

Does Sukuk Offer Portfolio Diversification Benefits During Crisis? Evidence from GARCH Analysis.

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Abstract

Islamic finance has gained prominence as a credible alternative to conventional finance, particularly following its resilience during the 2008 Global Financial Crisis. This study examines the volatility dynamics of Sukuk and conventional bond across the World, MENA and GCC regions, with a special focus on the Covid-19 pandemic period and its implication for investors. Using daily data from January 2019 to February 2021, a Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model is employed to analyse the return volatility. The results reveal that Sukuk indices outperformed conventional bond indices in certain regions during specific period, while the opposite was observed in others. GARCH results indicate that although both asset classes exhibit high volatility persistence, Sukuk indices generally display lower volatility persistence than their conventional counterparts. Overall, the results suggest that Sukuk may serve as a viable diversification instrument, offering relatively lower volatility during the period of financial distress.

Keywords: Bond Market, Covid-19, Financial Crisis, GARCH Model, Sukuk, Volatility

JEL Classification: C51, G01, G11, Z12

1. Introduction

In recent years, Islamic financial instruments have garnered significant attention as a viable alternative to the conventional financial instruments. The Islamic financial instruments are designed in compliance with Sharia law, emphasizing ethical investments and risk sharing principles. It prevents any engagements in business that go against Sharia standards or which violates Islamic laws. There has been tremendous growth for Islamic Financial Industry in the past years, where it grew at 10.3% annually and reached US\$3.50 trillion in the global market capitalization in 2020 and is expected to be US\$ 4 trillion in assets by 2030 (IFSB, 2018; Sherif, 2020; Alam and Seifzadeh, 2020)

The experience of two significant financial crises in the past three decades, namely the Asian financial crisis of 1997 and the 2008 Global Financial Crisis, has encouraged researchers to check the existence of any benefits of diversification (Abdulkarim et al., 2021). In this due course, Islamic finance has attracted investors attention which include both Muslims and non-Muslim investors, particularly after the resilience it exhibited after the crisis, particularly the Global Financial Crisis of 2008 (Aloui et al., 2016; Akhtar and Jahromi, 2017; Alam, 2019).

Later, Islamic bond, also called as Sukuk, another major Islamic financial asset, has gained the attention of investors and policymakers due to its integration into the international financial system (Hasan et al., 2022). According to IIFM² Sukuk Report (2023) Sukuk market has continued to grow steadily and shown resilience, as evidenced by the active market issuances in both established Sukuk issuing countries and new entrants during 2022. Additionally, Sukuk continues to play a significant role in driving growth within the Islamic Financial Services Industry. Sukuk holds a share of 24.43% equivalent to USD 0.794 trillion outstanding Sukuk among total industry share of worth USD 3.25 trillion (IIFM Sukuk report, 2023). The global Sukuk market is geographically diversified where Asia continues to be the dominant player, followed by GCC and Middle East, Europe and Africa (IIFM Sukuk Report, 2023).

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The Covid-19 pandemic had an unparalleled impact on the world, leading to a significant decline in global economic and financial performance. While Covid-19 initially emerged as a health crisis, it quickly evolved into an economic catastrophe akin to the Global Financial Crisis of 2008 (Hasan et al., 2022). Since the pandemic has affected every sector, we examine how did Sukuk and bond markets responded to Covid-19 pandemic. Previous researches have primarily focused on the performance of conventional and Islamic stock indices, their inclusion of Sukuk and conventional bonds in the comparative analysis was limited. While previous studies have analyzed the performance of both stock indices extensively, there is a noticeable gap in the literature regarding the comparative analysis of Sukuk and bond indices exclusively, especially in terms of volatility dynamics. This study aims to fill this gap by comparing selected Sukuk indices with conventional bond indices from three main regions, World, Middle East and North Africa (MENA) and Gulf Corporation Council (GCC) countries.

The primary objectives of this research are: How do Sukuk indices differ from conventional bond indices in terms of volatility? And what are the implications of these differences for investors? Understanding the volatility dynamics of Sukuk and bonds is crucial for investors seeking to diversify their portfolios and for policymakers aiming to promote stable financial markets with better risk return profile.

The remainder of the paper is organized as follows. Section 2 includes the review of the literature followed by data and methodology in section 3. The empirical findings and discussions are presented in section 4 and section 5 provides the concluding remarks.

2. Review of the literature

The literature examining the differences between Sukuk and bonds underscores the distinct structural and risk characteristics of these instruments. Zolfaghari (2017) notes that Sukuk resemble bond in some aspects, their feature often align more closely with equity-like instruments. Several studies have explored volatility differences, with Jawad and Faris (2019) finding Sukuk to be less volatile than conventional bonds, and Hassan et al. (2018) observing that Sukuk respond less strongly to market shocks using multivariate GARCH models. Similarly, Alaoui el Mrani Driss and El Mezouari (2020) and Nasir and Farooq (2017) confirmed that relative stability of Sukuk through performance metrics and Value at Risk (VaR) analysis respectively.

Studies has also highlighted the diversification potential of Sukuk in investment portfolios. Asl and Rashidi (2021) analyzed MENA region indices during the Covid-19 period and suggested that Sukuk offer risk mitigation benefits, particularly during turbulent times. Yesuf (2016) found that global Sukuk provided better risk-adjusted returns than bonds and could attract non-Islamic investors. Bhuiyan et al. (2020) and Danila (2023) investigated the resilience of financial instruments during the pandemic and found Sukuk markets to be less independent and more stable than their conventional counterparts, though in some cases, the pandemic did not affect significantly the volatility in either market. Conversely, Samitas et al. (2021) reported a close interdependence between Sukuk and bond markets, with sensitivity to external shocks.

Empirical studies across countries further enrich the comparison. In the context of Indonesia, Fathurahman and Fitriati (2013) found that sukuk yields were generally higher, while Rodoni and Setiawan (2016) observed significant differences in VaR but not in yields. Mosaid and Boutti (2014) found that Malaysian Sukuk Indices outperformed bond indices, through returns were positively correlated. Audi et al. (2021) compared Islamic and conventional indices globally, finding Sukuk to yield better returns in emerging markets, while bonds performed better in developed economies. Bhuiyan et al. (2018) supported Sukuk's role as a diversification tool, especially in emerging markets, with evidence of weaker co-movements in developed countries.

Overall, existing studies have examined Sukuk and bond markets across diverse geographies and periods, employing varied methodologies. While many emphasize the lower volatility and diversification potential of Sukuk, others find mixed or context-dependent results. Notably, a significant number of studies focus on individual countries or regional indices, often excluding broader global dynamics. Moreover, few have explored the volatility behavior of Sukuk and bonds during Covid-19 pandemic in a comparative, multi-regional context. This study addresses the gap by analyzing the volatility dynamics of selected Sukuk and bond indices during the pandemic period, with a focus on implication for investors.

3.1 Data

The present study empirically examines the performance of Sukuk and conventional bonds during periods of financial distress, with a particular focus on Covid 19 pandemic period. The outbreak, which was first identified in China in December 2019, rapidly spread across the globe as was officially declared a pandemic in March 2020³ (Cucinotta and Vanelli, 2020).

The analysis covers three key geographical regions. The World, the Middle East and North Africa (MENA) and the Gulf Cooperation Council (GCC) countries. The study aims to compare the performance of Sukuk and conventional bonds across these regions during Covid-19 crisis period. To represent the global market, the Dow Jones Sukuk Index and S&P International Corporate Bond index were selected. For the MENA region, the S&P MENA Sukuk index and S&P MENA Bond Index were used, while the S&P GCC Sukuk Index and S&P GCC Bond Index were chosen to represent the GCC region (see Table 1).

Daily closing price data for the selected indices were obtained from the Bloomberg database, covering the period from January 1, 2019 to February 26, 2021. Following the classification of Bokhtiar Hasan et al. (2022), the full sample period was further divided into two subperiods: the pre-Covid period (January 1, 2019 to December 31, 2019) and the Covid period (January 1, 2020 to February 26, 2021). The covid period encompasses both the first and second wave of the pandemic. The daily log returns were computed by using the following equation:

$$\text{Log Returns} = \ln\left(\frac{P_t}{P_{t-1}}\right)$$

where P_t is the closing price of index at current day and P_{t-1} is the closing price of the index at previous day.

Table 1: List of Indices selected

Sukuk and Bond Indices	Region
Dow Jones Sukuk Index	World
S&P International Corporate Bond Index	World
S&P MENA Sukuk Index	MENA
S&P MENA Bond Index	MENA
S&P GCC Sukuk Index	GCC
S&P GCC Bond Index	GCC

Source: Compiled by authors.

3.2 Methodology

GARCH (1,1) model

The Autoregressive Conditional Heteroscedasticity (ARCH) model was developed by Robert Engle in 1982, for capturing time varying volatility in financial time series data. The model posits that the volatility of the present period is correlated with the volatility of the previous period and the presence of ARCH effect indicates autocorrelation in the variance. The basic ARCH (1) model is represented as:

$$\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2$$

There were limitations for this model and a natural extension of this model which overcomes these limitations was Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model (Brooks 2019), which was developed by Bollerslev (1986) and Taylor (1986).

³ As per World Health Organization (WHO) the initial cases of Covid -19 were recorded by Wuhan Municipal Health Commission, China.

According to the GARCH model, the conditional variance for current time depends, not only on the squared residual terms of previous period but also on its conditional variance. So ‘p’ stands for the lagged terms of squared residual terms and ‘q’ for lagged conditional variances. General GARCH (1,1) can be expressed as GARCH (p, q) formulation, where current conditional variance is parametrized to depend upon p lags of squared error and q lags of conditional variance.

$$\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + \alpha_2 u_{t-2}^2 + \dots + \alpha_p u_{t-p}^2 + \beta_1 \sigma_{t-1}^2 + \beta_2 \sigma_{t-2}^2 + \dots + \beta_q \sigma_{t-q}^2$$

And general GARCH (1,1) is written as:

$$\sigma_t^2 = \alpha_i + \sum_{i=1}^p \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^q \beta_j \sigma_{t-j}^2$$

In the above specified model, p and q are ARCH and GARCH terms. The magnitude of the parameters of α and β (ARCH and GARCH) determine the persistence of volatility.

4. Results and Discussion

4.1 Descriptive statistics

Table 2 presents the descriptive statistics for all the selected indices across the three periods under analysis. Panel 1 reports the results for the total period. All indices have positive mean returns during this period. Notably, conventional bond indices in the World and MENA regions outperformed their Sukuk counterparts in terms of average returns, whereas the GCC Sukuk exhibited higher mean returns than the corresponding bond index. In terms of risk, as measured by standard deviation, conventional bond indices generally displayed higher volatility compared to sukuk indices, which were characterized by both lower mean returns and lower variability.

Panel 2 presents the descriptive statistics for the pre-Covid period, while panel 3 reports the figures of Covid period. During the pre-Covid phase, both the Dow Jones Sukuk and GCC Sukuk indices slightly outperformed their respective conventional bond counterparts, whereas in the MENA region, the conventional bond index yielded higher returns than Sukuk. All indices recorded positive mean returns in this period. In terms of risk, standard deviation indicate that the bond indices exhibited higher deviation than Sukuk indices. During the Covid period, all indices again posted positive return. However, the S&P International Bond and GCC Bond indices outperformed their Sukuk counterparts, while the MENA Sukuk Index demonstrated stronger performance than the MENA Bond index. Consistent with previous periods, bond indices continued to reflect higher risk, as evidenced by their larger standard deviation.

Most of the return series exhibit negative skewness and high kurtosis, indicating the presence of fat tails and asymmetry in the distribution. The Jarque-Bera tests statistics further confirm that the return distributions deviate significantly from the normality.

Table 2: Descriptive Statistics

	DJ Sukuk	SP Bond	Intl	MENA Sukuk	MENA Bond	GCC Sukuk	GCC Bond
Panel 1: Total Period (01/01/2019 to 26/02/2021)							
Mean	0.00031	0.00034	0.00029	0.00034	0.00034	0.00034	0.00033
Std. Dev	0.00156	0.00521	0.00154	0.00389	0.00313	0.00313	0.00332
Maximum	0.00729	0.02947	0.00667	0.02684	0.01212	0.01212	0.02271
Minimum	-0.01345	-0.04655	-0.01165	-0.03500	-0.03650	-0.03650	-0.02993
Skewness	-2.53355	-1.77309	-1.93393	-2.28730	-5.32393	-5.32393	-2.39770
Kurtosis	23.5420	21.7787	17.4273	30.5763	52.4714	52.4714	30.1975
Jarque Bera	10407.8	8491.25	5187.28	18167.1	59538.6	59538.6	17732.8

Probability	0.000	0.000	0.000	0.000	0.000	0.000
Panel 2: Pre-Covid Period (01/01/2019 to 31/12/2019)						
Mean	0.00039	0.00036	0.00037	0.00052	0.00056	0.00048
Std. Dev	0.00102	0.00304	0.00108	0.00205	0.00113	0.00183
Maximum	0.00451	0.01167	0.00470	0.00731	0.00613	0.00658
Minimum	-0.00302	-0.00821	-0.00350	-0.00741	-0.00436	-0.00622
Skewness	0.19094	0.43880	0.16757	0.02887	0.66166	0.06896
Kurtosis	4.33454	3.96183	4.54426	4.33794	7.57042	4.24662
Jarque Bera	20.7937	18.2954	26.9478	19.3540	244.323	16.9762
Probability	0.00003	0.00010	0.00000	0.00006	0.00000	0.00020
Panel 3: Covid Period (01/01/2020 to 26/02/2021)						
Mean	0.00024	0.00032	0.00022	0.00019	0.00014	0.00020
Std. Dev	0.00190	0.00653	0.00184	0.00495	0.00414	0.00420
Maximum	0.00729	0.02947	0.00667	0.02684	0.01212	0.02271
Minimum	-0.01345	-0.04655	-0.01165	-0.03500	-0.03650	-0.02993
Skewness	-2.54723	-1.71031	-2.05041	-1.99021	-4.19338	-2.14044
Kurtosis	19.1014	16.2674	14.9739	21.3123	31.3348	21.6141
Jarque Bera	3553.26	2338.75	1995.73	4375.17	10878.62	4544.94
Probability	0.000	0.000	0.000	0.000	0.000	0.000

Source: Authors' calculation

4.2 Unit root test

To ensure the suitability of data for further analysis, the stationarity of all index return series was examined across the three sample periods. Unit root tests were performed using both the Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests. The results confirm that all six indices are stationary at level at 5% significance level in each period. Detailed results of the unit root tests are presented in table 3.

Table 3: Unit root test results

	DJ Sukuk	SP Intl Bond	MENA Sukuk	MENA Bond	GCC Sukuk	GCC Bond
Panel 1: Total Period						
ADF Stat	-9.38173	-16.8152	-9.91014	-12.3299	-6.08243	-12.0538
P Value	0.000	0.000	0.000	0.000	0.000	0.000
PP Stat	-18.2717	-17.1245	-21.9880	-18.1585	-17.5493	-18.2223
P Value	0.000	0.000	0.000	0.000	0.000	0.000
Panel 2: Pre-Covid Period						
ADF Stat	-9.90134	-16.1425	-19.8371	-9.16587	-15.3344	-9.25194

P Value	0.000	0.000	0.000	0.000	0.000	0.000
PP Stat	-17.1300	-16.1507	-19.4115	-16.2741	-15.3554	-16.6615
P Value	0.000	0.000	0.000	0.000	0.000	0.000

Panel 3: Covid Period

ADF Stat	-6.18740	-11.4377	-6.40514	-12.2569	4.21462	-12.0841
P Value	0.000	0.000	0.000	0.000	0.000	0.000
PP Stat	-11.5557	-11.7748	-14.0471	-12.5593	-11.9566	-12.4338
P Value	0.000	0.000	0.000	0.000	0.000	0.000

Source: Authors' calculation

4.3 ARCH test

To assess the presence of conditional heteroscedasticity, the ARCH test was applied to all index return series. The results revealed significant ARCH effects during total and Covid periods, while no significant effects were observed in the pre-Covid period. As the P values for total and Covid periods were below the 5% significant level, we rejected the null hypothesis of homoscedasticity and concluded that the return series exhibit ARCH effect in these periods. The detailed test statistics are reported in table 4. In the light of ARCH model's limitation in capturing volatility clustering and persistence, the GARCH (1,1) model was employed for further analysis.

Table 4: ARCH LM test results

	F Statistics	Probability	Obs. R squared	Probability
Panel 1: Total period				
DJ Sukuk	18.0934	0.000	17.5853	0.000
SP Intl Bond	34.6422	0.000	32.7244	0.000
MENA Sukuk	30.1024	0.000	28.6541	0.000
MENA Bond	56.2676	0.000	51.2641	0.000
GCC Sukuk	8.96318	0.002	8.85252	0.002
GCC Bond	42.6796	0.000	39.7748	0.000
Panel 2: Covid Period				
DJ Sukuk	5.27009	0.022	5.21288	0.022
SP Intl Bond	14.0399	0.000	13.4947	0.000
MENA Sukuk	7.48649	0.006	7.35070	0.006
MENA Bond	23.0685	0.000	21.5404	0.000
GCC Sukuk	4.93326	0.027	4.88517	0.027

Source: Authors' calculation

4.4 GARCH (1,1) test

The time varying volatility of the indices was analyzed using the GARCH (1,1) model. This model was applied to the total period and the Covid period only, as the pre-Covid period was excluded due to the absence of ARCH effects, as indicated by the insignificant p-values in the ARCH LM test.

In the GARCH (1,1) model, the sum of ARCH (α) and GARCH (β) coefficients serves as an indicator of volatility persistence. When this sum approaches 1, it suggests that shocks to volatility are highly persistent and decay slowly over time. The first parameter ' Ω ' represents the long-term minimum level of conditional variance. The second parameter ' α ' captures the immediate impact of past shocks (lagged squared residual) on current volatility and the third parameter ' β ' reflects the contribution of past volatility (lagged conditional variance) to current volatility, thereby measuring its persistence. Interpretation of the sum of ($\alpha+\beta$) typically falls into three categories: if the sum is less than 1, volatility is mean-reverting; if it equals 1, volatility persistence is indefinite (a unit process in variance); and if it exceeds 1, the model suggests explosive volatility, making prediction unreliable.

In the GARCH (1,1) model, Ω represents the intercept or constant term in the variance equation and reflects the long-term average variance. The coefficient α captures the impact of lagged squared residuals, thereby measuring the influence of past shocks on current volatility. In contrast, β is the coefficient of the lagged conditional variance, indicating the degree of volatility persistence. A high value close of β , particular close to 1, suggests that volatility shocks are highly persistent over time.

Table 5: GARCH (1,1) estimations for total period

	DJ Sukuk	SP Intl Bond	MENA Sukuk	MENA Bond	GCC Sukuk	GCC Bond
Ω	1.08E-07 (0.000)	7.94E-07 (0.000)	9.42E-08 (0.000)	4.96E-07 (0.000)	1.08E-07 (0.000)	3.81E-07 (0.000)
α	0.15892 (0.000)	0.11266 (0.000)	0.14208 (0.000)	0.21789 (0.000)	0.21302 (0.000)	0.21213 (0.000)
β	0.76620 (0.000)	0.84670 (0.000)	0.79681 (0.000)	0.73157 (0.000)	0.76913 (0.000)	0.73588 (0.000)
$\alpha + \beta$	0.92512	0.95936	0.93889	0.94946	0.98215	0.94801

Source: Authors' calculation

Table 5 presents the GARCH (1,1) estimation results for all the six indices for the total period under study. The intercept terms of the variance equation Ω for the Dow Jones Sukuk and S&P International Bond indices are 0.00000011 and 0.00000079 respectively, reflecting their long-term average variance levels. The ARCH coefficient is 0.15892 for Dow Jones Sukuk and 0.11266 for the S&P International Bond, indicating the impact of recent shocks is more pronounced in Sukuk index. The GARCH coefficient is 0.76620 for the Dow Jones Sukuk and 0.84670 for the S&P International bond, suggesting that volatility is more persistent in the bond index compared to the Sukuk index. The sum of coefficients ($\alpha + \beta$) is 0.92512 for Dow Jones Sukuk and 0.95936 for S&P International bond – indicating high volatility persistence in both indices. However, the relatively higher β in the bond index implies greater dependence on past volatility while the higher α in Sukuk index suggests a stronger response to recent shocks.

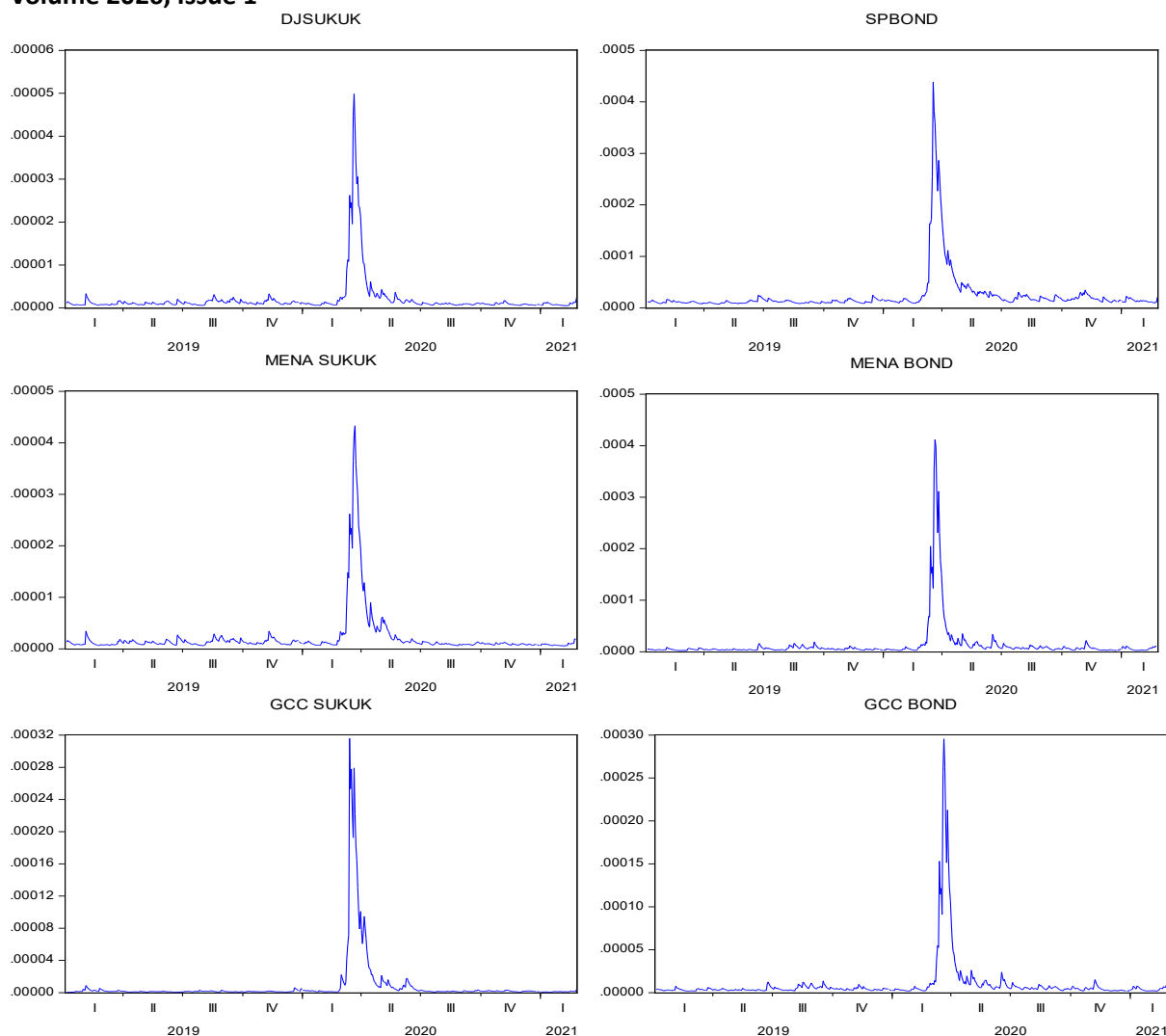


Figure 1: Conditional variance graphs for the indices.

For the MENA region, the ARCH coefficients for the Sukuk and bond indices are 0.14208 and 0.21789 respectively, while the corresponding GARCH coefficients are 0.79681 and 0.73157. Sum of these coefficients, $\alpha + \beta$, is 0.93889 for MENA Sukuk and 0.94946 for MENA bond, indicating a high degree of volatility persistence in both indices. Similarly, for the GCC region, the sum of coefficients is 0.98215 for Sukuk and 0.94801 for bond index, suggesting even greater volatility persistence, particularly in sukuk series.

Overall, during the total period under study, the Sukuk indices for the World and MENA regions exhibited lower persistence in volatility compared to their conventional bond counterparts, indicating a relatively more balanced risk profile. These findings align with the conclusions of Jawad and Faris (2019), Hassan et al. (2018) and Bokhtiar Hasan et al., (2022), who also observed lower volatility in Sukuk. In contrast, GCC bond index displayed superior performance over GCC Sukuk in terms of volatility, as reflected by lower $\alpha + \beta$ value for bond index. The conditional variance plots for the total period as illustrated in figure 1.

Similarly, GARCH (1,1) estimations were conducted for all indices during Covid period as reported in table 6. The intercept Ω term represents the long-term average variance level. The ARCH and GARCH coefficients are positive and statistically significant across all indices, indicating the presence of volatility clustering and the influence of past shocks on current volatility. The sum of coefficients for the Dow Jones Sukuk and for SP International Bond is 0.97398 and 0.94886 respectively, suggesting high volatility persistence in both cases, with the Sukuk exhibiting slightly higher persistence.

Table 6: GARCH (1,1) estimations for Covid period

	DJ Sukuk	SP Intl Bond	MENA Sukuk	MENA Bond	GCC Sukuk	GCC Bond
Ω	6.51E-08 (0.000)	1.61E-06 (0.008)	4.54E-08 (0.016)	4.49E-07 (0.030)	1.57E-07 (0.002)	2.78E-07 (0.039)
α	0.20801 (0.000)	0.14499 (0.000)	0.15438 (0.000)	0.35312 (0.000)	0.30744 (0.000)	0.34017 (0.000)
β	0.76597 (0.000)	0.80387 (0.000)	0.82291 (0.000)	0.66319 (0.000)	0.69937 (0.000)	0.68102 (0.000)
$\alpha + \beta$	0.97398	0.94886	0.97729	1.01631	1.00681	1.02119

Source: Authors' calculation

For the MENA region, the sum of coefficients is 0.97729 for the Sukuk and 1.01631 for the bond index. While the Sukuk index displays strong volatility persistence, the bond index exceeds the threshold of 1, indicating the presence of explosive volatility and unpredictability in the behavior. A similar pattern is observed in GCC region, where the sum of coefficients for the Sukuk and Bond indices are 1.00681 and 1.02119 respectively - both exceeding unity and suggesting the unstable variance dynamics. The conditional variance plots for the Covid period are illustrated in figure 2.

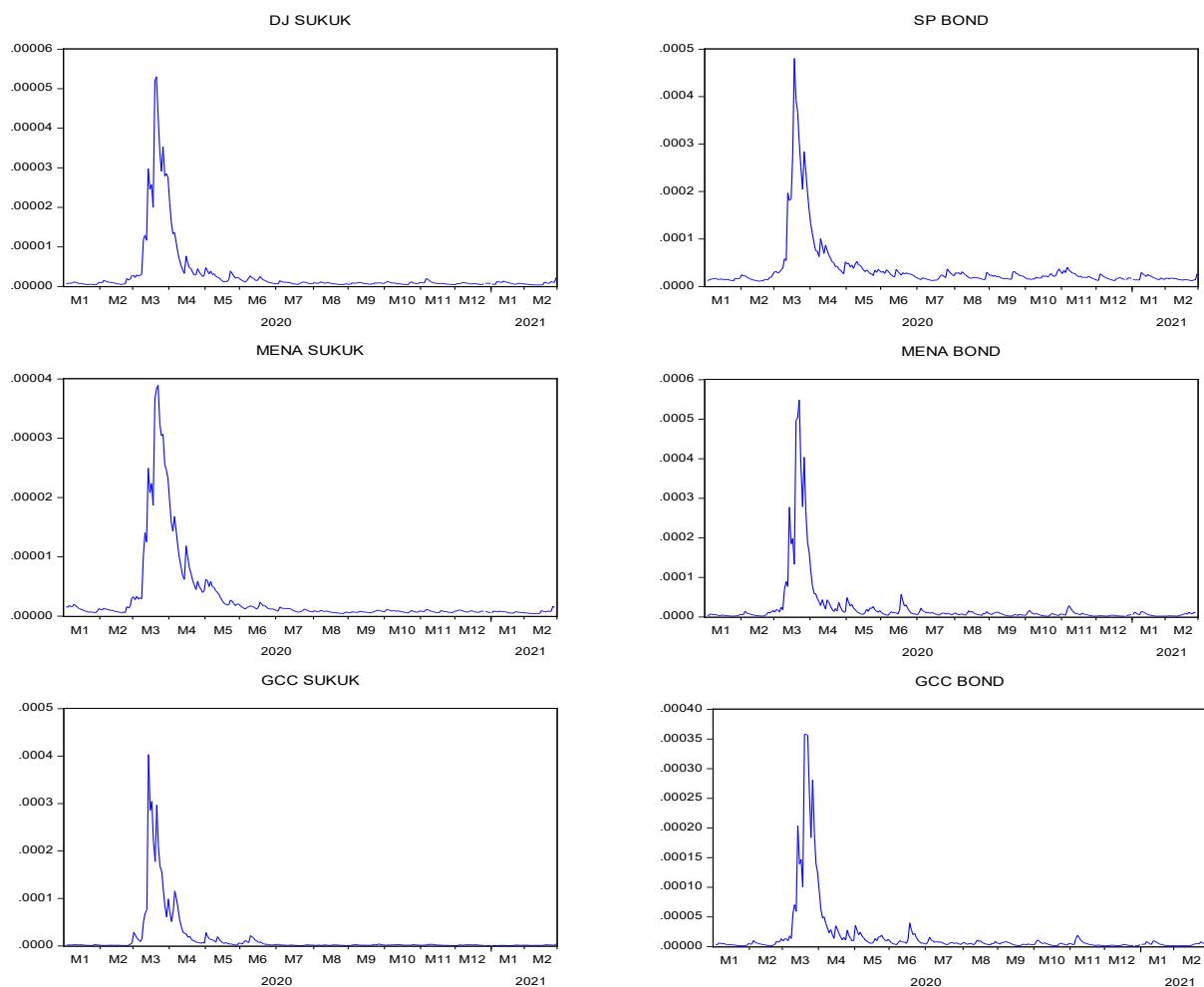


Figure 2: Conditional variance graphs for the indices.

Overall, during the Covid period S&P International Bond and MENA Sukuk indices demonstrate relatively more stable volatility behavior compared to their respective counterparts, offering a more balanced risk profile in time of financial distress.

5. Conclusion

This study examined the volatility dynamics of conventional bond and Sukuk markets during Covid-19 pandemic, with a focus on their implications for investors. The analysis employed descriptive statistics, heteroscedasticity tests, and the Generalized Autoregressive Conditional Homoscedasticity (1,1) model. For analytical purpose, the data were divided into three periods: total, pre-Covid and Covid.

Descriptive statistics revealed different mean returns across time periods. The Dow Jones Sukuk index outperformed the S&P International Bond index during the pre-Covid period; however, the bond index recorded higher returns during total periods and Covid period. In the MENA region, Sukuk outperformed bonds only during Covid period, while in the GCC region, Sukuk outperformed bonds in the total and pre-covid periods, but not during Covid. All indices were found to be stationary at level, as confirmed by both the Augmented Dickey Fuller and Phillips Perron tests. ARCH effects were present only in the total and Covid periods, warranting the application of the GARCH (1,1) model to these periods.

The GARCH results indicated the sum of coefficients during the total period was close to one for all indices, reflecting higher persistence of volatility. During the covid period, the sum of coefficients for MENA bond and GCC Bond indices exceeded one, indicating explosive volatility and lack of predictability. For the remaining indices, the sum was below one but close to it, suggesting sustained volatility persistence.

Overall, the findings reveal that Sukuk indices exhibit relatively lower volatility levels compared to their conventional bond counterparts, indicating a more favorable risk-return profile. This highlights the potential of Sukuk as a lower risk alternative investment during periods of financial distress. The study reinforces the need for more integrated financial markets and increased investor awareness of the benefits of Islamic financial instrument. Nonetheless, this research is limited to a selected group of indices and does not account for geographical heterogeneity or the varying impact of different pandemic waves. Future research could extend this work by analyzing a broader set of indices across more regions and considering multiple phases of financial turbulence, including a detailed assessment of pandemic sub periods.

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