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Better Protection of Financial Consumers? Risk Shifting and Islamic Banking

Session D - Islamic Finance

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Contents

Managing Risk

1.Risk Transfer

- When a party transfers risk to his/her counterpart.
  - Example: A pure financial intermediary transfers risk from depositors to borrowers.

2.Risk Shifting

- When risks are shifted to the less-informed counterparty without her/his knowledge or consent.
  - Example: A bank can shift risk onto its deposit insurer by increasing its assets risk without simultaneously increasing its capital

3.Risk Sharing

- When the risks of a transaction or a contract are shared according to parties' ability to bear risk.
  - Examples: common equity stocks and sharecropping.

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Managing Risk

10 Government Securities	90 Deposits
70 Short-term Loans and Financing	
20 Investment Loans	10 Equity

Off-Balance Sheet

Bank Balance Sheet

Risk Transfer

Risk Shifting

Risk

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Risk Shifting

- Tagged as a major cause of worsening economic conditions.
- Adverse distributional impact through wealth transfer.
- Associated with system-wide crises[1].
- Mitigating factors

[1] See Kroszner and Strahan (1996) and Hovakimian and Kane (2000)

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Risk Shifting and Islamic Banking

Motivation

- Axiomatically, Islamic finance is about risk sharing. Risk shifting is absent in an ideal Islamic financial system (KL Declaration, 2012). Investment account holders' skin in the game reinforces their monitoring incentives.
- The present formation of Islamic finance has grown out of conventional finance and it reverse-engineers many of its instruments.
- Is there evidence of risk shifting in Islamic banking?

Contribution

- Initial attempt at testing risk shifting behaviour in an Islamic banking model.
- Unique coverage of OIC member states in the risk shifting literature.
- Addressing concerns of endogeneity and dynamic bias through two-step dynamic difference GMM estimator.
- Policy recommendations.

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Literature Review

Risk shifting measure	Literature	Methodology	Review
1.Key balance-sheet ratios.	- Duran et al. (2014); - Angkinand et al. (2010); - Aggarwal et al. (2001)	Three-stage least squares estimation (LSE). Ordinary least squares (OLS) and random effects model. Three-stage LSE.	**Hypothesis**: Balance sheets reflect risk preferences, interalia. **Shortcoming**: Nowadays, risk is largely found off balance-sheet.
2.Assets' compositions' analysis.	- Landier et al. (2012), - Hooks et al. (2002).	OLS estimation. Standard mean regression model.	**Hypothesis**: same as above **Shortcoming**: Problems with sample bias, suitability, etc.
3.Estimates of deposit insurance premium.	- Bushman et al. (2012); - Guizani et al. (2010); - Hovakimian et al. (2003 and 2000); - Duan et al. (1992)	- OLS estimation. - Standard mean regression model. - OLS and two-stage LS instrumental-variables estimation. -OLS, switching-regression and two-equation structural model.	**Hypothesis**: Safety nets aggravate moral hazards. **Findings**: Risk is shifted when banks increase the risk-adjusted value of their deposit insurance, without being charged for the increase.

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To empirically investigate the risk shifting behaviour in Islamic banks in the dual banking systems of OIC member states

Research Questions

1. In a dual banking system, does banks' risk shifting behaviour depend on their underlying banking model?
2. Do Islamic banks engage in risk shifting?
3. What are the factors that determine the magnitude of risk shifting?

Methodology

- Put option framework (Merton, 1977; Duan et al., 1992).
- Two-step dynamic difference GMM.

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Data and Sample Size

- 347 Islamic and conventional banks in 19 OIC countries.
- The sample period spans 2002-2013.
- Bank financial statement data is taken from the Bankscope database.
- Country-level variables are derived from key World Bank global databases.

	Variable	N*T	Mean	S.D.	Min	Q25	Mdn	Q75	Max
Conventional Banks	IPP	2779	0.01	0.06	0	0	0	0	0.86
	DV	2779	65.28	15.03	1.43	58.21	68.25	74.93	156.53
	σ_v	2779	18.26	23.23	0.27	6.95	12.66	20.59	362.4
	EQ	2779	11.7	7.68	-95.94	7.69	10.44	14.27	78.97
	TA	2779	8,500	16,000	37	750	2,300	8,200	120,000
	RoA	2734	1.39	2.43	-72.44	0.81	1.44	2.15	13.2
	RoE	2731	13.62	34.06	-534.93	7.57	13.74	20.4	850.24
	Law	2779	1.78	0.59	0.08	1.23	1.89	2.37	3.04
	GDPPCG	2712	22.67	3.85	2.94	21.18	23.54	24.82	70.03
	Lerner	2045	2.28	0.15	1.81	2.19	2.24	2.4	2.62
Islamic Banks	IPP	571	0.02	0.08	0	0	0	0	0.97
	DV	571	60.29	20.41	1.3	51.63	65.23	74.47	111.08
	σ_v	571	21.6	33.34	0.36	7.19	13.09	23.73	453.57
	EQ	571	14.06	12.6	-77.21	7.52	11.19	17.53	82.61
	TA	571	5,300	9,100	20	620	2,200	5,500	75,000
	RoA	563	1.36	2.35	-12.72	0.55	1.13	1.91	21.39
	RoE	563	10.09	31.63	-573.3	5.26	11.19	17.02	101.22
	Law	571	1.96	0.68	0.16	1.23	2.26	2.51	3.04
	GDPPCG	553	21.66	4.44	2.94	19.83	22.74	24.37	37.49
	Lerner	372	2.33	0.15	1.81	2.22	2.35	2.46	2.62

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Model Specification

- $IPP^*_{ijt} = \beta_0 IPP^*_{ijt-1} + \beta_1 \sigma_v{}^*_{ijt} + \beta_2 \sigma_v{}^*_{ijt} * IB + \beta_3 \sigma_v{}^*_{jit} * X_{ijt} + \beta_4 \sigma_v{}^*_{jit} * K^*_{jt} + \varepsilon^*_{ijt}$

RQ1 + RQ2

RQ3

where,

IPP_{ijt}	*is the actuarial value of safety net subsidy per dollar of deposits for bank i at time t in country j,*
σv_{ijt}	*is asset risk,*
IB	*is a binary variable that takes the value of 1 if the bank is Islamic and 0 otherwise, and*
X_{ijt}	*is a vector of bank-specific variables*
K_{jt}	*is a vector of country-specific variables*
ε_{ijt}	*is an error term.*

- Conceptually $\beta 1$ captures the net effect of the tension between banks' incentives to increase risk and outside disciplining forces.

The superscripted * denotes forward orthogonal deviations transformation of the respective variable.

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Risk Shifting in the Dual Banking Systems Of OIC Member States

	(1)	(2)	(3)	(4)	(5)
IPP_{it-1}	0.262***	0.314***	0.234***	0.233***	0.240***
σ_v	0.137***	0.127**	0.124***	0.125***	0.121***
$IB_{xMT}*\sigma_v$	-0.0184***	-0.0304***	-0.0199***	-0.0205***	-0.0185***
$MY*IB*\sigma_v$	0.0383***	0.0243**	0.0356***	0.0415***	0.0463***
$TRK*IB*\sigma_v$	0.0482***	0.0254**	0.0501***	0.0391*	0.0110
Size* σ_v	-0.00405***	-0.00341**	-0.00374***	-0.00380***	-0.00425***
$Capital_{it-1}*\sigma_v$	-0.00137***	-0.00158***	-0.00133***	-0.00134***	-0.00112***
ROA* σ_v	-0.0134**	-0.00979	-0.0159***	-0.0159***	-0.0148***
GDP Growth* σ_v		-0.000170	-0.000220	-0.000263	-0.000746
Rule of Law* σ_v		-0.0130***	-0.000417	-0.000612	-0.000106
Stock Market* σ_v			0.0291***	0.0293***	0.0297***
Lerner Index* σ_v			-0.00813	-0.00871	-0.00150
$IB_{xMT}*Crisis*\sigma_v$				-0.000356	
$MY_{IB}*$ Crisis* σ_v				-0.00481**	-0.00479**
$TRK_{IB}*Crisis*\sigma_v$				-0.000564	-0.00165
CB*Crisis* σ_v					0.00357**
F	45.40	26.65	35.40	37.49	115.8

A positive coefficient on σ_v is consistent with risk shifting.

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Post Estimation Tests

Risk Shifting in the Dual Banking Systems Of OIC Member States

	(1)	(2)	(3)	(4)	(5)
No of observations	1769	2536	1769	1769	1769
No. of banks	286	330	286	286	286
No. of instruments	149	325	227	230	230
AR(2) test	-1.69*	-1.46	-1.38	-1.38	-1.29
Hansen test	116.52	285.48	192.91	194.68	196.59

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Conclusions

- Empirical evidence of risk shifting in Islamic banks.
- Present deviations from the theoretical model undermines some of the most important features of the ideal Islamic banking system.
  - Better protection of financial consumers, financial inclusion, poverty alleviation and income redistribution.
- Estimates may, in part, justify the relative resilience of Islamic banks during the recent financial crisis (Hasan and Dridi, 2010).

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Policy Implications

- Refocus on measures that alter banks' risks attitudes and increase private monitoring.
- Conveying an appropriate set of rights to depositors and Investment Account Holders can provide a means to better protection of financial consumers.

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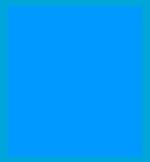
Thank you



بِسۡمِ ٱللَّهِ ٱلرَّحۡمَٰنِ ٱلرَّحِيمِ

اللهم صل على محمد وآل محمد

Better Protection of Financial Consumers? Risk Shifting and Islamic Banking

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Abstract

In the last five decades, advances in information technology and in financial innovations have made possible the emergence of an immense capacity for banks to switch regimes from risk transfer to risk shifting. The devastating power of this capacity was amply pronounced in the financial crisis of 2007/2008. The fallout of which has intensified calls for a re-examination of current banking model and its risk management (or rather mismanagement). Risk shifting is, axiomatically, absent in an ideal Islamic financial system. The Islamic banking model, thus, provides unique paradigm with risk sharing at its core, potentially fostering financial inclusion and reducing the incidence of bank failures and the size of losses incurred by depositors and tax payers. However, the present formation of Islamic banking has grown out of conventional banking and reverse-engineers many of its techniques and instruments. The main objective of this paper is to empirically investigate risk management in Islamic banks in dual banking systems in member states of the Organization of Islamic Countries (OIC). The two-step dynamic difference GMM is applied to cater for the nature of Islamic banking data, which is characterized by a larger dynamic panel and a smaller timeframe. Findings tend to indicate that Islamic banking, in general, is better suited to the protection of financial consumers (and institutions) through a limiting effect on risk shifting. The effect however is not sufficient to fully nullify the overall risk-shifting incentives. The evidence supports strengthening risk sharing and reforming Islamic banking configuration as the way forward.

Keywords: Risk Shifting, Risk Sharing, Islamic Banks, Sustainable Alternative Banking Model, Two-Step Difference GMM

* Views expressed in this article are of the authors and may not represent the views of authors' affiliated institutions. Ms. Alaa Alaabed is the corresponding author (alaabed.alaa@gmail.com).

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1. Introduction

The original intent of conventional banking was to serve as pure intermediary between surplus fund holders and deficit units in the economy. In this role, banks transferred risk from one class of financial consumers (depositors) to another (borrowers). An edifice of deposit insurance system and supervisory/regulatory structure was introduced to protect the creditor at the expense of the debtor. In the last five decades, however, advances in information technology and in financial innovations have made possible the emergence of an immense capacity for rapid regime switching from risk transfer to risk shifting (Pol, 2009). Keynes (1932, 1936) had argued that risk transfer, through the interest mechanism, leads to two evils of capitalism: worsening income distribution and unemployment. Piketty (2013) validated this argument by demonstrating worsening income distribution worldwide. The devastating power of risk transfer enhanced by risk shifting was amply pronounced in the financial crisis of 2007/2008. The fallout from the crisis has intensified calls for a re-examination of current banking model and prevalent pervasive risk culture (Čihák et al., 2013). In particular, banks' tendency to shift the risk of losses to external parties, while internalizing gains through debt-based contracts (Sheng, 2009).

Risk shifting is, axiomatically, absent in an ideal Islamic banking system. Instead, risk sharing is advocated as the principal risk management modality (The Kuala Lumpur Declaration[1], 2012). In such a system, equity holders are expected to share assets' upside and downside potential with investment account holders (depositors). A "credible threat of loss" is envisaged to strengthen investment account holders' monitoring incentives (Distinguin, Kouassi and Tarazi, 2013, based on Calomiris, 1999). The Islamic banking model, thus, provides unique paradigm with risk sharing at its core. Eliminating any opportunity for risk shifting can, therefore, be a litmus test of the authenticity of Islamic banking.

It cannot be denied, however, that the present formation of Islamic banking has grown out of conventional banking and it reverse-engineers many of its techniques and instruments. Whereas significant work has delineated the theoretical foundations of Islamic banking and its axiomatic characteristics, empirical assessment of the implications of present form Islamic banking is relatively limited and often focused on issues of efficiency, profitability and stability. To this end, this paper makes the initial attempt to empirically investigate the risk shifting behaviour in Islamic banks in dual banking systems of OIC member states. It offers first time coverage of OIC member states in the empirical risk shifting literature and contributes to the largely under-researched topic of risk shifting in Islamic banks, where a peculiar class of depositors acts as residual claimants. Studies conducted, thus far, are based on conventional models of banking, where depositors are fixed claimants.

Findings have significant implications for Islamic banking reforms and the general framework of regulations and supervision. The research is timely given the recent global financial crisis and the interest it has revived in the sustainability of banking business models and participants' incentives' structure. It is also essential in light of the increasing importance of Islamic finance and the newly-acquired "commercial significance" of its banking operations.

The analysis benefits from Arellano and Bond's (1991) two-step difference GMM estimator. This is due to the unlikelihood of strictly exogenous asset risk (independent variable), the likelihood of reverse causality between our dependent and independent variables and the properties of our micro panel dataset, all of which could bias OLS estimates.

[1] The same view reverberated in Jeddah Declaration 2013 and Durham Declaration 2014, Based on 2:275 of the holy Qur'an and the legal maxims "al-Ghunmu bi al-Ghurmi" and "Al-Kharaju bi adh-Dhaman".

This paper proceeds as follows; review of relevant literature is presented in the next section. Research objectives and questions are presented in section 3. The methodology and estimation model are provided in Section 4. Data is described in section 5. Results are reported and discussed in Section 6. Finally, Section 7 concludes with some suggestions of policy recommendations.

2. Review of Relevant Literature

2.1 Theoretical literature

Risk shifting is rooted in agency theory (Jensen and Meckling, 1976). It occurs as a standard moral hazard problem in an environment of information asymmetry. Informationally-advantaged equity holders are incentivised to pursue their self-interests under concealed conflict of interests (Karl and McCullough, 2012; Hovakimian et al., 2003).

Beyond information asymmetry, the use of leverage further exacerbates equity holders' risk-shifting incentives (Hellwig, 1998; Esty, 1997). Debt holders' often fixed and predetermined rate of interest reinforces equity's convex payoff structure and its similarity to call options (Jensen and Meckling, 1976; Black and Scholes, 1973). More specifically, equity holders stand to benefit from excess upside potential, by the virtue of their state-contingent risk-sharing-based contracts, while debt holders' benefits are predetermined contractually. Downside exposure, on the other hand, is limited by limited liability clauses and is largely borne by debt holders (Danielova et al., 2013; Wilson and Wu, 2010; MacMinn, 1987; Jensen and Meckling, 1976). The resulting distributional asymmetry encourages excessive risk taking on the part of equity holders. At the extreme, even negative NPV investments may be pursued (Hernández, Povel and Sertsios, 2014; Hellwig, 1998). Consequently, more safe assets are substituted with risky assets, giving rise to the notion of "asset substitution" (Harris and Raviv, 1991). The conflict ultimately leads to a transfer of wealth from debt holders to equity holders, in a direct violation of shared prosperity precepts (Van Wijnbergen et al., 2013; Bushman et al. 2012; Esty, 1997 a & b).

Galai and Masulis (1976) illustrates that a risky undertaking increases debt holders' systematic risk while reducing it simultaneously for equity holders, when it is not backed by a proportionate increase in bank capital. The authors also demonstrate that the value of equity (E) increases with assets' volatility (σ); $\frac{\partial E}{\partial \sigma} > 0$. The larger the derivative, the greater the equity holder's incentive to shift risk (Galai and Masulis, 1976).

Risk shifting is not limited to the classical debt-equity relationship. It may occur in different informationally-inefficient contexts[2]. This study, however, focuses on risk shifting in dual banking systems where Islamic and conventional banking coexist. In conventional banking depositors represent one class of debt holders and there exists a risk shifting moral hazard between them and the banks' equity holders.

The ideal Islamic banking system is unique in its proposition to separate commercial and investment banking activities, in conformity with the Islamic law of contract. As such,

[2] Risk shifting has also been analysed in the following contexts: money management (Basak, Pavlova and Shapiro, 2007), mutual funds industry (Huang, Sialm and Zhang, 2011), pension plans (Rauh, 2009), insurance (Karl and McCullough, 2012), and non-financial firms (Gilje, 2013; Eisdorfer, 2008).

Amanah-based short-term demand deposits are supported with 100% reserves[3] and are exclusively maintained for safe keeping purposes. Investment banks, on the other hand, pursue their traditional intermediary role. They accept surplus funds on a profit-and-loss sharing basis (Mudharabah), and channel them to the real economy through projects that match depositors' risk and return profiles. Since the principal in profit-and-loss sharing contracts are not protected; no reserve is required for this segment of banking. The risk of bank runs is, thus, inherently muted and there is no role for deposit insurance (Mirakhor et al., 2012; Askari et al., 2012). As a result, the moral hazard problem, associated with the latter, is likely to be eliminated. At the same time, the risk of capital loss and the contingency of profits make investment account holders residual claimants of the Islamic banks (Abedifar et al., 2013). This, in effect, reinforces their monitoring incentives and expose banks to greater disciplinary withdrawal risk[4] (Beck, Demirgüç-Kunt and Merrouche, 2013; Van Wijnbergen et al., 2013; Abedifar et al., 2013). The possibility of adverse wealth transfer is also overcome by the dominance of residual claims, making risk shifting less potent[5] (Esty, 1997). Given the above characteristics plus the Shari'ah requirement of real sector anchor and restrictions on the sale of debt and short selling, leverage is capped in Islamic banks (Van Wijnbergen et al., 2013). Altogether, these characteristics weaken Islamic banks' risk shifting incentives.

Even when Islamic banks adopt smoothing strategies to mitigate withdrawal risk, such as maintaining profit equalization reserves and investment risk reserves (Van Wijnbergen et al., 2013; IFSB, 2010), benefits from risk shifting are, still, lower. This is the case because the upside from high-risk projects is no longer monopolized by equity holders but is shared with the investment account holders, in accordance to profit-and-loss sharing contract.

2.2 Empirical literature

A growing body of empirical literature investigates risk shifting in the banking industry. It is, however, dominated by OECD countries related studies, static regression analyses and conventional models of banking. An important subset does so with reference to option-based estimates of the fair value of deposit insurance[6] (See for example, Bushman et al. 2012; Hovakimian, Kane, and Laeven, 2003[7]). These works and others are founded on the conception that modern financial safety nets[8] initiate a lethal combination of reduced monitoring on the part of insured depositors, and increased protection of equity holders against downside risk. Both of which strengthen incentives to shift risk to depositors, deposit insurers and tax payers, in aggregate (Hovakimian, Kane, and Laeven, 2003).

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[3] This is also the essence of the Chicago Plan, proposed in the aftermath of the great depression by leading American economists. The proposal advocates a 100% reserve against demand deposits and no deposit insurance for investment deposits (see Mirakhor et al., 2012; Askari et al., 2012; Benes and Kumhof, 2012, among others).

[4] Also known as displaced commercial risk.

[5] Ozerturk (2002) shows that no combination of debt and equity claims can induce the entrepreneur to choose a low risk strategy, except for pure equity.

n[6] Deposit insurance contract creates multilateral principal-agent conflicts (Kane, 1995; Calomiris, 1999). Risk is shifted when banks succeed in increasing the risk-adjusted value of their deposit insurance, without being charged for the increase (Bushman et al. 2012).

[7] See also, Guizani and Watanabe, 2010; Hovakimian and Kane, 2000; Duan, Moreau and Sealey, 1992; Pennacchi, 1987; Ronn and Verma, 1986; Marcus and Shaked, 1984.

[8] Modern financial safety nets include implicit and explicit deposit insurance, solvency standards, public capital infusion, central bank's lender-of-last-resort facilities and emergency assistance from multinational institutions, such as the IMF.

Robert Merton is credited for developing the empirical foundation for this stream of risks shifting analysis. In his seminal 1977 paper, he describes deposit insurance as a put option issued by the deposit insurer to the banks' equity holders. The option value is shown to increase with asset risk and leverage (Duran and Lozano-Vivas, 2014). The introduction of quasi-flat deposit insurance is, therefore, argued to encourage risk shifting by failing to fully adjust the price for risk shifted (Bhattacharya and Thakor, 1993).

Recent empirical literature has, in general, confirmed the presence of moral hazard in the form of risk shifting by deposit-taking banks. Cross-country variations in the intensity of risk shifting have been mainly ascribed to different institutional environments, different deposit insurance design features[9] and different regulatory and supervisory frameworks[10].

Other proxies have also been used to test for risk shifting, based on the assumption that a banks' balance sheet reflects its risk preferences, inter alia (Mitchener and Richardson, 2013). These include key balance-sheet ratios, such as the ratio of non-performing loans to assets, the ratio of risk-weighted assets to total assets and the Z-score[11] (see, for example, Duran and Lozano-Vivas, 2014; Angkinand and Wihlborg, 2010; Aggarwal and Jacques, 2001). The first proxy is a common measure of credit risk. The latter two are broader in scope and serve as measures of overall risk. Landier, Sraer and Thesmar (2012) and Hooks and Robinson (2002), on the other hand, are amongst few researchers who directly analysed insured banks' asset compositions to detect risk shifting.

All in all, the incentive to shift risk is less pronounced for banks whose charter values are prohibitively high[12] (Gropp and Vesala, 2004; Keeley, 1990), whose shareholders have relatively high "skin in the game" (Talib, 2013) and whose depositors are actively monitoring (Diamond and Rajan, 2001). Attempts to align incentives include capital controls. However, stricter disclosure rules and increased capital requirements in regimes that weaken private monitoring and shift the burden of risk management to deposit insurers and other regulatory bodies have not been sufficient. Policy makers are urged to refocus on measures that alter banks' risks attitudes and increase depositors' disciplinary incentives[13] (Mitchener and Richardson, 2013; Rajan, 2006).

The efficacy of the above private and public controls, however, depends on informational, ethical[14], and economic considerations (see for example Hovakimian et al., 2003; Hovakimian and Kane, 2000). A society's internal culture and ethical traditions are more important than

[9] Loss-control features such as risk-sensitive premiums, coverage limits, and coinsurance provisions are found to deter risk shifting incentives under deposit insurance (Hovakimian et al., 2003). The argument of some critics with regards to risk-sensitive premiums is worth-noting, however, as they argue that that the spread in premiums between the safest and riskiest banks has been insufficient to seriously dissuade risk shifting (Kaufman, 1994). Risk-sensitive premiums can only be effective "if a substantial premium loading is present" (Dong et al, 2013).

[10] Significant risk shifting is observed in countries with poor contract enforcement; property rights rules and governance systems that impede efficient public and private monitoring of financial institutions (Demirgüç-Kunt and Detragiache, 2002; Demirgüç-Kunt and Kane, 2002).

[11] The Z-score is an inverse measure of overall risk that quantifies the distance to default based on book values. It is measured as $Z = \frac{E+ROA}{\sigma}$, where E is the equity-to-assets ratio, ROA is the return on total assets and σ is the standard deviation of the rate of return on assets (Duran and Lozano-Vivas, 2014).

[12] Bank's charter value is an estimate of its growth opportunities. A high charter value dissuades excessive risk-taking by "increasing the cost of financial distress" (Demsetz et al., 1997). The estimate is positively related to anti-competitive regulations and is commonly proxied by the average market-to-book assets ratio (Galloway, Lee and Roden, 1997; Marcus and Shaked, 1984).

[13] Depositors may discipline banks by requiring higher rates of return and/or withdrawing their deposits (Demirguc-Kunt et al., 2009).

[14] Risk shifting incentives may, therefore, vary with social capital, solidarity and ethicality of a given society.

external laws and regulations in shaping risk shifting incentives (Bernstein, 2000). This notion further supports the hypothesised potential of Islamic banks in restraining undesirable risk shifting.

Turning to Islamic banking, risk shifting in Islamic banks remains largely under-researched, as compared to their conventional counterparts. The nascent industry has received increased research attention since the onset of the recent global financial crisis. Empirical literature, however, is focused on such areas as the efficiency and profitability of Islamic banks (see, for example, Abdul Rahman and Rosman, 2013; Hassan, Mohamad and Bader, 2008; Mokhtar, Abdullah and Alhabshi, 2008; Chong and Liu, 2009; Yudistra, 2004; El-Gamal and Inanoglu, 2002; Aggrawal and Yousef, 2000); profit dynamics (Beck, Demirgüç-Kunt and Merrouche, 2013; Chong and Liu, 2009); risk and stability (Bourkhis and Nabi, 2013; Abedifar, Molyneux and Tarazi. 2013; Čihák and Hesse 2010), among others. The overwhelming majority of these studies find no significant differences between Islamic and conventional banks in the researched areas. To the researcher's knowledge, there has been no attempt to assess risk shifting behaviour in Islamic banks. This study, therefore, contributes to a largely under-researched discipline of Islamic banking and offers first time coverage of OIC member states in the empirical risk shifting literature.

3. Research Objectives and Questions

In consideration to the centrality of risk-sharing in Islamic finance and the far-reaching repercussions of moral hazard, the paper aims to offer first time empirical assessment of risk-shifting behaviour in Islamic banks and derive implications for the future of the industry.

In particular, our research questions are threefold.

1. In dual banking systems, does banks' risk shifting behaviour depend on their underlying banking model; whether conventional or Islamic?

2. Do Islamic banks engage in risk shifting in a systematic and significant way[15]?

3. What are the factors that determine the magnitude of risk shifting?

4. The Model

Following prior research, the study utilizes the deposit insurance put option framework to estimate risk shifting in the largely under-researched dual banking systems of OIC member countries[16]. The framework provides suitable grounds for testing risk shifting. It links the actuarial insurance subsidy received by a bank to its risk shifting behaviour and infers risk shifting not only to depositors but also to taxpayers and the general public (Duran and Lozano-Vivas, 2014). The framework is applicable whether explicit or implicit deposit insurance is in place. Merton (1977) and Duan et al. (1992) models provide the necessary

[15] While deterrents, such as monitoring by investment account holders, could reduce leverage or solicit higher capital, in response to increased risk, the change may not be sufficient to fully nullify the bank's risk shifting incentives (Bushman et al., 2012).

[16] Other empirical models and common proxies for risk shifting have been disregarded, given concerns about their efficacy, precision and higher probability of measurement error (Hernández, Povel and Sertsios, 2014).

foundation for this stream of analysis. The base models are extended to estimate the impact of Islamic banking on risk shifting behaviour in a dynamic setting.

Where risk is measured by the standard deviation of annual change in the value of assets, the equation is modified as follows[17]:

$$IPP^{*}_{ijt} = \beta_0 IPP^{*}_{ijt-1} + \beta_1 \sigma_v^{*}{}_{ijt} + \beta_2 \sigma_v^{*}{}_{ijt} * IB + \beta_3 \sigma_v^{*}{}_{ijt} * X_{ijt} + \beta_4 \sigma_v^{*}{}_{ijt} * K^{*}_{jt} + \varepsilon^{*}$$

where,

IPP_{ijt} is the actuarial value of insurance premium per dollar of insured deposits, i = bank, j = country and t = time,
σ_{vijt} is asset risk,
IB is a binary variable that takes the value of 1 if the bank is Islamic and 0 otherwise,
X_{ijt} is a vector of bank-specific control variables
K_{jt} is a vector of country-specific control variables
ε is an error term.

Banks succeed in shifting risk when the net changes in σ_v increases the risk-adjusted value of insurance premium (*IPP*) (Duan et al., 1992). A positive estimate of the net effect of σ_v is, thus, consistent with risk shifting. An estimate of $\beta_2 < 0$ would indicate that Islamic banking has a limiting effect on risk shifting. If banks find risk-shifting behaviour to be value maximizing, such that the net effect of $\sigma_v > 0$, they would manage their overall risk levels accordingly. On the other hand, if banks do not find risk shifting to be beneficial, they would refrain from taking excessive risk; as consequences will be borne by equity holders (Bushman et al., 2012).

In order to identify factors that influence the magnitude of risk shifting, a combination of the following bank and country-specific variables are considered:

1. Bank's capital ratio. On the one hand, an increase in equity can lower moral hazard problems, by exposing more of the banks' "skin in the game". On the other hand, it can increase banks' risk-taking capacity,

2. Bank's size. Large banks can benefit from both scale economies and diversification (Hughes et al., 2001). At the same time, they might be riskier, since they may try and exploit the Too-Big-To-Fail safety net subsidies (Kane, 2010).

3. Return on assets (ROA). To measure the general profitability of the bank.

4. Real GDP per capita's growth rate. Favourable economic conditions are expected to deter risk shifting behaviour through increased prospects of profitability and the rising opportunity costs of charter values (Laeven, 2002). Financial crises literature, however, suggests an adverse impact. Banks' optimism and appetite for risk may increase as the economy expands (Minsky, 1984).

5. Rule of law. To control for the general institutional environment and the efficiency and the integrity of the country's legal system. After all, banks' behaviour may be influenced by varying degrees of institutional development (Fang et al., 2014).

[17] The superscripted * denotes forward orthogonal deviations transformation of the respective variable (Doornik et al., 2002)

6. Lerner index. To measure the market power in the banking industry. On the one hand, higher market power may reduce risk shifting as it enhances banks' charter values and mitigates shareholders' incentives to take risk (Fonseca and Gonzalez, 2010; Gorton and Rosen, 1995). On the other hand, it may intensify risk shifting as it results in a concentrated market with a few Too-Big-To-Fail banks.

7. A stock market dummy that takes the value 1 when the country has a stock market and 0 otherwise. Where stock markets exist, disclosure rules and price signals may mitigate risk shifting by fostering transparency and information symmetry (Gunther et al., 2001). Similarly, market investors and research analysts could arguably deter risk shifting through improved corporate governance (Flannery, 1998).

8. A crisis dummy that takes the value of 1 during the recent global financial crises in 2008 and 0 otherwise. Periods of severe financial stress are expected to amplify banks' risk-shifting incentives (IMF, 2014).

Simple OLS estimators would suffice for unbiased and consistent panel estimation if asset risk (independent variable) was to be strictly exogenous[18] and occur as a pure random event. The strict exogeneity assumption, however, is not plausible. Kane (1995) has long pointed to the shortcoming of treating risk as exogenous. There is an opportunity of reverse causality. Asset risk influences and is influenced by estimates of the fair value of deposit insurance (Bigg, 1999). Moreover, path dependencies are characteristic of economics and finance. In contrast to a pure random event, economic agents continue to follow the same pattern of behaviour so far it has proven profitable (Shaukat et al., 2014).

Furthermore, introducing lagged values of the dependant variable in OLS estimators may seriously bias estimated coefficients (Nickell, 1981). In consideration to the above, heteroskedasticity and the properties of our micro panel dataset, Arellano and Bond's (1991) two-step difference GMM estimator is used. This dynamic Generalised Methods of Moments (GMM) estimator ensures a consistent and reliable estimation of the parameters of interest (Roodman, 2006). Transformation is achieved through orthogonal deviations instead of first differences; in order to preserve the sample size in the presence of time gaps. The two step's standard errors are corrected using Windmeijer's (2005) correction procedure.

In general, the consistency of GMM estimator depends on the validity of the assumption that the error terms do not exhibit serial correlation and on the validity (exogeneity) of its instruments. To validate these assumptions, STATA offers two sets of specification tests. The first set constitutes Sargan and Hansen test of over-identification. The null hypothesis of these tests implies that the instruments are orthogonal (Baum et al., 2003) and that all together they are valid instruments. The Sargan statistic is not valid in the presence of heteroskedasticity (Baum et al., 2003). Heteroscedasticity is detected in our sample. As a result, it is the Hansen statistic that is reported in the regression tables.

The second set examines the hypothesis that the error term is not serially correlated. The differenced error term is expected to exhibit First-order serial correlation, by construction, even if the original error term is not. AR (1) is, therefore, uninformative. To check for first-order serial correlation in levels, we look for second-order correlation in differences AR (2) (Mileva, 2007). Autocorrelation in levels indicates that lags of the dependent variable (and any other variables used as instruments) are not strictly exogenous but in fact endogenous, thus bad instruments.

[18] A variable is considered strictly exogenous if it is uncorrelated with current and past errors.

Failure to reject the null hypotheses of the over-identification and serial correlation tests gives support to our model.

5. Data

The unbalanced panel data set comprises 272 conventional banks and 75 Islamic banks over the period 2003-2013. The banks come from 19 OIC member countries, where both Islamic and conventional banks coexist. These are Bahrain, Bangladesh, Brunei Darussalam, Egypt, Indonesia, Iraq, Jordan, Kuwait, Malaysia, Mauritania, Pakistan, Palestinian Territories, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. The sample is fairly representative of Islamic banking. According to the 11th annual edition of the World Islamic Banking Competitiveness Report 2014/15, Qatar, Indonesia, Saudi Arabia, Malaysia, the UAE and Turkey, alone, commanded 80% of the international Islamic banking assets in 2013.

Data availability dictated the sample's size and coverage. Banks must have at least three years of continuous observations to be included into our sample. Banking data is taken from the Bankscope database. Country-level data is derived from key World Bank global databases such as the World Development Indicators, and World Governance Indicators. IPP and σ_v, are unobservable but were estimated using option pricing methods[19] (Bushman et al., 2012).

Table 1 provides summary statistics of the study's dependent variable and main explanatory variables. A priori inspection of the data gives an impression that Islamic banks are only marginally different from their conventional counterparts. This conforms to the overwhelming majority of Islamic banking studies that suggest the same (Beck et al., 2013; Loghod, 2010). Islamic banks tend to be less levered and better capitalized, whereas conventional banks are more profitable, less volatile and larger in size.

Table 1. Sample's Descriptive Statistics

[19] The use of synthetic data is common in financial literature (Hovakimian et al., 2003). Please refer to appendix 2 for full details of the estimation of IPP.

	Variable	N*T	Mean	S.D.	Min	Q25	Mdn	Q75	Max
Conventional Banks	IPP	2779	0.01	0.06	0	0	0	0	0.86
	DV	2779	65.28	15.03	1.43	58.21	68.25	74.93	156.53
	σ_v	2779	18.26	23.23	0.27	6.95	12.66	20.59	362.4
	EQ	2779	11.7	7.68	-95.94	7.69	10.44	14.27	78.97
	TA	2779	8,500	16,000	37	750	2,300	8,200	120,000
	RoA	2734	1.39	2.43	-72.44	0.81	1.44	2.15	13.2
	RoE	2731	13.62	34.06	-534.93	7.57	13.74	20.4	850.24
	WGI	2779	11.84	3.25	2.43	8.82	11.32	14.03	18.74
	Law	2779	1.78	0.59	0.08	1.23	1.89	2.37	3.04
	GDPPCG	2712	22.67	3.85	2.94	21.18	23.54	24.82	70.03
	Lerner	2045	2.28	0.15	1.81	2.19	2.24	2.4	2.62
	Credit	2697	45.34	27.38	1.27	26.76	35.99	55.52	123.88
Islamic Banks	IPP	571	0.02	0.08	0	0	0	0	0.97
	DV	571	60.29	20.41	1.3	51.63	65.23	74.47	111.08
	σ_v	571	21.6	33.34	0.36	7.19	13.09	23.73	453.57
	EQ	571	14.06	12.6	-77.21	7.52	11.19	17.53	82.61
	TA	571	5,300	9,100	20	620	2,200	5,500	75,000
	RoA	563	1.36	2.35	-12.72	0.55	1.13	1.91	21.39
	RoE	563	10.09	31.63	-573.3	5.26	11.19	17.02	101.22
	WGI	571	12.64	3.78	3.88	8.68	13.65	16.02	18.74
	Law	571	1.96	0.68	0.16	1.23	2.26	2.51	3.04
	GDPPCG	553	21.66	4.44	2.94	19.83	22.74	24.37	37.49
	Lerner	372	2.33	0.15	1.81	2.22	2.35	2.46	2.62
	Credit	548	52.69	33.21	2.68	29.11	43.85	71.44	123.88

Table 2 presents Pearson's correlation coefficients' matrix. Correlations among the variables are low suggesting that estimations are not biased due to multicollinearity.

Table 2. Correlation Matrix (Pearson)

	IPP	DV	σ_v	σ_v*IB	TA	EQ	RoA	Law	GDPPCG	Lerner
IPP	1									
DV	0.0472*	1								
σ_v	0.4938*	-0.1574*	1							
σ_v*IB	0.1275*	-0.1542*	0.2018*	1						
TA	-0.1420*	0.1623*	-0.2093*	-0.0871*	1					
EQ	-0.0258	-0.2742*	0.0217	0.0498*	-0.0568*	1				
RoA	-0.1162*	-0.0797*	-0.0350*	0.0008	0.0505*	0.1608*	1			
Law	0.015	0.0480*	-0.01	-0.0874*	-0.1227*	-0.0488*	-0.0239	1		
GDPPCG	-0.1476*	-0.1190*	-0.1364*	0.0352*	0.4770*	0.0440*	0.0252	-0.1863*	1	
Lerner	-0.1156*	-0.0305	-0.1921*	0.0740*	0.1914*	0.0621*	0.0667*	-0.2120*	0.3920*	1

* indicates significance at the 0.05 level.

6. Estimation Results

Table 3 tabulates the estimation results. In view of the centrality of the issues of serial correlation and exogeneity to the validity of difference GMM's estimates, the diagnostic tests are considered prior to the discussion of results. The study fails to reject the null hypotheses of Hansen test of over-identification and AR (2) test. This gives support to our model.

The coefficients of σ_v and IB*σ_v, β_1 and β_2 respectively, address the first and second research questions. The coefficient of σ_v is positive and significant at the 10% level in the baseline specification (column 1). This is evident of risk shifting in conventional banks in OIC member countries, and is consistent with the reviewed literature on risk shifting in the US, Japan and other countries.

To the extent that β_1 captures the net effect of the tension between banks' risk shifting incentives and outside disciplining forces, the positive estimate suggests that the former dominates in the conventional segment of OIC's dual banking systems. The inadequacy of outside discipline seems to render risk-shifting behaviour value maximizing. Banks are able to expropriate wealth from deposit insurers and taxpayers by increasing their overall risk and shifting the burden of any resulting losses and erosion of assets' value to the public. This is captured by the higher fair value of deposit insurance premium for every unit of additional risk. IPP depends on the probability distribution of the asset values in relation to the face value of deposits on the audit date. It is worth more as the probability that the value of bank assets falls below a certain level of deposits, resulting in bankruptcy, increases (Duan et al., 1992; Merton, 1977). From taxpayers' perspective, it is the cost incurred by them if/when a bank fails (Ruud, 2007).

The coefficient of the Islamic banking interacted term (β_2) in the baseline model (column 1) is negative as predicted by theory. A negative coefficient implies that risk shifting benefits and incentives are lower in the case of Islamic banks. However, the estimate lacks statistical significance. This could suggest the irrelevance of the underlying banking model to the practice of risk shifting in the dual banking systems of OIC member countries in relation to the first research question. Banks seem to shift risk regardless of their banking model.

However Islamic banking practise is not uniform across the board (Vayanos et al., 2008). Despite the standard-setting efforts of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and the Islamic Financial Services Board (IFSB), the nascent industry still lacks standardization, in contrast to its conventional counterpart. Compliance with these standards is not enforced nor monitored, except where AAOIFI's rulings are adopted at the national level in Bahrain, Dubai International Financial Centre, Jordan, Sudan, Syria and Qatar. As a result, Islamic banking institutions and products are premised on, sometimes, widely varying interpretations of Shari'ah and Islamic legal doctrines. For example, the legality of organized Tawarruqh[20] is debatable. On the one hand, Malaysia has long recognised the innovated concept as permissible and used it extensively in Bursa Malaysia Suq Al Sila's transactions. On the other hand, it was declared impermissible by the OIC Fiqh Council, which draws distinction between classical and organized Tawarruqh. The

[20] Whereas classical Tawarruqh raises liquidity through the purchase of a commodity for a deferred payment and its subsequent sale for a lower cash price to other than the original seller, organized Tawarruqh (at-Tawarruqh al-Munadhdham) involves buying a commodity from a financial institution on a deferred basis and selling it simultaneously, through the services of the same financial institution, on cash basis (Fahmi et.al, 2008).

latter view has been largely adopted by Indonesia and the GCC countries, among others. Consequently, the use of one dummy variable (IB) may not suffice to make fair statistical inference about the industry, at this stage. A better alternative could perhaps be to use a three-way interaction between IB, σ_v and a variable denoting the respective country (e.g. IB*σ_v *UAE).

Upon introducing the three-way interaction terms[21], evidence arises of significant and opposing impacts of Islamic banking across the unstandardized industry. More specifically, the heterogeneous Islamic banking industries manifest three different impacts on risk shifting. The first aggravates risk shifting. The second reduces risk shifting. The third outnumbered impact is that of effectively nullifying risk shifting. Taken together, this may explain the insignificance of the Islamic banking interacted term in the parsimonious specification of Table 3 (column 1).

In the interest of GMM estimates' consistency and instruments' validity, the analysis proceeds with only Malaysia and Turkey specific Islamic banking interacted terms. These are denoted MYIB and TRKIB, respectively. All other Islamic banking industries are represented with one dummy variable (IBxMT), in order to avoid instrument proliferation. The choice of interactions is based on pre-estimation and statistical testing for the equality of regression coefficients.

Table 3. Estimation Results

This table reports the results from Arellano and Bond's (1991) two-step difference GMM estimation of:
$IPP^*_{ijt} = \beta_0 IPP^*_{ijt-1} + \beta_1 \sigma_v^*_{ijt} + \beta_2 \sigma_v^*_{jit}*IB + \beta_3 \sigma_v^*_{jit}*X^*_{ijt} + \beta_4 \sigma_v^*_{ijt}*K^*_{jt} + \varepsilon^*_{ijt}$, t= 2002, 2003 … 2013
Following Merton (1977) and Duan et al. (1992), IPP is the actuarial value of insurance premium per dollar of insured deposits. All other variables are as defined before. Windmeijer corrected standard errors are in parentheses. AR(2) is a test for second-order serial correlation in the first-differenced residuals, under the null of no serial correlation. The Hansen test of over-identification is under the null that all instruments are valid. ***, **, * represent significance at the 1%, 5% and 10% level, respectively. The instruments used in the GMM estimation are the lagged levels of IPP_{ijt}, σ_{vijt}, σ_{vijt}*IB, σ_{vjit}*Xijt and σ_{vjit}*K_{jt}.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IPP_{it-1}	0.601***	0.262***	0.314***	0.234***	0.239***	0.233***	0.240***
	(0.0563)	(0.0647)	(0.0739)	(0.0602)	(0.0560)	(0.0590)	(0.0582)
σ_v	0.00498*	0.137***	0.127**	0.124***	0.123***	0.125***	0.121***
	(0.00255)	(0.0279)	(0.0532)	(0.0169)	(0.0171)	(0.0170)	(0.0183)
IB*σ_v	-0.00071						
	(0.00516)						
IB_{xMT}*σ_v		-0.0184***	-0.0304***	-0.0199***	-0.0200***	-0.0205***	-0.0185***
		(0.00616)	(0.00694)	(0.00496)	(0.00479)	(0.00459)	(0.00461)
MY*IB*σ_v		0.0383***	0.0243**	0.0356***	0.0359***	0.0415***	0.0463***
		(0.00746)	(0.0104)	(0.00698)	(0.00674)	(0.00688)	(0.00508)
TRK*IB*σ_v		0.0482***	0.0254**	0.0501***	0.0367***	0.0391*	0.0110
		(0.00725)	(0.0113)	(0.0162)	(0.0120)	(0.0206)	(0.0331)
Size* σ_v		-0.00405***	-0.00341**	-0.00374***	-0.00415***	-0.00380***	-0.00425***
		(0.00101)	(0.00158)	(0.00115)	(0.00120)	(0.00116)	(0.00127)

[21] For brevity the analyses were made but not reported but are available upon request.

$Capital_{it-1}$* σ_v		-0.00137*** (0.000415)	-0.00158*** (0.000410)	-0.00133*** (0.000329)	-0.00126*** (0.000378)	-0.00134*** (0.000334)	-0.00112*** (0.000328)
ROA* σ_v		-0.0134** (0.00571)	-0.00979 (0.00990)	-0.0159*** (0.00237)	-0.0152*** (0.00283)	-0.0159*** (0.00236)	-0.0148*** (0.00298)
GDP Growth* σ_v			-0.000170 (0.00116)	-0.000220 (0.000862)	-0.000462 (0.000964)	-0.000263 (0.000857)	-0.000746 (0.000922)
Rule of Law* σ_v			-0.0130*** (0.00466)	-0.000417 (0.00508)	0.000101 (0.00494)	-0.000612 (0.00527)	-0.000106 (0.00549)
Stock Market* σ_v				0.0291*** (0.00554)	0.0297*** (0.00557)	0.0293*** (0.00565)	0.0297*** (0.00526)
Lerner Index* σ_v				-0.00813 (0.00607)	-0.00439 (0.00651)	-0.00871 (0.00635)	-0.00150 (0.00674)
Crisis* σ_v					0.00163 (0.000997)		
IB_{xMT}*Crisis*σ_v						-0.000356 (0.00244)	
MY_{IB}* Crisis* σ_v						-0.00481** (0.00200)	-0.00479** (0.00189)
TRK_{IB}*Crisis* σ_v						-0.000564 (0.00236)	-0.00165 (0.00246)
CB*Crisis* σ_v							0.00357** (0.00139)
F	44.68	45.40	26.65	35.40	31.60	37.49	115.8
No of observations	1963	1769	2536	1769	1769	1769	1769
No. of banks	302	286	330	286	286	286	286
No. of instruments	66	149	325	227	230	230	230
AR(2) test	0.04	-1.69*	-1.46	-1.38	-1.34	-1.38	-1.29
Hansen test	62.67	116.52	285.48	192.91	194.40	194.68	196.59

Judging by the results of columns 2 to 7, the underlying banking models seem to determine risk shifting in the dual banking systems of OIC member countries. The negative coefficient of the Islamic Banking interaction term (IB_{xMT}*σ_v) is in line with the theory of Islamic banking and its desired attributes of stability and inclusive and sustainable development (Askari et al., 2012). It implies that risk shifting benefits and incentives are lower in the case of Islamic banks. This may, in part, justify the relative resilience of Islamic banks during the recent financial crisis (Hasan and Dridi, 2010). The size of the coefficient, however, is not sufficient to fully nullify banks' risk shifting incentives (Bushman et al., 2012). Islamic banks, therefore, engage in risk shifting in a systematic way. The positive coefficients of MY*IB*σ_v and TRK*IB*σ_v, on the other hand, suggests that Islamic banks in Malaysia and Turkey not only shift risk, but they do so more than their conventional counterparts.

The deviation of Islamic banks' practice from theory, and the lack of risk sharing prerequisites could perhaps explain these contrary findings. In the Malaysian context, for example, the research of Misman and Ahmad (2011), lends support to the observed shifting of risk by Islamic banks. The authors find that Islamic banks in Malaysia managed their earnings through the use of loan loss provisioning, in a similar fashion to the country's conventional

banks, over the 1993–2009 period. Analogous results were established by Chong and Liu (2009).

Earnings smoothing, whether via loan loss provisioning or profit equalization reserves, is associated with losses in informational transparency, as documented in an international study by Bushman et al. (2007 and 2012). The resultant obscuring of banks' fundamentals weakens outside monitoring and increases the scope for risk shifting by banks. It remains to be seen if the trend is reversed with the implementation of the Islamic Financial Services Act (IFSA 2013) in Malaysia.

Furthermore, it can be argued that Malaysian Islamic banks enjoy unmatched regulatory forbearance and political support, which have, on the one hand, contributed to double-digit growth of the industry (Ali, 2012; Malmendier, 2009) but might have, on the other hand, aggravated risk shifting incentives, unintendedly. Duan and Yu (1999) demonstrate how a greater degree of regulatory forbearance increases the fair value of deposit insurance premium, incentivizing, in turn, excessive risk-taking.

As for Turkey, the government's response to Ihlas Finans's collapse in 2001 and their introduction of an Islamic deposit insurance scheme may have had the unintended consequence of displacing more private discipline than government regulators could generate in its stead[22].

With regards to our third research question, the strength of risk shifting incentives is found to be highly state-dependent, as suggested by earlier literature. Other things being equal, banks' size, capital structure and profitability inversely influence risk shifting incentives.

The coefficient of the bank size interacted term is significantly negative across all specifications. The tendency of OIC banks' to engage in risk shifting appears to be tempered by their size. Such impact is contrary to the 'too big to fail' paradigm, which anticipates excessive risk taking on the part of larger banks in exploitation of the 'too big to fail' safety net subsidies (Barrell et al., 2011; Kane, 2010). Thus suggesting that the moral hazard of "too big to fail" institutions does not exist in OIC member countries at present. On the contrary, banks seem to benefit from both scale economies and diversification as they grow in size.

The significantly negative coefficient of the bank capital interacted term provides evidence that maintaining more equity capital in the asset structure of the bank incentivizes shareholders to act more prudently and shift less risk. This is in line with the arguments put forth by Nassim Talib (2013) and operationalized by Basel Committee on Banking Supervision regarding having more "skin in the game".

A similar skin-in-the-game effect arises from bank's ex-post profitability. A profit-making bank with a high franchise value has a lot to lose and little incentive to take excessive risk. This is because shareholders carry the residual claims on banks' assets and profits (Jensen and Meckling, 1976). In the same spirit, a poor-performing bank that is teetering on the brink of bankruptcy will be willing to take excessive risks to increase the value of the deposit insurance in a gamble for resurrection (Brunnermeier and Oehmke, 2012; Loktionov 2009; Eisdorfer 2008).

[22] This argument is consistent with Hovakimian et al.'s line of thought (2003).

Turning to aspects of the country's financial system, the stock market interacted term is consistently and significantly positive in all relevant specifications. The presence of stock markets in OIC member countries seems to expand opportunities for opportunistic risk shifting behaviour. This confirms that while stock markets are arguably the first best avenues for risk sharing (Brav, Constantinides, and Geczy 2002); there are necessary conditions for this to hold. Yartey (2008), for example, finds that political risk, law and order, democratic accountability and efficient bureaucracy are crucial for the viability and proper functioning of stock markets. An examination of the current state of affairs in the contemporary Muslim world reveals numerous adversities (Al-'Alwani, 1993). Exploitation, corruption, political instability and lack of trust are just a few (Ng, 2014). Whereas, furthermore, stock markets are almost non-existent in most Muslim counties, they are plagued with informational problems and governance issues where they exist (Askari, et. al, 2012; Mirakhor and Askari, 2010; Iqbal and Mirakhor, 2011; Chapra, 2000). Both characteristics are likely to undermine the integrity of stock markets and impair efficient resource allocation, aggravating at the same time risk shifting moral hazard.

The crisis has the expected impact of aggravating moral hazard in conventional banks through gambling for resurrection (Brunnermeier and Oehmke, 2012). No such impact is significant in the case of Islamic banks. On the contrary, the credible threat of loss to investment account holders appears to have had the advantage of strengthening regulators and depositors' disciplinary pressure in Islamic banks in Malaysia (Calomiris, 1999).

Most importantly, the mitigating impact of Islamic banking remains significant in all specifications. This confirms that some inherent features of Islamic banking deter risk shifting over and above other characteristics.

The findings are inconclusive with regards to the influence of the rest of the macroeconomic variables, with the sole exception of rule of law in the 2nd column, where it appears that banks in strong legal systems shift less risk.

7. Conclusion

The study contributes to an issue of timely relevance for Islamic finance and the international financial community at large, especially policy makers and advocates of financial consumers' protection. To date, substantial efforts have been made to address some of the incentives' conflicts that taint conventional banking model and threaten financial consumers' welfare. Reforms reflect the understanding that banks carry a large responsibility not only towards their shareholders but also towards their customers and the society in general. However, the sufficiency and potency of these reform initiatives remain debatable (Haldane, 2011). There still seems to be some scope for "re-rooting" and "inter-learning" in the pursuit of a sustainable model.

Islamic banking has emerged as a viable alternative in the aftermath of the financial crisis (Haneef and Mirakhor, 2014; Ibrahim et al., 2014). The Shari'ah compliant model provides unique paradigm with risk sharing at its core. Whereas the empirical evidence of risk shifting by Islamic banks - regardless of its magnitude - goes against theoretical predictions, it appeals to the prevailing view that the prerequisites to guarantee full implementation of the axiomatic model are at best partially met (Mirakhor and Askari, 2010). These include "a developed financial system; rule of law; legal institutions that protect investors, creditors, and property rights; good governance; policy discipline to ensure macroeconomic stability; and trust in

government and institutions" (Mirakhor, 2007). Furthermore, the development of Islamic financial instruments is often criticized for having concentrated on debt-like instruments. While apparently fulfilling the sufficient condition of interest prohibition, the design and economic implications of such instruments, more often than not, resemble their conventional counterparts; as they undergo a process of reverse-engineering (Mirakhor, 2011). As the latter are traditionally centered on risk transfer and risk shifting, contagion is largely inevitable. Risk sharing is compromised.

Reputational risks aside, risk shifting by Islamic banks entails a sacrifice of some of the most important features of the Ideal Islamic banking, including close link between real and financial sectors, financial inclusion, poverty alleviation, relative stability and sustainable economic development and growth.

That said, the Shari'ah compliant industry appears to mitigate 17% of risk shifting incentives, on average, in general. In other words, incentives for pervasive risk shifting are lower in a majority of Islamic banks even though they are not fully eliminated. This could provide some useful insights regarding the way forward for financial consumers' protection. The deterring impact of Islamic banking is worth strengthening through the expansion of risk sharing and removal of risk transfer incentives in the present corporate, regulatory and supervisory frameworks (CIBAFI, 2015; Haneef and Mirakhor, 2014; AbdulRahman and Romsan, 2013). This could be achieved through market-oriented approach to incentivising risk sharing and removing debt biases in central banking, governance, taxation, accounting and bankruptcy laws. Malaysia's Islamic Financial Services Act (IFSA 2013[23]) may provide significant impetus in this regard.

[23] The act formally acknowledges risk-sharing in Islamic finance and attempts to operationalize it legislatively; a formidable step away from the grips of risk-shifting-destined path-dependency.

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9. List of Appendices

Appendix 1. Banks' Distribution by Country

No.	Country name	Banks	%	Islamic Banks	%	Conventional Banks	%
1	Bahrain	15	4	6	8	9	3
2	Bangladesh	35	10	5	7	30	11
3	Brunei Darussalam	2	1	1	1	1	0
4	Egypt, Arab Rep.	24	7	2	3	22	8
5	Indonesia	55	16	2	3	53	19
6	Iraq	7	2	3	4	4	1
7	Jordan	12	3	3	4	9	3
8	Kuwait	9	3	3	4	6	2
9	Malaysia	39	11	16	21	23	8
10	Mauritania	6	2	1	1	5	2
11	Pakistan	30	9	8	11	22	8
12	Palestinian Territories	3	1	1	1	2	1
13	Qatar	9	3	3	4	6	2
14	Saudi Arabia	12	3	3	4	9	3
15	Syrian Arab Republic	11	3	2	3	9	3
16	Tunisia	15	4	1	1	14	5
17	Turkey	31	9	4	5	27	10
18	United Arab Emirates	23	7	7	9	16	6
19	Yemen	9	3	4	5	5	2
	Total	**347**		**75**		**272**	

Appendix 2. IPP Estimation

Merton (1977) characterizes deposit insurance as a put option written by the deposit insurer on bank's assets and derives an implicit stock market-based price, as follows:

$$IPP \equiv \mathrm{N}\left(\mathrm{y} + \sigma_v\sqrt{T}\right) - (1-\delta)^n \left(\frac{V}{D}\right) N(y),$$

where

$$y \equiv \frac{\ln\left(\frac{D}{V(1-\delta)^n}\right) - \sigma_v^2 T/2}{\sigma_v\sqrt{T}}$$

IPP is the actuarial value of insurance premium per dollar of insured deposits,
V is the market value of bank assets,
D is the face value of deposits
σ_v is asset risk,
N is the cumulative standard normal distribution of a standard normal random variable,
δ is the dividend per dollar of asset value,
n is the number of times the dividend is paid per period
T is the unit of time until the expiry of the deposit insurance contract, it is assumed to be 1.

In this characterization, the face value of deposits (D) corresponds to the exercise price and the value of bank assets (V) corresponds to the market price.

RISK-SHARING BANKING: VIABILITY AND RESILIENCE

Speaker : Dr. Siti Muawanah Lajis

2016 Global Forum For Financial Consumers
International Academy of Financial Consumers
SKK University, Seoul, Korea
November 4-5, 2016

Evaluating Viability & Resilience of Risk Sharing Banking as the Ideal Model for Islamic Banks

- Risk-Transfer vs Risk-Sharing Banking
- KL Declaration 2012
- Risk-sharing banking: An illustration
- Conclusion and policy recommendations

Present banking model

- Risk-transfer based
  - Risks are transferred to counterparty.
  - Risks are shifted to public/taxpayers.
- Dis-connected with real sector
- Inherently fragile
  - due to unmatched balance sheet.
  - Exposure to liquidity risk, maturity risk, currency risk on daily basis.
- Impact on behavior?
  - Banks - excessive risk taking, highly leverage, unproductive financing, driven mainly by profit maximization.
  - Borrowers - irresponsible spending, high level of debt.
  - Saver/fund provider - low concern on usage of funds.

*"**Bad conduct** has occurred in investment banking, securities market and retail banking. This has **eroded industry's trustworthiness**."*

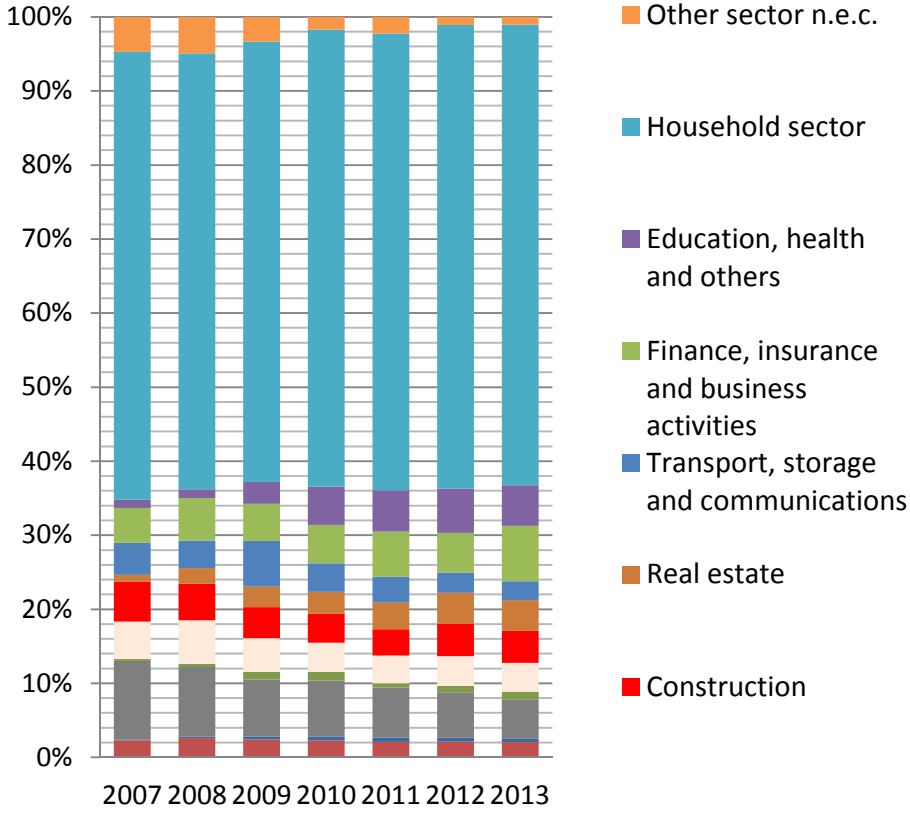
PCEO FedReserve NY, 20 Oct 2016

"Crisis showed us that they're (banks) not looking out for us…They're greedy bastards out for themselves. That's eroded a lot of trust people have in banks."

PCEO TransferWise NY, 31 Oct 2016

Present Islamic Banking Practices: Concentration on Household & Sale-based Financing

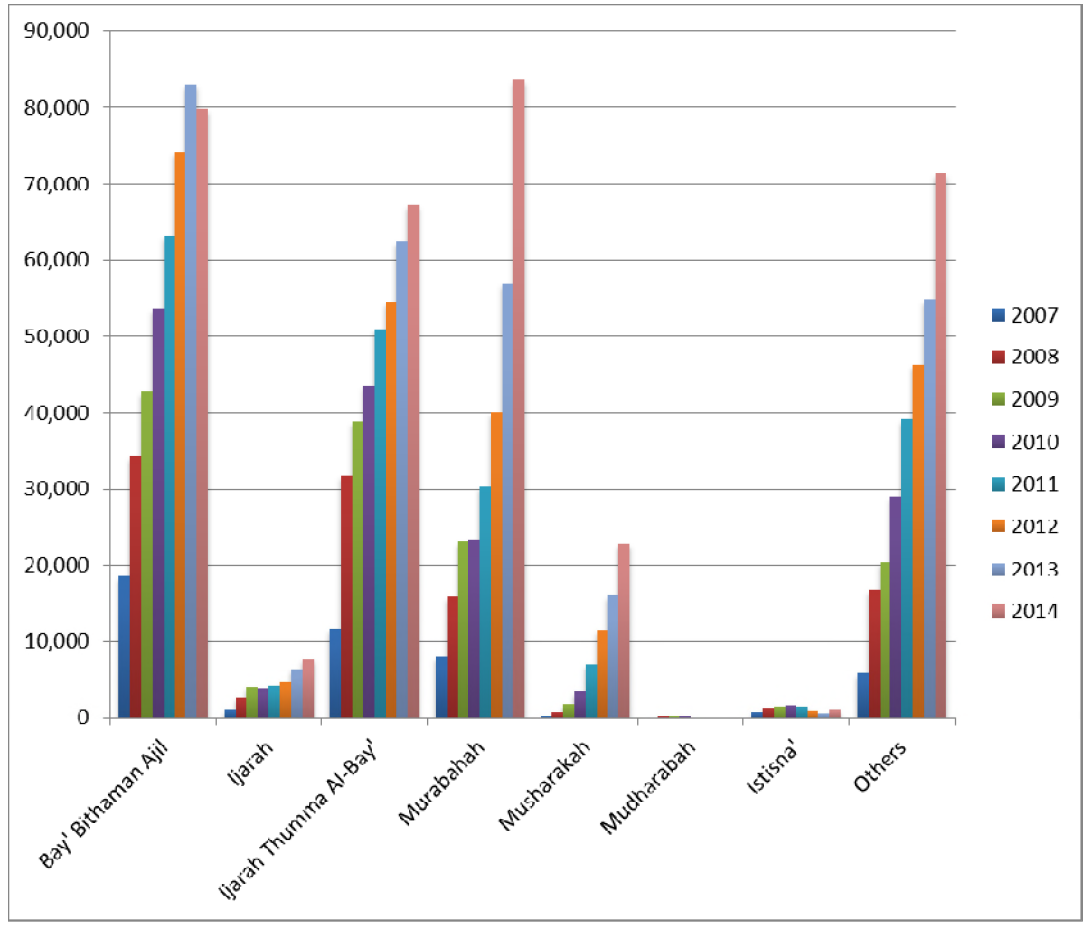
Figure 1



Financing by sector

Household constitutes ~60% of total financing…. Risks being concentrated and not well diversified.

Figure 2



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Maturity Mismatch & Narrowing Profit Margin

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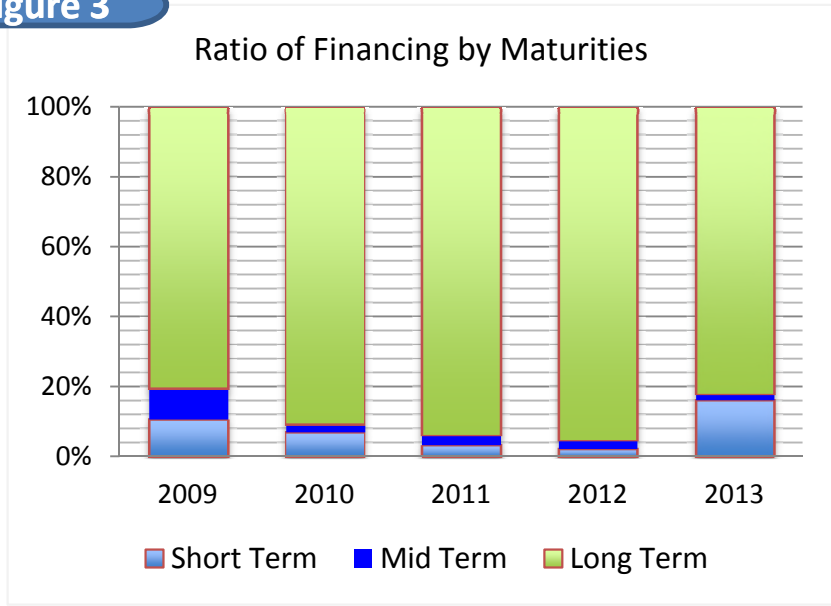

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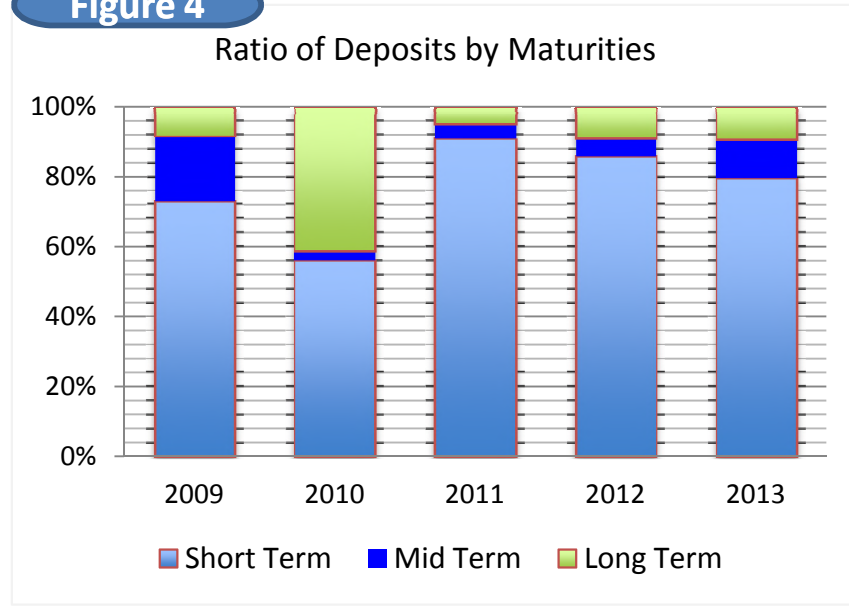

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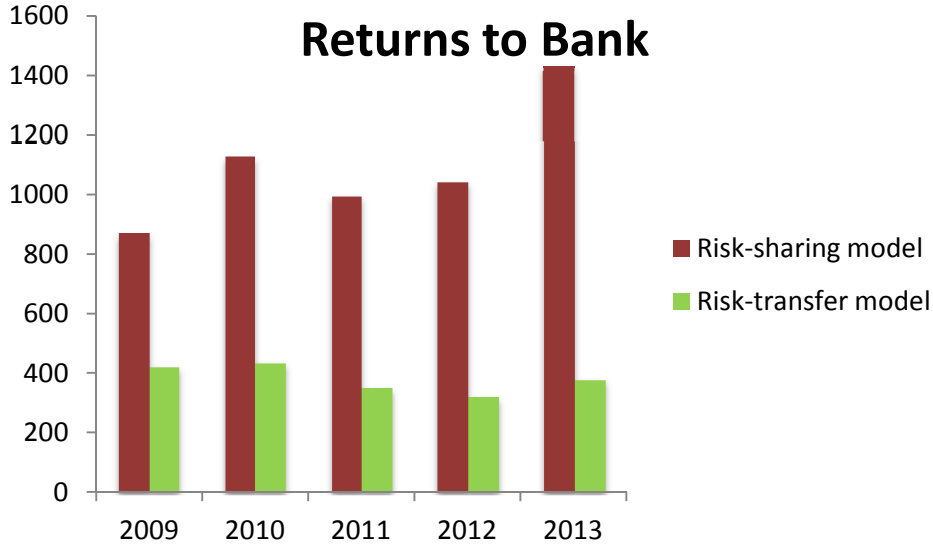

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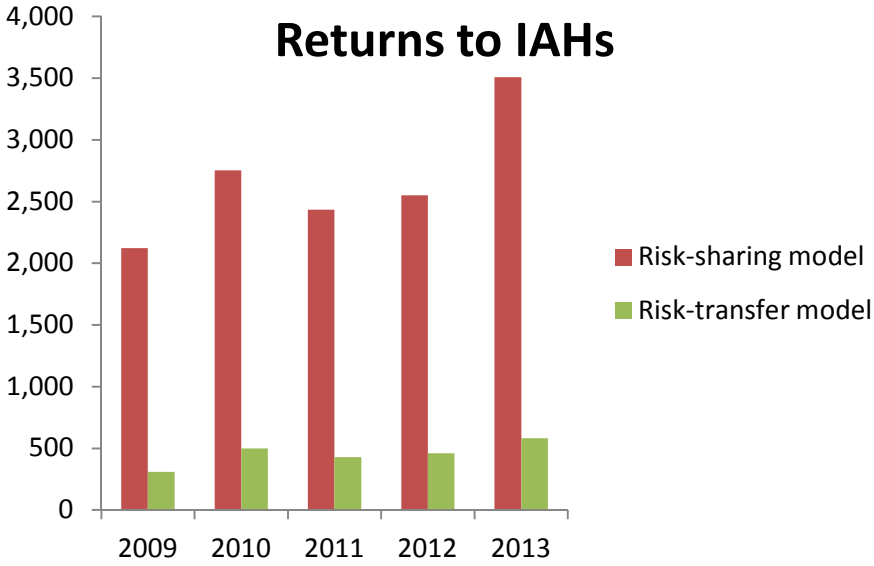

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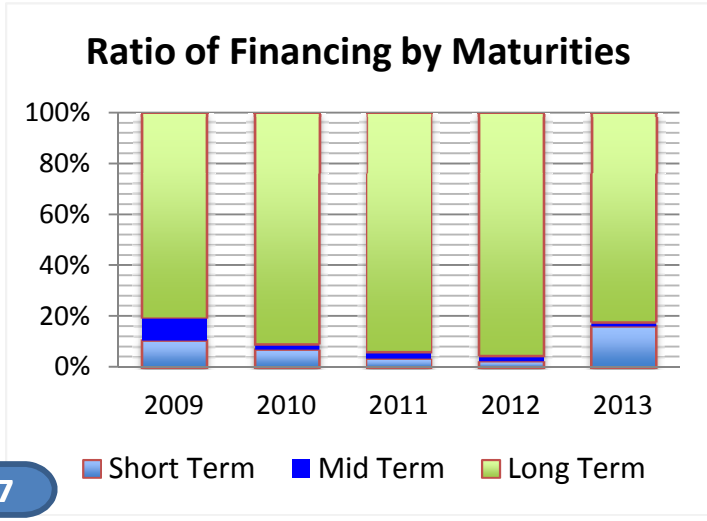

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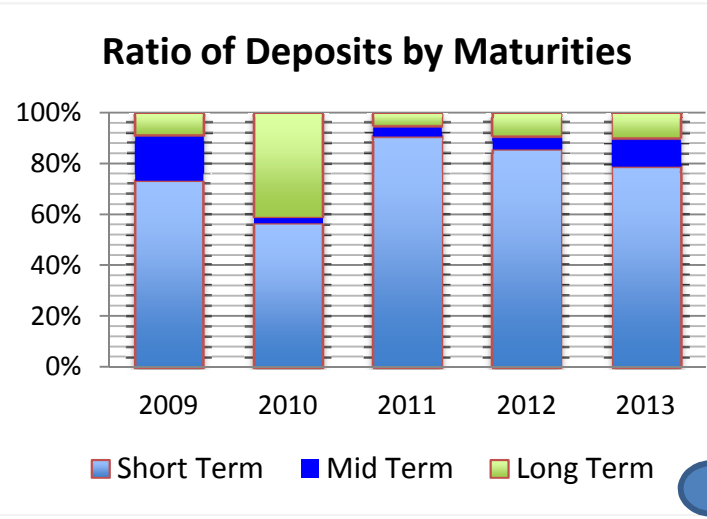

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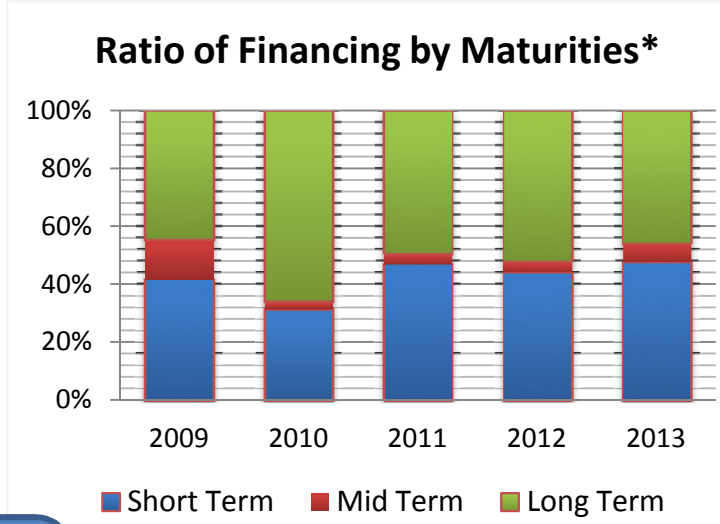

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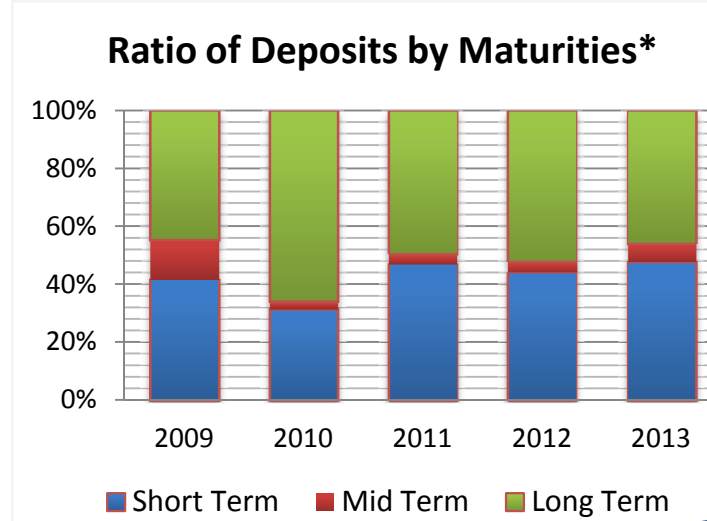

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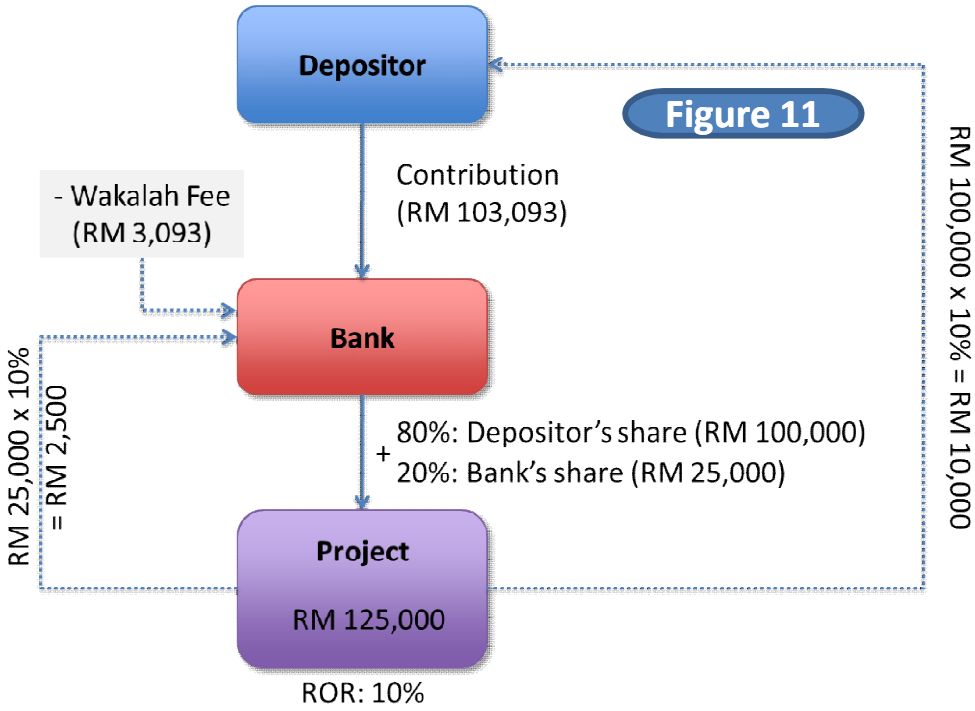

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Conclusion: Whither Islamic finance?

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- Risk-transfer banking induces negative behaviors such as excessive risk taking and socially unproductive financial intermediation.

- To be competitive & sustainable, Islamic banks must move away from risk-transfer banking. They must embrace risk-sharing banking.

- Risk-sharing banking requires the balance sheet to be matched in terms of maturity, value, risk and materiality. Its value propositions:-
  - Significant upside potentials commensurate with the risk undertaken
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Policy recommendations

Focus areas	Remarks
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Macro-prudential & ancillary policies	Risk sharing as policy objective • Create level playing field by removing biases in favor of risk transfer in legal, administrative, economic, financial and regulatory policies • Create blueprint risk-sharing regulatory framework for Islamic banks to be phased in over a period of time to ensure smooth transition
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Human capital	Investment in human capital to have full appreciation of risk-sharing finance & economy
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Incentive structure design	• Periodic audit of the incentive structure to align them with the ethical and moral practices expected from Islamic banks
Knowledge nurturing environment	Develop platforms for effective collaboration amongst regulators, researchers and industry

Thank you

Dr. Siti Muawanah Lajis, PhD Islamic finance

Bank Negara Malaysia (Central Bank of Malaysia)

- PhD (Islamic finance specializing in risk sharing and banking regulation) – INCEIF, Malaysia
- Chartered Professional in Islamic Finance
- MBA (Finance) - Monash University, Australia
- BSc (Finance) - Northern Illinois University, USA
- BA (Economics) - Northern Illinois University, USA
- Executive Diploma (Usuludeen) – University of Malaya, Malaysia

- With Bank Negara Malaysia (the Central Bank of Malaysia) since 1988
  1. Banking Supervision/Audit Department
  2. ICT Systems Supervision/Audit Department
  3. Risk Management Department
  4. International Department
  5. Islamic Banking and Takaful Department (since 2005)

- Was with the National Economic Action Council (Prime Minister's Department) implementing Malaysia's first FTA with Japan

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- Pioneered the formulation of enterprise-wide operational risk management framework for BNM (early 2000s).

Global Financial Reform Initiatives

Initiative	Summary of Policy Direction	Status/Remarks
US: Volcker Rule	• Prohibit propriety trading within bank holding company	• Part of US Dodd-Frank Act 2010 • Full implementation 2015 - 2018
UK: **Vickers Report** (of the Independent Commission of banking)	• Separate retail from market-based and non-European activities • Retail operations "ring-fenced" in separate entity with limited exposure to rest of the bank	• Part of Financial Services (Banking Reform) Act 2013 • Full implementation 2019
European Union: Liikanen Report **(**of the European Commission's High-level Expert Group on Bank Structural Reform)	• Prohibit proprietary trading in financial instruments and commodities • Separate other high-risk trading activities (such as market-making) in a separate legal entity within the banking group ("subsidiarization")	• Legislative proposals by European Commission on structural reforms of EU banks • Proprietary trading ban (1 Jan 2017) • Separation of trading activities would (1 July 2018)
Iceland: Monetary Reform Report (A report by Frosti Sigurjonsson, commissioned by PM of Iceland)	• Provides monetary reform alternatives: 100% Reserves, Narrow Banking, Limited Purpose Banking and Sovereign Money proposal	• Highlights benefits of Sovereign Money System and what steps needed for a successful transition
UK & Europe: Creating a Sovereign Money System **(**by Positive Money)	• All money is created by the state. Only central bank, representing the state, may create money • Commercial banks are prevented from creating money, serving two functions – payments (transactions acct) & lending/saving (investment acct).	• Investment account features – profit and loss bearing with banks, no instant access, no guarantee from govt • Equity requirements and other prudential rules to prevent reckless behaviour by banks

Source: Various reports and literatures

RISK-SHARING BANKING: VIABILITY AND RESILIENCE

Speaker : Dr. Siti Muawanah Lajis

2016 Global Forum For Financial Consumers
International Academy of Financial Consumers
SKK University, Seoul, Korea
November 4-5, 2016

Evaluating Viability & Resilience of Risk Sharing Banking as the Ideal Model for Islamic Banks

- Risk-Transfer vs Risk-Sharing Banking
- KL Declaration 2012
- Risk-sharing banking: An illustration
- Conclusion and policy recommendations

Present banking model

- Risk-transfer based
  - Risks are transferred to counterparty.
  - Risks are shifted to public/taxpayers.
- Dis-connected with real sector
- Inherently fragile
  - due to unmatched balance sheet.
  - Exposure to liquidity risk, maturity risk, currency risk on daily basis.
- Impact on behavior?
  - Banks - excessive risk taking, highly leverage, unproductive financing, driven mainly by profit maximization.
  - Borrowers - irresponsible spending, high level of debt.
  - Saver/fund provider - low concern on usage of funds.

*"**Bad conduct** has occurred in investment banking, securities market and retail banking. This has **eroded industry's trustworthiness**."*

PCEO FedReserve NY, 20 Oct 2016

"Crisis showed us that they're (banks) not looking out for us…They're greedy bastards out for themselves. That's eroded a lot of trust people have in banks."

PCEO TransferWise NY, 31 Oct 2016

Present Islamic Banking Practices: Concentration on Household & Sale-based Financing

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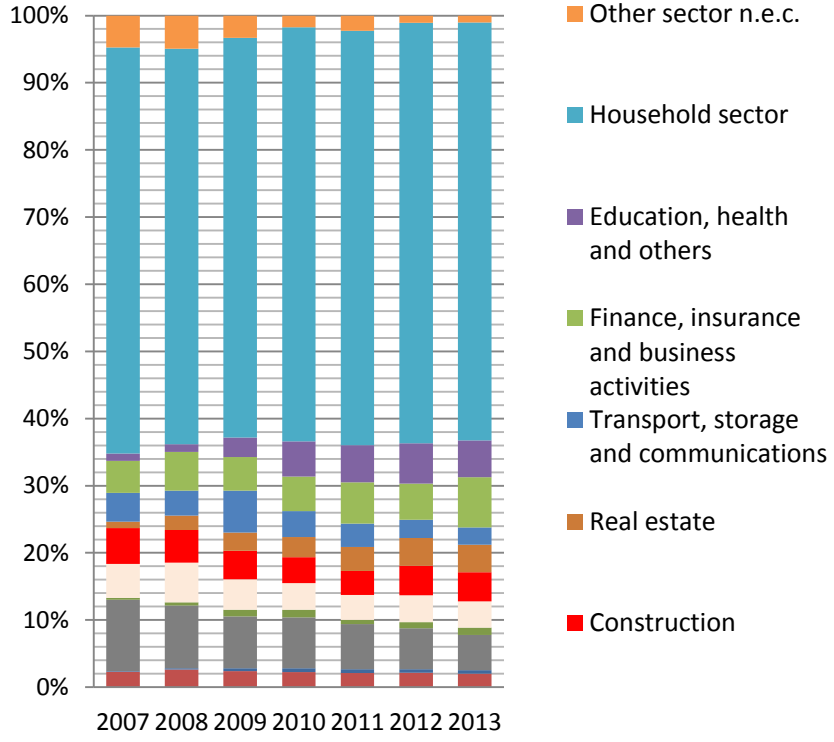

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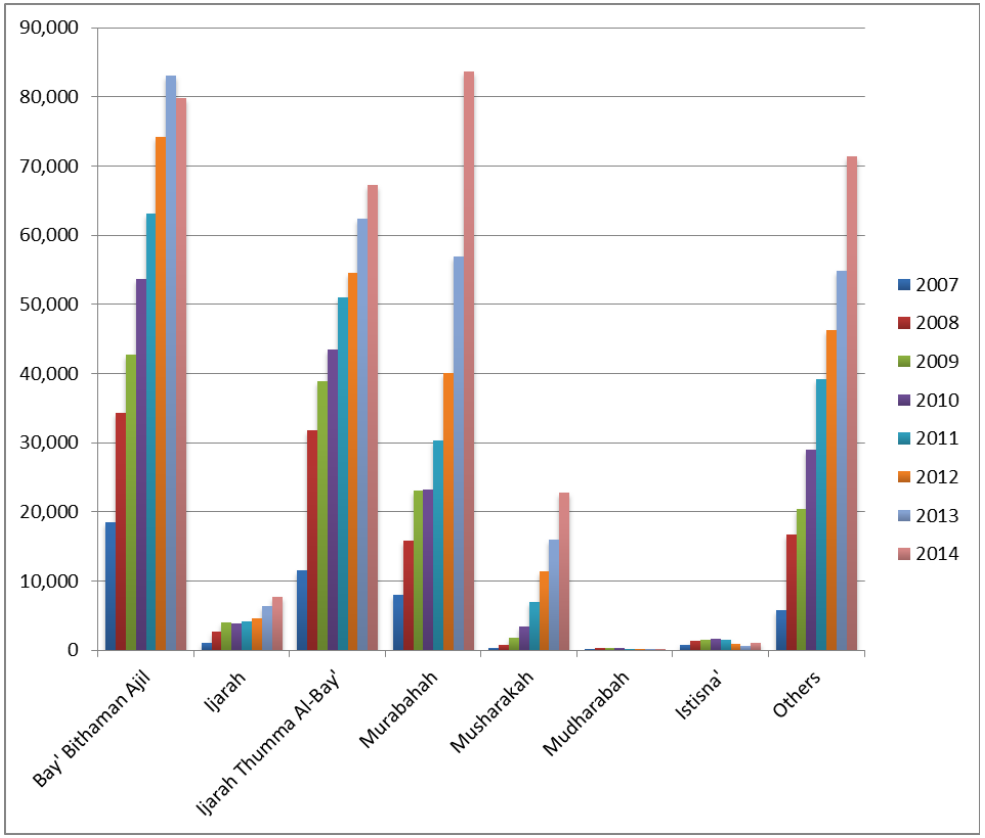

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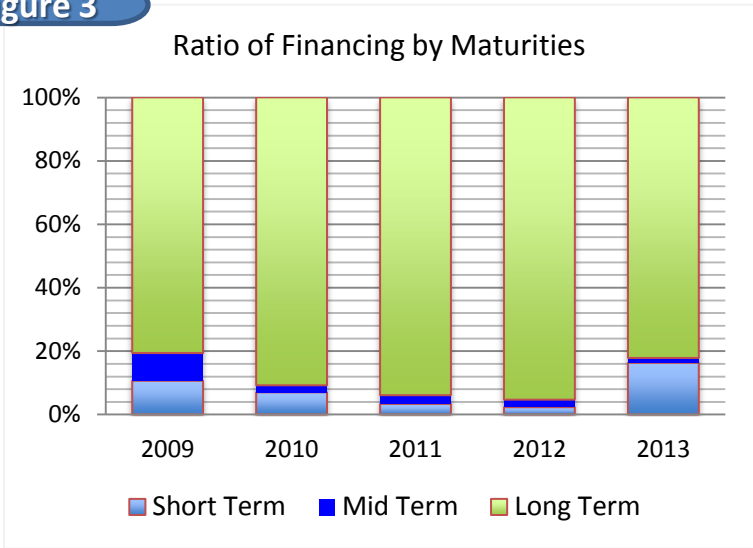

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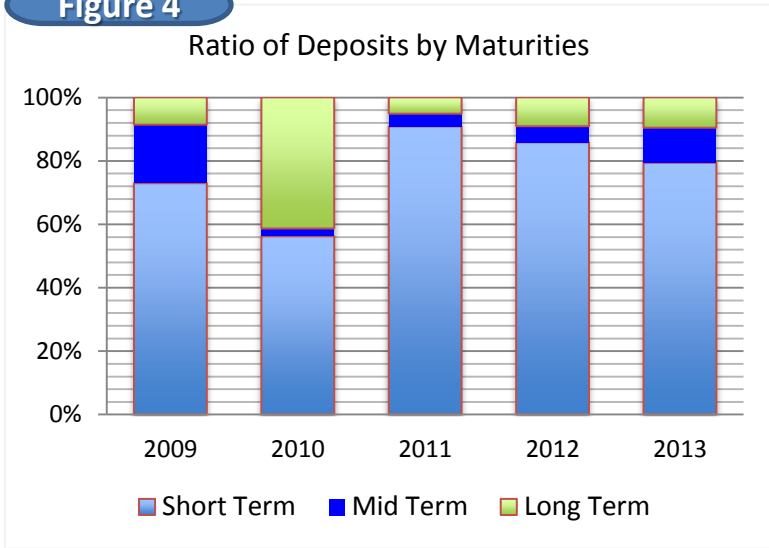

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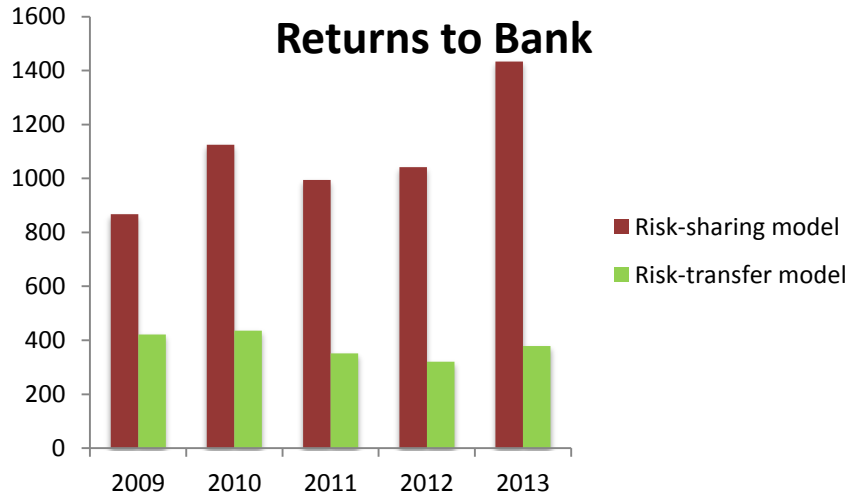

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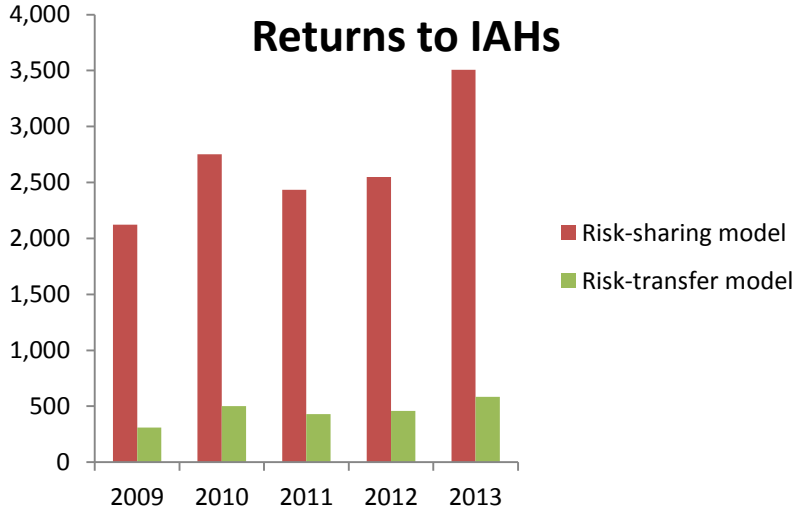

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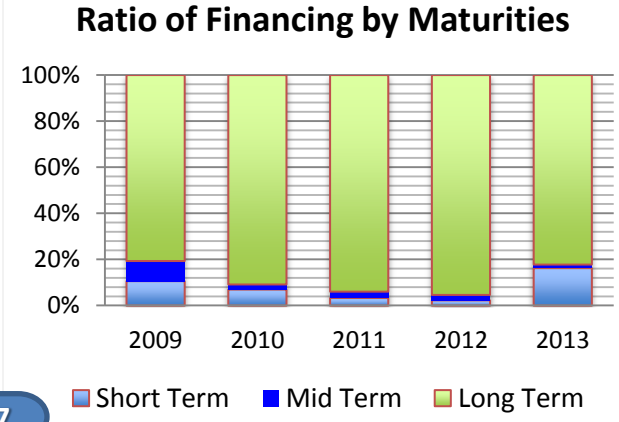

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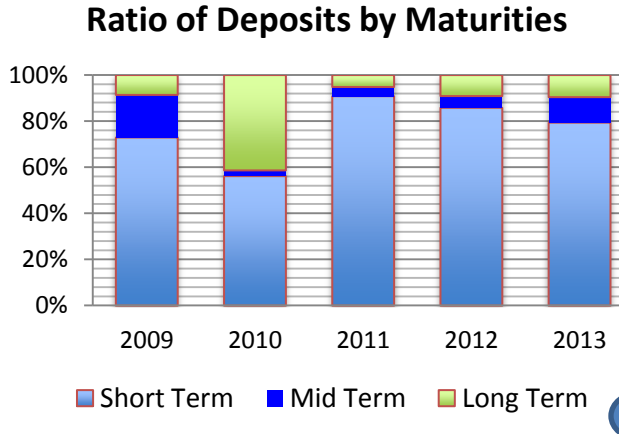

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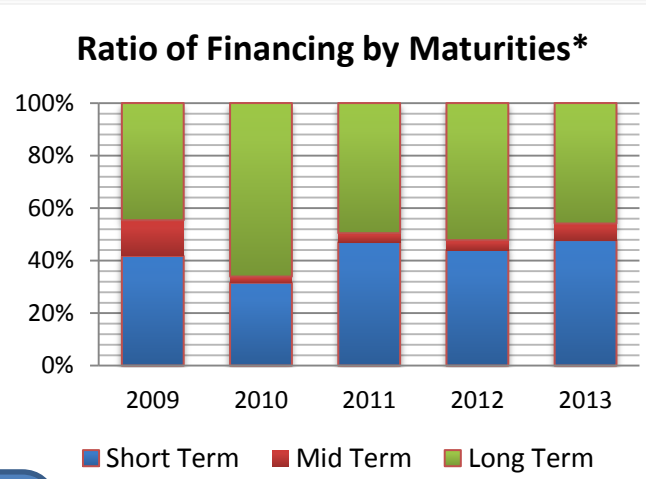

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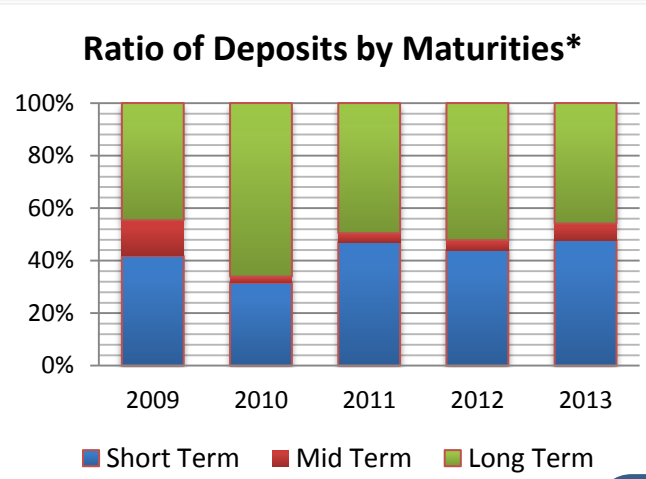

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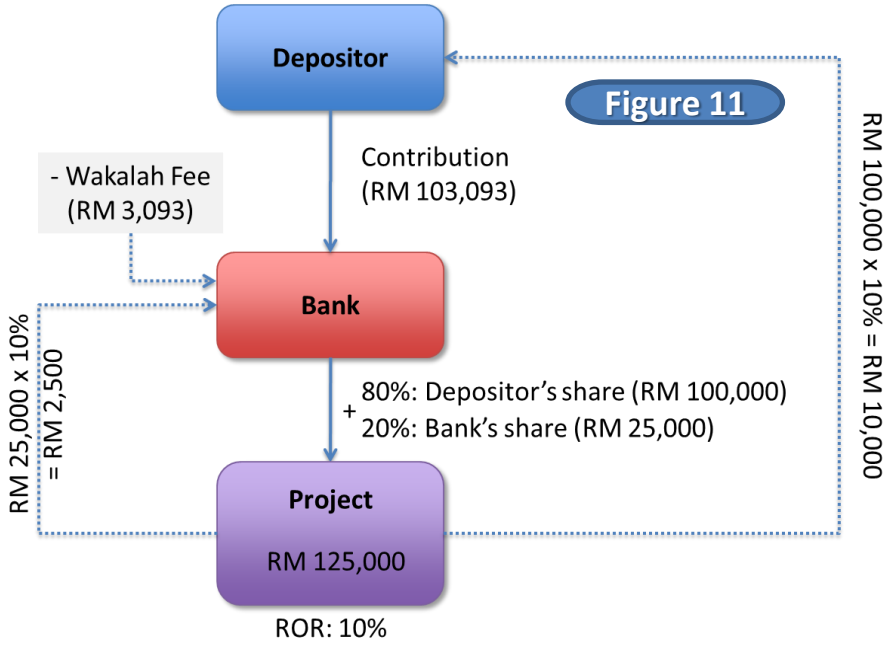

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Bank Negara Malaysia (Central Bank of Malaysia)

- PhD (Islamic finance specializing in risk sharing and banking regulation) – INCEIF, Malaysia
- Chartered Professional in Islamic Finance
- MBA (Finance) - Monash University, Australia
- BSc (Finance) - Northern Illinois University, USA
- BA (Economics) - Northern Illinois University, USA
- Executive Diploma (Usuludeen) – University of Malaya, Malaysia

- With Bank Negara Malaysia (the Central Bank of Malaysia) since 1988
  1. Banking Supervision/Audit Department
  2. ICT Systems Supervision/Audit Department
  3. Risk Management Department
  4. International Department
  5. Islamic Banking and Takaful Department (since 2005)

- Was with the National Economic Action Council (Prime Minister's Department) implementing Malaysia's first FTA with Japan

- Involved in the setting up of INCEIF, ISRA (the International Shariah Research Academy for Islamic Finance) and ACIFP now known as CIIF (Charted Institute of Islamic Finance Professionals).

- Pioneered the formulation of enterprise-wide operational risk management framework for BNM (early 2000s).

Global Financial Reform Initiatives

Initiative	Summary of Policy Direction	Status/Remarks
US: Volcker Rule	• Prohibit propriety trading within bank holding company	• Part of US Dodd-Frank Act 2010 • Full implementation 2015 - 2018
UK: Vickers Report (of the Independent Commission of banking)	• Separate retail from market-based and non-European activities • Retail operations "ring-fenced" in separate entity with limited exposure to rest of the bank	• Part of Financial Services (Banking Reform) Act 2013 • Full implementation 2019
European Union: Liikanen Report (of the European Commission's High-level Expert Group on Bank Structural Reform)	• Prohibit proprietary trading in financial instruments and commodities • Separate other high-risk trading activities (such as market-making) in a separate legal entity within the banking group ("subsidiarization")	• Legislative proposals by European Commission on structural reforms of EU banks • Proprietary trading ban (1 Jan 2017) • Separation of trading activities would (1 July 2018)
Iceland: Monetary Reform Report (A report by Frosti Sigurjonsson, commissioned by PM of Iceland)	• Provides monetary reform alternatives: 100% Reserves, Narrow Banking, Limited Purpose Banking and Sovereign Money proposal	• Highlights benefits of Sovereign Money System and what steps needed for a successful transition
UK & Europe: Creating a Sovereign Money System (by Positive Money)	• All money is created by the state. Only central bank, representing the state, may create money • Commercial banks are prevented from creating money, serving two functions – payments (transactions acct) & lending/saving (investment acct).	• Investment account features – profit and loss bearing with banks, no instant access, no guarantee from govt • Equity requirements and other prudential rules to prevent reckless behaviour by banks

Source: Various reports and literatures

Financial Consumer protection in the context of schedule 7 – 10 in IFSA 2013

(The case of Malaysia)

Ahcene Lahsasna

Abstract

The public (or retail) consumer is a very important aspect in any financial market. Although they do not provide the bulk of the financing income compared to business consumers or corporations, they make up in terms of quantity and is an essential contributor to the performance of any financial institution. However, financing retail consumers are very much fragile and volatile in nature due to their inability to gasp their own financial capability as well as the tendency to overextend their credit limit which may create problems in the future and affect their ability to repay their loans. This in turn, creates problems for the financial institutions making the recovery process very lengthy and expensive. With that in mind, it is imperative that the retail consumers are educated and taught the proper ways to manage their credit and protect themselves against the inability to pay their loans. Thus the purpose of this paper is to highlight the importance of consumer protection and the means that have been put in place by the central bank of Malaysia, Bank Negara Malaysia (BNM) to help increase customer awareness and financial literacy in Malaysia. This paper will also highlight the challenges that are faced in consumer protection and efforts that have been made to improve consumer protection. This paper found that the highest percentage of loan approved in Malaysia are loans from the household sector and despite the measures to increase financial literacy and consumer awareness that have been put in place by BNM, there has been a steady increase of bankruptcy cases for the past five years in Malaysia. It would be interesting to see the impact of the measures put in place by FSA 2013 and IFSA 2013 on financial institutions and retail consumers and it is recommended that a more stringent regulative framework be put in place to address the increase in bankruptcy among the working population.

Keywords: Financial inclusion, financial consumer, Consumer protection, financial literacy, Malaysia