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DETERMINANTS OF RISK AND RETURN PERFORMANCE SIGNIFICANCE ON MATURITY BASED SUKUK MARKET STRUCTURE

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ABSTRACT: *This research focuses on determinants of recent return and risk performance in the sukuk market. Therefore, this paper attempted to identify different types of risks embedded in sukuk structure and to determine the impact of different types of risks on return of sukuk analyze the relationship between risk and sukuk returns as objectives. Data were collected on periodic basis for determining the impact on daily from 2005 to 2013. This research study considered sukuk returns as dependent variable and many independent variables such as diverse risks, which are interest rate risk, inflation risk, foreign exchange risk, legal risk, Shari'ah compliance risk, credit risk, default risk, maturity risk, liquidity risk, and reinvestment risk. The data presentation and analysis using line charts and descriptive statistics followed by the correlation analysis, regressions i.e. ordinary least square (OLS) are conducted with F and t statistics.Results of this study reveal that Dow Jones maturity base confirmed that four models explain 70% to 80 % of variation such as DJ M3T sukuk return is 80%, DJ M5T sukuk return is 78%, DJ M7T sukuk return is 75% and DJ M10T sukuk return is 75%.There is relationship between market risk ,credit risk ,operational risk , liquidity risk and Sukuk returns. These results revealed that objectives set in this research study proved the relationship between total return and different type of risks. This research has implications for the managerial and policy making level. Since sukuk markets are becoming famous globally developed countries try to adopt Islamic sukuk for prevailing financial crisis.*

KEYWORD: Market, Performance, Return, Risk, Maturity**.**

INTRODUCTION

Islamic finance is still in its development stage. In the case of Shari'ah compliance, the sukuk issuance is subject to change of Shari'ah scholars' opinion. The IDB trust (2005) point out that the Shari'ah opinions on sukuk could change, leaving uncertainty about their Shari'ah compliance. In addition, there is no provision yet at local or international level that approval by a particular Shari'ah board is universally acceptable to others. Durrath Sukuk Company (2004) identified that the sukuk issuance has faced a number of legal challenges in the capital market. The enforcement and jurisdiction law, the non- recognition of precedent in many country, non-existent of trust law, the taxation law, and the property ownership law are some of the legal challenges. Therefore, sukuk is also exposed to legal risk which has impact on all types of risks which may lead to have an effect on sukuk returns. However, legal part of sukuk is inherently incorporated in the Islamic financial system.

Treating sukuk as an equity product rather than debt finance could result in heavy tax being imposed according to KPMG (2009), placing them at a competitive disadvantages against

conventional bond issues. This tax risk is because sales or purchase of certain assets under sukuk arrangement can be subject to profit tax and stamp duty in some countries. As discussed by Tariq (2004), the issuers of sukuk will need to response to fluctuation in libor as any raise in income will have to be common with the investors.

According to Al-Amine (2012), any increase interest rate directs to the decrease in the fixed returns sukuk values. The Global Research (2008) expresses that market risk is composed of interest rate risk, foreign exchange rate risk, equity price risk and commodity risk, and explain that sukuk based on the fixed rate are exposed to risk in the same manner as fixed rates bonds through the practice of benchmarking with libor. And it also states that credit risk and counterpart risk in Islamic finance are unique because of the nature of Islamic finance instrument that become the foundation of sukuk asset pools. Major sukuk issues are based on Ijarah, Istisna, Salam and Murabaha contracts. Salam contract, exposed to the risk as commodity, will not be supplied on time. Similarly, Istisna contract will involve performance risk. And it is also expressed that the Shari'ah compliance risk becomes an issue when the transaction involves non Islamic jurisdiction. Therefore, impact of various risks on returns on different sukuk structure is important.

Sukuk market has developed globally. Studies highlight this development. For example, Kane & Harnischfeger (2009) in mention that, another factor for the slowdown of sukuk issuance is related to default. The rights of investor is limited to the sukuk assets, while some sukuk, such as Nakheel sukuk issued in Dubai were secured by existing real estate development and land that were 50% devalued. The documents clearly saw Dubai government would not back Nakheel Dubai World Project as against the promoters said at the time of issuance. As reported in the Islamic Finance Gateway, Thomson Reuters (2013) large portions of sukuk in the recent low rate environment will necessarily decline in value, if rates increase in the market. The cost of swapping to variable rate utilizing profit rate swaps is still a new and relatively expensive practice for Islamic financial institution. As further pointed out in Thomson Reuters (2013), the supply of international sukuk is limited compared to the high investment demand that expect the paper from issuer with solid reputation in the market. Despite such high demand liquidity remains a major challenge for sukuk investors.

On the other hand, sukuk that is placed at the far end of the maturity curve higher spreads or less traded as these are probably held by pension and hedge fund investors who prefer long term investment which generate fixed returns with moderate risk. The development and expansion of the Islamic capital market is integral to the overall development of Islamic finance as well as the broadening and deepening of capital market in general. While there are different products and services that make up the Islamic finance, including stocks, funds, and risk management mechanism, sukuk takes a critical important place.

It is important to note that the hub of Islamic finance, the GCC region has been experiencing huge amount of cash inflow and ever increasing need to fund huge infrastructure development that are taking place. There are huge benefits in investing locally available fund for local investment. Stable and establish Islamic financial system can facilitate investors and borrowers alike. As for the Shari'ah scholar strengthening and broadening the sukuk market will lead to strengthening of the Islamic finance as a whole. It would be triumph for the promoters of the

Islamic finance, if it is finally recognize the alternative to the conventional financial system. Therefore, present research paper has strengthen the sukuk industry with the findings and recommendations. This research study contributes to the existing literature on Islamic finance. This study is further adding value to the present literature on Islamic finance by providing evidence on the relationship between firm-related risk (default risk) and sukuk return. This research has further strengthened the current literature by providing empirical findings to support the past literature on the influence of Shari'ah compliance risk and liquidity risk on sukuk returns. The results of this research study would find the elements of risk embedded in sukuk structure and contract in different sukuk market. Furthermore it is possible to make recommendations to mitigate risks in the sukuk market that is expected to contribute to the sustainable growth of sukuk market with the findings. It is also possible to provide recommendations to which risk the management should give more weightage in managing risks, preventing risks at all or minimize the risks and avoid unnecessary disappointments.

REVIEW OF LITERATURE

Identification of risks connected with the sukuk is the vital for the future development of the sukuk market (Haral, 2010). And it is most important for the better management of the market concern. As such identifying the risks related with sukuk and the significant impact levels of such risks also important. Al-Amine (2012) stated that sukuk also involves many risks like all other financial instruments. These risks include country risks, sector risks or assets risks. These risks also can be described as market risk, credit risks, operational risks, liquidity risk, legal risks, taxation risks and the liquidity risks. There is an argument on that are sukuk riskier than bonds, or are they safer than bonds. Nanaeva (2010) in their study they predicted that sukuk and bonds should have similar level of risk. But their findings was not as predicted. Firoozye, (2012) argue that Sukuk is subject to a wide array of risks. Furthermore Al-Awsat (2008) states that sukuk risks vary according to the structure of the sak. He also further argues that these risks also vary depending on the underlying assets of these sukuk. People are not in a position to say exactly which is right and which is wrong. This was also discussed in the article of Taqi Usmani which opens a new discussion (Razaq & Cheema, 2010). "Liquidity risk is also a great problem for the investors" (Cheema, 2010). On the other hand some respondents said "Like the traditional bond the sukuk also have some market risks for example in case of fixed rate asset based sukuk the interest rate and credit risk emerges" (Haral, 2010).

Khan (2012) pointed out that one important risk associated with sukuk is structure risk. Structure risk is the risk of losing investment value**.** This is because of the ambiguity between the exposure to price risk of the sukuk assets as an equity stake, and the credit risk of the originator because of the expectation for performance of the investment within the maturity time of the sukuk as in a conventional bond. As Tariq & Dar (2007) stated Shari'ah does not recognize financial options as a form of wealth and, therefore, options cannot be traded (Usmani, 2002; Vogel & Hayes III, 1998). They also further stressed that risk management techniques must be enforced adequately in order to foster the growth of sukuk market that result from the satisfaction of a greater variety of investment needs. So then both managers and investors will be able to protect themselves from these various types of risks.

Some of its key analytical findings in assessing the risks of corporate sukuk are pointed out by Standard & Poor's ratings services. The surge Both issuers' and investors' growing interest in Islamic finance are been highlighted in the recent surge in sukuk. Demand is likely to be met in the gulf cooperation council. As the rates are benchmarked against libor rates some of the sukuk issuances are exposed to interest rate risks (Tariq, 2004). The rising market rates lead to fall in the fixed income from sukuk. This also leads to investment risks, especially if the asset is not liquid as the zero non tradable sukuk.

Based on the above empirical evidences the researcher raise the research question that is what are the different types of risks embedded in sukuk structure? and to what extent, different types of risks impact on return of sukuk? So to find out the answer to these questions, the objectives are set as to identify different types of risks embedded in sukuk structure, to determine the impact of different types of risks on return of sukuk and to analyze the relationship between risk and sukuk return.

RESEARCH METHODOLOGY

The researcher analyzed the data from the developed Dow Jones sukuk markets indices. This research covers nine years sample period beginning from January 2005 to June 2013. The 2282 daily observations of adjusted closed values of each index were downloaded from websites of respective sukuk market. Construct model was used to explain variability of excess returns on sukuk with different maturities. The model is employed to determine the excess return variability of the sukuk return index. To test the conceptual model of this study and hypotheses the present study employs well known statistical techniques of Ordinary Least Squares (OLS) Multiple Regression Model. It is developed as follows:

$$R_{s-rf} = \alpha_8 + \gamma_1 \Delta IRD_t + \gamma_2 \Delta CPI_t + \gamma_3 \Delta DOR + \gamma_4 \Delta CCI_t + \gamma_5 \Delta MPIt + \gamma_6 HQRt + \gamma_7 \Delta SMB_t + \gamma_8 \Delta RIIt + {}_{+} \varepsilon_{t.} \text{ ....Model (1)}$$

Many researchers have studied about different index for studying bond market. For instance IRD_t is used to measure interest rate risk, CPI_t is used to measure inflation risk, DOR is used to measure currency risk, CCI_t is used to measure operational risk, MPI_t is used to measure maturity risk, HQRt is used to measure credit risk, SMB_t is used to measure default risk and RIIt is the reinvestment risk used to measure liquidity risk.

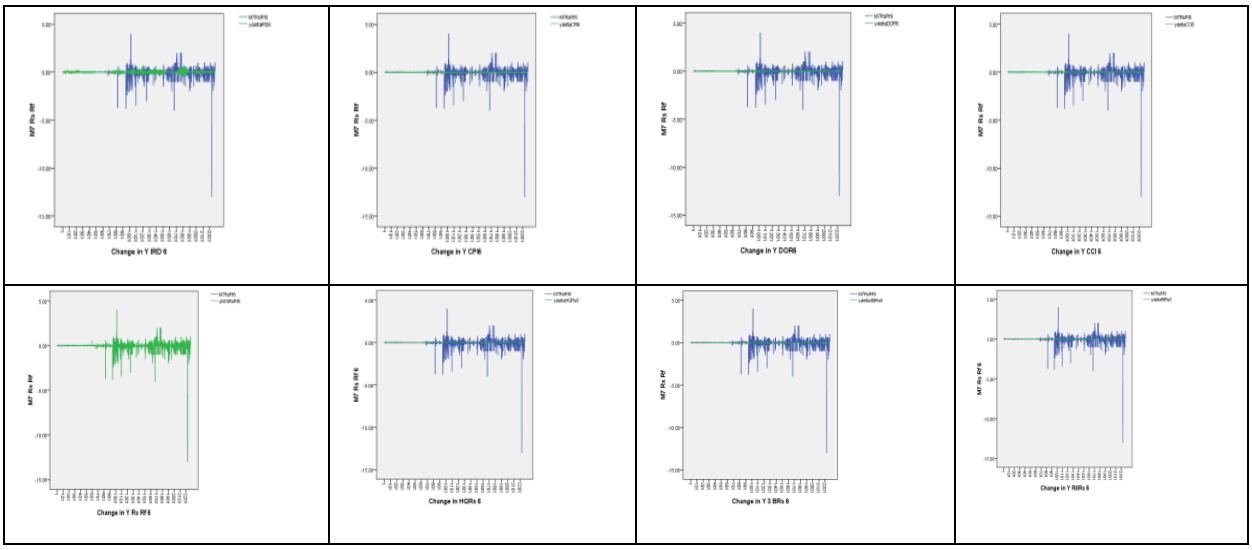
Table 1: Descriptions and Sources of Data

Variable	Description	Source	Time Horizon	# of Observation
ΔIRD	Change in interest rate	www.fedprimerate.com	2005-2013	2282
ΔCPI	Change in inflation rate	www.tradingeconomics.com	2005-2013	2282
ΔDOR	Change in dollar rate	www.treasury.gov	2005-2013	2282
ΔCCI	Change in consumer confidence rate	www.tradingeconomics.com	2005-2013	2282
ΔMPR	Change in maturity risk	Bloomberg Ticker DJSUK10T	2005-2013	2282
ΔHOR	Change in operational risk	Bloomberg Ticker DJSHKT	2005-2013	2282
Δ SMB	Change in credit risk	Bloomberg Ticker DJSUK3BT	2005-2013	2282
ΔRIR	Change in liquidity rate	Bloomberg Ticker DJSUKTXR	2005-2013	2282
Rf	Change in risk free rate	www.treasury.gov	2005-2013	2282
M3TRs	Dow Jones Sukuk 1-3 Year Total Return Index	Bloomberg Ticker DJSUK3T	2005-2013	2282
M5TRs	Dow Jones Sukuk 3-5 Year Total Return Index	Bloomberg Ticker DJSUK5T	2005-2013	2282
M7TRs	Dow Jones Sukuk 5-7 Year Total Return Index	Bloomberg Ticker DJSUK7T	2005-2013	2282
M10TRs	Dow Jones Sukuk 7-10 Year Total Return Index	Bloomberg Ticker DJSUK10T	2005-2013	2282

Source: Year 2013

RESULTS AND FINDING

Fluctuation between global Dow Jones return of sukuk and its related risks are represented in line charts. Variation and fluctuation in both dependent variable - global Dow Jones return of sukuk and independent



Source: Analysis output
Figure 1: Fluctuation between Dow Jones return of sukuk and its related risks

Variables - interest rate risk, inflation risk, dollar rate risk, consumer confidence rate, maturity risk, operational risk, credit risk and liquidity risk are presented using line charts. This research study next presents the variation between global Dow Jones return of sukuk and its related risks.

Descriptive Analysis for Maturity Basis of Dow Jones Sukuk Return

Descriptive Analyses have been conducted using descriptive statistics such as mean and standard deviation for dependent variables. Dow Jones 1-3 return of sukuk abbreviated as M3TRsRf, Dow Jones 3-5 return of sukuk abbreviated as M5TRsRf, Dow Jones 5-7 return of sukuk abbreviated as M7TRsRf and Dow Jones7-10 return of sukuk abbreviated as M10TRsRf are considered for descriptive analysis.

Table 2: Descriptive Analysis for Maturity Basis of Dow Jones Sukuk Return

Dependent variable	**Mean**	**Std. Deviation**	**Number of observation**
M3TRsRf	.0366	.47051	2281
M5TRsRf	.0356	.47038	2281
M7TRsRf	.0394	.47033	2281
M10TRsRf	.0383	.47051	2281

Source: Analysis output

Table 2 shows that mean values for M3TRsRf, M5TRsRf, M7TRsRf and M10TRsRf are .0366, .0356, .0394 and .0383. This refers to that average sukuk return for M3TRsRf, M5TRsRf, M7TRsRf and M10TRsRf vary between .0356 and .0394. They have the range of standard deviation between .47033 to .47051. This refers to that there is higher variation among these variables.

Descriptive Analysis for the Independent Variables

This paper next presents descriptive analyses have been conducted using descriptive statistics such as mean and standard deviation for independent variables. Change in interest rate coded as ΔIRD, change in inflation rate which is measured by ΔCPI, change in dollar rate coded as ΔDOR, change in consumer confidence rate abbreviated as ΔCCI, change in maturity risk coded as ΔMPR, change in operational risk abbreviated as ΔHQR, change in credit risk coded as ΔSMB, change in liquidity rate abbreviated as coded as ΔRIR are considered for descriptive analysis.

Table 3: Descriptive Analysis for the Independent Variables

Independent variable	**Mean**	**Std. Deviation**	**Number of observation**
ΔIRD	.00672	.47039	2281
ΔCPI	.09298	.10957	2281
ΔDOR	.08842	.00616	2281
ΔCCI	.06374	.01261	2281
ΔMPR	. 35324	.01234	2281
ΔHQR	.28500	.00134	2281
ΔSMB	.15300	.00654	2281
ΔRIR	-.00014	.00514	2281

Source: Analysis output

Table 3 shows that mean values for ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔHQR, ΔSMB, and ΔIRD are .00672, .09298, .08842, .06374,. 35324, .28500, .15300 and -.00014. This refers to that average sukuk return for ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔHQR, ΔSMB, and ΔIRD vary between -.00014 and .35324. They have the standard deviation between .47039, .10957, .00616, .01261, .01234, .00134, .00654 and .00514. This refers to that there is higher variation among these variables.

Correlation between total returns of DJ sukuk M3T, DJ sukuk M5T, DJ sukuk M7T and DJ sukuk M10T and its related independents

Dow Jones Index categorises sukuk market on the basis of maturity that has 4 maturity periods such as 1 to 3 years abbreviated as DJ sukuk M3T, 3 to 5 years abbreviated as DJ sukuk M5T, 5 to 7 years abbreviated as DJ sukuk M7T and 7 to 10 years abbreviated as DJ sukuk M10T.

Values of correlation between total return of DJ sukuk M3T and interest rate, consumer price rate risk, dollar rate risk, consumer confidence rate risk, maturity risk, high quality risk, credit risk and liquidity risk range between 0.001 to 0.055. Of these values, consumer price rate risk (market risk) influence high. Reinvestment risk (liquidity risk) influence second in order. Next to these two risks, credit risk influences on total return.

Other independents variables such as interest rate risk, dollar rate risk, consumer confidence rate risk and operational risk influence lower than other independents variables. In case of DJ sukuk M5T, those between total return of DJ sukuk and other independents stated above range between 0.003 to 0.060. Results of these correlations vales are similar to those of 1 to 3 years. Pearson correlation values of DJ sukuk M7T vary between 0.004 to 0.066.

Results of these are influencing somewhat more than that 1 to 3 and 3 to 5 year of maturity. In case of DJ sukuk M10T, correlation vales of interest rate risk, consumer price rate risk, dollar rate risk, consumer confidence risk, high quality risk, credit risk and liquidity risk range between 0.006 to 0.026.

DJ sukuk M10T has higher influence than other maturity periods. This is because, in long terms, there are higher chances for the dramatic change in interest rate, consumer price index, dollar rate, consumer confidence risk, high quality risk, credit risk and liquidity risk. Further, it is observed that in all the independents variables, maturity risk occupies the predominant place in the first three types of maturities other than 7 to 10 year of maturity period. There is a special observation in the maturity of 7 to 10 years.

This type of maturity shows that a negative value of correlation with total retrns. This is because, the sukuk investors can accommodate the risk up to the maximum of 7 years. Thereafter, their perception towards more than 7 year of maturity declines and intention to holding sukuk return becomes negative. Needed correlation values are revealed in table 4.

Table 4: Correlation between total returns of DJ Sukuk M3T, DJ Sukuk M5T, DJ Sukuk M7T and DJ Sukuk M10T and its related independents

IDVs	DJ **Sukuk** M3T	DJ **Sukuk** M5T	DJ **Sukuk** M7T	DJ **Sukuk** M10T
ΔIRD	.003	.004	.005	.006
ΔCPI	.023	.024	.025	.026
ΔDOR	.006	.007	.008	.009
ΔCCI	.001	.003	.004	.005
ΔMPR	.055	.060	.066	-.038
ΔHQR	.003	.004	.006	.007
ΔSMB	.011	.012	.016	.017
ΔRIR	.018	.020	.023	.024

Source: Analysis output

Regression between Total Returns of DJ M3T Sukuk and Its Related Independents

Results indicates that value of R, R square, and adjusted R square indicates that interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk, liquidity risk, and consumer confidence risk explain 80% to 89% of the variation on sukuk return. Unexplained variation ranges between 11% to 20%. Results are presented in model summary table 5.

Table 5: Model Summary for Total Returns of DJ M3T Sukuk and Its Related Independents

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899[a]	.809	.805	.01961

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
Source: Analysis output

It is observed that when looking at the ANOVA table, it shows that SS Regression is 503.865 which is larger than SS residual that has a value of .873. Df for SS Regression and SS Residual are 8 and 2272 respectively. MS regression and MS Residual are 62.983 and 0.000 respectively. This is why, significance value of F statistics indicates that model is significant and variables taken in this study explain the model. F statistics are shown in table ANOVA 6.

Table 6: Anova[b] for Total Returns of DJ M3T Sukuk and Its Related Independents

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	503.865	8	62.983	1.638	.000[a]
	Residual	.873	2272	.000		
	Total	504.738	2280			

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
b. Dependent Variable: M3TRsRf
Source: Analysis output

Alternative hypothesis is set as that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk, liquidity risk, consumer confidence and return as an alternative hypothesis. Since Sig. value is less than 0.05. Researcher rejects null and accepts alternative

Table 7: Coefficients[a] for Total Returns of DJ M3T Sukuk and Its Related Independents

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.000		-.781	.435
	ΔIRD	-.002	.004	.000	-.528	.597
	ΔCPI	.003	.067	.000	.047	.962
	ΔDOR	-.016	.033	.000	-.488	.626
	ΔCCI	-.031	.033	.000	-.928	.354
	ΔMPR	.093	.001	.009	1.144	.000
	ΔHQR	-.128	.305	-.003	-3.369	.001
	ΔSMB	-.123	.063	-.006	-6.718	.000
	ΔRIR	-.134	.080	-.001	-1.677	.094

a. Dependent Variable: M3TRsRf
Source: Analysis output

hypothesis. Accepting alternative hypothesis refers to that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk and liquidity risk, credit risk consumer confidence risk and return. Table 7 shows the coefficient values for developing the model. Generated model is shown in equation 2.

M3TRsRf=0.000+(-.002*IRD)+ (.003*CPI) + (-.016*DOR) +(-.031*CCI) + (.093*MPR)
+(-.128*HQR)+(-.123*SMB)+(-
.134*RIR)……..Equation (2)

It can be argued that beta values may vary between different types of risks and total returns. Justifications cold be made that more than 50% of investors prefer to invest in the short term sukuk that has the maturity period of 3 to 5 years. Despite the slight recovery in the global market, investors still prefer the fixed rate which reflects their negative outlook for the interest rate. Investors prefer fixed rate so as to benefit from the return of short term. If it's a longer term there is no grantee for the return. So, investors prefer short term sukuk to avoid the credit risk and default risk.

Regression between Total Returns of DJ M5T Sukuk and Its Related Independents

Results indicates that value of R, R square, and adjusted R square indicates that interest rate, consumer price index, dollar rate, maturity risk, high quality risk , credit risk, liquidity risk, and consumer confidence risk explain 78% to 88% of the variation on sukuk return. Unexplained variation ranges between 12% to 22%. Results are presented in model summary table 8.

Table 8: Model Summary for Total Returns of DJ M5T Sukuk and Its Related Independents

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888[a]	.789	.780	.01777

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
Source: Analysis output

ANOVA table 9 shows that SS Regression is 503.758 which is larger than SS residual that has a value of .718. Df for SS Regression and SS Residual are 8 and 2272 respectively. MS regression and MS Residual are 62.970 and 0.000 respectively. Value of F statistics is 1.994 that indicates that model is significant and variables taken in this study explain the model. F statistics are shown in table ANOVA 9.

Table 9: Anova[b] Total Returns of DJ Sukuk M5T and Its Related Independents

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	503.758	8	62.970	1.994	.000[a]
	Residual	.718	2272	.000		
	Total	504.475	2280			

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD

Table 9: Anova[b] Total Returns of DJ Sukuk M5T and Its Related Independents

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	503.758	8	62.970	1.994	.000[a]
	Residual	.718	2272	.000		
	Total	504.475	2280			

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD

b. Dependent Variable: MT5RsRf

Source: Analysis output

This study set alternative hypothesis as that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk , credit risk, liquidity risk, consumer confidence risk and return as an alternative hypothesis. Since Sig. value is less than 0.05. Researcher rejects null and accepts alternative hypothesis. Accepting alternative hypothesis refers to that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk , credit risk, liquidity risk, consumer confidence risk and return. Table 10 shows the coefficient values for developing the model. Generated model is shown in equation 10.

Table 10: Coefficients[a] for Total Returns of DJ Sukuk M5T and Its Related Independents

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.000		-.710	.478
	ΔIRD	-.002	.003	.000	-.494	.621
	ΔCPI	.006	.061	.000	.092	.927
	ΔDOR	-.024	.030	.000	-.782	.434
	ΔCCI	-.026	.030	.000	-.848	.397
	ΔMPR	.089	.001	.003	1.262	.000
	ΔHQR	-.190	.277	-.002	-2.639	.008
	ΔSMB	-.173	.057	-.005	-6.544	.000
	ΔRIR	-.123	.072	-.001	-1.703	.089

a. Dependent Variable: MT5RsRf

Source: Analysis output

MT5RsRf = 0.000 +(-.002*IRD) +(.006*CPI)+(-.024*DOR) +(-.026*CCI)+ (.089*MPR) +(-.130*HQR) +(-.173*SMB) +(-123 * RIR)……Equation (3)

Beta values for different varieties of returns differ. These difference beta values could be justified by indicating the following justifications. In an expectation, preference mismatches the majority of the issuers expect tenure to be between 5 and 10 years while the majority of the investors prefer their tenure to within 3 to 5 year range. The sukuk survey has found that many investors prefer to invest in medium term sukuk. Most probably due to interest rate risk. Most outstanding international sukuk are expected to mature within the next 3 to 5 years. Investors do not prefer the change in interest rate risk and credit risk.

Regression between Total Returns of DJ M7T Sukuk and Its Related Independents

Results indicates that value of R, R square, and adjusted R square indicates that interest rate risk , consumer price rate risk, dollar rate risk, maturity risk, high quality risk, credit risk, liquidity risk, and consumer confidence risk explain 75% to 86% of the variation on sukuk return. Unexplained variation ranges between 14% to 25%. Results are presented in model summary table 11.

Table 11: Model Summary for Total Returns of DJ Sukuk M7T and Its Related Independents

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869[a]	.756	.740	.01714

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
Source: Analysis output

ANOVA table 12 shows that SS Regression is 503.698 which is larger than SS residual that has a value of .668. Df for SS Regression and SS Residual are 8 and 2272 respectively. MS regression and MS Residual are 62.962 and 0.000 respectively. Value of F statistics is 2.143 that indicate that model is significant and variables taken in this study explain the model. F statistics are shown in table ANOVA 12.

Table 12: Anova[b] for Total Returns of DJ Sukuk M7T and Its Related Independents

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	503.698	8	62.962	2.143	.000[a]
	Residual	.668	2272	.000		
	Total	504.366	2280			

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
b. Dependent Variable: MT7RsRf
Source: Analysis output

Researcher sets alternative hypothesis as that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk, liquidity risk**,** consumer confidence risk and return as an alternative hypothesis. Since Sig. value is less than 0.05. Researcher rejects null and accepts alternative hypothesis. Accepting alternative hypothesis

refers to that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk liquidity risk, consumer confidence risk and return.

Table 13 shows the coefficient values for developing the model. Generated model is shown in equation 4. Different beta values can be accounted by several reasons. Investors could face future reinvestment risk and interest rate risk once the maturity period is longer. Fixed income instruments are usually structured to see long term investors yet most sukuk are still trapped in the medium terms turnover of 5 to 10 years. Very few international sukuk serve the long term. This is because investors preferred to avoid reinvestment risk, interest rate risk and credit risk.

Table 13: Coefficients[a] for Total Returns of DJ Sukuk M7T and Its Related Independents

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.000		-.388	.698
	ΔIRD	.001	.003	.000	-.052	.958
	ΔCPI	.021	.059	.000	.364	.716
	ΔDOR	-.014	.029	.000	-.487	.626
	ΔCCI	-.009	.029	.000	-.302	.763
	ΔMPR	.093	.001	.003	1.308	.000
	ΔHQR	.056	.267	.000	.211	.833
	ΔSMB	-.046	.055	.000	-.833	.405
	ΔRIR	.007	.070	.000	.101	.919

a. Dependent Variable: MT7RsRf
Source: Analysis output

MT7RsRf = 0.000+(.001*IRD) +(.021*CPI) +(-.014*DOR) +(-.009*CCI) +(.093*MPR)
+(.056*HQR) +(-.046*SMB) +(.007*RIR)……..
…….Equation (4)

Regression between Total Returns of DJ M10T Sukuk and Its Related Independents

Results indicates that value of R, R square, and adjusted R square indicates that interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk, liquidity risk, and consumer confidence risk explain 70% to 83% of the variation on sukuk return. Unexplained variation ranges between 23% to 30%. Results are presented in model summary table 14.

Table 14: Model Summary for Total Returns of DJ M10T Sukuk and Its Related Independents

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.838[a]	.703	.640	.47061

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
Source: Analysis output

ANOVA table 15 shows that SS Regression is 1.565 which is larger than SS residual that has a value of 503.180. Df for SS Regression and SS Residual are 8 and 2272 respectively. MS regression and MS Residual are 0.196 and 0.000 respectively. Value of F statistics is 0.884 that indicates that model is significant and variables taken in this study explain the model. F statistics are shown in table ANOVA 15.

Table 5.15: Anova[b] for Total Returns of DJ M10T Sukuk and Its Related Independents

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.565	8	.196	.884	.529[a]
	Residual	503.180	2272	.221		
	Total	504.746	2280			

a. Predictors: (Constant), ΔRIR, ΔCPI, ΔDOR, ΔCCI, ΔMPR, ΔSMB , ΔHQR, ΔIRD
b. Dependent Variable: MT10RsRf
Source: Analysis output

It is set that the alternative hypothesis as that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk ,credit risk, liquidity risk, consumer confidence risk and return as an alternative hypothesis. Since Sig. value is less than 0.05. Researcher rejects null and accepts alternative hypothesis. Accepting alternative hypothesis refers to that there is relationship between interest rate, consumer price index, dollar rate, maturity risk, high quality risk, credit risk, liquidity risk, consumer confidence risk and return. Table 5.16 shows the coefficient values for developing the model. Generated model is shown in equation 5.

Table 5.16: Coefficients[a] for Total Returns of DJ M10T Sukuk and Its Related Independents

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.036	.010		-3.617	.000
	ΔIRD	.012	.092	.003	.131	.896
	ΔCPI	.149	.011	.026	1.210	.227
	ΔDOR	.137	.099	.009	.423	.673

ΔCCI	.105	.099	.003	.132	.895
ΔMPR	-.002	.001	-.038	-1.798	.072
ΔHQR	.029	.037	.003	.140	.889
ΔSMB	.167	.510	.018	.839	.402
ΔRIR	.164	.117	.024	1.129	.259

a. Dependent Variable: MT10RsRf
Source: Analysis output

GRsRf = -.036 + (.012*IRD) + (.149*CPI) + (.137*DOR) +(.105*CCI) + (-.002*MPR)
+(.029*HQR)+(.167*SMB)+(.164*
RIR)…….Equation (5)

The model and the coefficient table show the coefficient values that differ from variable to variable. Conventional banks are the issuers of long term maturity period sukuk. They are the dominant parties who issue the long term maturity issues, nearly 78 % of sukuk are issued by conventional banks.

Table 5.17: Regression Models of DJ Sukuk Return Covers Maturity Basis

Regression Model	**R**	**R Square**	**Adjusted R Square**	**F**	**Sig.**	**Model accepted**
Regression between total returns of DJ M3T sukuk and its related independents	.899[a]	.809	.805	1.638	.000[a]	√
Regression between total returns of DJ M5T sukuk and its related independents	.888[a]	.789	.780	1.994	.000[a]	√
Regression between total returns of DJ M7T sukuk and its related independents	.869[a]	.756	.740	2.143	.000[a]	√
Regression between total returns of DJ M10T sukuk and its related independents	.838[a]	.703	.697	.884	.000[a]	√

Source: Analysis output

Table 17 summarizes four regression models. Four models explain 70% to 80 % of variation. As such Dow Jones M3T sukuk returns is 80%, Dow Jones M5T sukuk returns is 78%, Dow Jones M7T sukuk returns is 75% and Dow Jones M10T sukuk returns is 70%. F statistics shows that models are significant and all models are acceptable.

CONCLUSION AND RECOMMENDATION

Dow Jones maturity base confirmed that four models explain 70% to 80 % of variation. As such Dow Jones M3T sukuk returns is 80%, Dow Jones M5T sukuk returns is 78%, Dow Jones M7T

sukuk returns is 75% and Dow Jones M10T sukuk returns is 70%. F statistics shows that models are significant and all are models are acceptable. Reason for this is interest rate risk. Recent research findings also prove justification for interest rate risk. Al-Amine (2012) found that any increase interest rate directs to the decrease in the fixed returns sukuk values. Another research finding supports the argument that sukuk which are designed on fixed rate of return are exposed to the interest rate risk as bond. Increase in interest rate will result decrease in sukuk price and vice versa (Heral, 2010). This is mostly observed in the case of asset based sukuk (Mehmood, 2010). All three research findings confirm rationales for interest rate risk.

Dow Jones maturity base confirmed that four models explain 70% to 80 % of variation. Sukuk issuers consider libor rate as a benchmark for avoiding interest rate. Thomson Reuters has introduced a common interest rate in place of labor rate. It is recommended that interest rate introduced by Thomson Reuters is far better than libor rate because this interest rate has been formulated for Islamic finance industry.

This research has few limitations. One such limitation is that , although there are different risks and returns in the sukuk structure in Islamic financial market very few risk categories such as market risk, operational risk, credit risk and liquidity risk have been considered in this study. Another limitation is that this study did not consider non-traded and unlisted sukuk. Therefore, the researcher allows himself or other researchers to further investigate this study by removing these limitations. This paper has important implications for the theory and practically for managers and policy makers. Since sukuk markets are becoming famous in globally developed countries and they are trying to adopt Islamic sukuk as a remedy for prevailing financial crisis, this research study may help to provide a remedy for global financial crisis in conventional market. Findings of this study will promote sukuk market and help to mitigate different risks involved in such as market risk, operational risk, credit risk and liquidity risk. Future investors or business people may become aware about these risks for secure sukuk investment and transactions.

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