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Bank return heterogeneity, do governance, sentiment, and uncertainty matter?

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FINANCIAL ECONOMICS | RESEARCH ARTICLE Bank return heterogeneity, do governance, sentiment, and uncertainty matter?

Syed Faisal Shah¹* and Mohamed Albaity²

Abstract: This paper examined the impacts of; investor sentiment, governance, and uncertainty on bank stock returns in the Middle East and North Africa (MENA) and Gulf Cooperation Council (GCC) region countries. The sample consisted of 173 conventional and Islamic banks based in the MENA region and 68 conventional and Islamic banks based in the GCC region from 2010-2020. Also, this study employed the Two-step system Generalized Method of Moments (GMM) estimator. The selection of this estimator prevented endogeneity issues related to the variables used in this study. This research found that individual sentiment and uncertainty negatively affected bank stock returns while governance positively influenced bank stock returns. The regression coefficients from the interaction of the governance indicators and conventional banks variable showed a positive and significant effect on bank stock returns in the MENA region, except for the interaction of the rule of law and voice and accountability in conventional banks, showing a negative effect. The GCC countries showed similar results. However, the outcomes were insignificant. Regarding the control variables, the loan ratio and inflation were negative, and bank size and the GDP showed positive and significant effects on bank stock returns throughout all models, excluding the loan ratio and bank size in the GCC region. Overall, the banking sectors of the MENA region countries were sensitive to; investor sentiment, uncertainty, and country-level governance indicators.

Subjects: Economics; Finance; Business, Management and Accounting

Keywords: Investor sentiment; governance; uncertainty; MENA; stock return

1. Introduction

As a result of the 2008 Global Financial Crisis, bank shareholders experienced severe losses on their investments. The collapse of the US stock market and banking industry during the credit crisis was partially blamed on poor bank governance (Berger & Bouwman, 2013; Fahlenbrach & Stulz, 2011). Recent studies have tried to explain the poor performance of bank stocks during the Global Financial Crisis. They have mainly concentrated on the differences in; business models, governance, regulations and capital structures of banks (Berger & Bouwman, 2013; Fahlenbrach & Stulz, 2011) and investor crisis sentiment (Irresberger et al., 2015).

A lack of efficient country-level governance in monitoring and managing stock market volatility can cause increases in credit that might not be recovered promptly, potentially leading to a financial crisis. The most highlighted failure during the 2008 Global Financial Crisis was the collapse of Lehman Brothers due to the spread of credit from banks in the United States (Albaity et al., 2020). In addition, the more recent COVID-19 pandemic caused a massive financial shock to the economy of the United States (Mazur et al., 2021). Most financial sectors were not fully





operational due to employees being auarantined, which resulted in a decline in stock returns. As a result, financial sector businesses laid off their labour forces to reduce costs. This situation led to a significant reduction in consumption and economic output (Mazur et al., 2021) and an increase in the saving behaviour of individuals who sought to reserve resources to deal with uncertainty and risk (Jin et al., 2021). Stock markets suffered (stock prices collapsed) from the uncertainty surrounding the COVID-19 pandemic (Mazur et al., 2021). Besides, banks' financial positions suffered from the negative outcomes of the COVID-19 pandemic (Demir & Danisman, 2021). Moreover, Elnahass et al. (2021) revealed that the COVID-19 pandemic adversely affected; banks' revenue, stock market valuations, and the overall economy. The pandemicfueled uncertainty had a negative and statistically significant effect on stock returns & risk (reward-to-variability ratio) in the stock markets of the G7 countries (Loudon, 2017). The most common and widely used factors used to measure uncertainty affecting stock returns comprise; economic uncertainty (Ahmad & Sharma, 2018), financial market uncertainty (Chiang et al., 2015), political uncertainty (Hillier & Loncan, 2019), policy uncertainty (Ftiti & Hadhri, 2019; Kang & Ratti, 2015; Xiong et al., 2018) and severe depressions causing uncertain shocks (Mathy, 2016). There is high responsiveness between stocks, economic uncertainty, and high trading due to overpricing, which may generate lower future stock returns (Yun et al., 2019).

Investor sentiment is commonly explained as market participants' expectations connected to a norm (Brown & Cliff, 2004; Singer et al., 2013). Baker and Wurgler (2007) stated that investor sentiment backed future cash flows and investment risk. Many studies have found that investor sentiment has had a positive and statistically significant impact on stock returns (Baker & Wurgler, 2006; Dash & Maitra, 2018; Gao & Yang, 2018; G. Wang et al., 2020; W. Y. Lee et al., 2002). At the same time, several papers have revealed that the spread in investor sentiment had an inverse relationship on future stock returns and realised volatility due to a lack of information about stock returns making it harder to predict stock returns (Fisher & Statman, 2000; See-To & Yang, 2017).

Finally, country-level governance has received little attention in the banking industry, especially in the MENA region. Few studies have tried to enlarge on and test the influence of country-level governance on the efficiency of the banking sector (Chortareas et al., 2012; Kamarudin et al., 2016, 2018; Lensink et al., 2008). Good governance maintains and improves trust in the banking sector; therefore, improved levels of good governance promote bank stability and increase stock returns (Albaity et al., 2020). Macro governance elements, such as; political stability, regulatory quality, government effectiveness, control of corruption, the rule of law, and voice and accountability, form institutional quality and play an essential role in improving efficiency in the banking sector (Albaity et al., 2020; Chan et al., 2015; Uddin et al., 2020). Several studies have found that macro governance statistically impacted bank stock returns (Chortareas et al., 2012; Kamarudin et al., 2016, 2018).

This paper was motivated by the research of (Kamarudin et al., 2018), which focused on governance in the banking sector, and (Di et al., 2021), which focused on investor sentiment in the banking sector. The present study used several sources for data collection (*Appendix A*). The sample data covered 17 countries from the MENA region, including six GCC countries. The MENA and GCC regions were selected due to their unique; social norms, state roles, geography, cultural identity, social conflicts and certain governance regulations (Albaity et al., 2020). Oil-producing countries comprised 53% of the sample (Mertzanis et al., 2019). The regions have also experienced their share of economic instability and political conflict (Arab spring, debt crisis and unemployment (Awartani et al., 2016). The sample consisted of 173 listed banks, 49 Islamic and 124 conventional banks in the MENA region. In addition, 40 conventional and 28 Islamic banks in GCC countries were part of the MENA region sample, using data from 2010 to 2020. This study offers an important contribution to the existing literature. This paper aimed to examine; investor sentiment, uncertainty, and governance indicators on bank stock returns in the MENA countries. In addition, this research investigated the interaction effects of governance indicators and conventional banks on bank stock returns in the MENA countries. The remainder of this paper is structured as follows. Section 2 provides a review of the existing literature related to the topic of this study. Section 3 provides specific details regarding the; sample data, variables, hypotheses, and the methodology employed in the analysis. Section 4 presents the results of the empirical findings and hypothesis testing. Finally, Section 5 concludes this paper and provides insights for possible future studies.

2. Related literature

According to Fama (1970), the efficient market hypothesis reflects all available private and public information. While the alternative hypothesis (theory) of behavioural finance doesn't signify all the available information, meaning that the market is inefficient (Fama, 2021).

On the other hand, Daniel et al. (1998), Kahneman (2011), and Odean (1998) have challenged the efficient market hypothesis. Investor decision-making relies on the way that information is obtained and processed. Psychological biases (i.e., overconfidence, belief persistence, and over-optimism) negatively influence investment decisions (Daniel et al., 1998; Kahneman, 2011; Odean, 1998; Shah et al., 2020). Similarly, investors follow stocks under media attention and invest in a bid to make a profit (Kaniel et al., 2008). Kahneman (1973) stated that investors could not gather all information about all stocks. However, higher levels of reliable information clarify and reduce the differences between investors' expected and actual returns and market inefficiency (H. K. Baker & Nofsinger, 2010).

2.1. Investor sentiment & stock returns

Investor sentiment is investors' belief concerning future cash flows and investment risk (Baker & Wurgler, 2007). Several strands of literature have investigated the association between investor sentiment and stock returns from various perspectives. Di et al. (2021) attempted to evaluate the stock performance sensitivity of Middle Eastern and Asian countries to changes in the size of the impact of investor sentiment. They obtained sentiment data from Google Trends and stock return data from the Bloomberg database. The outcome of their analysis showed that the impact of investor sentiment on bank stock performance was uneven. Di et al. (2021) and W. Y. Lee et al. (2002) also stated that investors' optimism strongly influenced bank stock returns. Besides, Shah and Albaity (2022) conducted a study on the MENA and GCC countries and found that market sentiment had a positive and significant influence on bank stock returns, while individual sentiment had a negative and significant effect on bank stock returns in the MENA region. Investor sentiment had a positive and statistically significant relationship with stock returns in China (Gao & Yang, 2018; G. Wang et al., 2020), and another study used three indices DJIA, S&P500, and NASDAQ (W. Y. Lee et al., 2002). While, Albaity et al. (2022) examined the impact of COVID-19 investor sentiment on bank stock returns in 16 MENA region countries, and the result showed that COVID-19 investor sentiment had no significant effect on bank stock market returns.

G. Wang et al. (2020) studied individual and institutional investors in the Shanghai and Shenzhen Stock Exchanges. They revealed that investor sentiment positively influenced stock returns, but only for individual investors. On the contrary, Huang et al. (2015) and Irresberger et al. (2015) found a negative and statistically significant influence of investor sentiment on stock returns. Similarly, Corredor et al. (2015) and Schmeling (2009) claimed that investor emotion negatively impacted stock returns. The negative relationship could be the reason for information spread, triggering investment momentum, and experience creating overreaction. As a result, investors bought too much stock (Di et al., 2021; Hong & Stein, 1999).

Furthermore, investor pessimism negatively impacted the stock market while positively affecting stock market volatility and trading volume (Dimpfl & Kleiman, 2019). Sul et al. (2017) analysed investor sentiment data from Twitter and revealed that it significantly positively and negatively affected stock returns. Finally, Chu et al. (2016) showed that investor sentiment had no impact on stock returns.

2.2. Governance and stock returns

A country's efficient governance system supports firms in improving their financial performance (Albaity et al., 2020). Macro governance elements, such as; political stability, regulatory quality, government effectiveness, control of corruption, the rule of law, and voice and accountability, form institutional quality and play an essential role in improving efficiency in the banking sector (Albaity et al., 2020; Chan et al., 2015; Uddin et al., 2020). Similarly, governance is one mechanism that promotes bank efficiency (W.-K. Wang et al., 2012) and influences bank performance. Chortareas et al. (2012) pointed out that country governance (macro governance) in a particular country-level governance indicator scientifically impacted banks' performance in 22 EU countries from 2000–2008.

In terms of macro governance elements, (Kamarudin et al., 2016) found positive effects of **voice and accountability** on bank performance in the GCC region countries and suggested that citizens and state institutions should promote democracy and mitigate poverty which would enhance bank performance. Kamarudin et al. (2016) claimed that citizens having greater freedom in selecting their government would improve bank efficiency. Voice and accountability tended to raise the level of media independence; as a result, information quality improved concerning local developments (Lensink et al., 2008). Information quality helps both foreign and local banks to increase their efficiency.

Hwang and Akdede (2011) investigated the influence of *governance effectiveness* on efficiency in the public sector and found a positive relationship. Likewise, greater government credibility positively affected Islamic and conventional banks' revenue efficiency in the GCC region (Kamarudin et al., 2016). Also, they spotted that government trustworthiness was gained through devising and applying policies and regulations for local and foreign businesses; eventually, it promoted bank performance. The banking sector needs *regulatory quality* to ensure the reliability of the financial system (Albaity et al., 2020). Regulatory quality, including formulating and implementing reliable bank-efficient policies and regulations, may improve and develop the banking sector (Albaity et al., 2020; Kamarudin et al., 2016).

Furthermore, effective regulatory quality may provide the professional handling of bureaucracy and accountability of government employees, increasing bank performance. Therefore, better regulatory quality was positively correlated with bank performance when considering banks worldwide during Global Financial Crisis (2007–2008; Beltratti & Stulz, 2009). Kamarudin et al. (2018) claimed a positive association between the rule of law and bank efficiency levels in the Gulf countries regarding the impact of the rule of law. The quality of the rule of law affects the cost efficiency of banks where the judiciary is involved (Lensink et al., 2008). Also, they stated that judgment delays led to cost inefficiency; therefore, the quality of the rule of law promoted bank performance in 105 countries, including MENA region countries, between 1998–2003. The improved rule of law and a better judiciary system would benefit banks in the GCC region by reducing uncertainty and risk when starting businesses and raising private sector investment, helping to improve bank efficiency and the overall market (Kamarudin et al., 2016).

Political stability and the absence of violence may improve bank performance due to politicians using their influence to promote social welfare. This situation might result in cost reductions and remove asymmetric information helping banks receive funds and provide loans efficiently (Kamarudin et al., 2016). Equally, political stability improved the banking sector's efficiency level (Albaity et al., 2020). The positive relationship between political stability and bank performance may result in more efficient handling of deposit and loan transactions (Kamarudin et al., 2016). In terms of the *control of corruption*, banks perform better in non-corrupt markets (Chortareas et al., 2012). Equally, a higher level of control of corruption leads to better public sector efficiency in; administration, stability and infrastructure (Hwang & Akdede, 2011). Strong agency supervision reduces corruption, enhances monitoring, and discipline and, thus, improves overall bank efficiency (Kamarudin et al., 2016). On the other hand, banks based in highly corrupt countries suffer from

high loan debts. Corruption also badly affects investment and financing decisions in the MENA region (Albaity et al., 2020) and ASEAN (Chan et al., 2015).

2.3. Uncertainty and stock returns

The conditional volatility of a predictable disruption from an economic agent's viewpoint is known as uncertainty (Jurado et al., 2015; Yun et al., 2019). The Great Depression was a disastrous time in American history that resulted in significant output, economic and employment declines. In addition, Mathy (2016) examined the key events of the depression that triggered a crisis in the banking sector. The results revealed that the Great Depression unfavourably affected households and businesses with a decline in income; however, uncertainty shocks may result in a return spread.

As per Loudon (2017), considerable variability in stock returns was found in the G7 countries' stock markets between 1973-2013 due to the level of uncertainty caused by different events. Different types of uncertainty may cause negative effects on stock returns, such as; stock market uncertainty (Loudon, 2017), economic uncertainty (Yun et al., 2019), political uncertainty (Hillier & Loncan, 2019), economic policy uncertainty (Ahmad & Sharma, 2018; Kang & Ratti, 2015; Xiong et al., 2018) and pandemics, such as COVID-19 (Xu, 2021). Political instability causes business uncertainty (Hillier & Loncan, 2019; Liu et al., 2017), which may cause capital flight (Alesina & Tabellini, 1989; Hillier & Loncan, 2019). The rise in COVID-19 cases negatively impacted Canada's and the United States' stock returns. Stock responses were asymmetric on the rise and decline in COVID-19 cases in Canada (Xu, 2021). According to Szczygielski et al. (2021), Asian markets showed resilience to COVID-19 uncertainty; on the other hand, European and North & Latin American markets experienced lowering effects from COVID-19 uncertainty over time. Besides, investors, risk-averse behaviour might enhance volatility in stock markets. Still, on the other hand (Chiang et al., 2015) found that a rise in risky behaviour may lead to positive results and investors expecting high returns. Moreover, the negative relationship between uncertainty and stock returns could result from behavioural factors, for instance, investor sentiment, overconfidence, and overoptimism (Loudon, 2017). Finally, Di et al. (2021) discovered that negative crisis sentiment terms caused statistically significant and negative effects on bank stock returns during financial crises.

2.4. Research gap

Several studies have found that investor sentiment has influenced stock returns worldwide. Such affected countries include; some Middle Eastern and Asian countries (Di et al., 2021), China (Gao & Yang, 2018; Gong et al., 2022; G. G. Wang et al., 2020), India (Dash & Maitra, 2018), MENA countries (Albaity et al., 2022), United States (Gao et al., 2020; Renault, 2017). Therefore, this study identified the following research gaps. In the MENA region, there hasn't been a reliable and available sentiment index that can be used to measure the impact of investor sentiment on bank returns. In addition, most MENA countries are Arab speaking, and they are challenged to find a reliable sentiment index. Thus, this paper has created a sentiment index for the MENA region using Google Trends comprising 89 terms, including Arabic terms, covering ten years. The index comprised 16,020 observations.

Many studies have identified that governance indicators have a significant impact on stock returns in different countries, i.e. MENA countries (Albaity et al., 2020), GCC countries (Kamarudin et al., 2016), ASEAN-5 (Chan et al., 2015, Pakistan (Islam & Bilal, 2021), the United States (Krishnan & Wu, 2022). In terms of uncertainty, several studies have found that uncertainty has significantly impacted stock returns in various countries. The noted countries include; the G7 countries (Loudon, 2017), the United States (Escobari & Jafarinejad, 2019), South Korea (Yun et al., 2019), Brazil (Hillier & Loncan, 2019), China (Xiong et al., 2018), and the MENA countries (Albaity et al., 2022; Chau et al., 2014). Consequently, this study has identified the following research gaps. MENA countries have experienced much political turmoil and economic uncertainty since 2008 (e.g., Arab Spring, debt crisis, and oil price fluctuations; Awartani et al., 2016). Hence, governance institutions in MENA countries have developed to ensure that markets are governed, and information is

transmitted accordingly. Thus, this paper has built on and expanded Albaity et al. (2020) and Albaity et al. (2022) by including more MENA countries and a different set of control variables over a longer period to confirm the previous results.

3. Sampling and methodology

This paper measured the influence of; investor sentiment, uncertainty, and governance on bank stock returns. In addition, the research has highlighted the effects of the interaction between a dummy variable (conventional banks) and selected governance indicators. The System Generalized Method of Moments (GMM) estimator was employed to examine a sample comprising 173 banks from the MENA region, including 68 banks in GCC countries, with data collected between 2010 to 2020.

3.1. Sampling

Initially, a list of 534 banks' data was gathered using consolidated statements in the MENA region. Upon further filtering, 361 banks were excluded from the sample due to missing data. Hence, the final sample comprised 173 banks operating between 2010–2020.

3.2. Two-step system GMM estimator

The Generalized Method of Moments (GMM) approach is a well-known statistical technique developed by Arellano and Bond (1991). The selection of the two-step System (GMM) estimator prevented endogeneity issues related to the variables used in this study. The GMM estimator merges observed numerical economic data with population moment conditions to examine unknown parameters in an economic model (Albaity et al., 2020; Masoud & Albaity, 2021; Zsohar, 2012). The method's reliability lies in implementing robustness measures to meet the assumption of errors in serially uncorrelated data (Abrigo & Love, 2016; Kamarudin et al., 2016; Masoud & Albaity, 2021).

The models' validity and freedom from misspecification were ensured through two tests. First, the Hansen test was used to examine the overidentifying restrictions of the instruments and ensuring that the procedures were followed (Hansen, 1982). The second test was the Arellano-Bond (AR) test, which was employed to test the hypothesis of no correlation. The first order of the AR1 test of autocorrelation should not signal inconsistencies in the estimates, while the second order of the AR2 test confirmed the AR1 test. The analytical model is discussed below:

$$BUH_{ij,t} = \alpha_0 + \alpha_1 BUH_{ij,(t-1)} + \alpha_2 ISE_{j,t} + \alpha_3 MSE_{j,t} + \alpha_4 UNC_{j,t} + \alpha_5 QoG_{j,t} + \alpha_6 ROE_{ij,t} + \alpha_7 TLTA_{ij,t} + \alpha_8 size_{ij,t} + \alpha_9 NII_{ij,t} + \alpha_{10} OPR_{ij,t} + \alpha_{11} GLTA_{ij,t} + \alpha_{12} GDP_{j,t}$$

$$+ \alpha_{13} INF_{j,t} + \alpha_{14} Dum_{ij,t} + \varepsilon_{ij,t}$$
(1)

The endogenous variable was bank buy and hold stock returns (BUH), the proxy for bank stock performance. The lagged buy and hold return as independent variable (BUH t - 1). Investor sentiment comprised individual (ISE) and market sentiment (MSE). The other independent variables were the quality of governance indicators (QoG) and uncertainty (UNC). Moreover, several control variables were included in this study, i.e., the return on equity (ROE), total liabilities (TLS), bank size (Size), non-interest income (NII), operating revenue (OPR), gross loans (GLS), GDP growth (GDP) and inflation (INF). A dummy control variable was created, with 1 signifying conventional banks and 0 signifying Islamic banks. The subscripts *i*, *j* and *t* referred to bank, country, and time, respectively. Lastly, a_0 and a_{15} were coefficients, and ε was an error term.

$$BUH_{ij,t} = \alpha_0 + \alpha_1 BUH_{ij,(t-1)} + \alpha_2 ISE_{j,t} + \alpha_3 MSE_{j,t} + \alpha_4 UNC_{j,t} + \alpha_5 QoG_{j,t} + \alpha_6 ROE_{ij,t} + \alpha_7 TLTA_{ij,t} + \alpha_8 size_{ij,t} + \alpha_9 NII_{ij,t} + \alpha_{10} OPR_{ij,t} + \alpha_{11} GLTA_{ij,t} + \alpha_{12} GDP_{j,t} + \alpha_{13} INF_{i,t} + \alpha_{14} Dum_{i,t} + \alpha_{15} QoG_{i,t} * Dum_{i,t} + \varepsilon_{i,t}$$

$$(2)$$

l able 1	. Descrip	tive stat	istics															
Country	BUH	ΔISEN	ΔMSEN	AUNC	RUL	GOE	REQ	PSV	COC	VOA	ROE	TLTA	GLTA	size	IIN	AOPR	GDP	INF
United	0.057	0.609	0.442	25.753	0.657	1.286	0.823	0.760	1.126	-1.037	7.520	0.804	0.661	16.399	40.070	0.001	3.576	1.143
Arab Emirates	0.370	1.560	1.444	80.484	0.163	0.193	0.250	0.109	0.097	0.079	14.902	0.175	0.091	1.322	19.623	0.002	1.794	1.784
Bahrain	0.022	0.659	0.245	0.000	0.403	0.424	0.618	-0.915	0.131	-1.302	7.073	0.827	0.528	15.500	52.795	0.001	3.375	1.939
	0.335	1.181	1.039	0.000	0.066	0.152	0.132	0.228	0.195	0.125	8.996	0.106	0.143	1.242	22.803	0.005	1.219	1.027
Egypt	0.019	1.307	0.168	0.000	-0.489	-0.650	-0.671	-1.364	-0.624	-1.171	20.526	0.907	0.417	15.188	30.165	0.001	3.801	11.253
	0.428	3.519	0.655	0.000	0.133	0.163	0.244	0.230	0.045	0.166	11.688	0.029	0.123	0.732	19.047	0.002	1.346	6.372
Israel	0.081	0.141	0.717	14.533	1.025	1.312	1.248	-1.022	0.880	0.682	8.126	0.935	0.671	17.560	38.591	0.001	3.728	1.064
	.0247	0.788	1.702	42.184	0.073	0.068	0.050	0.172	0.119	0.056	2.254	0.008	0.065	1.114	6.206	0.001	0.970	1.262
Iraq	-0.074	0.474	3.471	19.484	-1.542	-1.208	-1.179	-2.247	-1.312	-1.046	4.158	0.505	0.281	12.980	82.830	0.005	5.522	2.211
	0.356	1.755	12.840	63.051	0.134	0.087	0.068	0.235	0.074	0.060	6.127	0.183	0.166	0.674	33.659	0.031	5.580	2.123
Iran	0.168	-0.137	2.987	6.195	-0.868	-0.412	-1.414	-1.221	-0.805	-1.482	11.013	0.939	0.634	16.652	75.460	0.002	0.843	20.255
	0.911	0.450	6.210	60.513	0.144	0.158	0.142	0.305	0.144	0.127	26.931	0.037	0.060	1.228	41.100	0.007	6.272	11.213
Jordon	-0.001	0.272	0.621	36.380	0.304	0.083	0.122	-0.486	0.148	-0.746	8.769	0.819	0.578	14.744	34.625	0.001	2.394	2.814
	0.167	1.082	4.511	189.853	0.103	0.058	0.085	0.093	0.081	0.045	4.441	0.157	0.156	1.535	31.417	0.002	0.428	2.165
Kuwait	0.009	0.607	0.968	17.504	0.245	-0.054	-0.023	0.128	-0.148	-0.616	5.367	0.794	0.559	15.974	41.463	0.001	1.601	2.778
	0.251	1.675	2.450	71.184	0.206	0.100	0.100	0.182	0.186	0.044	10.044	0.191	0.237	1.442	26.896	0.003	3.901	1.231
Lebanon	-0.038	0.057	2.173	26.845	-0.779	-0.466	-0.226	-1.644	-0.973	-0.448	8.752	0.893	0.269	15.457	33.788	0.001	1.162	10.488
	0.259	0.841	6.332	103.176	0.052	0.167	0.159	0.043	0.098	0.071	7.947	0.035	660.0	1.815	14.821	0.005	3.623	23.653
Morocco	0.022	1.659	3.510	20.760	-0.161	-0.111	-0.166	-0.392	-0.266	-0.660	10.132	0.898	0.691	16.651	28.552	0.001	3.475	1.157
	0.195	4.343	10.836	164.496	0.055	0.056	0.068	0.057	0.101	0.036	3.270	0.017	0.104	0.919	9.178	0.003	1.187	0.569
Malta	-0.051	0.060	-0.135	0.000	1.186	1.056	1.238	1.132	0.752	1.162	8.104	0.908	0.489	15.221	46.299	0.000	5.485	1.425
	0.147	0.345	0.166	0.000	0.152	0.150	0.139	0.091	0.208	0.029	3.536	0.029	0.069	1.171	16.689	0.001	2.450	0.749
Oman	-0.057	0.594	0.775	36.858	0.475	0.229	0.448	0.623	0.267	-1.060	8.783	0.818	0.736	15.389	28.600	0.001	3.017	1.610
	0.152	1.519	2.151	211.301	0.055	0.073	0.149	0.130	060.0	0.032	5.245	0.134	0.134	1.190	17.060	0.004	2.890	1.291
																	(C	ontinued)

Table 1	. (Contin	ued)																
Country	BUH	ΔISEN	AMSEN	AUNC	RUL	GOE	REQ	PSV	COC	VOA	ROE	ТLТА	GLTA	size	IIN	ΔΟΡR	GDP	INF
Palestine	0.054	0.021	-0.195	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.383	0.890	0.545	13.851	29.721	0.002	7.918	1.360
	0.211	0.570	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.161	0.021	0.078	0.767	7.878	0.001	6.124	1.399
Qatar	0.066	1.345	0.021	36.967	0.815	0.831	0.629	0.968	0.968	-1.109	12.765	0.858	0.651	16.984	30.153	0.001	5.692	1.207
	0.223	1.962	0.944	118.931	0.085	0.131	0.110	0.216	0.191	0.106	4.254	0.024	0.075	0.867	8.913	0.001	6.011	1.763
Saudi	0.061	0.706	0.576	19.125	0.151	0.135	0.033	-0.454	0.105	-1.782	12.627	0.822	0.623	17.266	35.740	0.001	3.460	2.260
Arabia	0.235	1.710	5.570	62.115	0.071	0.183	0.071	0.118	0.198	0.104	4.853	0.120	0.095	1.201	19.574	0.007	2.871	2.332
Syria	0.011	0.331	2.543	0.000	-1.488	-1.362	-1.524	-2.490	-1.425	-1.888	16.675	0.808	0.333	12.857	63.702	0.005	17.595	25.721
	0.483	1.587	10.920	0.000	0.527	0.449	0.312	0.615	0.213	0.089	33.412	0.162	0.143	0.813	34.624	0.019	13.436	19.126
Tunisia	-0.050	0.136	1.569	128.496	-0.041	-0.062	-0.336	-0.771	-0.092	-0.065	11.103	0.887	0.743	14.561	47.315	0.001	1.942	4.854
	0.198	0.946	6.145	394.030	0.092	0.112	0.145	0.309	0.062	0.500	8.075	0.040	0.171	0.915	12.917	0.008	1.620	1.295
Total	0.016	0.579	1.266	33.424	-0.092	-0.017	-0.117	-0.701	-0.125	-0.958	10.305	0.821	0.549	15.441	44.368	0.002	4.190	5.974
	0.348	1.935	6.265	164.653	0.782	0.791	0.783	1.035	0.781	0.599	14.233	0.162	0.203	1.803	29.078	0.011	6.161	10.966
Note(s): T	he table pr to of indivi	esents the	mean and	Standard	deviation (r	respectively	y). The dep	endent var	riable is ba	nks Buy an	d Hold Sto	ck Return (E	3UH). The i	ndepender	it variables	A ISE and	A MSE indi	cate the

growth rate of individual sentiment and market sentiment, respectively, Δ UNC is the growth of uncertainty in the country. The QoG is each of the six quality of governance indicators namely the voice and accountability VOA, the political stability PSV, the government effectiveness GOE, the regulatory quality REQ, the control of corruption COC, and the rule of law RUL. ROE, GLTA, SIZE, NII and TLTA are the return of equity, gross loans by total assets, size of the bank non-interest income, total liabilities by total assets, respectively.

While considering all the variables of Equation 1, an additional interaction between the quality of governance and the dummy variable **(QoG* Dum)** was added to identify the impact on bank stock returns.

3.3. Variables: (Appendix A)

3.3.1. Bank buy and hold returns (Stock returns)

The dependent variable Bank Buy and Hold stock returns consisted of aggregated monthly stock returns calculated annually for individual bank stocks from the *BankScope database of Bureau van Dijk*. It is worth noting that the selection of Bank stock returns (BUH) as the dependent variable was a proxy of bank stock performance (Di et al., 2021; Irresberger et al., 2015)

3.3.2. Investor sentiment

The stock market defines investor sentiment as the confidence of an investor (belief) concerning future cash flows and investment risks that are unjustified by the evidence (facts) at hand (Baker & Wurgler, 2007). The exogenous variable, investor sentiment, was collected as weekly data from Google Trends and computed to yearly data as data in Google Trends is only available weekly. This paper used 84 English terms, similarly to (Petit et al., 2019), to form investor sentiment. However, individual and market sentiment data relied on data from non-US and non-English speaking countries. The search terms for individual sentiment comprised eighty-nine (89) terms (84 English & 5 Arabic). Finally, all the terms were summed up, and an index was created (Albaity et al., 2021; Baker & Wurgler, 2006; Di et al., 2021; Irresberger et al., 2015). The index was built to identify the performance of the market, which is the behavioural result of investor sentiment (Baker & Wurgler, 2006; Sun et al., 2021). The reasons for choosing search-based data were that it could directly reveal the whole population's beliefs, and the data are useful in financial applications (Brochado, 2020). Several studies have found that investor sentiment has negatively and statistically significantly influenced stock returns (Chu et al., 2016; Dimpfl & Kleiman, 2019; Huang et al., 2015; Irresberger et al., 2015; Sul et al., 2017; Yang et al., 2019). The negative relationship could be because a steady spread of information triggered investment impetus. As a result, traders bought too much stock based on past experiences and information momentum, creating overreaction (Di et al., 2021; Hong & Stein, 1999).

Hypothesis 1: There is a negative relationship between investor sentiment and bank stock returns.

3.3.3. Uncertainty

The uncertainty (UNC) predictor macro variable was obtained from the International Monetary Fund's

3.3.3.1. World uncertainty index. (Ahir et al., 2018). Uncertainty is a form of the volatility of a disturbance that is predictable from the point of view of economic agents (Jurado et al., 2015; Yun et al., 2019). The available data were collected quarterly and converted into yearly data by calculating the sum of four guarters. In contrast, the uncertainty index was created based on the occurrence of "Uncertainty" (and its variants) found in the Economist Intelligence Unit's (EIU) country reports. The World Uncertainty Index (WUI) was formed by scaling the raw counts of indices by the total number of words in each report. The WUI was formed from a single source, with a specific topic of economic and political developments, and also EIU country reports based on a standardised process (writing the report, editing, double checking, sub-editing, and production) and structure (consistent and standardised; Ahir et al., 2018). In addition, the index has accumulated data from 143 developed and developing countries from the first quarter of 1996 onward, using the EIU country reports. The WUI index was detected to move upward surrounding the following events: 9-11 attack, the SARS epidemic, the Gulf War 2, the Lehman Brothers collapse, the Euro debt crisis, El N Niño, Europe border control tension, UK's vote for Brexit, US presidential elections (2016) and recent trade tensions between China and the United States (Ahir et al., 2018). They also mentioned using the index in research for two main reasons: first, any

change in the WUI explained output (GDP) and second, how each country responds to the level of uncertainty across countries relating to macroeconomic output. Several studies have employed the WUI uncertainty index to identify the impact of uncertainty on stock returns (Albaity et al., 2022; Demir et al., 2020; Mallek et al., 2021).

An alternative uncertainty index is the Economic Policy Uncertainty Index, which measured uncertainty from modifications in economic policies for twelve countries in 2016, followed by twenty-six countries in 2020, though, this index is limited to advanced economies only (Baker et al., 2016; Ho & Gan, 2021).

Several studies have found a negative relationship between uncertainty and stock returns (Ahmad & Sharma, 2018; Hillier & Loncan, 2019; Kang & Ratti, 2015; Liu et al., 2017; Loudon, 2017; Xiong et al., 2018; Xu, 2021; Yun et al., 2019). The cause of the inverse relationship could be that a fall in the stock market may lead investors to be risk-averse (Barone-Adesi et al., 2012). Other explanations for a negative relationship could result from behavioural factors, such as; market sentiment, overconfidence, and over-optimism (Loudon, 2017).

Hypothesis 2: There is a negative relationship between uncertainty and bank stock returns.

3.3.4. Governance

Country governance indicators (governance effectiveness, political stability and the absence of violence, regulatory quality, the rule of law, control of corruption and voice and accountability) were taken from The World Bank's Worldwide Governance Indicators (WGI). In the Worldwide Governance Indicators (WGI), country governance values are measured by a scoring range between -2.5 (weak) and 2.5 (strong), where a higher value indicates better country governance performance. Below is a brief description of the governance indicators used in this study:

3.3.4.1. *Government effectiveness.* This indicator signifies the honesty of a government's commitment to formulate, implement and promote private sector development through its policies. A higher level of government effectiveness positively correlates with stock returns (Chortareas et al., 2012; Kamarudin et al., 2018).

3.3.4.2. *Rule of law.* The rule of law refers to agents' confidence in and accepting the rules of society, especially; property rights, contract enforcement quality, the police, the courts and the likelihood of crime and violence. An increase in the rule of law can positively influence stock returns (Kamarudin et al., 2016, 2018; Kuipers et al., 2009; Lensink et al., 2008).

3.3.4.3. Political stability and the absence of violence. This indicator defines political stability but considers the possibility that a government might be weakened by politically motivated violence, such as terrorism. Better political stability and the absence of violence lead to higher stock performance (Kamarudin et al., 2016; Mehmood et al., 2021).

3.3.4.4. *Regulatory quality.* This indicator assesses a government's ability to form and implement sound policies and regulations which help promote private sector development. Effective regulatory quality enhances institutional quality, promoting bank performance (Albaity et al., 2020).

3.3.4.5. Control of corruption. This indicator signifies that public power is used for private gain, involving different levels of corruption. Improved control of corruption positively affected the performance of Islamic and conventional banks (Kamarudin et al., 2018), while Mehmood et al. (2021) found poor control of corruption increased the initial IPO returns of listed IPOs in the Pakistan Stock Exchange.

3.3.4.6. Voice and accountability. This indicator refers to local citizens' participation in; selecting their government, freely expressing their beliefs and thoughts, freedom of association and media

freedom. A greater level of voice and accountability positively influenced bank stock returns in the GCC region countries (Kamarudin et al., 2018).

Existing studies have found that governance had a statistically significant and positive impact on stock returns (Albaity et al., 2020; Al-Hiyari & Kolsi, 2021; Chan et al., 2015; Islam & Bilal, 2021; Kamarudin et al., 2016; Uddin et al., 2020; W.-K. Wang et al., 2012). Governance is one mechanism that promotes bank efficiency (W.-K. Wang et al., 2012) and influences bank performance. H3: The governance has a positively effect on bank stock returns.H4: The interaction between governance and dummy variable has a negative impact on bank stock returns.

3.3.5. Control variables

3.3.5.1. Bank-specific variables. All the bank-specific micro-level (control variables) data were derived from the BankScope database of Bureau van Dijk.

Return on Equity (ROE). The return on equity calculates a bank's efficiency in generating earnings. The ROE is computed as the net income of shareholder equity, which can explain bank performance. Besides, Kanas et al. (2019) used the ROE to proxy bank stability and performance, whereby a higher return on equity (ROE) showed improved performance and better bank stability.

Total liabilities over total assets (TLTA). Total liabilities are a bank's cumulative debt and financial obligations at any specific period. Total liabilities are divided into two forms; short-term liabilities (current liabilities) and long-term liabilities (non-current liabilities; Eriotis et al., 2007). Total assets consists of current and non-current assets owned by a bank (Kosmidou* et al., 2004). The leverage ratio is calculated by dividing the total liabilities by the total assets. A higher value indicates a worse ratio, which might negatively impact bank stock returns, Fahlenbrach et al. (2012).

Bank size. Bank size is the natural logarithm (LN) of a bank's total assets. The reason for examining bank size is to control for the size of banks in a sample data set (Aebi et al., 2012; Di et al., 2021; Gandhi & Lustig, 2015; Masoud & Albaity, 2021).

Non-interest income (NII). Non-interest income generally comprises the trading and commission activities of the banking sector (C.-C. Lee et al., 2014). The non-interest income ratio is calculated as non-interest income over operating revenue.

Operating revenue (OPR). A bank's operating revenue is derived as the sum of its total interest income and total non-interest income (Shim, 2013). Also, total operating revenue is obtained from a bank's ongoing business operations to know a bank's trade during operations.

3.3.6. Gross loans by total assets (GLTA)

Gross loans are a part of the total loan amount to fund new investment opportunities during an accounting period. Bank liquidity can be judged through the ratio of loans. The pricing of bank loans depends on loan issuing costs and borrowers' riskiness (Ashraf et al., 2021).

3.3.6.1. Country-level variables. The country-level (macro-variables) data were obtained from the *World Bank (World Development Indicators).*

Growth of the Gross Domestic Product (Δ GDP). The GDP growth rate evaluates a country's economic activities and situation (Masoud & Albaity, 2021). It indicates an increase in better investment opportunities. Therefore, GDP growth positively correlates with bank stock returns (Irresberger et al., 2015).

Inflation. Inflation (INF) is calculated by the annual percentage change in the consumer price index, and it shows the growth rate of the consumer price index. This method is typically used in the financial sector (*World Bank: World Development Indicators*).

Dummy variable. A dummy variable was created to differentiate conventional banks from Islamic banks. Thus, conventional banks were assigned a value of 1 and Islamic banks a value of 0. Besides, Beck et al. (2013) found that Islamic banks performed better than conventional banks in their study of twenty-one countries, including countries in the MENA region.

4. Results

4.1. Descriptive statistics

Table 1 highlights the means and standard deviations for all variables under examination and the number of observations taken in the sampled MENA region countries. The descriptive statistics of this study revealed that the mean value of stock Buy and Hold returns were positive in most countries, and the range was between 0.009 and 0.168. While in some countries: Jordan, Iraq, Lebanon, Malta, Oman and Tunisia, the mean values were negative -0.001, -0.0074, -0.038, -0.0051 and -0.050, respectively. These negative values aligned with Di et al.'s (2021) study on selected MENA region countries. The mean scores of individual sentiment were between positive 0.021 to 1.659, except for Iran at -0.135, and the mean scores of market sentiment were in the range of positive 0.021 to 3.510, except for Malta and Palestine at -0.135 and -0.195, respectively. Overall, the combination of individual and market sentiment represented investor sentiment, and the results were consistent with (Di et al., 2021; Irresberger et al., 2015). The comparative research by Di et al. (2021) found the mean of investor sentiment to be 96.91 points from selected MENA region countries; thus, the outcome of this study indicated a positive but lower value.

Regarding uncertainty, Di et al. (2021) employed the CBOE volatility index and highlighted the occurrence of the Arab Spring. They discovered that the mean value of uncertainty was 23.667 points. On the other hand, the present study employed the World Uncertainty Index and found that the growth rate of uncertainty was 33.424 points.

The novelty of this paper has been its consideration of six governance indicators as exogenous variables. First, the rule of law indicator was positive in the UAE, Bahrain, Israel, Jordan, Kuwait, Malta, Oman, Qatar and Saudi Arabia. It ranged between 0.151, higher than the global average of the rule of law index at -0.04 points, and 1.186, which was consistent with (Kamarudin et al., 2016) in their study covering the GCC region countries. On the contrary, the result indicated that non-GCC region countries showed a negative mean score for the rule of law. The total score of the mean of the rule of law was negative 0.0092, which was lower than the global average of this index. The reason could be the weak rule of law in economies, demonstrated by the low levels of confidence and compliance with the country's rules, thus, lowering the motivation of banks to be involved in risky behaviour, especially in non-GCC region countries (Albaity et al., 2020). The second, governance effectiveness, indicated a positive mean score in; the UAE, Bahrain, Israel, Jordan, Malta, Oman, Qatar, and Saudi Arabia. It ranged between 0.083 to 0.135 and was in line with the results of (Kamarudin et al., 2016) and higher than the global average of -0.02 for the governance effectiveness index, while other countries, including Kuwait, showed negative mean scores between -0.054 to -1.362. The overall mean score of governance effectiveness was -0.017, a little lower than the global average index. This outcome indicated that lower government effectiveness led to lower bureaucracy and higher institutional effectiveness, which meant banks took longer to respond to financial crises and reduced risk-taking behaviour (Albaity et al., 2020). The third, regulatory guality, showed very similar results to governance effectiveness. The positive regulatory guality was higher than the global average index at -0.02 in the GCC region countries, such as; the UAE, Bahrain, Israel, Jordan, Malta, Oman, Qatar, and Saudi Arabia. This outcome indicated that the governments in these countries had formulated and implemented sensible policies and regulations, which enhanced development in the banking industry (Albaity et al., 2020; Kamarudin et al., 2018). However, the overall mean score of regulatory quality was negative 0.117, which was lower than the global index of the same, which meant that governments had failed to formulate and implement sound policies and regulations in most MENA region countries.

The fourth, political stability and no violence, found negative mean scores in eleven of seventeen countries (ranging from -0.392 to -2.490). In contrast, the UAE, Bahrain, Oman, and Qatar showed positive signs of 0.760, 0.128, 0.623 and 0.968, respectively. The global average political instability index at -0.06 was lower than most countries, meaning eleven countries performed lower than the index value. This situation may lead to political instability and the presence of public violence. Also, politicians might be more interested in their benefits than fixing public issues (Shleifer & Vishny, 1998). In the fifth, control of corruption, the countries' mean scores showed similar results regarding the signs of the regulatory quality and governance effectiveness results. Eight of the seventeen countries showed negative mean scores in the range of -0.092 to -1.425, lower than the global index of -0.04 for the same indicator. At the same time, the indicator showed a positive sign in; the UAE, Bahrain, Israel, Jordan, Malta, Oman, Qatar, and Saudi Arabia. Overall, the control of corruption indicated negative at -0.125, higher than the global average index. The reason for this result could be that lower control of corruption indicates less strict controls where public power is used for private gain (Kamarudin et al., 2016), reducing the revenue efficiency of banks (Kamarudin et al., 2018).

Finally, the voice and accountability mean score was negative (ranging from -0.065 to -1.888) in fourteen of seventeen countries, and the overall scores were negative -0.958, far higher than the global average of the voice and accountability index of -0.02. The negative signs could be that citizens were not freely allowed to participate in selecting their governments, people didn't have freedom of expression and association, and the media was not free to operate. Lower voice and accountability and credibility of governance, leading to lower economic growth of a country (Kamarudin et al., 2018)

Several control variables were used in this study. First, the return on equity (ROE), which shows a bank's efficiency in generating revenue, had mean ratio scores ranging between 4.158 and 20.52, and the overall mean ratio score was positive 10.299; this signalled a positive sign for earnings. The result was consistent with the study of Boussaada and Hakimi (2020), where a mean score of 12.8 for bank returns was found in the MENA region. Second, the leverage ratio (total liabilities by total assets) mean score showed positive in the range of 0.794 to 0.939, which was in line with the result of (Irresberger et al., 2015). Third, loans (gross loans by total assets) indicated an overall mean score of positive 0.549, close to the mean score of 0.665 found by Irresberger et al. (2015). Banks where higher loans have a smaller portfolio of securities were expected to perform better increases in credit spreads (Beltratti & Stulz, 2012; Irresberger et al., 2015). Fourth, bank size was the natural logarithm of the total bank asset value, and overall bank size was higher than Di et al.'s (2021) results, with average mean scores of 15.44 and 10.01 points, for each study, respectively. Fifth, non-interest income had a positive range of 28.552 and 82.830, and the overall average mean score was 44.36, slightly higher and consistent with the average value of 34.53 obtained from the selected MENA region countries (Di et al., 2021). Moreover, Köhler (2015) found an average value of 30.03 in the European Union. Sixth, the average value of operating revenue growth was lower than the result found by Ismail (2006) for UK-based banks and Sqhaier et al. (2018) for banks in the MENA region. Seventh, GDP growth was positive, ranging between 0.843 and 17.595 in the MENA region countries, and the overall average score was 4.2, which was nearly the same as the average of 4.139 found by Di et al. (2021) and was also consistent with (Albaity et al., 2020). Finally, the overall average inflation value was 5.97 points, similar to the mean value of 5.328 found by Di et al. (2021). According to Demirgüç-Kunt and Detragiache (1998), low GDP growth and a rising inflation rate indicate problems in the banking sector that could worsen bank stock returns through cascade effects.

4.2. Empirical findings

4.2.1. Results for the Middle East and North Africa (MENA) Region

Table 2 reports the GMM regression analysis, based on the sample in the MENA region, to examine whether bank stock returns were sensitive to investor sentiment, uncertainty, and governance. The

Table 2. Efi	ect of Inves	tor Sentimen	ıt, Uncertain	ty, and Gove	rnance on bd	ink stock rei	turn in MENA	A region				
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH
L.BUH (t-1)	-0.5317***	-0.5762***	-0.5517***	-0.5835***	-0.6027***	-0.5514***	-0.5092**	-0.5180***	-0.4661***	-0.6616***	-0.4211**	-0.5963***
	-0.133	-0.1429	-0.1435	-0.1455	-0.1382	-0.131	-0.2056	-0.1349	-0.1406	-0.1994	-0.1712	-0.1273
ΔISEN	-0.0434***	-0.0416***	-0.0489***	-0.0444***	-0.0579***	-0.0429***	-0.0797***	-0.0396***	-0.0393***	-0.0611***	-0.0731***	-0.0472***
	-0.0111	-0.0123	-0.0133	-0.0135	-0.0123	-0.013	-0.0176	-0.0128	-0.0124	-0.0163	-0.0193	-0.0166
AMSEN	0.0039	0.005	0.0103	0.0059	0.0041	0.0089	-0.0004	0.0077	0.0085	0.0145*	0.0215**	0.0070**
	-0.0031	-0.0031	-0.0085	-0.0044	-0.0025	-0.0072	-0.0128	-0.0053	-0.006	-0.0076	-0.01	-0.0032
AUNC	-0.0002**	-0.0002**	-0.0003**	-0.0002**	-0.0002**	-0.0002**	-0.0004**	-0.0002*	-0.0002**	-0.0004**	-0.0001	-0.0002
	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0002	-0.0001	-0.0001	-0.0002	-0.0001	-0.0001
ROE	0.0088***	0.0090***	0.0079***	0.0093***	0.0092***	0.0091***	0.0045	0.0109***	0.0113***	0.0086**	0.0092***	0.0087***
	-0.0025	-0.0026	-0.0029	-0.0028	-0.0025	-0.0027	-0.0034	-0.0023	-0.0027	-0.0034	-0.0031	-0.0023
TLTA	-0.1458	-0.1253	-0.0575	0.0418	-0.064	-0.0347	-0.3006	0.2457	0.0081	-0.5287	0.3332	0.2846
	-0.13	-0.1212	-0.1267	-0.1445	-0.1283	-0.1622	-0.3209	-0.291	-0.1931	-0.3626	-0.312	-0.27
GLTA	-0.1544**	-0.1069	-0.0555	-0.0042	-0.1619**	0.1184	0.0331	-0.1910*	-0.0732	0.2077	-0.2799**	0.0076
	-0.0736	-0.0661	-0.0715	-0.0855	-0.0724	-0.0859	-0.1679	-0.113	-0.0804	-0.2472	-0.1359	-0.1141
size	0.0078	0.0004	0.0015	0.0147	0.0091	0.0234**	0.0409**	-0.0128	-0.0143	0.034	-0.0072	0.0330*
	-0.008	-0.0071	-0.0079	-0.009	-0.0076	-0.0095	-0.0157	-0.0139	-0.0122	-0.0207	-0.0156	-0.0177
IIN	0.0007	0	0.0005	0.0001	0.0004	-0.0006	0.0035*	-0.0011	-0.0008	0.0025*	-0.0012	0.001
	-0.0006	-0.0005	-0.0006	-0.0006	-0.0005	-0.0006	-0.0018	-0.0009	-0.0009	-0.0014	-0.0012	-0.0014
AOPR	-5.2153	-5.929	-3.8876	-4.6612	-5.5743	-5.0546	-4.5586	-6.3886	-7.0868	-5.374	-5.1689	-2.5704
	-4.2632	-4.1292	-4.4323	-4.8409	-4.8588	-4.6203	-7.1398	-5.2334	-5.4913	-6.7586	-7.8831	-4.7645
Dum_co	-0.0301	-0.0314	-0.0598**	-0.0085	-0.016	-0.0242	0.1118	-0.1466	-0.0506	-0.3009*	-0.0924	-1.2206^{*}
	-0.0306	-0.0309	-0.0296	-0.0386	-0.0302	-0.0357	-0.105	-0.1017	-0.0614	-0.1592	-0.1091	-0.6341
GDP	0.0058	0.0025	0.0066	0.0032	0.0029	0.0053	0.0118*	0.0065	0.0056	0.0003	0.0162**	0.0132**
	-0.0051	-0.0046	-0.005	-0.0048	-0.0047	-0.0047	-0.0064	-0.0073	-0.0067	-0.0072	-0.0081	-0.0052
INF	0.0066	0.006	0.0079	0.0023	0.0073*	0.0019	0.0318**	-0.0017	-0.0075	0.0244*	-0.0074	0.0116
												(Continued)

Table 2. (Co	ontinued)											
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH
	-0.0048	-0.0041	-0.0053	-0.0041	-0.004	-0.004	-0.014	-0.0077	-0.0086	-0.0145	-0.0085	-0.0097
RUL	0.1707***						1.0737**					
	-0.0303						-0.4232					
GOE		0.1695***						-0.1913				
		-0.0282						-0.262				
REQ			0.1951***						-0.209			
			-0.036						-0.1593			
PSV				0.0443**						0.8344**		
				-0.0208						-0.4256		
COC					0.1616***						-0.3025	
					-0.0256						-0.2769	
VOA						0.0352*						1.0555*
						-0.0205						-0.5776
c.Dum_co#c. RUL							-1.1528**					
							-0.5086					
c.Dum_co#c. GOE								0.4971*				
								-0.2882				
c.Dum_co#c. REQ									0.5221**			
									-0.2222			
c.Dum_co#c. PSV										-0.9514*		
										-0.5112		
c.Dum_co#c. COC											0.5933*	
												(Continued)

Table 2. (Co	ntinued)											
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	HNB	BUH	BUH
											-0.3381	
c.Dum_co#c. VOA												-1.1607*
												-0.6268
Observations	606	606	606	606	606	606	606	909	606	606	606	606
Number of ID	122	122	122	122	122	122	122	122	122	122	122	122
AR (1)	0.075	0.079	0.068	0.073	0.034	0.098	0.039	0.091	0.064	0.017	0.01	0.064
AR (2)	0.411	0.463	0.304	0.377	0.236	0.414	0.134	0.454	0.281	0.162	0.127	0.61
Hansen Test	0.142	0.144	0.181	0.134	0.129	0.347	0.477	0.515	0.154	0.424	0.187	0.107
VIF	1.43	1.39	1.44	1.4	1.4	1.35	1.91	1.94	1.92	1.95	1.95	3.52
The dependen sentiment, res the governmei size of the barn GDP and inflai respectively. N	t variable is bar pectively. Δ UN it effectiveness k non-interest i ion, respective umber in parer	ks buy and hold L is the growth a GOE, the reguld ncome, total lia ly. Finally, Dum theses are p-vc	d stock return (Bl of uncertainty in atory quality REC ibilities by total c <u>c</u> o variable cor alues.	JH).The L. BUH 1 the country. Th 2, the control of 1ssets, respectiv 1sist of convent	-1 is the lagged e QoG is each or corruption COC ely. Each of the ional banks:1 o	l of buy and hol f the six quality , and the rule o QoG indicators and Islamic bar	d stock returns. of governance i f law RUL. ROE, interacted with nks:0. Notes: ***	Δ ISE and Δ MSI ndicators name GLTA, SIZE, NII i conventional b, *, **, and * indic	E indicate the gr ly the voice and and TLTA are th anks (Dum_co). cate statistical	owth rate of ind accountability \ e return of equit The GDP and IN significance at 1	ividual sentime /OA, the politica cy. gross loans b F indicates the the 1%, 5%, ar	nt and market l stability PSV, y total assets, growth rate of d 10% levels,

	1					0						
dependent	variable is bank	s buy and hold :	stock return (Bi	UH).The L. BUH t	-1 is the lagged	of buy and hold	stock returns.	A ISE and A MSE	indicate the gr	owth rate of ind	ividual sentime	nt and market
timent, resp	iectively. A UNC i	is the growth of	^r uncertainty in	the country. The	e QoG is each of	the six quality c	of governance i	ndicators namel	y the voice and	accountability \	'OA, the politica	l stability PSV,
governmen	t effectiveness 6	GOE, the regulat	ory quality REC	2, the control of	corruption COC,	and the rule of	law RUL. ROE,	GLTA, SIZE, NII o	and TLTA are the	e return of equit	y, gross loans b	y total assets,
of the ban	k non-interest in	come, total liab	ilities by total (assets, respectiv	ely. Each of the	QoG indicators i	interacted with	conventional be	anks (Dum_co).	The GDP and IN	F indicates the	Jrowth rate of
and inflat	ion, respectively	. Finally, Dum_	co variable co	nsist of convent	ional banks:1 a	nd Islamic ban	ks:0. Notes: **'	, **, and * indic	ate statistical	significance at 1	che 1%, 5%, an	d 10% levels,
ectively. N	umber in parentl	heses are p-valu	ues.									

result of the second order of the Arellano-Bond autocorrelation test was insignificant. This outcome meant there was no autocorrelation in the models. Also, the second-order Hansen test result was insignificant, which showed that the test statistics rejected the alternative hypothesis and accepted the null hypothesis that the instruments were exogenous in all cases. It can be seen in Table 2 that the lagged stock returns and current returns were negative and significant, hinting that the previous higher values of the lagged returns lowered the current returns.

4.2.1.1 Does investor sentiment influence banks' performance?. The results of the Google Trends search on investor sentiment was the gauge of investor sentiment, which considered the growth of individual and market sentiment. Thus, investor sentiment and bank stock returns were expected to have a negative relationship. The results showed that the growth of individual sentiment had a weakly negative and significant relationship with bank stock returns, consistent with the results of (Petit et al., 2019; Shah & Albaity, 2022). This outcome meant that individual sentiment was sensitive throughout the models in the MENA region. At the same time, market sentiment was positive and insignificant in most models, except for Models 10, 11 and 12.

Similarly, (Shah & Albaity, 2022) found positive but statistically significant results. As a result, investor sentiment had a negative and significant impact on stock returns, which was in line with the findings of (Di et al., 2021; Irresberger et al., 2015), while (Shah & Albaity, 2022) found mixed results. The results in the models supported the proposed hypotheses. Following the behavioural finance theory, cognition factors influence investors' decision-making, and emotionally motivated investors can alter the price from its fundamental value (G. Wang et al., 2020). Such price alteration can lead to either an upward or downward trend of stock returns. In this paper, investor sentiment indicated a downward trend and a decline in stock returns.

4.2.1.2 The impact of uncertainty on bank stock returns. The result of the exogenous uncertainty variable showed that the percentage change in uncertainty was statistically significant and weakly but negatively influenced stock returns in all models, which supported the proposed hypothesis and was in line with the results of (Ahmad & Sharma, 2018; Di et al., 2021; Hillier & Loncan, 2019; Kang & Ratti, 2015; Loudon, 2017; Xiong et al., 2018; Yun et al., 2019). On the contrary, Shah and Albaity (2022) found uncertainty's positive and significant effect on bank stock returns in the Middle East and North Africa region. According to Mathy (2016), uncertainty shocks represent an element of risk, and the inverse relationship between uncertainty and stock returns may result in risk-averse behaviour (Chiang et al., 2015). These results could be explained, in part, by the fact that MENA region investors are risk-averse relative to political and economic uncertainty and, as a result, avoid investing in the stock market when this risk rises. A similar explanation was given by (Hoque & Zaidi, 2020), referring to global geopolitical risk uncertainty. Policy uncertainty can raise the cost of capital, which in turn reduces output and investments, as demonstrated theoretically by (Al-Thageb & Algharabali, 2019). Even more so, this impact was enhanced over the longer term. Another Theoretical explanation is that the cost of borrowing money increases because of uncertainty, leading to less investment. That is to say, if borrowing costs are too high, potential investors may be dissuaded, resulting in a lesser return on their capital. Similarly, rising economic uncertainty may lead firms to; delay investments, hiring, and consumer purchases, which can negatively affect economic activity. A decrease in uncertainty increases economic and investment activities.

4.2.1.3 Does country governance promote banks' revenue efficiency?. To address the issue of whether the six indicators of country governance mattered in determining the performance of banks' operating in the MENA region, Equation (1) was estimated to include all six indicators of country governance. The six indicators comprised: the rule of law, government effectiveness, regulatory quality, political stability and the absence of violence, control of corruption, and voice and accountability. The impact of the six indicators of country governance and bank stock returns

Table 3. Ef	fect of inves	tor sentimen	t, uncertaint	y, and gover	nance on ba	nk stock ret	urn in GCC c	ountries				
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH
L.BUH (t-1)	-0.4482***	-0.4272***	-0.4009**	0.4892***	0.4385***	0.4169***	-0.3661*	-0.4199**	0.4369***	0.4893***	-0.4199**	-0.4745**
	(0.1679)	(0.1587)	(0.1637)	(0.1596)	(0.1591)	(0.1518)	(0.1900)	(0.1738)	(0.1633)	(0.1566)	(0.1787)	(0.2148)
AISEN	-0.0615***	-0.0586***	-0.0713***	0.0608***	0.0586***	0.0701 ***	0.0712***	0.0595***	0.0619***	0.0596***	0.0569***	0.0747***
	(0.0157)	(0.0163)	(0.0180)	(0.0203)	(0.0158)	(0.0170)	(0.0149)	(0.0169)	(0.0186)	(0.0192)	(0.0156)	(0.0160)
ΔMSEN	0.0516***	0.0554 ***	0.0631***	0.0445*	0.0515***	0.0431**	0.0507***	0.0583***	0.0499**	0.0409*	0.0437**	0.0379
	(0.0158)	(0.0171)	(0.0192)	(0.0235)	(0.0168)	(0.0177)	(0.0163)	(0.0182)	(0.0220)	(0.0234)	(0.0179)	(0.0235)
AUNC	-0.0004***	-0.0003**	-0.0004***	-0.0004**	-0.0004**	-0.0003**	0.0004***	-0.0003**	0.0004***	-0.0003**	-0.0003**	-0.0003**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
ROE	0.0016	0.0024	0.0017	0.0027	0.0015	0.0025	0.0018	0.0024	0.0027	0.0030	0.0015	0.0029
	(0.0032)	(0.0038)	(0.0038)	(0.0049)	(0.0034)	(0.0043)	(0.0032)	(0.0041)	(0.0046)	(0.0051)	(0.0037)	(0.0043)
TLTA	-0.7407***	-0.7170***	-0.7617***	-0.6569**	0.6725***	-0.2554	-0.6056	0.7166***	-0.6208**	-0.6722**	-0.6395**	-0.1345
	(0.2867)	(0.2583)	(0.2731)	(0.3169)	(0.2443)	(0.2500)	(0.3783)	(0.2615)	(0.2883)	(0.2940)	(0.2581)	(0.5389)
GLTA	0.0509	0.0206	0.0362	0.0192	0.0600	0.0396	0.0092	0.0599	-0.0676	0.0508	0.0152	-0.3429
	(0.2515)	(0.2371)	(0.2536)	(0.3175)	(0.2112)	(0.2777)	(0.2947)	(0.2563)	(0.3302)	(0.3158)	(0.2402)	(0.6219)
size	0.0615***	0.0556***	0.0697***	0.0671**	0.0579***	0.0355	0.0555**	0.0603***	0.0608**	0.0713***	0.0595***	0.0209
	(0.0182)	(0.0180)	(0.0199)	(0.0268)	(0.0160)	(0.0242)	(0.0243)	(0.0188)	(0.0294)	(0.0272)	(0.0148)	(0.04.02)
IIN	-0.0007	-0.0011	-0.0005	-0.0007	-0.0002	0.0010	-0.0009	-0.0007	-0.0011	-0.0002	-0.0005	-0.0000
	(0.0022)	(0.0021)	(0.0023)	(0.0028)	(0.0020)	(0.0020)	(0.0026)	(0.0023)	(0.0028)	(0.0029)	(0.0022)	(0.0033)
AOPR	-5.4440	-5.5382	-5.1275	-2.6979	-7.0889	-7.0516	-6.6767	-5.0867	-4.1896	-3.4250	-5.1255	-16.4341
	(8.8405)	(8.2632)	(9:0046)	(10.1690)	(8.2428)	(9.2737)	(11.3932)	(8.6132)	(9.5829)	(10.0142)	(8.6195)	(22.0783)
Dum_co	-0.1005***	-0.1130***	-0.1187***	-0.1109**	0.1192***	-0.0946**	-0.0641	-0.1663	-0.1051	-0.1459*	-0.1799*	1.1530
	(0.0338)	(0.0385)	(0.0438)	(0.0418)	(0.0361)	(0.0420)	(0.1645)	(0.1451)	(0.1550)	(0.0859)	(0.0941)	(1.7732)
GDP	0.0355***	0.0357***	0.0362***	0.0351***	0.0323***	0.0451 ***	0.0370***	0.0362***	0.0323***	0.0336***	0.0334***	0.0371*
	(0.0095)	(0.0087)	(0.0097)	(0.0129)	(0.0082)	(0.0102)	(0600:0)	(0.0088)	(0.0121)	(0.0126)	(0.0085)	(0.0192)
INF	-0.0342**	-0.0343**	-0.0358**	-0.0304	-0.0225*	-0.0401^{**}	0.0358***	-0.0363**	-0.0308*	-0.0275	-0.0287**	-0.0408**
												(Continued)

Table 3. (Co	ntinued)											
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH
	(0.0148)	(0.0139)	(0.0149)	(0.0206)	(0.0119)	(0.0170)	(0.0137)	(0.0149)	(0.0176)	(0.0208)	(0.0142)	(0.0208)
RUL	0.2719***						0.3071					
	(0.0562)						(0.2263)					
GOE		0.1745***						0.0989				
		(0.0394)						(0.2120)				
REQ			0.1952***						0.2363			
			(0.0533)						(0.2678)			
PSV				0.0929**						0.0295		
				(0.0443)						(0.1344)		
COC					0.2046***						0.0649	
					(0.0357)						(0.1553)	
VOA						0.1452***						-0.8275
						(0.0488)						(1.0593)
c.Dum_co#c. RUL							-0.0841					
							(0.3622)					
c.Dum_co#c. GOE								0.1060				
								(0.2781)				
c.Dum_co#c. REQ									-0.0587			
									(0.3765)			
c.Dum_co#c. PSV										0.1081		
										(0.2194)		
c.Dum_co#c. COC											0.1869	
												(Continued)

Table 3. (Co	pntinued)											
VARIABLES	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH	BUH
											(0.2177)	
c.Dum_co#c. VOA												1.1058
												(1.5804)
Observations	261	261	261	261	261	261	261	261	261	261	261	261
Number of ID	54	54	54	54	54	54	54	54	54	54	54	54
AR (1)	0.013	0.012	0.009	0.036	0.018	0.015	0.014	0.013	0.022	0.046	0.021	0.087
AR (2)	0.374	0.152	0.157	0.341	0.223	0.299	0.44	0.144	0.329	0.415	0.357	0.368
Hansen Test	0.268	0.178	0.115	0.165	0.306	0.155	0.193	0.111	0.111	0.144	0.132	0.137
VIF	1.42	1.41	1.43	1.44	1.42	1.46	2.0	1.86	1.83	1.77	1.82	2.94
The dependen sentiment, res the governmei size of the ban GDP and inflai respectively. N	t variable is ban pectively. Δ UN(it effectiveness k non-interest i :ion, respectivel umber in paren	ks buy and hold is the growth c GOE, the regulc ncome, total lia. ly. Finally, Dum itheses are p-va	l stock return (Bl of uncertainty in atory quality REC bilities by total c _co variable cor ilues.	JH). The L. BUH the country. Th 2, the control of assets, respection asist of conven	t-1 is the lagged e QoG is each of corruption COC /ely. Each of the tional banks:1 o	d of buy and hol f the six quality , and the rule o ? QoG indicators and Islamic ba	ld stock returns. of governance f law RUL. ROE, s interacted with nks:0. Notes: **	Δ ISE and Δ MSI ndicators name GLTA, SIZE, NII n conventional b * **, and * indi	E indicate the g ly the voice and and TLTA are th anks (Dum_co). cate statistical	rowth rate of in t accountability is return of equi The GDP and IN significance at	dividual sentime VOA, the politic ty, gross loans t VF indicates the the 1%, 5%, ar	nt and market al stability PSV, yy total assets, growth rate of nd 10% levels,

lependent vc	ariable is bar	nks buy and he	old stock return (BUH). The L. BUH	I t-1 is the lagged	d of buy and hold	d stock returns.	∆ ISE and ∆ MSI	indicate the gr	owth rate of ind	vidual sentimer	nt and market
ment, respec	ctively. Δ UN	IC is the growt	th of uncertainty i	n the country. Th	he QoG is each of	f the six quality a	of governance ir	idicators name	y the voice and	accountability V	OA, the political	l stability PSV,
overnment e	effectivenes:	s GOE, the reg	julatory quality RI	EQ, the control o	of corruption COC	, and the rule of	law RUL. ROE, C	LTA, SIZE, NII	and TLTA are th	e return of equit	y, gross loans by	y total assets,
of the bank n	interest	income, total	liabilities by tota	l assets, respecti	ively. Each of the	: QoG indicators	interacted with	conventional b	anks (Dum_co).	The GDP and INI	⁵ indicates the g	Jrowth rate of
and inflatior	n, respective	ely. Finally, Du	um_co variable c	onsist of conver	ntional banks:1 c	and Islamic ban	iks:0. Notes: ***	, **, and * indi	cate statistical	significance at t	he 1%, 5%, an	d 10% levels,
sctively. Nurr	nber in pare	ntheses are p	-values.									

was analysed individually due to the high correlation between the indicators (Kamarudin et al., 2016; Langbein & Knack, 2010) (Appendix B). The results are shown in Table 2.

The rule of law showed a statistically significant and positive relationship with bank stock performance in the MENA region which was in line with the results of (MODUGU & DEMPERE, 2020) in the GCC countries during 2006–2017. The rule of law indicator denoted respect for law and order, the performance of the judiciary system and the effective implementation of contracts (Kamarudin et al., 2016). It would be reasonable to say that the judicial institutions in the MENA region reduce uncertainty and risk in conducting business and improve bank stock performance, strengthening stock markets. The government effectiveness indicator showed a positive and statistically significant influence on stock performance in the MENA region countries, which was consistent with the results of (Chan et al., 2015) when investigating the ASEAN 5 countries, and (Kamarudin et al., 2016) in the GCC region countries. On the other hand, (MODUGU & DEMPERE, 2020) found negative and insignificant results in Gulf countries. According to Stevens and Cooper (2010), governance policies and actions demonstrated a higher level of commitment resulting in improved efficiency. Thus, the results indicated that better government credibility concerning the formulation and implementation of private sector policies and regulations positively affected the operations and the stock performance of the banking sector in the MENA region.

The regulatory quality variable exhibited a positive sign and showed statistically significant effects on bank stock performance consistent with the results of (Kamarudin et al., 2016) in the GCC region, while (MODUGU & DEMPERE, 2020) found negative effects. The better regulatory quality improved revenue efficiency in the banking sectors of the GCC region countries (Kamarudin et al., 2016). Similarly, Albaity et al. (2020) claimed that regulatory quality negative influenced credit risk and insolvency risk while, on the other hand, it improved the revenue of the banks. The regulation theory specifies that regulatory system quality can be evaluated by measuring efficiency, effectiveness and good governance (Jalilian et al., 2007). It can be observed in Table 2 that political stability and the absence of violence exhibited a statistically significant and positive influence on stock returns in the banking sectors of the MENA region. This result signifies that countries with better political stability will experience improved bank revenue efficiency. A similar result was found by (Kamarudin et al., 2016). Also, it supports the theory that a more robust institutional framework accelerates more predictable bank performance.

This paper found a positive and statistically significant impact of the control of corruption on bank stock performance, which was consistent with the result of (Chortareas et al., 2012; Kamarudin et al., 2016). Similarly, (MODUGU & DEMPERE, 2020) found a positive and insignificant influence of control of corruption on stock performance. According to Kamarudin et al. (2016), agency and strong supervision reduce corruption and improve; monitoring, discipline and bank performance. Besides, highly corrupt countries suffer from high debt due to capital flight, negatively affecting investment and financial decisions (Albaity et al., 2020; Chan et al., 2015). The supervision theory implies that a powerful supervisory agency directly disciplines and monitors banks leading to better performance and a fall in corruption regarding bank lending (Beck et al., 2006). It can be observed in Table 3 that voice and accountability exhibited positive and statistically significant effects on bank stock returns, which was in line with the results of (Chortareas et al., 2012; Kamarudin et al., 2016, 2018; Lensink et al., 2008). In contrast, voice and accountability showed a significant but negative association with stock market performance in the GCC countries (MODUGU & DEMPERE, 2020). Voice and accountability promote democracy and eliminate poverty through citizens' influence and role in state institutions, leading to better bank performance in the MENA region (Albaity et al., 2020).

4.2.1.4 Conventional banks' governance indicators and stock returns. It can be observed in Table 2 that the interaction between the governance indicators and conventional banks (dummy variable) had a statistically significant influence on stock returns throughout the models. First, the rule of law is a form of country governance indicator, and conventional banks were found to be

negative, which meant that the rule of law in conventional banks weakened the relationship with bank stock returns in the MENA region. This result was consistent with the results of (Kamarudin et al., 2016) in conventional banks in the GCC region countries. Second, the interaction between government effectiveness and conventional banks was positive and statistically significant, indicating that government effectiveness in conventional banks strengthened bank stock returns. This outcome supported the results of (Chan et al., 2015; Kamarudin et al., 2016). Third, the interaction between regulatory quality and conventional banks showed a positive and significant relationship, which suggested that regulatory guality in conventional banks positively influenced bank stock returns, which was consistent with the results of (Albaity et al., 2020; Kamarudin et al., 2016). Fourth, the interaction between political stability and the absence of violence and conventional banks showed a negative and statistically significant relationship. This result signified that political stability and the absence of violence in conventional banks had a decreasing relationship with bank stock returns in the MENA region countries. In contrast, Kamarudin et al. (2016) found that political stability and the absence of violence in conventional banks in the GCC region countries had a positive and statistically significant relationship with bank stock returns. Fifth, the interaction of control of corruption and conventional banks of the MENA region was found to be positive, which suggested that better control of corruption in conventional banks led to improved bank stock returns. Similar results were found by (Chortareas et al., 2012; Kamarudin et al., 2016, 2018). Finally, voice and accountability's interaction with conventional banks in the MENA region countries was negative, meaning that this interaction negatively influenced bank stock return. In contrast, several other studies have found voice and accountability's influence in conventional banks to be positive, which was inconsistent with the results of (Chortareas et al. (2012); Kamarudin et al. (2016), (Kamarudin et al., 2018); Lensink et al., 2008).

When looking at the control variables, a significant positive effect of the *return on equity (ROE)* on stock returns was found throughout all models, consistent with Kanas et al. (2019). A higher ROE specifies better bank performance and improved bank stability (Kanas et al., 2019). Also, a change in the ROE could change a bank's degree of financial leverage (Di et al., 2021).

In some of the models,' the loans to assets ratio had a statistically significant and negative impact on bank stock returns. Bank liquidity can be measured through the loans to assets ratio, which might affect risk-taking behaviour in banks (Albaity et al., 2020). A higher loans-to-assets ratio signals low liquidity, which may lead banks to difficulty fulfilling their financial obligations and, thus, lowering stock returns (Bouheni & Hasnaoui, 2017). Similarly, the natural logarithm of bank total assets, representing *bank size*, had a weak positive and significant relationship with stock returns in the two models. According to Adusei and Elliott (2015), Masoud and Albaity (2021) and Simpasa et al. (2015), a positive bank size indicates financial stability providing more capital to finance banks' business operations. The *net interest income (NII)* was found to have a positive but statistically insignificant effect on the endogenous variable, except for two models. Higher net interest income raises bank stock returns. The growth of gross loans was insignificant and directly related to the dependent variable.

Finally, the Gross Domestic Product (GDP) and Inflation (INF) were positive and statistically significant in only a few models. The GDP positively impacted bank stock returns, consistent with Irresberger et al. (2015), while Chue et al. (2019) found an inverse relationship for the same situation.

4.3. Results for the Gulf Cooperation Council (GCC) region

In Table 3, the lagged returns can be seen as negative and significant, indicating that the previous higher values of the lagged returns reduced the current returns. The investor sentiment indicator (see Appendix A) reflected individual and market sentiments. Hence, a negative relationship was expected between investor sentiment and bank stock returns in the GCC countries. The results showed that growth in individual sentiment (ISEN) had a statistically significant negative impact. In contrast, growth in market sentiment revealed a significant and positive impact, consistent with the results of G. G. Wang

et al. (2020). Overall, investor sentiment reflected a negative relationship, which was consistent with the results of the MENA region models and those of (Di et al., 2021; Irresberger et al., 2015).

The relationship between the uncertainty variable and bank stock returns in the GCC region countries was negative and statistically significant in all models, which was the same as the results of the MENA region. The analysis of the six country-level governance indicators showed that all the indicators had a statistically significant and positive impact on bank stock returns in the GCC region countries, except voice and accountability, which were found to be negative and significant. In contrast, all six indicators positively correlated with bank stock returns in the analysed MENA region countries. Looking at the control variables, an insignificant and positive impact was found for the *return on equity (ROE) and gross loans by total assets (GLTA)* on bank stock returns, while *Non-Interest Income (NII)* and *growth in operating revenue (NII)* had a negative and insignificant influence on bank stock returns. The related country-level control variable gross domestic product (GDP) was positive.

In contrast, inflation (INF) was negative, while both variables were weak and statistically significant. Overall, the baseline results of the main variables in the GCC region countries were consistent with the MENA region. However, market sentiment (MSEN), voice and accountability (VOA), and interaction of governance indicators and conventional bank stock returns in the GCC region countries were not statistically significant (Tables 2 and 3).

5. Conclusion

This paper examined how; investor sentiment, uncertainty, and governance indicators impacted bank stock returns. The sample covered 173 banks operating in 17 countries across the MENA region, including 68 banks based in GCC countries, using data between 2010 to 2020. Information concerning the variables and the data sources used in this study are in the appendix A.

The GMM regression of banks' yearly stock buy-and-hold returns provided convincing evidence that; investor sentiment, uncertainty, and governance drove bank performance between 2010 to 2020. The baseline findings revealed that investor sentiment and uncertainty adversely affected bank stock returns. In contrast, overall, governance indicators positively influenced bank stock returns. In addition, voice and accountability negatively influenced GCC countries' stock returns. Also, the interaction of the rule of law and voice and accountability with conventional banks was negative in the MENA region.

Regarding the control variables, loan ratio and inflation were negative, and bank size and the GDP revealed a positive and statistically significant effect on the endogenous variable in all models in the GCC region countries, excluding loan ratio and bank size. This novel paper also added an interaction term in the regression to determine the impact of governance indicators on the relationship between conventional banks and bank stock returns. The regression coefficient for the product of the governance indicators and conventional bank variables showed a positive and significant impact on bank stock returns in the MENA region. In contrast, the GCC region countries showed similar but statistically insignificant results. Overall, the banking sectors of the MENA region countries were sensitive to investor sentiment, uncertainty, and country-level governance indicators.

The primary limitation of this paper was the lack of weekly, monthly, or quarterly data availability for all variables. Future research studies should consider the UN's 2030 sustainable development goals. The implication that the financial sector has suffered from a lack of country-level governance, uncertainty, and investor sentiment, affecting economies of scale, may bring new challenges to investment and the region's policymakers. Although volatility is priced, investors may still be affected by the mood in these markets. Similarly to underdeveloped and emerging economies, the MENA nations have limited access to arbitrage opportunities due to information inefficiencies. As a result, their strategies should take sentiment into account when calculating overall risk. To be rewarded, investors must own well-diversified portfolios. Thus, it is necessary to develop trading techniques to

avoid potential losses due to uncertainty. Additionally, it would assist policymakers in enacting proper measures to prevent bubble or crash formations throughout "greed and fear" periods.

The findings of this study hold several practical implications. First, investor sentiment should be taken into account in portfolio management. It is desirable to increase investment education and use appropriate incentive measures to lead investors to build long-term investment portfolios to decrease investor risks and stabilise stock market fluctuation. Authorities could set up monitoring mechanisms for sentiment variations in the capital market and take relevant measures to limit market risks and mitigate capital market swings from affecting the financial market and the actual economy. Second, trade ambiguity impacts market participants, foreign investors, and the political environment on a global scale. Recent trade obstacles, tariff wars, and ambiguities may cast doubt on the free and fair nature of international commerce and the competitiveness of world trade organisation members, as uncertainty occurs due to the inability of humans to control external events. Consequently, establishing platforms or programs for the financial industry to invest surplus wealth in successful and secure enterprises requires government engagement. Thirdly, practitioners may be more concerned with maximising firms' long-term earnings or sustainable development. The long-term goals of sustainable development may precede the immediate financial gains of businesses under good governance procedures. Lastly, MENAcountries through governance might find methods to create more refined investor sentiment to help investors in their trading opportunities. Future studies on this topic may consider following the same fundamental concepts as this research while; applying additional variables, examining different regions, examining data over an extended period, and comparing conventional and Islamic Banks to expand the body of knowledge.

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Appendix A. Variable definitio	n, expected signs, and data source	Ş	
Variables	Description	Expected sign	Data source
Dependent Variable			
Buy and Hold	Buy-and-hold return (Calculated from market prices) New Market Price 0d Market Price x100 Old Market Price	(+)	BankFocus
Independent Variables			
Investor Sentiment represent both	h individual sentiment and market sent	iment.	
Δ Individual Sentiment	Percentage change of Market sentiment index.	(+)	Google Trends
Δ Market Sentiment	Percentage change of Individual and Market sentiment index.	(+)	Google Trends
∆ Uncertainty	Percentage change of Uncertainty.	(-)	World Uncertainty Index
Governance	Governance Indicators	(+)	The Worldwide Governance Indicators (WGI)
Control Variables			
Bank Characteristics			
ROE	Return on Equity	(王)	BankFocus
Δ Total Liabilities	Percentage change of Total liabilities	(主)	BankFocus
SIZE	The national logarithm of total assets as a proxy of the bank size.	(=)	BankFocus
Non-Interest Income %	Non-interest income Operating revenue	(=)	BankFocus
Δ Operating Revenue	Change in percentage of operating revenue.	(=)	BankFacus
∆ Gross Loans	Change in percentage of Gross Loans.	(主)	BankFocus
Interaction Governance indicators*Conventional banks	Governance indicators*Conventional banks	(+)	The Worldwide Governance Indicators (WGI) and BankFocus
			(Continued)

Appendix A. (Continued)			
Variables	Description	Expected sign	Data source
Dum_co	Dummy variable that takes a value of "1" if the bank is conventional, and "0"otherwise.	(+)	BankFocus
Country Level Variables			
GDP growth rate %	The growth rate of the GDP in percentage.	(±)	World Bank
Inflation %	Inflation calculated through consumer prices	(土)	World Bank

Append	lix B. Cor	relation	matrix to	able														
Variables	BUH	AISEN	ΔMSEN	AUNC	RUL	GOE	REQ	PSV	ğ	VOA	ROE	TLTA	GLTA	size	IIN	AOPR	GDP	INF
BUH	1																	
ΔISEN	-0.133	7																
AMSEN	-0.030	-0.015	1															
AUNC	-0.034	0.039	-0.074															
RUL	0.208	0.122	-0.222	0.058														
GOE	0.219	0.076	-0.189	0.076	0.893	1												
REQ	0.180	0.121	-0.193	0.112	0.913	906.0												
PSV	0.138	0.169	-0.213	0.137	0.799	0.750	0.712											
COC	0.232	0.085	-0.207	0.082	0.931	0.959	0.888	0.826										
VOA	0.000	-0.017	0.013	-0.062	0.180	0.129	0.230	-0.200	0.073									
ROE	0.230	0.034	-0.027	-0.004	0.076	0.068	0.029	0.086	0.075	-0.076								
TLTA	0.094	0.069	-0.098	0.032	0.425	0.406	0.325	0.318	0.348	0.219	0.154							
GLTA	0.090	0.121	-0.150	0.049	0.531	0.483	0.381	0.529	0.532	0.051	0.092	0.393	1					
size	0.157	0.101	-0.109	0.048	0.432	0.497	0.405	0.384	0.419	-0.106	0.203	0.564	0.297	1				
IIN	-0.013	-0.128	0.074	0.019	-0.496	-0.375	-0.489	-0.437	-0.422	-0.075	-0.076	-0.392	0.281	-0.225	1			
AOPR	-0.065	-0.052	-0.003	-0.010	-0.067	-0.026	-0.066	-0.051	-0.044	-0.089	0.050	-0.003	0.029	-0.023	0.033	1		
GDP	0.002	0.229	-0.101	0.036	0.174	0.184	0.238	0.238	0.232	-0.042	0.044	-0.082	060.0	0.008	-0.147	-0.103	-1	
INF	0.061	-0.102	0.012	0.026	-0.296	-0.230	-0.468	-0.196	-0.267	-0.199	0.183	0.205	0.036	0.061	0.257	0.046	-0.256	1



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