

Impact of Economic Factors to Determine the Sukuk Market Development: An Empirical Analysis

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ABSTRACT

The present paper examined the causes of Economic Factors influencing the Development of Sukuk Structure.. The scope of our study covers the most Sukuk Issuers' countries namely: UAE, Malaysia, Saudi Arabia, Kuwait, Qatar, Bahrain, Indonesia, Brunei, Pakistan and Gambia. This study has analyzed the influence of: (1) Economic factors (2) Global financial Crisis (3) Financial System (4) Institutional Environment (5) Legal Origin (6) Religion and Society Factors on the Development of the Sukuk Market. The study showed that Economic factors such GDP per capita; trade openness, economic size and percentage of Muslims, have a positive influence on the growth of the Sukuk market. Financial crisis has a major negative effect on the development of the Sukuk market since the amount of Sukuk issued in those years has declined significantly. Regulatory quality has a major effect on the development of Sukuk market. This implies that countries ranking higher in regulation quality have a larger Sukuk market. This can be interpreted as reliability and efficiency of regulations.

Keywords: Islamic Banks; Sukuk; Sharia-Compliance, Islamic Finance, GDP, Financial Crisis.

1. Introduction

The Islamic banking structure has to follow Islamic law (*Shariah*), which forbids interest rate in banking transactions, and that might have various effects on the operation of related organizations. Consequently, to conform with Islamic laws governments, corporations and banking entities needed to build up another financial tool that could be acceptable by the *Shariah* laws, give liquidity and mobility for resources in the Islamic banking system(V. sundararajan, 1998).

The growth potential for Global Sukuk (see table no.1 below) is significant and progressively more considered in the Islamic finance sector (Thomson, 2013).*Sukuk have* been the tools that have provided sovereign governments and corporations within access to the liquidity pool as well as following the Islamic laws(saim Kaya Dibi, 2014).

Table no.1: Global Aggregate Sukuk Issued by different Countries
(January 1996 – to September 2018)

| Country | No. of Issues | Amount Issued (\$ Million) |
|-----------|---------------|----------------------------|
| Malaysia | 2,438 | 324,576.9 |
| Bahrin | 273 | 13,918.5 |
| Gambia | 242 | 149.2 |
| Indonesia | 216 | 19,924.1 |

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| | | |
|--------------------|--------------|------------------|
| Brunei Darussalam | 95 | 4,980.7 |
| UAE | 73 | 47,876.4 |
| Saudi Arabia | 64 | 39,296.0 |
| Pakistan | 57 | 6,348.9 |
| Kuwait | 22 | 2,992.4 |
| Qatar | 19 | 19,245.6 |
| Turkey | 9 | 5,469.7 |
| Singapore | 9 | 984.2 |
| United Kingdom | 5 | 279.1 |
| United States | 3 | 765.7 |
| China | 3 | 274.7 |
| Yemen | 2 | 251.5 |
| Sudan | 3 | 220.9 |
| Germany | 2 | 190.9 |
| Iran | 4 | 132.8 |
| Jordan | 1 | 120.3 |
| Japan | 1 | 100.0 |
| Kazakhstan | 1 | 73.3 |
| France | 1 | 0.7 |
| Grand Total | 3,543 | 488,172.5 |

Source: Turkey Islamic Finance Report 2014

This study tries to recognize the influence of the Economic factors on 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 (1) Economic factors (2) Global financial Crisis (3) Financial System (4) Institutional Environment (5) Legal Origin (6) Religion and Society Factors on the Development of the *Sukuk* Market. This study also tries to examine the determinant of choosing some particular structures of *Sukuk* to a certain extent.

The scope of our study covers the most *Sukuk* issuers' countries namely: Malaysia, Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, 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 numerous variables drives the development of *Sukuk* market.

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

2. Literature Review

Sukuk are financial instruments used for raising funds, and are also considered for resource mobilization, for public or private sector (A. Mohd, 2010). Additionally, *Sukuk* consider being investment products and can be expressed as "certificates of equal value representing

undivided shares in ownership of tangible assets, usufructs and services or in the ownership of the assets of meticulous projects or special investment activity” (A. Mohd, 2010).

Sukuk are considered as securities and possess very similar features to conventional bonds, this is why the financial media label them as Islamic bonds. Though, Ariff and Safari showed there are major differences in yield of *Sukuk* against yield of conventional bonds. However, the study does not show the fundamental relation between yields of these two types of securities. There are the guidelines shown by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) that highlight the differences between *Sukuk* and conventional bonds. These guiding principles 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. Types of *Sukuk*

Ijarah *Sukuk*: These certificates are released on separate assets that are identified on the balance sheet. The assets can be any fixed assets to be leased such as vehicles, aircrafts, land and ships (Said, 2011).

Hybrid/Pooled *Sukuk*: Those types of *Sukuk* consisted of the underlying pool of assets that may be of *Istisna'a*, in which the investor normally uses a parallel *Istisna'a* contract and 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* (Said, 2011). The other types of *Sukuk* would be *Murabahah* these bonds have been very successful in the case of investment deposits with Islamic banks; where the return is calculated annually based on the bank's profits.

Variable Rate Redeemable: like *Musharaka Sukuk*, those types of *Sukuk* engage forming a partnership or company to propose financing with members. The sharing in profits in this mode of security will be based on correlation to the weight of their investment share (Said, 2011).

Fixed-Rate Zero-Coupon *Sukuk*: is a type of *Sukuk* that can be created where the assets to be mobilized do not yet exist. Afterward, the objective of the fund mobilization would be to create more assets on the balance sheet of the company via *Istisna* (Said, 2011).

Salam *Sukuk*: is a type of *Sukuk* where a business needs to manufacture an explicit 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* (Said, 2011).

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 mutually agreed price that could be different from the spot price.

3. Research Question

Does Economic Factors persuade 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: (1) Economic factors (2) Global financial crisis (3) financial system (4)

institutional environment (5) Legal origin and (6) Religion and society determinants of the Sukuk market development are also presented for 10 countries namely: Malaysia, Saudi Arabia, Kuwait, UAE, Bahrain, Qatar, Indonesia, Brunei, Pakistan and Gambia.

4.1. Model

The panel data comprises 10 countries (including 3 from different regions). The data covers the period 2003-2012 at an annual frequency for a maximum of hundred years of observations. Data were selected according to data accessibility for all the relevant variables. Data were collected from Zawya database. Table no.2 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:

$$Y_{i,t} = (\alpha_i + \beta X_{i,t} + \mu_i, \text{ For } i = 1, 2 \dots N, t = 1, 2 \dots T_i)$$

Where $Y_{i,t}$ 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 Economic variables, institutional quality, indicators of the financial system, Global financial crisis, Legal origin, market regulation, 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 suitable estimator. If the Hausman test discards the null hypothesis that the individual effects are not correlated with the explanatory variables, the most appropriate estimation would then be the fixed-effects model.

4.2. Definition of Variables and Data

The Independent Variables of the study would be Economic variables such as:

4.2.1. Economic Factors:

Economic Size: is measured by GDP at purchasing power parity PPP (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 gives the impression to have a depressing impact on issuance and development of both bonds and *Sukuk* market since a small number of firms can issue bonds/*Sukuk* when interest rates are high. We anticipate a negative relationship between nominal interest rate instability and *Sukuk* market development. Rising interest rates hinder the diffusion of *Sukuk* market because they lift the opportunity cost for less religious individuals to buy *Sukuk*. The interest rate is also considered as an indicator of economic instability.

Inflation: Economic stability is an important factor for the development of financial development. We consider the current inflation as our 2nd indicator of Economic stability. We anticipate that there is a strong negative relationship between inflation and *Sukuk* market development. A stable Economic environment is favorable to the development of both *Sukuk* market and bonds market.

Oil Revenues: To capture this outcome, we use three indicators of oil revenues: (1) Oil prices (OILPRI): as the measure of oil prices we have considered the crude oil prices, (2)

Value of oil exports (OILEX) and (3) Oil rents to GDP ratio (OILRENTS). We anticipate that all oil revenue indicators have a positive effect on the growth of *Sukuk* market.

Openness of an Economy: is measured as the ratio of export to GDP. Various studies have stressed the significance of the degree of openness of an economy in determining market development (Zingales, 2001). 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 progress of the *Sukuk* market.

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

4.2.2. Financial Crises:

Global Financial Crisis: will be used to recognize its impact on the growth of the *Sukuk* market. According to Standards and Poor's rating agency report, the World financial crisis has encouraged growth of the *Sukuk*(Said, 2011).

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

4.2.3. Indicators of Financial System:

Islamic Banking System Size: measured as Islamic financial assets to GDP, is also determinant of *Sukuk* market development. Islamic financial Institutions serve as dealer's markers, and their existence is required for the development of the *Sukuk* market. In addition, Islamic banks and *Sukuk* markets in providing Shari'a-compliant financial mechanisms and in the other hand well-developed Islamic financial system can divest *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 outcome of this variable on the development of *Sukuk* market.

Bonds Market Size: is measured as the value of bonds issuance to GDP, we judge this variable to check if *Sukuk* market can be an alternate of the conventional bond market or a complement. The effect of the conventional bonds market on the development of *Sukuk* market appears vague 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, 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.

4.2.4. Institutional Quality:

We will use three variables to measure the institutional environment: (1) rules of law (2) control of corruption (3) regulation quality.

Rule of Law: The area to which agents have assurance 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 possibility of crime and violence. The law subcomponent is an assessment of strength and neutrality of the legal system while order assesses popular observance of the law.

Control of Corruption: The area to which public power is exercised for private gain, including together petty and grand forms of corruptions, in addition to 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 expansion.

Regulatory Quality: The capability of the government to provide sound regulations and policies that enables and promotes private sector development. These variables have been rescaled to presuppose values between zero and one. In all cases, larger values specify better institutions. We expected a positive association between Sukuk market development and indicators of institutional quality.

4.2.5. 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.

4.2.6. Religion and Cultural Factors:

Muslim: is a dummy variable equal to one, if the country's primary religion is Islam and zero otherwise. Actually, the higher percentage of Muslims in a country, the quicker 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 same ethnic group arguing 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 inference is that greater ethnic diversity implies the implementation 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

For the period 2003-2018, Malaysia is the biggest *Sukuk* issuer (57%) of total *Sukuk* issued as described by figure 1. Brunei is the 2nd *Sukuk* issuer, (18%) and UAE is the 3rd (8%). Figure 2 describe the different structure of *Sukuk* issued during the period 2003-2018. *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%.

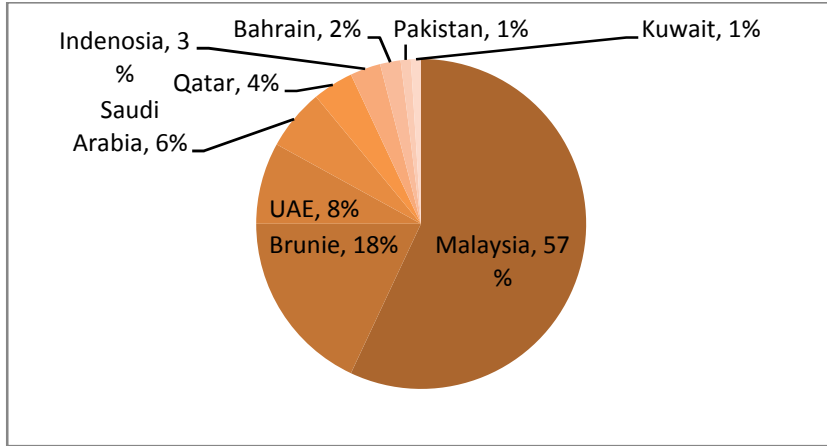


Figure 1: Global *Sukuk* Issuance by Country during the Period 2003-2018

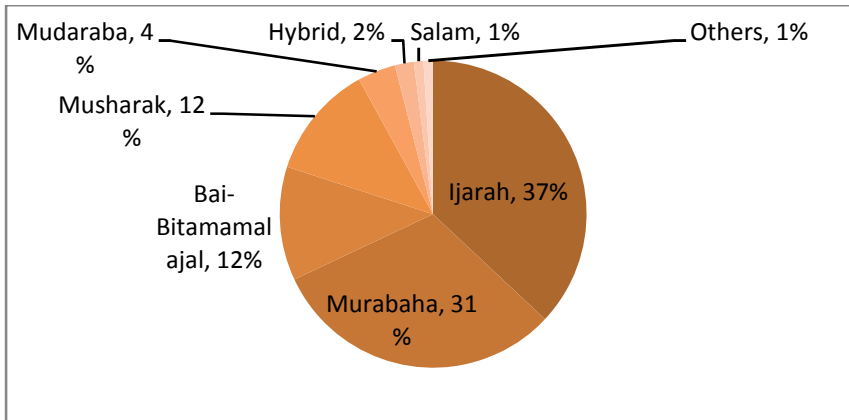


Figure 2: Global *Sukuk* Issuance by *Sukuk* Structure during the Period 2003-2018

5.2. Regression Results

Tables 3, 4, 5 and 7 present the regression results of the importance of (1) Economic factors (2) Global Financial Crisis (3) Financial System (4) Institutional Environment (5) Legal Origin and (6) Religion and Society determinants of the *Sukuk* market development on *Sukuk* market development.

Table no.3: Economic Determinants of *Sukuk* Market Development

| (Economics Indicators) | Measured by | Source |
|------------------------|---|------------|
| Economic Size (EC) | GDP at purchasing power parity (EC size)/ | World Bank |
| | Population (POP) | |
| 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 Bank |
| The economic growth (EC growth) | GDP per Capita | World Bank |
| OIL revenue | Values of oil exports (OILEX) | OPEC |
| | Oil rents to GDP ratio (OILRENTS). | |
| (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 |
| Banking 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 | Moody's Investor Service |
| (Legal Origin) | Measured by | Source |
| Shariah Law | Dummy variable equals 1 if the country adopted the Shari'a law and 0 otherwise. | Fact book, 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. | Fact book, 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. | Fact book, CIA |
| (Culture and Religion) | Measured by | Source |
| Ethnic Fractionalization | Measures the probability that two randomly selected individuals from a given country will not belong to the same ethnic group. | LLSV et al. (1999) |
| Muslim | Dummy variable equals one if the country's primary religion is Islam and zero otherwise. | PEW Report |

Table no. 3 summarizes the results of random and fixed models for our study. In the (1st) columns of the table, we present results just 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 (Radzewicz-Beeck, 2009) on the development of the bond market in sub-Saharan Africa (Gazdar, 2012) on the development of Sukuk market in GCC countries and consistent with the finding of (Luigi, 2001); (Luengnaruemitchai, 2004) on the development of the bond market in Asia.

The level of the population does 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 (Luengnaruemitchai, 2004), (Radzewicz-Beeck, 2009) and (Gazdar, 2012). Bigger economy has a strong potential to develop their Sukuk market.

To investigate the effect of Economic instability on the development of Sukuk market, we introduced current inflation in the model (column 4th). The results show that inflation does not seem to have a strong effect on the development of Sukuk market in general. Besides, column (5th) of our regression table no.3 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 (Radzewicz-Beeck, 2009).

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

is contrary to the finding of (Gazdar, 2012), where they found a positive and significant effect between oil revenues and Sukuk market development in GCC countries.

Table no.4: Financial Crisis and Sukuk Market Development:

| Financial Crisis | | | |
|---|--------------------|---------------------|--------------------|
| Y= Sukuk /GDP | | | |
| | Panel no.1 | Panel no.2 | Panel no.3 |
| EC growth | 0.003 (2.13**) | 0.073 (1.95**) | -0.003 (1.88*) |
| TO | 0.077 (5.47***) | -0.217 (3.70***) | 0.079 (5.60***) |
| Global financial crisis | - | -0.036 (2.21**) | - |
| Dubai Sukuk crisis | - | - | 0.022 -1.25 |
| CST | 0.009 -0.36 | -0.66 -1.39 | -0.08 -0.08 |
| R2 | 0.3841 | 0.1442 | 0.4014 |
| 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 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 no.5: Financial System and Sukuk Market Development

| Y= Sukuk /GDP | | | | | | | |
|----------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| | Panel no.1 | Panel no.2 | Panel no.3 | Panel no.4 | Panel no.5 | Panel no.6 | Panel no.7 |
| EC Growth | 0.003 (2.13**) | 0.006 (3.67***) | 0.053 (1.72*) | 0.007 -0.76 | 0.009 -0.69 | 0.003 (2.14**) | 0.0035 (2.15**) |
| TO | 0.077 (5.47***) | 0.106 (7.03***) | -0.109 (2.15**) | 0.0822 (6.23***) | 0.063 (3.87***) | 0.076 (5.28***) | 0.075 (4.97***) |
| Islamic Finance Size | - | 0.009 -1.02 | - | - | - | - | - |
| Banking Size | - | - | -0.068 -1.02 | - | - | - | - |
| Bond | - | - | - | 0.389 | - | - | - |

| | | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Market | - | - | - | (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 |
| R2 | 0.3841 | 0.559 | .1904 | 0.666 | 0.6138 | 0.3853 | 0.3866 |
| Hausman | RE | RE | RE | 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. | | | | | | | |
| 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 no.5. 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 no.6: Institutional Determinants of Sukuk Market Development:

$$Y = \text{Sukuk} / \text{GDP}$$

| | Panel no.1 | Panel no.2 | Panel no.3 | Panel no.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 |

| | | | | |
|---|--------|--------|--------|--------|
| R2 | 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 (2nd) of table no.6, 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 (3rd) of Table no.6 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 (4th) 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 no.7: Legal Origin and Sukuk Market Development:

$$Y = \text{Sukuk} / \text{GDP}$$

| | Panel no.1 | Panel no.2 | Panel no.3 | Panel no.4 |
|---|--------------------|---------------------|--------------------|--------------------|
| EC growth | 0.003 (2.13**) | 0.002 -1.59 | -0.006 (1,62*) | 0.003 (2.13**) |
| TO | 0.077 (5.47***) | 0.0765 (5.41***) | 0.075 (5.32***) | 0.077 (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 -0.36 | 0.0005 -0.21 | -0.018 -0.53 | 0.009 -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 no.7 shows how *Sukuk* development differs according to legal families. In the (3rd) column of Table no.7, 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 principal source of Islamic finance, hence government adopting Shari'a legal system are more interested to develop the Islamic finance industry. In column (4th) of Table no.7, we introduce our first mixed legal family, which are 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 (5th) 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 no.8: The Effect of Culture and Religion on Sukuk Market Development:

$$Y = \text{Sukuk} / \text{GDP}$$

| | Panel no.1 | Panel no.2 | Panel no.3 |
|---|--------------------|--------------------|---------------------|
| EC growth | 0.003 (2.13**) | 0.002 -0.79 | 0.0033 (1.85*) |
| TO | 0.077 (5.47***) | 0.044 (2.18**) | 0.0757 (5.02***) |
| Ethnic fraction | - | - | 0.029 |
| Muslim | - | 0.173 (2.21***) | - |
| CST | 0.009 -0.36 | 0.164 (2.21**) | -0.002 -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%. | | | |

Table no.8: The Effect of Culture and Religion on Sukuk Market Development:

The next step to conduct in this paper is to inspect the effect of ethnic and religion on *Sukuk* market development. So, we add 2 indicators to our baseline regression. In column (2nd) of Table no.8, we investigated on the impact of percentage of Muslim religion on the *Sukuk* market development. Our results show that this indicator is a positive and important determinant of *Sukuk* market growth. Column (3rd) of Table no.8 represents the ethnic fractionalizing variable added to our baseline regression. This variable does not appear a significant determinant for the growth of *Sukuk* market.

5.3. Does Economic Factors Influence the Construction of certain Structures of Sukuk?

Subsequently, we suggest to investigate the determinants of *Sukuk* structures and to see if Economic factors way the development of some structures of *Sukuk*. We suggest studying the most issued *Sukuk* structures as describes in section 5.1 namely (*Ijarah, Murabaha and Musharaka*). Additionally, we propose including only the most important dependents variables as we have detected before. Table no.9 presents regression results describing the effect of Economic factors on the development of some *Sukuk* structures. Trade openness and GDP per capita have a positive and important on the development of the three *Sukuk*

structures namely: *Ijara Sukuk*, *Murabaha Sukuk* and *Musharaka Sukuk*. Though, the effect of other variables on the development of certain Sukuk structures appears indefinite.

| Table no.9: Factors of Determinant of Sukuk Structure | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|----------|----------|----------|----------|-----------|----------|-------------------|-----------|-----------|----------|----------|----------|----------|------------------------|-----------|-----------|----------|-----------|-----------|----------|
| | Y= Murabaha Sukuk /GDP | | | | | | | Y=Ijara Sukuk/GDP | | | | | | | Y= Musharaka Sukuk/GDP | | | | | | |
| | Pan el 1 | Pa nel 2 | Pan el 3 | Pan el 4 | Pan el 5 | Pan el 6 | Pa ne 17 | Pa nel 1 | Pan el 2 | Pa nel 3 | Pan el 4 | Pan el 5 | Pa nel 6 | Pan el 7 | Pan el 1 | Pan el 2 | Pan el 3 | Pa nel 4 | Pan el 5 | Pan el 6 | Pan el 7 |
| EC | 0.002 | 0.002 | 0.002 | 0.007 | 0.002 | -0.002 | 0.002 | 0.003 | 0.005 | 0.003 | 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**) |
| Economic Factors | | | | | | | | | | | | | | | | | | | | | |
| POP | | 0.001 | | | | | | | 0.004 | | | | | | | 0 | | | | | |
| | | | -0.62 | | | | | | | (4.08***) | | | | | | | -0.38 | | | | |
| EC Size | | 0.05 | | | | | | | 0.1 | | | | | | | 0.034 | | | | | |
| | | | -0.49 | | | | | | | (2.20**) | | | | | | | -0.88 | | | | |
| Financial Crises | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--|--|---------|-------|---------|--------|--|--|--|-------|-------|-----------|--|--|--|--|-------|-------|-----------|-------|
| Global Financial | | | -0.004 | | | | | | | 0.002 | | | | | | | 0.004 | | | |
| | | | (1.54*) | | | | | | | -0.27 | | | | | | | -1.04 | | | |
| Financial Market | | | | | | | | | | | | | | | | | | | | |
| Bond Market | | | | 0.011 | | | | | | | 0.107 | | | | | | | 0.06 | | |
| | | | | -0.94 | | | | | | | -0.55 | | | | | | | -0.82 | | |
| Institution Quality | | | | | | | | | | | | | | | | | | | | |
| Law | | | | | -0.127 | | | | | | | 0.19 | | | | | | | 0.005 | |
| | | | | | -0.25 | | | | | | | (5.20***) | | | | | | | -0.35 | |
| CCOR | | | | | 0.074 | | | | | | | 0.039 | | | | | | | 0.084 | |
| | | | | | (1.60*) | | | | | | | -1.12 | | | | | | | (3.73***) | |
| Legal Origin | | | | | | | | | | | | | | | | | | | | |
| Shariah Law | | | | | | -0.002 | | | | | | | | | | | | | | -0.03 |
| | | | | | | -0.14 | | | | | | | | | | | | | | |

| Culture and Religion Factor | | | | | | | | | | | | | | | | | | | | | |
|--|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|-------|------------|-------|------------|-------|-------|-------|--------|------------|--------|---------|
| Ethnic | | | | | | | 0.003 | | | | | | | | | | | | | | 0.03 |
| | | | | | | | -0.011 | | | | | | | | | | | | | | (1.79*) |
| Muslim | | | | | | | -0.005 | | | | | | | | | | | | | | 0.008 |
| | | | | | | | -0.086 | | | | | | | | | | | | | | -0.39 |
| CST | 0.006 | 0.028 | 0.008 | 0.011 | -0.032 | 0.006 | 0.005 | 0.008 | 0.125 | 0.008 | 0.015 | 0.072 | 0.006 | 0.202 | 0.003 | 0.006 | 0.002 | -0.005 | -0.006 | -0.003 | 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 |
| R2 | 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 |
| <p>Note: Panel estimations. Y is the dependent variable. H-statistics correspond to Hausman test between fixed (FE) and random (RE) effect specifications.</p> <p>T-statistics for the coefficient are in parenthesis *** significant at 1%,** significant at 5% and* significant at 10%</p> | | | | | | | | | | | | | | | | | | | | | |

6. Conclusion

This study examines on the determinants of the growth of the *Sukuk* market for the period 2003-2012. Overall, the results show that a convergence of many variables drives the development of *Sukuk* market. Economic factors such as GDP per capita, and economic size, have a positive impact on the growth of the *Sukuk* market. Furthermore, 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 larger the development of the local *Sukuk* market.

The financial crisis has a significant negative effect on the growth of the *Sukuk* market since the amount of *Sukuk* issued in those years has decreased significantly. Though, the Dubai debt crisis has no significant effect on the development of *Sukuk* market.

Furthermore, bond market has a significant, positive impact on the development of *Sukuk* market. Therefore, 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 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 principal source of Islamic finance; hence, governments 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*, and *Musharaka Sukuk*.

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