The Determinants of Sukuk Market Development: Does Macroeconomic Factors Influence the Construction of Certain Structure of Sukuk?

Ali Said[1] and Rihab Grassa[2]

Abstract

The present paper examined the reasons Macroeconomic Factors Influence the Construction of Certain Structure of *Sukuk*. The scope of our study covers the most Sukuk issuers' countries namely: Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Malaysia, Brunei, Pakistan, and Gambia observed over the period 2003-2012. The study has analyzed the influence of (i) Economic and Macroeconomic factors, (ii) Global financial Crisis (iii) Financial System (iv) Institutional Environment (v) Legal Origin and (vi) Religion and Society Factors on the Development of the *Sukuk* Market. The study showed that Macroeconomic factors such GDP per capita; economic size, trade openness, and percentage of Muslims have a positive influence of the growing of the *Sukuk* market. Financial crisis has a significant negative effect on the development of the Sukuk market since the amount of Sukuk issued in those years has declined considerably. Regulatory quality has a significant effect on the development of *Sukuk* market. This implies that countries ranking higher in regulation quality have a larger *Sukuk* market. This is can be interpreted as efficiency and reliability of regulations.

1 Introduction

The Islamic banking system has to follow Islamic law (*Shariah*), which, prohibited interest rate in banking transactions, which might have some effect on the operation of that organization. As a result, to conform with Islamic laws governments, corporations,

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[1]Strayer University, United States, Phone: 859-270-8755.
[2]Phone: 00971 55 2867405.

and banking entities needed to develop alternative financial tools that could be acceptable by the *Shariah* laws and provide liquidity and mobility for resources in the Islamic banking system [15].

In the recent years, the market for *Sukuk* has grown fast from less than $8 billion in 2003 to USD 197,042 billion in 2010 [8]. *Sukuk* has been the tools that have provided sovereign governments and corporations within access to the liquidity pool as well following Islamic laws. In 2009, the issuing of the *Sukuk* has increased to reach symbolic bar of $100 billion. The major issuers of Islamic finance tools were the Asian countries. In addition, Asia was the major regional engine of growth for the *Sukuk* market, which accounted for 63.9% of issuance and Malaysia alone was the source of 54.1% of issues [5].

While a considerable body of literature has focused on the determinant of the development of the bond market, in our best knowledge only one study has attempt to discusses the determinants of the development of the Islamic bond market (*Sukuk* Market) in GCC context [7]. Most of previous researches on *Sukuk* are theoretical and focuses on the structures of *Sukuk*. It seems to be efficiently to investigate on the factors driving the rapid growth of the *Sukuk* market Worldwide.

This study attempts to identify the influence of the macroeconomic factors the construction of a certain Structure of *Sukuk* in the most Sukuk issuers' countries namely: Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Malaysia, Brunei, Pakistan and Gambia. In particular, we will try to study the influence of (i) Economic and Macroeconomic factors, (ii) Global financial Crisis (iii) Financial System (iv) Institutional Environment (v) Legal Origin and (vi) Religion and Society Factors on the Development of the *Sukuk* Market. The study tries also to investigate on the determinant of choosing some particular structures of Sukuk rather than others structures of *Sukuk*.

The scope of our study covers the most *Sukuk* issuers' countries namely: Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Malaysia, Brunei, Pakistan, and Gambia observed over the period 2003-2012. Using a panel data analysis under the fixed and random effects specifications, we find a confluence of many variables drives the development of Sukuk market.

This study contributes to the literature in several ways. This study is the first paper focuses on the determinant of growth of the Sukuk markets worldwide. Further, this is the first paper focuses on the influence of the macroeconomic factors on the construction of a certain Structure of Sukuk worldwide, an area that continues to lag in the Islamic finance literature. Our findings reveal that Sukuk market will have a strong potential of growth worldwide in the next years.

The remainder of the paper is structured as follows. In section 2, we discuss the literature review. In section 3 we present data and the methodology adopted for our paper. Our main empirical results are presented in section 4. Section 6 offers our concluding remarks.

2 Literature Review

Sukuk are financial instruments that use for raising funds, and they are to be considering financial instruments for resource mobilization, for public or private sector [10]. In addition, According to [1], Sukuk consider being an investment products and can be described as "certificates of equal value representing undivided shares in ownership of

tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity".

Sukuk consider securities have similarity features to conventional bonds, which many reason why the financial media label them those types of securities as Islamic bonds. However, Ariff and Safari [4] showed there are significant differences in yield of *Sukuk* against yield of conventional bonds. In addition, the study did not show causal relation between yields of these two types of securities. As well, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) guidelines show the differences between Sukuk and conventional bonds. These guidelines show that *Sukuk* do not symbolize a debt owed to the certificate holder by the issuer and that the owners share in the returns and bear the losses.

2.1 Type of Sukuk

Ijarah Sukuk: These certificates are released on stand-alone assets that are identified on the balance sheet. The assets can be any fixed assets to be leased such as aircrafts, land, and ships [13].

Hybrid/Pooled Sukuk: Those types of *Sukuk* consisted of the underlying pool of assets can consist of *Istisna'a*, which is a type of *Sukuk* that is based on *Istisna'a*, the investor commonly uses a parallel *Istisna'a* contract how enters a contract with a subcontractor building the facility being financed. The government authority or private company will need to authorize the project by providing the details of the specifications and timing of the schemes to be able to use *Istisna'a* [13].

The investors then provide the proposed documents for the bond. The next types of *Sukuk* would be *Murabahah* these bonds have been highly successful in the case of investment deposits with Islamic banks; where the return is calculated annually based on the bank's profits. Owners of *Mudaraba* notes lack the same rights and benefits as equity investors [13].

Variable Rate Redeemable: such as *Musharaka Sukuk*, those types of *Sukuk* involve forming a partnership or company to provide financing with members. The sharing in profits in this type of security will be based on correlation to the size of their investment share [13].

Fixed-Rate Zero-Coupon Sukuk: is a type of *Sukuk* that can be created where the assets to be mobilized do not yet exist. Subsequently, the objective of the fund mobilization would be to create more assets on the balance sheet of the company through *Istisna* [13].

Salam Sukuk: is a type of *Sukuk* where a business desires to manufacture a specific product at a future date, sells products in advance, and sets a delivery date in the future to monetize from the assets through the issuance *Sukuk al-Salam*. This type of *Sukuk* would be equal in value when issued and used for mobilizing (Salam) capital [13].

Bai' Bi-thaman Ajil (BBA)/Bai' Muajjal Sukuk: is a type of that deferred payment sale of goods permitted in Shariah. According to some Islamic scholars, this type of *Sukuk* would have a jointly agreed price that could be different from the spot price.

3 Research Question

Does Macroeconomic Factors Influence the Construction of Certain Structure of *Sukuk*?

4 Methodology and Model

In this section, we will present the methodology and the multivariate analysis. Empirical finding on the (i) Economic and Macroeconomic factors, (ii) Global financial crisis (iii) financial system (iv) institutional environment (v) Legal origin and (vi) Religion and society determinants of the Sukuk market development are also presented for 10 countries namely: Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Malaysia, Brunei, Pakistan, and Gambia.

4.1 Model

The panel data comprises 10 countries3 from different regions. The data covers the period 2003-2012 at an annual frequency for a maximum of 100 year of observations. Data were selected according to data availability for all the relevant variables. Data were collected from Zawya database. Table 1 Presents and describes the list and source of variables used in this study.
Our model will be as follow:
The model to be estimated is:

$$Y_{i,t} = \alpha_i + \beta X_{i,t} + \mu_{i,t} \qquad \text{For i = 1, 2...N, t = 1, 2....Ti}$$

Where *Yi,t* the dependent variable: Sukuk issued as share of GDP, $X_{i,t}$ is a matrix of factors that could explain the development of Sukuk market in the 10 observed countries, made up of macroeconomic variables, indicators of the financial system, institutional quality, Global financial crisis, market regulation, Legal origin, religion and society.
α_i is the unobserved country specific fixed effect, $\mu_{i,t}$ is the error term for each observation. Fixed effects as well as random effects models are considered in this study. We use the Hausman test to select the appropriate estimator. If the Hausman test rejects the null hypothesis that the individual effects are not correlated with the explanatory variables, the most suitable estimation would then be the fixed-effects model.

4.2 Definition of Variables and Data

The Independent Variables of the study would be Macroeconomic variables such as

i. *Economic and Macroeconomic Factors:*
Economic Size: is measured by GDP at purchasing power parity (EC SIZE). This indicator has been used in the literature to measure country size.
Interest Rates: is measured by interest rate spread (lending rate minus LIBOR). Higher rate of interest seem to have a depressing impact on issuance and development of both bonds and *Sukuk* market since few firms can issue bonds/*Sukuk* when interest rate are

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[3]Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Malaysia, Brunei, Pakistan, and Gambia

high. We expect a negative relationship between nominal interest rate volatility and *Sukuk* market development. Rising interest rates hinder the diffusion of *Sukuk* market because they raise the opportunity cost for less devout individuals to buy *Sukuk*. The interest rate is also considered as an indicator of macroeconomic instability.

Inflation: Macroeconomic instability may be an important factor for the development of financial development. We consider the current inflation as our second indicator of macroeconomic stability. We expect that there is a strong negative relationship between inflation and *Sukuk* market development. A stable economic environment is favorable to the development of both bonds and *Sukuk* market.

Oil Revenues: To capture this effect we use three indicators of oil revenues: (i) Oil prices (OILPRI): as the measure of oil prices we have considered the crude oil prices, (ii) Values of oil exports (OILEX) and (iii) Oil rents to GDP ratio (OILRENTS). We expect that all oil revenues indicators have a positive effect on the development of *Sukuk* market.

Openness of an Economy: is measured as the ratio of export to GDP. Several studies have stressed the importance of the degree of openness of an economy in determining market development [11]. The expected sign must be positive the economic growth is measured by GDP per capita (EC growth). We expect that economic growth will have a positive impact on the development of the *Sukuk* market

Population: we use total population to examine the effect of the population on the growth of Islamic finance.

ii. Financial Crises:

Global Financial Crisis: will be used to understand its impact on the development of the Sukuk market. According to Standards and Poor's rating agency report, the global financial crisis has encouraged growth of the *Sukuk* [14].

Dubai Sukuk Crisis: will be used to understand its impact on the development of the Sukuk market.

iii. Indicators of Financial System:

Islamic Banking System Size, measured as Islamic financial assets to GDP, is also determinant of *Sukuk* market development. Islamic banks serve as dealers' markers, and their presence is required for the development of the *Sukuk* market. As well, Islamic banks and *Sukuk* markets in providing Shari'a-compliant financial mechanisms, and in the other hand well-developed Islamic financial system can deprive *Sukuk* of market share.

Banking System Size: measured as domestic credit provided by the banking sector to GDP is always described in the literature as a determinant of the bond market development. It seems to be interesting to see the effect of this variable on the development of *Sukuk* market.

Bonds Market Size: is measured as the value of bonds issuance to GDP. We consider this variable to check if *Sukuk* market can be a substitute of the conventional bond market or a complement. The effect of the conventional bonds market on the development of *Sukuk* market appears ambiguous now.

Country Credit Rating is an assessment done by a private rating agency that indicates the risk level of the investing environment of a country and which can be used by investors looking to invest abroad. We expect that the sovereign credit rating will have a positive impact on the *Sukuk* market development.

iv. Institutional Quality:

We will use three variables to measure the institutional environment: (i) rules of law (ii) control of corruption and (iii) regulation quality.

Rule of Law: The extent to which agents have confidence in and abide by the rules of society, including the quality of contract enforcement and property rights, the police and the course, as well as the likelihood of crime and violence. The law subcomponent is an assessment of strength and impartiality of the legal system while order assesses popular observance of the law.

Control of Corruption: The extent to which public power is exercised for private again, including both petty and grand forms of corruptions, as well as 'capture' of the state by elites and private interests. A high level of corruption that undermines law enforcement will be negatively related to Sukuk market development.

Regulatory Quality: The ability of the government to provide sound policies and regulations that enables and promotes private sector development.

These variables have been rescaled to assume values between zero and one. In all cases, larger values indicate better institutions. We expected a positive relationship between Sukuk market development and indicators of institutional quality.

v. Legal Origin Factors:

The Shari'a Law: is a dummy variable equal to one if the country adopted a pure Law from the Shari'a law and zero otherwise.

Mixed Civil Law / Shari'a Law: is a dummy variable equal to one if the country adopted a mixed Law from the French Civil law and Shari'a law and zero otherwise.

Mixed Common Law/ Sharia Law: is a dummy variable equal to one if the country adopted a mixed Law from the French Civil law and Shari'a law and zero otherwise.

vi. Religion and Cultural Factors:

Muslim: is a dummy variable equal to one if the country's primary religion is Islam and zero otherwise. In fact, the higher percentage of Muslims in a country, the faster development of Islamic banks,

Ethnic Fractionalization: is an indicator of ethnic diversity it measures the probability that two randomly selected individuals from a given country will not belong to the some ethnic group. [9] argue that ethnic diversity leads to corruption and low efficiency in governments that expropriate the ethnic losers. When this view is applied to the financial sector, the implication is that greater ethnic diversity implies the adoption of policies and institutions that are focused on maintaining power and control, rather than on creating an open and competitive financial system.

5 Results

5.1 Descriptive Statistics

Figure 1 describes the development of Sukuk issuance during the period 2003-2012 for our 10 countries. *Sukuk* issuance has increased considerably from the period 2003-2007. The year 2008 has seen a shadow in *Sukuk* issuance due to the global financial crisis. Nevertheless, starting from the 2009, *Sukuk* market has increased considerably.
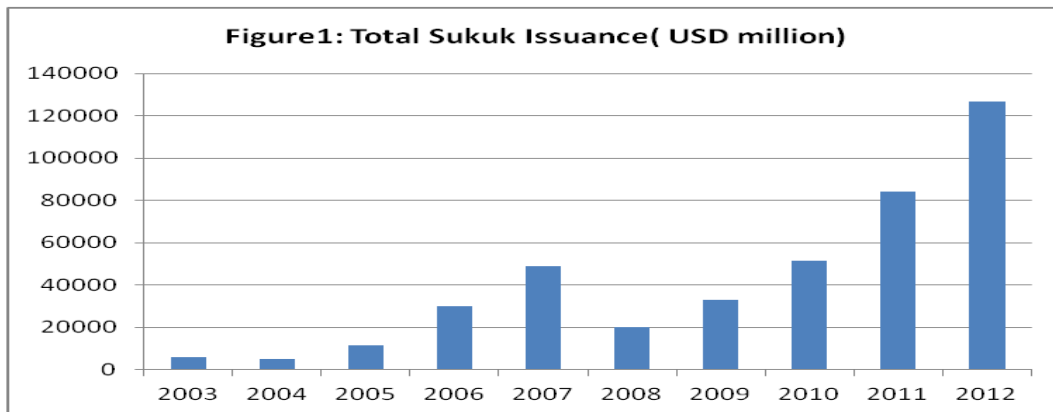
Figure 1: Total Sukukb issuance

For the period 2003-2012, Malaysia is the biggest *Sukuk* issuer (57% of total *Sukuk* issued) as described by figure 2. Brunei is the second *Sukuk* issuer, (18%) and UAE is the third one (8%). Figure 3 describe the different structure of *Sukuk* issued during the period 2003-2012. *Ijarah Sukuk* is the most *Sukuk* structure used (37%). *Murabaha Sukuk* represents 31% of *Sukuk* issued, *Musharaka* 12%, *Mudaraba* 4% and *Bai bitamam al ajal* 12%.

Figure 2: Global *Sukuk* Issuance by Country during the Period 2003-2012

Figure 3: Global *Sukuk* Issuance by *Sukuk* Structure during the Period 2003-2012

5.2 Regression Results

Tables 2, 3, 4 and 6 present the regression results of the importance of (i) Economic and Macroeconomic factors, (ii) Global Financial Crisis (iii) Financial System (iv) Institutional Environment (v) Legal Origin and (vi) Religion and Society determinants of the *Sukuk* market development on *Sukuk* market development.
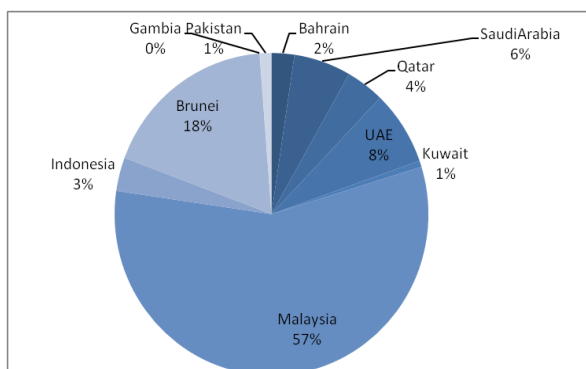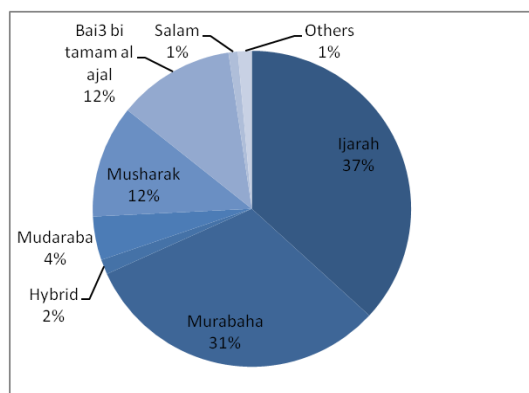
Table 2: Macroeconomic Determinants of Sukuk Market Development

Macroeconomic Indicators	Measured by	Source
Economic size (EC SIZE)	GDP at purchasing power parity (EC size)/ Population (POP)	World bank
Interest rates (INTER)	Interest rate spread(lending rate minus LIBOR)	World bank
Inflation (INF)	Inflation (INF)	World bank
Openness of an economy TO)	Export to GDP	World banks
The economic growth (EC growth)	GDP per capita	World bank
OIL revenue	Values of oil exports (OILEX)	OPEC
	Oil rents to GDP ratio (OILRENTS).	OPEC
Institutional Environment	Measured by	Source
Rules of law (LAW)	Scale of many variables	Developed by Kaufmann and al.(1999)
Control of corruption (CORR)	Scale of many variables	Developed by Kaufmann and al.(1999)
Regulation quality (REGUL)	Scale of many variables	Developed by Kaufmann and al.(1999)
Financial Development	Measured by	Source
Islamic banking system size	Islamic financial assets to GDP	World bank
Banking system size	Domestic credit provided by the banking sector to GDP	Central banks of GCC countries
Bonds market size	value of bonds issuance to GDP	World bank
Economic risk	Scale of many variables	Developed by Kaufmann and al.(1999)
Financial risk	Scale of many variables	Developed by Kaufmann and al.(1999)
The country credit rating	Rating	Moodys Investor Service
Legal Origin	Measured by	Source
Shariah Law	Dummy variable equals 1 if the country adopted the Shari'a law and 0 otherwise	Factbook, CIA
Mixed Shariah Law/ Common Law	Dummy variable equals 1 if the country adopted a mixed Law from the French Civil law and Shari'a law and 0 otherwise	Factbook, CIA
Mixed Shariah Law/ Civil Law	Dummy variable equals 1 if the country adopted a mixed Law from the French Civil law and Shari'a law and 0 otherwise	Factbook, CIA
Religion and Culture	Measured by	Source
Muslim	dummy variable equals one if the country's primary religion is Islam and zero otherwise	PEW Report
Ethnic Fractionalization	Measures the probability that two randomly selected individuals from a given country will not belong to the some ethnic group	LLSV et al. (1999)

Table 2 summarizes the results of fixed and random models for our study. In the first columns of the table, we present results only for our basic regression composed of two variables: economic growth and trade openness. The results showed that economic growth measured by GDP per capita has a significant effect on the development of the

Sukuk market in GCC countries. As well, trade openness has a positive and significant effect on the development of the Sukuk market. This implies that higher level of natural openness, the higher level of access to external funding and the greater the development of the local Sukuk market. This is contrary to the finding of [3] on the development of the bond market in sub-Saharan Africa and [7] on the development of Sukuk market in GCC countries, and consistent with the finding of [11]; [6] on the development of the bond market in Asia.

The level of the population do not appear a non-significant determinant to the development of the Sukuk market. The economic size is positively related to Sukuk market development. This is consistent with the finding [6], [3] and [7]. Bigger economy has a strong potential to develop their Sukuk market.

To investigate the effect of macroeconomic instability on the development of Sukuk market, we introduced current inflation in the model (column 4). The results show that inflation does not seem to have a strong effect on the development of Sukuk market in general. Besides, column 5 of our regression table 2 shows that the interest rate has a negative but not significant effect on the amount of the Sukuk issued. This finding is inconsistent with the finding of [3].

In order to test the importance of the oil sector in developing the Sukuk market, two indicators of oil revenues are considered which are described above. Results show that our two oil indicators don't have any significant effect on the development of Sukuk market. This finding is contrary to the finding of [7], where they found a positive and significant effect between oil revenues and Sukuk market development in GCC countries.

Table 3: Financial Crisis and Sukuk Market Development:

Financial Crisis			
Y= Sukuk /GDP			
	Panel 1	Panel 2	Panel 3
EC growth	**0.003**	**0.073**	**-0.003**
	(2.13)**	**(1.95**)**	**(1.88*)**
TO	**0.077**	**-0.217**	**0.079**
	(5.47*)**	**(3.70***)**	**(5.60***)**
Global financial crisis		**-0.036**	
		(2.21)**	
Dubai Sukuk crisis			0.022
			-1.25
CST	0.009	-0.66	-0.002
	-0.36	-1.39	-0.08
R^2	0.3841	0.1442	0.4014
Hausman	RE	FE	RE
Note: Panel estimations of 10 countries. Y is the dependent variable.			
H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.			
T-statistics for the coefficient are in parenthesis			
*** significant at 1%,** significant at 5% and* significant at 10%.			

The financial crisis has a positive and negative effect on the development of the *Sukuk* market since the amount of *Sukuk* issued in this year has declined considerably. However, the Dubai debt crisis has no significant effect on the development of *Sukuk* market.

Table 4: Financial System and Sukuk Market Development

Financial System and Sukuk Market Development							
Y= Sukuk /GDP							
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7
EC growth	**0.003**	**0.006**	**0.053**	**0.007**	0.009	**0.003**	**0.0035**
	(2.13**)	(3.67***)	(1.72*)	-0.76	-0.69	(2.14**)	(2.15**)
TO	**0.077**	**0.106**	**-0.109**	**0.0822**	**0.063**	**0.076**	**0.075**
	(5.47***)	(7.03***)	(2.15**)	(6.23***)	(3.87***)	(5.28***)	(4.97***)
Islamic finance size		0.009					
		-1.02					
Banking size			-0.068				
			-1.02				
Bond market				**0.389**			
				(2.11)**			
Credit rating					0.002		
					-0.41		
Economic risk rating						-0.005	
						-0.33	
Financial risk rating							-0.0004
							-0.47
CST	0.009	0.024	**-0.488**	0.068	0.119	0.011	**0.016**
	-0.36	-0.89	**-1.29**	-0.39	-0.54	-0.44	**-0.54**
R^2	0.3841	0.559	0.1904	0.666	0.6138	0.3853	0.3866
Hausman	RE	RE	FE	Re	RE	RE	RE
Note: Panel estimations of 10 countries. Y is the dependent variable.							
H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.							
T-statistics for the coefficient are in parenthesis							
*** significant at 1%,** significant at 5% and* significant at 10%.							

We now report the impact of the financial system in general and the Islamic financial system in particular on the *Sukuk* market development. The results of the panel data estimations are reported in Table 4. As seen, Islamic banking size and whole banking size have no significant effect on the development of *Sukuk*. Moreover, bond market has a significant and positive impact on the development of *Sukuk* market. Hence it appears that conventional bond market and *Sukuk* market are complements rather than substitutes. The country credit rating in general has no effect on the development of *Sukuk* market.

Table 5: Institutional Determinants of Sukuk Market Development:

Institutional Quality and Sukuk Market Development				
Y= Sukuk /GDP				
	Panel 1	Panel 2	Panel 3	Panel 4
EC growth	**0.003**	**0.003**	**0.004**	**0.002**
	(2.13)**	**(2.40***)**	**(2.56***)**	**(1.66*)**
TO	**0.077**	**0.069**	**0.081**	**0.082**
	(5.47*)**	**(4.74***)**	**(5.73***)**	**(5.21***)**
LAW		**0.148**		
		(1.86*)		
CCORR			**0.128**	
			(1.73*)	
REGUL				-0.052
				-0.67
CST	0.009	-0.078	-0.069	0.031
	-0.36	-1.44	-1.27	-0.34
R^2	0.3841	0.4213	0.4129	0.3891
Hausman	RE	RE	RE	RE
Note: Panel estimations of 10 countries. Y is the dependent variable.				
H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.				
T-statistics for the coefficient are in parenthesis				
*** significant at 1%,** significant at 5% and* significant at 10%.				

The next step to conduct in this paper is to examine the effect of institutional quality on *Sukuk* market development. Therefore, we add 3 institutional indicators to our baseline regression. In column (2) of table 5, we investigated on the impact of rule of law on the growth of the Sukuk market. Our results show that rule of law is a positive and significant determinant of *Sukuk* market growth. Column 3 of Table 5 represents the control of corruption index added to our baseline regression. This variable has a positive and a significant effect on the development of *Sukuk* market. In column 4, regulation quality is introduced in our model. Regulatory quality has no significant effect on the development of *Sukuk* market in general and in the growth.

Table 6: Legal Origin and Sukuk Market Development:

Legal Origin and Sukuk Market Development				
Y= Sukuk /GDP				
	Panel 1	Panel 2	Panel 3	Panel 4
EC growth	**0.003**	**0.002**	**-0.006**	**0.003**
	(2.13)**	**-1.59**	**(1,62*)**	**(2.13**)**
TO	**0.077**	**0.0765**	**0.075**	**0.077**
	(5.47*)**	**(5.41***)**	**(5.32***)**	**(5.47***)**
Shariah Law		**0.023**		
		(1.67*)		
Mixed Shariah Law/Common Law			**0.025**	
			(1.71*)	
Mixed Shariah Law/ Civil Law				0.32
				-0.69
CST	0.009	0.0005	-0.018	0.009
	-0.36	-0.21	-0.53	-0.36
R^2	0.3841	0.3988	0.4003	0.3841
Hausman	RE	RE	RE	RE
Note: Panel estimations of 10 countries. Y is the dependent variable.				
H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.				
T-statistics for the coefficient are in parenthesis				
*** significant at 1%,** significant at 5% and* significant at 10%.				

Table 6 shows how *Sukuk* development differs according to legal families. In the third column of Table 6, we present results when we introduce Shari'a Law as an indicator of legal families. Our findings confirm the theoretical expectations. In fact, Shari'a Law has a positive and a significant effect on *Sukuk* market development. This outcome can be explained by the fact that Shari'a Law is the principles source of Islamic finance, hence government adopting Shari'a legal system are more interested to develop the Islamic finance industry. In column (4) of Table 6, we introduce our first mixed legal family, which is the Common Law/Shari'a Law. Our findings show that while the Common Law/Shari'a law appears a significant determinant of development of *Sukuk* market.

In column (5), Civil Law/Shari'a Law is introduced as an indicator of mixed legal families. The results indicate that Civil Law/Shari'a law has no significant effect on *Sukuk* market development.

Table 7: The Effect of Religion and Culture on Sukuk Market Development:

Effect of Religion and Culture on Sukuk Market Development			
Y= Sukuk /GDP			
	Panel 1	Panel 2	Panel 3
EC growth	**0.003**	**0.002**	**0.0033**
	(2.13)**	**-0.79**	**(1.85*)**
TO	**0.077**	**0.044**	**0.0757**
	(5.47*)**	**(2.18**)**	**(5.02***)**
Muslim		0.173	
		(2.21***)	
Ethnic fraction			0.029
			-0.66
CST	0.009	**0.164**	-0.002
	-0.36	**(2.21**)**	-0.04
R^2	0.3841	0.4352	0.39
Hausman	RE	RE	RE
Note: Panel estimations of 10 countries. Y is the dependent variable.			
H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.			
T-statistics for the coefficient are in parenthesis			
*** significant at 1%,** significant at 5% and* significant at 10%.			

The next step to conduct in this paper is to examine the effect of religion and ethnic on *Sukuk* market development. Therefore, we add 2 indicators to our baseline regression. In column (2) of Table 7, we investigated on the impact of percentage of Muslim religion on the *Sukuk* market growth. Our results show that this indicator is a positive and significant determinant of *Sukuk* market growth. Column 3 of Table 7 represents the ethnic fractionalizing variable added to our baseline regression. This variable does not appear a significant determinant for the development of *Sukuk* market.

5.3 Does Macroeconomic Factors Influence the Construction of certain Structures of Sukuk?

In the next step, we propose to investigate the determinants of *Sukuk* structures and to see if macroeconomic factors influence the development of some structures of *Sukuk*. We suggest studying the most issued *Sukuk* structures as describes in section 5.1 (namely: *Ijarah, Murabaha*, *Musharaka*). As well, we suggest including only the most significant dependents variables as we have detected before. Table 8 presents regression results describing the effect of macroeconomic factors on the development of some *Sukuk* structures. Trade openness and GDP per capita have a positive and significant on the development of the three *Sukuk* structures namely: *Murabaha Sukuk*, *Ijara Sukuk* and *Musharaka Sukuk*. However, the effect of other variables on the development of certain Sukuk structures appears ambiguous.

Table 8: Determinant of Sukuk structure

	Y= Murabaha Sukuk /GDP							Y=Ijara Sukuk/GDP							Y= Musharaka Sukuk/GDP						
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7
EC	**0.002**	0.002	**0.002**	0.007	**0.002**	**-0.002**	0.002	0.003	**0.005**	0.0003	0.003	**0.005**	**0**	**0.004**	**0.001**	**0.001**	**0.001**	0.003	**0.001**	-0.001	0.0001
growth	**(1.71*)**	-1.44	**(1.64*)**	-1.11	**(2.12**)**	**(1.60*)**	-1.16	-0.44	**(4.21***)**	-0.4	-0.25	**-0.78**	**-0.1**	**-0.51**	**-0.53**	**-0.2**	**-0.44**	-0.69	**(2.53**)**	-0.33	-0.32
TO	**0.023**	0.021	**0.023**	**0.002**	**0.027**	**0.024**	0.014	**0.015**	**0.0138**	**0.014**	**0.04**	0.003	**0.013**	**0.019**	**0.012**	**0.01**	**0.02**	**0.01**	**0.015**	**0.02**	**0.014**
	(2.66*)**	**(1.53*)**	**(2.56**)**	**(2.25**)**	**(2.8***)**	**(2.62***)**	-0.95	**(1.92*)**	**-1.44**	**(1.85*)**	**(2.9***)**	-0.45	**(1.76*)**	**(1.70*)**	**(3.83***)**	**(2.94***)**	**(3.63***)**	**(2.08*)**	**(5.05***)**	**(3.75***)**	**(2.58**)**
Macroeconomic Factors																					
POP		0.001							**0.0004**							0					
		-0.62							**(4.08***)**							-0.38					
EC SIZE		0.05							**0.1**							0.034					
		-0.49							**(2.20**)**							-0.88					
Financial Crisis																					
Global		-0.004							0.002							0.004					
financial		(1.54*)							-0.27							-1.04					
Financial Market																					
Bond				0.011							0.107							0.06			
Market				-0.94							-0.55							-0.82			
Institution Quality																					
LAW					-0.127							**0.19**							0.005		
					-0.25							**(5.20***)**							-0.35		
CCORR					0.074							0.039							**0.084**		
					(1.60*)							-1.12							**(3.73***)**		
Legal Origin																					
Shariah						-0.002							-0.01							-0.03	
Law						-0.14							-1.59							-0.62	
Religion and Culture Factors																					
Muslim							-0.05						**-0.164**								0.008
							-0.86						**(3.49***)**								-0.39
Ethnic							0.003						**-0.056**								**0.03**
							-0.1						**(2.38**)**								**(1.79*)**
CST	0.006	0.028	0.008	0.011	-0.032	0.006	0.055	0.008	0.125	0.008	0.015	**0.072**	0.006	**0.202**	0.003	0.006	0.002	-0,05	**-0.06**	-0.03	0.03
	-0.4	-0.7	-0.49	-0.94	-0.77	-0.38	-0.1	-0.6	-1.44	-0.63	-0.08	**(2.29**)**	-0.48	**(3.75***)**	-0.64	-0.47	-0.36	-0.78	**(3.73***)**	-0.68	-1.04
R^2	0.144	0.177	0.148	0.193	0.179	0.144	0.167	0.15	0.37	0.16	0.32	0.39	0.11	0.25	0.24	0.28	0.26	0.22	0.43	0.25	0.29

Note: Panel estimations. Y is the dependent variable. H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.

T-statistics for the coefficient are in parenthesis

*** significant at 1%,** significant at 5% and* significant at 10%.

6 Conclusions

This study investigates on the determinants of the development of the *Sukuk* market for the period 2003-2012. Overall, the results show that a confluence of many variables drives the development of *Sukuk* market. Macroeconomic factors such GDP per capita, economic size, have a positive impact of the growing of the *Sukuk* market. Moreover, trade openness has also a positive effect. This implies that higher level of natural openness, the higher level of access to external funding and the greater the development of the local *Sukuk* market.

The financial crisis has a significant negative effect on the development of the *Sukuk* market since the amount of *Sukuk* issued in those years has declined considerably. However, the Dubai debt crisis has no significant effect on the development of *Sukuk* market.

Furthermore, bond market has a significant and positive impact on the development of *Sukuk* market. Thus, it appears that conventional bond market and *Sukuk* market are complements rather than substitutes.

Regulatory quality has a significant effect on the development of *Sukuk* market. This implies that countries ranking higher in regulation quality have a larger *Sukuk* market. This is can be interpreted as efficiency and reliability of regulations. Furthermore, countries adopting a Shariah legal origin and mixed common Law/ Shariah law legal origin has a developed *Sukuk* market.

This outcome can be explained by the fact that Shari'a Law is the principles source of Islamic finance, hence government adopting Shari'a legal system are more interested to develop the Islamic finance industry. As well, the percentage of Muslim has a positive effect on the development of *Sukuk* market. Moreover, trade openness and economic growth have a positive and significant effect on the development of *Murabaha Sukuk*, *Ijara Sukuk*, *Musharaka Sukuk*.

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