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Analysis of Profits Obtained from *Sukuk* Investment using *Ijarah* and *Musyarakah* Mutanaqisah Concepts

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ABSTRACT

Musyarakah and *ijarah* are among the popular models of *sukuk* and *musyarakah mutanaqisah* is an improvised model of *musyarakah* currently available in financing only. In *musyarakah mutanaqisah*, if the same model is to be applied to *sukuk*, the periodic payments made by issuer to the investor are for the payments of profit and to buy out the ownership of the asset. In this paper we compared the amount of profits obtained from investment in *sukuk* by using *ijarah* and *musyarakah mutanaqisah* principles. Some mathematical formulas for the computation of profits for the two models are used. The data for the study is taken from the Bank Negara website for a sukuk with 4.5% coupon rate, five-year tenure and AA rating. From the analysis done, we found that the profit obtained under the *musyarakah mutanaqisah* model is higher compared to the one under *ijarah*. Hence, we think *musyarakah mutanaqisah* principle should be seriously considered as an alternative to other Islamic concepts already available in the sukuk market.

Keywords: ***Sukuk, Musyarakah, Musyarakah Mutaqisah, Ijarah, Islamic Investment***

INTRODUCTION

In Malaysia, up until in the late 1980s, the issuance of debt securities was based on conventional system where the interest payments were considered as *riba*', which is prohibited to Muslim. In Islamic law, any financial transaction must be clear from prohibited elements such as interest, uncertainty (*gharar*) and gambling (*maisir*) (Chakir and Raei (2007)). Therefore, conventional system cannot flourish especially in a country like Malaysia where the Muslim population is the majority. Hence, there was a high demand and need for developing an alternative to traditional debt markets that can be acceptable by the Islamic law. As a result, the 1990's saw a thriving multi-billion dollar market in *Shariah*-compliant sovereign and corporate Islamic structured financial instruments known as *sukuk*. In the 2000s the Islamic capital market became more dynamic and the idea was quickly and widely accepted not only by Muslim investors but also by non-Muslims' around the world (Umar (2001)). In recent years, the global world *sukuk* market has grown tremendously from US$8 billion in 2003 to US$50 billion in mid-2007 with Malaysia and the Gulf region as the main hubs in *sukuk issuance* (Chakir and Raei (2007)).

Sukuk is frequently referred to as an Islamic bond, but a more accurate translation of the Arabic word would be the "Islamic Investment Certificate". It is operated in a similar manner to that of a conventional bond with a fix term maturity, may bear a coupon and traded on the normal yield price relationship. The major difference between them is, a conventional bond represents the issuers' pure debt, while *sukuk* represents the ownership stake in an underlying asset (Chakir and Raei (2007)). The transaction of sukuk must be clear from prohibited elements such as interest, uncertainty *(gharar)* and gambling *(maisir*).

Sukuk may be issued under different principles according to the need of the issuers, demand by the investors and tenure. In Malaysia, the most popular sukuk issued are the *Murabahah*, *Bai'bithaman Ajil Ijarah* (BBA), *Ijarah, Musyarakah and Istisna'* principles (Bank Negara Malaysia (2008)). These principles are based on the similar structures used as mode of financing under the same names. Since these principles differ in structure, the computation of the profit may also differ by virtue of the different formula used. When investors invest, they may not know about the implementations of the formula or how it is being used to determine the profit of their business ventures. So, when they decide to invest in a certain *sukuk*, they may not be aware that different principle of *sukuk* may give different profit because of the difference in its structures and mathematical formula used.

Figure 1 below shows the percentages of Islamic corporate bonds of different concepts issued in Malaysia in the year 2004 and as of March 2008.

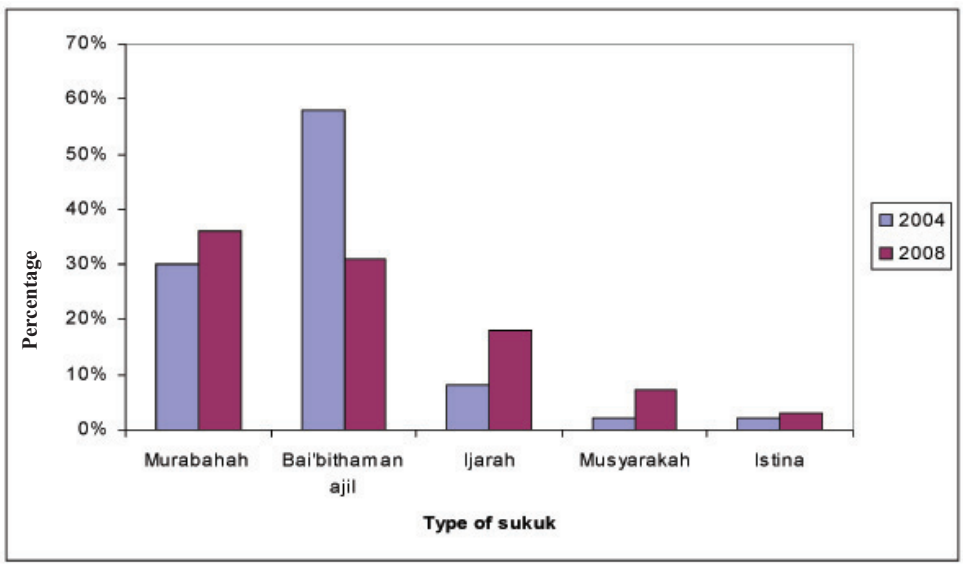

Figure 1: Islamic Corporate Bonds Issued in 2004 and as at March 2008
Source: Bank Negara Malaysia

From the Figure 1 above, the *sukuk* issued under the *musyarakah* principle has not been that encouraging in terms of volume and increase in percentage. We are not really sure of the actual reasons why it is so. However, we would like to investigate on the profitability of the application of an improvised *musyarakah* principle called diminishing *musyarakah* or better known as *musyarakah mutanaqisah* in *sukuk*. At the moment *musyarakah mutanaqisah* concept is used in financing but not as an instrument in the issuance of *sukuk* yet. The *ijarah* model is used as a mean of comparison because the formula for the computation of profit using this model is made available for us by the Bank Muamalat, Kuala Lumpur and it is slightly more popular than *musyarakah* as indicated in Figure 1.

IJARAH MODEL FOR SUKUK

Ijarah is a lease-based certificate which means investors will purchase a certain *Shariah*- compliant assets from the issuer at a purchase price. The issuer will lease back the asset from the investor and the investor, in turn, can earn the profit from the leasing payments made by the issuer. The expected returns are fixed and can be treated as the coupon and at the end of maturity date the issuer will buy back the asset (Rahman (2008)).

Figure 2 below shows a typical structure for *ijarah sukuk* model.

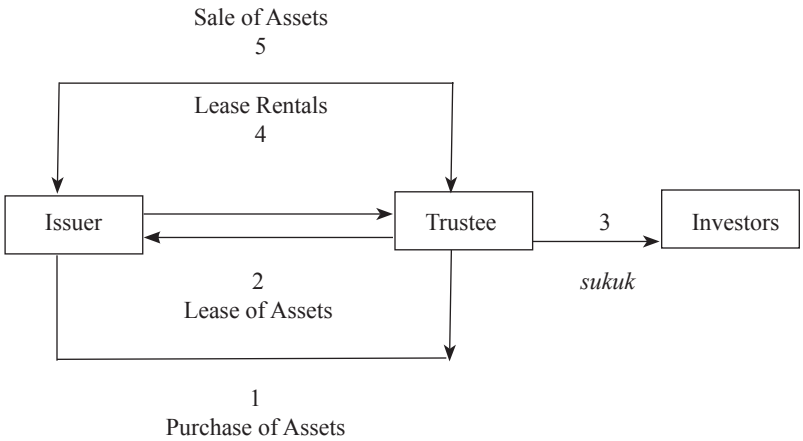

Figure 2: Ijarah Sukuk structure
Source: Cagamas Berhad, 2008

Under the *ijarah* principle, a trustee on behalf of the *sukuk* holder will purchase certain *Shariah*-compliant leasable assets from the issuer at an asset purchase price. The trustee will lease the asset to the issuer under an *ijarah* agreement for a pre-determined lease rental. The issuer will pay the periodic lease rental on each rental payment. On the maturity, the issuer will purchase the asset from the trustee for a consideration plus other related expenses.

MUSYARAKAH MODEL FOR SUKUK

Musyarakah refers to a business partnership or a joint venture between two parties where the contribution of the capital for investment, the management of the business and the distribution of profits will be apportioned according to an agreed ratio. In the event of losses, both parties will share them on the basis of their equity participation. For sukuk investment, the investors may form a *musyarakah* among themselves and through a trustee, they can invest in certain *Shariah*-compliant assets of the issuer and appoint the issuer to manage their venture. The issuer will be paid an incentive management fee. The profit from the venture will be distributed by the issuer to the trustee who then distributes to investors in the form of periodic payments (Rahman (2008)).

Figure 3 shows a typical structure for *musyarakah mutanaqisah sukuk* model (adopted from *musyarakah mutanaqisah* financing model).

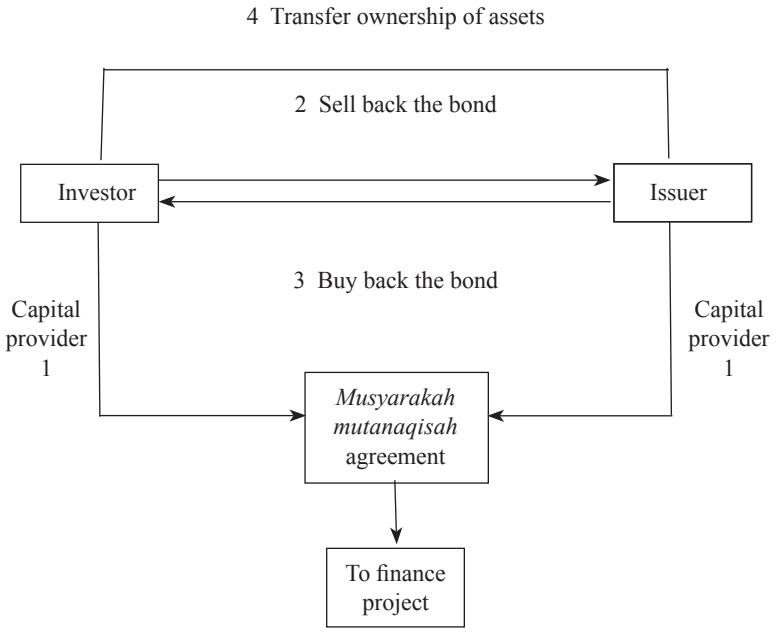

Figure 3: Musyarakah mutanaqisah sukuk structure
Source: Bank Negara Malaysia

M*usyarakah mutaqisah* or diminishing *musyarakah* is an improvised form of *musyarakah* where issuer will make a periodic payment to the investor for profit of the venture and also for the purchase price of the *sukuk* which partially contributes towards increasing his/her share in the equity. At the end of maturity date and upon payment of all *sukuk*, the issuer would have acquired all the investor's shares and the partnership will come to an end with the issuer being the sole owner of the project. Jaafar (2006) had introduced a new *musyarakah mutanaqisah* model in managing a joint venture between two parties where the profit is distributed according to the agreed ratio and one party will slowly acquire the share of the equity through periodic payments and eventually owns the business at the end of tenure (Jaafar (2006)). Miswan (2008) had adapted her model in his study entitled *Managing Islamic Bond using Musyarakah Mutanaqisah Model.* In his research, he compared this new *musyarakah mutanaqisah* model with *bai'bithaman ajil* (BBA) in terms of investors' profit and proposed that the total profit using the *musyarakah mutanaqisah* principle was higher compared to the one from BBA (Miswan (2008)).

COMPUTATIONS OF PROFITS USING *IJARAH* AND *MUSYARAKAH MUTANAQISAH* PRINCIPLES

The set of data is taken from Bank Negara website for Plus SPV Berhad which issued RM 175 millions worth of sukuk on 27 June 2008 with a face value of RM100, 4.5 % coupon rate, five years tenure, AA rating and semi-annual profit payment.

Ijarah Principle

Under the *ijarah* principle the mathematical formula applied is adopted from the one used by Bank Muamalat with the assumption that the investor holds the *sukuk* until maturity date and the first payment for the profit is paid at the end of the first period.

The mathematical formulae indicated below are needed for the computation of profit obtained under the ijarah principle.

Profit = Proceed at Future Value – Proceed at Present Value

$$\text{Price} = 100\left(1+\frac{r}{200}\right)^{-t} + \sum_{k=1}^{t}\frac{c}{2}\left(1+\frac{r}{200}\right)^{-k}$$

$$\text{Proceed at Present Value} = \frac{\text{Redemption Value} \times \text{Price}}{100}$$

$$\text{Future Value} = \sum_{k=1}^{t-1}\frac{c}{2}\left(1+\frac{r}{200}\right)^{k-1} + 100$$

$$\text{Proceed at Future Value} = \frac{\text{Redemption Value} \times \text{Future Value}}{100}$$

c Coupon rate

r Yield to maturity rate

t Periodic Payment number;

N Number of semi-annual lease payments between the issue date and maturity date

The value r in the formula for price and future value is the yield to maturity rate (YTM) which varies from year to year and it is determined by Bank Negara according to the rating given to a particular *sukuk*. For SPV Berhad *sukuk* which was rated AA, the value r for each period is indicated in Table 1 below. Since the profit payments are made semi-annually, the YTM for the second period for each year is taken to be the average of the YTM for the previous year and the current year. For example, the YTM rate for period 3 is 4.50 which is the average of the YTMs from period 1 and period 3.

Table 1: Yield to Maturity (YTM) of *sukuk*

Year	Period	YTM
0.5	1	2.17
1.0	2	4.34
1.5	3	4.50
2.0	4	4.66
2.5	5	4.83
3.0	6	5.00
3.5	7	5.09
4.0	8	5.18
4.5	9	5.27
5.0	10	5.35

Source: Bank Negara Malaysia, 2008

An example of the calculation of *sukuk* price and profit for *ijarah* at the end of the first period:

$$\text{Price} = \left\{\frac{100}{\left(1+\frac{2.17}{200}\right)^{1}}\right\} + \left\{\sum_{k=1}^{1}\frac{0.045/2}{\left(1+\frac{2.17}{200}\right)^{1}}\right\}$$

$$= \text{RM } 98.92664589 + \text{RM } 0.02225850 = \text{RM } 98.94890439$$

$$\text{Proceed at Present Value} = \frac{\text{RM}175000000}{\text{RM}100} \times \text{RM } 98.94890439 = \text{RM } 173160582.68$$

$$\text{Future Value} = = \left(\sum_{K=1}^{1-1}\frac{0.045}{2}\left(1+\frac{2.17}{200}\right)^{1-1}\right) + 100 \text{RM } 100.02250000$$

$$\text{Proceed at Future Value} = \frac{\text{RM } 175000000}{\text{RM } 100} \times \text{RM } 100.02250000 = \text{RM } 175039375$$

Profit = RM 175039375 – RM 173160582.68 = RM 1878792.32

$$\text{Hence, the profit for each unit of } \textit{sukuk} \text{ is} = \frac{\text{RM}1878792.32}{1750000} = \text{RM } 1.07359561$$

***Musyarakah Mutanaqisah* Model**

The formula to determine the investor's equity and profit after t periods under the *musyarakah mutanaqisah* model was proposed by Jaafar (2006) with profit sharing ratio of 90% : 10% and the price of *sukuk* is at par.

The amount of accumulated profit received by investor at the end of t period is

$$U_t = k\left\{100[(1+r)^{t}-1] - B\left(\frac{(1+r)^{t}-1}{r} - t\right)\right\} \text{ where}$$

$$B = \frac{100k[(1+r)^{10}-1]+100}{10(1-k)+k\frac{(1+r)^{10}-1}{r}} \quad C_t = rk\left(100(1+r)^{t-1} - B\frac{(1+r)^{t-1}-1}{r}\right)$$

k Profit-sharing rate as agreed by investor and issuer
r Profit rate on single semi-annual payment
B The amount of periodic payment by the issuer to the investor
C_t The amount of semi-annual profit for investor at the end of t - 1 period

Below is an example of the calculation of *sukuk* profit under the *musyarakah mutanaqisah* model at the end of the first period.

$$B = \frac{(\text{RM } 100)(0.9)[(1+0.045)^{10}-1]+\text{RM } 100}{10(1-0.9)+(0.9)\frac{(1+0.045)^{10}-1}{0.045}}$$

$$= \frac{(90)(0.552969421) + \text{RM } 100}{1 + 11.05938843} = \text{RM}12.4191$$

$$C_1 = (0.045)(0.9)\left(\text{RM } 100(1 + 0.045)^{1-1} - \text{RM } 12.4191\frac{(1 + 0.045)^{1-1} - 1}{0.045}\right)$$

$$= (0.0405)\ (\text{RM}100 - 0) = \text{RM } 4.05$$

$$U_1 = 0.9\left\{(\text{RM } 100)\left[(1 + 0.045)^1 - 1\right] - \text{RM } 12.4191\left(\frac{(1 + 0.045)^1 - 1}{0.045} - 1\right)\right\}$$

$$= 0.9\{\text{RM}100)(0.045) - 0)\} = \text{RM}4.05$$

RESULTS AND DISCUSSION

Ijarah Principle

The amount of proceed at present value and proceed at future value obtained by the issuance of RM175 millions of *sukuk* by Plus SPV Berhad using *ijarah* principle is computed by using Microsoft Excel and tabulated in Table 2 below.

Table 2: The amortization schedule of *ijarah sukuk* at Present Value

Payment No	Period	Price	Proceed at Present Value	Future Value	Proceed at Future Value
1	0.5	98.94890439	173160582.68	100.02250000	175039375.00
2	1	95.84086424	167721512.42	100.04548825	175079604.44
3	2.5	93.60730473	163812783.28	100.06903014	175120802.75
4	2	91.28357792	159746261.36	100.09319464	175163090.63
5	2.5	88.85760582	155500810.19	100.11806657	175206616.49
6	3	86.35361942	151118833.98	100.14372408	175251517.13
7	3.5	84.01105867	147019352.68	100.17004837	175297584.65
8	4	81.66111476	142906950.83	100.19719016	175345082.78
9	4.5	79.30810827	138789189.48	100.22520903	175394115.80
10	5	76.99367860	134738937.55	100.25410981	175444692.16

Musyarakah Mutanaqisah Principle

The amount of the profit and accumulated profit obtained by the issuance of RM175 millions of *sukuk* by Plus SPV Berhad by using *musyarakah mutanaqisah* principle is computed by using Microsoft Excel and tabulated in Table 3.

Table 3: The amortization schedule of *musyarakah mutanaqisah*

Payment number (t)	Periodic Payment (B) B	Profit for investor C_t	Accumulated profit for investor U_t
1	12.4191	4.0500	4.0500
2	12.4191	3.7293	7.7793
3	12.4191	3.3941	11.1734
4	12.4191	3.0439	14.2173
5	12.4191	2.6779	16.8951
6	12.4191	2.2954	19.1906
7	12.4191	1.8957	21.0863
8	12.4191	1.4781	22.5643
9	12.4191	1.0416	23.6059
10	12.4191	0.5855	24.1914

The summary of the amount of profits obtained in *sukuk* investment by using *ijarah* and *musyarakah mutanaqisah* principles is indicated in Table 4 below.

Table 4: Total profits earned by investor on *ijarah* and *musyarakah mutanaqisah* principles

Payment Period (t)	*Ijarah*	*Musyarakah mutanaqisah*
1	1.0736	4.0500
2	4.2046	7.7793
3	6.4617	11.1734
4	8.8096	14.2173
5	11.2605	16.8951
6	13.7901	19.1906
7	16.1590	21.0863
8	18.5361	22.5643
9	20.9171	23.6059
10	**23.2604**	**24.1914**

Table 4 shows that for a *sukuk* with coupon rate of 4.5% and five years tenure, the *ijarah* model gives RM **23.2604** and the *musyarakah mutanaqisah* model gives a profit of RM **24.1914** per one unit of *sukuk* issued. Hence, the *musyarakah mutanaqisah* gives better profit than *ijarah* for all period of up until five years.

CONCLUSION

This paper made comparative analysis of profits between *sukuk* investment under the *ijarah* and *musyarakah mutanaqisah* principles by using the data taken from Bank Negara Malaysia. Based on the results obtained we found that the *musyarakah mutanaqisah* model gives a better profit than the one given by *ijarah* model for *sukuk* with tenure of five years or less with a coupon rate 4.5%.

The *musyarakah* model has not command much of the Malaysian *sukuk* market as indicated by 2% in year 2004 and only 7% as of March 2008. We do not know the actual reason or reasons why the volume of *sukuk* issued in Malaysia under this model is still comparatively small, but, we hope that the results of this study together with the one obtained by Miswan (2008) will open the eyes of potential investors that *musyarakah mutanaqisah* model has a potential to give good returns for their investment.

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