Liquidity Crisis: Are Islamic Banking Institutions More Resilient?

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The views expressed here are those of the authors and do not necessarily represent or reflect the views of *DFID, IMF, IMF Policies, State Bank of Pakistan or Central Bank of Oman*.

18+

STRONG GRAPHICS

Under 18 requires an accompanying adult

Motivation

- Islamic Banking: Fast growing segment in the financial sector.

    Islamic banking is one of the fastest growing parts of the financial sector. Growing recently at approximately 20%, and already accounting for $700 billion or 1% of the global banking market, "the global potential of the Islamic banking market is conservatively estimated at $4,000 billion, according to Moody's Investor Service" (Financial Times).

FINANCIAL TIMES

Motivation

- Imperative claims of insulation from the financial crisis.

    The financial crisis may have spurred its growth and potential market share even further, as observers claim the "principles based on religious law insulate the industry from the worst of the financial crisis" (Washington Post).

Motivation

- Lack of detailed empirical research.

- Literature suggests religious beliefs may affect economic choices [Economic growth across Regions- Landes (1998); Economic attitude- Guiso, Sapienza and Zingales (JME 2003)]

- Can religious beliefs dampen a crisis?

Islamic Banking

- Pre-specified interest on loans forbidden.
  - Profit-loss sharing (PLS) on investment is allowed.

- Trading is allowed.

- Financing of 'negative' sectors - casinos, tobacco, alcohol, drugs - is forbidden.
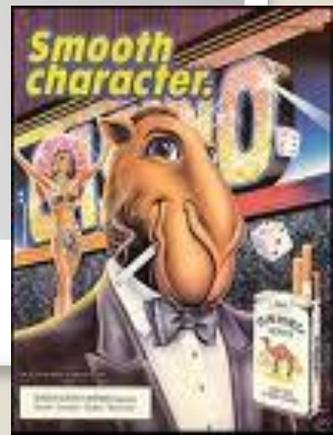
The 4th Question

- What is wrong with interest or any financial transaction in commercial setting?

- We don't address this!

Sajjad

Bank and Sajjad enter in *Murabahah* agreement

M
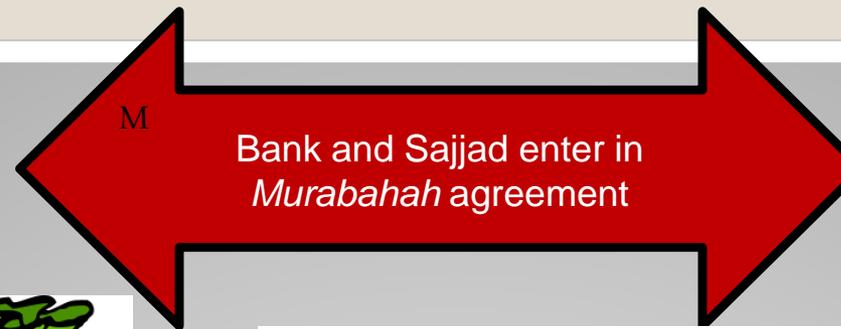
The bank appoints Hussein to purchase the car and gi[ves] money for that purchase, [then] itself purchases the car.

Inventory and/or working capital
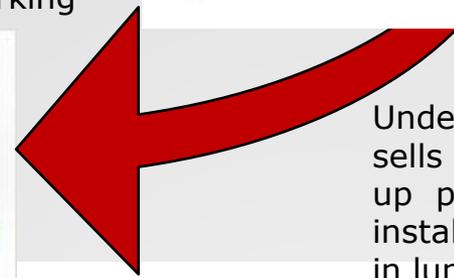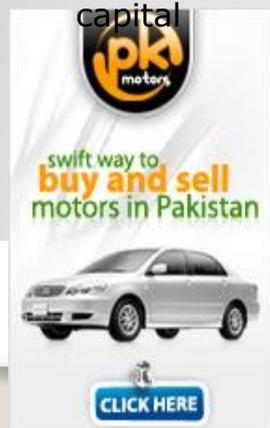
Under a separate contract, the bank sells the car to Sajjad at a marked-up price. Sajjad pays the price in installments over a period of time or in lump sum at an agreed date.
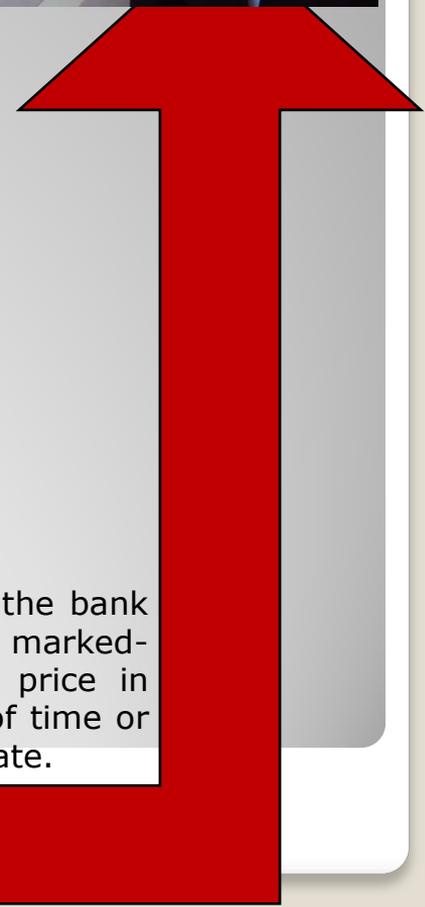
Islamic Bank

Sajjad, prospective home owner

Bank and Sajjad enter in *Diminishing Musharakah* agreement

Sajjad pays rent to bank, calculated as (1 – his share) times total rent.

Every period, Sajjad buys 1 unit from the bank, until she acquires full ownership…rent payment to bank get adjusted accordingly

IB pays 80, and becomes 80% owner of the house

Sajjad pays 20, and becomes 20% owner of the house
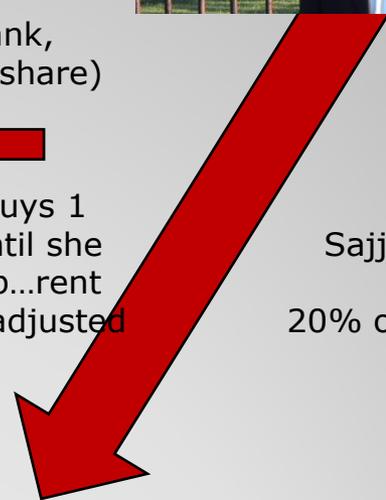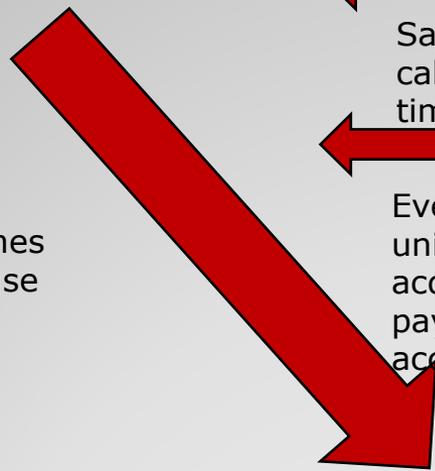
Share of bank is divided in say 8 different units

House, worth 100

Liabilities Side

- Current Accounts

- Profit and Loss Sharing Investment Accounts (PSIA)
  - Share in P&L
 - No Voting Rights
  - But redeemable

What We Do?

- Exploit a natural experiment to examine the effect of a liquidity crisis on deposit and credit behavior of conventional and Islamic banks.

"Never Let a Crisis Go Waste"

2008 Liquidity Crisis in Pakistan

- Deposit withdrawals induced by widespread rumors in the public about financial sector failure.
- Continued for 7 weeks, in just three weeks demand deposits 4 percent to 131 billion PKR

Figure 1: Demand Deposits in Billion PKR
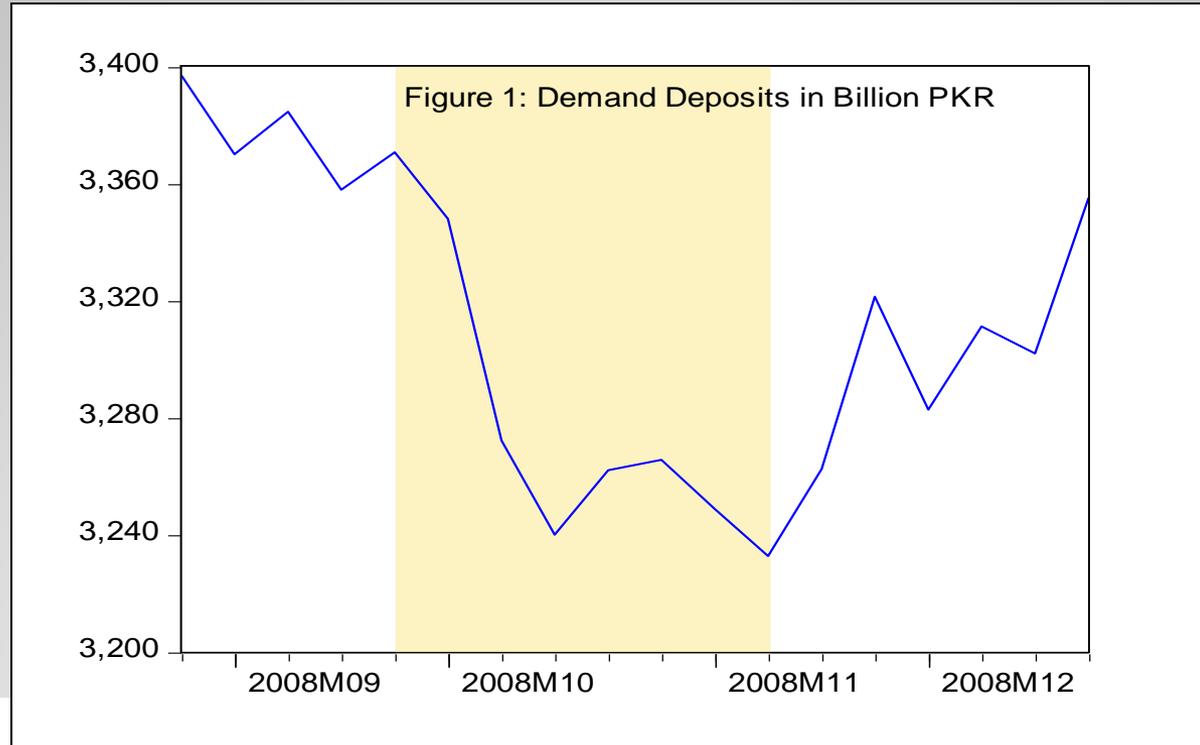
What We Find?

- Islamic banking(subsidiaries) are less prone to the risk of withdrawal during episodes of liquidity stress

- Islamic banking (subsidiaries) are more likely to grant new loans during stressed periods

- Results hold after controlling for a variety of bank & borrower characteristics.

Data

- Weekly Deposit Data of All Banks Operating in Pakistan

- Period : W39- 2008 to W 46- 2008

- Credit Information Data (Credit Registry), Data includes information about loan, borrower and bank characteristics

Data

		IBB +	IB	=IBI
		Banks		
		only Conventional	Conventional & Islamic	only Islamic
Customers (Borrowers)	only Conventional			
	Conventional & Islamic			
	only Islamic			

Bank Runs- Conceptual Framework

(Mario Catalan – IMF)
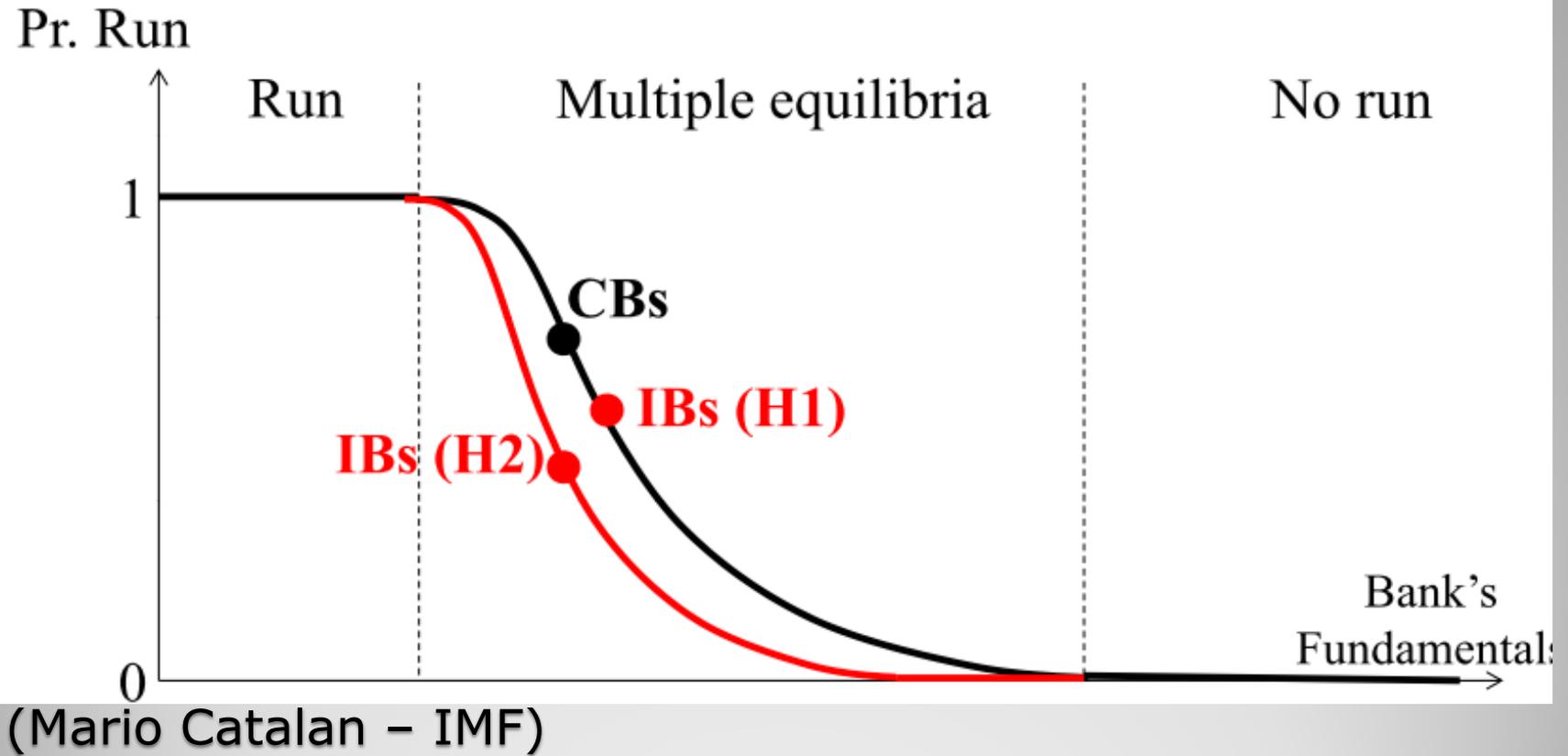
The Model

- $\Delta \ln D_{ij} = \alpha + \beta_1 \text{ISL}b_j + \beta_2 \text{ISL}bb_j + \gamma_1 B_{ij} + \varepsilon_{ij}$ (1)

- Where $\Delta \ln D_{ij}$ is the change in log of deposits over seven-week liquidity crisis period for bank i, branch type j,

- $\text{ISL}b_j$ is the dummy for Islamic Banks (IBs), $\text{ISL}bb_j$ is dummy for Islamic Banking Branches (IBBs) of conventional banks, these dummies take the value of one for IB or IBB and zero otherwise.

- B_{ij} conntrol variables, which change across banks and branches type. These controls include log of total assets, capital-to-asset ratio, log of number of branches, age, credit rating, operating cost to total cost, and non-deposit funding to total funding of the banks or (Islamic) branches.

The Model

- $\ln L_{ijk} = \alpha + \vartheta_1 \Delta \ln D_{ij} + \beta_1 \, ISL_j + +\gamma_1 B_{ij} + \delta_1 F_k + \theta_1 L_n + \varepsilon_{ij}$ (2)

- $\ln L_{ijk}$ is natural log of new loan granted by bank i, branch type j to borrowing firm k during the crisis period.

- $\Delta \ln D_{ij}$ is the change in log of deposits over seven-week liquidity crisis period for bank i, branch type j ISL_j is the dummy for Islamic Banks Institutions (IBIs), that is either IBs or IBBs.

- $B_{ij}, , F_k, and \, L_n$ are a battery of bank, borrower and loan characteristics used as control variables.

Table 2: Summary Statistics

The table reports the descriptive statistics for the variables used in estimations

	Type / Description	Mean	Median	Maximum	Minimum	Std. Dev.
IB	1/0	0.12	0.00	1.00	0.00	0.32
IBB	1/0	0.23	0.00	1.00	0.00	0.43
Capital to Asset	Ratio	10.06	11.81	76.32	3.36	48.69
Branches	Number	383.17	27.50	1,265.00	1.00	1,760.07
Age of bank	Years	34.50	31.00	86.00	1.00	22.88
Non-deposit Funding to Total Funding	Ratio	21.47	13.25	92.45	0.45	24.44
Operating Cost to Total Cost	Ratio	42.12	42.49	96.16	9.93	20.98
NPL Ratio	Per cent	7.83	6.47	70.17	0.00	7.58
Return on Assets	Per cent	1.76	1.91	4.35	-2.94	1.21
Liq. Assets/Total Assets	Per cent	32.24	32.40	54.43	6.72	5.19
Credit Ratings	Number	6.03	6.50	10.00	1.00	2.32
Log (Assets)	Number	10.01	10.04	13.14	5.99	1.85
Demand Deposits	Rs., millions	63,995.48	12,600.00	450,974.00	16.00	108,978.20
lnL	Log of New Loan during crisis	15.54	15.42	19.81	10.82	1.69
Size	Log Firm Size (measured as sum of all loans)	16.82	16.81	23.31	10.82	2.35
Term	Loan Maturity in Months	10.10	8.95	84.14	1.02	10.02

Results

Models	I	II	III	IV	V	VI	VII
Constant	-7.262***	-6.979***	-9.941	-9.119	-21.148***	26.502	-3.320
	(2.679)	(2.597)	(6.309)	(13.426)	(6.843)	(58.308)	(5.221)
Islamic Banks (IB)	-2.045	-1.383	1.661	2.072	0.919	6.655	
	(10.451)	(10.400)	(9.902)	(10.584)	(9.99)	(11.059)	
Islamic Banking Branches (IBB)	19.086**	19.292**	21.439**	19.645*	49.936***	73.166***	15.144**
	(7.87)	(7.980)	(8.802)	(10.745)	(6.843)	(17.234)	(7.384)
Capital to Deposit Ratio		-0.04**	-0.022	-0.01		-0.159	
		(0.017)	(0.032)	(0.033)		(0.344)	
Log (Nr of Branches)			-0.944	-0.785		-1.428	
			(2.3)	(2.572)		(3.676)	
Age			0.154	0.079		0.216	
			(0.195)	(0.185)		(0.223)	
ROA				1.526		0.446*	
				(1.745)		(0.253)	
Liquid Assets/Total Assets				-0.029		5.191**	
				(0.198)		(2.497)	
NPL Ratio				0.076		-0.196	
				(0.097)		(0.221)	
Credit Rating					2.114**	-6.391	
					(0.821)	(6.213)	
Non-deposit Funding to Total Funding						-0.196	
						(0.221)	
Log (Assets)						-6.391	
						(6.213)	
Bank Fixed Effects	No	No	No	No	No	No	Yes

The Model
What about credit availability?

- $$\ln L_{ijk} = \alpha + \vartheta_1 \Delta\ln D_{ij} + \beta_1 \, \text{ISL}_j + + \gamma_1 B_{ij} + \delta_1 F_k + \theta_1 L_n + \varepsilon_{ij} \quad (2)$$

- $\ln L_{ijk}$ is natural log of new loan granted by bank i, branch type j to borrowing firm k during the crisis period.

- $\Delta\ln D_{ij}$ is the change in log of deposits over seven-week liquidity crisis period for bank i, branch type j ISL_j is the dummy for Islamic Banks Institutions (IBIs), that is either IBs or IBBs.

- B_{ij}, , F_k, and L_n are a battery of bank, borrower and loan characteristics used as control variables.

Results

Models	I	II	III	IV	V	VI	VII
Constant	15.504***	15.537***	6.31***		15.528***	6.233***	
	(0.032)	(0.035)	(0.414)		(0.034)	(0.424)	
Islamic (IBIs)	0.771***	0.721***	0.938***				
	(0.156)	(0.175)	(0.234)				
Islamic Banks(IBs)					0.434**	1.187***	0.487
					(0.215)	(0.394)	(0.837)
Islamic Banking Branches (IBBs)				1.947**	0.861***	0.901***	4.119**
				(0.885)	(0.259)	(0.237)	(1.849)
Change in Log Deposits		0.011**	0.001	-0.047*	0.008**	0.000	0.00300
		(0.005)	(0.003)	(0.026)	(0.004)	(0.004)	(0.0146)
Islamic*Change in Log Deposits		-0.015**					
		(0.007)					
Bank Characteristics							
CAR			0.032***			0.032***	0.0588*
			(0.008)			(0.008)	(0.0323)
Non-deposit Funding to Total Funding			-0.004			-0.004	-0.0377**
			(0.004)			(0.004)	(0.0182)
Log(Branches)			-0.013			-0.023	0.0763
			(0.028)			(0.031)	(0.159)
Credit Rating			0.104***			0.124***	0.381*
			(0.035)			(0.044)	(0.203)
Age			0.154***			0.156***	0.102
			(0.034)			(0.034)	(0.0824)
NPL Ratio			-0.015***			-0.014**	0.0325
			(0.006)			(0.006)	(0.0394)
ROA			-0.154***			-0.16***	-0.231
			(0.036)			(0.037)	(0.183)
Liq. Assets / Total Assets			0.041***			0.041***	-0.0250
			(0.007)			(0.007)	(0.0377)
Borrower / Loan Characteristics							
Size			0.437***	0.495***		0.437***	
			(0.014)	(0.023)		(0.014)	
Term			-0.012***	-0.009**		-0.012***	
			(0.004)	(0.004)		(0.004)	
(66)Sectoral Dummies	No	No	Yes	Yes	No	Yes	No
Borrower Fixed Effects	No	No	No	No	No	No	Yes
Bank Fixed Effects	No	No	No	Yes	No	No	No

Conclusions

Financial inclusion of faith based groups through, for example, Islamic banking *may* not only increase their economic well being but may also bring in some stability in the financial system.

Thank you!