Minhaj University Lahore

Factors Affecting Liquidity Risks in Islamic Banking in Pakistan

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Outline

- Introduction of Progress in Islamic Banking
- Liquidity Risk in Islamic Banking
- Research Methodology
- Data Analysis
- Recommendations

Introduction

Islamic Banking Indicators	Values (As on Sep 2022)
Assets (in billion Rs.)	6,902
Deposits (in billion Rs.)	5,021
Financing and related assets (in billion Rs.)	2,985
Market share (%)	20
Number of branches	4,191
Number of Islamic banking institutions	22

Table 1: Stylized Facts about Islamic Banking in Pakistan
Source: Data from Islamic Banking Bulletin, September 2022

Introduction

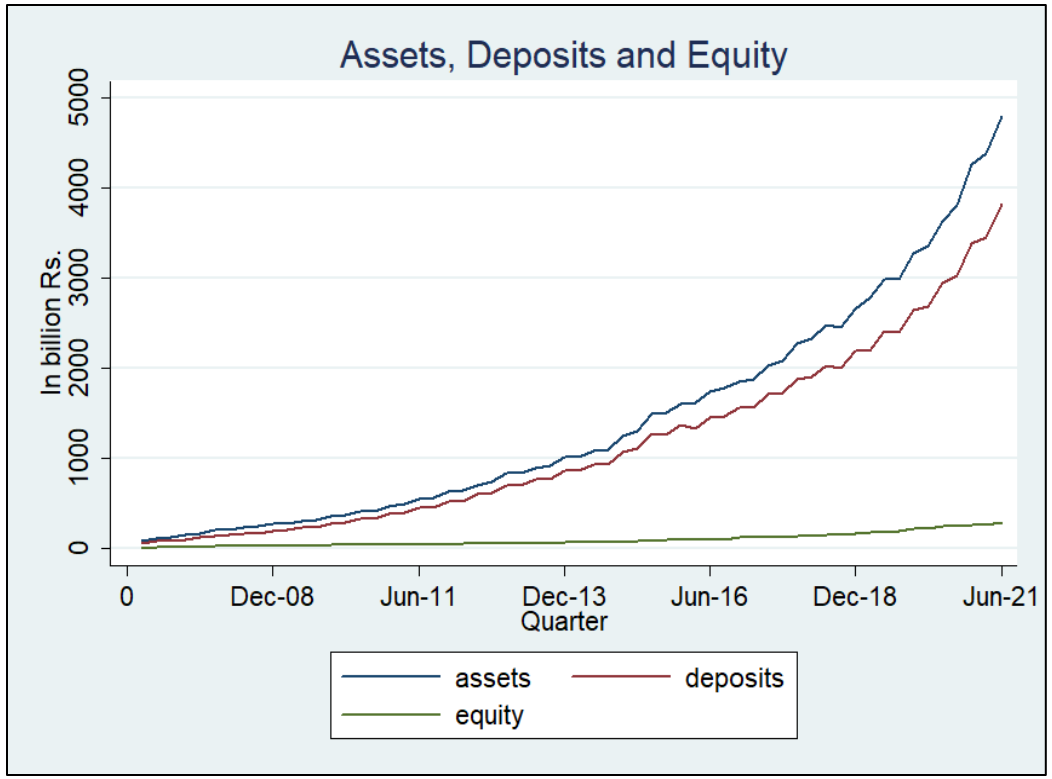

Figure 1: Assets, Deposits and Equity in Islamic Banking

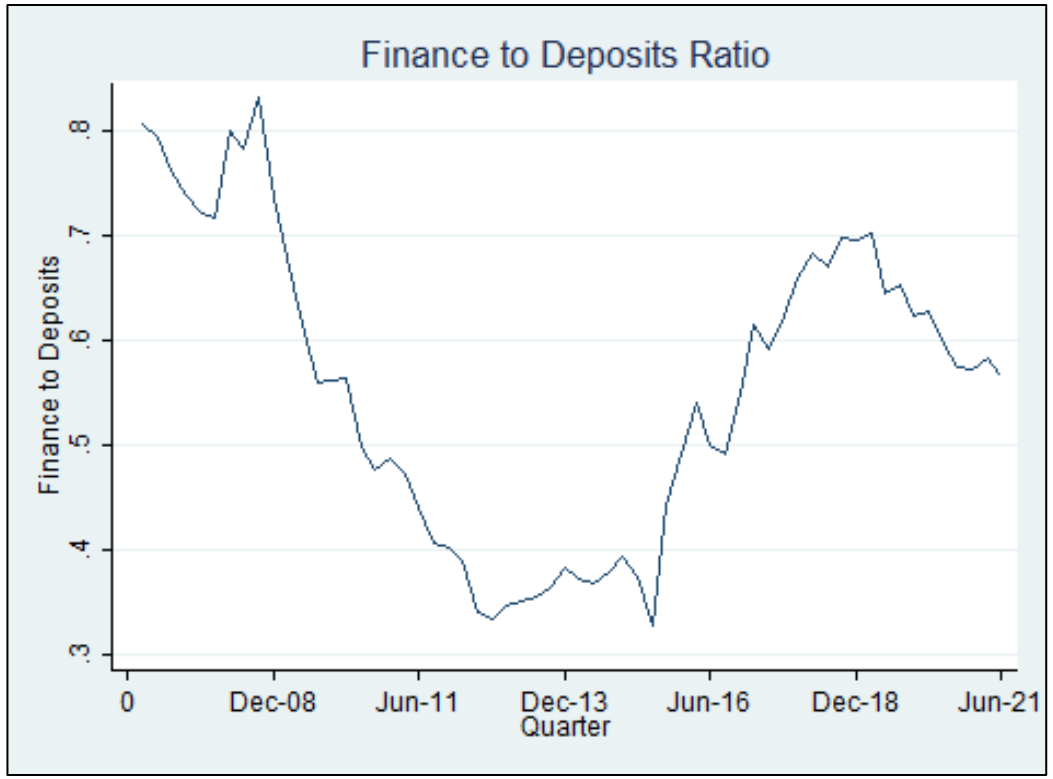

Figure 2: Finance to Deposit Ratio in Islamic Banking

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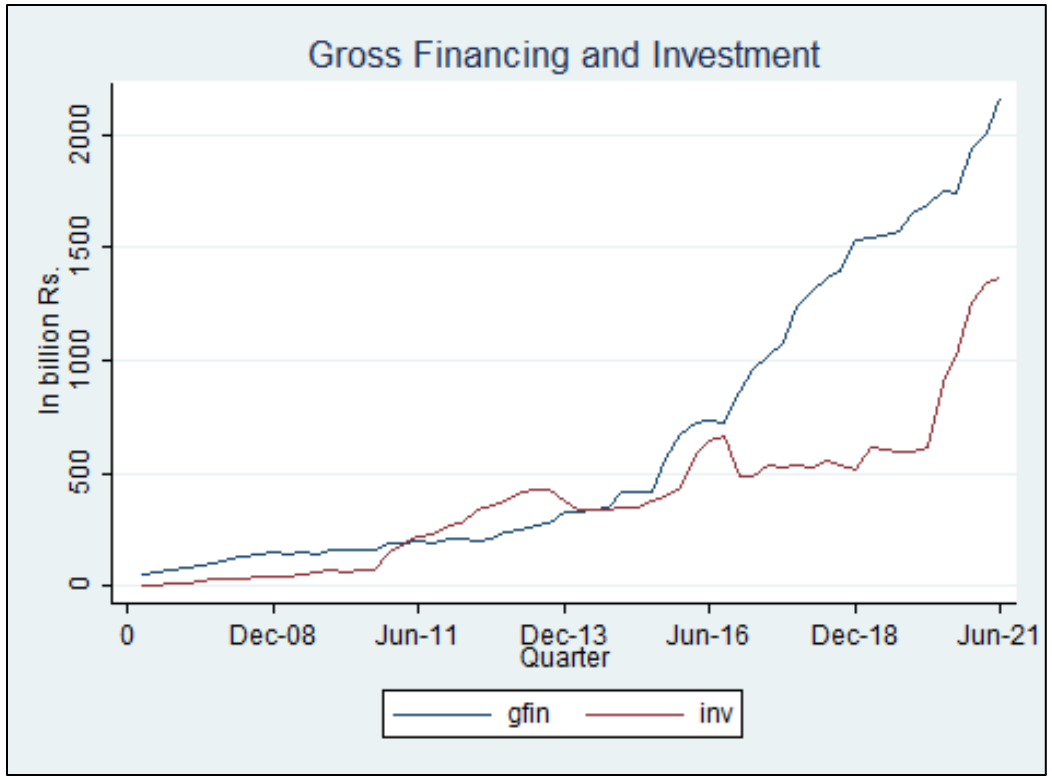

Figure 3: Financing and Investment in Islamic Banking

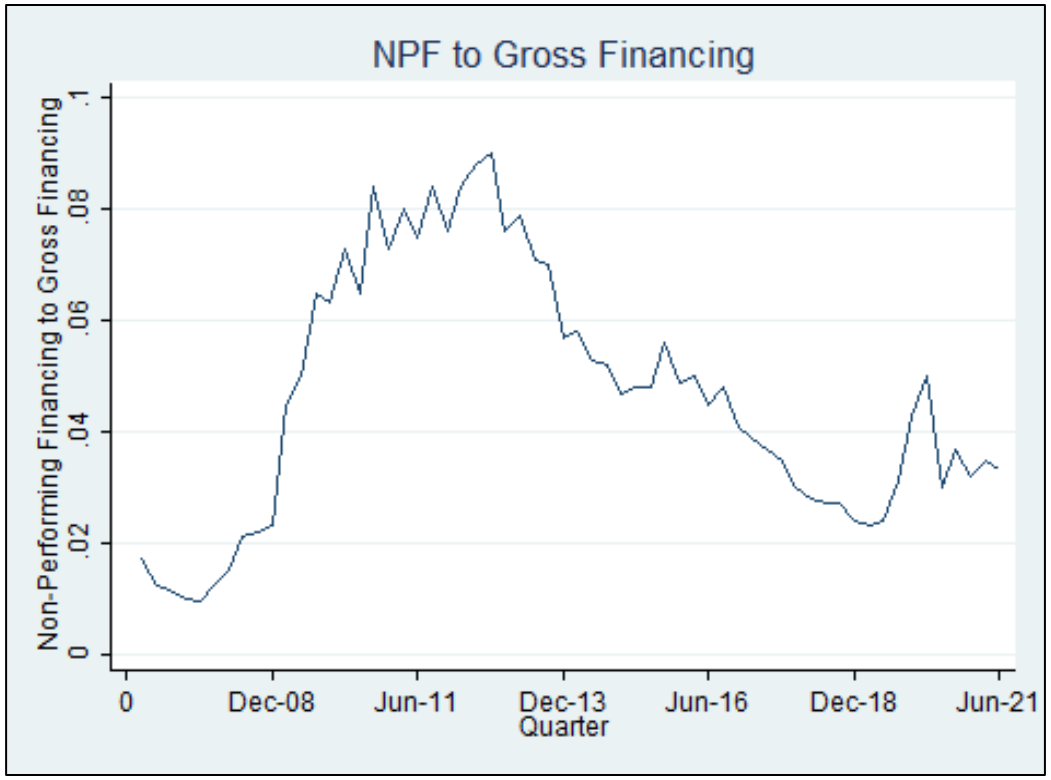

Figure 4: Non-Performing Financing to Gross Financing

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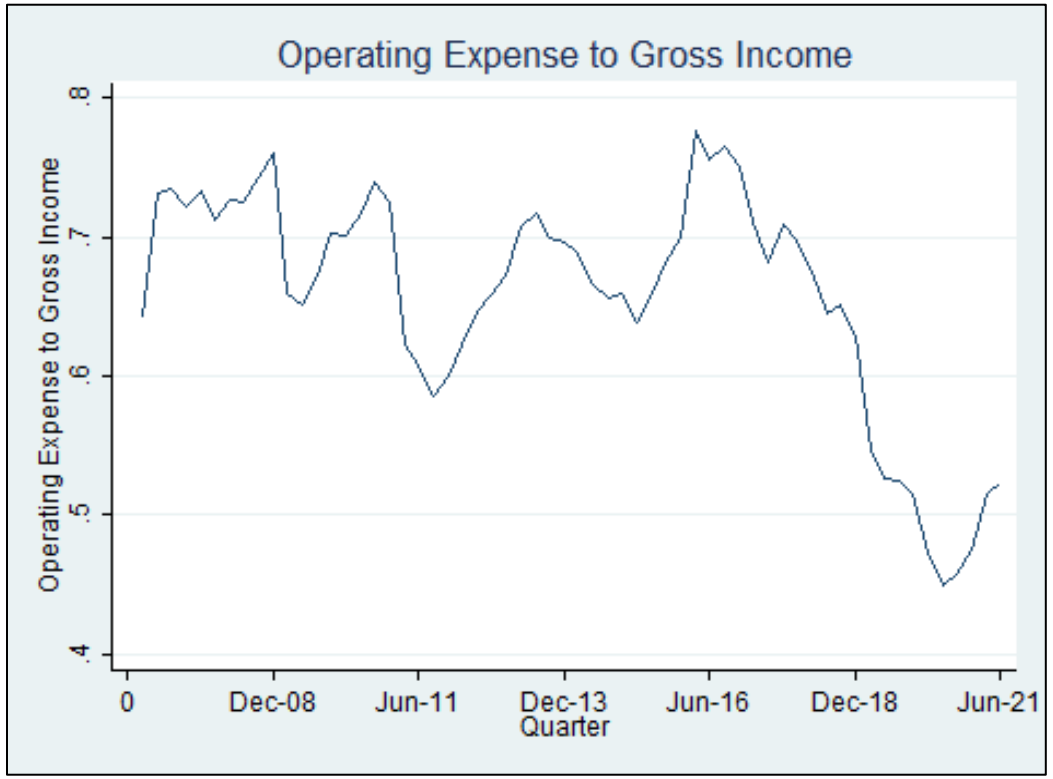


Figure 5: Operating Expense to Gross Income

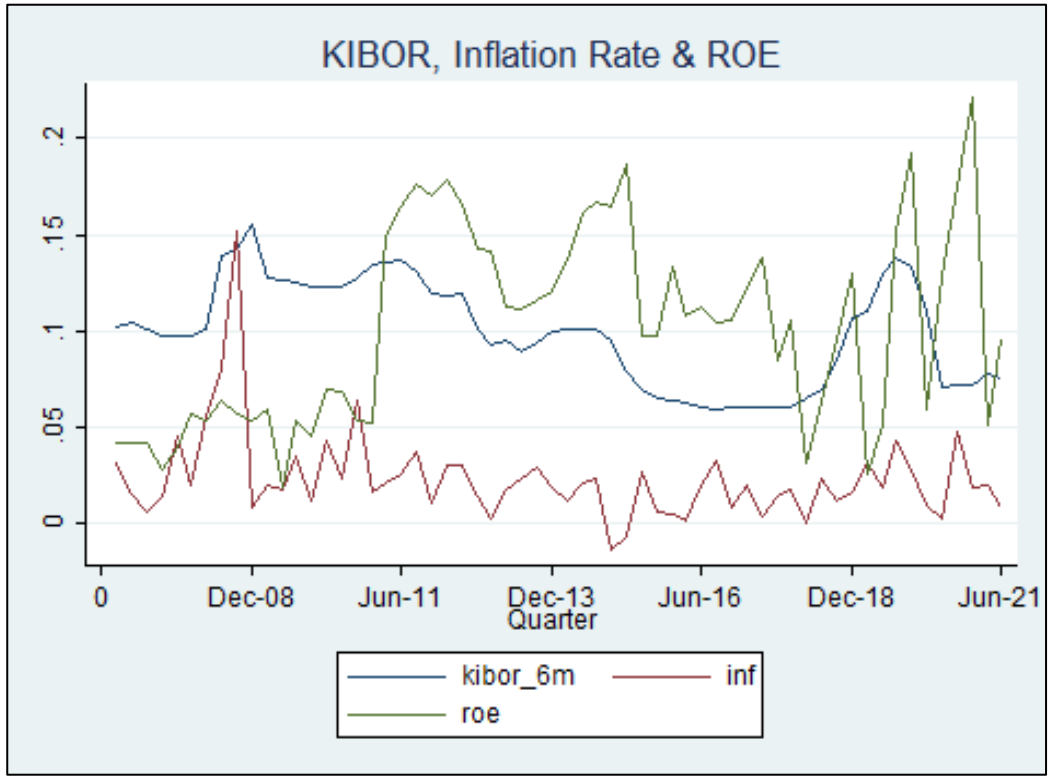


Figure 6: Operating Expense to Gross Income

Liquidity Risk in Islamic Banking

- **Liquidity risk** arises when there is surplus liquidity which does not generate income or when there is shortage of liquidity and Islamic banks needs funds to manage withdrawals and other liabilities.

Tools to manage liquidity risk

- Diversify sources of funds
- Reduce the concentration of funding base
- Rely on marketable assets

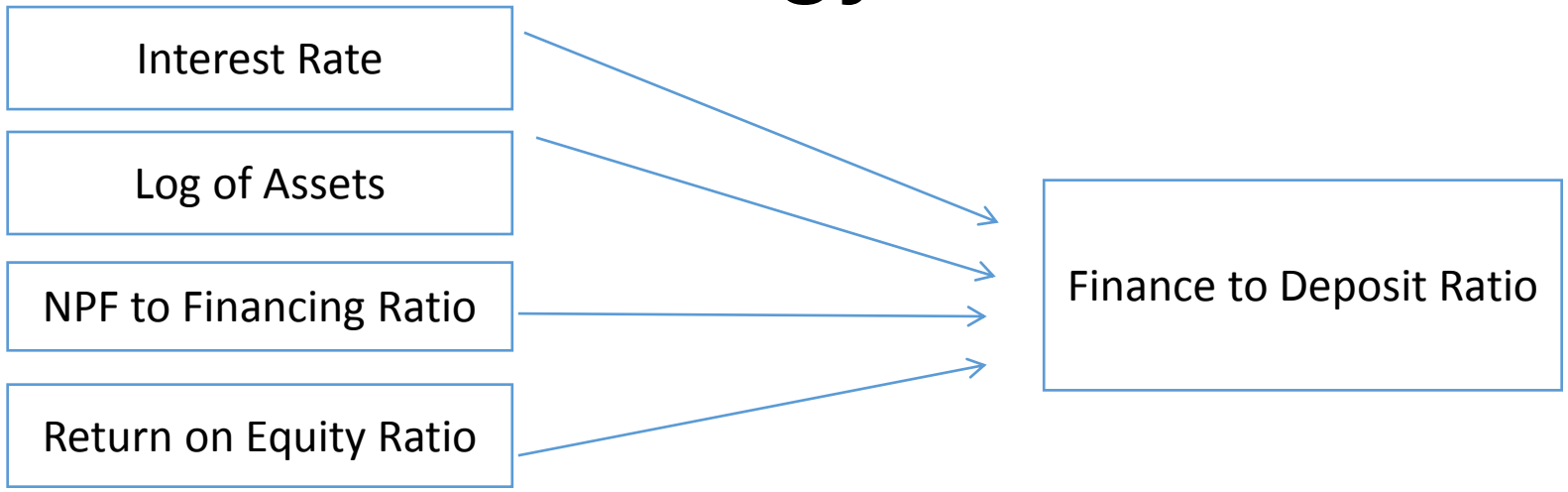
Liquidity Risk in Islamic Banking

- The nature of liquidity risk is also different in Islamic banks since:
  - Instruments and contracts available for Islamic banks in the money market and treasury operations are different.
  - Any late payment received in order to maintain financial discipline cannot be taken as income by the Islamic bank.
  - Price in Murabaha financing cannot be altered even if the price is not received at maturity.
  - New debt cannot be created by rescheduling or rolling over loan as it happens in conventional banking.
  - Islamic banks do not have access to the central bank as the lender of last resort in many jurisdictions.

Issues in Liquidity Management in Islamic Finance

- Absence of an Islamic interbank market
- Lack of Shari'ah-compliant alternatives for liquidity management, both at the interbank and central bank level
- Absence of liquid Islamic Sukuk both in short and long-term maturities
- Absence of Islamic discount window at the central bank level for Islamic financial institutions.
- In liquidity management, banks often have surplus liquidity as well as a shortage of liquidity. The problem becomes more pressing as there are lesser alternatives for managing liquidity shortage for Islamic banks.
- An Islamic bank can take investment from any financial institution and invest it in Shari'ah-compliant financing assets. However, it cannot invest its surplus liquidity on equity financing basis with conventional banks since they are operating on the basis of interest-based loans.

Research Methodology



The long run model equation using Vector Error Correction Model (VECM) framework with finance to deposit ratio as dependent variable is given in equation (1).

$$\Delta fd_t = \beta_0 + \sum_{i=1}^{k-1} \beta_i \, \Delta lna_{t-i} + \sum_{j=1}^{k-1} \beta_j \, \Delta r_{t-j} + \sum_{l=1}^{k-1} \beta_l \, \Delta roe_{t-l} + \sum_{m=1}^{k-1} \beta_m \, \Delta npf_{t-m} + \lambda_1 E_{t-1} + \epsilon_{1t} \text{ -- (1)}$$

Here, fd_t represents financing to deposit ratio, lna_t represents log of assets, r_t represents repo rate, roe_t represents return on equity and npf_t represents non-performing financing to total financing ratio. Finally, E_t represents error correction term.

Data Analysis and Findings

In the short run results, the coefficient of adjustment parameter for finance to deposit ratio is found to be -.017 and significant at 5% level of significance.

It implies adjustment towards equilibrium at a convergence speed of 1.7% next quarter. The estimates of the long run are presented in the co-integrating equation results in Table below.

Co-Integrating Equation Results

Johansen Normalization Restriction Imposed				
Beta	Coefficient	S.E	Z	P>z
Finance to Deposit	1.0000	.	.	.
Log of Assets	-.5406712	.0947104	-5.71	0.000
NPF to Financing	-11.86102	3.840004	-3.09	0.002
Return on Equity	5.215982	1.420227	3.67	0.000
Interest Rate	8.013204	3.957765	2.02	0.043
Constant	3.770559	.	.	.

Interpretation of Results

- It can be seen that all variables are statistically significant in the cointegrating equation. Rearranging the equation for finance to deposit ratio, the signs of coefficients are reversed to interpret the results.

- Size and credit risk have a positive association with liquidity risk. It is plausible since big size banks are in a position to afford a funding strategy by funding their finance operations from other sources than deposits.

- On the other hand, credit risk in long run goes hand in hand with liquidity risk. Lower asset quality might lower the cushion of deposits and hence leading to higher liquidity risk for banks in the long run.

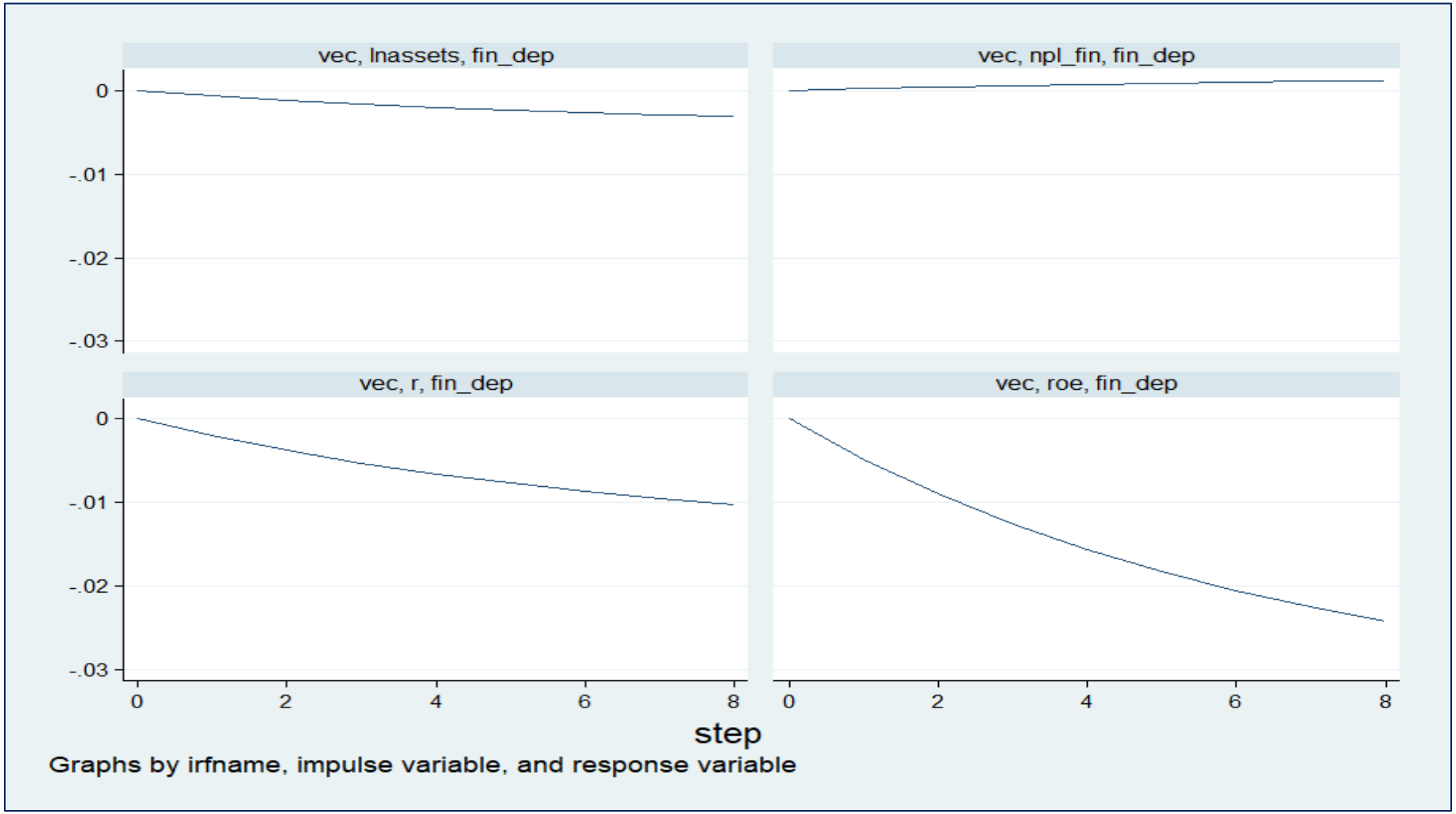
Interpretation of Results

- The results also reveal a negative association between profitability and funding strategy. Profitable banks would have lower liquidity risk and would be in a position to cover their financing operations mostly from deposits.

- Lastly, the cost of funds also has a negative association with funding strategy. One explanation could be that rise in interest lowers liquidity risk and bank moves to rely more on deposits. It is because deposits are less sensitive and elastic to rise in interest rate as compared to the financing contracts.

- Hence, rise in interest rate bodes well for the liquidity risk as the bank is able to raise revenues from financing contracts more substantially as compared to the rise on cost of funding from deposits.

Impulse Response Functions



Impulse Response Functions

- Impulse response functions reveal that one standard deviation shock in log of assets lowers the liquidity risk. Thus, big size banks have greater cover for liquidity risk.

- One standard deviation shock in non-performing financing to total financing has a positive effect on liquidity risk. Thus, credit risk goes hand in hand with liquidity risk. Lower asset quality bodes negatively for liquidity as well.

- One standard deviation shock in cost of funds lowers the liquidity risk. It means that rise in interest after controlling the effect of interest rate lower the liquidity risk. There is greater increase in revenues from financing operations than the rise in cost of funds from deposits.

- Finally, one standard deviation shock in return on equity also bodes well for liquidity risk. Deposit funds are sticky with profitable banks. Evidence also confirms that profitable banks are able to keep their deposits intact.

Recommendations

- For effective liquidity management, Islamic banks shall look to diversify sources of funds. An increase in non-remunerative deposits can reduce the cost of raising funds from the public. Reliance on a few big deposits is risky. It is better to have a widespread deposit base.

- It is better to have an efficient liability mix with adequate availability of short term and long term deposits. Maturity matching on both sides of the balance sheet can solve much of the problem systematically.

- In financing operations, all else equal, it is better to rely on financing of marketable assets and at floating rate if Ijarah and Diminishing Musharakah is used. It is better to finance those assets on a priority basis that have a secondary market and that are somewhat standardized and widely used in the real sector of the economy.

Questions and Answers

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