Risk Management In Islamic Banks
This case study was developed by the Asian Institute of Finance (AIF).

AIF focuses on developing human capital across the financial services industry in Asia. Established by the Central Bank of Malaysia (Bank Negara Malaysia) and the Securities Commission Malaysia to lead capacity building and standards setting for the financial services industry (FSI), AIF is committed to elevating Malaysia’s role as a premier provider of comprehensive solutions for the financial sector across the region.
Saiful Anwar had been headhunted six months previously to join the newly formed, Shiraka Bank, as a Risk Manager. Shiraka Bank was launched to take advantage of the recent Islamic Bank Act that was passed in the country of Malaiur.

Malaiur was a resourceful island in the South China Sea with a population predominantly made up of Muslims. This population had been demanding a Shari’a compliant way of banking for many years. Seeing the growth of Islamic finance solutions, legislators in Malaiur had decided the time was right to pass a law signalling the commencement of Islamic banking in the country.

Shiraka Bank spent many months searching for an experienced Risk Manager who understood the nuances of Islamic banking. These risks were different to those faced by regular banks, particular in terms of the products offered by the bank that involved buying and selling commodities and manufactured items. Despite searching for an individual with this knowledge, Shiraka Bank was unsuccessful and decided to employ an experienced Risk Manager with a conventional banking risk background who was interested in learning about Islamic banking.

Saiful had previously been employed as a Risk Manager at Standard Chartered Bank but wanted to expand his knowledge of Islamic banking risk. To become an expert in Islamic banking at the new organization seemed an excellent opportunity, so he welcomed the offer to join Shiraka. He threw himself into learning and for the first six months, everything seemed to be going well.

In his first year, however, Saiful faced two challenging cases of default by customers of the bank. What did he need to know in order to mitigate the risk and find a solution?
Fundamental Differences Between Conventional Banking and Islamic Banking

There were fundamental differences between the operations of an Islamic bank and a conventional bank, which brought a unique set of additional risks. The five key differences were:

1. Prohibition of interest (riba).
2. Prohibition of gambling and excessive speculation (qimar, maysir and gharar).
3. Transactions could only be asset based or asset backed.
4. Loans and investments could only be made into products and services considered halal.
5. Accumulation and distribution of Zakat.

Islamic banks faced the same generic risks listed in Table 1 but the nature and scope of the risk was different.

<table>
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<tr>
<th>Type of Risk</th>
<th>Definition</th>
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<tr>
<td>Credit Risk</td>
<td>The potential that a counterparty fails to meet its obligations in accordance with agreed terms and conditions of a credit-related contract</td>
</tr>
<tr>
<td>Market Risk</td>
<td>The potential impact of adverse price movements such as benchmark rates, foreign exchange rates, equity prices on the economic value of an asset. The risks relate to the current and future volatility of market values of specific assets</td>
</tr>
<tr>
<td>Liquidity Risk</td>
<td>The potential loss arising from the Bank’s inability either to meet its obligations or to fund increases in assets as they fall due without incurring unacceptable costs or losses</td>
</tr>
<tr>
<td>Operational Risk</td>
<td>The potential loss resulting from inadequate or failed internal processes, people and system or external events</td>
</tr>
</tbody>
</table>

Risk at Shiraka Bank

Within these four categories of risk, there were many more that Shiraka Bank was exposed to. These ultimately fell into one of the four categories, although mainly market risk and operational risk. For instance, legal risk fell under operational risk; commodity price risk fell under market risk. Similarly, risks that were specific to Islamic banks fell under one of these risk categories.

The quality of the risk and its effects were different for Shiraka than for conventional banks. This was due to the unique characteristics of its products. These risks arose from the structure of the bank and the principles it had to follow in structuring its products.
FRAMEWORK FOR ISLAMIC RISK MANAGEMENT

Islamic Banks faced unique risks. Given that there was no well-defined risk management framework for Islamic banks, they mostly tended to deal with the risks they faced in accordance with conventional guidelines. It was, however, important that risk managers identified the risks faced by Islamic banks correctly, measured them accordingly, mitigated and controlled them in accordance with Shari’a requirements and reported them to all the stakeholders honestly and accurately.

The following principle risk areas were in place in Shiraka Bank to cover credit, market, operational and Shari’a compliance.

Credit Risk Management

With the overwhelming demand for its products and the rather conservative Shari’a approach taken by its clients, Shiraka Bank decided to offer financing to both business clients and private individuals.

Determining the product and the client was part of the credit risk management process. The most conservative Islamic banks did not offer personal financing to individuals (notably in countries like Pakistan). They preferred to provide credit facilities to their prime business customers with whom they had long standing relationships. Therefore, client identification was rather straightforward for such banks. Their clients were few in numbers and were normally based around the headquarters of banks, making it easy to understand their businesses and credit requirements.

Other Islamic banks, which were involved in personal financing, used the tools employed by their conventional counterparts. Islamic banks, which were subsidiaries of conventional banks (e.g. CIMB Islamic and Hong Leong Islamic in Malaysia), used the identification methods employed by their parent bank and generally followed their policy guidelines and risk management frameworks.

Many Islamic banks that were involved in syndicate financing (in which conventional banks were also involved) followed the risk identification methods as employed by the lead members of the syndicate. In the case of participation in sukuk transactions, usually externally credit risk ratings were employed.

When predicting the potential for loss, Islamic banks relied on conventional tools to calculate probability of default, exposure of default and loss given default.
Market Risk Management

Shiraka Bank’s management, following strict advice from its Shari’a Advisory Committee, decided to offer products based on ijara, musharaka/mudaraba, murabaha, salam and istisna’ to give maximum choice to its customers.

As Shiraka Bank was involved in investment and trading activities, this necessitated an accurate measurement of market risk more so than for conventional banks. The bank needed to measure exposures of investments, trading portfolios and on- and off-balance sheet positions. Each risk under the market risk umbrella had to be measured separately, adding significant complexity to the process. Furthermore, valuation models for equity investment risk and FX rates suffered, as not all inputs were known or could not be estimated. It was, therefore, difficult to estimate dividends for equities and assess profit and loss rates in musharaka/mudaraba transactions.

In practice, Islamic banks tended to use murabaha-based structures (with provision for making the client an agent to buy and sell on behalf of the bank) to mitigate market risk. Requiring the client to sign a purchase undertaking at the beginning further minimized the bank’s exposure to commodity prices in such transactions. Specialized law firms were also used as execution agents to ensure that the timely execution of offer to sell (by the bank) and acceptance (by the clients) minimized the ownership risk that might have arisen from price fluctuations and, in some cases, from the risk of default during the time of purchase of the commodity and its onward sale to the client. In Malaysia, most of the funding to such clients was undertaken through commodity murabaha transactions through Bura Malaysia’s Suq al Sila.

In salam and istisna’ based transactions, parallel salam and istisna’ contracts were used to mitigate market risks.

In additional to the above, Islamic banks employed standard static and dynamic tools for the valuation of market risk. The Value at Risk (VaR) modelling technique was typically used as a measurement indicator for market risk. It measured a bank’s aggregate market risk exposure if it were to hold specific assets for a certain period of time. Inputs to this model included data on the bank’s position (book value, market value), prices, volatility and risk factors. The VaR model had to be supported by various tests in order to ensure robustness and effectiveness of the results. Back testing was applied to check whether VaR predictions corresponded to observed market changes. Stress testing assessed the consequence of risks that might have appeared in extreme circumstances.
Operational Risk Management

With the complexity of its transactions, there were certainly more operational risks facing Shiraka Bank. Converting these risks into quantifiable values enabled the risk management department of the bank to measure these operational risks. An important tool was to create Key Risk Indicators (KRIs), which Shiraka Bank used extensively to clearly identify and measure operational risks. Delay in offer and acceptance of the sale contracts to clients may have resulted in losses. Shiraka Bank had included such requirements in KRIs to ensure that no oversight happened on the part of employees. Similarly, sales staff were also reminded to go through specific KRIs when selling Islamic structured products to ensure that no miss-selling took place.

This was something that Shiraka Bank learned from Islamic banks in the UAE, who were particularly cautious after the UAE Central Bank issued a directive after a number of cases of miss-selling were reported by Islamic and conventional banks. Shiraka Bank used two sets of documents: standard legal documents and accompanying transaction documents. The Bank included in its KRIs that the transaction documents used by different entities (part of the structures) were executed within a specific time period.

Having quantified the risk, there were two ways to evaluate and manage operational risk:

1. Consider the risks and the operations that refer to different business lines of the institution.
2. Analyze actual operational risk losses.

The former was a bottom up approach that mapped workflows where failures may have occurred. The latter was a top down approach in which management issued operational procedures that were linked to potential losses arising from operational risks. These approaches could make use of operational VaR to evaluate the risk.

Shari’a Compliance Risk

In order to ensure that all its operations, products and procedures remained in strict compliance with Shari’a, Shiraka Bank appointed a Shari’a Advisor who liaised with its Shari’a Advisory Committee and the management of the bank. A Shari’a advisor was involved in the transactions at each and every step to avoid any Shari’a oversight. The bank was also considering automating the whole Shari’a process through specialised Shari’a process
software. Unlike in Malaysia, where Bank Negara Malaysia has issued specific guidelines to ensure Shari’a compliancy and transparency, the Islamic Banking Act in Malaiur was silent on Shari’a governance but Shiraka Bank remained vigilant about Shari’a compliance risk.

**Liquidity Risk**

Shiraka Bank used standard techniques like Gap Analysis, VaR, Risk Adjusted Rate of Return, and internal ratings to identify and measure liquidity risk.

**TACKLING RISK**

There were many different forms of risk management and mitigation techniques used by Shiraka Bank. Some were used to mitigate, while others tackled overall risk, as in the following list:

1. Loan loss reserves.
2. Collateral.
5. Rebates.

These techniques were use by both Islamic and conventional banks. Shiraka Bank had very few options for using risk mitigation techniques. Mitigating liquidity risk had proven to be difficult, as there was no Islamic money market in Malaiur and the central bank had yet to come up with a Shari’a compliant mechanism to serve as a lender of last resort for Shiraka Bank. Consequently, management at Shiraka Bank ensured that excess liquidity was retained to mitigate any liquidity risk it might encounter. With the creation of the International Islamic Liquidity Management Corporation in Malaysia, Shiraka Bank hoped to use Shari’a compliant liquidity management tools to manage its liquidity more efficiently.

One of the main concerns that emerged from a survey conducted by Shiraka Bank was the possible occurrence of Displaced Commercial Risk (DCR) or withdrawal risk. Shiraka Bank had to ensure the returns paid to its investment account holders (IAHs) were comparable with the market rate of return, by way of protecting the cash flows from IAH funds against variations in the income from assets financed by those funds. The bank mitigated DCR by maintaining a Profit Equalization Reserve (PER) and an Investment Risk Reserve (IRR). In Malaysia, Islamic banks maintained only PER, while in some other countries, Islamic banks made distinctions between the two. In Saudi
Arabia, Islamic banks were not allowed to have PER. Shiraka Bank decided to adopt the conservative approach by maintaining both the PER and IRR.

Many Islamic banks started to use Islamic derivatives (also known as Islamic hedging instruments) for risk management. The use of Islamic forwards, options and other such contracts were also on the rise, especially in capital market transactions. To ensure that such contracts remain Shari’a compliant, many Islamic banks started to use Tahawwut Master Agreement, jointly developed by International Islamic Financial Market (IIFM) and International Swaps & Derivatives Association (ISDA). Shiraka Bank, being only a small bank, had not yet used such additional instruments. Appendix 1 summarises risk management processes for different Islamic financial products.

**Case 1: Default and Stolen Goods**

It was in his sixth month at Shiraka that Saiful encountered a peculiar case of default. A customer had obtained murabaha financing from the bank to buy a second-hand car. The customer had paid 20% of the murabaha price upfront and the remainder in 36 monthly instalments. In the fifth month of the financing period, the customer was involved in a road accident. Upon investigation, the police determined that the car had previously been stolen. Malauri has strict police laws and so the police confiscated the car and returned it to its original owner. As a result, Shiraka Bank’s customer not only defaulted on his monthly payments but also demanded the bank to return his deposit and the four payment instalments prior to the accident!

In a conventional banking context, it was a simple case of default following the loss of the asset by a customer. Saiful had experienced this previously. In Islamic banking, however, the situation was quite different. In a murabaha transaction, an Islamic bank first buys an item from a third party/vendor before selling it on to a customer for a disclosed profit. The customer may change their mind after the bank has purchased the item but before it was sold to the customer. This is a default risk but of a very different nature than the default risk to that experienced by conventional banks, where the bank has already lent the money to the customer. In a Murabaha transaction, the risk of default becomes relevant even before the customer has received the item to be financed.

The different risks faced by an Islamic bank in a Murabaha transaction are listed in Figure 1. From inception to maturity, there are four key points on the timeline. In the above example, however, the default occurred between Points 2 and 3. Saiful and his team took the view that it was a simple case of default and hence legal action must be initiated against the customer if he failed to settle the account.
Figure 1: Risk Transformation in Murabaha

- How should Saiful and his team proceed?
- Is this the best solution?

**Case 2: Home Financing Default**

A few months later, a rather unique legal case confronted Saiful. It seemed that Shiraka Bank had extended home financing to a customer on the basis of bai’ bitthaman aajil (BBA). BBA was a contract that allowed the bank to buy a house first and later sell it to the customer for a higher price to be paid over a period of time (usually 15-25 years). Slightly after two years into the contract, the customer defaulted on the monthly payments. Shiraka Bank did everything it could to bring the customer back to the payment latter but all efforts failed.

- What should Saiful and his team do?

**Risk Framework for BBA or Other Sale-Based Shari’a Compliant Financing**

In a conventional framework, the amount outstanding to be paid by the defaulting borrower is calculated by adding a fixed penalty to the amount outstanding of the principal sum at the time of default. In the case of BBA or any other sale-based Shari’a compliant financing, the bank must calculate the amount outstanding by the following formula:
The example assumes that the interest is calculated on an annual basis. If the interest is calculated and charged on a daily basis, the applicable formulae would have been more complicated but for the sake of explaining the differences between conventional and Islamic default cases, we opted for simplifying assumptions.

**Table 2**  
Example of Default: Conventional Versus Islamic

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Islamic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing amount = P</td>
<td>$100,000</td>
<td></td>
</tr>
<tr>
<td>Financing rate (interest rate in case of conventional and mark-up in case of Islamic) = i</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Sale price in case of BBA</td>
<td>(1 + i)P = $110,000</td>
<td></td>
</tr>
<tr>
<td>Financing period = N</td>
<td>1 year (= 365 days)</td>
<td></td>
</tr>
<tr>
<td>Default date = Number of days before the default happened = n</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Penalty = x = percentage default fee</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Amount already paid at the time of default</td>
<td>( \left( \frac{n}{N} \right)(1 + i)P ) = $9,041.09</td>
<td>( \left( \frac{n}{N} \right)(1 + i)P ) = $9,041.09</td>
</tr>
<tr>
<td>Amount of the principal outstanding at the time of default (OUT)</td>
<td>( \left( \frac{N-n}{N} \right) )P = $91,780.82</td>
<td>( \left( \frac{N-n}{N} \right) )P = $100,958.90</td>
</tr>
<tr>
<td>Penalty</td>
<td>x X OUT = $7,342.46</td>
<td>x X SOUT = $8,076.71</td>
</tr>
<tr>
<td>Total amount to be settled</td>
<td>$99,123.29</td>
<td>$109,035.62</td>
</tr>
<tr>
<td>Total cost of borrowing including default penalty</td>
<td>$108,164.38</td>
<td>$118,076.71</td>
</tr>
</tbody>
</table>

Table 2 highlights the operational differences between the two treatments of default. The example is based on a number of simplifying assumptions\(^1\). As shown in Table 2, the amount of penalty faced by defaulting customers of Islamic banks could be significantly higher than their conventional counterparts. In Malaiur, a country dominated by conventional banks, it was deemed a reputational risk for Shiraka Bank if it was seen that an Islamic bank was harsher when its customers defaulted.

\[ \left[ \frac{N-n}{N} \right]P + X \]

where:
- \( N \) = Total number of financing periods (days or months etc.)
- \( n \) = Total number of financing periods after which the default occurred
- \( P \) = Sale price
- \( X \) = The amount of default penalty (which could be a percentage (e.g. 1-8 %) of the amount outstanding, in which case the above formula becomes:

\[ (1 + x) \left[ \frac{N-n}{N} \right]P \]

where:
- \( x \) = percentage default fee

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\(^1\) The example assumes that the interest is calculated on an annual basis. If the interest is calculated and charged on a daily basis, the applicable formulae would have been more complicated but for the sake of explaining the differences between conventional and Islamic default cases, we opted for simplifying assumptions.
## Risk Management Processes for Different Products

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<tbody>
<tr>
<td>Musharaka</td>
<td>Shiraka Bank was actively involved in business management activities and monitored profit and losses of the enterprise regularly.</td>
<td>A stop loss order at the last equity price was defined. This limited the Islamic bank’s losses if the equity share fell below the expected price.</td>
<td>Liquidity risks arose as a result of other risks. Shiraka Bank managed those risks and had additionally so far been fairly liquid. It had also reserved additional capital to manage liquidity risk.</td>
<td>A dedicated team within the compliance department strictly monitored the enterprise. Shiraka Bank was also considering using a takaful solution offered by an international firm specializing in takaful products for Islamic banks and financial institutions to cover losses from external events. It also required its clients to arrange for insurance.</td>
</tr>
<tr>
<td>Diminishing Musharaka</td>
<td>In addition to the above, Shiraka Banks included in the legal contracts the right to sell equity to third parties.</td>
<td>Price fluctuation was a key concern. Shiraka Bank employed static and dynamic analysis to estimate VaR.</td>
<td>(Same as musharaka)</td>
<td>(Same as musharaka)</td>
</tr>
<tr>
<td>Mudaraba</td>
<td>Shiraka Bank monitored business performance and checked the balance sheets often.</td>
<td>A stop loss order at the last equity price was defined and agreed to minimize loss.</td>
<td>Capital Adequacy requirements were taken into account either on regulatory directives or internal estimations.</td>
<td>As mudarib had full management responsibilities, Shiraka Bank ensured that the mudarib was an experienced and knowledgeable agent (by normally restricting financing to their prime customers)</td>
</tr>
</tbody>
</table>
## APPENDIX

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<tr>
<td>Murabaha</td>
<td>Mortgage, guarantee or cash security was obtained prior to the signing of the agreement.</td>
<td>Dynamic simulations of market behavior were used to estimate future commodity prices and benchmark rates. It assisted in determining the right mark up rate.</td>
<td>Shiraka Bank used a number of quantitative models to determine risk and price its products accordingly.</td>
<td>External law firms were used for timely execution of sale and purchase agreements.</td>
</tr>
<tr>
<td></td>
<td>Islamic banks possess the asset for a period of time. During this holding period, the bank is exposed to risks. If it appoints the client as the agent to buy the asset, then risk is reduced.</td>
<td>In case of revolving credit facilities, master murabaha agreements were frequently used to minimise exposure to market risks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salam</td>
<td>Shiraka bank carefully assessed the probability of default and the expected losses.</td>
<td>Shiraka Bank evaluated the future market price based on different market scenarios.</td>
<td>Shiraka Bank used a number of quantitative models to determine risks and price its products accordingly.</td>
<td>Detailed KRIs were developed by Shiraka Bank to ensure that regular and frequent inspections of the fields took place. It also ensured that the possession of the commodities was taken on the farm to ensure minimization of default.</td>
</tr>
<tr>
<td></td>
<td>Mortgage, guarantee or cash security was obtained prior to the signing of the agreement.</td>
<td>Shiraka Bank employed experienced staff that had expertise in the commodity market to offer financing based on salam.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>VaR analysis was also used to evaluate and manage market risk.</td>
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<tr>
<td></td>
<td></td>
<td>Parallel Salam was most frequently used.</td>
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## Risk Management Processes for Different Products

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</table>
| Istisna | Shiraka Bank carefully assessed the probability of default and the expected losses.  
Band al-jazaa (penalty clause) was frequently used to ensure that manufacturers built according to specifications.  
Disbursement of funds could be agreed on a staggered basis subject to different phases of construction. It aligned payments with the milestones. | In most cases, Shiraka Bank sold the commodities or property before the delivery dates (through parallel istisna’).  
It also valued the future market price based on different market scenarios.  
VaR analysis was used to evaluate the future market prices and manage market risk. | Shiraka Bank used a number of quantitative models to determine risks and price its products accordingly. | Detailed KRIs were developed by Shiraka Bank to ensure that regular and frequent inspections of the property take place. By making the payments to the suppliers of inputs, Shiraka Bank ensured that there was no misappropriation of the funds disbursed.  
Guarantees from manufacturer were sought to ensure that they were following an appropriate quality management system. |
| Ijara | Shiraka Banks carefully assessed the probability of default and the expected losses.  
Mortgage, guarantee or cash security was obtained prior to the signing of the agreement. | The bank used different quantitative techniques to simulate and evaluate future market prices of the leased assets, based on different market scenarios and strategies. VaR analysis was the most commonly used practice.  
In some cases, it also used takaful (if an international takaful companies was willing to offer such a service) to insure against losses and damages. | Shiraka Bank used a number of quantitative models to determine risks and price their products accordingly. | Detailed KRIs were developed by the bank to ensure that regular inspections of the leased assets took place. |
A Case Study on Leadership and Organisational Transformation