



Macroeconomic Variables and Islamic Bank Stock Returns: Panel Data Evidence From GCC Countries

Abdesslam Menacer^{a*}, Saheed Adebowale Nurein^b

^a*Universiti Utara Malaysia, Islamic Business School, Islamic Finance and Banking Othman Yeop Abdullah Graduate School of Business, 06010 UUM Sintok, Kedah Darul Aman, Malaysia*

^b*Universiti Malaysia Perlis, School of Business Innovation and Technopreneurship, Centre for Graduate Studies, 01000 Kangar, Perlis, Malaysia*

**Corresponding author: menacer.abd85@hotmail.fr*

Abstract

The study provides an empirical evidence of the relationship between macroeconomic variables and bank stock returns in the context of GCC countries using a panel data approach. The data for this study is retrieved from the DataStream World Bank Data archive. The data of 66 banks for the period 2005-2014 was examined using GLS estimation for the analysis. The findings revealed that there is a statistically positive relationship between macroeconomic variables and Islamic bank returns. The positive relationship implies that most banks in the GCC countries engage in numerous off-balance sheet transactions and implement efficient and effective methods of risk management, which reduces their exposure to changes in macroeconomic variables.

Keywords: Macroeconomic, money supply, interest, inflation, exchange.

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1. Introduction

One of the essential areas in finance and economics is the stock market; and the attempt in predicting its performance have attracted considerable research attention from various economic and financial analysts. Essentially, supply and demand determines the price of a stock (Al-Shubiri, 2010). The number of shares issued by a firm creates supply of stock, while the number of people who wish to buy the shares creates the demand. In this case, sellers and buyers assess information relating to a company, industry, business environment, as well as their own goals of investment (Palepu, Healy and Peek, 2008; NYSE, 2006). The first thing to consider when making decision on buying or selling a stock is the financial health of the company. Cash flow analysis, ratio analysis and strategy analysis are key liquidity determinants to evaluating the financial health of a firm considering its previous, current and future performances (Palepu et al., 2008). Another essential factor that is considered in firm evaluation is the industrial performance (Palepu et al., 2008). When an industry is declining in growth, investors may wonder why the firm is not growing even when it is financially healthy. Adding to the specific industry or firm characteristics, general trends signifying fluctuations in the overall political and macroeconomic environment will be carefully monitored by the investors. These signals can indicate the soundness and stability of the economy (NYSE, 2006). There are numerous studies that evaluate the link between stock performance and these variables over diverse time horizons (Mollick and Assefa, 2013; Abugri, 2006; Asprem, 1989). This present study concentrates on how stock return of banks is affected by some of these macroeconomic variables specifically money supply, inflation rate, interest rate, and foreign exchange rate.

Previous studies have shown that some important factors determine stock return, however there are inconclusive evidences in this regard (Foong et al., 2012). Two theories that are commonly used to explain the nature of stock return are the arbitrage pricing theory (APT) and capital asset pricing model (CAPM). Both theories stipulate an association between risk and expected return. The assumptions of CAPM, for instance the use of market return as the determinant of stock return fluctuations has been severally criticised (Foong et al, 2012). This deficiency shows that CAPM is less efficient in explaining

the price of risky asset. Butt, Rehman, Khan, and Safwan (2010) argued that numerous significant factors explain stock returns fluctuation better than a single market factor. Thus, APT is an alternative multifactor asset pricing model that can be applied to ascertain the variation in stock return. In formulating the APT, the assumption of Ross (1976) is that the uncertainty in return of assets was due to common firm-specific factors and macroeconomic factors. However, Opfer and Bessler (2004) found that APT was generated with a limited number of economic factors or variables.

According to Ihsan et al. (2007), the general understanding is that systematic financial and economic news influence stock return. In addition, Butt et al. (2010) also stressed that a number of various direct or indirect factors that predict a significant part of stock returns have influence on stock returns. The Gulf Cooperation Council (GCC) countries formulate similar regulations in terms of administration, legislation, religion, tourism, customs, trade, and finance; but diverse in terms of level of size, historical background, resource endowment and economic development. They are all market-based and among the fastest growing economies in the world with a high level of oil and natural gas export dependency and economic integration that is rationalized through a “Common Market” (Arab Times, 2008; The Peninsula, 2015). Therefore, the economic performance of these countries is significantly sensitive to the developments within and outside their borders. When the economies of these countries slows down, it may affect the performance of stock markets in this cooperation (Foong et al., 2012).

Most economist and financial analysts conclude that banks costs, revenues and profitability are directly affected by the unanticipated changes in macroeconomic variables (Choi and Yoon, 2015; Chude and Chude, 2013 Kasman et al., 2011; Saunders and Yourougou, 1990). Due to globalization and liberalization which leads to volatility of the financial market, most banks that typically perform their operations overseas usually face exposure to these macroeconomic factors. Thus, changes in macroeconomic variables could have a negative influence on the banks viability if such influence cannot be removed through methods of risk management (Gilkenon and Smith, 1992).

The exposure of banking institutions to changes in macroeconomic variables can be reduced through implementation of effective and efficient methods of risk management and involving in numerous off-balance sheet transactions (Kasman et al., 2011). However, the financial institutions in the developing countries seems more vulnerable resulting in a more severe financial crises apparently due to their relatively underdeveloped financial system. Therefore, it is imperative and worthy to examine the effect of macroeconomic variables on the stock return of banks in GCC countries since most of the countries under this cooperation are developing countries. It is envisaged that the findings from this study can have significant effects on policy formulation and financial stability of banks and regulatory authorities in GCC countries.

In spite of the clear necessity to understand the influence of macroeconomic variables on the stock return of banks, only limited studies examined overtly the influence of macroeconomic variables on stock returns of banks and their volatility in the case of developing markets (Adam and Tweneboah, 2008; Al-Sharkas, 2004; Maysami et al., 2004). This is in a stark contrast to numerous researches on this problem in the context of the developed markets (Choi and Jen, 1991; Laurenceson, 2002; Gunsel and Cukur, 2007; Humpe and Macmillan, 2007). Therefore, this study contributes to the literatures on Islamic banking and finance in many ways. Firstly, it provides a new evidence on influence of macroeconomic variables on Islamic banks returns. Secondly, it also proffers a new proof of the relationship between macroeconomic variables and Islamic banks returns in the context of GCC countries. This is of interest because of the increased economic cooperation in accordance with the GCC agreement, the successful financial reform, and the distinguished structure of their stock markets. Thirdly, this paper uses a panel data approach through GLS estimation which allows for examining the model devoid of unobservable heterogeneity.

2. Literature Review

2.1 Money supply and Bank stock returns

Money supply is the aggregate quantity of money accessible in an economy. In an economy that apply the restrictive monetary approach, reducing the growth level of money supply will lead to reduction in the supply of fund and expansion of businesses. A restrictive monetary approach increases market interest rate and cost of capital for firms (Foong et al., 2012; Chude and Chude, 2013; Choi and Yoon, 2015). However, a reduction in money supply may reduce inflation rate, which then result in lower expected rate

of return through the reduction in interest rate (Foong et al., 2012; Chude and Chude, 2013; Choi and Yoon, 2015).

Financial scholars and economist are highly determined to know whether stock return is affected by money supply, and many studies have proven that it does (Keran, 1971; Pesando, 1974, Chen et al., 1986; Fama, 1991; Arestis and Demetriades, 1997; Priestly, 1996; Choudhry, 1999; Omole, 1999; Cassola and Morano, 2004; Van Nieuwerburgh et al., 2005; Gan et al., 2006; Ikoku, 2007; Gay, Jr., 2008; Maku and Atanda, 2009; Osisanwo and Atanda, 2012). Any changes in money supply has a close relationship with stock price fluctuation, a direct influence on stock market, and an indirect influence on bond market based on the adjustment of interest rates (Choi and Yoon, 2015). When the decrease in real interest rates is as a result of the increase in money supply, investors will anticipate an increase in stock returns (Chude and Chude, 2013). However, stock prices will be affected negatively when money supply increases excessively because it could induce inflation. Therefore, the stock market volatility can be increased by money supply (Choi and Yoon, 2015).

Some studies found a negative relationship between money supply and bank stock returns (Maghayereh, 2002; Humpe and Macmillan, 2007; Abugri, 2008), while some other studies found a positive relationship (Muradoglu and Metin, 1996; Al-Sharkas, 2004; Maysami et al., 2004; Širuček, 2013), and some studies found no relationship (Muradoglu et al., 2001; Ozbay, 2009; Choi and Yoon, 2015). Based on these various findings, there are mixed results on the relationship and the nature of relationship between money supply and bank stock returns.

2.2 Interest rate and Bank stock returns

Interest rate is the price a borrower needs to pay or the time value of money that banks pay to the fund depositors. Interest rate is used to control the investment, inflation and unemployment as well as a monetary policy tool. For some years now, the globalization and liberalization of financial markets has triggered exposure to many sources of risk (Cheng, Tzeng and Kang, 2011). The influence of interest rate and money supply on banks' stock returns has been of main concern to regulatory authorities, bank managers, investors and academic communities. The failure of numerous banks has been specifically attributed to the adverse influence of the fluctuations in interest rates (Kasman, Vardar and Tunc, 2011; Elyasiani and Mansur, 2003).

Several hypotheses and models can theoretically explain the influence of changes in interest rate and exchange rate on bank stock returns (Kasman et al., 2011). Primarily, based on Merton's (1973) Intertemporal capital asset pricing model (ICAPM), interest rate risk can be included in ICAPM as a possible additional market factor, given that a change in the interest rate can signify a change in the set of investment opportunity. As a result of this, investors need extra compensation for risks bearing due to these changes. Similarly, the APT provides that a number of factors such as interest rate and exchange rate are included in determining banks stocks' equilibrium price (Sweeney and Warga, 1986). This is because interest rate and exchange rate sensitivities exert a significant impact on the common stocks of financial institutions including banks (Kasman et al., 2011; Yourougou, 1990).

Some authors also explain the sensitivity of banks' interest rate on stock return based on the arrangement of their balance sheet by using the nominal contracting hypothesis (Bach and Ando, 1957; Flannery and James, 1984; French et al., 1983; Kessel, 1956). This hypothesis indicates that the sensitivity of banks' interest rate on stock return is determined by the number of net nominal assets the bank held (Kasman et al., 2011). Banks common stock returns are affected by the effect of wealth distribution triggered by unexpected inflation when banks hold nominal assets and nominal liabilities (Kasman et al., 2011). However, since most financial institutions have not complete the process of internalization, there is high probability that interest rate sensitivity is different among banks. Thus, the financial operations and nationality of banks may likely influence the degree of the differences.

In addition, this has been proven by some authors that used the two-index model (i.e. both the market and the interest rate factor) suggested by Stone (1974) to examine the bank equity returns based on the hypothesis of constant variance error term (Lloyd and Shick, 1977; Chance and Lane, 1980; Lyng and Zumwalt, 1980; Flannery and James, 1984; Booth and Officer, 1985; Scott and Peterson, 1986; Bae, 1990). While some authors find that the index of interest rate has a little contribution to the process of generating stock returns of financial institutions (Lloyd and Shick, 1977; Chance and Lane, 1980), some other authors (Lyng and Zumwalt, 1980; Flannery and James, 1984; Booth and Officer, 1985; Scott and Peterson, 1986; Bae, 1990) uniformly find that the index of interest rate does no contribute to the process

of generating stock returns of financial institutions. According to Akella and Chen (1990), these dissimilarities in results can be traced to the variations in sample period and interest rate variables, structural changes in the banking sector, and / or model specification.

However, empirical studies provided that there are substantial evidences for banks' stock returns exhibiting statistically significant negative relationship with interest rates variations (Fama, 1981; Geske and Roll, 1983; Flannery and James, 1984; Brewer and Lee, 1986; Scott and Peterson, 1986; Kane and Unal, 1988; Saunders and Yourougou, 1990; Kwan, 1991; Akella and Greenbaum, 1992; Choi et al., 1992; Al-Sharkas, 2004; Maysami et al., 2004; Abugri, 2008; Ozturk, 2008; Adam and Tweneboah, 2008). Ozbay (2009) argued that there are plausible reasons for hypothesizing a negative relationship between interest rates and stock returns. One of it is that an investor perceives a discount rate as an expected rate of return (Stowe et al., 2007). As the main interest rates is adjusted by the government, the risk-free rate changes. Any increase in interest rate leads to increase in risk-free rate, which would then result in higher market rate. With all things being equal, the expected stock price should fall because of the increase in the expected return. On the other hand, if there is a fall in interest rates, the expected stock price should increase due to the drop in the expected rate of return. Moreover, the expected rate of return increases when there is increase in risk premium.

Furthermore, interest rates influence banks' operations. If interest rate increases, *ceteris paribus* the cost of capital will be higher. Thus, there is the need for a bank to intensify efforts in a higher interest economy to achieve higher returns. It is also expected that the negative relationship between interest rates and market returns should be through either the effect of discount factor or inflation (Choi and Jen, 1991; Humpe and Macmillan, 2007). It has been proven that most study on interest rate and bank stock return is consistent with the theory as the studies for both developed and emerging markets report negative relationship between stock returns and interest rate.

2.3 Inflation rate and Bank stock returns

The presence of inflation in an economy increases the value of the contingent claims. Therefore, the proportionate increases in prices should not affect the actual rate of equity returns. However, Hong (1977) stressed that the monetary assets of a firm such as cash, debt, securities and receivables are independent of changes in the level of price. Hence, changes in inflation only affects the actual part of the firm.

Surprisingly, studies have shown evidence of a negative relationship between nominal stock return and inflation (Fama and Schwert, 1977; Gultekin, 1983). According to Fama (1981), this negative relationship can be explained through two channels. Firstly, the negative inflation –real activity induced the relationship through the money demand theory and the quantity theory of money. Stock returns have positive relationship with real variables such as output and expenditure as elucidated in the finance theory. Secondly, nominal risk-free rate and discount rate may increase through increase in inflation. This will then decrease stock price which may be regarded as the discounted value of the estimated dividends.

There are mixed findings regarding the impact of inflation on stock returns. The study of Hoguet (2008) found a negative correlation between stock return and inflation, indicating that higher inflation rate reduces expected growth earnings and increases required real rates of returns. While some studies found negative relationship (Maghayereh, 2002; Al-Sharkas, 2004; Nishat and Shaheen, 2004), some others found positive correlation between inflation and stock returns (Firth, 1979; Maysami et al., 2004; Adam and Tweneboah, 2008). Moreover, some set of studies also found insignificant relationship between stock returns and inflation (Ozturk, 2008; Tursoy et al., 2008).

2.4 Foreign exchange rate and Bank stock returns

The enormous rises in liberalization of capital movements and globalization of trade have position currency value as a determinant factor influencing equity prices and profitability of business (Kim, 2003). The international competitiveness of firms is affected by the fluctuations of exchange rate. It influences firm value since currency values fluctuations leads to the change in future cash flows. The theory of economy suggests that exchange rates fluctuations will lead to change in profitability and investments, reflecting in the financial performance. As a result of this, stock returns are affected by movements in the firm's operations (Agrawal, Srivastav and Srivastava, 2010). This has been proven by previous and often referred research of Dornbusch and Fisher (1980) using a flow oriented model. They stress that the future cash flows, competitiveness and exports of local firms improves when there is depreciation in the value of the local currency. This will lead to increase in prices of stock, as a reaction to the increase in anticipated

cash flows. On the other hand, the foreign demand of exporting firms decreases when the local currency appreciates (Cheng et al., 2011; Solnik and McLeavey, 2009). This decreases the stock return as well as the profitability. Meanwhile, for a firm that deals in importation its firm value sensitivity to changes in currency is in contrary (Yau and Nieh, 2006).

The volatility of exchange rate can influence both the stock returns of domestic and international firms (Agrawal et al., 2010). Local firms with no international operations, transactions, assets and liabilities also face the exposure to changes in exchange rate since the price channels of their input and output, chains of demand and supply or the competitors prices may be influenced by changes in exchange rate. Grammatikos et al. (1986) and Chamberlain et al. (1997) were the initial studies that focused specifically on the exposure of foreign exchange rate on banks' stock return. Their findings showed that foreign exchange exposure influences US banks' returns. Chamberlin et al. (1997) relate the sensitivities of exchange rate of Japanese banks with US banks through the use of both monthly and daily data. They revealed that a significant part of the stock returns of US banks seemed to be sensitive to the changes in exchange rate; while only a smaller number of stock returns of Japanese banks are sensitive to changes in exchange rate.

Kasman et al. (2011) examined the influence of both changes in exchange rate and interest rate on the stock returns of banks in Turkey applying the GARCH and OLS estimation models. Their findings showed that changes in exchange rate and interest rate significantly and negatively influence the conditional stock returns of banks. Their result also implies that the volatility of exchange rate and interest rate are the main determinants of the volatility of the stock returns of banks.

3. Methodology

A panel data approach is used in this study to find the empirical evidence between the relationship between macroeconomic variables and bank stock returns in the six GCC countries (Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and United Arab Emirates). The economic and bank data collected from the six countries is a yearly data from the period 2005 - 2014. The data were retrieved from the DataStream and the World Bank data archive. Bank stock returns were retrieved from the DataStream while macroeconomic variables were retrieved from World Bank data archive. Initially, the data consisted of 71 banks from the six countries but due to missing and non-availability of figures that either completely or partially affected some banks, five banks were removed. The final data set consists of 66 banks with 421 observations. Table 1 depicts the countries and the numbers of banks for this study.

Table 1: Number of Banks per Country

COUNTRY		Firm- year Before Sorting	Firm- year Before Sorting	Banks After Sorting	Firm-year After Sorting
1	Bahrain	13	130	13	124
2	Kuwait	10	100	9	89
3	Oman	7	70	5	48
4	Qatar	9	90	8	77
5	Saudi Arabia	12	120	11	107
6	United Arab Emirates	20	200	20	190
Total		71	710	66	634

The measurements of the dependent variable and independent variables of this study are shown in Table 2 below:

Table 2: Variables Measurement

No	Variable	Measure	Connotation
1	Stock Return	Log of bank stock returns at time t	R
2	Money Supply	Log of money and quasi money at time t	M2
3	Interest Rate	Log of real interest rate at time t	INT
4	Inflation Rate	Log of Inflation rate at time t	INF
5	Exchange Rate	Log of exchange rate at time t	EXRATE

Descriptive statistics is used to test the frequency distribution, while GLS estimation is used for testing the variables in the model, in order to examine the significant of the independent variables.

Sequel to the literature review, it is hypothesized that there is a significant statistical relationship between macroeconomic variables and bank stock returns. Hence, the following model was developed:

$$\text{Log}(R)_{it} = \beta_0 + \beta_1 \log(M2)_{i,t} + \beta_2 \log(INT)_{i,t} + \beta_3 \log(INF)_{i,t} + \beta_4 \log(EXRATE)_{i,t} + \varepsilon_i \quad (1)$$

4. Results and Discussion

The descriptive statistics for bank stock returns and macroeconomic variables is shown in Table 3.

Table 3: Summary Statistics

Variable	Mean	Std. Dev.	Median	Minimum	Maximum	Variance
Banks in GCC Countries						
Bahrain	18.3752	176.525	0.454	0.042	1827	31161.02
Kuwait	1.0707	4.623	0.519	0.225	44.13	21.3725
Oman	0.3235	0.1726	0.2705	0.109	0.927	0.0298
Qatar	57.1444	34.7647	52.6	11.5	193.89	1208.59
Saudi Arabia	31.5146	21.4447	12.61	9.79	139.99	459.877
UAE	21.2856	23.7077	12.235	3.0283	176.604	562.055
Macroeconomic Variables						
Money Supply	25.5008	2.1126	26.5042	21.9797	28.1888	4.4630
Interest Rate	1.3782	9.0827	1	-19.9269	43.5012	82.4946
Inflation Rate	3.7663	3.4752	3.0570	-4.8633	15.0501	12.0769
Exchange Rate	2.3124	1.6457	3.6388	0.2738	3.7515	2.7082

Stock returns of banks in the GCC countries showed an average of 184 percent in Bahrain, 107 percent in Kuwait, 32 percent in Oman, 57 percent in Qatar, 31.5 percent in Saudi Arabia, and 21.29 percent in the UAE. This implies that most of the banks in these countries have robust market value during the period reviewed. The average of money supply for these countries during the period under study is 25 percent, while the median is 26.5 percent. The average of interest rate stands at 1.38 percent while the median is 1 percent. The inflation rate of GCC countries is averagely 3.77 percent, while the median is 3.06 percent. The changes in exchange rate is on the average 2.31 percent, while the median is 3.6 percent.

Table 4: Correlation Matrix of Macroeconomic variables

	R	M2	INT	INF	EXRATE
R	1.0000				
M2	0.0611*	1.0000			
INT	-0.0187**	0.0437**	1.0000		
INF	0.0187**	-0.0663*	-0.2957	1.0000	
EXRATE	0.1438	0.7777	0.0192**	0.0697*	1.0000

Note: **, * indicate significant at 5% and 10% respectively

The correlations that exist among the macroeconomic variables and bank stock return are depicted in Table above. The findings show that R (stock return) has a positive correlation with M2 (0.0611) and INF (0.1438) at 5 percent and 10 percent significant level respectively, but a negative correlation with INT(-0.0187) at 5 percent level. M2 has a positive correlation with INT (0.0437) and a negative correlation with INF (-0.0663) at 5 percent and 10 percent significant level respectively. INT and EXRATE have a positive correlation (0.0192) at 5 percent significant level. Meanwhile, INF and EXRATE are positively correlated at 10 percent significant level.

Table 5: Regression analysis of Each GCC Countries using GLS estimation

	Constant	log(M2)	log(INT)	log(INF)	log(EXRATE)	R2	Prob > chi2
Bahrain	-12323.69	-28.3951	-3.91310	-10.599	-13272.74	0.6321	0.2303
	0.021	0.608	0.099*	0.461	0.025		
Kuwait	-7.8307	0.0287	-0.0046	0.0673	-5.1132	0.5717	0.0130
	0.023	0.916	0.000***	0.789	0.023**		
Oman	-6.8975	0.1080	-0.0051	0.0855	-3.2062	0.4635	0.045
	0.050	0.585	0.035*	0.468	0.033**		
Qatar	-1593.85	-1.88054	-0.4564	-0.1430	469.087	0.5217	0.000
	0.032	0.858	0.004***	0.000***	0.032**		
Saudi Arabia	-267.888	-3.96787	0.1488	-0.3404	215.1513	0.3416	0.000
	0.079	0.361	0.000***	0.000***	0.016**		
UAE	-18966.41	5.72631	0	-3.8922	14472.26	0.4866	0.000
	0.000	0.279	0	0.000***	0.072*		

Notes: ***, **, * indicate significant at 1%, 5% and 10% respectively.

Table 5 shows the results of the regression analysis of each of the GCC countries using GLS estimation. Based on the result, interest rate (INT) has a negative influence on the bank stock returns in Bahrain at the 10 percent significant level. In Kuwait, interest rate and exchange rate negatively influence bank stock return at 1 percent and 5 percent significant levels respectively. Similarly, in Oman interest rate and exchange rate affect bank stock return at 10 percent and 5 percent significant level respectively. Meanwhile, the bank stock return in Qatar is negatively influenced by both interest rate and inflation at 1 percent significant level but positively influenced by exchange rate at 5 percent significant level. In Saudi Arabia, the banks stock return is positively affected by both interest rate and exchange rate at 1 percent and 5 percent significant levels respectively. Moreover, inflation and exchange rate negatively and positively influence the stock return of banks in UAE at 1 percent and 10 percent significantly level respectively. It also shows from the estimation that money supply does not influence any of the stock returns of banks in any of the GCC countries.

Table 6: Regression analysis of all GCC countries together with GLS estimation

Variable	Coefficient	Std. Error	z	Prob.
C	-28.64324	8.771944	-3.27	0.001
log(M2)	8.967363	2.722946	3.29	0.001***
log(INT)	0.3339414	0.0540316	6.18	0.000***
log(INF)	0.1202774	0.0603038	1.99	0.046**
log(EXRATE)	1.201805	0.1773017	6.78	0.000***
R-squared	0.8084			
Wald chi2 (4)	4365.45			
Prob > chi2	0.0000			
Observations	421			

Notes: ***, **, * indicate significant at 1%, 5% and 10% respectively

Table 6 shows the result of the regression analysis used to to examine the influence of macroeconomic variables on the stock returns of banks in the GCC countries. The result shows that the adjusted R-squared is 80.84 percent, indicating a robust relationship and that these macroeconomic variables explain larger proportion of the variation in banks' stock returns in the GCC region. All the macroeconomic variables influence banks' positively at 1 percent significant level except for inflation at 5 percent significant level.

Money supply exerts a significant influence on the stock returns in the GCC, indicating that most of the volatility of the bank stock returns was caused by money supply. This result implies that the higher the money supply, the higher the bank stock returns. The plausible reasons for this is that change in money supply is a major sign for change in stock price because it has a direct influence on stock market and an indirect influence on bond market based on the adjustment of interest rates. When the increase in money supply leads to decrease in real interest rates, an increase in stock returns will be expected. However, stock prices will be affected negatively when money supply increases excessively because it could induce inflation. Therefore, the stock market volatility can be increased by money supply. Furthermore, increase in money supply implies availability of excess liquidity for stocks purchase, ultimately leading to higher stock prices because of the higher demand for both real good and common stocks markets. However, as Fisher's equation assumed that money supply could increase inflation and then increase nominal interest rate; the increase in interest rate results in higher expected rate of return, and then lower stock price.

Interest rate has a positive significant relationship with bank stock returns of GCC. The plausible reason for this is that interest rate sensitivity does exert a significant impact on the common stock of the banks. Plausible reasons could include the effect of wealth distribution triggered by unexpected inflation when banks hold nominal assets and nominal liabilities. Meanwhile, inflation has a negative significant relationship with bank stock returns of GCC. This indicates that the higher the inflation rate, the higher the bank stock returns. The plausible reason for this is that positive inflation –real activity induced the relationship through the money demand theory and the quantity theory of money, since stock returns have positive relationship with real variables such as output and expenditure as elucidated in the finance theory. However, in normal circumstances, low inflation rate decreases both nominal risk-free rate and discount rate, which will then increase stock price since stock price could be regarded as the discounted value of the estimated dividends. Foreign exchange rate has a positive significant relationship with bank stock returns GCC. This implies that the foreign exchange exposures of GCC banks influence their stock returns since most part of the stock returns are sensitive to the changes in exchange rate during the periods.

6. Conclusion

This study has provided theoretical and empirical evidence that there is a relationship between macroeconomic variables and Islamic bank stock returns. The aim of this study is to examine the relationship between macroeconomic variables and bank stock returns using a panel data approach. The data for this study is retrieved from the DataStream World Bank Data archive. The sample consists of listed banks in GCC countries. The data of 66 banks for the period 2005-2014 was examined using GLS estimation for the analysis. The findings revealed that there is a statistically significant positive relationship between macroeconomic variables and Islamic bank returns. The positive relationship implies that most banks in GCC countries engage in numerous off-balance sheet transactions and implement efficient and effective methods of risk management, which reduces their exposure to changes in macroeconomic variables. The implication of this study is that maintaining an effective and efficient risk management method should be a priority for all banks because weak risk management methods affect bank stock returns specifically through the macroeconomic variables.

Reference

- Abugri, B.A. (2008). Empirical relationship between macroeconomic volatility and stock returns: evidence from Latin American markets. *International Review of Financial Analysis*, 17, 396-410.
- Adam, A. M., & Tweneboah, G. (2008). Do Macroeconomic Variables Play any Role in the Stock Market Movement in Ghana? MPRA Working Paper No. 9368.
- Agrawal, G., Srivastav, A.K. & Srivastava, A. (2010). A study of exchange rates movement and stock market volatility. *International Journal of Business and Management*, 5 (12). 62-73.
- Akella, S. R., & Greenbaum, S. I. (1992). Innovations in interest rates, duration transformation, and bank stock returns. *Journal of Money, Credit and Banking*, 24(1), 27-42.
- Al-Sharkas, A. (2004). The Dynamic Relationship between Macroeconomic Factors and the Jordanian stock market. *International Journal of Applied Econometrics and Quantitative Studies*, 1(1), 97-114.
- Al-Shubiri, F.N. (2010). Analysis of the determinants of market stock price movements: an empirical study of Jordanian commercial banks. *International Journal of Business and Management*, 5(10), 137-147.
- Arab Times (2008). GCC states to launch joint market today. Retrieved from <http://www.arabtimesonline.com/news/>
- Arestis, P., & Demetriades, P. (1997). Financial development and economic growth: Assessing the evidence. *The Economic Journal*, 107(442), 783-799.
- Asprem, M. (1989). Stock prices, asset portfolios and macroeconomic variables in ten European countries. *Journal of Banking and Finance*, 13, 589-612.
- Bach, G. L., & Ando, A. (1957). The redistributive effects of inflation. *The Review of Economics and Statistics*, 1-13.
- Bae, S.C. (1990). Interest rate changes and common stock returns of financial institutions: revisited, 13, 71-79.
- Booth, J., & Officer, D.T. (1985). Expectations, interest rates, and commercial bank stocks. *Journal of Financial Research*, 8, 51-58.
- Brewer, E., & Lee, C. F. (1986). *The impact of market, industry, and interest rate risks on bank stock returns* (No. 86-4). Federal Reserve Bank of Chicago.
- Butt, B. Z, Rehman. K. U., Khan. M. A., & Safwan, N. (2010). Do economic factors influence stock returns? A firm and industry level analysis. *African Journal of Business Management*, 4(5), 583-593.
- Cassola, N., & Morana, C. (2004) Monetary Policy and the Stock Market in the Euro Area. *Journal of Policy Modeling*, 26, 387-399.
- Chamberlain, S., Howe, J. S., & Popper, H. (1997). The exchange rate exposure of US and Japanese banking institutions. *Journal of Banking & Finance*, 21(6), 871-892.
- Chance, D.M., & Lane, W.R. (1980). A re-examination of interest rate sensitivity in the common stocks of financial institutions, *Journal of Financial Research*, 3, 49-55.
- Chen, N. F., Richard, R & Ross, S. A. (1986). Economic forces and the stock market. *The Journal of Business*, 59(3), 383-403.
- Cheng, C.M., Tzeng, Z.C., & Kang, W.L. (2011). The impact of non-macroeconomic events on Taiwan electronic industry stock index returns, *Global Economy and Finance Journal*, 4 (1), 80-101.
- Choi, J. J., Elyasiani, E., & Kopecky, K. J. (1992). The sensitivity of bank stock returns to market, interest and exchange rate risks. *Journal of Banking & Finance*, 16(5), 983-1004.
- Choi, D., & Jen, F. C. (1991). The Relation between Stock Returns and Short-Term Interest Rates. *Review of Quantitative Finance and Accounting*, 1, 75-89.
- Choi, K. H., & Yoon, S. M. (2015). The Effect of Money Supply on the Volatility of Korean Stock Market. *Modern Economy*, 6(5), 535.
- Choudhry, T. (1996). Real stock prices and the long-run money demand function: evidence from Canada and the USA. *Journal of International Money and Finance*, 15,1-17.
- Choudhry, T. (1999). Does interest rate volatility affect the US M1 demand function? Evidence from cointegration. *The Manchester School*, 67(6), 621-648.
- Chude, N.P., & Chude, D.I. (2013). Effect of Money Supply on the Stock Market Returns in Nigeria. *Journal of Business and Organizational Development*, 5(2), 135-150.

- Dornbusch, R & Fischer, S. (1980). Exchange rates and the current account. *The American Economic Review*, 70 (5). 960-971.
- Fama, E.F. (1981). Stock returns, real activity, inflation, and money. *American Economy Review*, 71, 545–565.
- Fama, E. F. (1991). Efficient capital markets: II. *The Journal of Finance*, 46(5), 1575-1617.
- Fama, E. & Schwert, W. (1977). Asset returns and inflation. *Journal of Financial Economics*, 5, 115- 146.
- Firth, M. (1979). The Relationship Between Stock Market Returns and Rates of Inflation, *The Journal of Finance*, 34(3), 743-749.
- Flannery, M., & James, C. (1984). The effect of interest rate changes on the common stock returns of financial institutions. *The Journal of Finance*, 39, 1141–1153.
- Foong, L.K., Lok, T.W. & Hoon, Y.Y. (2012). The impact of macroeconomic variables on banks' stock returns: evidence from Malaysia. Unpublished BSc. Degree research project. Universiti Tunku AbdulRahman Malaysia.
- French, K. R., Ruback, R. S., & Schwert, G. W. (1983). Effects of nominal contracting on stock returns. *The Journal of Political Economy*, 91(1), 70-96.
- Gan, C., Lee, M., Yong, H. H. A., & Zhang, J. (2006). Macroeconomic variables and stock market interactions: New Zealand evidence. *Investment Management and Financial Innovations*, 3(4), 89-101.
- Gay Jr, R. D. (2008). Effect of Macroeconomic Variables on Stock Market Returns for Four Emerging Economies: A Vector Regression Model for Brazil, Russia, India, and China. *International Business & Economics Research Journal*, 7(3), 1-8.
- Geske, R., & Roll, R. (1983). The fiscal and monetary linkage between stock returns and inflation. *The Journal of Finance*, 38(1), 1-33.
- Gilkenson, J., & Smith, S. (1992). The convexity trap: pitfalls in financing mortgage portfolios and related securities. *Economic Review*. Federal Reserve Bank of Atlanta, 14–27.
- Grammatikos. T., Saunders, A., & Swarv, I. (1986). Returns and risks of U.S. bank foreign currency activities, *Journal of Finance* 41, 671-682.
- Gultekin, N. B. (1983). Stock market returns and inflation: evidence from other countries. *Journal of Finance*, 1, 49-65.
- Günsel, N., & S. Çukur (2007). The Effects of Macroeconomic Factors on the London Stock Returns: A Sectoral Approach, *International Research Journal of Finance and Economics*, 10, 140-152.
- Hoguet, G. R. (2008). Inflation and Stock Price, State Street Global Advisors. Iobal Advisor http://www.ssga.com/library/esps/Inflation_and_Stock_Prices_George_Hoguet_8.21.08r_v3CCRI1221060800.pdf.
- Hong, H. (1977). Inflation and the market value of the firm: Theory and tests. *The Journal of Finance*, 32(4), 1031-1048.
- Humpe, A. & Macmillan, P. (2007). Can macroeconomic variables explain long term stock market movements? A comparison of the US and Japan, *Centre for Dynamic Macroeconomic Analysis Working Paper Series*.
- Ihsan, H., Ahmad, E., Ihsan, M., & Sadia, H. (2007). Relationship of economic and financial variables with behavior of stock returns, *Journal of Economic Cooperation*, 28 (2), 1-24.
- Ikoku, A.E. (2007). The Impact of Inflation on Stock Market Returns in Nigeria: *Business Day Newspaper*, March 3.
- Kane, E. J., & Unal, H. (1988). Change in market assessments of deposit-institution riskiness. *Journal of Financial Services Research*, 1(3), 207-229.
- Kasman, S., Vardar, G. & Tunc, G. (2011). The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey. *Economic Modelling*, 28, 1328-1334.
- Keran, M. W. (1971). Expectations, money and the stock market. *Federal Reserve Bank of St.Louis Review*, 16-31.
- Kessel, R. A. (1956). Inflation-caused wealth redistribution: A test of a hypothesis. *The American Economic Review*, 46(1), 128-141.
- Kim, K. (2003). Dollar exchange rate and stock price: evidence from multivariate cointegration and error correction model. *Review of Financial Economics*, 12, 301-313.
- Kim, C., & J. Lee (2004). .Exchange Rate Regimes and Monetary Independence in East Asia. In G. de Brouwer, & M. Kawai (eds) *Exchange Rate Regimes in East Asia*,. London, Routledge.

- Kwan, S. H. (1991). Re-examination of interest rate sensitivity of commercial bank stock returns using a random coefficient model. *Journal of Financial Services Research*, 5(1), 61-76.
- Laurenceson, J. (2002). The impact of stock markets on china's economic development: some preliminary assessments (Discussion Paper No 302), School of Economics, The University of Queensland.
- Lloyd, W.P & Shick, R.A. (1977). A test of stone's two-index model of returns, *Journal of Financial and Quantitative Analysis*, 12, 363-376.
- Lynge, M.J. & Zumwalt, J.K., (1980). An empirical study of the interest rate sensitivity of commercial bank returns: a multi-index approach, *Journal of Financial and Quantitative Analysis*, 15, 731-742.
- Maghayereh, A. (2002). Causal Relations among Stock Prices and Macroeconomic Variables in the Small, Open Economy of Jordan. *JKAU: Eco. & Adm*, 17, 3-12.
- Maku, E.O. and Atanda, A.A. (2009). Does Macroeconomic Indicators Exert Shock on the Nigerian Capital Market? Paper No. 17917, Munish Publication, University of Demark.
- Maysami, R. C., Howe, L. C., & Hamzah, M. A. (2004). Relationship between Macroeconomic Variables and Stock Market Indices: Cointegration Evidence from Stock Exchange of Singapore's All-S Sector Indices, *Jurnal Pengurusan* 24, 47-77.
- Merton, R.C. (1973). An intertemporal capital asset pricing model. *Econometrica* 41, 867-887.
- Mollick, A.V. & Assefa, T.A. (2013). U.S. stock returns and oil prices: The tale from daily data and the 2008-2009 financial crisis. *Energy Economics*. 36, 1-18.
- Muradoglu, G. & Metin, K. (1996), Efficiency of the Turkish Stock Exchange with respect to monetary variables: A cointegration analysis, *European Journal of Operational Research*, 90(3), 566-576.
- Muradoglu, G, Metin, K., & Argac, R. (2001). Is there a long run relationship between stock returns and monetary variables: evidence from an emerging market, *Applied Financial Economics*, 11, 641-649.
- Nishat, M. & Shaheen, R. (2004). Macroeconomic Factors and Pakistani Equity Market. *The Pakistan Development Review*, 43(4), 619-637.
- NYSE. (2006). What drives stock prices? Retrieved from: http://www1.nyse.com/pdfs/nyse_chap_04.
- Omole, D. A. (1999) Financial Depending and Stock Market Development in Nigeria. *Nigerian Institute of Social and Economic Research (NISER)*, Ibadan. NISER Monograph Series, No. 15.
- Opfer, H. & Bessler, W., (2004). University of Giessen, *FMA's E-journal*, June.
- Osisanwo, B.G. & Atanda, A.A. (2012). Determinants of Stock Market Returns in Nigeria: A Time Series Analysis. *African Journal of Scientific Research*, 9(1): 479-489.
- Ozbay, E. (2009). The relationship between stock returns and macroeconomic factors: evidence for Turkey. Unpublished Dissertation submitted to the University of Exeter, UK.
- Ozturk, B. (2008). The Effects of Macroeconomic Factors on Istanbul Stock Exchange National 100 Index and Its Volatility. (1997-2006), Unpublished Thesis submitted to the Istanbul Technical University.
- Palepu, K.G., Healy, P.M. & Peek, E. (2010). *Business Analysis and Valuation*. United Kingdom: Cengage learning.
- Peninsula (2015). GCC common market achieves most goals. *The Peninsula*. 9 January..
- Pesando, J. E. (1974). The supply of money and common stock prices: Further observations on the econometric evidence. *The Journal of Finance*, 29(3), 909-921.
- Priestley, R. (1996). The arbitrage pricing theory, macroeconomic and financial factors, and expectations generating processes. *Journal of Banking & Finance*, 20(5), 869-890.
- Ross, S. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, 13, 341-360.
- Saunders, A., & Yourougou, P. (1990). Are banks special? The separation of banking from commerce and interest rate risk. *Journal of Economics and Business* 42, 171-182.
- Scott, W.L., & Peterson, R.L. (1986). Interest rate risk and equity values of hedged and unhedged financial intermediaries. *Journal of Financial Research* 9, 325-329.
- Sirucek, M. (2013). The impact of money supply on stock prices and stock bubbles. Available online at <http://mpa.ub.uni-muenchen.de/40919/>. MPRA Paper No. 40919
- Solnik, B., & McLeavey, D. (2009). *Global investments*, Sixth edition, Boston, Pearson Prentice Hall.
- Stowe, J. D., Robinson, T. R., Pinto, J. E., & McLeavey, D. W. (2007), *Equity Asset Valuation*, New Jersey, John Wiley & Sons, Inc.
- Sweeney, R. J., & Warga, A. D. (1986). The Pricing of Interest-Rate Risk: Evidence from the Stock Market. *The Journal of Finance*, 41(2), 393-410.

- Tursoy, T., Gunsul, T., & Rjoub, H. (2008). Macroeconomic Factors, the APT and the Istanbul Stock Market. *International Research Journal of Finance and Economics*, 22.
- Van Nieuwerburgh, S., Buelens, F., & Cuyvers, L. (2006). Stock market development and economic growth in Belgium. *Explorations in Economic History*, 43(1), 13-38.
- Yau, H. & Nieh, C. (2006). Interrelationships among stock prices of Taiwan and Japan and NTD/Yen exchange rate. *Journal of Asian Economics*. 17, 535-552.
- Yourougou, P. (1990). Interest-rate risk and the pricing of depository financial intermediary common stock: Empirical evidence. *Journal of Banking & Finance*, 14(4), 803-820.