INTERNAL AND EXTERNAL FACTORS EFFECTS ON INSTITUTIONAL AND RETAIL INVESTORS' HERDING BEHAVIOUR IN THE GCC FINANCIAL MARKETS

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by

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GCC	Gulf Cooperation Countries
P/E	Price to Earnings Ratio
CSAD	Cross-Sectional Absolute Deviation
OLS	Ordinary Least Squares
US	United States
OF	Outward Foreign Direct Investment
OECD	Organization for Economic Cooperation and Development
UK	United Kingdom
PLC	Public Listed Companies
S&P	Standard and Poor
P/B	Price to Book Value ratio
MENA	The Middle East and North Africa
ADX	Abu Dhabi Securities Exchange
BH	Bahrain Bourse
QUE	Qatar Stock Exchange
DFM	Dubai Financial Markets
KSA	Kuwait Stock Exchange
MSM	Muscat Securities Market
Tadawul	Saudi Stock Exchange

FAKTOR DALAMAN DAN LUARAN KESAN TERHADAP TINGKAH LAKU PENGEMBORANGAN PELABURAN INSTITUSI DAN RUNCIT DALAM PASARAN KEWANGAN GCC

ABSTRAK

Negara-negara Majlis Kerjasama Teluk (GCC) telah berkembang dengan ketara dalam dua dekad yang lalu. Permodalan pasaran terkumpul wilayah ini berjumlah lebih USD 1 trilion pada 2018, dan pasaran kewangan ialah platform untuk mempelbagaikan pelaburan daripada pengeluaran dan eksport minyak, yang merupakan sumber utama pendapatan mereka. Turun naik berterusan dalam harga minyak memberi kesan kepada keputusan pelaburan kerana ia membawa kepada ketidaktentuan dan risiko dalam pasaran, mengubah tingkah laku pelabur dalam pasaran ini. Dalam ketidakpastian sedemikian, pelabur sering menyimpang daripada pendekatan pelaburan yang rasional. Pasaran kewangan di negara-negara ini didominasi terutamanya oleh kelas pelabur institusi tertentu dari negara GCC dan pelbagai negara seperti Amerika Syarikat, Eropah antara lain. Untuk mengurangkan kebarangkalian kerugian dan meningkatkan peluang keuntungan, pelabur kadangkala mengikut tingkah laku penggembalaan untuk pelaburan. Asas teori teorem utiliti yang dijangkakan dan teori prospek dalam kewangan Tingkah laku berfungsi sebagai asas untuk mengkaji gelagat penggembalaan dalam pasaran. Pembuat dasar telah menyatakan kebimbangan bahawa penggembalaan dalam kalangan pelabur memburukkan turun naik, menjejaskan kestabilan pasaran dan meningkatkan kerapuhan sistem kewangan yang menyebabkan gelembung dan kejatuhan seterusnya. Peranan pelabur institusi dalam

penggembalaan dan pemacu tingkah laku mereka tidak ditangani dengan secukupnya dalam kesusasteraan. Memandangkan nilai pelaburan institusi yang tinggi dalam pasaran kewangan GCC, adalah penting untuk mengkaji tingkah laku penggembalaan dalam pasaran ini. Dalam hal ini kajian bertujuan untuk menganalisis kesan jenis pelabur (saham pelabur institusi dan negara asal) dalam mempengaruhi tingkah laku penggembalaan serta kesan faktor luaran (ketidakstabilan politik, krisis kewangan global, dan kejutan minyak) dan faktor dalaman (Nisbah PE dan Permodalan Pasaran) mengenai tingkah laku penggembalaan. Kajian ini terpakai kepada jumlah sampel 693 firma dari tahun 1999 hingga 2019 meliputi negara Arab Saudi, Emiriah Arab Bersatu, Qatar, Bahrain, dan Oman. Penemuan menunjukkan pelaburan institusi mengurangkan tingkah laku penggembalaan dalam pasaran GCC. Ia juga telah menunjukkan bahawa negara asal pelaburan institusi mempunyai peranan penting dalam memacu tingkah laku penggembalaan. Khususnya, pelaburan institusi dari dalam negara GCC dan Amerika meningkatkan gelagat penggembalaan manakala pelaburan dari EU dan Asia, mengurangkan penggembalaan. Kesan ketidaktentuan harga minyak faktor luaran berbeza-beza di seluruh negara GCC individu, sementara terdapat bukti jelas tentang krisis kewangan yang meningkatkan tingkah laku penggembalaan di semua negara dan krisis politik yang mengurangkan tingkah laku penggembalaan di semua negara kecuali Qatar. Faktor dalaman mempunyai kesan yang berbeza-beza terhadap tingkah laku penggembalaan dalam kalangan pelabur di seluruh negara GCC. Penemuan menunjukkan bahawa pelabur institusi mengurangkan tingkah laku penggembalaan, menerapkan disiplin dan mengurangkan turun naik dalam pasaran kewangan GCC manakala penggembalaan oleh pelabur runcit di rantau ini mungkin menyebabkan turun naik dalam pasaran

kewangan. Dalam hal ini, dasar berhemat mesti dilaksanakan berdasarkan jumlah pelaburan.

INTERNAL AND EXTERNAL FACTORS EFFECTS ON INSTITUTIONAL AND RETAIL INVESTORS' HERDING BEHAVIOUR IN THE GCC FINANCIAL MARKETS

ABSTRACT

Gulf Cooperation Council Countries (GCC) have grown significantly in the last two decades. The cumulative market capitalization of this region stood at over USD 1 trillion in 2018, and the financial market is a platform for diversifying investments away from oil production and export, which is their primary source of revenue. Continuous fluctuations in oil prices impact investment decisions as they lead to uncertainty and risk in the market, altering investor behavior in these markets. In such uncertainties, the investors often diverge from rational investment approaches. The financial markets in these nations are primarily dominated by certain classes of institutional investors from GCC nations and various different countries such as USA, Europe among others. To reduce the probability of losses and enhance chances of profit, investors sometimes follow the herding behavior for investment. Theoretical underpinnings of the expected utility theorem and prospect theory within Behavioural finance serve as the foundation to study herding behaviour in markets. Policy makers have expressed concerns that herding among the investors exacerbates volatility, destabilizes markets and increases the fragility of the financial system causing bubble and a subsequent crash. Role of institutional investors in herding and the drivers of their behaviour has not been adequately addressed in literature. Considering the high value of institutional investment in GCC financial markets, it is imperative to study herding behaviour in these markets. In this regard the study aims to

analyse the impact of type of investors (institutional investors share and country of origin) in affecting herding behaviour; impact of external factors (political instability, global financial crisis, and oil shocks) and internal factors (PE Ratio and Market Capitalization) on herding behaviour. This study applies to a total sample of 693 firms from year 1999 to 2019 covering the countries Saudi Arabia, United Arab Emirates, Qatar, Bahrain, and Oman. The findings indicate institutional investment decreases the herding behavior in the GCC markets. It has also shown that the country of origin of institutional investment has a significant role to play in driving herding behavior. Particularly, institutional investments from within GCC nations and America increase herding behavior while those from EU and Asia, decrease herding. The impact of external factor oil price volatility varies across individual GCC nations, while there is clear evidence of financial crisis increasing herding behaviour in all nations and political crisis decreasing herding behaviour in all nations except Qatar. Internal factors have a varying impact on herding behavior among investors across the GCC nations. The findings show that institutional investors reduce herding behaviour, instilling discipline and reducing volatility in the GCC financial markets while herding by retail investors in this region may causes volatility in the financial markets. In this regard, prudential policies must be put in place based on volume of investments.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The Gulf Cooperation Countries (GCC) markets have grown significantly, with cumulative market capitalization standing at over one trillion US dollars in 2018. In this context, it is essential to look at the investment strategies driving the investor behavior in these markets. In an efficient financial market, all information is equally accessible, and each investor rationally interprets them. However, due to limited abilities and uncertainties in the market, heuristics can be seen in investors. Therefore, the existence of bias and chances of error is changing the investment decision approach of investors from rational to the broader approach, i.e., behavioral finance. Herein, each investor analyzes the market and makes their investment decision by considering their perception or judgment about the probability of risks (Fernández, Garcia-Merino, Mayoral, Santos, &Vallelado, 2011).

One such behavior under behavioural finance or broader approach is herding. In today's scenario, many financial markets witness the presence of herding wherein an investor without access to relevant information about the risky venture or risk-reward trade-offs manages their investment decisions by following the intent of others and imitating other investors' actions. Though in some cases, herding could be efficient, that is when the investors have similar issues and together set an investment decision, other than this case, primarily the intentional herding affects the efficiency of financial markets negatively (Bikhchandani and Sharma, 2000).

Herding behavior among institutional investors and their impact on capital markets has been a topic of significant interest, considering that institutional investors account for nearly 41% of the global market capitalization according to De La Cruz, Medina, and Tang (2019). Further the study states that some advanced economies have also become significant owners in individual companies.

Considering the variability in investor behavior due to changes in decision approach from rational to behavioral finance, this section analyses the new investment decision approach and its factors. Further, based on the fact that herding is today widely prevalent in the financial markets, this section discusses its presence in the GCC financial markets.

Traditional theories that explain the financial market state that investors are well informed and consistent because they are aware of financial markets. This prevents difficulty in financial markets and eases the investment decision-making process (Byrne and Utkus, 2013). However, investors are not always rational, and in fact, their investment decisions are dependent on the structure of the information and its characteristics. Thus, due to a lack of knowledge about factors that regulate an investor's decision, the expected utility of rational investors is not maximized and led to the growth of a new approach called behavioral finance.

Behavioral finance examines the investor decision-making process and explains the economic aspect of investor decisions in the financial market by focusing on the cognitive and psychological theory. For example, Shiller (2008), on the assumption of risk aversion, risk denial, and bounded rationality, states that behavioral finance tries to

explain how the presence of mental mistakes (cognitive errors) and investors' emotions regulate an investor's decision-making skill. Some of the biases in the financial market due to behavior are frame dependence, herding, loss aversion, mental accounting, anchoring, disposition effect, overconfidence, heuristics, confirmation bias, familiarity bias, money illusion, or innumeracy. In addition, all these biases show that human emotions such as overconfidence, greed, and fear regulate an individual's decision-making.

The definitions of behavioral science show that the primary significance of using this approach in financial markets is to have a clear understanding of the market dynamics and to determine the scope of investors' investment decisions considering the shortcomings or risks of the financial market (Byrne and Utkus, 2013; Frankfurter and McGoun, 2002; Prosad, Kapoor and Sengupta, 2015).

Waweru, Mwangi, and Parkinson (2014) classify the behavioral finance approach of investment into a heuristic decision process and prospect theory. Moreover, Kengatharan and Kengatharan (2014), examining the Colombo Stock Exchange, stated that apart from heuristic and prospect theory, herding and market-based classification are also part of behavioral finance. Heuristics refers to the behavior wherein an investor either represents himself as some other investor (representativeness), uses readily available information (availability bias), overestimates his knowledge (overconfidence), exhibits gambler fallacy or anchoring.

The Prospect theory of behavioral finance refers to the tendency of an investor to avoid risk and minimize its loss by following risk aversion, loss aversion, or mental

accounting. The market aspect of behavioral finance includes information about price changes, customer preference, stocks past trends, or investors' reactions to price changes.

Lastly, behavioral finance consists of herding behavior. Characteristics of investors such as financial literacy and demographic profile (age, or gender) affect the behavior of investors in the financial market (Ansari and Moid, 2013; Luong, 2015; Ritter, 2003; Waweru et al., 2014), and investors will be more likely to suppress their own beliefs and copy the behavior of others in the form of buying and selling decisions, other investors trading stock and volume choice, and speed of herding. The herding behavior in markets is particularly significant as several policy makers have expressed concerns that herding among the investors exacerbates volatility, destabilizes markets and increases the fragility of the financial system causing bubble and a subsequent crash (Lux, 1995; Bikhchandani and Sharma, 2000; Eichengreen and Mathieson, 1998). The dot-com bubble- amongst many other bubbles- depicts the impact of information cascades and herding in the stock market. (Galariotis, Rong, and Spyrou, 2015). Ulussever and Demirer (2017) have drawn a parallel between the dotcom bubble in the USA and the bubbles and crashes experienced in GCC linked to herding and oil volatility.

Some studies have analyzed herding behavior in the Middle East Financial Markets. Christie and Huang (1995) define herding as the behavior of investors wherein judgments based on their own beliefs and perspectives are suppressed. Investors follow the collective actions taken in the market for investment decisions even there is a deviation from the prediction.

Moreover, Hirshleifer and Teoh (2003) state that herding, including behavioral convergence, is based on other people's judgment. Thus, herding in a financial market refers to the behavior of investors of following other people's actions without any rational thinking. Agrawal, Singhal, and Swarup (2016) consider the prevalence of herding in financial markets to study the factors responsible for adopting herd behavior; their study on the Indian stock market shows that the factors like lack of financial literacy among people regarding the investment options, fear of losing money, risk diversification by having a large number of investments from different investors, market image of the people or group of people whom the investor follow, and the past performance of the stocks influence the adoption of herding by an investor. Thus, investors adopt for herding due to asymmetric information and the risk of losses in financial markets.

Balcilar, Demier and Hammoudeh (2013) explains the prevalence of different herding approaches in Gulf Arab stock markets of Abu Dhabi, Kuwait, Dubai, Qatar, and Saudi Arabia. Using the regime-switching model, the study undergoes a cross-sectional analysis of herding behavior in GCC countries. Their study states that the frontier market's structure is different from the developed market, and other than Qatar, all GCC markets have herded in a market crash or extreme volatility.

Further, Balcilar and Demirer (2013) examined the role of global risk factors in the case of Borsa Istanbul. They found that herding behavior is present in the case of high and extreme volatility regimes. They also stated that U.S. market factors such as the CBOT volatility index or S&P 500 index return significantly affected the regime transactions. Balcilar, Demier and Hammoudeh (2014) stated that although global factors such as U.S. stock market performance, oil prices, or U.S. interest rate and risk indexes

affect the herding behavior of investors; among all the elements, a dominant factor responsible for influencing herding level in Gulf countries was the market volatility (Solakoglu and Demir, 2014).

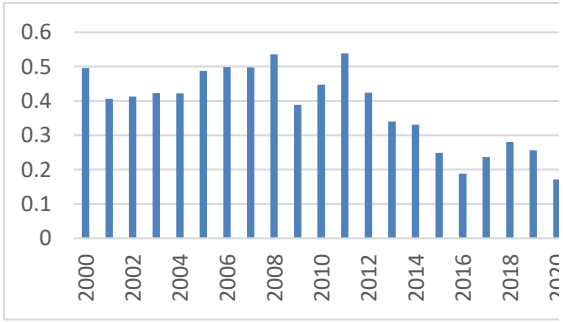
Investors' decision-making processes are profoundly influenced by their psychological and cognitive biases. While traditional financial theories assume that investors are rational agents who always seek to maximize utility, real-world observations suggest otherwise. Rational decision-making involves making choices that maximize an individual's utility based on all available information and logical reasoning. This approach assumes that investors are well-informed, act consistently, and aim to maximize their expected utility without the influence of emotions or biases. On the other hand, Heuristics, are mental shortcuts used to make decisions under uncertainty, and herding behavior, where investors mimic the actions of others, illustrate how decisions can deviate from rationality. These behaviors can lead to systematic biases and errors in investment choices, prompting a shift from the rational decision-making model to the broader approach of behavioral finance. Behavioral finance is a field of study that examines how psychological factors and cognitive biases affect the financial decision-making process of individuals and institutions. It challenges the traditional assumption of rational behavior in financial markets by incorporating insights from psychology to explain why investors often make irrational and unpredictable decisions. Behavioral finance does not determine rational decisions; rather, it explains the deviations from rational decision-making. It focuses on how biases, emotions, and cognitive errors impact investor behavior and lead to decisions that differ from those predicted by traditional rational models. Behavioral finance provides a framework to understand these deviations by incorporating psychological principles. It highlights how factors such as overconfidence, fear, and social influence shape investor

behavior. For example, heuristics like the availability bias and representativeness bias allow investors to make quick decisions but often at the cost of accuracy and optimality. Similarly, herding can cause market inefficiencies and lead to phenomena like asset bubbles and crashes.

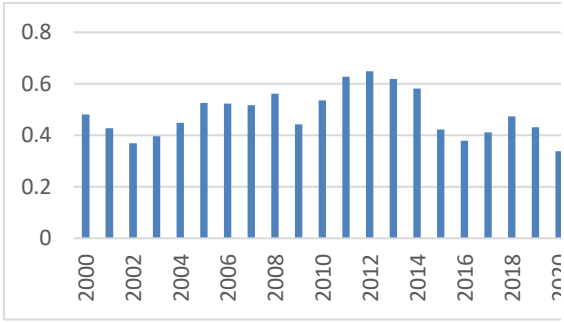
Given the complexity and variability of investor behavior, the study of behavioral finance is essential. It not only explains the shortcomings of traditional financial theories but also helps in developing strategies to mitigate the adverse effects of irrational behavior. This perspective is particularly relevant in the context of the GCC financial markets, where unique socio-economic factors may amplify these behavioral tendencies.

1.2 Background of the Study

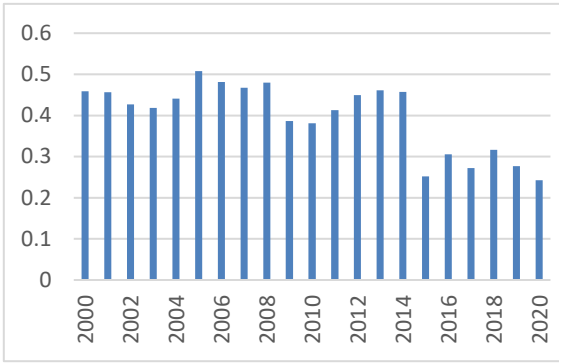
GCC countries possess about 48% of the total world oil reservoirs and control about one-third of total oil production in the world. In these countries, the primary source of income is exports of oil (Balcilar, Demier and Ulussever, 2016). The charts in Figure 1.1 show the share of crude oil exports in the total GDP of the GCC economies.



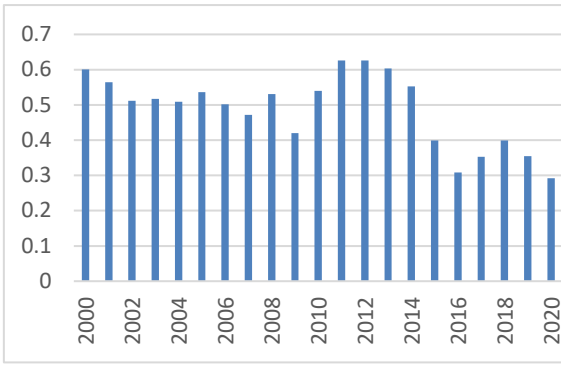
(A) Bahrain



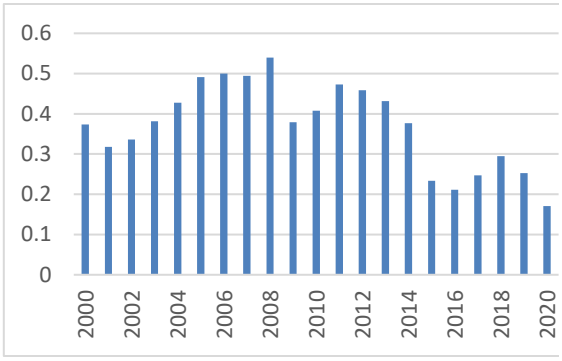
(B) Kuwait



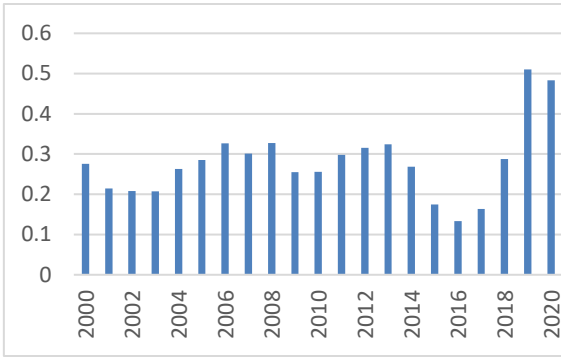
(C) Oman



(D) Qatar



(E) Saudi Arabia



(F) the United Arab Emirates

Figure 1.1: Crude oil exports level per GDP in USD Millions

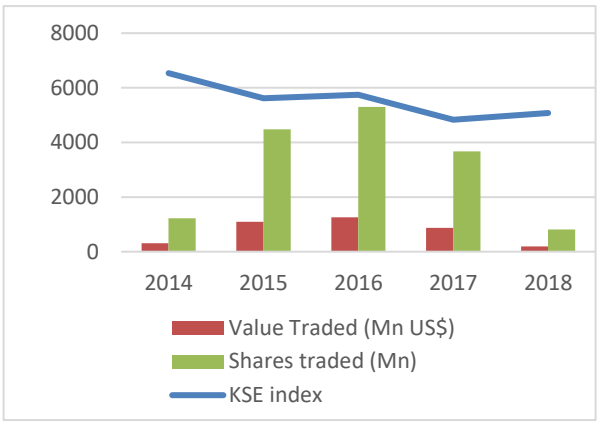
The above figures show high fluctuations in revenue generated from oil exports. Figure 1.1: Panel (A), (B), (C), (D), (E), and (F) shows the crude oil exports level per GDP in USD Millions (OECD, 2019; World Bank, 2019) for each of the GCC nations between 2000 to 2020. This volatility of markets increases the risk associated with investment and directs investors towards other capital markets. However, due to the lack of availability of any alternative stocks or assets for investments, the financial needs of these countries suffer from oil price risks. Moreover, this exposure to unhedged risk in the oil market often directs investors to react to the recent news and influence their investment decisions.

Thus, oil price risks in the GCC tend to change investors' strategy towards herding behavior (Balcilar et al., 2013, 2014, 2016).

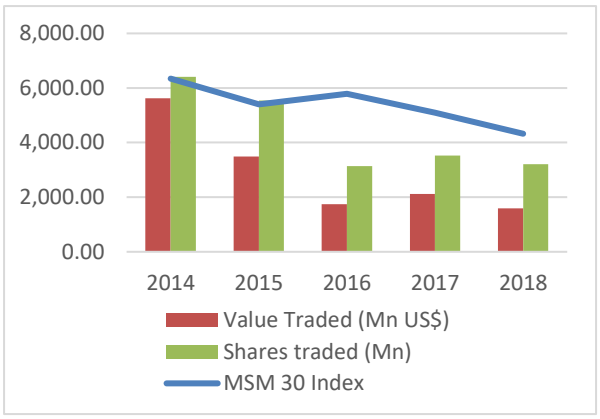
The first formal stock market in the GCC region was established in 1977, i.e., Kuwait Stock Exchange. However, by the 1980s, traditional stock exchange markets increased in the GCC region by opening stock markets in Saudi Arabia, Oman, and Bahrain. In addition, in the 1990s, following the development trend of financial markets in the GCC region, a new stock market was established in Qatar. Finally, the number of stock markets increased to seven in the 2000s when two new stock markets were set up in the region of UAE, i.e., Abu Dhabi Securities Exchange and Dubai Financial Market (Cheikh, Naceur, Kanaan, and Rault, 2018).

Except for Bahrain, all countries of the GCC region focused on oil market-based investment. However, the increase in oil prices from $50 per barrel in 2007 to $147 before the 2008 global financial crisis created an environment for investors to invest in stock markets. Apart from this, the easing of restrictions on foreign investments and increased market transparency by regulatory, legal, and supervisory changes led to the development of financial markets in the GCC region (Cheikh et al., 2018; IMF, 2018).

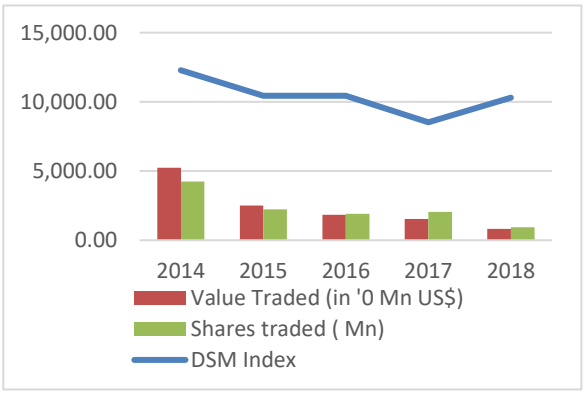
The analysis of the financial market of Saudi Arabia, UAE (Abu Dhabi and Dubai), Qatar, Oman, Bahrain, and Kuwait in Figure 1.2 shows the Stock market indexes, Number of shares traded and their values within the GCC region.



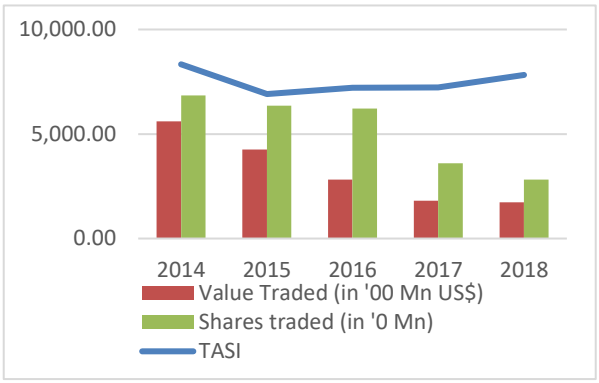
(A) Kuwait



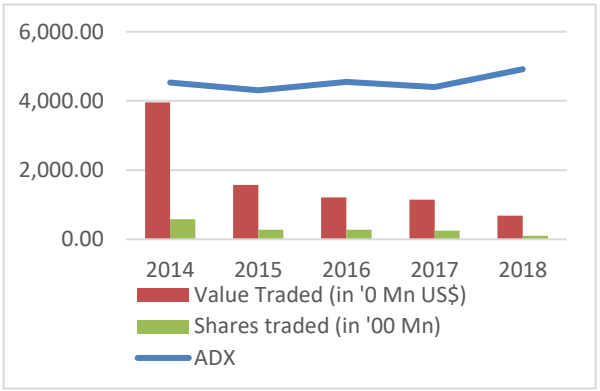
(B) Oman



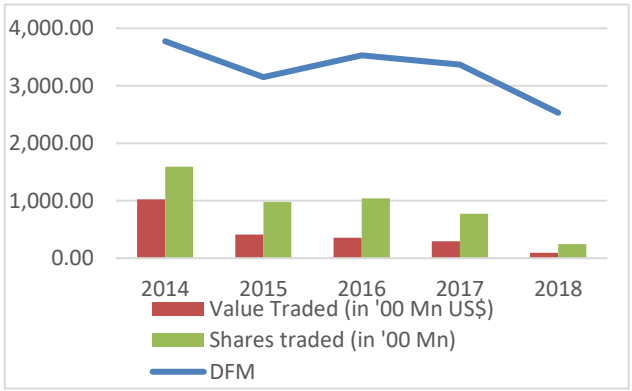
(C) Qatar



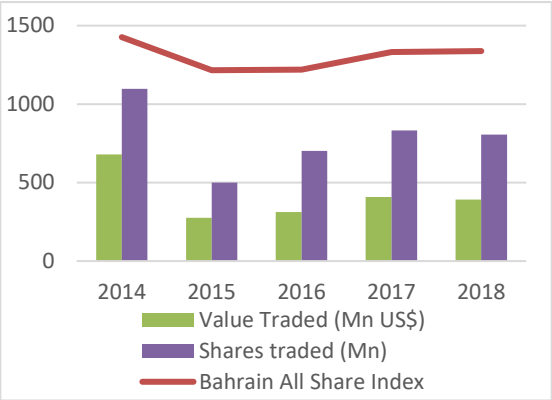
(D) Saudi Arabia



(E) Abu Dhabi



(F) Dubai



(G) Bahrain

Figure 1.2: Stock Market indexes and stock market movements

The above charts show that there has been a decrease in the value of the stocks for Kuwait, Oman, and Dubai. Figure 1.2: Panel (A), (B), (C), (D), (E), (F), and (G) show the stock market indexes, number of shares traded and their values for the GCC region. The charts show the impact of the GCC diplomatic crisis of 2014 (Arin, Caporale, Kyriaeou and Spagnolo, 2019). It can be seen that apart from Kuwait, Oman, and Dubai, for all other markets the closing value of the stocks though decreased initially after 2014, but by 2017, the stock prices witnessed an increasing trend depicting the market's recovery by 2017.

Table 1.1: Stock Market of GCC region

Exchange	Market Capitalization (trillion USD)	Market Cap %	Value of Shares Traded	Value of Shares Traded %	Turnover Velocity %	Number of transaction (Millions)

Saudi Stock Exchange (TADAWUL)	0.496	41.96%	0.232	71.83%	46.81%	25.054
Qatar Stock Exchange (QSE)	0.161	13.64%	0.019	5.80%	11.64%	1.043
Abu Dhabi Securities Exchange (ADX)	0.138	11.63%	0.011	3.33%	7.83%	0.274
Boursa Kuwait (KSE)	0.095	8.01%	0.014	4.22%	14.41%	0.934
Dubai Financial Market (DFM)	0.093	7.89%	0.016	4.97%	17.23%	0.66
Muscat Securities Market (MSM)	0.019	1.58%	0.0019	0.59%	10.24%	0.15
Bahrain Bourse (BHB)	0.022	1.84%	0.00086	0.27%	3.95%	0.019

Source: Arab Federation Exchange (AFE, 2019)

Table 1.1 shows the stock market condition of the GCC region. Percentages of market capitalization denotes the value of shares traded in terms of the total transaction in the Arab region.The largest market in terms of the capitalization value is the Saudi Arabia Stock Exchange (TADAWUL), having a market capitalization value of 0.496 trillion USD. It consists of 6196 institutional investors and 4,735,674 individual investors (Tadawul, 2018, 2019). This is followed by Qatar stock exchange (QSE) with a market capitalization value of about 0.161 USD trillion with 60.492% shares bought by institutional investors while 39.508% shares are held by individual investors (QSE, 2018b, 2018a). Abu Dhabi Stock exchange (ADX), with a market capitalization value of 0.138

trillion USD, consists of 568 institutional investors in 2018, out of 4644 total investors (ADX, 2018); Dubai stock Exchange (DFM) with a market capitalization of 0.093 USD trillion had 8 billion USD shares bought by institutional investors (DFM, 2018). Kuwait Stock Exchange (Boursa Kuwait), with a market capitalization of 0.095 trillion USD, consists of 55% of institutional investors (Govern, 2016). The stock market of Oman, i.e., Muscat securities exchange (MSM), has a market capitalization of 0.019 USD trillion records trade of about 1,625,569,691 shares by individual investors 2,395,131,995 shares by institutional investors (MSM, 2018). Lastly, Bahrain Bourse (BHB), the Bahrain stock exchange market, with a market capitalization of about 0.022 USD trillion, has the trade of approximately 139,474,782 shares by institutional investors. In comparison, 184,358,006 shares were purchased by individual investors (BHB, 2018). The weightage of all the investors is shown in Table 1.2.

Table 1.2: Investors in the GCC region stock market for the year 2019

Stock Exchange	**Population**	**Buy**		**Sell**	
		Individual investors	**Institutional investors**	**Individual investors**	**Institutional investors**
Bahrain Bourse (BHB)	Nationals	19.15%	33.65%	19.15%	48.62%
	Foreign	37.77%	9.42%	5.94%	26.30%
Boursa Kuwait (KSE)	Nationals	36.57%	50.27%	39.62%	46.51%
	Foreign	5.53%	7.63%	6.38%	7.49%
Muscat Securities Market (MSM)	Nationals	35.12%	43.53%	33.81%	42.32%
	Foreign	4.27%	17.08%	4.61%	19.27%
Qatar Stock Exchange (QSE)	Nationals	26.99%	20.90%	34.10%	20.86%
	Foreign	9.50%	42.60%	10.28%	34.76%
Saudi Stock Exchange (TADAWUL)	Nationals	78.87%	11.86%	84.55%	10.69%
	Foreign	6.45%	2.80%	3.41%	1.34%
	Nationals	1.16%	14.38%	56.65%	22.70%

Abu Dhabi Securities Exchange (ADX)	Foreign	6.33%	78.13%	14.74%	5.91%
Dubai Stock Exchange (DFM)	Nationals	28.58%	28.02%	27.70%	26.50%
	Foreign	21.92%	21.48%	23.40%	22.40%

Source: Bahrain Bourse (BHB, 2019); Boursa Kuwait (Boursa Kuwait, 2019); Muscat securities Exchange (MSM, 2019); Qatar stock exchange (QSE, 2019); Saudi Stock Exchange (Tadawul, 2019); Abu Dhabi Securities Exchange (ADX, 2019); Dubai Stock Exchange (DFM, 2019)

Table 1.2 shows that for all the stock exchanges in the GCC region, the weightage of institutional investors in the trading is much higher than the proportion of individual investors. The trends in the share of institutional and individual investors also caries among the market. This could possibly be due to the different level of financial restrictions among the market with respect to share ownership and trading. Only about 43.07% of the total purchase of shares in Bahrain Stock Exchange and 14.66% of the entire investment in Saudi Arabia Stock Exchange by institutional investors. However, in other regions, primarily, the shares are traded by institutional investors. For example, in Kuwait Stock Exchange, 57.9% of all shares were purchased by institutional investors; in Muscat Stock Exchange, institutional investors purchased about 60.61% of shares; institutional investors purchased 63.50% of shares in Qatar Stock Exchange, and Abu Dhabi Stock Exchange has purchased of 92.51% shares by institutional investors. Dubai Stock Exchange has an almost equal percentage of individual and institutional investors, i.e., 49.5% purchase of shares was done by institutional investors and remaining by individual investors.

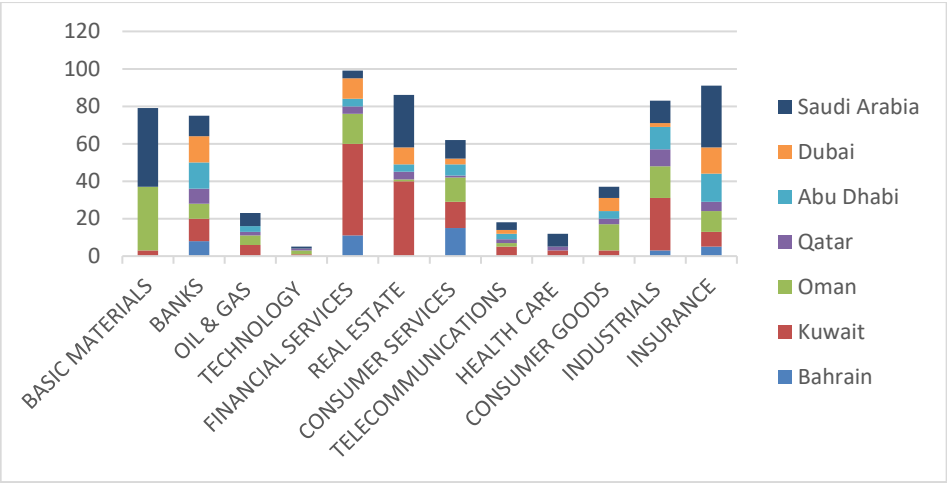


Figure 1.3: Sector-wise distribution of the companies in the GCC region

Figure 1.3 above shows the distribution of listed companies belonging to different industries/sectors in the stock markets of the GCC regions. The figure depicts the highest number of companies are in the financial, insurance, real estate, and insurance sector. However, sectors such as technology, health care, and telecommunications have less involvement in the capital market.

In all the above-stated markets, though factors such as volatility in the domestic market, exchange rate index, market return, global risks, and oil prices bought a change in the investors' decisions, among these factors oil price movements and domestic market volatility were the main reason behind the prevalence of herding in the Middle East (Balcilar, Demirer, and Hammoudeh, 2013, 2014; Demirer, Jategaonkar, and Khalifa, 2015). Further certain changes were witnessed in the herding behaviour of investors during the COVID-19 pandemic. The study by Loang and Ahmad (2023a) on herding behaviour in global markets during the period the pandemic. It was noted that there was absence of herding behaviour in developed markets such as United Kingdom, Japan, USA, France among others. However, in developing country markets such as Brazil, India,

Turkey, there was herding behaviour among investors. There was also an evidence of an uptick in cross-market herding between USA and China. The study by Loang and Ahmad (2023b) for GCC specifically, found key differences in herding behaviour between Sharia compliant stocks and conventional stocks. During the pre-pandemic period, there was greater evidence of herding in Sharia stocks as compared to the conventional stocks. However, during the pandemic herding increased for both Sharia as well as conventional stocks. Further not all markets in the GCC region show evidence of herding behaviour. Another study by Allam et. Al (2020) studied the impact of COVID-19 on the Egyptian stock market. The study began by outlining factors that affect hurting and subsequently examine the role of each of the factors on different sectors. Most notably, the study showed that not all the sectors experienced herding during the pandemic as different factors had different impacts on the various sectors. However, there were also studies that indicated that there was an increase in herding behaviour in European financial markets (Espinosa-Méndez and Arias, 2021; Fang et. al, 2021).

In the context of the current study, the impact of Covid has not been considered. This decision has been taken since COVID-19 pandemic was a global crisis that affected all the countries. When accounting for such a global shock, it's imperative to have a comprehensive data prior and post shock period. Due to lack of data availability of the post shock period, the impact of Covid has not been considered.

1.3 Stock Markets of GCC Nations- Descriptive Facts

According to data from World Bank's Global Financial Development Database, in the GCC markets, the stock market capitalization to GDP (%) has increased from 45.75% in 2000 to 60.29% in 2017, showing strong growth in the financial development of the

GCC economies. Simultaneously the database also shows that the stock market return had increased from 4.06% in 2000 to 8.65% in 2017. Particularly for the foreign portfolio investments (Khayat, 2020) for the GCC markets (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE) found that the average foreign portfolio investment equity (% of total portfolio investment) was 65.88% for the period between 2000-2018. As per IIF data, foreign flows into GCC equity markets have shown sluggish growth in the last two years. It fell from $6.7 billion in 2016 to $2.2 billion in 2017 and $2.7 billion in 2018. The average Equity Risk Premium for the GCC nations in 2020 was 6.6%. According to Ahroum and Achchab (2021). Islamic risk premium shows up significantly during a crisis.

A study by Bader (2021) showed that the risk factors in the GCC are independent of those in the U.S. and global factors and that these markets may offer significant diversification benefits and risk/return enhancements for international investors. As per his study, the excess returns earned the average annual returns from the GCC markets between 2001–2016 averaged 9.6%. As per (Bahrini and Filfilan, 2020), the GCC stock markets are impacted positively by the crude oil price (WTI) and negatively by the variation of the implied volatility in the global oil market and the global stock market. The GCC stock markets' long-term performance was analyzed (Boubaker, 2021). This paper investigated long-memory behavior in the returns of GCC stock market indexes across the period 2005-2019 and found a piece of clear and consistent evidence for long-memory. The subsequent section provides deeper details of the individual financial markets of the GCC nations.

1.3.1 Saudi Arabia Stock Exchange (Tadawul)

Tadawul is the only stock market in Saudi Arabia. The emergence of the stock market in Saudi Arabia was in the 1970s, but this market remained unofficial even till the 1980s. In 1984 when the Saudi Arabian government developed the National Stock Exchange, Tadawul was recognized as the formal stock exchange of Saudi Arabia. This market only deals with common stocks and has a strict short-selling ban. From 2004 to 2012, the number of listed companies under the stock exchange has increased by 207% (Asiri and Alzeera, 2013; Kalyanaraman, 2014).

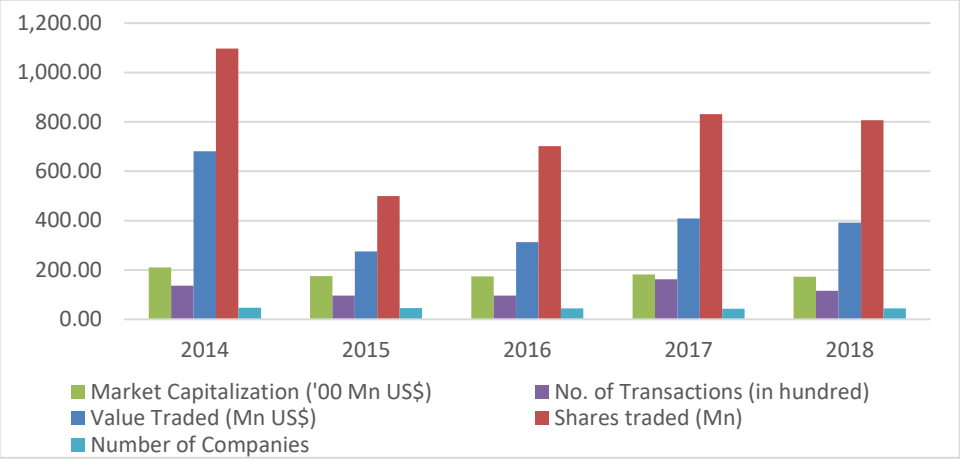


Figure 1.4: Tadawul Stock Exchange- Key Metrics

Despite this increase, in 2015, Tadawul was globally regarded as the worst-performing equity market. From 2016, the stock market condition has improved, and in 2018, due to oil price fluctuations, Tadawul was at second position among all global stock markets. Figure 1.4 shows the Tadawul stock exchange, which shows that the market capitalization of Tadawul has increased from 0.494 trillion USD in 2014 to 0.506trillion USD in 2018. The number of listed companies has increased from 169 to 200, and the number of traded shares has increased from 6.842 billion to a 2.815 billion. Figure 1.4

shows the above information in charts to show the dynamics across time. Further, in Tadawul, about 95% of the investment in Tadawul is reserved for domestic investors, and there is the consistent presence of herding in the market, which is mainly influenced by the religious norms (Rahman, Chowdhury, and Sadique, 2015).

1.3.2 Kuwait Stock Exchange

Being the first stock exchange in the Gulf region, Kuwait Stock Exchange was established in 1971. Currently, Kuwait Stock Exchange has more than 200 shares listed (Alanezi, Alfraih, and Almujamed, 2014). Initially, only domestic investors were able to make economic transactions in the market but to diversify their dependence on the oil prices and have more growth opportunities, foreign investors were allowed in the 1990s. Thus, in 2016, the Kuwait Stock Exchange began to be operated by Boursa Kuwait Securities Company and got classified into 16 sectors with a market capitalization of 25 billion Kuwait dollars. It consisted of banking, insurance, industrial, investment, real estate, food, services, and non-Kuwaiti companies' shares (Atyeh, Alrashed, and Telford, 2017).

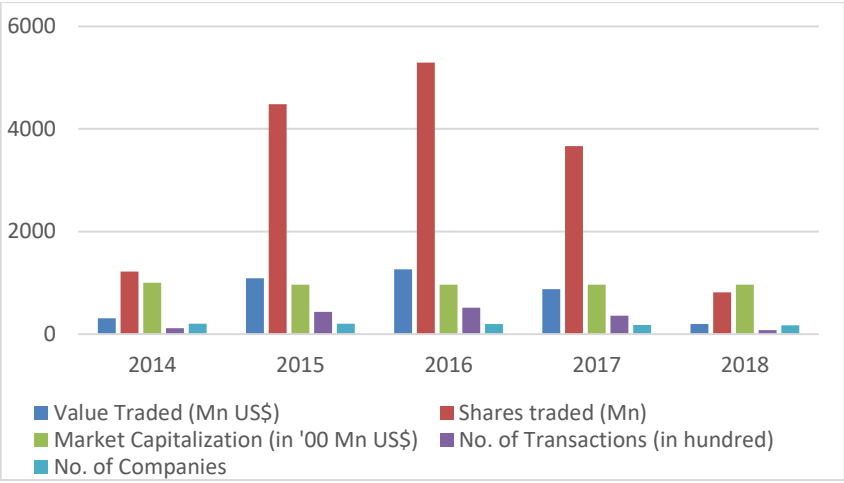


Figure 1.5: Kuwait Stock Exchange- Key Metrics

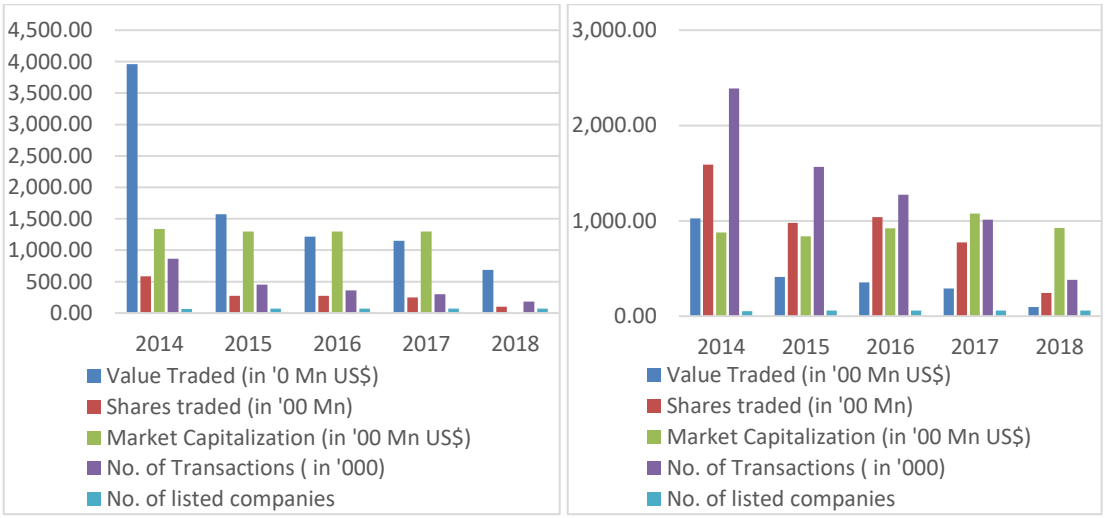
Figure 1.5 shows that the Kuwait Stock Exchange market capitalization has decreased from 0.100 trillion USD to 0.096 trillion USD. Further, the number of listed companies for the stock market also decreased from 206 to 174, and the number of traded shares decreased from 1.222 billion to 0.815 billion.

Among all these prominent characteristics, one more thing prevalent in Kuwait Stock Exchange is sentimental herding because of insufficient information about the firms, stock market, and financial outcomes of investing in a firm. Further, despite the liberty of foreign investments in the stock market, certain limitations on their investment via taxes are imposed on them to control foreign investment (Solakoglu and Demir, 2016).

1.3.3 UAE Stock Exchange

The UAE Stock Exchange amalgams Abu Dhabi Stock Exchange, NASDAQ Dubai, and Dubai Financial Market. The Abu Dhabi Stock Exchange and Dubai Stock Exchange started trading on 15 November 2000 and 26 March 2000, respectively, while

NASDAQ Dubai trading started in 2005. NASDAQ allows investments from foreign investors without considering their nation, while for the other two stock markets (Abu Dhabi Stock Exchange and Dubai Stock Exchange) started in 2003, foreign investments were allowed. Though there is a more significant number of listed companies under the Abu Dhabi stock exchange than Dubai Stock Exchange, a report of 2011 states that the Dubai Stock Market is more liquid and volatile (Al Mohana and Maatouq, 2015).



(A) Abu Dhabi Stock Exchange (B) Dubai Stock Exchange

Figure 1.6: UAE stock Exchange markets

Figure 1.6: Panel (A) and (B) shows the UAE stock exchange markets.

Figure 1.6 (A) shows that the Abu Dhabi Stock Exchange market capitalization had decreased from 0.134 trillion USD in 2014 to 0.130 trillion USD in 2018. The number of listed companies in ADX has increased from 67 to 70, and the volume of shares traded has decreased from 58.522 billion to 10.180 billion. Further,

Figure 1.6 (B) shows the stock market of Dubai and states that the market capitalization of the market has increased from 0.088 trillion USD in 2014 to 0.093 trillion USD. Listed companies in the stock exchange increased from 53 to 60, and the volume of shares traded has decreased from 158.898 billion to 24.493 billion.

The UAE's stock market faces regulatory problems due to the presence of two different regulatory authorities (i.e., Securities and Commodities Authority and Dubai Financial Services Authority), less liquidity, less number of listed companies in the stock market, and a lower trading value and market capitalization (Joseph and Fernandez, 2016; Khedhiri and Muhammad, 2011). Further, there is a lack of information available to the investors about the market, thus promoting the herding. Mainly herding is prevalent in the UAE market due to the loss aversion behavior of investors and oil price fluctuations (Ulussever and Demirer, 2017). The sectors wherein herding is most prevalent are financials and energy for Abu Dhabi and real estate in Dubai. Thus, in UAE Stock Exchange, high volatility in the market promotes herding, and mainly the investors take the signal from the oil price market fluctuations for their herding behavior (Balcılar, Demirer, and Ulussever, 2017).

1.3.4 Bahrain Stock Exchange

In the 1980s, due to continuous fluctuations in the oil prices, the need to develop the stock market emerged. This led to the establishment of the Bahrain Stock Exchange in cooperation with the International Financial corporation on 17th June 1989. Initially, the stock market was listed with 29 companies which increased to 47 in 2014 (BHB, 2014). In 2014, the name of the stock market was changed to Bahrain Bourse. Being one

of the most innovative stock markets in the GCC region, Bahrain Bourse attracts many foreign investors by relaxing its international norms. Despite the decrease in government support, the stock market flourished wherein the total assets level increased to 8,961,272 BD, and shareholders' equity rose to 8,427,535 in 2014 (Asiri and Abdalla, 2015). The figure below further shows the stock market variation from 2014 to 2018.

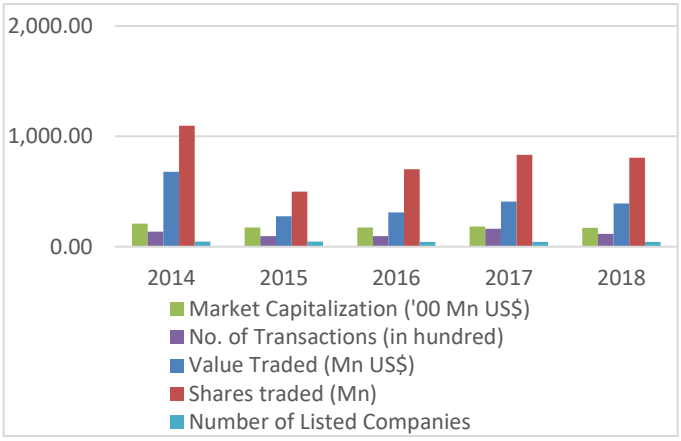


Figure 1.7: Bahrain Stock Exchange

Figure 1.7 shows that the stock exchange's market capitalization had decreased from 0.021 trillion USD in 2014 to 0.017 trillion USD in 2018. Further, the number of listed companies has decreased from 47 to 44, and the volume of shares traded has decreased from 11.097 billion to 0.806 billion in 2018.

As the market majorly consists of commercial banks, insurance facilities, and financial services, the global financial crisis of 2008 led to volatility and fluctuations in the stock prices, which hampers investors' confidence in the stock market. Thus, despite regular up-gradation in the trading system and liberalization of the investment policies, the investors have to bear the risk of volatility and uncertainty (Sharif et al., 2015).

1.3.5 Qatar Stock Exchange

With the significant growth in the economy of Qatar by an increase in the production of oil and gas, the diversification of the economy also began. As a result, a stock market named Doha Stock Exchange was established in 1997 with a listing of 18 companies. Qatar Financial Market Authority manages the stock market and makes it a safe place for investment for investors (Almujamed, 2018).

QE index shows that with the increase from 6,959.17 in 2009 to 9,024 points in 2018, the Qatar Stock Market ranked 2ndin terms of the index performance in the GCC region. Moreover, despite the lowest number of listed companies, i.e., 45, Qatar Stock Exchange ranks second in market capitalization after the Saudi Arabia Stock Exchange market. The below figure further shows the movement in the stock market from 2014 to 2018 (QSE, 2013, 2018).

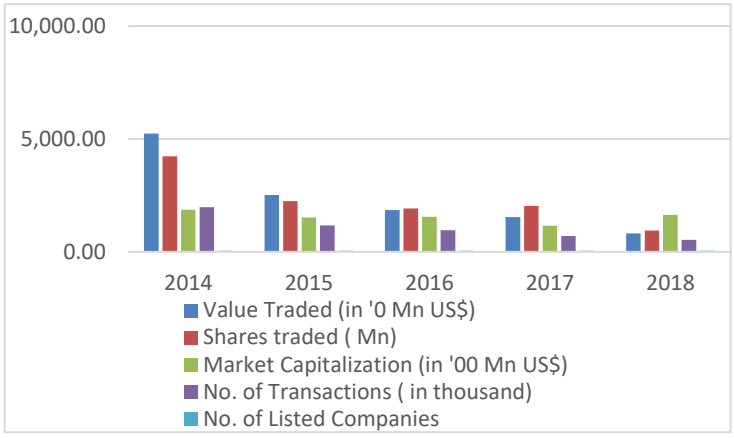


Figure 1.8: Qatar Stock Market

Figure 1.8 depicts that the market capitalization of the stock market has decreased from 0.186 trillion USD in 2014 to 0.163 trillion USD in 2018. The number of listed companies has further increased from 43 to 46, and the volume of shares decreased from