

A Risk Sharing Banking Model

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- The securitization process and requisites
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Islamic Banking – A helicopter view

- Previous 30 years: Convergence to the conventional
 - Same asset/liability mismatch issues: tenor, duration, risk/reward
 - Less able to deal with inherent risks in the interest-based framework
- Next 30 years: IFI growth naturally limited given current trajectory: growth and profitability requires a competitive advantage
 - Need to become more relevant, otherwise remain a niche player
- How to address this path dependency?

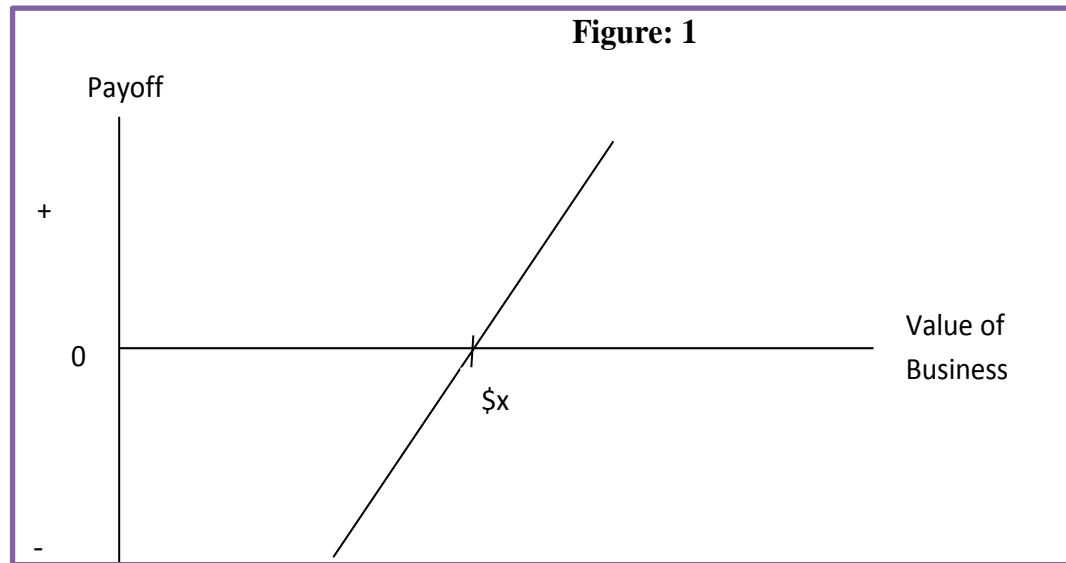
Introduction

Islamic Banking has thus far mimicked conventional banking with the result that the same problems and outcomes have surfaced, even though it is operating within an interest free framework

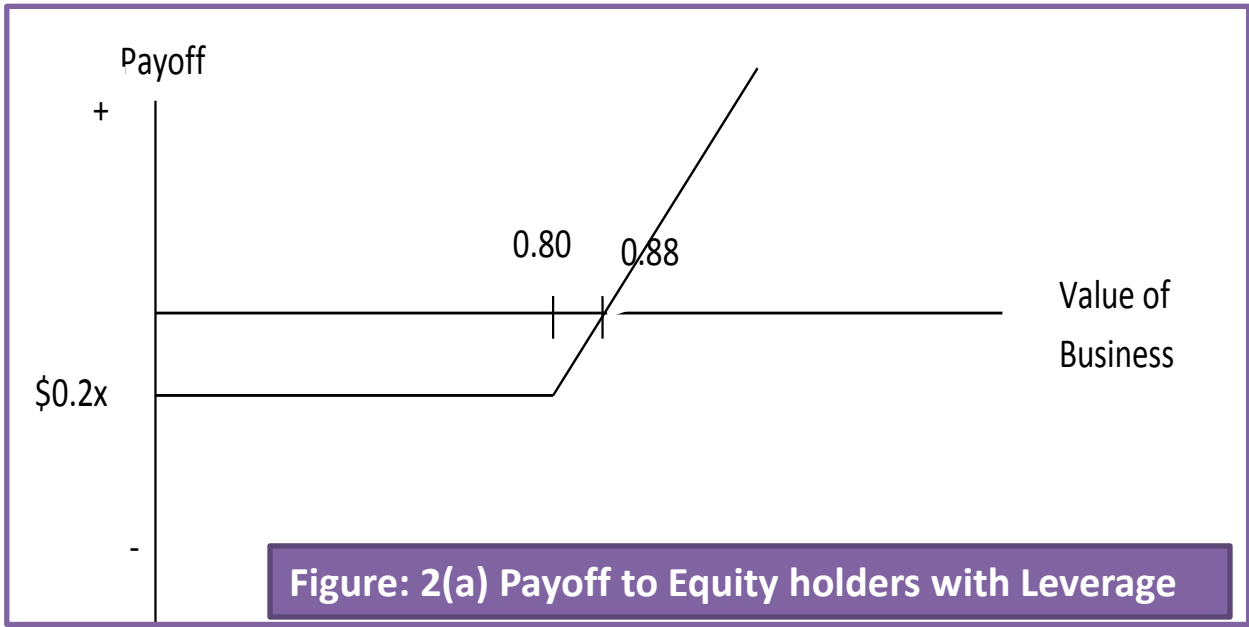
- **First problem** of liquidity risks arising from the inherent liquidity mismatch between a bank's assets and liabilities.
- **Second problem** of credit risk, arises from the risk-transfer that occurs with the intermediation by banks between surplus and deficits units.

*Payoffs to Debt, Levered
Equity and the fragility of
the Banking model.*

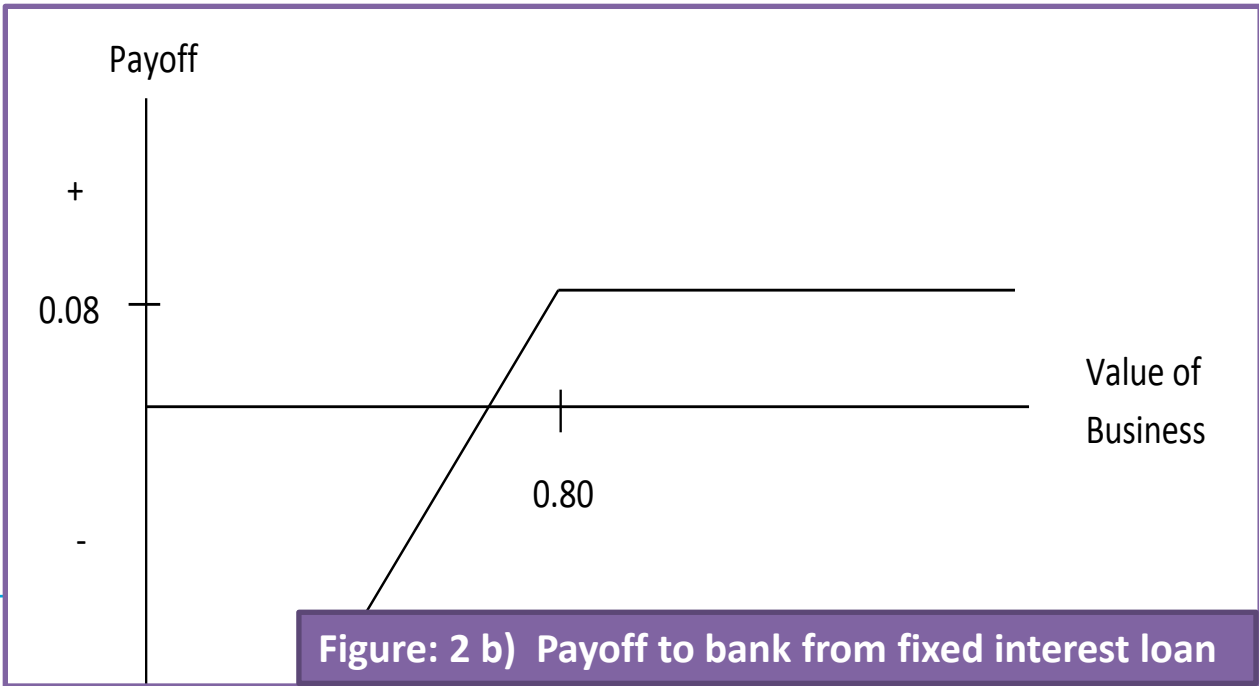
Illustrations: Suppose a business or project is entirely equity financed. The risk-profile with current value of \$X to equity holders is as follows;



Equity holders have “unlimited” upside and downside.



Figures 2(a) and 2(b) show payoff profiles to levered equity and the bank



- If there is one key missing ingredient that has resulted in the knife-edge equilibrium that banking stands on, it is the lack of a direct link between the risks on the asset and liability sides of the balance sheet.
- Islamic banking which has thus far mimicked conventional banking has had the same problems and outcomes. This apparent “convergence” has led to disaffection both among consumers of Islamic banking services and policy makers.
- This paper proposes a risk sharing model that can pull Islamic banking away from its current path dependency.

- Banking's fragility is due to risks being concentrated and not dissipated.
- Mutual funds another financial intermediary, operate in an even more hazardous environment but do not have the fragility that banks have.
- Mutual Funds operate in a risk-sharing not a risk-transfer model.
- An investor's funds are *tagged directly* to a specific portfolio. His returns depend entirely on the portfolio performance.
- If things go wrong, the fund manager loses his job, but the fund manager company remains intact. *No negative externalities beyond the investors.*
- Investment risks on the asset-side are shared fully with investor funds/deposits on the liability side.

- The shariah requires that financing should be of a risk-sharing nature with returns determined ex-post. Shariah provides for a number of contracts that are well suited for the matching of asset and liability side risk-profiles.
- In essence, under our proposal a majority of Islamic bank's assets would be securitized by the issuance of sukuk that have the same underlying contract and average “duration” of customer financing.
- Where an asset is large enough to justify an issuance against it, papers can be issued to securitize it.
- Where the assets are small, they would have to be pooled into tranches of similar maturity and then securitized.

Balance Sheet of Islamic Banks under Proposed Model

Assets	Liabilities
Cash	<i>Al Wadiah Accounts</i>
Cash	<i>Current Accounts</i>
Trade Financing	<i>Murabahah Papers (Trade Financing Papers)</i>
Leasing	<i>Ijarah Sukuk (Lease based papers)</i>
Term Financing -Consumer Finance -Hire Purchase	<i>Ijarah Sukuk (Leasing/HP based papers)</i>
Housing -Diminishing Musharakah	<i>Diminishing Musharakah Sukuk (Housing Finance Facility)</i>
Project Financing - Mudarabah / Musyarakah	<i>Mudarabah / Musyarakah Sukuk (Project Financing Facility)</i>
Venture Capital -Mudarabah/Musyarakah	<i>Mudarabah / Musyarakah Convertible Sukuk (V.C. Financing Facility.)</i>

The Securitization Process

- One to one correspondence- as the value of the asset item reduces so does the corresponding liability item.
- The process can be thought of as follows; as a bank completes assessment and documentation for the provision of funding on the asset side, it initiates the securitization process.
- For smaller assets, the packaging and securitization may be at predetermined intervals, monthly or quarterly etc.
- Thus, a bank may choose to issue papers at a fixed date every month.
- In determining the total face value of issuance, provisions for potential bad debt, prepayments etc., would have to be factored in.

- In determining tenors, a group of assets could be placed in different maturity buckets to determine how much of a certain tenor of sukuk should be issued.
- Similarly, in the case of large asset portfolios with different risk profiles, tranches of different risk classes may be warranted.
- For investors who might want varied or diversified exposure, some combination of different asset categories but with the same maturity could be the underlying for one series of the issuance.
- Several permutations of risk and tenors are possible.
- The key is to ensure a one-to-one correspondence. That is every paper outstanding can be tracked to one or a combination of assets.

- The model is flexible enough to allow for loan-syndication. In syndications, each bank will issue papers equivalent to its contribution in the syndication.
- The need for deposit insurance and lender of last resort is substantially reduced as the leverage arising from fractional reserve banking is avoided.
- For the purpose of financial inclusion, face value of papers issued should be small. Broadly, papers issued can have face values of RM1,000, RM10,000 and RM100,000. A small portion can in multiples of RM100.
- To ensure “*skin in the game*”, our model requires that banks be required to keep a minimum, say, 10% of each asset category by value in its own account. These, being funded directly from shareholder funds.

- To further protect investors/depositors, two requirements
- First, the 10% held by the bank carry a first loss provision. That is the initial losses from an asset be borne from the portion held by the bank. Only when losses go beyond 10% should investors be hit.
- Second, where necessary, the asset financed many have to be ring-fenced. This ring-fencing should occur at the customer level. - *self-liquidating and bankruptcy remote SPV.*

The need for market trading of securitized paper.

- The most challenging part of this proposal is probably the need to create well-functioning markets for the securitized papers put out by the banks.
- Market trading is critical for two reasons,
 - 1) dissipate risks broadly in order to minimize systemic risk
 - 2) price discovery.
- That is, the determination of cost of funds or required rates of return for the bank. With active markets, daily pricing and marking to market is possible.
- Redemption values can be determined in a transparent manner at any point.
- Aside from ensuring fairness to all parties, market derived prices and yields will move the system away from a reliance on interest rates.

Generalized Model for Pricing

Since the underlying asset has expected cash flows and a known tenor, the securitized paper being a proportionate claim on these cash flows, would imply a market price as follows;

$$\text{Price} = \left\{ \sum_{N=1}^t \frac{CF_t}{(1+k)^t} \right\} \times \left\{ \frac{x}{100} \right\} \dots\dots\dots \text{Eq. 1}$$

Where;

- CF_t = are expected/project cash flows until period t.
- t = tenor of the securitized instruments
- k = require yield. (Discount factor)
- x = Face value of paper as % of underlying asset value

For instruments that have a balloon payment, pricing would be a slight variation on Eq 1. As follows;

$$\text{Price} = \left\{ \sum_{N=1}^t \frac{CF_t}{(1+k)^t} + \frac{FV_n}{(1+k)^n} \right\} \times \left\{ \frac{x}{100} \right\} \dots\dots\dots \text{Eq. 2}$$

where;

FV_n = is the expected balloon payment at year n.

N = final year of tenor

- The one unknown in Equation 1 is “k” the required yield. It is this yield that is arrived at through market trading.
- “K” will depend on the riskiness of the underlying asset and a premium dependent on the perceived riskiness of the bank issuing the paper.
- Ratings’ of these papers and of the banks would inevitably emerge over time.
- Issuance or floatation costs of the securitized papers should be kept to a minimum - *master template*.

- ***Potential players / investors.***

- banking customers who in-lieu of deposits would be sold these securitized papers.
- other IFIs
- Islamic and Conventional NBFIs
- Commercial banks – managing liquidity
- new institutions – MMMFs
- Central banks – liquidity mangament/sterilization.

- **Trading Platforms**

- The short tenor papers - IIMM while the longer tenor ones could among others be listed and traded in stock markets.
- The larger denomination papers could also be traded on electronic platforms such as the IILM. The IILM is particularly well suited to provide the platform for the trading of these instruments.
- Price quoted based on RM100 face value.

Two advantages;

- a paper of any face value denomination can be easily priced.
- the implied yield or the market required return for the paper would be obvious at any given point.

- A final requisite, at least in the initial years, would be the need for market makers. Even with electronic markets, designated market makers are needed to provide trading continuity.

Rollout

- The model is amenable to a gradual rollout.
- A 10 year target to reach complete risk-sharing.
- A time-line approach with key targets to be achieved would be logical. For example, a 30% risk-sharing target to be reached in 3 years, 50% by year 5 and so on.

Efficacy of proposed Model

- If the proposed model would change the topography of Islamic banking one should be tempted to ask, why would the stakeholders want to adopt this model?
- The answer lies in the spread or the arbitrageable difference between what one currently earns from placing deposits with banks and what could be earned from investing in the underlying asset. Returns from investing in assets obviously vary by industry, country, and is dynamic.
- Table 1 in Appendix shows the 3 and 5 year global average stock returns for about 119 different “Shariah” compliant industries.
- Given bank returns of 3% or so, there is an arbitrageable spread of at least 6 to 8% after adjusting for risk.

Average Industry Returns											
<i>Industry Name</i>	<i>3-Year</i>	<i>5-Year</i>	<i>Industry Name</i>	<i>3-Year</i>	<i>5-Year</i>	<i>Industry Name</i>	<i>3-Year</i>	<i>5-Year</i>			
1 Advertising Agencies	22.49	18.63	44 Food Distribution	17.94	15.78	88 REIT - Industrial	20.4	22.71			
2 Aerospace & Defense	26.54	18.87	45 Footwear & Accessories	20.74	24.87	89 REIT - Office	14.26	14.37			
3 Agricultural Inputs	7.68	9.96	46 Grocery Stores	20.31	12.96	90 REIT - Residential	12.61	20.86			
4 Airlines	36.53	23.38	47 Health Care Plans	26.08	22.92	91 REIT - Retail	21.21	24.4			
5 Airports & Air Services	23.54	22.67	48 Health Information Services	16.76	15.69	92 Rental & Leasing Services	22.31	24.95			
6 Aluminum	6.45	-2.49	49 Home Furnishings & Fixture	25.91	25.55	93 Residential Construction	18.01	9.59			
7 Apparel Manufacturing	24.38	24.78	50 Home Improvement Stores	36.25	31.15	94 Restaurants	13.1	20.61			
8 Apparel Stores	19.2	20.87	51 Household & Personal Prod	13.78	11.72	95 Rubber & Plastics	16.72	12.75			
9 Asset Management	21.14	12.35	52 Industrial Distribution	5.37	18.18	96 Scientific & Technical Instru	10.33	14.73			
10 Auto & Truck Dealerships	23.76	25.27	53 Industrial Metals & Mineral	-15.9	-7.5	97 Security & Protection Servic	9.28	11.71			
11 Auto Manufacturers	16.72	9.24	54 Information Technology Ser	6.92	10.05	98 Semiconductor Equipment	20.6	14.68			
12 Auto Parts	20.83	19.49	55 Integrated Shipping & Logis	14.37	14.3	99 Semiconductor Memory	54.17	17.85			
13 Beverages - Soft Drinks	13.37	14.06	56 Internet Content & Informa	21.69	16.11	100 Semiconductors	15.46	15.14			
14 Biotechnology	39.92	30.4	57 Lodging	21.26	19.66	101 Shipping & Ports	-11.14	-9.38			
15 Broadcasting - Radio	17.43	28.13	58 Long-Term Care Facilities	24.59	15.35	102 Software - Application	13.25	14.74			
16 Broadcasting - TV	19.83	10.05	59 Lumber & Wood Productior	14.84	16.1	103 Software - Infrastructure	13.85	11.4			
17 Building Materials	17.06	9.61	60 Luxury Goods	12.4	20.95	104 Specialty Chemicals	22.67	24.27			
18 Business Equipment	-2.24	1.74	62 Media - Diversified	28.2	24	105 Specialty Finance	4.06	6.67			
19 Business Services	22.98	19.38	63 Medical Care	27.98	17.84	106 Specialty Retail	18.17	18.61			
20 Chemicals	8.07	12.51	64 Medical Devices	21.31	13.65	107 Staffing & Outsourcing Serv	19.38	12.92			
21 Coal	-23.1	-16.1	65 Medical Distribution	33.35	26.5	108 Steel	-15.12	-14.8			
22 Communication Equipmen	11.75	4.16	66 Medical Instruments & Supp	24.05	15.86	109 Telecom Services	7.67	7.5			
23 Computer Systems	9.3	-4.24	67 Metal Fabrication	0.06	4.32	110 Textile Manufacturing	17.43	15.1			
24 Confectioners	17.1	19.21	68 Oil & Gas Drilling	-16.9	-10.8	111 Tools & Accessories	13.57	18.67			
25 Conglomerates	31.77	15.22	69 Oil & Gas E&P	-3.64	2.31	112 Truck Manufacturing	13.17	11.46			
26 Consumer Electronics	20.26	23.98	70 Oil & Gas Equipment & Serv	-0.4	4.99	113 Trucking	25.02	17.71			
27 Contract Manufacturers	6.12	4.65	71 Oil & Gas Integrated	-2.78	2.25	114 Utilities - Diversified	13.06	11.8			
28 Copper	-14.8	-2.84	72 Oil & Gas Midstream	14.81	18.91	115 Utilities - Independent Pow	9.17	4.58			
29 Data Storage	11.08	12.3	73 Oil & Gas Refining & Market	23.83	23.1	116 Utilities - Regulated Electric	17.89	12.7			
30 Department Stores	9.08	10.15	74 Packaged Foods	18.07	15.72	117 Utilities - Regulated Gas	18.28	17.77			
31 Diagnostics & Research	20.59	14.39	75 Packaging & Containers	20.22	17.55	118 Utilities - Regulated Water	9.05	15.49			
32 Discount Stores	18.01	15.44	76 Paper & Paper Products	14.27	3.93	119 Waste Management	14.76	8.53			
33 Diversified Industrials	13.89	14.76	77 Pay TV	24.15	24.76	Average Returns	15.4257	13.9475			
34 Drug Manufacturers - Majc	20.3	14.78	78 Personal Services	14.45	12.72						
35 Drug Manufacturers - Spec	31.41	22.16	79 Pharmaceutical Retailers	33.34	22.76						
36 Education & Training Servi	-2.97	-6.47	80 Pollution & Treatment Cont	5.41	10.51						
37 Electronic Components	24.45	14.31	81 Publishing	20	12.44						
38 Electronic Gaming & Multi	12.51	8.71	82 Railroads	24.65	26.05						
39 Electronics Distribution	12.57	14.97	83 Real Estate - General	22.35	18.85						
40 Engineering & Constructio	0.1	3.42	84 Real Estate Services	20.68	18.6						
41 Farm & Construction Equip	-5.08	7.49	85 Recreational Vehicles	21.13	25.68						
42 Farm Products	17.43	13.62	87 REIT - Healthcare Facilities	17.48	18.53						

Summary of Advantages

- 1) Increased risk sharing, avoidance of riba
- 2) New liquidity instruments, easier liquidity management.
- 3) Returns that are anchored in real assets
- 4) Potentially higher income for banks
- 5) Reduced capital adequacy requirements
- 6) Reduced systemic vulnerability
- 7) Reduced Contingent Liability for governments
- 8) New shariah compliant instruments for conduct of monetary policy.
- 9) Reduced complexity of banking regulation

Q & A

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