

# Bonds Market and Economic Growth in Selected OIC Member Countries: Investigating the Moderating Role of Political (In)stability

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<p>Article history Submitted: 10 November, 2022 Revised: 09 November, 2022 Accepted: 13 November, 2022</p>	<p><b>Abstract</b> The Organization of Islamic Countries (OIC) has encountered a significant decline in economic growth, which has been negatively impacted by decreasing commodity prices and ongoing regional wars. This study aims to investigate the moderating role of political (in)stability on the nexus between the bonds market and economic growth within the selected thirteen member countries in the Organization of Islamic Countries (OIC). In its methodology, this study used the panel generalized least square (GLS) and generalized method of moments (GMM) to describe and analyze the obtained data for the period from 2010 to 2019. The empirical results of the study suggested that bond finance positively contributed to and is closely associated with the economic growth and development in the investigated countries in the long run. The empirical findings suggested a significant and positive nexus between the bonds market and economic growth in the selected OIC countries. Furthermore, the findings revealed that political (in)stability has moderated the relationship between the bonds market and economic growth. Accordingly, it is highly recommended that a comprehensive financial market is established, including well-functioning financial institutions and a developed debt market, aiming to stimulate and facilitate fundraising in the economy, thereby supporting economic activities.</p>
<p><b>Keywords:</b> <i>Bonds Market, Economic Growth, Political (In)stability, OIC, GMM.</i></p>	

## 1. Introduction

The OIC or the Organization of Islamic Countries has encountered an utterly declining economic growth, which was adversely influenced by lower prices of commodities, accompanied by continuing regional conflicts based on reports [1]. Although several developed economies like the USA, Germany, China, and Japan achieved overall economic growth, the descending growth trend of the real GDP per capita has sustained for those Islamic countries in the OIC. The OIC members' growth rate, for example, dropped from 4.6 percent to 2.4 percent over the same periods, whereas the developed countries' average growth rate increased from 1.8 percent in 2014 to 1.9 percent in 2019 [2], which showed a decline in the OIC economies.

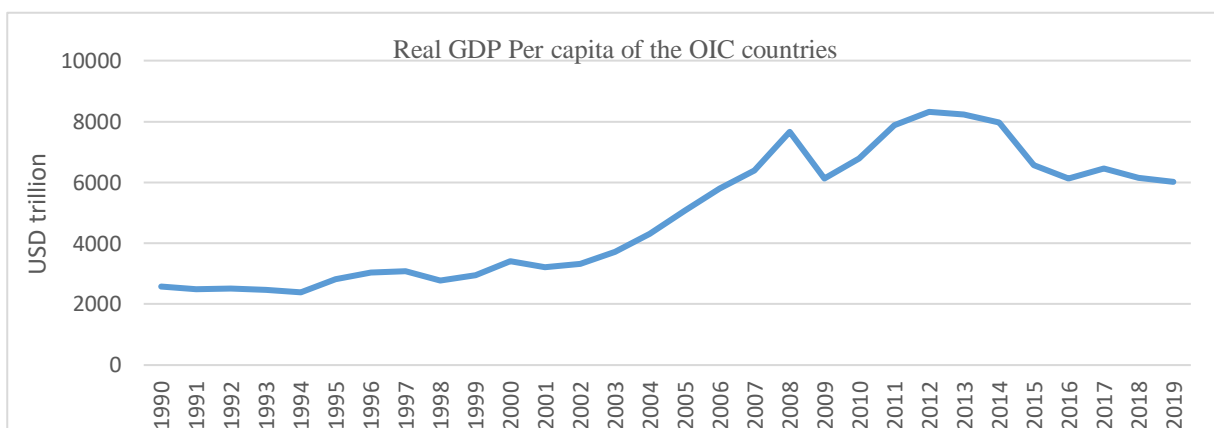


Figure 1: Real GDP Per Capita of the OIC Countries [3]

Similarly, Sudan had the lowest GDP per capita, ranking last with a stunted growth rate for almost the entire reporting year, according to data from the World Bank on the growth rates of GDP per capita of OIC individual members [3]. Pakistan and Indonesia, whose GDP began a minor decline in 1993 and proceeded slowly up to the conclusion of the reporting period, were closely behind this decline. Iraq’s economy showed a similar pattern, with a slight increase in GDP per capita. The Iraqi economy, however, was almost nonexistent until 1995, when it started to show some encouraging signals and eventually made a modest recovery from the effects of war and the sanctions imposed during the war in the Gulf region. Among the OIC members, Malaysia, Lebanon, Oman, Syria, Iran, Egypt, and Kazakhstan experienced moderate but consistent GDP growth virtually during this reporting period between 1990 and 2019.

The Saudi economy can also be said to have seen a modest growth rate that began nearly immediately after the reporting period started and persisted until 2015, after which it began to fall until the end of the given reporting period. In addition, after a sluggish start in 1990, the Turkish economy experienced a significant increase in GDP per capita starting in 2003. However, this pattern reversed to a fall from its high in 2015, probably as a result of the significant decline in the world economy that followed the decline in the benchmark international oil price. Furthermore, the OIC members with the highest GDP per capita all through this reporting period included the UAE, Azerbaijan, as well as the Maldives. Nevertheless, the growth rate has been extremely slow from the start until 2000, after which it slightly decreased until 2003. Although the GDP per capita in these countries started to increase until it reached an all-time high in 2015, it declined until this study period ended.

Furthermore, the reports of the World Bank made it evident that after 2015, decreased oil prices and political unrest caused the GDP per capita income of the OIC members to decline. The OIC countries accounted for up to approximately 30 percent of all countries globally, but they only contributed an extremely small portion of the global GDP, which is projected to be 8 percent, according to data from the [3], which is a source of concern for those countries, as shown in Figure 2 below. In contrast, some countries made an individual contribution with an exceptionally high global GDP share, as shown in Figure 3.

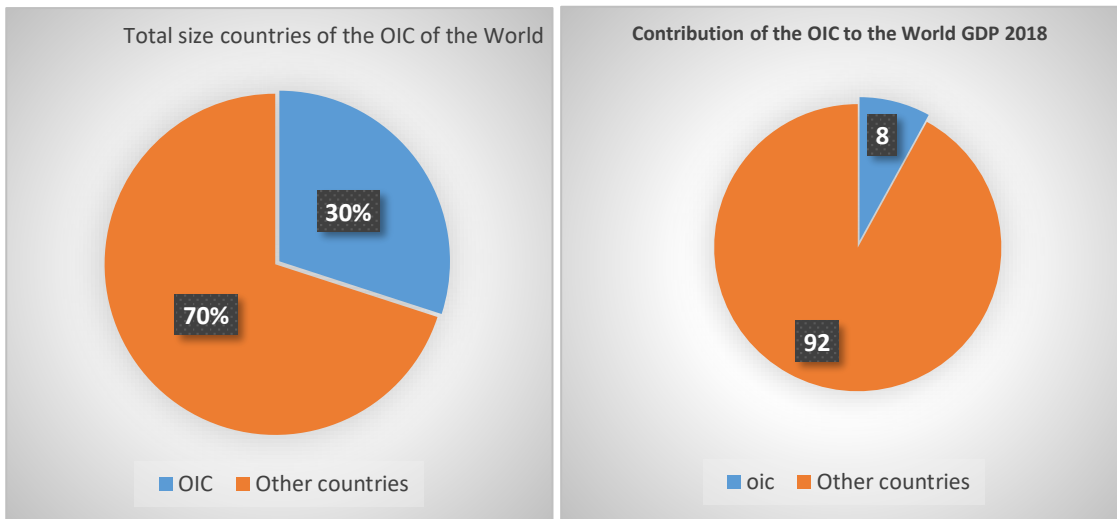


Figure 2: Size and Contribution of the OIC to the World GDP in 2019 [3]

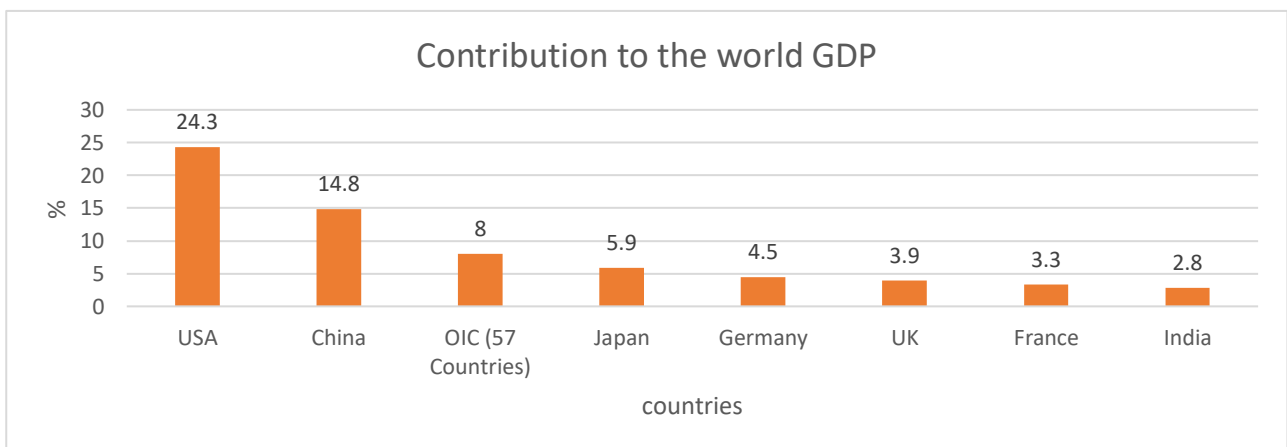


Figure 3: Contribution to the World GDP in 2019 [3]

An essential component of the financial and capital markets is the development of the debt market [4]. The growth of the debt market has several advantages that are crucial for smart financing and investment choices. Additionally, debt markets are regarded as one of the primary sources of funding for governments and corporations in both developed and developing nations [5]. As a result, the growth of the debt market might be seen as an endeavor to lessen the likelihood of financial crises occurring or a mechanism for minimizing their negative effects once they happen. This is because debt markets provide a reserve or alternate source of funding when traditional financing sources like banks fail [6].

Many OIC economies modified their economic and financial systems during the 1980s to increase the effectiveness of their financial intermediation with the single goal of developing the financial sector and fostering economic growth, according to previous empirical evidence [7] [8], [9]. This study used GLS, i.e., panel general least square, and GMM, i.e., panel generalized technique of moments to examine the relationship between the bond market with economic growth in these OIC members between 2010 and 2019. In this regard, [10] pointed out that political stability is necessary for a nation to have security, law, and order, which are essential for speeding economic growth and development. Political stability in the context of economics refers to the perception of investors that the host nation they have chosen for their investment is tranquil enough to allow investment forecasting and allow for a fair assessment of project business success over time. Due to their comparatively stable political environments, Malaysia, the UAE, and Turkey were best known as the OIC members with the highest levels of development and innovation [11]. This study is significant research because it aims to examine the impact of political (in)stability on the nexus between the bonds market and the OIC countries' economic growth<sup>1</sup>.

This paper is organized into five sections. Section 2 reviews previous related studies to establish a theoretical foundation in this study regarding the association between the bond market and countries' economic growth. Section 3 describes the methodology used in this study and data collection methods and procedures. The empirical findings are provided in Section 4, while Section 5 provides the conclusion and seral directions for further studies.

## **2. Literature Review**

While the neoclassical growth theory provides a foundation for investigating the connection of the bond market with economic growth, Olson's Theory of Stability and Growth serves as a supporting theory, which links political stability as a factor that influences the relationship. According to the neoclassical theoretical supposition, an economy has a finite amount of labor and capital resources. However, sources within the capital market, including loanable money or debt market are where capital formation comes from. As a result, this growth theory placed a strong emphasis on the necessity of the accumulation of capital for economic development, particularly through the loan market inside an economy [12]

Likewise, the use of political stability as an independent variable has been made clear by [13]. Olson asserted that there is a more intricate connection between political stability and economic development and prosperity. Following [14] the theory presented by [13] emphasized that wars, revolutions, and destabilizing events can disrupt economic growth in a short-term period but argued that these events can help in setting the stage for rapid growth in a medium-term period. Over a long-term period. Olson, however, emphasized that political stability would be dysfunctional economically, causing growth to slow down the instability phases and affecting economic growth (also known as the "Olson effects").

In the conventional bonds market, [15] looked into the effect of bond market development on the growth of 10 Asian economies, covering the period from 1990 to 2016. This was measured alongside the roles of bank and stock market developments, whereas the bond market development is measured in four different dimensions. The results, based on the fixed effect model, confirmed that the bond market development positively influences the growth of economies. In a previous study by [16] the influence of the bond market – as another important component of the financial system – on economic growth was investigated in a panel of 38 countries. Relying on the GMM estimation technique, the authors found that government bonds have a significant and positive linkage with economic growth; the impact of corporate bonds on growth transits from negative to positive as the internal financial structure grows in diversity and size.

In a previous study, [17] explored the long-run connection between bond market development and economic growth in G-20 economies. The study covered the period between 1990 and 2011. The authors employed four indicators of the bond market (internal and external private debt securities, as well as internal and external public debt securities). While applying the vector autoregressive (VAR) model in examining the Granger causalities, the findings revealed the existence of both bidirectional and unidirectional causality between bond market development and economic growth. In specific terms, the researchers found that on some occasions, economic growth resulted in the development of the bond market, and in others, the reverse is the case. Hence, they found evidence for both demand-following and supply-leading hypotheses. In the same G-20 economies, [18] investigated the causal nexus between bond and stock market developments (including some other macroeconomic variables), and economic growth, spanning 1991-2016. Relying on a panel VAR model and Granger causality test, it was reported that both bond and stock market developments are cointegrated with economic growth, interest rate, and inflation rate; the development of the bond market is equally obtained to Granger cause economic growth in the long run. Also, in a study conducted in South Africa, [19] evaluated the causation between bond market

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<sup>1</sup> The 13 OIC countries considered are Bahrain, Bangladesh, Indonesia, Jordan, Malaysia, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Sudan, Turkey, and United Arab Emirates.

development and economic growth. Using quarterly data spanning 1995-2012 and applying the Engle-Granger cointegration and the pairwise granger causality tests, the empirical estimates suggested a unidirectional causality from the bond market through economic growth.

In a combination of both positive and negative estimates on the different forms of bonds, while investigating the role of bond market development in the Nigerian economy, [20] used the ARDL Bounds testing on the time-series data between 1986 and 2018. While observing that government bonds exhibited no significant impacts on the economic growth in Nigeria, the bond yield was found with a significant, negative effect on economic growth. The authors equally found that corporate bonds and the value of traded bonds were significant and positively influence the growth of the Nigerian economy. In the same vein, [21] explored the influence of the capital market on Malaysian growth by measuring the impact of Sukuk and other sub-components of the capital market, between 1998 and 2018. Based on the ARDL technique, the authors found that each Sukuk and conventional bond exerted a positive (though insignificant) impact on the country's economic growth, while the stock market development had a significant and positive effect.

In the same vein, [22] examined how Nigeria's bond market development affected its economic growth. The results showed that the bond market has a statistically insignificant impact on economic growth. They were based on secondary data (covering the years 1982-2014) taken from the World Development Indicators (WDI) and the Statistical Bulletin of the Central Bank of Nigeria, as well as estimates from the Generalized Method of Moments Instrumental Variables (GMM-IV) estimator and Granger Causality test.

Based on a previous study by [23], no causal relationship between Nigeria's bond market and economic growth was found. Various nations in America, Africa, Europe, and Asia were also investigated to determine the relationship between bond market development, foreign investment, and economic growth. Using data from 2004 to 2015, the authors evaluated the Granger causality approach, the Vector Autoregressive (VAR), and the Vector Error Correction Model (VECM). There is only a univariate association in Thailand, Mexico, and Indonesia despite the fact that the authors' claims of a causative connection throughout the entire sample were unsupported by any data. Additionally, each sample had proof of the cointegrating link, according to the authors.

Moreover, [17] modeled the relationship between the development of capital market sub-components (i.e., corporate bond, stock, mutual/pension funds, and government bond markets) and economic growth in Turkey. The researchers relied on the monthly data covering 2006: M1-2016:M6 and applied the Markov Switching Regression, ARDL, and Kalman Filter models as well as a test of causality. A correlation was found between capital market development and economic growth, as well as a unidirectional causality running from the latter to the former. The authors equally found that the development of the capital market exerts asymmetric effects on Turkish growth; the impact of government bond market development is negative, while that of the aggregated index of other sub-components is positive. Going forward, [17] estimated the causality between the development of the bond market, economic growth, and four other macroeconomic variables. Using data covering 1993-2011 for 35 countries, the researchers observed that the development of the bond market is a likely causative factor for economic growth.

In explaining the macroeconomic factors that drive corporate market development in Nigeria, [24] employed the OLS technique on the data between 1980 and 2013. Their findings revealed that the basic macroeconomic determinants (including bond yield, FDI, and banking sector development) largely drove the development of the corporate bonds market in Nigeria, even though they did not exhibit a common stimulating pattern. Nonetheless, exchange rate and savings appeared to bear a more significant effect than other factors. Likewise, [25] studied the macroeconomic drivers of bond market development in Nigeria, based on the time-series data covering a period from 1982 to 2013. By employing the OLS technique, the authors confirmed that inflation, exchange, and interest rates, as well as banking sector development, exerted significant and negative influences on the Nigerian bond market, while savings and FDI showed positive coefficients.

In a prior study by [26] a similar methodology and set of findings were reached. The study employed the generalized approach of moment techniques for dynamic panels and utilized a panel data set of 38 countries. The results demonstrated a positive relationship between government bonds and economic expansion. Additionally, [27] argued that non-sustainable debt ratios have a bigger negative effect on GDP than sustainable debt ratios do. Using India, Brazil, Indonesia, Mexico, Malaysia, Thailand, South Africa, and Turkey as examples, [28] investigated the relationship between public debt and economic development and found a considerably favorable, albeit very modest correlation. However, [29] asserted that a non-monotone association between growth and debt is tied to data and methodology and suggested that the empirical topic of whether high levels of public debt have a detrimental impact on long-term growth levels. The results of [30], which provided an enhanced Solow Model with government and public debt as an exogenous variable, showed a negative impact on an economy's steady-state levels of output and human and physical capital. While there are negative short- and long-term causal impacts of deficit spending on the physical capital and economic development, their magnitudes differ for low-debt and high-debt countries, according to estimates made for cointegration and error-correction models for each specific country.

Kapingura and Makhetha-Kosi [19] used South Africa as a case study to analyze the ad hoc association between the development of the bond market and Africa's economic growth from 1995 to 2012. The authors used the Augmented Dickey-Fuller (ADF) and Phillips-Perron time series statistical analysis and Engle and Granger single equation-based

two-step approach to analyze the data set to determine if the two variables are co-integrated (PP). The empirical findings demonstrated a single line of causality between the bond market and economic growth, from the bond market to the economic growth.

Alternatively, from the supply side, [16] examined how the stock and bond markets can affect economic development. Their findings demonstrated that government bonds have a favorable impact on economic growth and that stock market development stimulates economic growth using both panel data analysis and cross-country ordinary least squares regressions. In a study by [31] to establish a specific causal relationship between gross domestic products, the value of bonds traded, and market capitalization of bonds, the researcher examined the relationship between the issuance of treasury and government bonds and economic growth in Kenya using data that spans the years 2003-2011. According to the empirical findings, Kenya’s economic growth is positively impacted by the issuance of government bonds. The author concluded that during the study period, Kenya was characterized by supply-led economic expansion.

In Kenya, real GDP was used by [32] to calculate economic growth. By analyzing the influence on Kenya’s GDP, the researchers have attempted to determine the impact of the capital market i.e., the debt market development on Kenya’s economy. They considered the turnover of the bond market. Their multivariate analysis revealed that the expansion of the capital market has a sizable favorable impact on Kenya’s economic development. The findings corroborated the results of the following researchers, including [33]–[35]. In another South African country, [22] used a GMM approach to evaluate the association between the financial market, specifically the bond market, with economic development in Nigeria. The results found that the Nigerian bond market exerted a positive, but statistically negligible, impact on that country’s economic development. The Nigerian bond market and economic development are not causally related, either.

Other researchers have also measured the influence of political instability on the economic development of countries. For instance, the political stability influence on economic growth has been studied by [36], who examined a sample of 117 countries from 1980 to 2012. The researchers implemented Heritage Foundation economic freedom index of economic freedom; they created an index for political stability by utilizing twelve varying political risk measures of the ‘International Country Risk Guide’. The results suggested that economic freedom and political stability positively influence economic growth. Based on [37] political stability has a crucial role to play in the economic growth rates in Romania, and the country’s stable political situation promoted sustainable economic growth.

Also, by implementing a panel on the US economic growth from 1975 to 2005, [38] tested the Olson superstructure in an attempt to examine the relationship, associating economic growth with political stability. The results suggested that there is a significantly negative association between the examined political instability and the rates of US economic growth. Similarly, according to [38], higher levels of political turnover and (thereby lower levels of expected durability) can be linked to lower rates of marginal growth and further rent-seeking behavior.

Given the above-mentioned empirical results, the previous findings regarding the nexus between economic growth and the bond market were inconclusive as there were inconsistent results across countries around the globe. Besides, the role of political (in)stability in the link between the two variables has not been given significant attention, especially in the OIC member states, many of whom have suffered years of political instability. These aspects, therefore, underline the relevance of this study because of its potential contributions to the body of knowledge.

### 3. Data and Empirical Method

The data analysis in this study employed annual secondary data, which were already publicly accessible on several websites, including the World Bank, as well as the national stock markets. This analysis also employed aggregate nation data from the OIC member states, building on the work of [39] because aggregated data, as opposed to data from individual enterprises, better reflect the level of the entire variables in a specific country, according to [39]. Table 1 provides the model’s variables’ description and measurement.

Table 1: Summary of Variables Definitions, Measurement, Sources of Data, and Expected Outcome

Variables	Measurement	Sources	Expected Outcome
Panel A: Dependent Variable			
Economic Growth	GDP per capita	WDI-World Bank database	–
Panel B: Independent variables			
Bond Market	Bonds Issuance (Governmental)	Islamic Financial Services Board	(+)
Political Stability	Political stability and absence of violence/Terrorism	Worldwide Governance Indicators-	(+)
Government Spending	Government expenditure	Countries Central Banks	(+)

Electricity Consumption	Electric power consumption (KWh per Capita)	WDI-World Bank database	(+)
Unemployment rate	Unemployment, total (% of the total labor force)	WDI-World Bank database	(-)
Financial development	The financial development index is an aggregate of the Financial Institutions Index and the Financial Markets Index.	WDI-World Bank database	(+)

### 3.2 Model Specification

This study adopted the empirical model by [40] in selecting the variables, considering the shift from a culture that prioritizes saving to one that prioritizes investing in the light of the inclusion of financial instruments, including bonds and stocks as key variables in the model of economic growth. The study, thus, adapted and extended the model by including new variables and the moderation (interaction) effect (refer to Equation 2) of political stability on the association between bonds market and economic growth.

$$GDP_{it} = \beta_{0it} + \beta_1 BND_{it} + \beta_2 UPT_{it} + \beta_3 GC_{it} + \beta_4 FDI_{it} + \beta_5 EPC_{it} + \mathcal{E}_{it} \quad (1)$$

$$GDP_{it} = \beta_{0it} + \beta_1 BND_{it} + \beta_2 PS_{it} + \beta_3 (BND_{it} * PS_{it}) + \beta_4 UPT_{it} + \beta_5 GC_{it} + \beta_6 FDI_{it} + \beta_7 EPC_{it} + \mathcal{E}_{it} \quad (2)$$

, where GDP = Economic Growth measured by GDP per capita, BND = Bond Finance issue, FDI = Financial development index. UPT = Unemployment rate, GC = Government Spending (or consumption), EPC = Electricity Power Consumption, and PS = political stability.

### 3.3 Panel General Least Square Model

The proposed feasible GLS (FGLS) estimator outperforms the conventional least squares (OLS) estimate in the existence of heteroskedasticity, and serial, as well as cross-sectional correlations by consistently estimating the large error covariance matrix. If the random effect model has a heteroscedasticity problem, Panel general least square model will be an appropriate alternative. Therefore, the study used the panel general least square model for bond-related variables and Sukuk-related variables in this study.

### 3.4 Generalized Method of Moments (GMM) Estimator

The model of the dynamic panel data can be used to identify various statistical issues using techniques for dynamic panel data, such as GMM estimators. The study suggested the GMM method as a departure from the three prior models, considering the drawbacks identified to the RE, FE, and the Pooled OLS. Because the model's dependent variables (i.e., GDP per capita, in addition to Real GDP) are dependent on historical data, they are expected to exhibit significant persistence over time, necessitating the introduction of lagged dependent variables as a regressor. This can justify the employment of the generalized method of moments (GMM) estimator, developed for dynamic models for panel data and presented by [41].

To resolve such statistical issues with static models, the GMM technique has been suggested. Without providing a specific distribution for the errors, the GMM estimators can provide an unbiased, consistent estimate for the econometric models. For estimating the models of dynamic panel data with the autoregressive processes, the difference GMM estimator is a more robust technique. [42] presented this difference GMM estimator, which can also eliminate the country-fixed impacts from the given equation using differencing.

## 4. Empirical Analysis and Discussion of Findings

Table 2 presents the findings of the descriptive analysis of the Bond market and the economic development of several countries, including the mean, median, minimum, and maximum value, the standard deviation, and the variables for 130 observations. The estimates showed that the average GDP recorded 16.19 with a maximum value of 85.08 and a minimum value of 0.44; the standard deviation for the GDP recorded 19.87. A standard deviation of 19.87 showed that it is more volatile within the sample data of the study and GDP has been inconsistent because of the cross-country data. A heteroscedasticity issue might exist in the model. Comparably, the BND average value recorded was 7.12 (Billions) with a maximum value of 59.31 and a minimum value of 0.03. The BND standard deviation was recorded at 10.56.

Thus, the standard deviation value is large, showing that the provided score is not close to the mean, and it might be skewed positively of the distribution because the mean value is bigger than the median.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent variable					
GDP	130	16.19	19.87	0.44	85.08
BND	130	7.12	10.56	0.03	59.31
FDI	130	0.38	0.16	0.09	0.68
EPC	130	5573	6082	131	21146
GC	130	13.36	6.08	3.75	30.00
UPT	130	5.70	4.87	0.00	17.50
PS	130	-0.71	1.11	-2.81	1.22

Note: GDP = Economic growth, BND = Bond Finance issue, SUK = Sukuk Finance issue, FDI = Financial development index, EPC = Electricity Consumption (Electric power consumption), GC = Government Spending (General government final consumption expenditure), UPT = Unemployment Rate, PS = Political Stability

However, FDI EPC and GC, as well as UPT were to some extent normally distributed. This is because, the standard deviation value is large, showing that the score is not near the mean, and it might have skewed positively of the distribution because the mean value is bigger than the median. Lastly, the PS average value was recorded as -0.71 with a maximum value of 1.22 and a minimum value of -2.81. The PS standard deviation was recorded at 1.11. Thus, the standard deviation value has been relatively normal, thereby indicating that the given score is close to the mean although positively skewed of the distribution because the mean value is bigger than the median.

Table 3 illustrates the provided correlation coefficient between the study variables to determine the multicollinearity risk, which might have existed between these variables. Collinearity is defined as a linear correlation between a couple of predictors. Moreover, multicollinearity is defined as a situation, whereby two predictors or more are extremely linearly related. An absolute correlation coefficient for  $>0.80$  between two predictors or more shows the existence of multicollinearity. The predictors' correlation matrix might show multicollinearity, as mentioned above. Although correlation involves a bivariate linear relationship, while multicollinearity is multivariate, but not always, the correlation matrix is a good indicator of multicollinearity, which shows that more analysis is needed. Based on Table 3, no value greater than 0.80 exists, which showed that the multicollinearity issue might not have existed in the model.

Table 3: Correlation matrix

	GDP	BND	BND*PS	FDI	EPC	GC	UPT	PS
GDP	1.00							
BND	-0.04	1.00						
BND*PS	0.33	-0.68	1.00					
FDI	0.50	0.23	0.07	1.00				
EPC	0.76	-0.07	0.33	0.54	1.00			
GC	0.34	0.23	0.02	0.55	0.50	1.00		
UPT	-0.49	0.05	-0.20	-0.37	-0.54	-0.19	1.00	
PS	0.70	-0.03	0.47	0.70	0.56	0.50	-0.42	1.00

#### 4.1.3 Regression Results without Moderating Effect

In Table 4, the regression model is presented without the moderating variable. It is observed that Bond (BND) does not have any impact on economic growth (GDP). The control variable, such as EPC is positively associated with economic growth at a 1% significance level. Moreover, the unemployment rate (UPT) is negatively associated with GDP at a 10% level of significance. However, FDI and GC did not establish any significant relationship with GDP.

Table 4: Regression results without the moderating variable

GDP	Coefficient	Standard Error	Z-value	P-value
BND	0.14	0.14	0.98	0.33

FDI	13.80	9.88	1.40	0.16
EPC	0.00	0.00	7.37	0.00***
GC	-0.37	0.23	-1.57	0.12
UPT	-0.54	0.30	-1.79	0.07*
Constant	8.16	5.28	1.55	0.12

Note: \*\*\*, \*\*, and \* indicate significant level at 1%, 5% and 10%, respectively.

#### 4.1.4 Regression Results with the Moderating Effect

In Table 5, the regression result is presented with the moderating variable of PS interacting with BND (BND\*PS). It was found that both variables are significantly associated with economic growth in the panel of countries under consideration. The Chi-Square statistic is a goodness of fit test, which is used to find out how the observed value of a given phenomenon is significantly different from the expected value. As shown in the table, the P-value of Chi-Square is less than 1%, confirming that the overall model fit is acceptable and there is no significant difference between the observed and the expected value.

Table 5: Moderating Effect

GDP	Coefficient	Standard Error	Z-value	P-value
BND	0.5223	0.2004	2.61	0.01***
BND*PS	0.6457	0.2359	2.74	0.01***
FDI	21.3274	9.9179	2.15	0.03**
EPC	0.0020	0.0003	7.36	0.00***
GC	-0.4441	0.2329	-1.91	0.06*
UPT	-0.2700	0.3000	-0.87	0.38
Cont.	2168	1065	2.04	0.03**
Year dummy	Yes			
Number of obs	130			
Number of groups (Country)	13			
Periods (Year)	10			
Wald chi2(17)	229			
Prob > chi2	0.00			

Note: \*\*\*, \*\*, and \* indicate significant level at 1%, 5% and 10%, respectively.

In addition, as depicted in Table 5, BND and BND\*PS are positively associated with economic growth at the level of 1%. The control variables, such as FDI, EPC, and GC are significantly associated with economic growth expected for UPT. Moreover, Year is considered a dummy variable.

#### 4.1.5 Generalized method of moments (GMM) approach

Using the GMM approach, it was observed that political stability moderated the association between economic growth and bond finance, as shown in Table 6.

Table 6 : GMM Estimates

Variables	Coefficient	Standard Error	T-value	P-value
GDP(t-1)	0.696	0.052	11.45	0.00***
BND	0.351	0.1379	2.54	0.03**
BND*PS	0.2322	0.819	2.84	0.02**
FDI	25.6972	16.5367	1.55	0.15
EPC	0.0017	0.0007	2.49	0.03**



GC	-1.711	0.7116	-2.4	0.03**
UPT	0.3442	0.3398	1.01	0.33
Cont.	5.271	6.0241	0.87	0.40

## 5. Discussion of Findings

Given the main results presented in Table 5 and the robustness test in Table 6, the empirical findings suggested a significant and positive nexus between the bonds market and economic growth in OIC countries. The results showed that a 1-unit increase in bond finance caused a 0.52 unit expected increase in the OIC countries' economies, assuming that other variables remained constant. This result is consistent with the findings of previous studies, including [40], [16]. However, some results of other studies were contradictory. For example, [27] and [29]. This is conceivable because the bond market offers businesses a direct funding source as an alternative to bank loans. The likelihood that corporate projects can be funded at cheaper rates increases with the depth of the bond market and the quality of the market environment, where it functions, both of which promote investment and economic growth.

According to the Neoclassical theory, in terms of capital and labor, an economy has finite resources. Capital creation is sourced from capital market sources, such as loanable money or the debt market. The accumulation of capital, especially through the debt market inside an economy, and how individuals employ that money, according to this growth theory, is critical for economic growth. It has been highlighted by [13], [43] that financial intermediaries' primary purpose is to buy primary securities from ultimate borrowers and issue indirect loans for ultimate lenders' portfolios. Once the direction of the influence of bond market development on economic growth is known, the economic policy may be structured in a way that more effective approaches the desired level of economic growth, just like any other variable [24].

According to estimations of the political (in)stability's moderating influence on the relationship between the bond market and economic growth, political stability strengthens the bond market's beneficial influence on the OIC countries' economic growth. According to [44], political stability fosters an environment that is conducive to company expansion, employment opportunities, and migration into urban areas, all of which can enhance demand and spur economic growth. This implies that the country's political stability and its economic growth are interconnected, whereas uncertain political conditions can hinder both growth and investment. Thus, political stability plays a crucial role in fostering a secure investment environment that encourages the issue of bonds in support of funding public spending on investment and infrastructure projects to promote slowing economic growth.

## 6. Conclusion

This study examined whether political stability is a moderator in the relationship between the bond market and OIC countries' economic growth. Using a panel of static, as well as dynamic models to analyze data between 2010 and 2019, the empirical results suggested that the bond market has a significant, positive association with the country's economic growth. The estimates showed that political stability contributes to enhancing the relationship between economic development and the bond market within the investigated OIC countries. However, economic growth can be reduced in the absence of stability. Therefore, political stability is a key factor in achieving economic development in OIC countries as opposed to other developing nations. Many Islamic countries have witnessed a series of crises, civil wars, terrorism, conflicts, and Arab protests (also known as the Arab Spring), which resulted in more financial burdens on governments, thereby leading to reduced public spending on investment projects and infrastructure. The findings of this study suggested that to boost the OIC countries' economies, the involved policymakers in these countries should pay more attention to bond finance in the capital market. Specifically, efficient capital allocation is required in sync with guaranteed bond market development, where a sound financial market, including well-functioning financial institutions, with a developed debt market, stimulates and facilitates fundraising to support economic activities. In terms of the practical implications, this study has delivered evidence for scholars, policymakers, decision-makers, and other authorities that bond finance is regarded as a crucial booster for economic growth. Besides, governments of OIC countries and policymakers should be concerned about existing political conditions while investing in the bond market, since political instability or an inefficient market can act as a barrier to achieving economic growth. The feasibility of these findings is only applicable to the selected countries. Further studies should include a wide range of non-OIC countries to examine the relationship between the bond market and economic growth.

## REFERENCES

- [1] M. K. Hassan, M. A. R. Shah, M. A. Alazhari, and M. Selim, "Towards the Implementation of Monetary Management in Islamic Economic System Based on Recent Developments," *Int. J. Islam. Econ. Financ.*, vol. 4, no. 2, pp. 177–206, 2021.
- [2] O. I. C. E. Outlook, "Statistical, economic and social research and training centre for Islamic countries (SESERIC)." Statistical, Economic and Social Research and Training Centre for Islamic ..., 2019.

- [3] W. Bank, *Global financial development report 2019/2020: Bank regulation and supervision a decade after the global financial crisis*. The World Bank, 2019.
- [4] S. A. Shatnawi, A. Marei, M. M. Hanefah, M. Eldaia, and S. Alaaraj, "The Effect of Audit Committee on Financial Performance of Listed Companies In Jordan: The Moderating Effect of Enterprise Risk Management," *J. Manag. Inf. Decis. Sci.*, 2022.
- [5] Y. N. Nguyen, K. Brown, and M. Skully, "Impact of finance on growth: Does it vary with development levels or cyclical conditions?," *J. Policy Model.*, vol. 41, no. 6, pp. 1195–1209, 2019.
- [6] A. F. Presbitero, D. Ghura, O. S. Adedeji, and L. Njie, "Sovereign bonds in developing countries: Drivers of issuance and spreads," *Rev. Dev. Financ.*, vol. 6, no. 1, pp. 1–15, 2016.
- [7] E. M. A. Almadaat and I. Ibrahim, "Investigation of the Relations between Organizational Culture , Innovation , and Performance in Jordanian Banking Sector," *Int. J. Contemp. Manag. Inf. Technol.*, vol. 2, no. 6, pp. 39–50, 2022.
- [8] S. A. Shatnawi, A. Marei, M. M. Hanefah, M. Eldaia, and S. Alaaraj, "Audit Committee and Financial Performance in Jordan: The Moderating Effect of Ownership Concentration," *Montenegrin J. Econ.*, vol. 17, no. 4, pp. 45–53, 2021.
- [9] S. A. Shatnawi, M. Eldaia, A. Marei, and S. Alaaraj, "The Relationship Between Muslim Directors on Board of Directors and Audit Committee Characteristics on Performance Evidence from Jordan," *Int. J. Bus. Digit. Econ.*, vol. 2, no. 2, pp. 15–27, 2021.
- [10] M. I. Nor and T. A. Masron, "Turkish foreign direct investment and peace in somalia: a new political stabilization policy," *Int. J. Soc. Econ.*, 2018.
- [11] A. Cornell, "Economics of Land Degradation Initiative: Report for the private sector," *Bonn, Ger. Econ. L. Degrad. Initiat.*, 2016.
- [12] M. S. Oudat, N. Ahmad, and M. Yazis, "The impact of macroeconomic variables and global events on banking system: Evidence from Jordanian banking system," *J. Adm. Bus. Stud.*, vol. 2, no. 1, pp. 29–34, 2016.
- [13] M. Olson, "Stagflation and the Political Economy of the Decline in Productivity," *Am. Econ. Rev.*, vol. 72, no. 2, pp. 143–148, 1982.
- [14] A. A. Goldsmith, "Does political stability hinder economic development? Mancur Olson's theory and the Third World," *Comp. Polit.*, vol. 19, no. 4, pp. 471–480, 1987.
- [15] N. T. M. Hue and N. N. Tram, "Bond market development and economic growth: An empirical study in Asia," *J. Asian Rev. Public Aff. Policy*, vol. 4, no. 1, pp. 1–12, 2019.
- [16] P. Thumrongvit, Y. Kim, and C. S. Pyun, "Linking the missing market: The effect of bond markets on economic growth," *Int. Rev. Econ. Financ.*, vol. 27, pp. 529–541, 2013.
- [17] R. P. Pradhan, D. B. Zaki, R. P. Maradana, S. Dash, M. Jayakumar, and D. Chatterjee, "Bond market development and economic growth: The G-20 experience," *Tékhné*, vol. 13, no. 1, pp. 51–65, 2015.
- [18] R. P. Pradhan, M. B. Arvin, M. Nair, and S. E. Bennett, "Unveiling the causal relationships among banking competition, stock and insurance market development, and economic growth in Europe," *Struct. Chang. Econ. Dyn.*, vol. 55, pp. 74–87, 2020.
- [19] F. Kapingura and P. Makhetha-Kosi, "The causal relationship between the bond market development and economic growth in Africa: Case study of South Africa," *Mediterr. J. Soc. Sci.*, vol. 5, no. 3, p. 126, 2014.
- [20] M. O. Oke, O. Dada, and N. O. Aremo, "Impact of Bond Market Development on the Growth of the Nigerian Economy.," *Folia Oeconomica Stetin.*, vol. 21, no. 1, 2021.
- [21] Y.-L. Tan and R. M. Shafī, "Capital market and economic growth in Malaysia: the role of sukūk and other sub-components," *ISRA Int. J. Islam. Financ.*, 2021.
- [22] C. Ogboi, B. O. Njogo, and E. Nwankwo, "Bond market development and economic growth in Nigeria (1982-2014): A GMM Approach," *Res. J. Financ. Account.*, vol. 7, no. 8, pp. 60–67, 2016.
- [23] H. Muharam, I. Ghozali, and E. D. Arfinto, "Bond Market Development, Economic Growth, and the Role of Foreign Investment," *KnE Soc. Sci.*, 2018.
- [24] F. E. Nkwede, L. C. Uguru, and L. C. Nkwegu, "Corporate bond market development in Nigeria: does macroeconomic factors matter?," *Arab. J. Bus. Manag. Rev. (Oman Chapter)*, vol. 6, no. 2, p. 25, 2016.
- [25] F. E. Nkwede, "Macroeconomic determinants of bond market development: Evidence from Nigerian," *Int. J. Dev. Manag. Rev.*, vol. 15, no. 1, pp. 178–194, 2020.

- [26] S. Mishra and P. K. Narayan, "A nonparametric model of financial system and economic growth," *Int. Rev. Econ. Financ.*, vol. 39, pp. 175–191, 2015.
- [27] C. Dreger and H.-E. Reimers, "Does euro area membership affect the relation between GDP growth and public debt?," *J. Macroecon.*, vol. 38, pp. 481–486, 2013.
- [28] B. Fincke and A. Greiner, "Public debt and economic growth in emerging market economies," *South African J. Econ.*, vol. 83, no. 3, pp. 357–370, 2015.
- [29] U. Panizza and A. F. Presbitero, "Public debt and economic growth in advanced economies: A survey," *Swiss J. Econ. Stat.*, vol. 149, no. 2, pp. 175–204, 2013.
- [30] E. Coupet Jr, "Government Debt and Economic Growth: Another Neoclassical Growth Approach.," *J. Appl. Econ. Bus. Res.*, vol. 7, no. 3, 2017.
- [31] A. Gopal and B. R. Koka, "The asymmetric benefits of relational flexibility: Evidence from software development outsourcing," *Mis Q.*, pp. 553–576, 2012.
- [32] E. A. Adebowale and A. I. Akosile, "Interest rate, foreign exchange rate, and stock market development in Nigeria," *Binus Bus. Rev.*, vol. 9, no. 3, pp. 247–253, 2018.
- [33] N. Nnamdi, "Financial Liberalisation Policy And Theperformance of the Financial Sector in Nigeria." 2017.
- [34] T. M. Maina, "The effect of capital market deepening on economic growth in Kenya." University of Nairobi, 2013.
- [35] J. Aduda, R. Chogii, and T. M. Maina, "Effect of Capital Market Deepening on Economic Growth in Kenya," 2013.
- [36] M. F. Bashir and C. Xu, "Impact of political freedom, economic freedom and political stability on economic growth," *J. Econ. Sustain. Dev.*, vol. 5, no. 22, pp. 59–67, 2014.
- [37] C. Radu and N. Smaili, "Corporate performance patterns of Canadian listed firms: Balancing financial and corporate social responsibility outcomes," *Bus. Strateg. Environ.*, vol. 30, no. 7, pp. 3344–3359, 2021.
- [38] T. Caporale and J. Leirer, "Take the money and run: Political turnover, rent-seeking and economic growth," *J. Econ. Behav. Organ.*, vol. 76, no. 2, pp. 406–412, 2010.
- [39] A. Boudriga, N. B. Taktak, and S. Jellouli, "Banking supervision and nonperforming loans: a cross-country analysis," *J. Financ. Econ. policy*, 2009.
- [40] J. Junaidi, A. Jamal, and S. Syahnur, "Sukuk and endogenous growth in Indonesia: Generalized method of moments approach," in *1st Aceh Global Conference (AGC 2018)*, 2019, pp. 633–639.
- [41] E. Podrecca and G. Carmeci, "Fixed investment and economic growth: new results on causality," *Appl. Econ.*, vol. 33, no. 2, pp. 177–182, 2001.
- [42] A. Waheed and Q. A. Malik, "Board characteristics, ownership concentration and firms' performance: A contingent theoretical based approach," *South Asian J. Bus. Stud.*, vol. 8, no. 2, pp. 146–165, 2019.
- [43] H. H. Goldsmith *et al.*, "Roundtable: What is temperament? Four approaches," *Child Dev.*, pp. 505–529, 1987.
- [44] A. Uddin, M. A. F. Chowdhury, S. D. Sajib, and M. Masih, "Revisiting the impact of institutional quality on post-GFC bank risk-taking: Evidence from emerging countries," *Emerg. Mark. Rev.*, vol. 42, p. 100659, 2020.