Performance Benchmark for Islamic Financial Transactions
MQAM©
A substitute for LIBOR

O'haj-Kantakji Model (VER. 3.1)

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MQAM مقام

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INTRODUCTION

The spread of Islamic financial institutions (IFIs) in the financial markets has been characterized via its *shari'ah* teachings. Up to date, the focus has been greatly directed to debt-based instruments (i.e. *murabahah*, *istisna'* and *salam*) considering their ability to transfer the financial obligations to the borrower or investor.

Debt instruments generally require the debtor to provide an asset as a pledge against the debt; which eventually restricts the possibility of generating ROI (return on investment) from these assets.

IFIs seldom resort to equity-based instruments (i.e. *mudarabah* and *musharakah*) considering their speculative nature, profit sharing ratio (PSR) requirements and other risks associated with governance and transparency.

LIBOR has been used by IFIs as a benchmark and/or reference guide for long-term investment pricing. It is widely accepted

and recognized in the Islamic Banking industry without taking any genuine innovative movement to fully free the system from interest-based benchmark which does not truly reflect the needed investment behaviour to meet the requirements of Islamic partnership contracts. The arguments and justifications are based on a complete replication of the conventional financial indicators. Moreover, the unjustified views of some scholars clearly show their surrender to the long lasting control of the conventional practice; a very pessimistic position considering the modern Islamic finance being at infancy.

Conventional banks lend and borrow money through charging different interest rates in which they mainly charge the borrower the cost of borrowed money and other risk factors. On a macro level, such practices represent a behaviour that exhaust the economic cycle due to the imbalance among the parties of the investment; the return is guaranteed to one side whilst the risk is transferred to the other, upon which, the result will certainly have no positive impact on the economy considering the likelihood that the loss may spread to creditors.

Considering the current practices, both Islamic and conventional banks transfer the liability to the buyer and borrower, respectively, and prevent his/her assets from further productive investment.

Both Islamic and conventional systems share the proactive of using the same index (LIBOR); being the most practical and

widely used index based on the widely spread conventional beliefs.

The question arises is that though conventional financial institutions heavily rely on LIBOR considering the adherent nature in their system and seeing it as a complementary element of the system, how can we justify such act for IFIs considering its proponents' opposing views to *riba* (interest) that is strictly prohibited by *shari'ah*.

Back in 2003, after intensive discussions with practitioners; I published a working paper in which I proposed a standard for measuring the performance of Islamic financial transactions as a substitute for LIBOR, employing profits rather than the cost of fund, interest and other related elements of LIBOR.

After seven years, we presently are able to offer an alternative to LIBOR which measures the efficiency of long-term investments and evaluate investment decisions. We are able to finally propose an alternative technique to replace the interest-based instrument (LIBOR).

The debate towards a substitute to LIBOR has arisen among the members of **Kantakji Group**[1]**, which** focuses on research activities related to Islamic economics, Islamic jurisprudence, banking and finance. Eventually, this debate has resulted in the creation of an innovative mechanism that will help in increasing the effectiveness of the formulas developed for the Islamic financing instruments and particularly designed to avoid *riba* based approaches. Upon the blessing and

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[1] Kantakji Group, link

empowering of Allah SWT, we have developed a model "O'haj – Kantakji Model" that resulted in several indicators, the key indicator "MQAM" refers to the Arabic translation of "Performance Benchmark for Islamic Financial Transactions".

MQAM is aimed at benefiting all people, all Muslims and and hopefully the Islamic financial system. This model proves to LIBOR proponents that chose the path of imitation that the justification for the usage of LIBOR is no more valid *Insha'Allah*.

We hope that this proposed model of MQAM will consist a cornerstone for a future building and reconstruction of the financial behaviour around the universe. We recommend using both indicators in the financial markets at this stage, MQAM as well as LIBOR until you are fully convinced of its effectiveness and applicability.

And that before the publication of version 3.0 of the book in two days the following news was issued:

Executive Director Andrew Bailey announced to the Financial Conduct Authority (FCA) on July 27, 2017: the abolition of the British Libor interest rate index at the end of 2021 and its replacement with a more efficient and efficient standard system after its reputation was damaged after a series of manipulations; Which involved major banks fined a total of 9 billion dollars.

The chief executive said the index was inefficient because of the low number of transactions on which it is priced, as well as the absence of data on the volume of transactions, and it must be replaced by another indicator that reflects a greater role in the volume of operations. There have been suggestions for some time to use other indicators.

News link: www.fca.org.uk/news/speeches/the-future-of-libor

This is a virtue of God ..

MODEL FRAMEWORK

(O'haj –Kantakji) model to estimate the rate of return of any proposed project on the consideration of the future cashflows expected relative to the capital invested. The future cashflows are supposed to take into account the economic conditions prevailing (i.e. growing or recession), and others prevailing factors.

So, the customer provides a feasibility study for the proposed project to indicate the size of the expected cashflows in addition to other indicators.

Then the fund provider (i.e. Islamic Bank), provides the needed financing taking into consideration the results of (O'haj-Kantakji) model reflecting the data from the feasibility study.

Such approach, using the forecasted cashflows (i.e. the difference between cash inflows and outflows) is not original, but it was a focus by studies evaluating investment decisions.

Firstly:

NPV (net present value) Seeks to calculate the net value of the current asset based on pre-assumed discount rate. In other words; NPV is used to calculate the net cashflow based on pre-determined future value, relative to the cash from the current assets flow. So the NPV calculates the difference in the cashflows between the current and expected future cashflows using a discount rate calculated on the base of prevailing cost of funds, which is referred to as the prevailing interest rate or LIBOR.

Due to the different times of cashflows which requires different interest rates for that time, as a result NPV does not provide a scientific and objective representation, taking into consideration that NPV value provide a final judgement for considering the project or not!!

The net value of the project goes up if the pre-assumed interest rate applied is low, and vice versa. As a result, to determine the discount rate at future cashflows will remain the challenge facing the application of the standard net present value NPV principle.

Secondly:

IRR (Internal Rate of Return) is another widely used indicator to determine the whether the investment decision is profitable. So, IRR is follows the same path as NPV, which as a result replicates the working mechanism of the NPV principles, but with different criteria and assumptions. In other words; IRR looks for the discount rate (discount) which makes the net present value of the project equal to zero. Therefore, the criteria's are closely related to each other's due to the fact of adopting the same equation but with different assumptions.

The IRR is calculated by trial and error that results in the rate which corresponds to NPV to approach zero.

So the project is considered acceptable if the internal rate of return is greater than the interest rate on long-term investments (i.e. government bonds).

The NPV and IRR overlapping concepts can be represented as in Figure (1) below[1]:

$$-CF_0 + \frac{CF_1}{(1+IRR)^1} + \frac{CF_2}{(1+IRR)^2} + \ldots + \frac{CF_n}{(1+IRR)^n} = 0$$

$$NPV = \sum_{i=1}^{n} \frac{CF_i}{(1+IRR)^i} = 0$$

So, if we assume that a project cashflows over its life tome of five years as follows: -1000, 500, 400 300 100, then the following graphic representation shows that the present value PV of the inflows will reach 1000 and the net present value equal to zero.

	0	1	2	3	4
Cashflows					
	1000-	500	400	300	100

Sum of PVs for CF$_{1-4}$

1000

Net Present Value   0
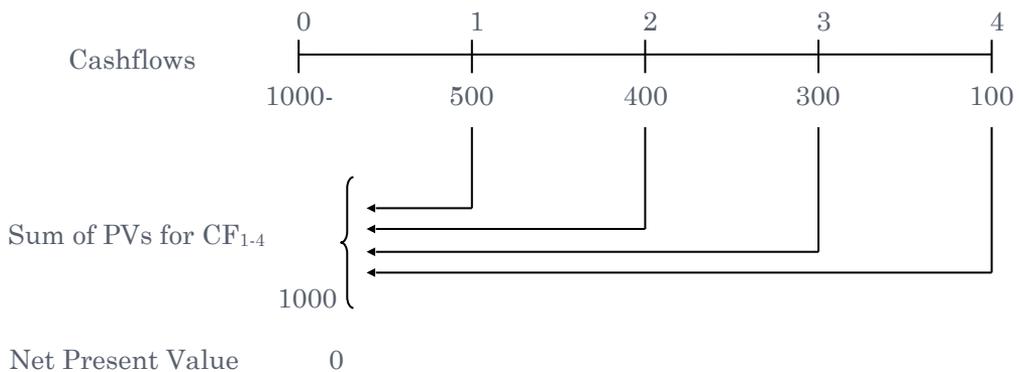
$$-1000 + \frac{500}{(1+IRR)^1} + \frac{400}{(1+IRR)^2} + \frac{300}{(1+IRR)^3} + \frac{100}{(1+IRR)^4} = 0$$

While applying (O'haj- Kantakji) allows the calculation of (MQAM), which aims to determine the cost of appropriate funding calculating the expected return, by depending on the flows of the project expected to assess the feasibility of

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[1] Eugene F. Brigham and Michael C. Ehrhardt, Financial Management Theory & Practice, Thompson, South Western, USA, 2005, P. 351-355.

investing in the project instead of the interest rate based calculation.

So, MQAM allows access to the rate of return through cashflows assumptions that resemble the internal rate of return IRR mechanics, or aim to the determination of net cashflows to be achieved when the return reaches the target; simulating the approach of the net present NPV without the need to base on the interest rate; such as in LIBOR or SIBOR ... etc.

MODEL OBJECTIVES:

We aim to implement MQAM to achieve the following:

- Promote the use of Mudarabah by helping to determine the percentage distribution of profits between "rab al-mal" and "Mudarib" on the basis of cashflows rather than the party's negotiation.
- Support credit due diligence studies that focus upon the banks to indicate the extent to which the client is alleged to have cashflows sufficient to pay his obligations.
- Protect owners, employers, and society as a whole through reliable indicators derived from real cashflows in order to avoid liquidity crisis as seen in the recent financial crisis.
- The total elimination of reliance on bank interest (LIBOR, and similar products) and to be avoided in all applications.

MODEL LIMITATIONS AND CRITERIAS:

The model (MQAM) is based on the assumptions that the expected cashflows of the project, according to the proposed feasibility study, matches the actual cashflows by the end of the project after fulfilling all debt obligations and services.

The above assumption is a condition for the application of MQAM model and the efficiency of the project is by achieving the cashflows forecasted after the reinvestment of those discounted cashflows.

The client is also responsible for the accuracy of the data forecasted in the feasibility study; jointly with the company preparing it (i.e. moral and legal responsibility).

Other assumptions are:

- The project has to achieve any annual cashflows, negative or positive.
- The five-year funding period is a preferred period.
- To re-invest funds (existing + incoming cash inflows) in the same discount rate generated by MQAM

HYPOTHESIS OF THE MODEL

- Are the model (O'haj-Kantakji) criterias and limitations feasible?
- Does the model (O'haj-Kantakji) fit to evaluate investment projects?

MODEL FORMULA

The model (O'haj-Kantakji) can be formulated into two opposing approaches:

The first method: calculate the target rate of profit target in terms of cashflows.

The second method: calculate the cashflows in terms of the target rate of profit.

METHOD ONE:

Calculating the target rate of profit target in terms of incoming cashflows:

The idea of this approach is based on a proposed equation represents the neutral point where an alternative mechanism for calculating the balancing point between the cashflows forecasted on the study (for five consecutive years, for example) and the current actual cashflows of the project. We will be able also to apply the model of each year separate from the other, which makes the equation even valid for one year, whether the cashflows proposed annually are equal or not.

The model assumes that the product of the apportionment of the total cashflows to yield the target is brought to the number of years that have achieved such flows is equivalent to the target multiplied by the return of capital invested.

And it can be formulated the hypothesis that equation the following sports:

$$\frac{TotalCashFlow}{TargetedDiscountrate^n} = TargetedDiscountRate \,.\, InvestedCapital$$

$$\frac{\sum_{i=1}^{n}(CF_i)}{R^n} = R \,.\, C \qquad (1)$$

Where:

CF   Cashflows

R   Target discount rate through year (n)

n   *Number of years*

C   *Invested Capital*

Based on the equation (1) we can determine the total cashflow equation as follows, equation (2):

$$TotalCashFlow = TargetedDiscountRate^n \,.\, TargetedDiscountRate \,.\, InvestedCapital$$

$$\sum_{i=1}^{n} CF_i = (R)^n \,.\, R \,.\, C \qquad (2)$$

By dividing both sides of equation (2) on invested capital (C) we get equation (3):

$$\frac{TotalCashflows}{InvestedCapital} = (TargetedDiscountrate)^{(n+1)}$$

$$\frac{\sum_{i=1}^{n}(CF_i)}{C} = R^{(n+1)} \qquad (3)$$

$$TargetedDiscountRate = \left(\frac{TotalCashflows}{InvestedCapital}\right)^{\frac{1}{(n+1)}}$$

$$R = \left(\frac{\sum_{i=1}^{n} CF_i}{C}\right)^{\frac{1}{n+1}} \qquad (4)$$

The targeted discount rate for the first year shall be calculated as follows

$$R_1 = R \qquad (5)$$

The targeted discount rate by one year is calculated according to the following equation:

$$R_{(i)} = R^i \tag{6}$$

MQAM is calculated on the basis of cashflows for several years, and can be calculated from the following equation:

$$MQAM = \frac{(TotalCashlows)^{\frac{1}{(n+1)}}}{InvestedCapital} - 1$$

$$MQAM = \left(\frac{\sum_{i=1}^{n} CF_i}{C}\right)^{\frac{1}{n+1}} - 1 \tag{7}$$

To calculate MQAM on the basis of cashflow for one year, the equation is as follows:

$$MQAM = \left(\frac{CF}{C}\right)^{\frac{1}{n+1}} - 1 \tag{8}$$

Example:

An investment project (A) request the bank to finance a mudarabah of 100000 pounds, for five years. Feasibility study shows that the project will achieve annual cashflows of 100000 pounds a year until the end of the project.

Required:

1. What is the minimum rate of return, which should be accepted by the Islamic Bank?

2. Establish a minimum rate of return.

3. Assuming that the bank aims to achieve a return of 9.6% annually. Did the Islamic bank achieve its targeted credit policies?

Solution:

I. Determining the minimum that must be accepted by the bank:

By applying equation (7) we can build the following table (1):

year	Discount Rate	Cashflows	Financer's Share Share1	Reinvested Cashflows	Profits of reinvesting
n	R	CF	DCF	CFp	(Share2)
1	1.30766	100,000	76,472.45	100,000.00	
2	1.70998	100,000	58,480.35	158,480.35	
3	2.23607	100,000	44,721.36	251,959.86	
4	2.92402	100,000	34,199.52	363,677.47	
5	3.82362	100,000	26,153.21	501,719.86	
total	-	500,000	240,026.89	501,719.86	261,692.97

TABLE (1)

MQAM =1 - (500000/100000)^(1/6) = 0.30766

So, the minimum accepted percentage by the Bank to finance the Mudarabah application form and according to MQAM is equivalent to 30.766%, taking into account the requirement of re-investment of funds received in the same proportion.

Establish a minimum rate of return

Requests Bank the amount of 30,766 pounds, a minimum of five years to return. To prove this we apply the following equation:

$$MinimumRateOfReturn_{(n)} = \frac{InvestedCapital \cdot (n)year}{MinimumCoefficientRate_{(n)}}$$

$$R = C \cdot \frac{n}{R^n} \tag{9}$$

Where R_n $is\ calculated\ from$:
$R_n = R_1^{(n)}$ = 1.30766^5 = 3.82362

CONCLUSION AND RESULTS

(O'haj-Kantakji) Model is proposed mechanism:

- That can be used as an alternative to the traditional borrowing based on interest or the forbidden riba.
- (O'haj-Kantakji) approach can be applied to Musharakah or Mudarabah, where the fund owner bears the loss as long as not due to negligence.
- A tool to assist in identifying the investment rate of return target (i.e. an alternative to LIBOR) for identifying the breakeven point, on the basis of expected cashflows of the project to be funded and not on the basis of seeking the indicators of riba or interest (such as LIBOR). Assuming that the minimum return on the annual target by the financier (any Islamic Bank) is to achieve a rate of 9.6% annual profit return and the total life of the project is five years, then the total return is expected financier will get in such case is 48% (9.6% × 5 years).
- A judging instrument to determine whether funding is allowed.
- An instrument to assist in designing and determining the targeted cashflows.

Accordingly; the proposed Model (MQAM) clearly shows the feasibility and practicality of a substitute to LIBOR and as an evaluator instrument to proposed investment projects.

We are stressing advise here to all practitioners working in the financial markets to utilize and apply (MAQAM) to the test – side to side – with LIBOR, until MQAM proves its effectiveness and practically shows its applicability.

The model also includes related topics, with important applications, like:

- Efficiency (MQAM) and measurement of the quality of cashflows.
- Sensitivity analysis (MQAM).
- The choice between investment decisions.
- Pricing of financial products and liquidity pricing.

www.kantakji.com