EFFECT OF SENTIMENT ON STOCK RETURNS: EVIDENCE FROM THE GULF COOPERATION COUNCIL STOCK MARKETS

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EFFECT OF SENTIMENT ON STOCK RETURNS: EVIDENCE FROM THE GULF COOPERATION COUNCIL STOCK MARKETS

by

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This work is dedicated to the memory of my late grandparents.

TABLE OF CONTENTS

CHAPTER 3 - LITERATURE REVIEW

CHAPTER 6- ANALYSIS OF RESULTS

CHAPTER 7 - DISCUSSION AND CONCLUSION

LIST OF TABLES

LIST OF FIGURES

KESAN SENTIMEN TERHADAP PULANGAN SAHAM: BUKTI DARIPADA PASARAN SAHAM MAJLIS KERJASAMA TELUK

ABSTRAK

Para penyelidik telah melaporkan pengaruh sentimen yang signifikan dalam banyak pasaran membangun dan maju. Oleh sebab akses yang terhad bagi pelabur asing, pasaran serantau GCC (Majlis Kerjasama Teluk) yang bernilai AS$900 bilion dolar ini telah gagal untuk menarik pelabur asing pada masa lalu. Pasaran ini tidak akan membangun sekiranya pelabur asing tidak berminat. Bagi tujuan menarik pelabur asing, pengaruh sentimen terhadap pasaran ini perlu dikaji dengan teliti. Objektif kajian ini adalah (i) untuk mengkaji pengaruh sentimen tempatan dalam pasaran saham GCC, (ii) untuk menentukan kesan ciri-ciri firm terhadap hubungan antara pulangan saham pasaran dengan sentimen, (iii) untuk mengenal pasti kesan asimetrik sentimen terhadap pulangan pasaran saham sebagai akibat kejutan sentimen, dan yang terakhir (iv) untuk meneliti pengaruh sentimen serantau dan global terhadap pasaran GCC. Teori prospek digunakan untuk menerangkan beberapa aspek tingkah laku para pelabur bawah keadaan ketidakpastian. Pasaran saham daripada enam negara GCC diambil kira dalam kajian ini. Tempoh kajian adalah dari bulan Januari 2004 hingga Disember 2017. Kajian mengambil kira lima proksi sentimen tidak langsung dan empat pembolehubah makroekonomi. Bagi tujuan penciptaan proksi sentimen dan untuk menganalisis data, PCA (Analisis Komponen Utama), pengasingan data berdasarkan ciri-ciri kukuh, dan analisis regresi (kedua-dua model ganda dua terkecil dan volatili) telah digunakan. Penemuan menunjukkan bahawa purata pergerakan dan jumlah perdagangan ialah proksi yang paling penting dalam semua pasaran untuk mendapatkan sentimen. Sebaliknya, tawaran awam awal bukan petunjuk yang baik

untuk mengesan sentimen pasaran. Hasil kajian menunjukkan bahawa terdapat pengaruh sentimen yang kuat dalam semua pasaran saham GCC, tetapi kesan asimetrik kejutan terhadap sentimen secara umumnya tidak wujud. Keputusan mendapati bahawa terdapat kesan sentimen positif pada bulan semasa, tetapi kesan negatif pada bulan berikutnya. Keputusan juga menunjukkan bahawa sentimen ialah fenomena keseluruhan pasaran dan ciri-ciri firma tidak penting dalam pasaran ini. Sentimen serantau mempunyai kesan yang kuat terhadap pasaran individu. Sentimen global tidak penting bagi pasaran ini. Walau bagaimanapun, indeks limpahan Diebold-Yilmaz menunjukkan bahawa terdapat limpahan sentimen daripada peristiwa dunia dan serantau ke dalam pasaran saham GCC individu. Oleh hal yang demikian dijangkakan akan ada lebih banyak kajian berkaitan aspek lain fenomena tingkah laku dalam pasaran GCC. Penemuan ini memberikan kesimpulan bahawa pasaran GCC tidak efisien tetapi terintegrasi dengan baik apabila melibatkan sentimen. Oleh hal yang demikian, masih terdapat ruang lingkup bagi pengurus dana global untuk mempelbagaikan risiko mereka dengan melabur dalam pasaran ini. Pengurus dana global mempunyai peluang yang baik untuk mempelbagaikan portfolio mereka memandangkan pasaran tersebut terasing daripada seluruh dunia. Hasil kajian dijangka dapat membantu para pelabur, pengawal selia dan pembuat dasar tempatan dan asing yang berkenaan untuk memahami pasaran ini dengan lebih baik. Pembuat dasar boleh memperkenalkan indeks sentimen masa sebenar bagi pasaran ini. Kesan utama teori kajian ini adalah untuk menyediakan bukti bahawa beberapa aspek teori prospek – seperti kesan pelupusan, kecenderungan tingkah laku dan kewujudan bias – dapat menjelaskan pulangan pasaran GCC.

EFFECT OF SENTIMENT ON STOCK RETURNS: EVIDENCE FROM THE GULF COOPERATION COUNCIL STOCK MARKETS

ABSTRACT

Researchers have reported a significant influence of sentiment in many developing and developed markets. Due to the limited access for foreign investors, the US$900-billion-dollar GCC (Gulf Cooperation Council) regional market has failed to attract foreign investors in the past. These cannot develop unless foreign investors are interested. To attract foreign investors, the influence of sentiment on these markets need to be investigated in details. The objectives of the study are (i) to identify the influence of local sentiment in the GCC stock market, (ii) to determine the effect of firm characteristics on the relationship between the stock returns and sentiment, (iii) to detect any asymmetric effect on stock returns with respect to a shock to sentiment, and finally (iv) to investigate the influence of regional and global sentiment on the GCC markets. Prospect theory is used to explain some of the behavioral aspects of investors under uncertainty. Six GCC countries' stock markets are considered. The period of study covers from January 2004 to December 2017. It considers five indirect sentiment proxies and four macroeconomic variables. For the creation of sentiment proxies and data analyses, PCA (Principal Component Analysis), sorting based on firm characteristics, and regression analysis (both least squares and volatility models) have been used. The findings of the study show that moving average and volume of trade are the most important proxies across the markets to capture sentiment. On the other hand, initial public offer is not a good indicator for detecting the market sentiment. The results showed a strong influence of sentiment in all the GCC stock markets, but the asymmetric effect of shock to sentiment is absent in general. Results find positive

sentiment effect in the current month, but negative effect in the following month. Results also show that sentiment is a market-wide phenomenon and the firm characteristics used in the study do not matter in these markets in general. Regional sentiment has strong impact on individual markets. Global sentiment is not important for these markets. However, Diebold-Yilmaz spillover index shows that there is spillover of sentiment from world and regional events to individual markets. More future research on other aspects of behavioral phenomena in the GCC markets is expected. The implications of the findings lead to conclude that the GCC markets are not efficient but well-integrated as far as sentiment is concerned. Thus, there is still scope for regional fund managers to diversify their risk by investing in these markets. The global fund managers have good opportunity to diversify their portfolios since these markets are segregated from the rest of the world. Findings are also expected to help the concerned regulators and policy makers to understand these markets better. Policy makers may introduce real-time sentiment index for these markets. The main theoretical implication of this study is providing evidence that some of the aspects of prospect theory – such as disposition effect, herding behavior and availability bias – can explain the returns of the GCC markets.

CHAPTER ONE

INTRODUCTION

1.0 Research background

An efficient market is a market where prices of securities fully reflect all available information. In an efficient market, stock prices should follow a random walk where stock price changes are random and unpredictable and only new information can cause security prices to change. In 1970, Eugene F. Fama introduced the concept of efficient market hypothesis in "Efficient Capital Markets: A Review of Theory and Empirical Work". He defines a market to be "informationally efficient" if stock prices at each moment reflect all available information about future values. Informational efficiency is a natural outcome of the presence of competition, relatively free entry, and low costs of information.

On the other side of the efficiency literature, there is a concept of inefficient market. In an inefficient market, stock prices are not determined rationally and price movements are predictable because available information is not fully and quickly reflected in the stock prices. Some of the well-known anomalies in the stock market are momentum effect (Jegadeesh and Titman, 1993), contrarian effect (DeBondt and Thaler, 1985), size premium (Banz, 1981) and value versus growth (Fama and French, 1998). As traditional finance failed to explain the phenomena mentioned above, behavioral finance – a branch of finance that mixes traditional finance with human psychology – flourished in the late 1980's (page xi, Thaler, 2005).

One of the ways to examine the impact of behavior on the stock market is to estimate market sentiment and its relation with stock returns. The term "sentiment" attributes to whether any agent possesses enormous negative or positive psychological influence. Previous studies in decision sciences provide evidence that the positive sentiment is the outcome of investors' extremely optimistic beliefs and vice versa (Arkes et al., 1988; Bower, 1981, 1991; Johnson and Tversky, 1983; Wright and Bower, 1992). In other words, overall psychological attitude toward the financial stock market is defined as investors' sentiment. Baker and Wurgler (2007) portray the sentiment as investors' belief and this belief is about their future cash flows and returns which cannot be justified by the real facts they currently have on their hand. There are many researchers who have given the opinion that sentiment should be considered as an important market-wide phenomenon and hence it cannot be overlooked (Stambaugh et al., 2012; Ho and Hung, 2009). Thus, the importance of sentiment on the stock markets cannot be ignored.

Sentiment can be rational or irrational. According to Verma and Verma (2007), the part of sentiment explained by fundamentals is referred to as rational sentiment, while the remaining part, which cannot be explained by fundamentals, is referred to as irrational sentiment. Sentiment may represent partially rational evaluation of the asset characteristics (Baker et al., 2008; Shleifer, 2000). In a market where irrational investors are able to influence stock prices, sentiment shows the gap between the asset valuation of retail investors' and that of arbitragers (Lee et al., 1991). In the finance literature, these retail investors are considered as unsophisticated, irrational, and individual investors. On the

other hand, arbitragers are referred to as rational, professional, institutional, and sophisticated investors (Bank and Brustbauer, 2014).

In order to understand sentiment in the stock market, two related concerns need to be addressed – the reason for the occurrence of sentiment and the reason why market cannot drive it away through market forces. The first concern is associated with the presence of noise traders. Noise traders are the traders who do the transactions based on incorrect subjective belief or information of little relevance to asset fundamental value. Black (1986) is one of the early academicians who explain the reasons of noise traders' irrational behavior in the market and how they get influenced by the market sentiment. Dorn et al. (2008) provide evidence that if noise traders are systematically and sufficiently correlated, they may distort stock prices.

Another reason for the occurrence of sentiment is related to how humans often use heuristics or rules of thumb to find an easy way to solve a problem at hand. In other words, people do not go for the required search that is needed to solve a problem. This is mainly a shortcut for solving time-consuming recurrent problems (Schwartz, p. 57, 2010). Shefrin (2002) considers sentiment as the reflection of heuristic-driven biases such as representativeness, availability, anchoring, overconfidence, loss and regret aversion, and mental accounting. That is, sentiment is the combined effect of various types of investor heuristics. Hence, the presence of aforesaid heuristics – or sentiment – creates a ground for the stock prices to go away from their true prices supported by fundamentals.

The second concern is related to the inability of the market to correct itself. In reality, rational investors are constrained by limits to arbitrage so that price correction becomes difficult (Barberis and Thaler, 2003). Hence, the effect of sentiment may prevail in the market at any given time. Irrational or individual investors (also known as retail investors) are more motivated to invest during the bull market (Grinblatt and Keloharju, 2001; Lamont and Thaler, 2003). Thus, the effect of sentiment may be higher in good time.

The occurrence and presence of sentiment and consequent effects on stock prices may be different for emerging and mature markets because these two markets behave dissimilarly in so many ways. Hassan et al. (2003) have characterized emerging and frontier markets by having low liquidity, infrequent trading, high presence of less-informed individual investors, presence of unreliable information and considerably higher stock return volatility. Baker and Wurgler (2006) report that due to the lack of information there is a higher possibility of the presence of sentiment for young, high- growth, and relatively small firms. Thus, if markets themselves are young and emerging – which is the case for the markets in the GCC – there should be even higher likelihood of the presence and influence of sentiment.

The GCC (Gulf Cooperation Council) market consists of seven individual stock markets, namely Abu Dhabi, Bahrain, Dubai, Kuwait, Oman, Qatar and Saudi Arabia.[1] Lahyani (2014) argues that the GCC markets are extremely auspicious emerging markets.

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[1] Qatar and UAE markets are now considered as emerging. Saudi market already fulfilled all the requirements for emerging status except market openness to the foreigners. Now this market is open to foreign institutional investors and expects to be upgraded to emerging status very soon.

However, the author opines that these GCC markets are different not only from developed markets but also from other emerging and frontier markets. These markets are considered different because these are largely segmented from the equity markets of the world and also these markets are highly sensitive to any political situation in the region. The author also points out that these markets are relatively new and small. There are few listed companies, most stocks are infrequently traded, and overall trading volume is low. Moreover, institutional investors in these markets may not be as sophisticated as those in the developed markets.

Ariss et al. (2011) says that short selling is either fully or partially restricted in many emerging and frontier stock markets, which makes these markets slow to correct mispricing of stocks. Lamont (2004) shows that in a market where short sale is allowed, arbitragers are able to make profits when stock price is too high to be explained by fundamentals. This selling pressure may help to bring stock prices to equilibrium.[2] Short selling is partially allowed in the GCC stock markets, which is supposed to contribute to the influence of sentiment. Moreover, there is a lack of availability of transparent information and professional financial analysts' services/recommendations, which makes these markets a good ground for sentiment-biased investment environment.

In the past, only the GCC countries' local investors were allowed to invest in these stock markets. The investors outside the GCC could invest only in the mutual funds for the

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[2] When a stock is overpriced, arbitragers may sell short, which result in strong selling pressure and an ultimate reduction in stock prices. Hence, short selling is very effective tool to make correction for overpriced stocks. However, this cannot help when a stock is underpriced.

GCC stocks. Now the situations have changed and the foreign investors can invest directly in the GCC stock markets (Bley and Chen, 2006). Despite the fact that the GCC market is now more open to foreign investors, this market is still dominated by irrational regional retail investors (Bley, 2011).

Since a detailed search has been unable to find any comprehensive research on these GCC markets related to sentiment-stock return relationship, it is better to mention some of the studies that report findings that may make these markets possible candidates for the presence and influence of sentiment. In the Saudi stock market – considering the capitalization – the largest market among the Arab countries, approximately 91% of trades consist of retail trades (KAMCO, 2015; Chowdhury et al., 2015). Herding – a behavioral phenomenon like sentiment – is also observed in a relatively recent research on the Saudi market (Rahman et al., 2015). Blasco et al. (2012) show in their results the presence of direct or indirect relationships between herding and sentiment. Hence, sentiment has a very high likelihood to be present in the GCC stock markets.

In the GCC stock markets, arbitrage mechanism of price correction simply did not exist in the past due to the prohibition of short selling (Hassan et al., 2003; Ariss et al. 2011). This increases the possibility of the influence of sentiment in these markets. That is, short-sale cannot be fully or partially used to correct over-priced stocks.

Recent opening up of the Saudi market to the foreigners and the emergence of Qatar and the UAE as emerging markets by Morgan Stanley Capital International (MSCI) are

two recent events that are crucial to motivate academicians and practitioners to pursue more future in-depth research on these markets. So there is a huge unexplored research potential as far as the GCC markets are concerned. The influence of sentiment in the developed markets and the likelihood of such in the GCC have widened the research gap manifolds.

In a nutshell, the GCC markets are in many ways different from the developed markets and it is quite logical. As the GCC markets belong to the category of "emerging" and "frontier" markets, they share common characteristics of the latter, which have already been mentioned above. Furthermore, these markets are unique as far as other emerging markets are concerned, mainly due to the high dependence on oil income, similar culture and heritage, and high intra-regional trades. In the backdrop of the emergence of behavioral finance, the peculiarity of the GCC markets and the interrelation between the GCC economies, this study investigates the GCC markets' relationship with their own, regional and global market sentiment.

In less than efficient markets with the phenomenon of limited arbitrage opportunity, firm characteristics could be important factors to influence the return-sentiment relationship. Several studies document a significant relationship between firm size, MV/BV and security returns (Fama and French, 1992; Barber and Lyon, 1997; Fama and French, 1993). Baker et al. (2012) report that sentiment and the future stock returns have negative relationship for small, high return volatility, and growth for both the U.S. and non-U.S. markets. Therefore, this study investigates how firm characteristics such as size, MV/BV and volatility can influence the sentiment-return relationship.

The finance theory that is closest to this study is prospect theory. This theory is best known as a choice method under risky situation. According to this theory, people are risk-averse in a situation of guaranteed gain but they become risk seekers in a situation when possibility of loss is high. Loss aversion is one of the most important features of prospect theory and the idea of this feature is that people are more sensitive to their losses than gains even though those losses are small, suggesting that they give more weight to losses than to gains. Zhang and Semmler (2009) find that stock returns' response to pessimism is much stronger than the response to optimism. Their finding is in line with the prospect theory, which suggests that investors are hurt more due to loss than they are happy due to gain of same amount. Therefore, this study examines the asymmetric effect of sentiment shocks (i.e., positive versus negative change in market sentiment) on the GCC stock returns in line with the prospect theory.

1.1 Problem statements

Sentiment is perceived to be one of the latest and most important sources for market inefficiency. A significant body of literature (mentioned above) has evolved that has examined the significance of the sentiment in developed as well as emerging markets. Most of the research on the GCC markets focuses on market efficiency and the ability of behavioral investment to explain efficiency has not yet been tested. Some of them can be discussed. Al Janabi et al. (2010) report that the GCC markets are effectively informationally efficient in regard with the changes of the gold prices and the oil price indexes. However, Jamaani and Roca (2015) find that the GCC stock markets are not individually and collectively weak-form efficient. For individual markets, current stock

prices can be forecasted using historical stock prices. Moreover, the changes in a GCC country's past stock prices can be used for forecasting another GCC country's future prices.

Masih et al. (2010) confirm that the GCC markets are dominated by less-informed individual investors (i.e., noise traders). For example, the Saudi market consists of approximately 91% retail traders (Chowdhury et al., 2015). The presence of noise traders and the absence of short selling (partial or completely) may contribute to sentiment in the GCC stock returns. This is a huge concern for potential foreign investors because they definitely do not want to be the prey of whims of less-informed noise traders.

Since the GCC markets are different from others, these markets provide an opportunity for regional and global portfolio diversification (Arouri and Fouquau, 2009). Fayyad and Daly (2010) show that the correlation between the GCC markets and the developed markets is very low. They report that correlation between Kuwait and the U.S. and the U.K. is approximately 0.12 and that between the UAE and latter two is approximately 0.24. Thus, there is a higher possibility that portfolio managers can make even better mean-variance portfolio with the inclusion of the GCC markets. And, of course, more research on the GCC markets needs to be done before these markets are included in a global investor's portfolio.

Although recently researchers have become very interested to work on sentiment, unfortunately US$900 billion dollar GCC markets fail to attract international researchers, academicians, and foreign investors as far as serious research is concerned. Most of the

studies on the GCC markets are related to oil prices – probably due to the high dependence of these economies on hydrocarbon revenues. The very limited access of international investors until recently is among the important possible reasons for the lack of attention. Now, as the markets have become open to the foreign investors, these investors definitely need to know these markets more thoroughly. Specially, behavioral aspects of the regional market are of prime interest mainly due to the strong presence of retail investors.

Two phenomena – the recent opening up of Saudi market to the foreigners and the emergence of Qatar and UAE as emerging markets (by MSCI) – demand more in-depth research on these markets. So, there is a huge research potential as far as the GCC stock markets are concerned. The influence of sentiment in the developed world and the likelihood of such in the GCC markets have widened the research gap manifolds.

The impact of behavior on stock prices may be different for different countries. For example, Williamson (2010) opines that cultural biases are developed by religious beliefs, languages, ethnicity and other factors that influence current behavior. In terms of culture, investors of the GCC markets are way different from those of the Western countries. Findings of other markets may not be applicable in the GCC countries. Hence, an in-depth study on the effect of sentiment in the GCC markets is interesting for both academicians and investors.

The role of sentiment-return relationship in the presence of firm characteristics such as firm size, volatility and market to book value ratio have not been tested in the GCC

markets. It is observed in developed and developing stock markets that these factors have some kind of influence on sentiment although the nature of their effect is debatable and the past studies have documented some contradictory findings (Hawawini and Keim, 1995; Brown, 1999).

Lahyani (2014) opines that the GCC markets are relatively new, have few listed companies with smaller size firms, and have low trading volume. As Baker and Wurgler (2006) say that the possibility of presence of sentiment is high in these markets due to these characteristics, the examinations of these factors on the GCC markets could provide valuable information regarding the practical implementation of the sentiment effect on abnormal stock returns and offer a clue on the underlying causes of sentiment.

The effect of asymmetric shocks to sentiment has been tested in developed and emerging markets (Chung et al., 2012; Yu and Yuan, 2011; Chen et al., 2013; Aydogan, 2017). The stylized fact in this regard is that a negative shock has a stronger effect on returns than a positive shock has. An investor needs to know if same kind of asymmetric effect is present in the GCC market. Especially, asymmetric shocks may have notable impact on the GCC stock markets during the oil price shocks in 2008-09 and 2014. Basher et al. (2017) examine the nonlinear relationship between stock returns and oil shocks in six major oil-exporting countries and report a significant presence of impact of shocks on the returns of Saudi Arabia, Kuwait and the UAE markets. A prospective foreign investor may be able to take a better investment decision if he knows the magnitude of the asymmetric effect.

In terms of trade, the economies in the Gulf region are highly inter-related (Al-Maamary et al., 2017). For example, the Saudi consumption in Bahrain is a very important factor for the Bahraini economy. But, the findings about the integration among these stock markets are still contradictory. Some researchers find these markets are highly integrated (Bley and Chen, 2006; Espinoza et al., 2011). However, Marashdeh and Shrestha (2010) report that the GCC markets do not completely behave in the same manner. Hammoudeh and Li (2008) find that most Arab markets respond strongly to any large global incidents than to their own, local or the regional incidents. Thus, there is a need to know how the markets in the region are integrated among themselves and with other stock markets in the world. Overall, this study on the impact of local, regional, and global sentiment should be able to tell the relative importance of these sentiment measures. Specially, it may contribute to the understanding of the investors, policy makers and regulators.

1.2 Research objectives

This study investigates the influence of sentiment in the GCC stock markets. The possible firm characteristics that could influence sentiment are also investigated. The role of investor sentiment has not yet been evaluated in the GCC markets. An investigation into this issue in these markets would provide crucial out-of-sample evidence. The objectives of this study are provided as follows.

1. To identify the influence of local sentiment in the individual GCC stock market.
2. To determine the effect of firm characteristics such as size, market-to-book value ratio and volatility on the relationship between the stock returns and sentiment.

3. To detect any asymmetric effect on stock returns with respect to positive or negative shock to sentiment.

4. To investigate the influence of regional and global sentiment on the GCC and individual stock market returns.

1.3 Research questions

The aforementioned unresolved issues and research potential show the path of the formulation of four research questions. The order of listing is not indicative of the relative importance of the questions but rather follows the sequence of analysis conducted in this thesis. The crucial research questions primarily focus on investor sentiment. Although sentiment has been documented to influence in the U.S., the relationship has not been investigated in non-U.S. markets such as the GCC. Psychology of investors in Asia – and more particularly Arab world – may differ from those in Western countries. Thus, it is interesting to examine sentiment in the GCC countries' stock markets. Following questions address this issue.

1. Is there any influence of local sentiment in the GCC individual stock markets?

2. How is sentiment related to the stock returns of portfolios constructed based on size, market-to-book value ratio and volatility?

3. Which asymmetric effect of sentiment, positive or negative, has more impact on the individual GCC stock market returns?

4. Which sentiment, regional or global, has stronger influence on the individual GCC stock market returns?

1.4 Significance of the study

This study is expected to offer a new insight within the existing research. Overall, there are two new contributions of this study to the extant literature. First is the theoretical contribution; this study introduces a regional sentiment index, which has not been used for any other regions (which may be comprised of independent but homogenous and related stock markets). Second is the practical contribution; this is the first time a comprehensive research is conducted to investigate the effect of sentiment on the under-focused yet highly potential GCC markets. This will pave the way for more future research on sentiment in the GCC markets. Details of these contributions are discussed below:

1.4.1 Theoretical contribution

As Baker et al. (2012) construct six local indices and a global index from six major stock markets, this study constructs the global and local sentiment indices same way they did. Additionally, this study constructs a regional sentiment index by combining the sentiment indices of six GCC countries' stock markets. For constructing the global index, ten influential (eight developed and two emerging stock) are considered and from these total sentiment indexes a single global index is created. For regional index, it is constructed considering six GCC markets the way it is done for global index with six countries in Baker et al. (2012). This regional sentiment measure should be very relevant due to the high inter-relationship among the GCC economies. If this regional sentiment index is able to predict future returns for the GCC markets, then similar sentiment index can be created and used for other (geographic as well as economic) regions.

1.4.2 Practical contribution

According to the previous literature, the possibility of the presence of sentiment in the emerging and frontier market is very high. For example, Rehman (2013), Anusakumar et al. (2012), Chi et al. (2012), and Grigaliuniene and Cibulskiene (2010) find the presence of sentiment for the stock market of Pakistan, Asian emerging markets, Taiwan, and Greece, respectively. The majority of the GCC stock markets are considered as frontier (two of them are emerging). Recently, Qatar and the UAE market have been included in the emerging stock market category and Saudi Arabia is expected to be upgraded to be an emerging market as soon as it fulfills the last requirement for the upgrade – the opening of the market to the foreign investors.

As discussed above, it is expected that sentiment is present in these markets. Although researchers have been working on the effect of investor sentiment on developed, emerging, and frontier markets for the past twenty years, surprisingly the GCC stock markets got very little attention. As far as the GCC markets are concerned, international investors' and researchers' little attention in the literature makes it a good case to work on the influence of investor sentiment in these markets.

These markets cannot develop unless foreign investors are interested. Their interest definitely depends on the level of liberalization, openness and the understanding of these markets. A study on the sentiment of the GCC markets surely will help them in this regard. These markets are dominated by less-informed retail investors. Thus, the GCC markets give us (academicians) a unique opportunity to test the influence of sentiment where retail

investors are heavily involved in trading. This study should fill out the research gap in this regard. Potential local, regional and especially foreign investors should feel more confident to invest in these markets and hence more foreign capital will be attracted in future.

The impact of local, regional, global and combined investor sentiment on the GCC stock markets is investigated. According to Bley (2011) and Lahyani (2014), the GCC countries have many common features: (i) prevalence of young growing firms, (ii) high presence of less informed investors and less availability of reliable market information, (iii) similar risk-return relationship, (iv) oil dependency and (v) recent open access to the international investors. These markets not only have common features but also are inter-related. For example, Saudi consumption in Bahrain is the biggest factor for the Bahraini economy. Dubai is a trade and tourism based economy, which is heavily dependent on the neighboring economies. The surplus of the Saudi Arabia, Qatar and Kuwait – all oil dependent rich economies – has direct impact on others in the region. Thus, this study is appropriate and timely. The correlation between the Gulf stock markets and the developed markets is low (Fayyad and Daly, 2010). Therefore, there is a higher possibility that a portfolio manager can achieve even better diversification benefits with the inclusion of the GCC markets. Obviously, this is an important consideration for global portfolio managers.

Policy makers definitely need to know the effect of sentiment on the stock (sentiment's impact on the stock) markets of the region. Their upgrade to emerging markets is related to their future performance and the influence of sentiment could be an important consideration for sure. Some of the measures of sentiment such as TRIN (Traders' Index)

can be provided to the traders real-time. This study should be able to tell how the market

can be made less susceptible to sentiment by providing related data in due time.

Finally, sentiment has important implications for regulators. A quantifiable

measure of sentiment can help regulators and policy makers to make appropriate and timely

interventions and policy changes. Specially, this is important for the Saudi market since it

opened to the foreign investors about a couple of years ago and this market is the key to

attract these investors to the region as a whole. As a spillover effect, investors will be

attracted not only to the Saudi market, but also to the GCC market as a whole. Appropriate

handling of sentiment may stop another episode of disaster that happened to Saudi Arabia

in 2006.

1.5 Organization of thesis

The rest of the study is designed as follows: Chapter 2 provides a brief review of

the GCC economies and their stock markets. Chapter 3 is designed for the discussion of

relevant prior studies related to this study. The hypotheses to be tested in this study along

with the justification are discussed in chapter 4. Chapter 5 discusses the data and

methodology. Chapter 6 presents the empirical results of the study. Chapter 7 concludes

the study by discussing the results, implications, future research, and limitations of it.

CHAPTER TWO

A BRIEF REVIEW OF THE GCC ECONOMIES AND STOCK MARKETS

2.0 Introduction

The GCC is comprised of six independent countries – Bahrain, Kuwait, Oman, Saudi Arabia, Qatar and UAE (United Arab Emirates) and started its journey in 1981. The aim of this council was to promote coordination, integration, inter-connection among the member countries in every field of economic activities to achieve balanced and sustainable economic and social growth (Alharbi, 2009; IMF, 2013). Every member country of the GCC has one stock exchange except the UAE which has two stock exchanges: one in Abu Dhabi and the other one in Dubai. This section provides information regarding the individual GCC economies and their stock markets. Emphasis has been given on the information for the period 2004-2017 since this period is the main focus of this study.

2.1 GCC economy

This is an oil-based region with the largest proven crude oil reserves in the world with 486.8 billion barrels. This oil reserve accounts for 35.7% of the world's total reserves and 52% of the total OPEC (Organization of the Petroleum Exporting Countries) oil reserves and 49% of the total OPEC crude oil production (Abrantes, 2014). Consequently, this region plays an important role in the world economy in general as the largest producer and exporter of petroleum. This council has successfully achieved an unprecedented economic and social transformation in the past three decades with the help of oil revenues. This sub-section discusses the demography and economy of the GCC members.

2.1.1 The demography of the GCC countries

Table 2.1 provides us the information about the area, population, and the population density of the GCC countries. Regarding the region, Saudi Arabia is the largest country followed by Oman. Although Bahrain is the smallest among all countries, its population density is the highest in the region. On the other hand, Oman has the least population density among all countries. Interestingly GCC countries except Saudi Arabia and Oman have more foreigners than their own citizens.

Table 2.1 Area (km^2), Population and its density (Person/ km^2) of the GCC countries

Country	Area	Population (million, 2017)	% in total population		Population density
			Nationals	Non-nationals	
Bahrain	771	1.42	46.70	53.30	1,847
Kuwait	17,818	4.41	30.30	69.70	248
Oman	309,500	4.60	54.10	45.90	15
Qatar	11,627	2.67	14.30	85.70	230
Saudi Arabia	2,000,000	31.74	63.20	36.80	16
UAE	71,024	8.26	11.50	88.50	116
GCC	2,410,740	53.11	49.40	50.60	22

Source: gulfmigration.eu, GCCstat.com

2.1.2 The influence of oil on the GCC economies

The GCC is a geographical region with the largest proven crude oil reserve in the world. Thus, this region plays a leading role in the world in general as the largest producer and exporter of petroleum. This region enjoyed a spectacular economic boom that tripled its economy to $ 1.1 trillion during 2002-2008 period. The GCC region's oil and gas sector provides approximately 73% of total export earnings, which is roughly 63% of government's revenues and 41% of its GDP (Mutum et al., 2016).

The oil market has been significantly volatile since the middle of 2014. Crude oil price reached an all-time-high of $151.72 a barrel in July 2008 but price plunged thereafter and it touched $26.19 in February, 2016 which is the lowest in last 15 years. As of last day of December 2017, the oil price is hovering around $60.46 a barrel. In figure 2.1, daily oil price has been considered from January 2004 to December 2017 to show crude oil price movements in the global market.

Data Source: FRED Economic Data

Figure 2.1 Daily crude oil price movement (2004-2017)

2.1.3 Gross domestic product (GDP) per capita of the GCC countries

Table 2.2 reports the GDP per capita for individual countries. Qatar is the richest country in the GCC. In 2017, its per capita of $66,246.81 is in fact much higher than the next closest of $39,482.40 of the UAE. In the same year, Oman has the lowest GDP per capita of $19,395.18. Saudi Arabia has the second lowest GDP per capita of $22,657.89, although in terms of the size of the economy, it has the largest economy in the region. The

IMF estimations for all these countries' GDP per capita for the year 2020 are higher than current years' (2017) GDP per capita although the projected growth seems to be slow for the region.

Table 2.2 GDP per capita for the GCC countries at current prices (US $ in million)

Year	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
2004	15,960.53	21,585.56	9,312.26	44,051.66	11,467.10	39,304.51
2005	17,962.34	27,014.77	11,525.26	54,228.83	14,068.22	43,988.67
2006	19,263.41	31,907.20	13,535.93	62,920.65	15,603.99	44,313.59
2007	20,903.82	33,732.52	14,952.44	69,166.96	16,666.63	41,472.29
2008	23,231.04	42,827.13	21,272.15	74,189.29	20,157.30	39,074.84
2009	19,461.09	30,414.74	16,203.97	59,935.45	16,094.68	30,920.45
2010	20,823.22	32,216.41	19,698.23	76,413.20	19,112.69	34,611.96
2011	24,299.03	41,830.52	22,622.78	99,431.46	23,593.83	40,817.40
2012	25,227.12	45,992.90	22,922.61	103,605.55	25,139.00	42,591.17
2013	26,456.19	45,202.08	21,422.56	98,709.95	24,815.93	42,874.60
2014	26,686.27	43,005.43	20,923.75	93,990.41	24,498.62	42,943.78
2015	24,057.58	27,756.41	18,186.31	68,004.02	21,013.58	38,649.91
2016	24,182.90	26,004.71	15,963.98	60,786.72	20,150.13	37,677.91
2017	25,203.56	29,880.15	19,395.18	66,246.81	22,657.89	39,482.40
2018[*]	26,009.81	30,206.12	17,978.56	70,797.71	22,411.01	41,772.31
2019[*]	26,299.92	31,139.01	18,183.36	73,950.05	22,650.66	42,661.02
2020[*]	26,748.50	32,238.51	18,461.76	77,428.36	22,874.12	43,759.80
2021[*]	27,238.46	33,480.51	19,725.01	81,055.46	23,307.18	44,868.93

Note: [*] estimated value
Source: International Monetary Fund

2.1.4 Trade among the GCC countries

The GCC agreed to launch the free trade zone in 1983. During the 1983-2002 period, the GCC intra-trade jumped from $6 billion to $15.2 billion (Al-Mawali, 2015). The GCC economies started reaping the benefits of the economic integration after the

enforcement of customs union in 2003. During the period 2002-2005, the GCC intra-trade went up from $15.2 billion to over $33 billion. Table 2.3 provides intra-regional trade among the GCC countries in 2000 and 2013. In 2013, the total intra-regional trade reached over $95 billion. Among all the countries, the trade growth of Qatar is the most phenomenal – about 20 times in just 13 years. However, since this region's economic structure is very identical, these countries do most of the trading activities with the non-GCC countries.

Table 2.3 Intra-regional trade among the GCC countries, 2000 and 2013 ($ in millions)

Country	Year	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Bahrain	2000	-	80.25	40.28	58.77	1268.09	243.66
	2013	-	279.16	385.55	456.4	5050.85	1267.04
Kuwait	2000	80.25	-	50.48	27.76	719.13	397.76
	2013	279.16	-	777.67	1,481.28	2,629.5	1,692.18
Oman	2000	40.28	50.48	-	24.35	242.3	1,487.86
	2013	385.55	777.67	-	1570.68	4,623.43	15,689.37
Qatar	2000	58.77	27.76	24.35	-	276.32	320.54
	2013	456.4	1,481.28	1,570.68	-	2,454.39	8,381.36
Saudi	2000	1,268.09	719.13	242.3	276.32	-	1,508.95
Arabia	2013	5,050.85	2,629.5	4,623.43	2,454.39	-	8,141.18
UAE	2000	243.66	397.76	1,487.86	320.54	1,508.95	-
	2013	1,267.04	1,692.18	15,689.37	8,381.36	8,141.18	-
Total	2000	1,632.28	1,247.62	1,820.92	707.74	3,738.47	3,638.23
	2013	6,982.60	5,378.51	21,476.02	14,344.11	20,444.96	26,789.77

Note: This table was collected from http://studies.aljazeera.net/en/dossiers/2015/03/20153316186783839.html.

2.1.5 Traditional GDP growth versus oil GDP growth in the region

Oil sector is the main driver of the GCC economies. Since last few years' (2014-2016) oil price decline, the GCC regional GDP growth also declined. The expected decline of growth in 2015 and in 2016 were 4.4% and 3.2%, respectively. The GCC region's GDP growth is so much influenced by the revenues from the oil sector that non-oil sectors have been somewhat ignored.

Although the GCC maintained healthy positive fiscal balance during 2010-2015, it is expected that the GCC will have a fiscal deficit in 2017 (fiscal balance of -6.90%) due to the reduction in oil revenues. According to IMF estimation, the GCC non-oil GDP growth is expected to drop from 3.8% to 1.8% from 2015 to 2016 and it will again go up to 3.1% in 2017. The real GDP growth is expected to slow down to 0.5% in 2017 from 2.2% in 2016 because of the lower oil output. Table 2.4 shows the GDP growth and oil GDP growth for the period 2009-2017.

Table 2.4 Oil GDP and Non-oil GDP growth, 2009-2017

Indicators	2009	2010	2011	2012	2013	2014	2015	2016[*]	2017[*]
Real GDP Growth (%)	1.00	6.40	7.70	6.40	4.10	4.20	4.40	2.20	0.50
Oil GDP Growth (%)	-6.10	4.40	10.20	5.40	0.90	0.40	0.60	1.00	1.00
Non-Oil GDP Growth (%)	3.90	6.30	6.60	5.20	5.40	5.40	3.80	1.80	3.10
Current Account Bal. (% of GDP)	6.60	12.40	23.60	240	20.20	18.30	15.60	5.40	1.76
Fiscal Balance (% of GDP)	-0.60	3.60	11.60	13.80	9.90	3.10	-9.40	-9.80	-6.90

Note: [*] is the estimated value by IMF
Source: imf.org

2.1.6 Inflation in the GCC

For a long period of time the inflation in the GCC countries has been very stable and low. Inflation rate was very mild -- especially from 2001 until 2004, but the situation started to change after 2004. In 2008, this region faced a strong inflationary pressure for the first time (table 2.5). Qatar had high inflation starting from 2006 and continued until 2008, with the highest 15.2% in the same year but had negative inflation rate for the following two years. In 2009 and afterwards, all the GCC countries were able to bring

down their inflation to a reasonable level. According to Kandil and Morsy (2009), some of the major reasons for the pressure of relatively higher inflation were the depreciation of U.S. dollar against other major currencies, own monetary policy, fixed exchange rates, lower interest rates, demand and supply imbalances in goods and services, excess liquidity and high spending.

Table 2.5 Inflation in the GCC countries, 2004-2017

Country	Saudi Arabia	UAE	Qatar	Kuwait	Oman	Bahrain
2004	0.32	5.04	6.90	1.26	0.76	2.25
2005	0.54	6.20	8.80	4.12	1.86	2.62
2006	1.93	9.29	11.90	3.10	3.20	2.04
2007	5.04	11.13	13.60	5.47	5.89	3.25
2008	6.10	12.25	15.20	6.30	12.56	3.53
2009	4.15	1.56	-4.90	4.61	3.54	2.79
2010	3.80	0.88	-2.40	4.50	3.26	1.97
2011	3.75	0.88	1.90	4.91	4.03	-0.37
2012	2.86	0.67	1.90	3.20	2.94	2.77
2013	3.51	1.10	3.10	2.70	1.25	3.30
2014	2.69	2.35	3.32	2.94	1.01	2.65
2015	2.39	4.07	1.68	3.40	0.18	1.84
2016	2.00	1.80	2.70	3.20	1.10	2.80
2017	-0.90	2.00	0.40	1.50	1.60	1.40

Source: imf.org and knoema.com

2.2 The GCC stock markets

The individual financial sectors of the GCC are solid, but not very sophisticated simply because businesses are mostly financed through bank lending rather than through traditional financial securities such as bonds and stocks and these banks always rely on government support in case of liquidity crisis (Hertog, 2012). Because of such dominance of the GCC banking sector companies cannot really reap the benefits from the alternative