Volatility of the returns and expected losses of Islamic bank financing

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Abstract

Purpose – The paper attempts to analyze the volatility of returns and expected losses of Islamic bank financing. In particular, it takes the case of Indonesian Islamic banking industry.

Design/methodology/approach – The paper uses Value at Risk (VaR) approach to compute the volatility (risk) of returns and expected losses of Islamic bank financing. In particular, it uses variance-covariance method to calculate VaR of multi-asset portfolios (groups of equity-, debt- and service-based financing).

Findings – First of all, equity and debt-based financing produce sustainable returns of bank financing. Moreover, they are also very resilient during unfavorable economic conditions. Second, the performance of service-based financing is very sensitive to the economic conditions. Lastly, VaR computation on the volatility of returns and expected losses of bank financing finds that risk of investment and expected losses are well managed.

Practical implications – The paper demands Islamic banks to keep intensifying equity-based financing rather than only debt-based financing and improve the banking services to support the performance of service-based financing.

Originality/value – To the best of the author’s knowledge, this is the first paper to assist the volatility of returns and expected losses of the Islamic banking financing in Indonesian.

Keywords Financial risk, Equity capital, Debts, Financing, Banking, Islam, Indonesia

Paper type Research paper

1. Background

The Indonesian Islamic banking industry has been growing remarkably since 1992. Based on the Islamic banking statistical report from Bank Indonesia (central bank) until September 2008, there are three Islamic Commercial Banks (Bank Umum Syariah), 28 Islamic banking units/windows (Unit Usaha Syariah) and 128 Islamic rural banks (Bank Pembiayaan Rakyat Syariah) integrating 712 offices (Table I). Besides a growing number of banks and offices, the industry has also shown promising performances of banking indicators such as under controlled financing-to-deposit ratio (FDR), non-performing financing (NPF) and a growing trend of total assets, financings, and deposits. The annual FDR has been lying between 100 and 120 percent since 2001 while the conventional banks only record it around 60 per cent; NPF is between 2 and 4 percent and; the average increasing of total assets, financings and deposits is more than 50 percent over the periods of 2000-2008 (Table I).

However, maintaining those robust banking indicators is more difficult nowadays. There are some internal and external challenges influencing the performance of Islamic banking operations. For example, lack of human resources, limited alternatives of Islamic investments, limited Islamic banking products, and less synergy with the other financial institutions, are some internal challenges of the industry.
Meanwhile, sensitive liquidity behaviors of depositors, under-developed Islamic financial markets, direct or indirect impacts of unfavorable economics and financial conditions, are examples of the external challenges (Ismal, 2009, pp. 9-12). Indeed, assessing the volatility of returns and expected losses of bank financing is one of the ways to monitor and manage the performance of such Islamic bank indicators.

This paper uses Value at Risk (VaR) approach to analyze the volatility of returns of bank financing and assess the expected losses of such financing within the periods of 2000-2008. The analyses are believed very important because:

- the positive returns of bank financing is one of the robust banking indicators unexceptionally for Islamic banks;
- the volatility of returns of bank financing is one representation of investment risk;
- total financings in Islamic banks tend to exceed total deposits, thus it has to be monitored and prevented from any potential risks and losses;
- well-anticipated losses may benefit stakeholders and regulators of Islamic banking industry to maintain the robust performance of this industry; and
- volatility of the returns of bank financing is one of the correspondents of investment risk while knowing expected losses benefits the market players and regulators to anticipate the unexpected business conditions in the future.

The following sections will explain about the available Islamic financing instruments in Indonesian Islamic banking industry continued by technical explanations about VaR approach. Then is the VaR assessment to the Islamic financing portfolio and interpretations. Finally, the paper recommends some actions based on the results of the analyses.

### 2. Islamic financing instruments

The classical Islamic banking theory recognized some modes of Islamic financing instruments which can be grouped as:

- Islamic equity-based financing such as *Mudarabah* (trustee partnership), *Musharakah* (joint venture), *Muzara’ah* (harvest yield profit sharing) and *Musaqah* (plantation management fee based on certain portion of yield) (Antonio, 1999, pp. 143-55).
Islamic debt-based financing such as *Murabahah* (mark up sale), *Ijarah* (leasing), *Salam* (deferred delivery sale), *Istisna* (manufacture-sale), and *Qardh* (benevolent loan).

Islamic service-based financing such as *Wakalah* (opening of letter of credit), *Kafalah* (letter of guarantee) and *Hiwalah* (Obaidullah, 2005, pp. 113-15, 2009).

However, amongst all of the classical instruments, there are only some of them which are available and well developed in the Indonesian Islamic banking industry. In the forms of equity-based financing, there are Musharakah and Mudarabah contracts while in debt-based financing there are *Murabahah*, *Salam*, *Istisna*, *Ijarah* and *Qardh*. In service-based financing or simply named as the other types of financing, there are *Wakalah*, *Kafalah*, *Sharf* and *Hiwalah* (Indonesian Islamic Banking Monthly Report, Bank Indonesia, 2000-2008). These facts are mainly because the industry is in early stages of the development compared with the conventional banking (Bank Indonesia, 2005, *Blue Print of Islamic Banking*).

Particular data investigation on the share of financing instruments over total financings from December 2000 to September 2008 suggests that *Murabahah*, *Salam* and *Istishna* (debt-based financing instruments) are the most utilized financing instruments dominating 59.5 percent of the total financings. Following those instruments are *Musharakah* and *Mudarabah* (equity-based financing instruments) with the share of 36.4 percent of the total financings. Finally, there are *Ijarah*, *Kafalah*, *Wakalah*, *Hiwalah* and *Sharf* (the other types of financing instruments) as the least usable financing instruments with the share of only 4 percent of the total financings (Table II).

However, there is another interesting figure found from such historical data (Table II). Equity-based financing instruments are indeed less preferable than debt-based financing instruments because the return of equity based is uncertain and they need strong monitoring, evaluation, full information and transparency of all related parties (Ismal and Wilson, 2008). Nonetheless, the share of equity-based financings has been showing a bigger trend than the others for the last seven years (Table II). This is quite interesting since the experience of the other countries having Islamic banking industry shows that the supremacy of debt-based financings captures more than 80 percent of the total financings and the equity-based financings are not more than 20 percent of the total financings (Bank Indonesia, 2008, *Indonesian Economic Report*).

This fact suggests that the Indonesian Islamic banks have positively tried to intensify the equity-based financing and lowered the dependency on the debt-based financing especially during the favorable economic conditions. This is indeed one of the promising figures of the industry which should give positive impacts to

<table>
<thead>
<tr>
<th>Type of bank financing</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity financing</td>
<td>32.19</td>
<td>22.22</td>
<td>16.33</td>
<td>19.42</td>
<td>29.01</td>
<td>32.97</td>
<td>31.29</td>
<td>35.05</td>
<td>36.41</td>
</tr>
<tr>
<td>Debt financing</td>
<td>66.70</td>
<td>77.36</td>
<td>74.38</td>
<td>75.03</td>
<td>69.22</td>
<td>64.13</td>
<td>63.40</td>
<td>59.34</td>
<td>59.52</td>
</tr>
<tr>
<td>Other types of financing</td>
<td>1.12</td>
<td>0.42</td>
<td>9.28</td>
<td>5.56</td>
<td>1.77</td>
<td>2.89</td>
<td>5.32</td>
<td>5.60</td>
<td>4.07</td>
</tr>
</tbody>
</table>

**Note:** *Until September 2008  
**Source:** Bank Indonesia
total returns of bank financing. Nevertheless, this intensification might bring the consequence of business losses or defaults. Thus, unlike debt-based financing, Islamic banks have to be ready to accept the positive (returns) or negative (losses) results of the business.

3. VaR approach

VaR is very popular to measure the volatility of returns and expected losses of Islamic bank financing. By definition:

Value at Risk is used to measure the worst expected loss that an institution can suffer over a given time interval under normal market condition at given confidence level. It assesses this risk by using statistical and simulation models designed to capture the volatility of assets in a bank’s portfolio (Butler, 1999, p. 5).

Simply, VaR measures the potential losses of the value of risky assets or portfolio over a defined period for a given confidence interval (Benninga and Wiener, 1998, p. 1). There are at least three methods of computing VaR:

1. historical simulation;
2. variance-covariance or analytic method; and
3. Monte Carlo or stochastic simulation (Linsmeier and Pearson, 1996, pp. 7-16).

The first method is a simple atheoretical approach that requires relatively few assumptions about the statistical distributions of the underlying market factors. Specifically, this method uses historical changes in market rates and prices to construct a distribution of potential future portfolio profits and losses.

The second method is based on assumption that the underlying market factors have a multivariate normal distribution. Once the distribution of possible portfolio profits and losses has been obtained, the standard mathematical properties of the normal distribution are used to determine the loss that will be equaled or exceeded \( \times \) percent of the time. Finally, the last method is almost similar with the historical simulation and uses a statistical distribution to adequately capture the possible changes in market factors. But, a pseudo-random number generator is occupied to generate thousands or 10,000 hypothetical changes in the market factors to be used to thousands of hypothetical portfolio profits and losses where VaR is determined. However, although there are three methods of calculating VaR, all of them go through a common general structure which can be summarized as (Mangenelli and Engle, 2001, pp. 7-12):

1. marking-to-market the portfolio;
2. estimating the distribution of portfolio returns; and
3. computing the VaR of the portfolio.

This paper chooses variance covariance or analytic method to analyze the volatility of returns and expected losses of bank financing portfolio. It is simply because of its easiness to determine the assumptions of correlations/standard deviations which reflect the typical conditions of the Islamic banking industry. Moreover, using historical simulation or Monte Carlo simulation demand long series of data which are not available yet nowadays. There are only eight-year monthly data of the Indonesian Islamic bank financing.
Specifically, the analytic method uses the one developed by J.P. Morgan to calculate
VaR of multi-assets portfolio. The process is explained by Butler (1999) in three steps:
(1) calculating standard deviations;
(2) calculating volatility of assets; and
(3) calculating expected losses of the group of financing instruments.

Since there are three groups of Islamic bank financing instruments (debt-, equity-, and
service-based financing) exercised in this paper, the standard deviation for such three
groups is the square root of the equation (1) below:

\[
Var(R_p) = \sum_{i=1}^{3} \sum_{j=1}^{3} w_i w_j \sigma_{i,j}
\]

\[
= w_1^2 \sigma_1 + w_2^2 \sigma_2 + w_3^2 \sigma_3 + 2w_1 w_2 \rho_{1,2} + 2w_1 w_3 \rho_{1,3} + 2w_2 w_3 \rho_{2,3}
\]

\[R_p\] is a variance of bank portfolio financing; \(w\) is weight of a group of bank financing;
\(\sigma\) is standard deviation of a group of bank financing; and \(\rho\) is a coefficient of
correlation of two groups of bank financing.

Then, the volatility of portfolio financing is found by constructing volatility matrix
which is multiplications of confidence interval factor (\(\alpha\)), for example, \(\alpha = 95\) percent,
\(\alpha = 90\) percent or \(\alpha = 99\) percent and standard deviation matrix, such that:

\[
(\alpha) \begin{bmatrix}
\sigma_1 & 0 & 0 \\
0 & \sigma_2 & 0 \\
0 & 0 & \sigma_3 \\
\end{bmatrix} = \begin{bmatrix}
\alpha \sigma_1 & 0 & 0 \\
0 & \alpha \sigma_2 & 0 \\
0 & 0 & \alpha \sigma_3 \\
\end{bmatrix}
\]

Meanwhile, variance covariance matrix is derived initially by multiplying volatility
matrix above and correlation coefficient matrix, such that:

\[
\begin{bmatrix}
\alpha \sigma_1 & 0 & 0 \\
0 & \alpha \sigma_2 & 0 \\
0 & 0 & \alpha \sigma_3 \\
\end{bmatrix} \begin{bmatrix}
1 & \rho_{1,2} & \rho_{1,3} \\
\rho_{2,1} & 1 & \rho_{2,3} \\
\rho_{3,1} & \rho_{3,2} & 1 \\
\end{bmatrix} = \begin{bmatrix}
\alpha \sigma_1 & \alpha \sigma_1 \rho_{1,2} & \alpha \sigma_1 \rho_{1,3} \\
\alpha \sigma_2 \rho_{2,1} & \alpha \sigma_2 & \alpha \sigma_2 \rho_{2,3} \\
\alpha \sigma_3 \rho_{3,1} & \alpha \sigma_3 \rho_{3,2} & \alpha \sigma_3 \\
\end{bmatrix}
\]

Following this, in order to have variance covariance matrix, the result from point 3 is
multiplied with variance again, to become:

\[
\begin{bmatrix}
(\alpha \sigma_1)^2 & (\alpha \sigma_1 \rho_{1,2}) & (\alpha \sigma_1 \rho_{1,3}) \\
(\alpha \sigma_2 \rho_{2,1}) & (\alpha \sigma_2)^2 & (\alpha \sigma_2 \rho_{2,3}) \\
(\alpha \sigma_3 \rho_{3,1}) & (\alpha \sigma_3 \rho_{3,2}) & (\alpha \sigma_3)^2 \\
\end{bmatrix}
\]

Finally, weighting matrix and matrix equation (3) above is used to find VaR value as
shown below:
\[ X_1 = w_1 (\alpha \sigma_1)^2 + w_2 [(\alpha \sigma_2) \rho_{1.2} (\alpha \sigma_1)] + w_3 [(\alpha \sigma_3) \rho_{3.1} (\alpha \sigma_1)] \]

\[ X_2 = w_1 [(\alpha \sigma_1) \rho_{1.2} (\alpha \sigma_2)] + w_2 (\alpha \sigma_2)^2 + w_3 [(\alpha \sigma_3) \rho_{3.2} (\alpha \sigma_2)] \]

\[ X_3 = w_1 [(\alpha \sigma_1) \rho_{1.3} (\alpha \sigma_3)] + w_2 [(\alpha \sigma_2) \rho_{2.3} (\alpha \sigma_3)] + w_3 (\alpha \sigma_3)^2 \]

and:

\[
\begin{bmatrix}
  X_1 & X_2 & X_3
\end{bmatrix}
\begin{bmatrix}
  w_1 \\
  w_2 \\
  w_3
\end{bmatrix} = V.
\]

VaR is found from the square root of this V-value.

However, to be implemented in the Indonesian case, some underlying conditions are assumed to clearly explain the focus of VaR analysis, as in the following:

- The VaR analysis on the portfolio returns of bank financing applies particularly to the output of Islamic financing contracts between Islamic banks and the business partners.
- The returns from debt-based financing instruments are fixed, positive, and predetermined in the beginning of the contract agreement.
- The returns from equity-based financing are not fixed but uncertain and being shared with all parties involved in the projects.
- The returns of the other types of financing are fixed (fixed service charges).

4. VaR analysis for the Indonesian Islamic bank financing

**Profile of the returns of Islamic bank financing**

The assessment of the returns of three groups of Islamic bank financing suggests different kinds of resilience of the groups against any favorable or unfavorable economic conditions (Table III). During favorable economic conditions, from 2000 into 2003, the portfolio returns of all groups of bank financing were very promising. The group of equity-based financing generated average returns of 6.16 percent whilst the group of debt-based financing was 6.17 percent and the group of the other types of financing was 6.35 percent, respectively.

Meanwhile, during unfavorable economic conditions, from 2003 into 2005, when domestic economy pressured by the world oil price hike forcing the government to adjust the domestic oil price, upward inflation, depreciation of Rupiah exchange rate, and slowing domestic demand for goods (Ismal, 2006, pp. 4-20), the portfolio returns
of all groups were down with two different patterns. The returns of the groups of equity- and debt-based financing decreased from 7.99 into 6.62 percent (Table III). Indeed, the slowing economic growth during such periods impacted the performance of the real business so that the return sharing of the equity-based financing instruments and trading activities of the debt-based financing instruments were both down. Nonetheless, the returns of both groups were only slowing down and recovered immediately after the economic conditions came back to normal.

Unfortunately, such return patterns of the two groups did not apply to the group of the other types of financing. It slumped significantly from 6.48 percent in 2002 into just 0.08 percent for three years (2003-2005). The patterns of the returns did not rebound to the prior achievements when the economy was in upsurge (Table III). It means that the service-based financing were very sensitive with any economic pressure and stood as the least preferred target of financing for Islamic banks compared with both equity and debt-based financing.

Finally, when the economic downturn passed away, from 2005 into 2008, the returns of all groups of Islamic financing grew up progressively. The return sharing of the group of equity-based financing raised 44.6 percent, followed by the returns of the group of debt-based financing with 47.3 percent and; the returns of the group of the other types of financing with 85.4 percent. Nevertheless, unlike the first and the second groups, the recovery of the other types of financing still did reach its best performance ever (before the economic downturn), although its inflation was the highest compared with the other two groups. This finding is presented as italics in Table III.

In conclusion, the returns of the group of equity- and debt-based financing are very endurable even during unfavorable economic conditions. To some extents, it is because of two main supportive conditions:

1. 73.6 per cent of bank financings (equity- and debt-based financing) went to small and medium enterprises which did not severely hurt by economic distress (Bank Indonesia, 2008).
2. The bank financings are mostly extended in the form of working capital financings (52 percent) under murabahah (trade) contract rather than investment capital financing. Therefore, the returns from debt-based financing is more sustainable, positive and predictable (Ismal, 2009, p. 19).

### Table III

<table>
<thead>
<tr>
<th>Year</th>
<th>Equity</th>
<th>Debt</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>5.71</td>
<td>5.71</td>
<td>5.87</td>
</tr>
<tr>
<td>2001</td>
<td>6.32</td>
<td>6.32</td>
<td>6.70</td>
</tr>
<tr>
<td>2002</td>
<td>6.45</td>
<td>6.46</td>
<td>6.48</td>
</tr>
<tr>
<td>2003</td>
<td>7.99</td>
<td>7.99</td>
<td>0.08</td>
</tr>
<tr>
<td>2004</td>
<td>7.00</td>
<td>7.00</td>
<td>0.08</td>
</tr>
<tr>
<td>2005</td>
<td>6.62</td>
<td>6.62</td>
<td>0.08</td>
</tr>
<tr>
<td>2006</td>
<td>11.95</td>
<td>12.57</td>
<td>0.55</td>
</tr>
<tr>
<td>2007</td>
<td>13.48</td>
<td>14.88</td>
<td>0.51</td>
</tr>
<tr>
<td>2008a</td>
<td>15.70</td>
<td>13.86</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Note: aUntil September 2008
On the other hand, the group of the other types of financing cannot be reliable to support the performance of Islamic bank financing. This is because:

- Islamic banks have not intensively developed their banking services (office networks, various banking facilities, internet banking, mobile banking, etc);
- the main operations of Islamic banks are financing the projects and get profits rather than providing extensive banking services for fee-based incomes; and
- the demand for the other types of financing is still very trivial compared with the other two.

Moreover, in general, this group captures the smallest share of all, thus its under performance does not significantly influence the overall returns of Islamic bank financing as illustrated by italics in Table II in the beginning.

**Volatility of the returns of the groups of Islamic bank financing**

The volatility of returns in VaR is represented by the standard deviation of each group of bank financing. Computation by using equation (1) suggests that standard deviation of all groups of bank financing tended to fall since 2006 (see the italicised part of Table IV). Even, the standard deviation of the group of the other types of financing went down since 2003.

These results notify that the risk of investment (volatility of the returns) of the Indonesian Islamic banks is pretty manageable. For some reasons, these are caused by:

- The domination of *Murabahah* financing which counts 61 percent of the total financings followed by *Mudarabah* financing which counts 30 percent of total financings. Since the nature of *Murabahah* contract which are fixed and pre-determined returns, the risk of investment of Islamic bank financing is relatively under controlled (Bank Indonesia, 2008).
- The stable economic conditions after 2003-2005 periods. The performance of the groups of Islamic bank financing depends on the economic conditions as analyzed previously. If the economy is stable and supportive, the business sector would generate positive returns and was very unlikely to face any default (business loss).
- The expansion of banks financing during 2006-2008 was not as expansive as before (2000-2002) (Ismal and Wilson, 2008, p. 7). Islamic banks were more

<table>
<thead>
<tr>
<th>Year</th>
<th>Equity</th>
<th>Debt</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2.97</td>
<td>2.97</td>
<td>3.24</td>
</tr>
<tr>
<td>2001</td>
<td>3.15</td>
<td>3.15</td>
<td>3.49</td>
</tr>
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<td>2002</td>
<td>3.21</td>
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<td>3.23</td>
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<tr>
<td>2003</td>
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<td>2004</td>
<td>3.64</td>
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<tr>
<td>2005</td>
<td>3.49</td>
<td>3.49</td>
<td>0.06</td>
</tr>
<tr>
<td>2006</td>
<td>0.45</td>
<td>0.33</td>
<td>0.06</td>
</tr>
<tr>
<td>2007</td>
<td>0.80</td>
<td>0.51</td>
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<tr>
<td>2008a</td>
<td>0.57</td>
<td>0.15</td>
<td>0.09</td>
</tr>
</tbody>
</table>

[Table IV. Standard deviation of returns (%)]

*Note:* aUntil September 2008
caution to extend financing referring to the experience of the periods of economic turbulence (2003-2005).

**Correlation coefficients among groups of Islamic bank financing**

Following the analysis of volatility of returns of bank financing, this section continues the VaR computation with coefficients of correlation among groups of Islamic bank financing. Computation based on equation (1) and coefficient of correlation matrix in equation (3) produces the outputs as listed in Table V.

An interesting phenomenon was found during the last three years (2006-2008). During the year 2000-2005, the coefficients of correlation of returns of two groups of bank financing were positively correlated each other. Nevertheless, such positive coefficients of correlation turned out to be negative coefficients of correlation in the last three years as presented as italics in Table V. One main reason might answer this phenomenon. The periods of 2006-2008, which was the economic recovery periods, suggested Islamic banks to set an independent financing portfolio policy per group of financing. Previously, financing portfolio policy applied generally and went to the same direction (expansion of financing) to all of the groups but after the economic turbulence and knowing the resilience of each group of bank financing, Islamic banks implement an independent financing portfolio policy. As such, the direction of a group of Islamic bank financing might be different (uncorrelated) with the other groups.

**VaR result**

The final analysis is computing VaR per group of bank financing referring to formulas (1)-(5) above. VaR values are generated in an annual basis with the level of confidence of 99, 95 and 90 percent. As described in the beginning, the values of VaR imply the expected rate of losses of all groups of Islamic bank financing (Table VI).

The results imply that following the decreasing trend of investment risk (lower volatility of the returns), the expected rate of losses shows lower patterns of all groups of bank financing. It was precisely seen since 2006 (presented as bold in Table VII and as italics in Table VIII). The exception was only when the economic was in under pressure (presented as italics for 2003-2005 in Table VII).

In particular, within the periods of 2000-2005, VaR counted expected losses of around 7-8 percent of the total financings (equity-based financing); 4-6 percent of the total financings (debt-based financing) and; 4 percent of the total financings (the other

<table>
<thead>
<tr>
<th>Year</th>
<th>Equity and debt</th>
<th>Equity and others</th>
<th>Debt and others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
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<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>2001</td>
<td>0.99</td>
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<td>2002</td>
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<tr>
<td>2003</td>
<td>0.99</td>
<td>0.96</td>
<td>0.96</td>
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<tr>
<td>2004</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>2005</td>
<td>0.99</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td>2006</td>
<td>−0.86</td>
<td>−0.05</td>
<td>0.11</td>
</tr>
<tr>
<td>2007</td>
<td>−0.35</td>
<td>−0.56</td>
<td>−0.07</td>
</tr>
<tr>
<td>2008*</td>
<td>−0.05</td>
<td>−0.77</td>
<td>−0.03</td>
</tr>
</tbody>
</table>

*Note: *Until September 2008

Table V. Coefficients of correlation
types of financing). However, after these periods, the expected losses dropped significantly into only around 0.3-0.7 percent of the total financings (equity-based financing); 0.2-0.5 percent of the total financings (debt-based financing); and 0.1-0.4 percent of the total financings (the other types of financing). The highest dropped was indicated during 2005-2006 with an almost 100 percent dropped. On average, total expected losses of 2000-2005 was recorded 5.81 percent and then became only 0.38 percent after 2005 as shown in Figure 1.

These promising VaR values happened because of some supportive economic conditions, prudential Islamic banking operations, and supportive banking regulations, for example:

- The government successfully mitigated the sudden economic turbulence (2003-2005) by taking some domestic economic policies such as decreasing the
government oil subsidy, controlling Rupiah exchange rate volatility and managing inflation through tight monetary policy (Ismal, 2006, pp. 10-20). Such actions recovered the economic conditions and gave supportive conditions for Islamic banks to remanage their bank financing with proper and prudential portfolio financing policies.
Fortunately, total deposits in Islamic banks were not heavily suffered by any unfavorable economic condition. Depositors kept saving in Islamic banks as shown by the increasing trend of total deposits in Table I. This positive phenomenon benefited Islamic banks to keep extending banks financing. Supported by the supportive economic conditions, Islamic banking industry is getting mature and can suitably set the robust financing portfolio policy. As a result, risk of investment can be managed and Islamic banks may generate higher profits (returns) as analyzed previously (Table III).

The increasing trend of equity-based financing (Table I) which is a profit and loss sharing contract with entrepreneurs, benefits Islamic banks to reduce their responsibility to bear all of the business losses. Therefore, VaR values tend to go down progressively.

5. Recommendations

Based on the results of the overall analyses, the three groups of bank financing can be further classified as:

- the prospective and endurable groups of bank financing which belong to the group of equity- and debt-based financing; and
- the less prospective and sensitive group of bank financing which is the group of the other types of financing.

The former groups produce sustainable returns of bank financing not only during favorable economic conditions but also during unfavorable economic conditions. Meanwhile, the latter cannot be fully relied on unless the Islamic banks have successfully developed their banking services. Finally, this paper releases some recommendation as follows:

(1) The development of the group of equity-based financing should be more intensified due to facts that:
- the group produces prospective and promising returns;
- the group is relatively less affected by the economic downturn (very resilience against economic turmoil); and
- the volatility of returns and expected losses tends to go down and opens an opportunity for Islamic banks to expand more financings.

(2) Although the group of debt-based financing still dominates the returns of bank financing, the future financing should be progressively redirected into the investment (equity) based financing which may potentially give higher returns than debt-based financing.

(3) Since the Islamic banking operations depend strongly on the economic condition, the government in cooperation with all economic entities and market players has to maintain sustainable and supportive economic conditions.

6. Conclusion and possible area for future research

The Islamic bank financing is comprised of the equity-, debt- and service-based financing. The assessment of these three groups suggests that they produced sustainable and promising returns during upturn economic conditions but went slow
along the downturn economic conditions. In particular, the group of equity- and debt-based financing are found more reliable, profitable and survival in both favorable and less favorable economic conditions than the last group. Finally, VaR values find a well-managed risk of investment and a decreasing trend of expected losses of bank financing. In the end, intensifying equity-based financing is so recommended rather than focusing on debt financing per se and improving bank services would benefit Islamic banks to improve the performance of the group of service-based financing in the future. The recommended areas for future research might involve sukuk and Islamic stock. Currently, these two financing instruments are still in the initial period of development.

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