature finds that Islamic banks are less sensitive to systemic chocks, recent findings related to Islamic equity sector show an increasing integration with the global market (Rizvi et al. (2015) and Yilmaz et al. (2015)).

majority of banks in our sample are privately held. On the one hand, privately held Islamic banks are small size financial institutions and are more socially involved in the communities than similar size conventional banks. Indeed, smaller size Islamic banks are found to be more stable than their conventional peers (Cihak and Hesse (2010)). These observations suggest a lower cost of deposit insurance bared by privately held Islamic banks compared to their privately held conventional peers.

On the other hand, the distinguishing profit and loss sharing feature that characterizes the Islamic banking system against the conventional one may sometimes imply a higher imbedded risk of the Islamic banks' portfolios. Abedifar et al. (2013) and Olson and Zoubi (2008) report that Islamic banks take higher risks because of the complexity of Islamic financing modes and limitations in their funding, investment, and risk management activities. They argue that taking higher risk helps them recording higher profits on average, on the long run[7]. In addition, as pointed out by Beck et al. (2013) and Kuran (2004), cost inefficiencies and the complexity of Islamic banking products may undermine Islamic banks competitiveness. Furthermore, Samad and Hassan (1999) shows that Islamic banks become inefficient when they operate within a dual banking environment which is the case of numerous publicly-listed Islamic banks as shown by Chong and Liu (2009) and Khan (2010b). These results may imply a higher implicit cost of deposit insurance bared by publicly-listed Islamic banks compared to publicly-listed conventional banks. These observations lead to the following hypothesis:

Hypothesis 1: Publicly listed (Privately held) Islamic banks exhibit lower (higher) levels of implicit deposit insurance premium than publicly listed (privately held) conventional banks, ceteris paribus.

While the previous literature on the level of risk in conventional publicly banks compared to privately held banks documents mixed results (Kabir et al. (2015), Kwan (2004), and Nichols et al. (2009)), very few evidence exists yet in Islamic banking as far as the difference in risk levels between privately held Islamic banks and publicly listed ones is concerned. Publicly listed Islamic banks tend to develop financial products that are similar to those of conventional banks; whereas privately held Islamic banks, much smaller in size, are economically and socially more

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[7] These findings are consistent with Narayan et al. (2015) who show that an Islamic equity portfolio of low credit quality has higher returns than a higher credit quality one, and with Narayan and Bannigidadmath (2015) whose results support the risk-return trade-off principle.

involved in their communities and have a closer view of their customers, hence increasing the quality of their portfolio, which decreases their loan losses. In addition, publicly listed Islamic banks are more closely regulated than privately held Islamic banks. Referring to Jensen and Meckling (1976), agency costs decrease when information asymmetry decreases due to disclosure requirements and the enforcement of regulatory frameworks. In addition, smaller banks' size may imply lower economies of scale, higher cost inefficiencies, lower access to capital markets, and lower competitiveness. We therefore hypothesize that privately-held Islamic banks bearing an overall higher risk than their publicly-listed Islamic peers, which leads to the enunciation of the following hypothesis.

Hypothesis 2: Privately held Islamic (conventional) banks exhibit higher levels of deposit insurance premium than publicly listed Islamic (conventional) banks, ceteris paribus.

3. Methodology and Empirical Results

In this section, we first describe the data sources and extraction process leading to our final database used for the estimations. Second, we provide the theoretical modeling approach used to assess the implicit deposit insurance premium for publicly listed Islamic and conventional banks. We then use a multivariate regression setting to identify the risk-loading factors for these previously assessed deposit insurance premiums, and then use the estimated regression models to obtain the expected level of the deposit insurance premiums for privately held banks. Finally, we present the empirical results and their interpretations.

a. The Data

We use BankScope, a global database, to extract the annual banking data for all the banks around the World over the 1999-2013 period. BankScope presents an indicator to differentiate between publically listed banks and privately held ones. Similar to Beck et al. (2013), we eliminate the outliers in all variables by winsorizing at the 1st and 99th percentile within each country. Then, we use the World Bank's Islamic Banking Database to identify Islamic banks and we complement our identification exercise by referring to country-specific sources as well as Islamic banking associations. Finally we use Datastream to extract market-based data of all publicly listed banks (Islamic and conventional).

Our final sample presents 348,899 year-bank observations covering 352 Islamic banks and 30,572 conventional banks in 213 countries over the 1999-2013 period[8]. Table 1 provides a country distribution of our final sample. Panel A in Table 1 presents the distribution of Islamic banks by country as well as the distribution of the publicly listed Islamic banks and the privately held ones. Over the 352 Islamic banks, 131 are publicly listed (37%) and 221 are privately held (63%). Only eight countries hold two-third (2/3) of the Islamic banks population: Indonesia (63), Malaysia (46), Bahrain (27), Pakistan (23), the UAE, Saudi Arabia, Iran (17 each), and Kuwait (16). The remaining one third (1/3) of the Islamic banks population is spread over 39 other countries. Similarly, only five countries hold more than 50% of the 131 publicly listed Islamic banks: Pakistan (17), UAE (14), Kuwait (13), Saudi Arabia (12), and Indonesia (11). The privately held Islamic banks are more concentrated since more than 50% of them are located in only three countries: Indonesia (52), Malaysia (41), and Bahrain (19).

Panel B in Table 1 presents the distribution of conventional banks by country, publicly listed banks and privately held ones. Over the 30,572 conventional banks, 3,643 are publicly listed (12%) and 26,929 are privately held (88%). Only five countries hold around two-third (2/3) of the conventional banks population: the USA (13,741), Germany (2,797), Russia (1,212), Italy (1,064), and Japan (1,041). On its own, the USA holds 45% of the world conventional banks population, 40% of the world publicly listed conventional banks, and 45% of the world privately held conventional banks. Half of the 3,643 publicly listed conventional banks are located in the USA (1,470), Japan (189), the United Kingdom (94), and France (75). Finally, seven countries hold 70% of the privately held conventional banks: USA (12,271), Germany (2,738), Russia (1,139), Italy (995), Japan (852), France (668), and United Kingdom (602).

Table 2 presents descriptive statistics of the traditional key variables in the banking sector. The size indicator shows that privately held banks, both under the Islamic and conventional business models, are smaller than publicly listed ones. Loan deposit ratios for both business models (Islamic banking and conventional banking) exhibit relatively similar levels regardless of whether banks are publicly listed or privately held. The ratio of equity-to-total assets is

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[8] Bankscope offers two extraction options. The first is an extraction of seven years data. The second is an extraction of fourteen years data. We did our extractions using the longer historical records as offered by the second alternative.

higher in Islamic banks than in conventional banks. Similar results have been found in Beck et al (2013), meaning that Islamic banks are well capitalized than conventional banks.

Table 2 also shows that Islamic banks have superior profitability levels than conventional ones. While privately held Islamic banks are more profitable than publicly listed Islamic banks (Panel A), conventional banks record the reverse pattern (Panel B). Loan loss provisions, loan loss reserves, and non-performing loans, all reported to total gross loans, show higher levels for Islamic Banks than for conventional banks. This feature is consistent with the traditional risk-return trade-off principle and explains the profitability observation discussed above. Finally, publicly listed conventional banks show higher volatility of equity returns compared to their publicly listed Islamic peers.

b. The Model

The model is structured into three major blocs. The first one is an *option pricing approach* based on Merton (1977) and Ronn and Verma (1986) modeling frameworks and provides an estimation of the implicit cost of deposit insurance for publicly listed banks. The second one is based on the *market comparable approach* introduced in Falkenheim and Pennacchi (2003) and consists in identifying the relevant risk loading factors that explain the cross-sectional variations in risk-based deposit insurance premiums using the publicly traded banks premiums estimated in the first step. The third one provides an estimation of the implicit cost of deposit insurance for privately held banks using the risk loading factors identified in the previous step. The major assumption here is that publicly listed banks share the same risk characteristics, but with different levels/values, as the privately held ones, *ceteris paribus*.

Estimation of the cost of deposit insurance for publicly listed banks

This part of the model relies first on the theoretical option pricing setting of Merton (1977). We assume that all the deposits are insured and that the bank's debt equals the total amount of these deposits (i.e. the debt is exclusively composed by the deposits). Then, in case of the bank's insolvency, i.e. when the value of the bank's assets is lower than the value of the bank's debt (or total deposits), the depositors will receive back the value of the bank's assets, an amount lower than their total deposits. In the reverse situation, if the bank remains solvent i.e. when the value

of the bank's assets is higher than the value of the bank's debt (or total deposits), the depositors receive their deposits and the interests earned. Hence, depositors receive at end the minimum of two values: the value of the bank's assets (in case of insolvency) or the value of their deposits in addition to the revenues generated during the investment period (in case of solvency).

A formal expression of the model needs to set the following notations:

V: the unobserved market value of bank's assets

D: the face value of bank's deposits

σ_V: the instantaneous standard deviation of the rate of return on the value of the bank's assets

T: time until the next audit of the bank's assets

δ: dividend per dollar of value of the assets, paid n time per period.

At the maturity of the debt, deposit holders will receive

$$\text{Min } \{FV(D) \text{ , } V_T\}, \tag{1}$$

where FV(.) is the future value operator, and V_T is the terminal value of the bank's assets.

As pointed out in Merton (1977), the value of the deposit insurance is equivalent to the value of a European put option on the value of the bank's assets with a strike price equal to the total value of bank's debt:

$$\text{Max } \{0, FV(D) - V_T\}. \tag{2}$$

Referring to Black and Scholes (1973) option pricing expression, the *per dollar* value of the deposit insurance premium today is given by:

$$p = \Phi\left(\sigma_V \sqrt{T} - x\right) - (1 - \delta)^n (V/D)\Phi(-x), \tag{3}$$

where Φ is the cumulative normal distribution function and

$$x = \frac{Ln((1-\delta)^n V/D) + \sigma_V^2 T/2}{\sigma_V \sqrt{T}}.$$

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In Merton's (1977) model, two variables are unobservable: the bank's asset value V and the assets' volatility parameter σ_V. Solving for p needs necessarily the determination of V and the volatility parameter σ_V. As it appears in the analytical expression of the risk-based deposit insurance premium, there is no reference to the discount rate factor.

We then refer to Ronn and Verma (1986) who suggest to use a two non-linear equations setting in order to solve for the two unobservable variables V and σ_V. The first equation comes from considering the equity value of the bank, E, an observable value, as a call option on the bank's assets with a strike price equal to the value of the bank's debt.

$$E = V\Phi(y) - \rho D\Phi(y - \sigma_V\sqrt{T}), \tag{4}$$

where:

$$y = \frac{Ln(V/\rho D) + \sigma_V^2 T/2}{\sigma_V\sqrt{T}}.$$

The parameter $\rho \leq 1$ in the equation is used to capture the forbearance feature imbedded in deposit insurance practice. We set $\rho = 0.97$ as in Ronn and Verma (1986) and Giammarino et al. (1989) among others. As explained in Ronn and Verma (1986), this equation is dividend free and relates the unknown asset value V to the observed equity value E.

The second equation is obtained by applying Ito's Lemma to the previous equation, which gives:

$$\sigma_V = \frac{\sigma_E E}{V\Phi(y)}, \tag{5}$$

where σ_E is the instantaneous standard deviation of equity returns.

Using data on bank debt, equity, and equity volatility, we solve simultaneously equations (4) and (5) for V and σ_V. The value of the put option is then obtained from equation (3), which is interpreted here as the implicit cost of deposit insurance.

Identification of the determinants of the cost of deposit insurance

The second part of the model refers to the *market comparable approach* introduced in Falkenheim and Pennacchi (2003) and consists in identifying the risk characteristics of the risk-based deposit insurance premium of the publicly traded banks. The objective is to link the market-derived characteristics of the publicly traded banks to their accounting ratios. The two market-derived characteristics are those estimated in the previous step: the bank's ratio of market value of total assets to liabilities, *V/D*, and the volatility of the bank's total assets, σ_V. We then assume that any bank *i* is related to its risk characteristics according to the following relationships:

$$(V/D)_i = f(\text{Bank factors}_i\,; \text{Country controls}_i\,; \text{Year controls}_i) + \varepsilon_{1i}, \quad (6)$$

$$\sigma_{Vi} \quad = g(\text{Bank factors}_i\,; \text{Country controls}_i\,; \; \text{Year controls}_i) + \varepsilon_{2i}, \quad (7)$$

where "Bank factors$_i$" are the individual characteristics of bank i, "Country controls$_i$" and "Year controls" are country dummies and year dummies that control, respectively, for the country and time effects. Similar to Falkenheim and Pennacchi (2003), we use earnings data to capture their effects on bank's risk characteristics. The net interest margin (NIM) is used as an explanatory variable in our models. We also use the ratio of the bank's dividends to its total equity (Div), since dividends represent the part of the earnings distributed to the shareholders, hence impacting the bank's market value. In addition, we consider the return on assets (ROA) as an explanatory variable. We finally use variables that captures the risk related to bank's operations such as the ratio of total loans to total assets (LA), the loan loss provisions over total gross loans (LLP), loan loss reserves over total gross loans (LLR), non-performing loans over total gross loans (NPL), and the size of the bank's assets (Size).

Equations (6) and (7) are run on the publicly listed Islamic banks sample as well as on the publicly listed conventional banks sample.

Estimation of the cost of deposit insurance for privately held banks

The third part of the model is the continuum of the market comparable approach introduced in Falkenheim and Pennacchi (2003) and consists in using the relationship found in the previous step to infer the level of the risk-based deposit insurance premium for the Islamic and conventional privately held banks. The estimated equations (6) and (7) are used to infer the

market value of bank's assets and its volatility for the privately held Islamic as well as conventional banks. These two inferred values are used in equation (3) to assess the implicit value of the deposit insurance.

c. The results

Table 3 presents the implied cost of deposit insurance for publicly listed banks obtained from equation (3) after solving equations (4) and (5) for V and σ_V. The implied cost of deposit insurance is the *per dollar* value of the deposit insurance premium. Table 3 also presents the market value of equity, total deposits, total liabilities, the volatility of equity returns, market value of assets, and the volatility of bank's assets.

Panel A of Table 3 presents the deposit insurance premium by country for the publicly listed Islamic banks and Panel B presents the deposit insurance premium by country for the publicly listed conventional banks. The premium levels by country are the averaged premiums for all the country's individual banks since equation (3) is valued at the bank level.

The results show that publicly listed Islamic banks have a lower cost of deposit insurance than the publicly listed conventional banks. This suggests that publicly listed conventional banks are riskier than their Islamic peers. Our results are persistent through the different time windows: [1999-2006], [2007-2009], and [2010-2013] and are supportive of the first hypothesis.

Table 4 presents the average cost of deposit insurance by year for the publicly listed Islamic banks (Panel A) and for the publicly listed conventional banks (Panel B). It shows that the 2008 financial crisis significantly increased the implied/theoretical cost of deposit insurance for both Islamic and conventional banks, basically due the significant jump in equity volatility as well as assets volatility in 2008.

Using the estimated market values of bank's assets as well as the estimated assets volatility on the publicly listed sample, we implemented the market-comparable approach described above. Table 5 presents the results of the two regressions, (6) and (7), run on the publicly listed Islamic banks sample as well as on the publicly listed conventional banks sample. As in Falkenheim and Pennacchi (2003), we use the following explanatory variables: size (SIZE), net interest

margin (NIM), total gross loans over total assets (LA), dividends paid over equity (DIV), loan loss provisions over total gross loans (LLP), loan loss reserves over total gross loans (LLR), non-performing loans over total gross loans (NPL), and return on assets (ROA). Among these variables, only the size, the dividends over equity ratio, the loan loss provision ratio and the ROA are statistically significant in the market value of bank's assets regression run on the publicly listed Islamic banks sample. The same regression run on the publicly listed conventional banks sample shows that the size factor, the dividend over equity ratio, the net interest margin, total gross loans over total assets, and ROA explain the cross-sectional variation in the market value of bank's assets regression and are statistically significant to conventional levels.

Table 5 shows that the size factor, the dividend over equity ratio, total gross loans over total assets, loss loans provisions over total gross loans, and non-performing loans over total gross loans explain the cross-sectional variation in the dependent variable of equation (7), i.e. the volatility of market value of assets, run on the publicly listed Islamic banks sample. The same regression run on the publicly listed conventional banks sample shows that the size factor, the dividend over equity ratio, the net interest margin, total gross loans over total assets, loss loans provisions over total gross loans, and non-performing loans over total gross loans have a statistically significant explanatory power.

We use the estimated models of equations (6) and (7) to infer the market value of bank's assets and its volatility for the privately held Islamic as well as conventional banks. These two inferred values are used in equation (3) to assess the value of the implicit deposit insurance premium modeled as a put option on bank's assets as discussed above. Table 6 and 7 present the implicit cost of deposit insurance premium by country (Table 6) and by year (Table 7) for the privately held Islamic banks (Panels A in Table 6 & 7) and the privately held conventional banks (Panels A in Table 6 & 7). Both Tables show that the cost of the deposit insurance for privately held Islamic banks is comparable to the cost of the deposit insurance for privately held conventional ones. In relationship with the results shown in Table 3 and 4, the cost of the deposit insurance for privately held banks, either Islamic or conventional, is higher compared to the cost of the deposit insurance for publicly listed banks. This finding may be explained by the cost structure of privately held banks, mostly small banks, which may prevent them from benefiting from the

economies of scale that traditionally provide a competitive advantage to publicly listed, mostly large, banks. Our findings support the assertive form of our second hypothesis.

Finally, Table 8 presents the aggregate cost of deposit insurance by business model (the Islamic business model and the conventional one). The averaged cost of deposit insurance for publicly listed conventional banks is more than three times the averaged cost of deposit insurance for publicly listed Islamic banks whereas privately held banks exhibit comparable premium levels across the two different business models. Finally, privately held banks have higher premium levels than publicly held ones. In fact, on the one hand, publicly listed banks are usually subject to closer supervision by the regulatory agencies and higher regulatory requirements than privately held banks. On the other hand, privately held banks have lower access to capital markets, have more constraining cost structure due to their relatively small size, and have to cope with the competitive advantage of their larger peers.

4. Discussion and avenues for future research

Our empirical findings rely on different assumptions and model specifications. First, equations (3), (4), and (5) assume yearly constant volatility levels as hypothesized in Merton's modeling framework. Empirical evidence shows that volatility changes over time and presents clusters in different time windows. Relaxing this hypothesis, hence assessing the cost of deposit insurance while assuming time-varying volatility and using models that capture the volatility clustering phenomenon may help gaining more accuracy.

Second, Merton's model assume that the maturity period equals one year. Banks failure, regulatory intervention, and the operationalization of the deposit insurance mechanisms do not necessarily take one year. In fact, critical solvency situations trigger immediate reactions of both regulators and deposit insurance agencies which appoint an audit exercise without delays. Usually, the more the situation is critical, the shorter is the response delay. Assuming an inverse relationship between the maturity variable and the volatility of the market value of bank's assets is a reasonable assumption that may be tested in future research.

Third, the cost of deposit insurance for privately held banks relies on estimates of market value of assets and asset returns volatilities obtained from Ronn and Verma (1986) and the regression

framework of Falkenheim and Pennacchi (2003). Equations (6) and (7) are key part of our modeling framework. Even if we explore the entire set of the relevant variables offered by BankScope as independent variables in these equations, i.e. that we estimated several alternative specifications for equations (6) and (7), we may still find other possible explanatory factors that may appear to have a statistically significant explanatory power. Additional variables not covered by our database may provide further insights on our findings. This exploratory exercise may be tackled in future research.

Finally, since the focus of the present work was on the theoretical setting and its application to the global banking population, some country level factors have not been empirically explored. For example, following Beck et al. (2013), economic development, economic stability, country size, and financial structure may be explored as additional country specific factors to be integrated in the specification of equations (6) and (7). The degree of global integration is also an additional factor that may be of interest to be explored in future research[9].

5. Conclusions

As part of the financial system safety net, the deposit insurance function gained in importance specifically during the last periods of distress. The co-existence of the Islamic banking system with the conventional one as well as the increasingly growing size of the former stresses the importance of having a consistent and unique modeling framework that assesses the cost of deposit insurance for the whole banking system, while accounting for the specificities of the Islamic versus the conventional banking systems. In this paper, we provide a theoretical setting that assesses the deposit insurance premium and that applies for both Islamic as well conventional banks, whether they are publicly listed or privately held.

In a recent IMF discussion note, Kammer et al. (2015) present the issues and challenges that face the Islamic banking system as far as deposit insurance schemes are concerned and urges the regulators and policy makers to address these issues. Four items are mainly discussed. First, the

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[9] Similar to Beck et al (2013), the economic development of a country is proxied by the natural logarithm of GDP per capital. Economic stability is measured by the variance of GDP growth rate. Country size is proxied by the natural logarithm of country's population. Stock market capitalization divided by GDP and Private credit divided by GDP measure financial development and financial structure. Imports and exports of goods and services divided by GDP measures global integration.

IMF note states that deposit insurance frameworks should be developed so that to address the Islamic banking specific features and challenges. Second, it stresses the policymakers to extend the deposit insurance protection to Islamic banks in dual systems and to address the challenges that this initiative represents. Third, it reminds that the current liquidity risk is amplified by the lack of Shariah-compliant emergency liquidity instruments. Finally, it reminds the importance of having an effective resolution mechanisms for Islamic banks in line with international best practices.

Islamic banks definitely obey to a relatively distinct regulatory set of principles since their business model differs from the conventional banking business model (Turk Ariss (2010) and Kammer et al. (2015)). Our findings illustrate the differences in the cost of deposit insurance between Islamic banks and conventional banks. Considering that most of the current conventional banking systems are heavily subsidized (Leaven (2002)), differences in the cost of deposit insurance relative to the Islamic banking system may impact their competitiveness. Having relatively homogeneous regulatory principles that account for business model specificities without amplifying the subsidy effect becomes a challenging task for the international standard setters as well as for the national regulatory bodies.

Our results show that the cost of the deposit insurance for publicly listed Islamic banks is lower than for their conventional peers. Privately held Islamic banks exhibit however comparable levels of deposit insurance premium compared to conventional banks. Finally, privately held banks in both bank models exhibit higher levels of deposit insurance premium than publicly listed banks. These differences in the cost of deposit insurance between both business models, Islamic and conventional, whether they are publicly listed or privately held, highlight the importance of accounting for business model specificities in a unique and consistent theoretical framework. Our work sheds more light on the differences between the two business models as far as deposit insurance is concerned and helps international standard setters as well as national regulators and policymakers settling common basis for the co-existence of both business models.

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Table 1: Banks Distribution by Country - Islamic Banks vs. Conventional Banks

Panel A: Islamic Banks - Publicly Listed and Privately Held

Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private
UAE	17	14	3	Egypt	10	9	1	Kuwait	16	13	3	Oman	4	2	2	Syrian Rep.	4	2	2
Albania	1	0	1	United Kingdom	9	2	7	Cayman Islands	1	0	1	Philippines	1	0	1	Thailand	1	0	1
Azerbaijan	1	0	1	Gambia	1	0	1	Lebanon	8	0	8	Pakistan	23	17	6	Tunisia	4	1	3
Bangladesh	10	8	2	Indonesia	63	11	52	Sri Lanca	1	1	0	Palestine	1	0	1	Turkey	3	2	1
Bahrain	27	8	19	India	1	1	0	Morocco	2	1	1	Qatar	9	7	2	USA	3	0	3
Brunei	4	0	4	Iraq	10	4	6	Myanmar	1	0	1	Russia	1	0	1	Yemen	4	0	4
Bahamas	1	0	1	Iran	17	7	10	Mauritania	3	0	3	Saudi Arabia	17	12	5	South Africa	2	1	1
China	1	0	1	Jordan	3	2	1	Maldives	1	0	1	Sudan	8	1	7				
Cyprus	1	0	1	Kenya	3	0	3	Malaysia	46	5	41	Singapore	1	0	1				
Algeria	3	0	3	Kyrgyz	1	0	1	Nigeria	1	0	1	Senegal	2	0	2				
												Total				352	131	221

Panel B: Conventional Banks - Publicly Listed and Privately Held

Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private	Country	Total	Listed	Private
Andorra	8	0	8	Colombia	109	20	89	Hungary	71	4	67	Mali	11	0	11	Singapore*	107	24	83
UAE*	24	13	11	Costa Rica	114	5	109	Indonesia*	84	37	47	Myanmar*	11	0	11	Slovenia	37	6	31
Afghanistan	13	0	13	Cuba	10	0	10	Ireland	107	7	100	Mongolia	14	0	14	Slovakia	36	8	28
Antigua	12	0	12	Cape Verde	9	2	7	Israel	23	13	10	Macao	11	0	11	Sierra Leone	16	0	16
Anguilla	2	0	2	Curacao	26	0	26	India*	156	72	84	Mauritania*	11	0	11	San Marino	15	0	15
Albania*	17	0	17	Cyprus*	38	4	34	Iraq*	22	15	7	Malta	22	4	18	Senegal*	13	1	12
Armenia	25	4	21	Czech Rep.	61	3	58	Iceland	52	7	45	Mauritius	26	1	25	South Sudan	5	0	5
Angola	22	0	22	Germany	2,797	59	2,738	Italy	1,064	69	995	Maldives*	3	0	3	Sao Tome	3	0	3
Argentina	152	9	143	Djibouti	5	0	5	Jamaica	22	10	12	Malawi	19	3	16	El Salvador	25	9	16
Austria	419	15	404	Denmark	174	55	119	Jordan*	18	14	4	Mexico	208	22	186	Syrian Rep.*	12	9	3
Australia	136	21	115	Dominica	1	0	1	Japan	1,041	189	852	Malaysia*	93	26	67	Swaziland	8	1	7
Aruba	5	0	5	Dominican Rep.	89	0	89	Kenya*	62	10	52	Mozambique	22	0	22	Chad	5	0	5
Azerbaijan*	38	0	38	Algeria*	20	0	20	Kyrgyz*	15	3	12	Namibia	14	2	12	Togo	12	1	11
Bosnia & Herzegovina	23	9	14	Ecuador	51	7	44	Canmbodia	29	0	29	Niger	6	1	5	Thailand*	72	40	32
Barbados	11	1	10	Estonia	17	2	15	Comoros	1	0	1	Nigeria*	112	44	68	Tajikis	10	0	10
Bangladesh*	38	22	16	Egypt*	36	25	11	Saint Kitts & Nevis	1	0	1	Nicaragua	22	0	22	Timor	1	0	1
Belgium	160	10	150	Eritrea	3	0	3	North Korea	1	0	1	Netherlands	158	15	143	Turkmenistan	2	0	2
Burkina Faso	11	1	10	Spain	316	23	293	South Korea	133	61	72	Norway	204	33	171	Tunisia*	38	17	21
Bulgaria	38	7	31	Ethiopia	16	0	16	Kosovo	8	0	8	Nepal	33	25	8	Tonga	3	0	3
Bahrain*	29	11	18	Finland	62	9	53	Kuwait*	22	14	8	New Zeland	49	1	48	Turkey*	156	29	127
Burundi	8	0	8	Fiji	3	0	3	Cayman Islands*	60	1	59	Oman*	16	9	7	Trinidad & Tobago	18	2	16
Benin	10	1	9	Micronesia	1	0	1	Kasakhstan	53	15	38	Panama	20	2	18	Tuvalu	1	0	1
Bermuda	26	20	6	France	743	75	668	Laos	9	1	8	Peru	46	24	22	Taiwan	143	69	74
Brunei*	2	0	2	Gabon	8	0	8	Lebanon*	68	5	63	Papua New Guinea	6	0	6	Tanzania	45	4	41
Bolivia	15	2	13	United Kingdom*	696	94	602	Saint Lucia	5	0	5	Philippines*	103	27	76	Ukraine	203	37	166
Brazil	281	47	234	Grenada	3	0	3	Liechtenstein	15	2	13	Pakistan*	55	31	24	Uganda	4	1	3
Bahamas*	52	0	52	Georgia	22	3	19	Sri Lanca*	42	21	21	Poland	92	24	68	USA*	13,741	1,470	12,271
Bhutan	4	0	4	Ghana	46	7	39	Liberia	8	0	8	Palestine*	8	4	4	Uruguay	58	1	57
Botswana	19	5	14	Gibraltar	5	0	5	Lesotho	6	0	6	Portugal	76	14	62	Uzbekistan	27	0	27
Belarus	34	0	34	Gambia*	9	1	8	Lithuania	17	5	12	Paraguay	28	0	28	Vatican	1	0	1
Belize	9	1	8	Guinea	7	0	7	Luxembourg	201	8	193	Qatar*	7	2	5	St-Vincent & Grenad	1	0	1
Canada	164	23	141	Equator	3	0	3	Malta	1	1	0	Romania	45	4	41	Venezuela	98	22	76
Dem Rep. Congo	21	0	21	Greece	41	20	21	Latvia	28	2	26	Serbia	44	27	17	Virgin Islands	11	0	11
Central Africa	2	0	2	Guatemala	57	0	57	Lybia	19	0	19	Russia*	1,212	73	1,139	Vietnam	68	11	57
Congo	6	0	6	Guinea	2	0	2	Morocco*	29	9	20	Rwanda	11	0	11	Vanuatu	4	0	4
Switzerland	698	44	654	Guyana	1	0	1	Monaco	22	1	21	Saudi Arabia*	6	0	6	Samoa	4	0	4
Ivory Coast	25	3	22	Hong Kong	198	20	178	Moldova	18	9	9	Solomon Islands	2	0	2	Yemen*	9	0	9
Chile	65	14	51	Honduras	21	0	21	Montenegro	14	9	5	Seychelles	8	0	8	South Africa*	105	35	70
Cameroon	18	0	18	Croatia	64	29	35	Madagascar	8	0	8	Sudan*	9	0	9	Zambia	39	5	34
China*	244	24	220	Haiti	7	0	7	Macedonia	24	18	6	Sweden	167	12	155	Zimbabwe	50	9	41
								Total								30,572	3,643	26,929

This table presents the distribution by country of Islamic banks (Panel A) and Conventional banks (Panel B), either publicly listed or privately held. The asterix (*) in Panel B stands for countries where both systems, Islamic and conventional, Coexist. The entire sample has 348,899 year-bank observations covering 352 Islamic banks and 30,572 conventional banks from 213 countries over the 1999-2013 period

Panel A: Islamic Banks

Variable	Label	Publicly Listed					Privately Held				
		Obs.	Mean	Standard deviation	Minimum	Maximum	Obs.	Mean	Standard deviation	Minimum	Maximum
Size	Ln(Total Assets)	1449	14.904	1.928	6.944	19.026	2081	13.262	1.884	4.771	18.725
Loan Deposits Ratio (%)	Total Gross Loans to Total Deposits	1449	15.307	4.138	15.100	115.000	2081	15.514	4.990	15.100	115.000
Equity to Total Assets (%)	Total Equity to Total Assets	1449	18.191	16.022	3.800	100.000	2081	24.008	21.968	3.800	100.000
Equity to Net Loans (%)	Total Equity to Net Loans	1449	34.618	50.453	4.150	205.000	2081	36.148	51.550	4.150	205.000
Net Loans to Total Assets (%)	Net Loans to Total Assets	1449	42.364	25.429	5.250	92.740	2081	34.254	28.474	5.250	98.000
Fixed Assets (%)	Fixed Assets to Total Assets	1449	0.016	0.040	0.000	0.576	2081	0.016	0.051	0.000	0.670
Cost to Income Ratio (%)	Cost to Income Ratio	1449	44.444	57.005	0.890	771.880	2081	46.082	69.146	0.890	950.000
NIM (%)	Net Interest Margin	1449	4.171	6.492	-10.200	54.000	2081	4.945	5.324	-10.200	54.000
LLP (%)	Loss Loan Provisions to Total Gross Loans	1449	0.774	1.053	-0.010	4.300	2081	0.630	1.181	-0.010	4.300
LLR (%)	Loss Loan Reserves to Total Gross Loans	1449	5.911	11.921	-0.200	82.500	2081	3.036	7.425	-0.200	82.500
NPL (%)	Non-performing loans to Total Gross Loans	1449	3.448	5.591	0.500	30.200	2081	2.780	5.767	0.500	30.200
Volatility (%)	1-year historical volatility of equity returns	1449	39.416	19.747	2.372	185.550	n/a	n/a	n/a	n/a	n/a

Panel B: Conventional Banks

Variable	Label	Publicly Listed					Privately Held				
		Obs.	Mean	Standard deviation	Minimum	Maximum	Obs.	Mean	Standard deviation	Minimum	Maximum
Size	Ln(Total Assets)	39422	14.274	2.265	4.635	22.060	305947	12.533	1.867	2.303	22.372
Loan Deposits Ratio (%)	Total Gross Loans to Total Deposits	39422	15.635	6.689	15.100	115.000	305947	15.938	8.353	15.100	115.000
Equity to Total Assets (%)	Total Equity to Total Assets	39422	15.187	15.373	3.800	100.000	305947	13.405	11.112	3.800	100.000
Equity to Net Loans (%)	Total Equity to Net Loans	39422	20.782	33.216	4.150	205.000	305947	18.640	30.331	4.150	205.000
Net Loans to Total Assets (%)	Net Loans to Total Assets	39422	37.044	29.990	5.250	98.000	305947	23.940	28.156	5.250	98.000
Fixed Assets (%)	Fixed Assets to Total Assets	39422	0.013	0.062	0.000	7.381	305947	0.012	0.267	0.000	73.400
Cost to Income Ratio (%)	Cost to Income Ratio	39422	55.120	47.356	0.890	991.670	305947	58.833	46.685	0.890	988.890
NIM (%)	Net Interest Margin	39422	3.986	4.364	-10.200	54.000	305947	3.749	3.621	-10.200	54.000
LLP (%)	Loss Loan Provisions to Total Gross Loans	39422	0.580	1.064	-0.010	4.300	305947	0.284	0.781	-0.010	4.300
LLR (%)	Loss Loan Reserves to Total Gross Loans	39422	2.649	5.870	-0.200	82.500	305947	1.478	4.767	-0.200	82.500
NPL (%)	Non-performing loans to Total Gross Loans	39422	2.849	5.024	0.500	30.200	305947	1.797	3.757	0.500	30.200
Volatility (%)	1-year historical volatility of equity returns	39422	42.505	30.318	0.095	203.200	n/a	n/a	n/a	n/a	n/a

This table presents the descriptive statistics for the key variables and financial ratios of the Islamic and Conventional banks covered by our sample, the publicly listed banks as well as the privately held ones. *Size* is the logarithme of total assets, *Loan Deposits Ratio (%)* is the ratio of total gross loans over total deposits, *Equity to Total Assets (%)* is the ratio of total equity over total assets, *Equity to Net Loans (%)* is the ratio of total equity over net loans, *Net laons to Total Assets (%)* is the ratio of net loans over total assets, *Fixed Assets (%)* is the ratio of fixed assets by total assets, *Cost to Income Ratio (%)* is the ratio of total expenses excluding interest expenses over total revenues, *NIM (%)* is the net interest margin of the bank, *LLP (%)* is the ratio of loss loan provisions over total gross loans, *LLR (%)* is the ratio of loan loss reserves over total gross loans, *NPL (%)* is the ratio of non-performing loans over total gross loans, and *Volatility (%)* is the one-year historical volatility of the bank's equity returns. The ratios in this table are assessed using the sample has 348,899 year-bank observations covering 352 Islamic banks and 30,572 conventional banks from 213 countries over the 1999-2013 period.

Table 3: Implied Cost of the Deposit Insurance by Country - Publicly Listed Islamic and Conventional Banks

Panel A: Publicly Listed Islamic Banks

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Bahrain	455,489	1,511,687	1,957,314	0.4093	2,120,272	0.1056	0.00091	0.00369	0.03040
Bangladesh	118,104	939,625	1,064,048	0.3776	1,063,697	0.0387	0.00008	0.00001	0.00040
Egypt	126,446	1,263,993	1,395,584	0.3945	1,563,409	0.0326	0.01118	0.00220	0.00005
India	1,229,343	14,600,000	15,700,000	0.4222	16,900,000	0.0230	0.00030	0.00041	0.00015
Indonesia	82,304	434,662	527,967	0.4301	584,171	0.0436	0.01242	0.00126	0.00254
Iran	1,676,299	10,600,000	18,200,000	0.3500	13,700,000	0.0439	0.00001	0.00000	0.00000
Iraq	54,118	144,464	208,209	0.3726	234,989	0.1050	0.00001	0.00001	0.00002
Jordan	178,957	1,439,492	1,498,167	0.2362	1,521,579	0.0418	0.00000	0.00005	0.00000
Kuwait	498,279	1,380,753	1,825,391	0.4061	1,908,534	0.1430	0.00041	0.01093	0.00977
Malaysia	5,265,188	28,400,000	43,000,000	0.2188	41,300,000	0.0346	0.00000	0.00000	0.00001
Morocco	3,253,232	23,400,000	33,600,000	0.2327	31,500,000	0.0292	0.00000	0.00000	0.00000
Oman	352,608	1,000,521	1,281,348	0.3989	1,404,825	0.0421	0.00003	0.00037	0.00004
Pakistan	178,420	832,855	1,122,234	0.3817	1,157,150	0.0664	0.00005	0.00081	0.00024
Qatar	1,411,291	4,489,818	5,025,659	0.3283	6,141,812	0.0506	0.00003	0.00079	0.00000
Saudi Arabia	2,485,354	13,200,000	16,100,000	0.3095	18,000,000	0.0344	0.00027	0.00010	0.00000
South Africa	5,217,034	46,400,000	74,200,000	0.1300	53,800,000	0.0132	0.00000	0.00000	0.00000
Sri Lanca	32,353	121,073	123,773	0.3984	152,496	0.0808	0.00000	0.00000	0.00010
Sudan	140,260	82,945	292,182	0.5882	224,006	0.4357	0.00000	0.00226	0.00103
Syrian Rep.	86,403	512,424	717,774	0.1894	656,269	0.1174	0.01194	0.00000	0.00000
Tunisia	127,647	1,325,649	1,601,217	0.2087	1,716,520	0.0307	0.00000	0.00000	0.00000
Turkey	343,425	860,440	1,101,084	0.4493	1,087,862	0.0445	0.00117	0.00062	0.00000
UAE	1,029,489	4,972,879	5,931,191	0.3828	6,886,207	0.0487	0.00031	0.00134	0.00016
United Kingdom	130,607	133,144	168,017	0.6990	304,149	0.3345	0.00520	0.00169	0.02022
All							0.00275	0.00214	0.00332

Panel B: Publicly Listed Conventional Banks

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Argentina	720,166	3,138,710	6,102,889	0.4334	4,848,215	0.0532	0.00425	0.00012	0.00012
Armenia	20,970	75,502	99,789	0.3500	120,671	0.0819	0.00000	0.00001	0.00000
Australia	1,764,027	9,066,196	16,200,000	0.2555	13,200,000	0.0442	0.00913	0.00709	0.00028
Austria	992,884	5,531,556	12,000,000	0.2004	7,504,604	0.0292	0.00588	0.00695	0.00835
Bahrain	227,394	231,649	557,200	0.2684	483,400	0.1048	0.00469	0.00000	0.00914
Bangladesh	137,615	1,136,867	1,406,468	0.4085	1,432,019	0.0369	0.00043	0.00266	0.00601
Barbados	113,600	828,000	931,900	0.3500	1,100,749	0.0356	0.00001	0.00000	0.00000
Belgium	11,100,000	11,500,000	32,600,000	0.3435	23,500,000	0.0729	0.03064	0.01448	0.01743
Belize	228,000	580,900	604,600	0.3532	732,782	0.1160	0.00002	0.00018	0.00323
Benin	55,019	430,513	497,746	0.1757	546,996	0.0199	0.00000	0.00000	0.00000
Bermuda	682,513	1,578,129	1,774,090	0.3569	2,707,520	0.1154	0.00010	0.00871	0.00018
Bolivia	79,298	486,093	580,127	0.3500	626,944	0.0289	0.00000	0.00000	0.00001
Bosnia and Herz	27,332	111,671	140,819	0.2352	152,437	0.0434	0.00000	0.00000	0.00000
Botswana	91,275	717,903	824,481	0.1361	1,024,123	0.0173	0.00000	0.00000	0.00000
Brazil	456,392	1,000,000	2,789,384	0.4445	1,754,713	0.1168	0.04911	0.01289	0.00052
Bulgaria	97,851	427,941	499,408	0.4146	543,978	0.0482	0.00057	0.00213	0.00042
Burkina Faso	11,358	155,565	172,277	0.3500	183,634	0.0182	0.00000	0.00000	0.00000
Canada	1,300,260	3,505,852	7,326,910	0.1987	5,010,978	0.0350	0.02746	0.00629	0.00043
Cape Verde	27,938	588,431	474,523	0.3500	469,500	0.0353	0.07165	0.00001	0.00796
Cayman Islands	93,415	835,610	976,219	0.3500	1,042,427	0.0313	0.00001	0.00001	0.00001
Chile	1,272,969	6,821,606	11,400,000	0.2104	9,555,566	0.0354	0.00003	0.00000	0.00000
China	7,990,979	80,500,000	103,000,000	0.3383	107,000,000	0.0305	0.00000	0.00026	0.00000
Colombia	576,744	3,218,639	4,126,107	0.2876	4,311,286	0.0379	0.01023	0.00234	0.00298
Costa Rica	63,000	312,767	411,123	0.3500	450,539	0.0474	0.00000	0.00001	0.00001
Croatia	28,449	154,933	198,353	0.5149	212,255	0.0560	0.01251	0.00661	0.00148
Cyprus	629,445	7,937,914	8,636,433	0.4189	9,213,276	0.0296	0.01230	0.01586	0.00056
Czech Republic	2,003,756	19,600,000	24,200,000	0.2985	26,000,000	0.0330	0.00008	0.00022	0.00000

Panel B: Publicly Listed Conventional Banks (continued…)

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Denmark	68,854	357,784	461,727	0.2592	484,854	0.0319	0.00041	0.00723	0.00571
Ecuador	35,150	473,600	628,050	0.7398	482,934	0.0897	0.20490	0.07622	0.06343
Egypt	146,460	1,166,459	1,388,410	0.4052	1,480,551	0.0359	0.00434	0.00868	0.00261
El Salvador	149,150	1,139,800	1,367,868	0.3500	1,556,681	0.0410	0.00000	0.00000	0.00000
Estonia	424,429	2,029,288	2,883,417	0.3095	3,070,422	0.0377	0.00000	0.00010	0.00005
Finland	233,376	2,446,594	4,165,999	0.2868	3,843,804	0.0823	0.01488	0.00017	0.00000
France	360,330	1,150,588	2,720,224	0.2740	1,686,416	0.0777	0.00201	0.00039	0.00005
Gambia	8,896	67,262	73,958	0.1988	76,158	0.0225	0.00000	0.00000	0.00000
Georgia	38,138	146,281	262,387	0.3500	201,672	0.0900	0.00001	0.00001	0.00001
Germany	505,596	1,781,174	3,421,022	0.3376	2,473,414	0.0440	0.00720	0.01445	0.00035
Ghana	67,500	360,771	455,747	0.3235	475,074	0.0350	0.02124	0.00084	0.00002
Greece	681,146	3,436,574	5,298,087	0.4151	5,371,347	0.0514	0.00027	0.00033	0.00829
Hong Kong	1,586,091	8,167,766	9,466,692	0.3265	11,000,000	0.0512	0.01345	0.00386	0.00117
Hungary	204,502	691,848	2,848,443	0.3657	1,080,036	0.0537	0.00727	0.00020	0.00003
Iceland	248,668	1,826,155	3,178,855	0.3175	2,910,534	0.0532	0.00027	0.03755	0.00010
India	429,850	3,276,610	4,825,305	0.4521	4,286,355	0.0361	0.00201	0.00149	0.00038
Indonesia	116,313	826,003	1,098,507	0.4432	1,143,418	0.0476	0.01955	0.02030	0.01269
Iraq	60,881	129,298	183,348	0.3355	214,386	0.1055	0.00041	0.00045	0.00060
Ireland	4,472,312	21,000,000	113,000,000	0.3109	32,100,000	0.0437	0.00000	0.00232	0.00459
Israel	629,778	8,822,241	10,700,000	0.2770	11,400,000	0.0204	0.00032	0.00000	0.00007
Italy	1,052,913	5,255,663	10,800,000	0.2940	6,853,430	0.0473	0.00012	0.00014	0.00002
Ivory Coast	65,089	443,386	581,475	0.4569	623,599	0.0485	0.00010	0.00331	0.00602
Jamaica	171,264	490,541	769,775	0.3500	666,281	0.0828	0.00001	0.00001	0.00001
Japan	1,203,170	20,000,000	21,700,000	0.3433	22,500,000	0.0180	0.00027	0.00099	0.00224
Jordan	182,113	871,127	1,197,670	0.2916	1,217,912	0.0339	0.00039	0.00000	0.00000
Kasakhstan	105,434	539,334	1,229,996	0.5969	840,218	0.0699	0.08760	0.04776	0.04543
Kenya	120,027	694,307	787,111	0.3420	866,268	0.0359	0.00952	0.01890	0.00001
Kuwait	448,153	357,654	443,634	0.3760	796,793	0.1770	0.00201	0.00072	0.00372
Kyrgyzs	24,465	57,010	106,638	0.3500	89,202	0.1073	0.00598	0.00000	0.00001
Laos	129,521	1,809,659	1,970,000	0.3500	2,099,520	0.0194	0.00000	0.00000	0.00000
Latvia	152,904	914,217	2,526,801	0.4851	1,138,421	0.0634	0.00061	0.00267	0.00000
Lebanon	290,523	3,753,859	4,375,742	0.1891	4,461,362	0.0166	0.01424	0.01297	0.00076
Liechtenstein	969,670	9,238,495	10,400,000	0.2422	11,300,000	0.0233	0.00000	0.00019	0.00000
Lithuania	143,880	1,089,741	1,440,324	0.3704	1,548,896	0.0382	0.00432	0.00163	0.00000
Luxembourg	837,500	3,076,457	5,223,710	0.1652	3,855,346	0.0298	0.00000	0.00000	0.00000
Macedonia	22,536	90,050	118,730	0.3797	131,281	0.0898	0.04623	0.00005	0.00007
Malawi	38,818	129,343	156,612	0.2319	177,912	0.0267	0.00000	0.00000	0.00015
Malaysia	439,914	1,269,523	2,218,291	0.3189	1,925,463	0.0498	0.00036	0.00086	0.10584
Malta	209,689	798,091	999,768	0.2275	2,143,139	0.0330	0.00004	0.00004	0.00004
Mauritius	13,923	110,528	139,037	0.3500	152,703	0.0410	0.00001	0.00000	0.00102
Mexico	455,851	1,377,031	3,550,427	0.2876	1,919,940	0.0595	0.00548	0.00007	0.00001
Moldova	35,218	158,938	195,768	0.3500	228,117	0.0486	0.00000	0.00001	0.00001
Monaco	218,491	3,059,660	3,602,660	0.4064	3,821,150	0.0187	0.00000	0.00000	0.00000
Montenegro	31,383	141,841	202,660	0.3605	206,302	0.0556	0.00296	0.00001	0.00349
Morocco	397,383	1,769,791	3,810,148	0.2476	2,303,882	0.0426	0.00005	0.00001	0.00000
Namibia	228,132	1,152,485	1,556,008	0.1494	1,605,129	0.0204	0.00000	0.00000	0.00000
Nepal	17,786	157,735	192,226	0.3500	213,208	0.0329	0.00000	0.00001	0.00001
Netherlands	2,310,711	5,670,985	8,215,963	0.2737	9,417,937	0.0576	0.00969	0.01519	0.01556
New Zeland	33,325	219,739	281,562	0.1878	313,735	0.0128	0.00000	0.00000	0.00000
Niger	8,783	72,926	82,992	0.3500	91,774	0.0368	0.00000	0.00000	0.00000
Nigeria	29,936	176,119	243,770	0.5468	267,542	0.0584	0.02101	0.02554	0.02015
Norway	229,840	1,327,467	2,617,415	0.2419	1,632,646	0.0310	0.00001	0.00043	0.00001
Oman	253,836	1,317,035	1,652,146	0.3927	1,813,510	0.0650	0.00028	0.00090	0.00012
Pakistan	27,149	127,653	202,933	0.5379	165,443	0.1240	0.01505	0.02126	0.01798
Palestine	28,426	143,913	202,800	0.2845	204,000	0.0331	0.00186	0.00000	0.00000
Panama	69,367	392,492	472,394	0.3500	524,796	0.0355	0.00000	0.00000	0.00001
Peru	108,969	384,340	628,291	0.2990	594,877	0.0415	0.00746	0.00864	0.00000

Panel B: Publicly Listed Conventional Banks (continued...)

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Pilippines	213,015	1,136,820	1,388,345	0.3114	1,485,259	0.0373	0.00834	0.00025	0.00032
Poland	897,056	5,287,033	8,191,413	0.3624	8,125,936	0.0385	0.00159	0.00035	0.00001
Portugal	1,205,176	9,842,560	19,100,000	0.2834	13,700,000	0.0367	0.00003	0.00001	0.00480
Qatar	493,544	3,242,514	4,047,116	0.4208	4,584,574	0.0426	0.00007	0.00000	0.00000
Romania	487,537	2,515,767	3,239,430	0.4022	3,583,016	0.0431	0.00010	0.00255	0.00000
Russia	66,136	127,147	378,022	0.6334	208,813	0.1877	0.01249	0.01055	0.00907
Senegal	7,710	109,281	140,247	0.3500	151,415	0.0284	0.00000	0.00000	0.01433
Serbia	53,826	119,466	186,691	0.4108	181,059	0.1190	0.00021	0.00028	0.00209
Singapore	378,930	777,011	893,237	0.2940	1,150,500	0.0821	0.01457	0.01172	0.01017
Slovakia	149,828	1,446,835	1,857,425	0.4668	1,846,820	0.0392	0.00395	0.00068	0.00938
Slovenia	200,132	1,351,086	1,963,826	0.3928	2,036,400	0.0403	0.00170	0.00199	0.02178
South Africa	197,848	364,371	539,967	0.4162	649,864	0.1369	0.01696	0.00917	0.01815
South Korea	730,784	2,421,753	4,047,271	0.4907	3,882,344	0.0581	0.01918	0.00322	0.00389
Spain	1,727,070	11,900,000	25,500,000	0.2448	12,600,000	0.0330	0.00001	0.00001	0.01168
Sri Lanca	35,123	151,070	241,077	0.3833	213,294	0.1003	0.00164	0.00062	0.00077
Swaziland	18,281	128,634	141,260	0.3500	157,641	0.0482	0.00001	0.00001	0.00000
Sweden	211,857	1,550,542	4,059,062	0.3240	2,003,513	0.0377	0.00010	0.00251	0.01737
Switzerland	726,795	4,888,780	8,029,502	0.2080	6,197,979	0.0255	0.00749	0.00023	0.00013
Syrian Rep.	66,022	498,664	545,601	0.1555	589,818	0.0215	0.01693	0.00000	0.00000
Taiwan	1,174,875	5,293,521	7,176,216	0.3573	7,821,836	0.0728	0.00030	0.00040	0.00001
Tanzania	110,078	772,056	1,022,313	0.4114	1,027,126	0.0432	0.00111	0.00227	0.05926
Thailand	263,454	941,688	1,312,318	0.4332	1,422,561	0.0865	0.00434	0.00313	0.00046
Togo	904,700	5,256,600	6,523,550	0.3280	7,428,249	0.0355	0.00000	0.00000	0.00001
Trinidad and To	453,140	1,910,086	2,395,601	0.3500	2,803,905	0.0369	0.00000	0.00001	0.00000
Tunisia	94,291	141,599	398,319	0.2158	237,977	0.0387	0.00005	0.00296	0.00171
Turkey	537,169	1,904,673	3,542,654	0.4277	3,240,376	0.0707	0.01571	0.00061	0.00008
UAE	495,589	1,487,588	1,771,535	0.3984	2,147,320	0.0737	0.00041	0.00288	0.00019
USA	69,733	453,581	551,177	0.3382	586,100	0.0377	0.00663	0.02074	0.02136
Uganda	40,461	404,990	686,361	0.6114	726,821	0.0796	0.00096	0.00165	0.02218
Ukraine	80,418	301,062	554,793	1.0704	415,665	0.2940	0.05929	0.08963	0.06884
United Kingdom	365,410	537,592	275,866	0.2497	1,073,468	0.0909	0.00284	0.00435	0.00020
Uruguay	147,883	490,471	563,110	0.3500	675,665	0.0791	0.00001	0.00001	0.00001
Venezuela	229,157	1,603,189	1,891,990	0.4015	2,045,683	0.0376	0.02176	0.00214	0.01722
Vietnam	359,655	1,830,989	3,128,418	0.4016	3,165,254	0.0512	0.00010	0.00001	0.00232
Zambia	28,539	261,154	309,010	0.5399	280,466	0.0471	0.00160	0.00284	0.00215
Zimbabwe	38,250	134,305	196,800	0.7915	212,439	0.1082	0.00354	0.04291	0.02202
All							0.00802	0.01202	0.01128

Table 4: Implied Cost of the Deposit Insurance by Year - Publicly Listed Islamic and Conventional Banks

Panel A: Publicly Listed Islamic Banks

Year	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance
1999	216,934	1,131,790	1,341,920	0.3967	1,400,742	0.0481	0.00822
2000	219,062	1,077,807	1,224,000	0.3864	1,387,492	0.0466	0.00121
2001	180,449	1,050,010	1,242,314	0.3776	1,364,538	0.0350	0.00105
2002	199,808	1,280,783	1,343,154	0.3707	1,528,651	0.0444	0.00847
2003	218,962	1,633,016	1,862,922	0.3718	1,941,864	0.0502	0.00307
2004	319,200	1,803,095	2,353,156	0.3500	2,238,068	0.0433	0.00053
2005	368,378	1,268,200	1,536,426	0.3989	1,721,587	0.0585	0.00050
2006	488,266	1,769,157	2,086,813	0.4107	2,082,533	0.0487	0.00068
2007	542,873	1,930,507	2,369,836	0.3500	2,775,138	0.0575	0.00051
2008	631,178	2,469,435	2,908,622	0.4903	3,014,111	0.0697	0.00159
2009	711,994	2,684,901	3,188,618	0.4579	3,601,283	0.0632	0.00421
2010	723,687	2,880,912	3,519,283	0.3325	3,755,794	0.0467	0.01327
2011	813,341	2,974,290	3,953,275	0.3472	3,987,175	0.0464	0.00192
2012	683,727	3,821,831	4,895,449	0.3102	4,931,338	0.0334	0.00080
2013	677,712	3,425,627	4,603,596	0.3143	4,919,969	0.0322	0.00082
All							0.00284

Panel B: Publicly Listed Conventional Banks

Year	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance
1999	62,137	384,203	502,761	0.3911	523,883	0.0405	0.01260
2000	67,100	394,350	502,060	0.4137	535,246	0.0447	0.01093
2001	68,931	416,400	537,800	0.3709	570,796	0.0402	0.00887
2002	66,900	386,260	505,140	0.3553	538,656	0.0365	0.00827
2003	72,492	415,574	533,416	0.3397	577,188	0.0353	0.00666
2004	85,706	457,758	592,955	0.3146	637,183	0.0351	0.00839
2005	103,283	535,729	703,323	0.2977	766,732	0.0347	0.00594
2006	136,600	701,294	923,737	0.2888	1,006,328	0.0358	0.00449
2007	159,237	761,080	1,038,629	0.3309	1,099,210	0.0409	0.00329
2008	154,257	730,095	1,056,104	0.5187	1,101,692	0.0539	0.01262
2009	181,051	889,177	1,231,123	0.4796	1,286,672	0.0595	0.01999
2010	211,640	1,044,788	1,407,515	0.3500	1,468,117	0.0449	0.01168
2011	222,797	1,133,443	1,452,193	0.3735	1,572,538	0.0461	0.01373
2012	252,352	1,244,067	1,581,474	0.3274	1,667,597	0.0428	0.01200
2013	278,183	1,393,959	1,748,055	0.3120	1,827,348	0.0401	0.01024
All							0.00989

Table 5: Estimating the relationship between bank's characteristics and (1) the Market Value of Bank's Assets and (2) its Volatility

Description	Description	Ratio of Market Value of Assets to Liabilities			Volatility of Market Value of Assets		
		Islamic Banks	Conventional Banks	All Publicly Listed Banks	Islamic Banks	Conventional Banks	All Publicly Listed Banks
Size	Ln (Total Assets)	-0.210***	-0.137***	-0.138***	-0.0307***	-0.0152***	-0.138***
		(-3.322)	(-9.129)	(-9.425)	(-6.379)	(-15.96)	(-9.425)
NIM	Net Interest Margin	0.0322	0.0324***	0.0334***	0.00345	0.00234***	0.0334***
		-1.411	-4.282	-4.637	-1.426	-3.405	-4.637
LA	Loans / Assets	-0.685	-1.199***	-1.181***	-0.141***	-0.0734***	-1.181***
		(-1.587)	(-9.164)	(-9.391)	(-2.820)	(-9.187)	(-9.391)
Div	Dividends Paid / Equity	-1.568***	-1.020***	-1.044***	-0.231***	-0.0992***	-1.044***
		(-2.986)	(-6.515)	(-6.867)	(-4.707)	(-6.971)	(-6.867)
LLP	Loss Loans Provisions / Total Gross Loans	-0.144*	-0.0211	-0.0282**	-0.00686*	0.000832	-0.0282**
		(-1.961)	(-1.606)	(-2.143)	(-1.742)	(-0.565)	(-2.143)
LLR	Loss Loans Reserves / Total Gross Loans	0.00868	-0.00579	-0.00523	0.00143	0.00112**	-0.00523
		-0.424	(-1.309)	(-1.179)	-1.296	-2.421	(-1.179)
NPL	Non-performing Loans / Total Gross Loans	-0.00736	-0.00134	-0.00143	-0.00229**	0.00165***	-0.00143
		(-0.586)	(-0.539)	(-0.563)	(-2.539)	-4.279	(-0.563)
ROA	Return on Assets (ROA)	0.0334*	0.00615***	0.00638***	-0.000837	9.07E-05	0.00638***
		-1.866	-7.891	-8.232	(-0.517)	-0.923	-8.232
Constant	Constant	4.357***	3.150***	3.152***	0.550***	0.379***	3.152***
		-4.471	-10.93	-11.21	-8.466	-8.027	-11.21
Country effects		Yes	Yes	Yes	Yes	Yes	Yes
Year effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		1,201	31,023	32,224	1,202	31,028	32,224
R-squared		0.239	0.184	0.183	0.471	0.201	0.183

This table presents the results of two sets of regressions. The first set regresses the ratio of the market value of bank's assets to its liabilities on different bank-level variables. The second set regresses the volatility of the market value of bank's assets on different bank-level variables. The first set of regression is run on the Islamic banks sample (column 1), the conventional banks sample (column 2), and the entire sample (column 3). Similary,tThe second set of regression is run on the Islamic banks sample (column 4), the conventional banks sample (column 5), and the entire sample (column 6). The Robust t-statistics in presented in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Inferred Cost of the Deposit Insurance by Country - Privately Held Islamic and Conventional Banks

Panel A: Privately Held Islamic Banks

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Albania	9,073	43,057	45,949	n.a.	48,840	0.1098	0.02209	0.01176	0.00280
Algeria	32,308	77,747	180,123	n.a.	214,671	0.0412	0.00000	0.00251	0.00942
Azerbaijan	29,115	79,036	116,886	n.a.	126,046	0.0791	0.00000	0.00000	0.00000
Bahamas	455,900	641,400	937,500	n.a.	703,125	0.0412	0.02225	0.15738	0.00000
Bahrain	150,862	62,415	88,900	n.a.	82,484	0.0412	0.10808	0.20610	0.32521
Bangladesh	1,611	3,710	10,493	n.a.	7,869	0.0412	0.00000	0.02951	0.04619
Brunei	183,150	1,035,447	1,090,428	n.a.	1,166,814	0.0412	0.04396	0.00093	0.00354
Cayman Islands	368,100	356,921	188,000	n.a.	217,834	0.1151	0.33319	0.00000	0.00000
China	584,067	3,631,458	4,857,741	n.a.	3,643,306	0.0019	0.00437	0.03180	0.00000
Cyprus	81,950	70,900	144,300	n.a.	199,416	0.0412	0.02673	0.00000	0.00000
Egypt	625,628	17,100,000	18,500,000	n.a.	13,900,000	-0.0344	0.02313	0.04122	0.00000
Gambia	787	5,917	11,175	n.a.	14,761	0.0962	0.00005	0.00000	0.00000
Indonesia	81,403	328,713	420,988	n.a.	428,433	0.0412	0.06423	0.06648	0.03649
Iran	1,041,887	5,102,298	9,432,541	n.a.	7,074,406	-0.0324	0.00000	0.00000	0.00001
Iraq	84,931	253,417	323,225	n.a.	264,735	0.0412	0.04187	0.06348	0.00926
Jordan	88,575	278,561	722,144	n.a.	835,030	0.0719	0.00000	0.00000	0.07303
Kenya	15,166	69,431	77,971	n.a.	61,954	0.0970	0.04850	0.05606	0.02828
Kuwait	265,209	90,098	116,511	n.a.	87,383	0.0424	0.07725	0.23160	0.50724
Kyrgyzs	1,311	1,810	1,983	n.a.	2,974	0.2519	0.00305	0.00000	0.00000
Lebanon	21,532	92,852	112,764	n.a.	102,396	0.0412	0.10669	0.05441	0.06421
Malaysia	269,100	1,282,324	1,840,226	n.a.	1,453,323	0.0412	0.01134	0.08839	0.01386
Maldives	9,410	29,221	29,513	n.a.	44,269	0.1992	0.00000	0.00000	0.14204
Mauritania	22,670	56,417	67,020	n.a.	96,974	0.1386	0.00036	0.00000	0.00011
Morocco	37,890	251,351	270,934	n.a.	257,299	0.0463	0.00000	0.00000	0.00000
Myanmar	559,510	4,339,575	5,184,034	n.a.	3,948,489	0.0084	0.00000	0.00000	0.00000
Nigeria	36,232	167,298	224,701	n.a.	242,041	0.0694	0.00932	0.02677	0.00000
Oman	240,690	951,756	1,072,562	n.a.	1,108,760	0.0003	0.00000	0.00000	0.14056
Pakistan	63,595	221,820	366,522	n.a.	293,164	0.0412	0.07809	0.00004	0.01204
Palestine	26,424	211,984	289,698	n.a.	235,169	0.0412	0.06685	0.00109	0.00000
Pilippines	10,729	5,424	6,694	n.a.	10,041	0.2367	0.00000	0.01115	0.00117
Qatar	608,000	359,655	334,780	n.a.	479,603	0.0412	0.00000	0.35471	0.23525
Russia	16,078	8,306	12,177	n.a.	9,869	0.2152	0.10270	0.00000	0.00000
Saudi Arabia	744,400	527,452	721,854	n.a.	541,391	0.0412	0.34467	0.17410	0.36122
Senegal	23,257	190,548	251,420	n.a.	222,723	0.0412	0.01656	0.00000	0.02830
Singapore	251,900	55,600	142,800	n.a.	128,461	0.0412	0.00798	0.00000	0.00000
South Africa	30,310	250,273	254,788	n.a.	350,981	0.0640	0.00000	0.00000	0.00000
Sudan	56,690	76,979	149,648	n.a.	172,780	0.0994	0.00152	0.00000	0.00000
Syrian Rep.	65,343	118,267	262,090	n.a.	264,220	0.0913	0.00000	0.00048	0.00000
Thailand	40,788	570,175	594,696	n.a.	473,368	0.0002	0.18501	0.07079	0.00046
Tunisia	36,844	109,100	119,800	n.a.	177,108	0.0660	0.00001	0.00000	0.00001
Turkey	548,314	4,852,581	5,397,066	n.a.	4,047,800	-0.0227	0.01859	0.00000	0.00000
UAE	149,558	286,636	243,347	n.a.	242,464	0.0617	0.09694	0.09959	0.04159
USA	4,934	28,122	36,121	n.a.	27,091	0.1878	0.08876	0.09013	0.13399
United Kingdom	217,300	522,563	1,495,524	n.a.	1,221,554	0.0339	0.02658	0.00021	0.02287
Yemen	21,847	80,789	125,622	n.a.	156,235	0.1067	0.00034	0.04747	0.00000
All							0.05853	0.06905	0.07159

Panel B: Privately Held Conventional Banks

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Afghanistan	13,957	124,166	154,721	n.a.	154,874	0.1533	0.04402	0.06386	0.03957
Albania	21,937	165,026	217,798	n.a.	192,166	0.1503	0.04412	0.12245	0.14890
Algeria	142,020	541,490	965,521	n.a.	724,141	0.1199	0.00689	0.03426	0.06737
Andorra	239,976	1,633,888	2,050,326	n.a.	1,558,551	0.1216	0.12871	0.15002	0.08691
Angola	60,761	350,356	495,241	n.a.	475,866	0.1499	0.00590	0.02678	0.07080
Anguilla	25,671	273,109	283,742	n.a.	215,018	0.1623	0.11905	0.18567	0.00000
Antigua	19,148	107,272	124,797	n.a.	107,319	0.0412	0.10171	0.18543	0.14142
Argentina	32,085	56,376	135,014	n.a.	121,529	0.1645	0.03326	0.03410	0.01241
Armenia	22,528	53,411	74,514	n.a.	76,306	0.1767	0.06196	0.01974	0.02923
Aruba	57,877	285,866	371,061	n.a.	278,296	0.0412	0.10300	0.05125	0.12708
Australia	124,812	605,334	1,449,527	n.a.	1,094,125	0.0558	0.03127	0.04270	0.06547
Austria	27,226	221,410	311,450	n.a.	242,110	0.1133	0.05262	0.06430	0.07705
Azerbaijan	25,467	68,246	112,438	n.a.	94,466	0.1737	0.01552	0.01366	0.02776
Bahamas	56,400	139,376	228,500	n.a.	191,729	0.1261	0.03430	0.06230	0.08068
Bahrain	116,050	45,422	69,731	n.a.	55,111	0.0412	0.06784	0.23474	0.21844
Bangladesh	12,602	84,492	265,764	n.a.	201,284	0.0412	0.00004	0.02442	0.07024
Barbados	21,024	143,732	153,276	n.a.	143,239	0.1304	0.17174	0.14797	0.15533
Belarus	27,033	85,090	118,200	n.a.	120,789	0.1443	0.01638	0.01236	0.01106
Belgium	86,439	317,926	558,072	n.a.	488,840	0.0846	0.05904	0.07776	0.08048
Belize	16,910	103,550	169,750	n.a.	150,357	0.1541	0.04875	0.07268	0.08135
Benin	12,371	110,729	139,395	n.a.	122,216	0.1654	0.07880	0.05103	0.03758
Bermuda	245,059	1,203,349	1,374,890	n.a.	1,031,167	0.0619	0.08617	0.06142	0.18338
Bhutan	26,596	300,383	338,074	n.a.	305,039	0.1618	0.03476	0.10271	0.07574
Bolivia	42,734	209,040	274,931	n.a.	209,299	0.1566	0.03135	0.02760	0.07640
Bosnia and Herze	17,291	62,350	92,254	n.a.	70,182	0.0412	0.05532	0.02225	0.01009
Botswana	44,961	87,237	96,814	n.a.	76,998	0.0658	0.20697	0.28578	0.21295
Brazil	70,295	53,539	304,029	n.a.	296,472	0.1423	0.01313	0.00553	0.00426
Brunei	121,704	1,626,621	1,712,769	n.a.	1,284,577	0.1412	0.17897	0.20778	0.18377
Bulgaria	42,220	296,930	377,803	n.a.	333,863	0.1479	0.03517	0.03431	0.07962
Burkina Faso	15,061	137,503	175,572	n.a.	132,740	0.1449	0.07295	0.09621	0.08039
Burundi	7,775	30,952	49,188	n.a.	53,147	0.1864	0.00317	0.01493	0.01879
Cameroon	18,937	237,453	274,033	n.a.	252,719	0.1643	0.05856	0.06174	0.09757
Canada	116,869	558,649	855,754	n.a.	668,620	0.0412	0.07864	0.20482	0.11548
Canmbodia	32,182	94,400	113,326	n.a.	114,438	0.1617	0.09840	0.01367	0.04792
Cape Verde	1,975	118,358	142,550	n.a.	108,545	0.0412	0.00000	0.04416	0.10017
Cayman Islands	46,800	165,484	284,600	n.a.	277,030	0.0412	0.05232	0.02382	0.09835
Central Africa	8,258	48,392	60,810	n.a.	53,268	0.1743	0.01131	0.04236	0.07186
Chad	9,729	78,321	93,886	n.a.	80,343	0.1633	0.01090	0.08855	0.10806
Chile	98,689	281,447	399,097	n.a.	371,184	0.0412	0.05324	0.02635	0.06390
China	430,603	2,894,994	3,692,394	n.a.	2,796,163	0.0985	0.07815	0.15060	0.12908
Colombia	47,741	105,349	192,262	n.a.	158,533	0.1318	0.02020	0.02454	0.03338
Comoros	642	372	3,099	n.a.	3,954	0.2573	0.00000	0.00000	0.00864
Congo	3,128	84,197	84,737	n.a.	65,037	0.0412	0.00943	0.09604	0.08221
Costa Rica	12,248	31,668	49,217	n.a.	44,978	0.1559	0.02115	0.04575	0.08498
Croatia	16,922	82,306	142,889	n.a.	113,661	0.1047	0.02178	0.04669	0.03992
Cuba	59,582	249,391	573,411	n.a.	456,852	0.1419	0.05061	0.01592	0.00000
Curacao	52,439	326,148	481,058	n.a.	416,772	0.0670	0.03734	0.09826	0.13703
Cyprus	63,044	367,167	573,125	n.a.	491,462	0.1279	0.05948	0.03955	0.06794
Czech Republic	53,544	355,803	624,918	n.a.	494,171	0.1021	0.03843	0.06030	0.08147
Dem Rep. Congo	10,246	38,923	51,774	n.a.	63,711	0.1924	0.01650	0.01342	0.01411
Denmark	30,292	148,188	188,332	n.a.	155,119	0.1333	0.07788	0.06757	0.08104
Djibouti	15,108	116,881	185,714	n.a.	180,814	0.0412	0.00850	0.01240	0.06221
Dominica	34,519	263,037	259,555	n.a.	218,711	0.1637	0.00000	0.05358	0.17633
Dominican Rep.	9,680	33,659	42,907	n.a.	46,343	0.1907	0.04823	0.02726	0.04462
Ecuador	7,100	81,700	124,400	n.a.	121,050	0.1927	0.07274	0.05571	0.09637
Egypt	333,863	1,876,502	2,961,137	n.a.	2,220,852	0.1158	0.06034	0.08868	0.11570
El Salvador	20,096	70,972	103,913	n.a.	104,217	0.1615	0.02089	0.01785	0.03102

Panel B: Privately Held Conventional Banks (continued...)

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Equator	23,002	371,298	383,387	n.a.	429,235	0.2172	0.04940	0.12850	0.01448
Eritrea	14,022	365,936	279,155	n.a.	245,255	0.1580	0.12597	0.10230	0.00000
Estonia	23,711	62,110	103,702	n.a.	83,903	0.0412	0.00078	0.01389	0.08337
Ethiopia	30,703	162,959	227,783	n.a.	192,472	0.1544	0.05140	0.05671	0.05029
Fiji	42,274	107,361	308,997	n.a.	231,747	0.0412	0.01382	0.03229	0.00007
Finland	97,728	349,572	571,569	n.a.	445,184	0.0439	0.03029	0.01794	0.09516
France	115,369	322,096	1,207,560	n.a.	942,311	0.0877	0.02650	0.02196	0.02168
Gabon	41,039	95,473	196,084	n.a.	189,917	0.1552	0.00795	0.02609	0.05812
Gambia	5,893	37,085	49,739	n.a.	40,681	0.1701	0.07065	0.01498	0.03756
Georgia	18,298	33,973	58,824	n.a.	50,715	0.1966	0.00550	0.00379	0.00723
Germany	30,252	315,002	433,696	n.a.	344,345	0.1330	0.04229	0.05057	0.06493
Ghana	19,012	102,449	136,399	n.a.	148,137	0.1714	0.02480	0.03628	0.04298
Gibraltar	93,218	557,678	1,611,993	n.a.	1,208,995	0.1384	0.00328	0.00000	0.00302
Greece	115,171	424,817	753,588	n.a.	586,280	0.0954	0.03606	0.02703	0.02889
Grenada	18,444	168,778	177,926	n.a.	138,890	0.1610	0.12988	0.14121	0.21272
Guatemala	16,382	91,856	117,427	n.a.	109,434	0.1339	0.02196	0.09153	0.09781
Guinea	6,140	52,423	66,425	n.a.	70,676	0.1211	0.02710	0.08053	0.02379
Guyana	27,198	447,666	641,373	n.a.	481,030	0.0412	0.07916	0.00829	0.00000
Haiti	15,240	190,863	210,216	n.a.	255,604	0.1668	0.08311	0.04415	0.09196
Honduras	16,683	65,096	91,017	n.a.	94,706	0.1701	0.00753	0.04193	0.02300
Hong Kong	55,284	86,005	154,267	n.a.	130,335	0.0412	0.06476	0.09222	0.15595
Hungary	44,647	145,757	333,510	n.a.	262,152	0.0939	0.01646	0.01122	0.01508
Iceland	18,498	87,914	178,083	n.a.	142,548	0.0989	0.01205	0.00814	0.05113
India	86,965	393,942	610,974	n.a.	493,109	0.1189	0.05900	0.04889	0.06115
Indonesia	34,072	163,738	205,272	n.a.	164,502	0.0412	0.07948	0.11754	0.09809
Iraq	87,537	109,367	214,880	n.a.	234,573	0.1524	0.00139	0.04634	0.04565
Ireland	280,378	598,518	2,662,464	n.a.	2,127,848	0.0440	0.02266	0.02422	0.01536
Israel	93,417	2,580,811	2,880,086	n.a.	2,160,065	0.0988	0.09973	0.09854	0.06797
Italy	51,177	180,767	354,831	n.a.	273,408	0.1271	0.01514	0.01783	0.01624
Ivory Coast	12,623	97,767	134,441	n.a.	111,704	0.1304	0.05451	0.08040	0.05245
Jamaica	29,716	126,195	241,310	n.a.	268,423	0.1472	0.06073	0.05078	0.01206
Japan	68,604	1,184,937	1,231,638	n.a.	937,995	0.1392	0.20917	0.21424	0.20576
Jordan	84,930	4,238,928	8,291,114	n.a.	6,218,336	0.1071	0.07714	0.03747	0.06506
Kasakhstan	69,722	101,224	180,228	n.a.	141,664	0.1455	0.07066	0.11701	0.13034
Kenya	15,674	62,224	66,911	n.a.	66,364	0.1886	0.07313	0.12123	0.12117
Kosovo	15,174	154,865	164,728	n.a.	136,241	0.1473	0.08612	0.18698	0.21193
Kuwait	662,000	600,582	394,638	n.a.	295,979	0.0412	0.22330	0.23418	0.24581
Kyrgyzs	14,852	40,693	60,820	n.a.	49,566	0.1774	0.00520	0.00903	0.01345
Laos	642	55,430	84,474	n.a.	69,373	0.0412	0.02342	0.04982	0.04912
Latvia	37,707	274,094	353,528	n.a.	313,052	0.1521	0.02161	0.05193	0.09278
Lebanon	47,619	341,788	448,381	n.a.	419,983	0.1581	0.10681	0.10070	0.10619
Lesotho	18,340	88,293	173,667	n.a.	187,836	0.1858	0.02423	0.00043	0.01115
Liberia	6,000	78,780	114,640	n.a.	85,983	0.0412	0.01595	0.02861	0.04642
Liechtenstein	45,408	317,259	376,543	n.a.	382,066	0.1595	0.01150	0.02265	0.06522
Lithuania	13,644	95,088	162,479	n.a.	144,463	0.0953	0.00428	0.00904	0.04433
Luxembourg	86,171	529,216	1,148,158	n.a.	982,882	0.1129	0.02160	0.04350	0.04197
Lybia	128,631	1,098,371	1,460,805	n.a.	1,143,672	0.1302	0.03929	0.02911	0.09384
Macao	137,826	1,653,267	1,785,421	n.a.	1,340,944	0.1229	0.15051	0.17117	0.11524
Macedonia	34,737	55,460	64,711	n.a.	83,873	0.1767	0.16522	0.07536	0.00999
Madagascar	17,505	184,964	197,248	n.a.	201,519	0.1690	0.02594	0.05684	0.06658
Malawi	5,464	26,834	34,017	n.a.	36,606	0.1947	0.02235	0.04672	0.02196
Malaysia	132,739	456,188	725,609	n.a.	599,381	0.0412	0.03598	0.04395	0.05321
Maldives	25,672	125,609	456,312	n.a.	397,055	0.1655	0.00037	0.03090	0.05505
Mali	14,565	93,777	119,330	n.a.	106,661	0.1630	0.04713	0.05615	0.04699
Malta	86,609	127,194	605,730	n.a.	501,900	0.1266	0.01833	0.01814	0.02551
Mauritania	20,286	62,567	84,718	n.a.	76,790	0.1770	0.02226	0.02980	0.03855
Mauritius	74,318	292,756	404,127	n.a.	320,232	0.1216	0.08963	0.12699	0.17812

Panel B: Privately Held Conventional Banks (continued...)

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Mexico	69,569	169,521	330,005	n.a.	259,373	0.1034	0.03853	0.04862	0.04154
Micronesia	14,214	68,621	69,217	n.a.	92,683	0.2035	0.01176	0.01147	0.01112
Moldova	20,973	51,847	95,300	n.a.	88,386	0.1740	0.02050	0.00389	0.02067
Monaco	32,003	513,308	662,949	n.a.	687,752	0.1488	0.02651	0.05284	0.09364
Mongolia	18,801	86,180	143,192	n.a.	141,021	0.1599	0.02222	0.02119	0.03124
Montenegro	14,716	32,775	44,729	n.a.	34,824	0.1897	0.00522	0.04992	0.00163
Morocco	283,729	1,662,811	3,771,141	n.a.	2,838,673	0.1060	0.08393	0.05167	0.04335
Mozambique	13,803	57,759	76,106	n.a.	63,465	0.1682	0.03938	0.03128	0.09555
Myanmar	34,545	449,805	771,821	n.a.	578,866	0.0412	0.00000	0.01664	0.09345
Namibia	123,976	449,412	625,202	n.a.	471,908	0.1198	0.05617	0.13217	0.17841
Nepal	23,605	392,053	494,866	n.a.	371,149	0.1378	0.03551	0.09800	0.13832
Netherlands	153,373	1,021,015	2,212,479	n.a.	1,735,121	0.0472	0.02327	0.03449	0.05301
New Zeland	68,036	873,404	1,340,976	n.a.	1,005,732	0.0412	0.10836	0.07289	0.08668
Nicaragua	12,635	41,020	65,274	n.a.	68,814	0.1838	0.03923	0.02199	0.10683
Niger	10,671	87,191	105,692	n.a.	92,621	0.1657	0.03559	0.03917	0.01823
Nigeria	16,858	65,428	87,515	n.a.	73,073	0.0412	0.03031	0.04234	0.07446
North Korea	1,503	8,755	13,918	n.a.	17,872	0.1959	0.00001	0.00000	0.00000
Norway	38,197	243,869	343,114	n.a.	257,336	0.1085	0.04433	0.05704	0.06795
Oman	88,249	72,207	186,821	n.a.	140,116	0.0412	0.10439	0.10936	0.01722
Pakistan	20,673	46,876	94,276	n.a.	75,375	0.0873	0.02418	0.00391	0.07570
Palestine	20,151	47,900	59,358	n.a.	44,519	0.0412	0.26224	0.00018	0.06061
Panama	31,820	142,594	218,202	n.a.	177,155	0.1322	0.06454	0.03219	0.03995
Papua New Guine	31,153	187,872	302,225	n.a.	239,658	0.1066	0.04876	0.09811	0.06434
Paraguay	17,903	96,573	128,111	n.a.	129,075	0.1824	0.00922	0.01482	0.02879
Peru	91,966	285,690	450,917	n.a.	356,206	0.1151	0.05062	0.13865	0.09938
Pilippines	39,616	205,396	263,601	n.a.	209,212	0.0412	0.07719	0.08840	0.07611
Poland	70,551	229,881	477,834	n.a.	360,698	0.0983	0.02141	0.03818	0.03655
Portugal	100,195	310,841	1,077,231	n.a.	855,511	0.1010	0.01152	0.03797	0.02488
Qatar	177,734	362,487	100,619	n.a.	101,885	0.0937	0.46205	0.47841	0.26690
Romania	41,392	204,537	336,241	n.a.	269,919	0.1496	0.02210	0.02746	0.03212
Russia	12,442	10,827	54,126	n.a.	53,436	0.1883	0.00263	0.00291	0.00459
Rwanda	14,141	83,029	102,544	n.a.	89,327	0.1616	0.06891	0.07797	0.03481
Saint Kitts and	67,148	700,148	703,519	n.a.	1,007,471	0.1775	0.00125	0.00371	0.00848
Saint Lucia	14,921	131,125	150,730	n.a.	113,832	0.0412	0.14519	0.13617	0.08119
Saint Vincent an	642	230,481	240,448	n.a.	180,336	0.0412	0.00000	0.18457	0.00000
Samoa	9,516	36,232	55,640	n.a.	44,214	0.0412	0.12787	0.06141	0.04321
San Marino	48,548	271,727	444,148	n.a.	344,959	0.1519	0.05783	0.01574	0.01832
Sao Tome	642	6,041	9,690	n.a.	8,408	0.0412	0.03113	0.00000	0.00000
Saudi Arabia	1,156,640	2,248,456	3,110,936	n.a.	2,423,248	0.0412	0.12175	0.22224	0.16910
Senegal	25,233	178,382	228,963	n.a.	180,814	0.1448	0.07222	0.06746	0.11279
Serbia	77,084	151,983	380,105	n.a.	345,848	0.1463	0.01764	0.02314	0.02445
Seychelles	5,857	66,967	74,581	n.a.	83,972	0.0754	0.06014	0.08057	0.15313
Sierra Leone	7,498	30,277	40,162	n.a.	52,976	0.2399	0.03231	0.01282	0.00998
Singapore	69,310	166,681	305,230	n.a.	246,750	0.0412	0.06464	0.11823	0.20822
Slovakia	58,521	207,687	347,849	n.a.	275,601	0.1226	0.07423	0.07160	0.06064
Slovenia	24,579	204,441	419,184	n.a.	326,401	0.1178	0.02605	0.01158	0.01866
Solomon Islands	1,332	165,469	277,752	n.a.	208,314	0.0412	0.07474	0.00000	0.00000
South Africa	69,050	136,698	264,177	n.a.	222,876	0.0859	0.03581	0.07030	0.08806
South Korea	226,349	1,005,204	1,820,258	n.a.	1,387,592	0.0412	0.00439	0.00440	0.01683
South Sudan	8,766	46,797	102,479	n.a.	103,317	0.2094	0.00000	0.00184	0.00520
Spain	97,305	465,275	927,268	n.a.	708,760	0.0715	0.04488	0.08170	0.08124
Sri Lanca	42,755	112,302	193,257	n.a.	213,207	0.1484	0.00000	0.00000	0.03601
Sudan	34,926	132,682	177,273	n.a.	188,639	0.1735	0.00280	0.02620	0.03634
Swaziland	20,271	81,443	96,470	n.a.	75,931	0.1600	0.06948	0.12381	0.11363
Sweden	37,469	183,883	261,043	n.a.	202,092	0.1259	0.12805	0.14410	0.14055
Switzerland	21,722	176,997	278,782	n.a.	221,782	0.1048	0.01881	0.02034	0.03526
Syrian Rep.	386,391	2,933,984	2,848,109	n.a.	2,136,081	0.0412	0.12910	0.04424	0.00883

Panel B: Privately Held Conventional Banks (continued…)

Country	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance		
							1999-2006	2007-2009	2010-2013
Taiwan	199,376	383,797	553,448	n.a.	465,187	0.0412	0.25739	0.05269	0.16447
Tajikis	12,090	40,281	70,936	n.a.	77,084	0.1885	0.03885	0.00917	0.01441
Tanzania	12,981	65,907	79,118	n.a.	77,856	0.1720	0.00958	0.04837	0.06237
Thailand	125,667	304,149	482,125	n.a.	361,594	0.0555	0.15673	0.10727	0.07290
Timor	20,000 .		209,957	n.a.	157,468	0.0412	0.00000	0.00000	0.00000
Togo	14,393	86,812	101,502	n.a.	81,271	0.1525	0.06089	0.20493	0.10408
Tonga	10,373	35,607	57,769	n.a.	44,594	0.1391	0.06879	0.04300	0.00000
Trinidad and Tob	65,546	203,884	453,122	n.a.	388,188	0.1451	0.01004	0.08228	0.15319
Tunisia	25,146	26,102	124,300	n.a.	97,350	0.1630	0.01451	0.01099	0.00965
Turkey	59,538	135,957	254,472	n.a.	205,933	0.1013	0.02707	0.04740	0.05122
Turkmenistan	32,070	145,369	813,930	n.a.	610,448	0.1282	0.00000	0.00000	0.02211
Tuvalu	2,707	13,587	13,997	n.a.	16,802	0.2310	0.05185	0.02790	0.00000
UAE	233,381	647,007	911,124	n.a.	711,124	0.1125	0.06850	0.07240	0.04777
USA	17,565	102,239	127,920	n.a.	98,766	0.1517	0.06393	0.07192	0.11236
Uganda	41,101	64,962	119,103	n.a.	138,394	0.1722	0.03046	0.01156	0.00525
Ukraine	16,208	53,924	90,489	n.a.	72,610	0.0412	0.01456	0.00417	0.02255
United Kingdom	94,421	417,487	588,259	n.a.	487,315	0.0604	0.09224	0.12011	0.16801
Uruguay	17,140	92,710	132,311	n.a.	140,253	0.1794	0.07652	0.10546	0.10255
Uzbekistan	24,898	102,022	136,688	n.a.	124,236	0.1532	0.02445	0.04253	0.03125
Vanuatu	7,073	106,799	90,043	n.a.	78,862	0.1158	0.08014	0.11494	0.16072
Vatican	992,966	4,172,597	4,303,661	n.a.	3,980,916	0.2025	0.00000	0.00000	0.14228
Venezuela	35,349	147,052	175,360	n.a.	178,773	0.1639	0.11290	0.07001	0.10229
Vietnam	115,254	357,729	577,133	n.a.	471,230	0.1287	0.03545	0.03194	0.08540
Virgin Islands	21,204	421,471	720,346	n.a.	540,260	0.0412	0.06449	0.00540	0.00499
Yemen	57,067	399,512	448,440	n.a.	427,608	0.1840	0.02574	0.06336	0.08786
Zambia	9,460	38,939	50,224	n.a.	44,868	0.1924	0.03634	0.03040	0.05211
Zimbabwe	11,062	44,579	73,345	n.a.	62,851	0.0412	0.01204	0.00072	0.04092
All							0.05983	0.06527	0.08971

Table 7: Inferred Cost of the Deposit Insurance by Year - Privately Held Islamic and Conventional Banks

Panel A: Privately Held Islamic Banks

Year	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance
1999	41,369	232,152	267,777	n.a.	245,103	0.0472	0.05638
2000	40,800	157,994	188,000	n.a.	214,671	0.0605	0.06209
2001	49,119	158,533	221,950	n.a.	202,645	0.0607	0.05924
2002	53,031	171,355	224,479	n.a.	208,479	0.0633	0.06334
2003	58,039	180,213	254,057	n.a.	279,641	0.0659	0.05206
2004	64,344	188,731	280,926	n.a.	300,712	0.0629	0.04782
2005	52,364	188,767	266,366	n.a.	271,291	0.0567	0.06512
2006	97,884	234,185	385,844	n.a.	346,399	0.0549	0.06045
2007	120,818	273,050	414,220	n.a.	369,460	0.0628	0.06671
2008	112,251	265,209	420,126	n.a.	388,988	0.0531	0.06641
2009	127,968	300,040	422,458	n.a.	391,174	0.0456	0.07368
2010	154,441	314,900	466,640	n.a.	455,939	0.0448	0.07880
2011	153,838	397,811	585,962	n.a.	605,635	0.0292	0.06125
2012	174,640	491,581	715,934	n.a.	697,115	0.0437	0.07576
2013	169,967	524,529	696,144	n.a.	682,913	0.0402	0.06397
All							0.06560

Panel B: Privately Held Conventional Banks

Year	Market Value of Equity	Total Deposits	Total Liabilities	Volatility of Equity	Market Value of Assets	Volatility of Assets	Unit Cost of deposit Insurance
1999	14,100	88,608	126,536	n.a.	100,295.4000	0.1482	0.05657
2000	14,932	89,365	127,462	n.a.	101,841.3000	0.1491	0.05872
2001	15,300	91,302	130,280	n.a.	103,725.0000	0.1477	0.05732
2002	17,812	102,376	142,979	n.a.	112,899.4000	0.1458	0.06115
2003	19,925	111,759	154,837	n.a.	122,124.4000	0.1435	0.06141
2004	21,603	117,686	165,518	n.a.	131,163.8000	0.1429	0.05841
2005	22,494	125,007	175,186	n.a.	139,212.1000	0.1454	0.06066
2006	23,914	128,407	183,885	n.a.	145,708.1000	0.1432	0.06391
2007	26,391	140,018	203,892	n.a.	163,021.3000	0.1416	0.05877
2008	27,133	149,448	215,165	n.a.	169,751.0000	0.1384	0.06165
2009	29,725	165,002	231,571	n.a.	183,246.0000	0.1414	0.07546
2010	32,248	173,854	239,032	n.a.	190,398.9000	0.1432	0.08144
2011	35,320	185,687	254,200	n.a.	200,478.8000	0.1435	0.08834
2012	39,300	201,667	275,305	n.a.	218,024.2000	0.1415	0.09106
2013	41,892	217,552	292,683	n.a.	231,432.4000	0.1395	0.09398
All							0.06978

Table 8: Aggregate Unit Cost of deposit Insurance (per-dollar deposit insurance premium)

Banks	Status	1999-2006	2007-2009	2010-2013	1999-2013
Islamic Banks	Publicly listed	0.00275	0.00214	0.00332	0.00284
	Privately held	0.05853	0.06905	0.07159	0.06560
Conventional Banks	Publicly listed	0.00802	0.01202	0.01128	0.00989
	Privately held	0.05983	0.06527	0.08971	0.06978

Figure 1: Cash flow chart in deposit insurance contracts (*kafalah bil ujr*)

This chart plots the interactions between *mudarabah* certificate holders, Islamic banks (IB) and the insurer in the arrangement of deposit insurance contracts, "guarantee with fee" (kafalah bil ujr). IB initiates investment and requires outside financing in the form of Islamic profit sharing debt. The guarantor intervenes by providing a financial guarantee in order to improve the investment creditworthiness. If the investment is made, each stakeholder receives part of the return generated by the investment. The chart illustrates the cash inflows to and outflows from the investment to the different stakeholders.