

## Moody's Analytics' Approach to Regulatory Reporting Requirements for Islamic Finance Products

Islamic finance products call for a specific treatment in terms of credit risk calculation and reporting to meet regulatory requirements. Most current market solutions offer either a one-size-fits-all approach or a separate platform. True to its dedication to the Middle East market, Moody's Analytics has expanded its enterprise risk management platform –Fermat – offering a dedicated, but integrated, user-friendly solution to meet banks' needs.



*Pierre-Etienne Chabanel*  
*Product Manager Fermat CAD Basel II*

### Islamic finance products pose particular challenges for credit risk modelling and reporting

*“Recent market developments are prompting an increasing number of banks to enter the arena of Islamic finance. However, Islamic finance products present banks with a particular set of challenges when modelling them for risk calculation for the purpose of meeting regulatory reporting requirements,”* explains Pierre-Etienne Chabanel, Product Manager Fermat CAD Basel II.

To begin with, the range of such products – Murabahah, Ijarah, Salam, Istina'a, Muradabah and Sukuk being among the most common – does not correspond in any straightforward fashion to the list of conventional, non-Islamic products.

In addition, some Islamic products generate different risks at their different phases. The necessary risk calculations also differ at times from those under the standard Basel II rules.

A number of different approaches have been proposed in addressing this situation – none of which is wholly successful. Adopting a “one-size-fits-all” approach – i.e. attempting to fit Islamic banking products into conventional structures – necessitates making inadequate approximations and using non-Islamic terminology and makes it impossible to carry out specific calculations. Adapting conventional product types or table names to fit Islamic products may work to a degree but this approach cannot handle the various phases of some products (e.g. Murabahah).

Another approach currently proposed is to build completely new and separate structures to host Islamic finance products. A downside of this approach is that no benefit can be gained from the common characteristics between the Islamic and the non-Islamic products – and regulatory maintenance proves difficult.

Moody's Analytics' enterprise risk management solution – Fermat – provides a unique and compelling approach specifically designed to help banks address these challenges.



## Moody's Analytics' approach offers a dedicated, but integrated, module to accommodate risk modelling and reporting needs for Islamic finance products

### Model Islamic finance products and monitor their associated risks

Moody's Analytics' approach is based on a powerful and unique data mart solution, Fermat DataMart.

Fermat DataMart is a centralised data repository allowing banks to store, per reporting date, all the information they need for risk analysis purposes (e.g. detailed contract characteristics, facilities information, security referential, bank portfolio structures, business units and reporting entities, hierarchies of counterparties, market data such as exchange rates or yield curves).

Fermat DataMart features a unique and versatile 'workspace functionality' that allows users to process the same data in different ways for different requirements.

This allows users to model Islamic finance products and to monitor their associated risks from either a conventional banking or an Islamic banking perspective or to meet the requirements of different local supervisors under Basel II.

Many of the data structures within Fermat DataMart have a separate but integrated "Islamic Banking" section that is designed specifically to take into account the special characteristics of various Islamic products and associated issues.

The screenshot displays the Fermat user interface. On the left, a table lists several Islamic finance products with columns for 'Reference' and 'Counterparty'. The selected product is 'FAST\_33603\_003\_LOAN\_IJARAH\_AVAILABLE'. The right-hand side of the interface shows a configuration panel for this product, divided into 'Characteristics' and 'Islamic Banking' sections. The 'Characteristics' section includes fields for Trade date, Value date, Maturity date, Margin type, Margin profit, and Accrual type. The 'Islamic Banking' section includes a Stage dropdown (set to 'AVAILABLE'), checkboxes for 'Purchased at maturity', 'To the purchaser orderer', 'Right to recoup any loss', and 'Binding promise', and a 'Return to seller option' checkbox. It also features fields for Residual value, Residual/Bergain Ccy, Heresh jidlyyah, Heresh jidlyyah Ccy, Underlying MV, Underlying MV Ccy, Acquisition cost, and Acquisition cost Ccy.

*The Fermat user interface offers a separate view for Islamic banking products, with its own settings, results and risk analysis.*

### Use Fermat to comply with Basel II regulatory requirements associated with Islamic products

Moody's Analytics' Fermat CAD Basel II calculation engine and its reporting capability – the Fermat Reporting Tool – is designed to help banks comply with both Basel Accords and to provide the basis for economic capital assessment. With Fermat, banks can achieve Basel compliance in line with tight deadlines and maintain flexibility to adapt to the evolution of local regulations. As such, the Fermat CAD has been defined to support the specific Basel II rules as defined by the Islamic Financial Services Board (IFSB) to estimate credit risk or market risk for Islamic banking products. The different risk components inherent to Islamic finance products have been computed in the platform.



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*Risk components of Islamic finance products in the Fermat Reporting Tool*

	Banking/Trading	Sukuk risk	Equity risk	Commodity risk	Fx risk	Price risk
<b>Murabahah</b>	*				√	√
<b>Salam</b>	*			√	√	√
<b>Istisna'a</b>	*				√	√
<b>Ijarah</b>	*				√	√
<b>Musharakah</b>	Banking			√*	√	
	Trading		√	√*	√	
<b>Mudarabah</b>	Banking			√*	√	
	Trading		√	√*	√	
<b>Sukuk</b>	Banking				√	
	Trading	√			√	

**\*If underlying assets are commodities**

*The Fermat Reporting Tool includes the different risk components associated with each Islamic finance product type.*

The Fermat Reporting Tool also enables banks to produce regulatory capital adequacy reports in the commonly used formats of local supervisors. This includes full compliance with the local regulatory reporting requirements for Islamic banking products where available (namely as detailed by the Bahraini and Malaysian banking supervisors).

As with all regulatory reports produced within the Fermat Reporting Tool, users can easily audit any amount reported in a given cell (by double-clicking in the Excel report) and drill down to detailed information on exposures.



Exhibit 3: Example of a Basel II regulatory report dedicated to Islamic banking products, as defined by the Central Bank of Bahrain

Operating Ijarah					
<b>Asset available for lease (non-binding PL)</b> (Prior to signing the lease contract)	MRAVR.3		15%		-
<b>During the contract</b> (When the lessee gets the right to use the asset and the lease rental payment are due)	MRAVR.4		8%		-
<b>Upon maturity</b> (Leased asset returned to the bank)	MRAVR.5		15%		-
<b>Ijarah Muntahia Bittamleek</b> Asset available for lease (non-binding PL)	MRAVR.2		15%		-
<b>Istisna'a without Parallel Istisna'a</b> (Unbilled work-in-progress)	MRAVR.6		1,6%		-
Facility		Net Position		Gross Position	% Capital Charge
Salam with Parallel Salam	MRAVR.7 Note 1		15%		3%
Istisna'a with Parallel Istisna'a (Unbilled work-in-progress or amount receivable after contract billing)	MRAVR.8 Note 2		15%		3%
<b>Total Capital Charge (MRAVR.1 to MRAVR.8 inclusive)</b>				MRAVR .9	-

## Moody's Analytics' approach offers solutions for Islamic finance products beyond regulatory demands

### Analyse mark-up risk

As Islamic banks do not deal with interest rate, it is often thought that they face no market risks arising from changes in interest rates. However, changes in the market interest rate do introduce some risks in the earnings of those Islamic banks that use a benchmark rate to price their financial instruments. For example, in a Murabahah contract, the mark-up is determined by adding the risk premium to the benchmark rate (usually LIBOR). The mark-up rates on these fixed-income contracts cannot be adjusted. As a result, Islamic banks face risks arising from interest rate fluctuation.

Moody's Analytics' solution for asset & liability management – Fermat ALM – allows Islamic banks to analyse their mark-up risk accurately thanks to a powerful cash-flow generator and unique capability to handle rate curves.

### Manage liquidity risk

Islamic banking principles present particular challenges in terms of liquidity management depending on the source of funding. Indeed, liquidity risk arises from difficulties in obtaining cash at reasonable cost from either borrowings or sale of assets. The liquidity risk arising from both sources is thus critical for Islamic banks. As interest-based loans are prohibited by Shari'ah, Islamic banks cannot borrow funds to meet their liquidity requirements.

The Fermat ALM application can help Islamic banks manage their liquidity risk through the modelling of customers' and funding sources' behaviour and thanks to its accurate liquidity gap analysis.



### ***Moody's Analytics risk management approach for Islamic Finance products***

Use Fermat to:

- › **model Islamic finance products and to monitor their associated risks from either a conventional banking or an Islamic banking perspective.**
- › **generate Basel II regulatory reports associated with Islamic banking products defined by certain local banking supervisors.**
- › **perform other essential types of risk analysis – beyond regulatory demands – such as mark-up risk, liquidity risk, stress testing, consolidated exposures and limit monitoring.**

### **Contact Us**

For more information about Moody's Analytics' solutions for Islamic finance products, please call Wael Jadallah, Director at Moody's Analytics (DIFC) Ltd on +(971) 4401-9545 or via e-mail at [mena@moodys.com](mailto:mena@moodys.com).

