

## **Factors Affecting Risk of Musharākah Financing: Evidence from Pakistani Data**

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### **Abstract**

Present study has focused the internal as well as external factors affecting risk of musharākah financing in the Islamic banks of Pakistan. Earlier studies have investigated both internal and external determinants of overall financing, but the current study is an attempt to investigate the factors affecting the risk of musharākah financing. To the best of the author's knowledge, no previous study has investigated the said association in the given sample. We found that both internal as well as external factors have a significant impact on the risk of musharākah financing. Among the external factors regulation is the only insignificant factor. Overall the determinants considered in the current study have a significant impact on the risk of musharākah financing.

**Keywords:** Musharākah financing, financing risk, PLS, NPF, Islamic Banking.

### **Introduction**

Islamic banking and finance are in the infancy stages<sup>1</sup> through providing financial support to communities without charging usury. Providing funds to public both individually and in groups carry significant risk factor which cannot be ignored. The concept of risk factor is famous in ancient societies and needs proper management according to the principles of Sharī'a<sup>2</sup>. Non-Performing Financing (NPF) is the main source of sustainability of operations in Islamic banking. Banks might face heavy disasters because of high-level problematic financing<sup>3</sup> likewise, the majority of bank crises are because of high-level problematic financing<sup>4</sup> Risk is an important factor in decision making and even people know that lending a fund to a bankrupt firm has maximum chances of losing money in comparison to a debtor with a stable financial position<sup>5</sup>. Business entities operating in any environment can't ignore risk factors whether it is a systematic risk or unsystematic risk. Similarly, literature has evidence that the majority of Islamic bank bankrupt due to credit risk<sup>6</sup>

in similar vein study found that among the main four types of risk, credit risk is making banks more vulnerable<sup>7</sup>. Simultaneously, credit risk is more pronounced in Profit and Loss Sharing (PLS) financing. Such inherited risk in the participatory mode of financing can't be diversified by collateralizing<sup>8</sup>. The ultimate goal of any bank whether it is Islamic or conventional is remains the same i.e. the basic goal is the proper management risk, assets, and liability<sup>9</sup>.

Due to risk and complications in the PLS mode of financing Islamic banks are reluctant to the principles of PLS<sup>10</sup>. Alternatively, a revenue-sharing scheme is more popular because in such schemes the profit and loss are shared according to the proportion of their investment between the customers and bank. After all, in case of profit or loss, both parties will suffer equally to the extent of their investment<sup>11</sup>. Whereas, in Mudharabah both the parties will not suffer equally from loss until it is because of carelessness of the manager, moreover the ratio of profit is pre-determined at the time of contract. On the other hand, different types of risk associated with PLS schemes are the misuse of funds beyond the agreed terms, earning manipulation, or intentional mistakes. There could be also other forms of risks like information asymmetry, understanding of human capital in banks. Similarly, the determination of a suitable ratio for profit sharing is another problem<sup>12</sup>.

Rahman and Shahimi<sup>13</sup> Misman<sup>14</sup> earlier studies have reviewed financing risk while using internal and external context more specifically the financing structure of banks and firms. Srairi<sup>15</sup> found the association among ownership structure, concentration, and the risk faced by banks; moreover, studies have also investigated the financial risk in general<sup>16</sup>. Earlier studies have also documented that in musharākah the revenue distribution carries a high risk as compared to other contracts see for example<sup>17,18</sup>. However, these results could not be generalized for the level of risk in musharākah, and detailed investigation is required to uncover the phenomenon and understand the nuances in risk and musharākah contracts in Pakistani banks. Moreover, our study is different from the rest of the studies as it covers both external as well as factors affecting the risk of the participatory financing that refers to musharākah. Macro-economic factors such as inflation, GDP growth are also considered as risk determinants of musharākah in the present study. The rest of the paper is designed such that section 2 uncovers the related literature and section 3 discusses the methodology to achieve the objectives of the study. Section 4 discusses the results which are followed by the discussion and conclusion in the light of available literature.

## **Review of literature**

Businesses are exposed to various types of risks but, credit risk is the main factor affecting the capability of banks for example<sup>19</sup>. Financial instability is caused in the banking industry due to financial risk. In Islamic banking, participatory financing is one of the schemes for profit and loss (PLS) meanwhile, this scheme of

financing is considered the most vulnerable and too much risky. Mudharabah also carries significant financial risk but the musharākah mode of financing carries the highest risk in Islamic banking<sup>20</sup>. Based upon the existing literature it is clear that the risk factor cannot be separated from the participatory mode of financing and they both have a positive association<sup>21</sup>. On the other hand, some studies have highlighted that global financial crises have shaken the world. These crises have a significant effect on the banking sector in Pakistan but the Islamic banking industry is the least affected in the banking sector. A study from 2002 to 2005 investigated the performance of the Islamic banking sector in Malaysia and concluded that technical efficiency was dominated by scale efficiency<sup>22</sup>.

Nourishing literature has tried to investigate the risk determinants of Sharī'a-based Islamic banks as well as conventional banks. Salas and Saurina<sup>23</sup>. In this regard found that a bank's internal factors might act as an instrument to trigger/alter the level of financial risk. Studies have also considered the link between conventional bank's profitability and credit risk with different results. Similarly<sup>24</sup> highlighted a negative correlation between profitability and credit risk when measured the loss loan ratio to total loan. The return will decrease as a result of the increase in bad debts when banks increase the supply of loans to risky projects. In a similar vein of research Apergis<sup>25</sup> also found a negative association in the conventional banks of the United States of America.

Furthermore, Waemustafa<sup>26</sup> examined the risk determinants of liquidity risk among conventional and Sharī'a-based banking. They documented that Islamic banks hold the more current asset as compared to conventional banks. They further documented that among 14 bank-specific factors 4 factors have a significant impact on liquidity risk.

Burgeoning, literature has also evidence that other than bank-specific factors some external factors also determine financial risk see for example<sup>27</sup>. There are pieces of evidence that macroeconomic factors of any economy for example Gross Domestic Product (GDP) growth and Consumer Price Index (CPI) or inflation<sup>28 29 30 31</sup>. Generally, inflation is defined as the increase in the general price level. A study in Malaysia confirmed that if the inflation rate is shrinking its influence can maximize the risk of both conventional and Islamic banks financing<sup>32</sup>. According to the theory, there is a significant relationship between the GDP rate and the risk of Sharī'a-based banking<sup>33</sup>. They mentioned that financing risk decreases with an increase in the growth rate of GDP. Whereas, on the other hand, some studies found that the financing risk of Sharī'a-based banking is not influenced by the GDP growth between 2000 and 2010 in Malaysia<sup>34</sup>. This indicates that GDP growth shows an increase in the level of income of the citizens which minimize the probability of bad loan and adverse selection. Some studies have also found an inverse relationship between the GDP growth rate and Non-Performing Loan (NPL), see for example<sup>35 36 37</sup>. There have been disagreements among the factors affecting NPF and this study

aims to investigate these factors in the Pakistani context to present a clear picture of the phenomenon. Other than internal factors which refer to banks' internal factors banks, some external factors are also considered in the study. These factors are Consumer Price Index (CPI) representing the inflation rate and Gross Domestic Product (GDP).

### **Methodology**

The study is purely quantitative in nature. Panel data is acquired from the annual financial reports of the full fledged Islamic banks and from the website of state bank of Pakistan. Dependent variable of the study is risk of musharākah financing and the independent variable are divided into internal and external factors. Internal are bank's internal factors while external factors are macro-economic factors.

### **Research method**

The study is purely quantitative in nature and panel data from 2010 to 2018 is collected. The study focuses mainly on seven independent variables out of which are 5 internal and the rest of the two are external factors. All these variables are considered as determinants of risk in the musharākah mode of financing in Non-Performing Financing (NPF) Islamic banks of Pakistan. Detail definitions are provided in the following table 1.

### **Population sample and data sources**

There exist both window Islamic banks and full fledged Islamic banks in Pakistan. Window Islamic banks are those having a special cell or window that offers Sharī'a-based financial services to enhance the overall financial inclusion. But the current study only those full-fledged Islamic banks of Pakistan that are publishing their annual financial reports. So the current study has acquired panel data from 2014 to 2020 using purposive sampling technique from 5 full fledged Islamic banks in Pakistan. Data for the selected variables was collected from the state bank of Pakistan and the websites of the respective banks.

**Table 1 Detail Definitions of the Selected Measures**

| <b>S.NO</b>                      | <b>Name of the Measure</b> | <b>Definition of Measure</b>  | <b>Anticipated Sign</b> |
|----------------------------------|----------------------------|---|-------------------------|
| <b><u>Dependent Variable</u></b> |                            |   |                         |
| 1                                | NFP Musharākah             | Non-performing finance of musharākah (bad musharākah financing/ total musharākah financing) |                         |

| <b><u>Independent Variables</u></b> |         |  |          |
|-------------------------------------|---------|--|----------|
| 2                                   | ROM     | Return on musharākah<br>(yield of musharākah/ total<br>musharākah financing)               | Positive |
| 3                                   | RECAP   | Regulatory capital<br>(core capital/ total assets)   | Positive |
| 4                                   | MFIN    | Musharākah financing<br>(musharākah financing/ total<br>financing)                         | Positive |
| 5                                   | Finance | Total financing<br>(natural log of total financing)  | Positive |
| 6                                   | RSKF    | The risky sector of financing<br>Trade financing/total financing                           | Positive |
| 7                                   | CPI     | Consumer price index<br>(showing inflation in percentage)                                  | Positive |
| 8                                   | GDP     | Gross domestic product<br>((GDP <sub>t</sub> - GDP <sub>t-1</sub> ) / GDP <sub>t-1</sub> ) | Negative |

### **Econometric Specifications**

Current stud relies on panel data and generally, panel data have the problem of heteroscedasticity due to which results from biased estimations. So, to overcome the problem of heteroscedasticity we use Generalized Least Square (GLS) procedure for the estimation of coefficients. So the following econometric model is used in the study for regression analysis.

$$NPF = \alpha + \beta_1(ROM) + \beta_2(RECAP) + \beta_3(MFIN) + \beta_4(Finance) + \beta_5(RSKF) + \beta_6(CPI) + \beta_7(GDP) + \mu$$

**Table 2 Pairwise Correlation**

| VARIABLES | 1    | 2    | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------|------|------|---|---|---|---|---|---|
| 1 GDP     | 1.00 |      |   |   |   |   |   |   |
| 2 CPI     | -    | 1.00 |   |   |   |   |   |   |

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|   |         |   |       |       |       |       |       |       |      |
|---|---------|---|-------|-------|-------|-------|-------|-------|------|
|   |         |   | 0.059 |       |       |       |       |       |      |
| 3 | RSKF    | - | 0.290 | 1.00  |       |       |       |       |      |
|   |         |   | 0.077 |       |       |       |       |       |      |
| 4 | Finance | - | 0.034 | 0.025 | 1.00  |       |       |       |      |
|   |         |   | 0.119 |       |       |       |       |       |      |
| 5 | MFIN    | - | 0.038 | 0.011 | 0.419 | 1.00  |       |       |      |
|   |         |   | 0.083 |       |       |       |       |       |      |
| 6 | RECAP   | - | -     | 0.001 | 0.099 | 0.089 | 1.00  |       |      |
|   |         |   | 0.068 | 0.001 |       |       |       |       |      |
| 7 | ROM     | - | -     | 0.023 | -     | -     | 0.027 | 1.00  |      |
|   |         |   | 0.208 | 0.024 |       | 0.013 | 0.000 |       |      |
| 8 | NFP     | - | 0.015 | 0.037 | -     | 0.352 | 0.142 | 0.198 | 1.00 |
|   |         |   | 0.163 |       |       | 0.011 |       |       |      |

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The above table 2 reports pairwise correlation results of the selected variables and the estimated coefficient values of all variables are less than 0.5 which indicates that data have no severe multicollinearity issue.

### Results and Discussions

This part encapsulates the results and discussion of the main results in the light of nourishing literature and related theories. The results show that among external factors that refer to GDP growth and inflation the GDP growth is inversely and significantly related to the risk of musharākah in Islamic banks while focusing on the case of Pakistan. These results can be justified by the previous influential work of Al-Wesabi<sup>38 39</sup>. This also indicates that favorable economic condition is a good indication for Islamic banking because it reduces the likelihood of bad debts. CPI also negatively affects the risk factor of musharākah financing because the P-value is significant at 5% and the coefficient sign is negative.

The risk factors of musharākah financing in Islamic banks of Pakistan are positively influenced by the risk-free financing as the coefficient sign is positive and P-values are also less than 0.05. This that with increase the avenues of risk-free financing there is increased the risk of musharākah financing. Literature has also evidence to support this positive link for an example<sup>40 41</sup> who also reported a positive link between RSKF and the risk of musharākah financing.

**Table 3 Panel EGLS Cross-Sectional Seemingly Unrelated Regression**

| Independent variables | Coef    | t-stat | Porb.    |
|-----------------------|---------|--------|----------|
| GDP                   | -0.6178 | -3.82  | 0.000*** |
| CPI                   | -0.0228 | -1.96  | 0.050*   |
| RSKF                  | 0.6483  | 2.54   | 0.011**  |
| Finance               | 0.4978  | 2.50   | 0.012**  |
| MFIN                  | 0.2034  | 2.10   | 0.036*   |
| RECAP                 | 0.0350  | 0.06   | 0.955    |
| ROM                   | 0.0848  | 1.75   | 0.081*   |
| R-Square              | 0.8549  |        |          |
| Adj. R-Square         | 0.8226  |        |          |
| Durban-Watson value   | 1.84    |        |          |
| f. Statistics         | 71.82   |        |          |
| Log. Likelihood       | -190.45 |        |          |
| Chow test             | 0.0000  |        |          |

\*, \*\* and \*\*\* show level of significance at 10%, 5% and 1% respectively

Among internal bank factors, total finance is an important factor affecting the risk of musharākah financing in the given sample. The projected results show that with the increase in the total financing a decrease in the risk of musharākah financing is noticed. Because the coefficient sign of finance is negative and the P-value is with the acceptable limit. These results are in line with a stream of literature like<sup>42 43</sup>. They also reported an inverse relationship between the bad debts and the level of total financing. Some studies in this area have contradictory results as they highlighted that the musharākah mode of financing directly affects the financing issues<sup>44</sup>. The regression results also narrate that there exists a positive and significant relationship between the total musharākah financing and the risk of musharākah financing in the Shari'a base banking system in the given sample because the P-value is significant at 5% and the coefficient sign is positive. These results are also supported by a stream of literature that concluded that the risk factor is the highest in musharākah among other contracts<sup>45</sup>. Abusharbeh<sup>46</sup> also documented that profit and loss sharing financing in Indonesia leads to a high risk of financing. The estimated coefficient and the P-value of regulation capital show that regulation capital has no significant impact on the risk of musharākah financing. Because the

P-value is more than the acceptable range. These results are in line with Al-Wesabi<sup>47</sup>. Finally, the results show that yield of musharākah is positively and significantly related to the risk of financing in musharākah. The positive coefficient confirms that despite the risky nature and high rate of non-performing finance Islamic banks charge some return.

## **F. Test Results**

Table 4 shows that the calculated value of F is greater than F. tabulated value. Moreover, this confirms that hypothesis rejection or acceptance are regressors and have a significant impact on musharākah. Overall the results show that the factors considered in the study have a significant role in explaining the risk factor of musharākah financing in the Pakistani Islamic banks. Both internal and external factors are important while investigating the risk of musharākah financing.

**Table 4 F. test the 7 Effect of Regressor to Non-Performing Financing Musharākah**

| F. count | F. Table | Prob. F | A    | decision    | Conclusion  |
|----------|----------|---------|------|-------------|-------------|
| 71.827   | 2,101    | 0.000   | 0.05 | Rejected H0 | Significant |

## **Conclusion**

The profit and loss sharing scheme is the most dominant feature of Islamic banking and practically it dominants all the financing schemes in Islamic banking. Like all other countries, musharākah financing is a popular mode of financing in Pakistani Sharīʿa-based banking. Since the risk in musharākah financing is high and the present study is an effort to explain the impact of both internal and external factors on the risk of musharākah. The results indicate that external factors (GDP growth and inflation) play a vital role in the level of risk in musharākah financing. Similarly, among internal, all the factors have a significant impact on the risk of musharākah financing except regulation capital having a P-value more than 0.05. findings of the study have important implications for Islamic banks. Sharīʿa-based banks show consider certain internal and external factors while signing musharākah contracts.

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