Islamic Finance and the Theory of Capital Structure

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ABSTRACT

This paper empirically investigates firms using Islamic finance in Malaysia and Middle East countries. The comparative analysis of Islamic finance and non-Islamic finance users resulted in three major implications. First, Islamic bond issuers preferentially choose the Islamic bond issuance prior to bank borrowing and other external financing tools. Second, Islamic bond issuance is not related to the issuer's internal funds, while Islamic bank borrowing is significantly influenced by the magnitude of a firm's internal funds. These results suggest that Islamic bond issuers do not always choose to issue bonds based on information cost, but Islamic bank borrowers always do. Third, the Islamic bond issuance contributes to an increase in the issuer's stock returns and total factor productivity. This empirical result suggests that Islamic bond issuance is preferred because of this unique benefit which standard external financing does not have.

JEL Classification: G20, G21, G32
Keywords: Capital Structure, Bond Issuance, Islamic Finance

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I. Introduction

Islamic financing scheme has recently emerged as the new international fund source even for many firms from non-Islamic countries as shown in the following examples. For instance, total funding volume by Islamic bond issuance (hearafter referred as "Sukuk") as recorded in the London market was as large as that in the Middle East countries. In East Asia, the largest Japanese automobile manufacturer, Toyota Motors, also employed Sukuk as a funding scheme in July 2008. Realier, in 2007, the world total Sukuk issuance and Islamic bank borrowing were USD 47 billion and USD 29 billion, respectively. One important factor for this increasing trend is the progress achieved towards market oriented economy by the Islamic world. Reflecting the recent soaring natural resources prices, incoming cross-border securities investments to the Islamic countries dramatically increased which promoted the financial market development in these areas. In addition, multi-national firms from non-Islamic countries are expecting future large returns from the 1.1 billion population of the Islamic society. Apparently, these firms employ Islamic finance as a funding scheme as a way to localize their business operations.

It is well known that Islamic finance has the characteristics of both debt and equity issuances. Originally, prohibition of interest receipts or payment has made this financial scheme a quasi profit sharing type of finance. Investors and lenders receive some form of dividends from fund raisers, instead of interest receipts. The dividends vary depending on fund raisers' future profitability. Since Islamic finance has intermediate characteristics of debt and equity finance, our overall hypothesis that the determination of this financing choice is also an intermediate determinant between debt and equity issuance. There are many literatures on corporate capital structure based on pecking order and trade off theory. However, few literatures examine Islamic finance using the theory of capital structure. Our major aim in this paper is to determine if Islamic finance imposes larger agency costs to investors or if it brings an additional unique benefit to users. Hence, our analysis will attempt to identify the determinants of Islamic finance use from the theory of capital structure. We believe it contributes to explain the recent development of Islamic finance market.

This study first presents the recent developments of the Sukuk issuance and the Islamic borrowing markets by showing our empirical data. In the following two sections, we introduce our hypotheses, how it interacts with existing literature and empirical methodology. Sections III-V, show the empirical models and the results. Based on the three empirical results, we derive implications and provide conclusions of this study in a final section.

II. Backgrounds

The size of Sukuk market was USD 400 million by end December 1995, but it dramatically expanded since 2001. Volume of the primary market in 2007 was recorded USD 47 billion, 60 times as large as that of 2001. Such recent dramatic increase could be attributed to the Kuala Lumpur market development promotion by the Malaysian government. This government's promotional policy triggered an increase in several new types of bond issuance such as Ijara Sukuk, Musharakah Sukuk as the government provided preferential tax treatments for them. The increase in the number of Sukuk schemes also encouraged the participation of fund raisers to choose the most appropriate schemes among them.

The recent remarkable trend of the Sukuk market development is longer bond maturity and high credit rating. Sukuk with over five year maturities accounts for more than 69 percent of the total Sukuk issued in 2001-2008 with more than 29 percent of the total accounted for by the over ten-year maturity bonds. Furthermore, the Malaysian credit rating agency, MARC, provided "AAA", "AA" and "A" to eighteen percent, twenty percent and sixty one percent of the total Sukuk issued in Malaysia, respectively. Total ninety nine percent of the Sukuk issued in Malaysia has at least more than "A" rating in the primary market. Remarkably, no default deal has been announced since 2001.

Development of the Islamic banking market was not remarkable until 2004, reflecting some development delays of a few years after the Sukuk growth. While the Sukuk market development is led by Malaysia, that of the Islamic banking is pulled by Middle East countries. Saudi Arabia has the largest Islamic banking market recording USD 17 billion from January to June 2008. The second largest market is the United Arab Emirates with USD 9 billion in the above period. Gulf Cooperation Countries (GCC) countries, meanwhile, deregulated the new entry of foreign banks since 2005, contributing to the dramatic expansion of Islamic banking market since then.

Table.1 Total Funding Volume of Islamic Finance by Region (in USD million)

	Sukuk Issuance				Islamic Bank Borrowing			
	Total	Malaysia	GCC 6	Others	Total	Malaysia	GCC 6	Others
2005	12,034	8,747	2,341	946	8,528	102	7,848	578
	(100.0%)	(72.7%)	(19.5%)	(7.9%)	(70.9%)	(0.8%)	(65.2%)	(4.8%)
2006	27,167	15,048	11,191	928	19,273	230	18,443	600
	(100.0%)	(55.4%)	(41.2%)	(3.4%)	(70.9%)	(0.8%)	(67.9%)	(2.2%)
2007	46,950	26,529	18,710	1,711	29,312	70	22,230	7,011
	(100.0%)	(56.5%)	(39.9%)	(3.6%)	(62.4%)	(0.2%)	(47.3%)	(14.9%)

Source: Author's calculation based on ISI Emerging Markets.
Note: GCC 6 countries consist of United Arab Emirates, Oman, Kuwait, Qatar, Saudi Arabia and Bahrain.

Table 2. Total Funding Volume of Sukuk Issuance in Malaysia by Type (in USD million)

	Total	Ijara Sukuk	Murabahah Sukuk	Mudarabah Sukuk	Musharakah Sukuk	Others
2003	4,072	350	920	939	0	1,863
	(100.0%)	(8.6%)	(22.6%)	(23.1%)	(0.0%)	(45.7%)
2005	8,747	2,028	3,737	26	1,840	1,116
	(100.0%)	(23.2%)	(42.7%)	(0.3%)	(21.0%)	(12.8%)
2007	26,529	4,105	8,516	2,743	5,806	5,359
	(100.0%)	(15.5%)	(32.1%)	(10.3%)	(21.9%)	(20.2%)

Source: Author's calculation based on ISI Emerging Markets.

III. Existing Literatures and Testing Hypotheses

The number of literatures focusing on Islamic finance from the view point of corporate finance is not large. Other than that of Aggarwal and Yousef (2000), we cannot find any focusing on capital structure. Their paper examined and compared the behavior of the Islamic banking activity with the non-Islamic banking sector, and confirmed that Islamic banking has the characteristics of both debt financingg and equity issuance. In other words, Islamic funding avoiding interest payment/receipt has very close characteristics with profit-sharing type of financing. Benefits of money suppliers, i.e., investors and banks, for instance, depends on future profitability of the issuers/borrowers in this case. Therefore, investors and banks must monitor the performance of fund raisers, more carefully. This finding intuitively points that the choice for Islamic finance depends on information costs between corporate insiders and outsiders.

As shown by Myers and Majluf (1984), Harris and Raviv (1991) and Rajan and Zingales (1995), many literatures focused on the funding order from the asymmetric information in the corporate finance theory. This paper first examines if agency cost influences the choice for Islamic finance by looking at funding order. Our hypothesis is that the Islamic finance is chosen prior to equity finance, but subordinated to the normal bond issuance and bank borrowings. Similar to profit sharing type of firms, the choice for a financing scheme is based on information cost, i.e., size of the information cost of Islamic finance between debt finance and equity issuance. Taking examples of fund raisers in Malaysia and Middle East countries, this paper empirically verifies the order of the Islamic finance. Bolton and Freixas (2001) discussed the determinants of bond issuance of firms, i.e., the choice of bond issuance and bank borrowing depends on flexibility of negotiation between fund raisers and money suppliers. Our first analysis also considers comparison of the direct and indirect financing tools.

Part two of this paper further analysed bond issuance based on trade-off theory. The trade-off theory argues that firms balance the benefits of debt against the cost of debt and the capital structure is then determined. Existing literature suggests that pecking order and trade-off theories are mutually correlated. Jensen and Meckling (1976) regards information cost as a kind of cost of debt. Ang et. al.

(1982) also picked up bankruptcy cost as an example of cost of debt. Thus, there can be a variety of definitions of benefit and cost of debt. Our hypothesis is that Islamic finance markets attract potential participants when the financing brings in an additional benefit which normal traditional external finance does not provide. We test this hypothesis by taking as an example the shareholder's value and total factor productivity. In addition to literatures based on pecking order and trade off theory, there exist other literatures on Islamic finance. Dhumale and Sapcanin (1999), Errico and Farahbaksh (1998), Iqbal and Mirakhor (1987) and Khan(1989) discussed the possibilities and perspectives of Islamic finance as a new development financing scheme and appropriate financial supervision called for [1]. However, the studies did not focus on corporate financing aspect.

Since Modigliani and Miller (1958), many literatures suggest that firm's capital structure is not always neutral to the firm's performance in the product market, but does influence it from the view point of asymmetric information and trade off theory. This paper also examines and determines if the choice for Islamic financing influences the corporate performance in the post funding period.

IV. Data

Our study uses the Islamic finance deal data from ISI Emerging Markets, Inc. and matches them with the Thomson Reuters financial data. We first compared three Islamic financing deal data, i.e., Bloomberg LP., Thomson Reuters and ISI Emerging Markets. We employed ISI Emerging Markets because neither Bloomberg nor Thomson Reuters provide information on the type of Islamic financing and we cannot accordingly distinguish types of deals, i.e., Ijara, Musharakah and Mudarabah. In addition, these data sources do not provide Islamic banking data, either. The above qualitative information on the type and other Islamic banking data are absolutely necessary for our study. Since ISI provides such qualitative information and banking data, but does not have financial data of the fund raisers. Therefore, we matched the financial data of the Thomson Reuters with the ISI's deal data. As for the firm's financial data, Thomson Reuters financial data, originally known as "Worldscope", is more useful than Bloomberg since it includes delisted and newly listed firms.

The ISI Emerging Market provides the 2001-2007 sample deal data for Sukuk and 2004-2007 data for Islamic banking. Although sample period of the Sukuk and Islamic banking data are different, we consider the bias, if any, as insignificant since the number of issuers and borrowers is quite small during 2001-2003. The matched data between ISI's deal and Thomson Reuters financial data resulted in the following results. In Malaysia, 417 firms issued a total USD 61 billion of Sukuk in 2001-2007. Of these firms, 76 are listed. The annual average number of Malaysian listed firms is 990 firms, hence, there are 76 issuers and 914 non-issuers. As for Islamic bank borrowing, a total of USD50 billion were borrowed by GCC firms in 2004-2007. There were 86 firms that borrowed, of which 29 firms are listed.

As Malaysian issuers are not concentrated on a limited number of industrial sectors, the number of manufacturing issuers is as large as those of banks and real estate business firms. DRB-Hicom, Tracoma Holdings are issuers from automobiles and parts industries and Forms Resources, Symphony House are those from electronics industries. No particular industry accounts for more than 30 percent of the market. On the other hand, one remarkable difference between issuers and non-issuers is the firm size and profitability. Averages of these indicators of issuers statistically exceed those of non-issuers.

Different from Sukuk sample data, GCC Islamic banking borrowers mainly belong to commercial banks or real estate business sector. Emirates Islamic Bank, Qatar Islamic Bank and Saudi British Bank are frequent borrowers of the Islamic banking market. In addition, non-bank business borrowers such as National Leasing Inc. and Kuwait Finance House are also participants of the market. Since interbank market is undeveloped in the region, Islamic banking market seems to be used as a short-term funding tool by banks. Other than commercial banks and non-banks, real estate business participants are main borrowers in the market. These firms generally have large firm size since they have their own real estate or commercial/residential buildings as their assets. Therefore, the firm size of the Islamic bank borrowers is larger than other listed firms in the region. Averages of firm's profitability of the Islamic banking borrowers are also statistically larger than that of non-borrowers due to the recent real estate boom in the region.

[1] Dr. Kuran of South California University wrote a series prominent literature on Islamic finance by verifying how Islamic finance had contributed to economic development in the Islamic society since the 1980s. Recent studies by Kuran (2005) (2004) (2003) also focused on this matter from corporate financing view.

Table 3. Overview of Sample Data (in USD million)

	(a) Sukuk Issures in Malaysia			(b) Islamic Banking Borrowers in GCC		
	Amount Issued	Number of Issuers	Listed Firms	Amount Issued	Number of Issuers	Listed Firms
2001	680	3	0			
2002	761	4	0			
2003	4,072	25	10			
2004	4,949	48	14	1,178	4	2
2005	8,747	71	18	7,848	16	4
2006	15,048	150	18	18,443	28	10
2007	26,529	116	16	22,230	38	13
Total	60,786	417	76	49,699	86	29
Year Average	8,684	60	11	12,425	22	7

Source: Author's estimates based on ISI Emerging Markets.

Table 4. Average Size, Profitability and Growth of Sukuk Issuers in Malaysia (in USD million)

	Total Assets		Return on Assets (%)		Market to Book Ratio	
Sukuk Issuers (N=48)	4,499		3.361		1.061	
Non-Sukuk Issuers (N=941)	389		1.200		1.197	
t-test Results for Difference between Issuers and Non-issuers Averages	Issuers >Non-Issuers	***	Issuers >Non-Issuers	***	Issuers <Non-Issuers	***

Source: ISI Emerging Markets.

Notes:

1: The t-test for difference of averages between issuers and non-issuers are indicated as ***, ** and * for 1 percent, 5 percent and 10 percent levels of significance, respectively.

2: "Market to Book Ratio" is used as a proxy for a firm's future growth opportunity .

Table 5. Average Size, Profitability and Growth of Islamic Bank Borrowers in GCC (in USD million)

	Total Assets		Return on Assets (%)		Market to Book Ratio	
Islamic Bank Borrowers (N=25)	19,818		6.989		1.376	
Non-Islamic Bank Borrowers (N=440)	4,294		5.876		3.224	
t-test Results for Difference between Issuers and Non-issuers Averages	Issuers >Non-Issuers	***	Issuers >Non-Issuers	*	Insignificant	

Source: ISI Emerging Markets

Notes:

1: The t-test for difference of averages between issuers and non-issuers are indicated as ***, ** and * for 1 percent, 5 percent and 10 percent levels of significance, respectively.

2: "Market to Book Ratio" is used as a proxy for firm's future growth opportunity.
3: GCC 6 countries are United Arab Emirates, Oman, Kuwait, Qatar, Saudi Arabia and Bahrain.

III. Empirical Analysis 1: Common Characteristics of Islamic Finance Users

1. Determinants of Sukuk Issuance

The first empirical analysis of this paper focuses on the determinants of Sukuk issuance and examines the information cost of financing. As noted in the previous section, Sukuk is categorized as an intermediate corporate financing tool between fixed interest securities and equity issuance. Sukuk is originally structured to avoid interest payment/receipt in a financial market and investors accordingly receive dividends from the issuer's future profit, instead. Thus, this profit sharing type of financial tool depends on internal information of the issuers when investors would like to receive the maximum dividends. In this paper, our hypothesis of this is information cost of Sukuk issuance is between normal debt finance and equity issuance; the choice of this financing tool is accordingly subordinated to normal debt finance, but prior to equity issuance according to pecking order theory. Another hypothesis which is based on trade-off theory is that Sukuk is chosen prior to the above external financing when the financial scheme provides managerial merits to the issuer. We analyze this financial order by examining the following empirical equations:

(A)

$$SUKUK_{it} = const + \alpha_1 ROA_{it-1} + \alpha_2 CFlow_{it-1} + \alpha_3 SIZE_{it-1} + \alpha_4 MBR_{it-1} + \alpha_5 BANK_{it-1} + \alpha_5 Islam\_P_{it-1} + \alpha_6 N\_BOND_{it-1} + \alpha_7 DER_{it-1} + v_{it}$$

(B)

$$N\_BOND_{it} = const + \beta_1 ROA_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 Islam\_P_{it-1} + \beta_4 DER_{it-1} + \eta_{it}$$

(C)

$$BANK_{it} = const + \phi_1 ROA_{it-1} + \phi_2 SIZE_{it-1} + \phi_3 Islam\_P_{it-1} + \phi_4 DER_{it-1} + \mu_{it}$$

$SUKUK$: Sukuk Issued divided by book value of total liability, ROA: EBITDA divided by book value of total assets, $CFlow$: cashflow divided by total sales, $SIZE$: natural logarithm of book value of total assets, MBR: book value of liability plus market value of capital divided by book value of total assets, $BANK$: Bank borrowing plus inter-firm borrowing plus other debt increase divided by book value of total liability, $Islam\_P$: accumulated Sukuk issued by previous year divided by book value of liability, N_BOND: accumulated normal bond issued by this year divided by book value of liability, DER: book value of liability divided by market value of capital, Year01 -Year05: year dummy variables, DUM1: =1 when the firm is real estate, building materials, engineering and construction, others=0, DUM2: =1 when the firm is coal, gas, mining, oil and the suppliers of energy, others =0, DUM3: =1 when the firm is a commercial bank, insurance firm, venture capital, investment fund and other financial firm, others =0, DUM4: =1 when the firm is electronics, internet provider, semiconductor manufacture, software and telecommunications, others=0

Variables of the empirical model (A) are employed to examine the determinants of Sukuk issuance. In this model, we assume that internal funding ability and bank borrowing influences the issuance of Sukuk. In our hypothesis, the parameter of the proxy of internal fund, i.e., ROA, Cash Flow and bank borrowing are negative as those are chosen prior to the Sukuk. Model (A) also includes the issuer's growth opportunity, i.e., market to book ratio, debt to equity ratio, and the past issuance experience of Sukuk and the normal bond issuance as possible determinants that might influence Sukuk issuance. Since we estimate model (A) to verify financial order of Sukuk issuance based on information cost, parameter of accumulated normal bond issued by previous year is negative as this is prior to Sukuk issuance. Model (B) tries to find out if the Sukuk issuance crowd outs the use of the normal bond issuance. Our hypothesis is that the parameter of past Sukuk issuance experience is negative. In other words, the Sukuk is chosen prior to the normal bond issuance based on Trade-off theory. The empirical model (C) verifies if the past Sukuk issuance experience influences the bank borrowing as well. Our hypothesis is that the parameter of the Sukuk issuance experience is also negative based on trade-off theory.

The empirical results estimated by panel tobit estimation are summarized as follows. Under model (A), six equations are estimated to avoid possible correlations among the independent variables and confirm the robustness of the equations. The empirical results (a) to (f) suggest that natural logarithm of total asset, i.e., proxy of firm size, is

positively related to the Sukuk issuance. These positive parameters imply that large firms can access the Sukuk funding market more easily. In addition, what the empirical result of (e) suggests is that Sukuk is chosen by firms that have past issuance experiences. Firms without any previous experience of Sukuk issuance hardly employ this financing tool. In summary, it can be stated that two common characteristics of Sukuk issuers are large firm size and past Sukuk issuance experience .

The empirical results for models (B) and (C) are indicated as empirical results (g) and (h) in Table 5B. Empirical result (g) suggests that past Sukuk issuance experience negatively influences the issuance of normal bonds for the current financial year. Empirical result (f) of model (A) indicates that normal bond issuance of the previous financial year does not influence the current year Sukuk Issuance. Therefore, issuance of Sukuk is considered to be chosen prior to the normal bond issuance. In addition, empirical result (h) of model (C) indicates that Sukuk issuance negatively influences the bank borrowing, while the parameter of Sukuk is insignificant in empirical result (d). These empirical results imply that Sukuk issuance influences both the normal bond issuance and bank borrowing, but neither the normal bond issuance nor bank borrowing influences the Sukuk issuance.

Table 5A. Empirical Results 1 : Determinants of Sukuk Issuance

	Model (A)					
	(a) Dep. Var.= Sukuk		(b) Dep. Var.= Sukuk		(c) Dep. Var.= Sukuk	
ROA	4.1E-05	(0.010)				
CFlow			-1.2E-04	(-0.040)		
SIZE	0.001 *	(1.840)	0.001 *	(1.790)	0.001 *	(1.880)
MBR					1.6E-04	(0.260)
BANK						
Islam_P						
N_BOND						
DER	-0.001 ***	(-2.560)	-3.7E-04 ***	(-2.560)	-0.001 ***	(-2.580)
Dum1	-0.001	(-0.570)	-0.001	(-0.560)	-0.001	(-0.550)
Dum2	0.011 ***	(2.860)	0.011 ***	(2.870)	0.011 ***	(2.820)
Dum3	-0.004	(-1.300)	-0.004	(-1.270)	-0.004	(-1.300)
Dum4	-0.001	(-0.610)	-0.001	(1.180)	-0.001	(-0.640)
Year01	0.003	(1.350)	0.003	(1.350)	0.003	(1.340)
Year02	0.002	(1.170)	0.002	(1.180)	0.002	(1.170)
Year03	0.005 **	(2.440)	0.005 **	(2.430)	0.005 **	(2.430)
Year04	0.005 **	(2.210)	0.005 **	(2.210)	0.005 **	(2.200)
Year05	0.002	(1.030)	0.002	(1.030)	0.002	(1.040)
Const	-0.002	(1.040)	-0.004	(-1.480)	-0.005	(-1.520)
Wald chi2	22.060 **		21.960 **		22.130 **	
rho	0.005		0.007		0.005	
Likelihood Ratio of sigma_u	11.130 ***		10.220 ***		10.120 ***	
Observations	4,620		4,602		4,620	
Firms	955		954		955	

	Model (A)					
	(d) Dep. Var.= Sukuk		(e) Dep. Var.= Sukuk		(f) Dep. Var.= Sukuk	
ROA						
CFlow						
SIZE	0.001 *	(1.850)	0.001 **	(2.000)	0.001 **	(2.140)
MBR						
BANK	-2.2E-07	(-0.010)				
Islam_P			0.004 *	(1.710)		
N_BOND					6.7E-05	(0.690)
DER						
Dum1	-0.001	(-0.560)	-0.001	(-0.620)	-0.001	(-0.620)
Dum2	0.011 ***	(2.910)	0.009 ***	(2.740)	0.009 ***	(2.760)
Dum3	0.000	(-1.360)	-0.004	(-1.480)	-0.004	(-1.480)
Dum4	-0.001	(-0.600)	-0.001	(-0.560)	-0.001	(-0.550)
Year01	0.003	(1.340)	0.002	(1.310)	0.002	(1.310)
Year02	0.002	(1.140)	0.002	(1.110)	0.002	(1.100)
Year03	0.005 **	(2.500)	0.005 **	(2.410)	0.005 **	(2.400)
Year04	0.005 **	(2.230)	0.004 **	(2.170)	0.004 **	(2.160)
Year05	0.002	(1.030)	0.002	(1.260)	0.002	(1.260)
Const	-0.004	(-1.520)	-0.004	(-1.720)	-0.004	(-1.710)
Wald chi2	22.550 **		22.330 **		22.490 **	
rho	0.005		0.003		0.001	
Likelihood Ratio of sigma_u	21.160 ***		17.040 ***		15.010 ***	
Observations	4,708		5,064		5,059	
Firms	951		973		973	

Notes:

*** indicates the coefficient is significantly different from zero at the 1 percent level of confidence or less;
** indicates the coefficient is significantly different from zero at 5 percent level of confidence
* indicates the coefficient is significantly different from zero at 10 percent level of confidence

Table 5B. Empirical Results 2 : Determinants of Sukuk Issuance

	Model (B)		Model (C)	
	(g) Dep. Var.= N_BOND		(h) Dep. Var.= BANK	
ROA	-1.2E+00 ***	(-15.610)	-5.241 ***	(-3.740)
CFlow				
SIZE	-0.005	(-0.460)	2.019 ***	(4.140)
MBR				
Islam_P	-0.570 *	(-1.910)	-0.335 *	(-1.750)
DER	-0.004 **	(-2.170)	-3.3E-01 ***	(-2.782)
Dum1	-0.006	(-0.110)	-0.989	(-0.320)
Dum2	0.110	(1.160)	-0.010	(-0.180)
Dum3	0.151 **	(2.050)	-6.636	(-1.550)
Year01	0.064	(1.230)	0.537	(0.670)
Year02	0.036	(0.680)	0.305	(0.380)
Year03	0.103	(1.940)	0.924	(1.140)
Year04	0.303	(0.580)	1.225	(1.500)
Year05	0.032	(0.570)	0.386	(0.470)
Const	0.043	(0.590)	-12.614 ***	(-4.560)
Wald chi2	262.610 ***		32.560 ***	
rho	0.007		0.747	
Likelihod Ratio of sigma_u	37.210 ***		27.560 ***	
Observations	4,617		4,483	
Firms	955		942	

Notes:
*** indicates the coefficient is significantly different from zero at the 1 percent level of confidence or less
** indicates the coefficient is significantly different from zero at the 5 percent level of confidence
* indicates the coefficient is significantly different from zero at the 10 percent level of confidence

2. Determinants of Islamic Bank Borrowing

This section examines the determinants of another Islamic financing tool, i.e., Islamic bank borrowing. While Malaysia is the world largest Sukuk market, firms rarely choose Islamic banking as a financing scheme. GCC countries Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Abab Emirates hold the world's largest Islamic banking market. We empirically verify the characteristics of the firms that promote and determine the use of Islamic borrowing and the funding order of the borrowing. To examine the above propositions, we employed these equations:

(D)

$$IslamB_{it} = const + \chi_1 ROAB_{it-1} + \chi_2 SIZEB_{it-1} + \chi_3 DERB_{it-1} + \chi_4 BANKB_{it-1} + \chi_5 IslamB\_P_{it-1} + \varepsilon_{it}$$

$IslamB$: amount borrowed as Islamic bank borrowing divided by book value of total liability, $ROAB$: EBITDA divided by book value of book value of total assets, $SIZEB$: natural logarithm of book value of total assets, $BANKB$: Bank borrowing plus inter-firm borrowing plus other debt increase divided by book value of total liability, $IslamB\_P$: accumulated Islamic bank borrowing by previous year divided by book value of liability, $DERB$: book value of liability divided by market value of capital, Year01 -Year05: year dummy variables, DUM1: =1 when the firm is real estate, building materials, engineering and construction, others=0, DUM2: =1 when the firm is coal, gas, mining, oil and the suppliers of energy, others =0, DUM3: =1 when the firm is a commercial bank, insurance firm, venture capital, investment fund and other financial firm, others =0, CDUM1-CDUM5: country dummy variables, i.e., CDUM1: =1 when the firm headquarters is in United Arab Emirates, CDUM2:=1 when the firm headquarters is in Kuwait, CDUM3: =1 when the firm headquarters is in Bahrain, CDUM4: =1 when the firm headquarters is in Oman, CDUM5: =1 when the firm headquarters is in Qatar.

Equation (D) above employs the variables based on the following hypotheses. First, ROAB is chosen as a proxy of the firm's internal funding ability. We argue that firms with large internal funds do not have to participate in Islamic banking market as borrowers. SIZEB is a natural logarithm of book value of firm's total assets. Our hypothesis is that large firms are mostly those have long been established and have a channel to this funding market. BANKB is used as a proxy of firm's dependency on non-Islamic bank borrowing or inter-firm credit. Our hypothesis is that high BANKB firms avoid participating in the Islamic borrowing market. Here, we assume the normal bank borrowing or inter-firm credit is preferentially chosen to Islamic bank borrowing. IslamB_P is a variable that represents the past experience of Islamic bank borrowing. Our

hypothesis, in this regard, is that firms that have past Islamic borrowing experience can easily access this market. We employed Panel Tobit and GMM estimation and made three types of estimations to avoid possible correlation among the independent variables and confirm the robustness of the results.

Table 6 suggests that the parameters of ROAB are significantly negative as shown in empirical results (i) – (k), This is the major difference with the empirical result of Sukuk issuance. Firms with huge internal funds avoid Islamic bank borrowing, while Malaysian firms issues Sukuk regardless of the magnitude of their internal funding abilities. Islamic bank borrowing is chosen by large firms which is also true for Sukuk issuance. The empirical results (i) to (k) suggest that industrial concentration of Islamic bank borrowing users is remarkable in this case. Especially, firms in industrial sectors of real estate and urban development business are frequent Islamic banking borrowers.

Table 6. Determinants of Islamic Bank Borrowers: Empirical Results

	Model (D)					
	(i) Dep. Var.= IslamB		(j) Dep. Var.= IslamB		(k) Dep. Var.= IslamB	
IslamB(-1)					0.036	(0.673)
ROAB	-8.9E-03 ***	(-3.060)	-0.002 *	(-1.660)	-0.009 *	(1.900)
SIZEB	0.009 **	(2.430)	0.003 *	(1.750)	0.005 *	(1.880)
DERB	0.002 *	(1.768)	0.006	(1.490)	0.182	(1.540)
BANKB	-0.002	(-0.690)			0.181 **	(2.540)
IslamB_P			0.181 ***	(4.430)		
Dum1	0.258 **	(2.190)	0.367 **	(2.120)	0.219 ***	(3.560)
Dum2	0.007	(0.260)	0.238	(0.620)	0.301	(0.570)
Dum3	-0.003	(-0.300)	-0.005	(-0.340)	-0.008	(-0.400)
cdum1	0.011	(0.590)	0.265	(1.030)	0.327	(0.930)
cdum2	-0.003	(-0.210)	-0.001	(-0.000)	-0.002	(-0.500)
cdum3	-0.079 ***	(-3.410)	-0.009 ***	(-4.030)	-0.016 **	(-2.370)
cdum4	0.097	(0.530)	0.153	(0.590)	0.188	(0.530)
cdum5	0.004 ***	(3.180)	0.003 ***	(2.840)	0.037 **	(2.080)
Year01	0.053	(0.750)	0.051	(0.500)	0.116	(1.460)
Year02	-0.004	(-0.270)	0.256	(1.040)	0.362	(1.060)
Year03	-0.006	(-0.330)	0.997 ***	(3.800)		
Const	-0.008	(-0.200)	-1.873 **	(-1.860)	-3.166 **	(-2.060)
Wald chi2	22.340 **		32.480 **		13.490 *	
rho	0.094		0.139		18.000	
Likelihood Ratio of sigma_u	27.200 ***		3.910 *			
Observations	1,502		1,502		653	
Firms	481		481		365	
Number of Instruments					18	

Notes:
1 : ***, **, * indicate significance at 1 percent, 5 percent and 10 percent levels of confidence, respectively.
2 : Equations (i) and (j) are estimated by panel tobit estimation and (k) is by GMM estimation.

IV. Empirical Analysis 2: Islamic Bond Issuers and Shareholder's Value

A major finding of the previous section is that Sukuk issuance is resorted to prior to normal external finance, but the relationship with a firm's internal funds is insignificant. On the other hand, as for Islamic bank borrowing, significant negative relationship exists between internal funds and the Islamic bank borrowing. The first result does not support the pecking order theory while the second is subordinated to the internal funds when information cost is the smallest. These results support the observation that firms choose Islamic banking depending on the information costs, but Sukuk issuance does not consider the magnitude of the information cost. Therefore, we need to explore further evidence of Sukuk issuance, and why this financing scheme is chosen regardless of the internal funds.

Insignificant relationship between Sukuk issuance and the internal funds suggests that issuers were even cash affluent in some cases. This suggests that firms issue Sukuk to obtain other benefit no matter how large the information cost is. Our first hypothesis on this is that firms obtain an increase in the corporate value by issuing Sukuk. To examine this hypothesis, we employed event-study methodology of Brown and Warner (1985) and compared shareholder's values between Sukuk issuers and normal bond issuers. We first adopt a standard event study methodology to calculate abnormal returns originally developed by Brown and Warner (1985). The abnormal returns over three-day event window (-1, 1), eleven days event window (-5, 5), twenty one days event window (-10, 10) and forty one days event window (-20,20) around the issuance date using market model benchmark returns were estimated and market benchmark indexes were respectively extracted from the Kuala Lumpur market. By calculating abnormal returns of the above short-term and long-term event windows, we discussed the sources and origins of this abnormal return differences. The parameters for the market model were estimated over the (-250,-21) interval.

Table 7 shows the cumulative abnormal returns classified by Islamic and non Islamic issuers. In table 7, cumulative abnormal returns of Sukuk issuers are significantly positive no matter what the length of the event windows are. However, in case of normal bond issuers, the returns are insignificant, commonly. As for the difference in the cumulative abnormal returns between Sukuk issuers and normal bond issuers, difference of the return is significantly positive. To summarize, these empirical results suggest that Sukuk issuance obviously influences the stock price of the issuers, while the normal bond issuance does not as intuitively perceived.

Table 7. Shareholder's Value of Bond Issuers: Empirical Results

		(i) Sukuk Issuers (1)		(j) Normal Bond Issuers (2)		(k) Difference (2)-(3)	
(-1, 1)	Mean	3.11% ***	[5.71]	-0.14%	[-0.37]	3.25% ***	[5.08]
	Median	1.85% ***	[5.53]	-0.06%	[-0.47]	1.91% ***	[4.58]
(-5, 5)	Mean	12.43% ***	[6.03]	0.51%	[0.38]	11.92% ***	[5.04]
	Median	8.36% ***	[6.30]	-0.17%	[-0.02]	8.53% ***	[3.93]
(-10, 10)	Mean	20.39% ***	[6.71]	1.15%	[0.52]	19.24% ***	[5.26]
	Median	15.26% ***	[6.45]	0.30%	[0.33]	14.96% ***	[5.09]
(-20, 20)	Mean	31.88% ***	[6.77]	2.65%	[0.59]	29.23% ***	[4.40]
	Median	23.76% ***	[6.07]	0.47%	[0.01]	23.29% ***	[5.28]
	Observations	72		91			

Notes:
1. Cumulative abnormal returns for acquirers are calculated for the three-day (-1, 1), eleven days (-5, 5), twenty one days (-10, 10) and forty one-day (-20, 20) events around the announcement of a takeover. Abnormal returns are estimated using market index returns of mother country market of each acquirer. The parameters for the market model are estimated over the (-250,-21) interval. All issuers are publicly traded listed on the domestic/foreign stock exchange.
2. *** denotes significance at 1 percent level of confidence, ** denotes significance at 5 percent level of confidence and * denotes significance at 10 percent level of confidence.

V. Empirical Analysis 3: Islamic Finance and the Firm's Productivity

Sukuk issuance is preferentially chosen as a funding scheme as it brings higher stock returns as examined in the previous section. This section provides further verification of this result. Our hypothesis of this increasing shareholder's value origin is where the issuer enhances the competitiveness in the product market through an improvement of the consumer's credibility and their

organizational reputation. Final consumers support firms funded by Islamic finance if the quality of the products is as competitive as other firms in the Islamic society. Since it is difficult to estimate these qualitative values of credibility and reputation directly, we employed the following empirical equations to assess the issuer's post issuance performance.

(E)

$$GTFP_i = const + \omega_1 SUKKA_i + \omega_2 SHARE_i + \omega_3 (SUKKA_i * SHARE_i) + \omega_4 (SUKKA_i)^2 + \omega_5 (SHARE_i)^2 + \omega_6 Ijara_i + \omega_7 Musharakah_i + \omega_8 Mudharabah_i + \zeta$$

(F) $$GTFP_i = SALES_i + \lambda * LABOR_i + \kappa * MATERIAL_i - (1 - \lambda - \kappa) * CAPITAL_i$$

$GTFP$: average total factor productivity (2002-2006), $SUKKA$: Sukuk issued divided by total liability (2002-2006 average), $SHARE$: total sales divided by aggregated sales of same SIC code of listed firms, $IJARA$: =1 when the type of Sukuk is Ijara Sukuk others are =0, $Musharaka$: =1 when the type of Sukuk is Musharakah Sukuk others are =0, $Mudharabah$: =1 when the type of Sukuk is Mudharabah Sukuk, others are =0, DUM1: =1 when the firm is real estate, building materials, engineering and construction, others=0, DUM2: =1 when the firm is coal, gas, mining, oil and the suppliers of energy, others =0, DUM3: =1 when the firm is a commercial bank, insurance firm, venture capital, investment fund and other financial firm, others =0, DUM4: =1 when the firm is electronics, internet provider, semiconductor manufacture, software and telecommunications, others=0, $SALES$: average sales growth(2002-2006), $LABOR$: average number of employee growth (2002-2006), $MATERIAL$: average cost of raw materials growth (2002-2006), $CAPITAL$: average capital stock growth (2002-2006), λ, κ are respectively share of personnel expenses and cost of raw materials to the total sales. Total sales and cost of raw materials are deflated by GDP deflator.

Re

Empirical model of (E)-(F) did not use panel data, but cross-sectional data of the listed firms since the methodology of total factor productivity estimation could not be done without obtaining time series data by each firm. Hence, GTFP is calculated from the 2002-2006 data for each listed firms. We accordingly employed the independent variable of the five year average 2002-2006. Our empirical results are as follows. The parameter of Sukuk issued divided by total liability is significantly positive. The parameter of the firm's market share is insignificant, but the intersected variables between market share and the Sukuk issued divided by total liability is significantly positive. To examine the robustness of the above equations, this section also shows the result of additional test of (F) in addition to the equation (E). The above results are also found in this additional model.

Table 8. Sukuk Issuance and Total Factor Productivity: Empirical Results

	(l) Dep. Var.= GTFP		(m) Dep. Var.= GTFP	
SUKKA	1.4E+00 ***	(2.790)	1.576 **	(2.000)
Share	-0.110	(-1.070)	-1.2E-01	(-0.740)
SUKKA*Share	0.565 ***	(2.940)	0.587 *	(1.810)
SK^2	-0.253	(-0.080)	9.1E-02	(0.380)
SH^2	0.094	(0.760)	0.123	(0.510)
ROAA			-5.3E-05	(-2.782)
SIZEA			-0.011	(-1.290)
DERA			0.001	(0.310)
Ijara	0.032	(0.320)	0.053	(0.460)
Musharakah	0.064	(0.490)	0.030	(0.150)
Mudharabah	0.001	(0.322)	0.017	(0.300)
Dum1	-0.009	(-0.460)	-0.005	(-0.180)
Dum2	0.034	(1.020)	0.052	(0.880)
Dum3	-0.003	(-0.120)	0.016	(0.410)
Dum4	-0.004	(-0.200)	0.013	(0.340)
Const	0.011	(1.530)	0.059	(1.590)
Adj R-squared	0.005		0.004	
Observations	970		616	

Notes:

1 : ***, **, * indicate significance at 1 percent, 5 percent and 10 percent levels of confidence, respectively.
2 : Equations (l) and (m) are estimated by ordinary least squares.

VI. Discussion

A subsidiary of the Japanese supermarket, AEON Credit Service, issued USD56 million of Musharakah Sukuk in January, May and October in 2007. During our interview survey with them in 2006, financial officers of AEON Credit Service mentioned that their ROA and Capital Adequacy Ratio of the firm are high enough and they would not have originally depended on external funding market for their corporate finance. This preliminary interview survey is a background of our hypothesis and suggests that the Sukuk issuance is not determined depending on information cost, but other managerial merits as shown in our empirical results.

Our empirical results also suggest that Islamic bank borrowing is, on the other hand, positioned as one of the corporate financing tools in GCC countries. Here, explanatory power of pecking order theory is high. However, this funding scheme is used by firms in a limited number of industrial categories and not many firms have access to this funding market. Real estate and the urban development business are among these industrial categories and these firms usually have large assets for their commercial activities. This is one of the reasons why common characteristics of Islamic banking users are firms which are large. Our empirical results of Sukuk and Islamic bank borrowing pointed out that determinants of these financing choices are different. Therefore, we must recognize that participants in the Malaysian market and those in GCC Islamic banking market have a different purpose for their market entry.

One of the remarkable points of our empirical results is that the relationship between the firms' internal funds and Sukuk issuances are insignificant. This suggests that even firms with huge internal funds might even issue Sukuk. We hypothesize that the issuer's purpose is to enhance competitiveness in the product market through an improvement in final consumer's credibility. Although it is difficult to estimate the competitiveness and the credibility, directly, we examined this by looking at shareholder's value and total factor productivity before and after the issuance and found these two indicators support the hypothesis. This evidence suggests that direct financing tool of Sukuk issuance is more convenient for firms that would like to make a new entry in the local Islamic product market. Therefore, this could be an important factor in the dramatic expansion of the Sukuk market in the recent years.

Friedman (1970) defined a firm as "That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical custom." In this regard, it is understandable that Shariah qualified Islamic finance is ethically preferred because of the latter reason. However, there are recent discussions of this matter focusing on socially responsible ethical custom that may reduce shareholder's value. Since Jensen and Meckling (1976) and Easterbrook and Fishel (1991) regard corporate activities as the "nexus of contracts" between the suppliers of various factors of productions and shareholders have no contractual guarantee of a fixed payment from the activities, pursuit of the social contribution is not appropriate for the firm. These literatures suggest that Islamic finance consequently reduce the corporate value and it must not be used if this finance deteriorates the managerial performance. On the other hand, Sheehy (2005) and Gabaldon (2006) suggested that sacrificing profits in the public interest is entirely allowed since corporate directors have fiduciary responsibilities that extend to a wide variety of potential stakeholders. In addition, Lyon and Maxwell (2004) and Vogel(2006) pointed out that firms with high corporate performance frequently combined profit maximizing project and social responsible activities. These also suggest that social responsible activities do not always reduce corporate value, it sometimes accelerates it. Our empirical results regarding shareholder's value and total factor productivity show that this idea can be a possible explanation why Sukuk issuers are increasing in the Islamic bond market. Sukuk issuance is used not only as a corporate funding tool, but also used because it financially and ethically brings high benefit. Jensen et al. (2002), Heinkel et al. (2001) and Graff Zivin and Small (2005) pointed out that these social responsible activities not only improves the consumer's credibility, but also increase corporate value through an increase in additional equity investment from the emphatizing external investors.

The main conclusion of this paper is that Sukuk issuance and the Islamic bank borrowings are used by firms with different characteristics, sdifferent purpose and different funding orders. Therefore, benefits that users receive from the funding tool are different between Sukuk and Islamic bank borrowings. This paper does not employ the direct qualitative survey to examine the above corporate purpose, etc., but we regard our empirical results of

stock price effect and post issuance productivity support our hypotheses that Sukuk issuance is used to enhance the competitiveness in the product market. This is also the reason why non-Islamic multinational firms made new entry in the Sukuk market.

VII. Concluding Remarks

Empirical evidences from this paper suggest that users of Sukuk and Islamic bank borrowing are different and the purpose of the use is also different. Accordingly, funding order of these financial schemes is also different. Both financial schemes are used by large firms that have past experiences of this type of funding, but the Islamic bank borrowing has an industrial sectoral bias, i.e. borrowers are mainly real estate business or urban development business firms. More than anything, Sukuk issuance is not possibly regarded as a primary funding tool. In this regard, although a firm's social responsible ethical custom may in general reduce the shareholder's value in many industrial countries, this ethically desirable Islamic finance increases the shareholder's value and improve the issuer's productivity. This is what we would like to emphasize in our discussion based on the empirical results. The above finding is the reason why foreign investors increase the investment in Sukuk and the equity of the issuers and improve their corporate performance in the product market in the post-issuance period. These are our study's main conclusions, but some of them are not directly derived from the survey. In particular, this paper did not directly examine the possible relationship between corporate ethical custom and the Sukuk issuance. In addition, we employed total factor productivity as a proxy of market competiveness in a product market. Future studies can verify the relationship between final consumer's credibility and firm's productivity in a post issuance period.

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APPENDIX 1: Explanation of Data Employed in Study

1. Number of Sukuk Issuers and Non-Issuers

	(A) Sukuk Issuers		(B) Normal Bond Issuers		(C) Non-Sukuk	Total
	(a) All	(b) Listed Firms	(a) All	(b) Listed Firms	Issuers	
2002	4	0	303	25	708	708
2003	25	10	112	27	763	773
2004	48	14	158	42	834	848
2005	71	18	375	41	904	922
2006	150	18	390	42	924	942
2007	116	16	505	71	953	969
	414	76	1,843	248	5,086	5,162

Note: Author's estimates based on ISI Emerging Markets.

2. Number of Sukuk Issuers and Non-Issuers by Type

	(A) Sukuk Issuers by	(B) Listed Issuers by Type	(B)/(A)	(a)～(e)/(B)
(a) Ijara Sukuk	57	4	7.0%	5.4%
(b) Musharakah Sukuk	46	2	4.3%	2.7%
(c) Mudarabah Sukuk	10	3	30.0%	4.1%
(d) BBA	82	14	17.1%	18.9%
(e) Others	219	51	23.3%	68.9%
(f) Total	414	74	17.9%	100.0%

Note: Author's estimates based on ISI Emerging Markets

3. Number of Islamic Bank Borrowers

	(A) Islamic Borrowers		(B) Non-Islamic Borrowers	(C) Total
	(a) All	(b) Listed Firms		
2004	16	4	437	441
2005	28	9	485	494
2006	39	11	511	522
2007	86	12	465	477
	169	36	1,898	1,934

Note: Author's estimates based on ISI Emerging Markets

4. Number of Islamic Bank Borrowers by Country

	(A) Islamic Borrowers	(B) Listed Borrowers	(B)/(A)	(a)〜(e)/(B)
(a) Saudi Arabia	62	8	12.9%	22.2%
(b) United Arab Emirates	63	11	17.5%	30.6%
(c) Kuwait	15	7	46.7%	19.4%
(d) Qatar	20	6	30.0%	16.7%
(e) Oman	3	1	33.3%	2.8%
(f) Bahrain	38	3	7.9%	8.3%
Total	201	36	17.9%	100.0%

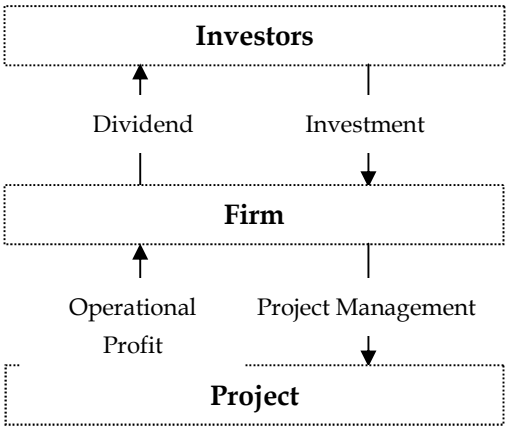
Note: Author's estimates based on ISI Emerging Markets

APPENDIX 2: Basic Concept and Scheme of Islamic Finance by Type

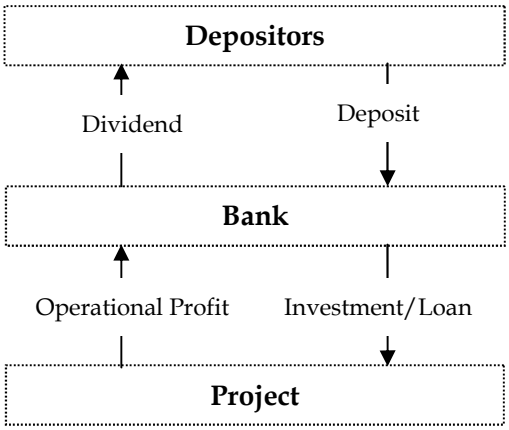
The chart below presents the flow of funds of Islamic finance scheme by selected type. Mudarabah and Ijara are indicated because these financial schemes represent and symbolize Islamic finance. As noted in section II of this paper, these two schemes account for 26 percent of Sukuk market in 2007. The remaining 74 percent are accounted for by Murabahah, Musharakah and others. As interest payment/receipt is forbidden by shariah, invstors/depositors receive benefit as dividend from the net profit of the project. In case of Mudarabah, investor/depositors are separated from the project, but are considered project participants in the case of Musharakah. Under Ijarah scheme, which recorded the most dramatic development, fund raisers first establish a special purpose company (SPC), sell their fixed assets and this SPC provides the leasing facility for the production. This SPC issues Sukuk asset backed by the leased fixed assets.

(A) Mudarabah

(a) Mudarabah Sukuk Issuance



(b) Mudarabah Bank Facility



(B) Ijara Sukuk