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INFLUENCE OF MONETARY POLICY TOWARD STOCK MARKET VOLATILITY IN SAUDI ARABIA

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ABSTRACT:
The study aimed to evaluate effect of good monetary policies on stability and sustainability of economy. The quantitative approach of descriptive statistical analysis used in SPSS analysis tool. The quantitative approach was conducted to determine monetary effect on the stock market with main model and dependent variable as volatility in stock market. There were main test which included regression and correlation test explained effect changes on exchange rates and interest rate and GDP. The methodological model predicts framework of regression analysis with proposed equation and model. The primary data was based on descriptive statistical analysis aspect which describes SPSS analysis needed for following case. Meanwhile, secondary data included literature review such as SAMA (Saudi Arabia Monetary Agency), IMF (International Monetary Fund) database to obtain the GDP (Gross Domestic Product). Besides, oil prices data was obtained from FRED database (The Federal Reserved). The data duration was 17 years quarterly between year 1997 and 2014. , the multivariate regression indicated exchange rates included GDP was impacted stock market volatility but interest rates had not impacted stock market. Besides, two of most common monetary policies effect was exchange rate change and GDP. Nowadays, coordinated market was important for national banks and other budgetary powers to offer data and impart on emergency anticipation measures. In such manner, BIS had been instrumental in provided national banks foundation research on different focal keeping money and market-related issues foe discourse in their standard gatherings. In this study, the result had validated the fact that exchange rate changes and GDP effects had fluctuate effect on the stocks.

INTRODUCTION:

Monetary policy is main factor of macroeconomic management in economic to increase economic stability and promote economic development via economic variables impact [1]. Meanwhile, monetary policy also known as deliberate action of monetary authorities in impact of cost, quantity and availability of money credit for desired macroeconomic objectives achievement of external and internal balances [2]. Monetary policy is not only impact macroeconomic development but also influence microeconomic environment which enterprises make decisions [3].The monetary policy can independently impact stock market returns via five channel such as interest rate, credit, wealth effect, exchange rate and monetary [4]. In some countries, monetary policy is based on exchange rate stability [5].National banks had scope of targets which given distinctive accentuation at various time. Targets incorporate fleeting loan costs, development rates of thin cash and wide cash, fiscal conditions, expansion, swapping scale and other financial markets.

SAMA formally suspended SDR join in May 1981 and subsequent to kept up true connection to the dollar with last downgrading of riyal happening in June 1986 when its conversion scale against the dollar was balanced from 3.65 to 3.75 [6]. In 1980s, the equalization of instalments remained overriding element in conversion scale approach. The remedy in estimation of the dollar from mid-1980 has been instrumental in lessening Saudi Arabia's present record deficiency (aside from in the prompt fallout of Gulf emergency. Durham (2001) implicated sensitivity analyses in balance payment consideration [7].The equity markets and anomalies in central banks, the balances of payments are considerable towards the equalization. The bull and bear market periods both portray significant changes in terms volatility and consideration of balance payment is most needed. As monetary benefits describe long term changes in stock volatility to balance out the payments, the appreciation of import or exports fluctuate the exchange rates, pries and stability [8].Hence, balancing out payment would most affected in this case as revaluation of currency depend on policies.The study aimed to evaluate effect of good monetary policies on stability and sustainability of economy. The factors of stable pricing and economic stability predict an effective monetary problem but considering Saudi Arabia and its volatile policies and affected the central bank discount rate and policy transmission mechanism.

METHODOLOGY

The quantitative approach of descriptive statistical analysis used in SPSS analysis tool. The quantitative approach was conducted to determine monetary effect on the stock market with main model and dependent variable as volatility in stock market. There were main test which included regression and correlation test explained effect changes on exchange rates and interest rate and GDP. The methodological model predicts framework of regression analysis with proposed equation and model.The primary data was based on descriptive statistical analysis aspect which describes SPSS analysis needed for following case. Meanwhile, secondary data included literature review such as SAMA (Saudi Arabia Monetary Agency), IMF (International Monetary

Fund) database to obtain the GDP (Gross Domestic Product). Besides, oil prices data was obtained from FRED database (The Federal Reserved). The data duration was 17 years quarterly between year 1997 and 2014.

$$Stock\ market = \ \alpha_0 + \beta_1\ interest\ rate + \ \beta_2\ exchange\ rate + \ \varepsilon_0$$

RESULT AND DISCUSSION

Result

Table 1 represented mean of stock market change over time with mean of 3.69. However, the log had been taken to evaluate changes in stock market due to changes in interest and exchange over time. The interest rate changes and exchange over time. The interest rates changes and exchange rate from year 1997 to 2014 were 3.41. In additions, increment in GDP from year 1997 to 2014 was estimated of 4.14.

Table 1 Mean of stock market, interest rate, exchange rates and GDP from year 1997 to 2014 in Saudi Arabia

Year	Exchange rate (log)	Interest rate	GDP log	Stock market (log)
1997	0.792	6.954	3.940	3.292
1998	0.797	7.219	3.874	3.150
1999	0.783	6.272	3.908	3.307
2000	0.747	6.557	3.966	3.353
2001	0.736	4.284	3.943	3.386
2002	0.781	2.606	3.946	3.401
2003	0.826	2.172	3.991	3.647
2004	0.857	1.932	4.060	3.914
2005	0.810	3.928	4.148	4.223
2006	0.867	5.155	4.193	3.899
2007	0.875	4.923	4.222	4.043
2008	0.738	3.537	4.304	3.682
2009	0.783	1.215	4.207	3.787
2010	0.763	0.889	4.281	3.821
2011	0.763	0.768	4.373	3.807
2012	0.781	0.970	4.400	3.833
2013	0.791	0.985	4.395	3.931
2014	0.767	0.974	4.385	3.921
Mean	0.79	3.41	4.14	3.69

Table 2 showed descriptive statistics for stock market included mean, standard error, median and standard deviation. The Kurtosis and skewers of stock market were -0.96 and -0.26 which showed normal distribution.

Table 2 Descriptive statistic for stock market

Stock market Log	
Mean	3.689
Standard Error	0.071
Median	3.797
Standard deviation	0.303
Sample variance	0.091
Kurtosis	-0.960
Skewness	-0.264
Range	1.073
Minimum	3.150
Maximum	4.223
Sum	66.223
Count	18

Table 3 showed descriptive statistic for GDP which included mean of 4.14, standard error of 0.045 and median of 4.17. Meanwhile, Kurtosis and skewness had -1.62 and 0.04 showed GDP had normal distribution. Furthermore, GDP range had estimated 0.52 and minimum and maximum value of GDP had estimated 3.87 and 4.40 respectively.

Table 3 Descriptive statistic for GDP

GDP Log	
Mean	4.141
Standard Error	0.045
Median	4.171
Standard deviation	0.189
Sample variance	0.036
Kurtosis	-1.622
Skewness	0.049
Range	0.524
Minimum	3.876
Maximum	4.400
Sum	74.540
Count	18

Table 4 showed coefficient value, standard errors and p-values for multiple regression analysis of interest and exchange rates with stock market volatility. The exchange rates and significant rates were significant as p-value were 0.001 and 0.010 and less than 0.05. The R square was 0.60 and overall adjusted R square was 0.514 which indicated model was good fit model.

Table 4. Multiple regression model

Stock market volatility	
Regression statistics	
Multiple R	0.769
R square	0.591
Adjusted R square	0.537
Standard Error	0.206
Observation	18

Anova

	df	SS	MS	F	Sig. F
Regression	2	0.924	0.462	10.850	0.001
Residual	15	0.639	0.043		
Total	17	1.563			

	Coef.	Std. error	T-statistic	p-value	Lower 95%
Intercept	1.119	0.924	0.462	10.850	0.001
Exchange rate (log)	3.610	1.218	02.963	0.010	1.013
Interest rates	0.085	0.022	3.914	0.001	0.131

Table 5 showed regression model between stock market and interest rates. The significant F value showed interest rate significantly affected stock market volatility with p-value of 0.009 and significant F value of 0.009. Meanwhile, T statistic value was less than 1.98 for interest rates. Hence, interest rate was insignificant for stock market.

Table 5. Multiple regression model

Stock market volatility					
	Coeff.	Std. error	T-statistic	p-value	Sig.F
Intercept	3.952	0.107	36.829	6.739e-17	0.009
Interest rate	-0.077	0.026	-2.948	0.009	

Table 6 showed coefficients, standard error and p-values for multiple regression analysis of interest rates and exchange rates with stock market volatility. The GDP log also showed significant relationship with stock market volatility. The R square value of intercept was 0.078 and overall adjusted R square was 73.4. The result displayed support proposed model as proved that factors of volatility in the stock market were dependent on the exchange rate and GDP. Table 6 showed T-statistic were greater than 1.98 in exchange rate (log) and GDP (log). Hence, these variables were significantly affected stock market volatility. However, interest rate was insignificant as T-statistical was less than 1.98.

Table 6. Multiple regression model

Stock market volatility	
Regression statistics	
Multiple R	0.884
R square	0.781
Adjusted R square	0.734
Standard Error	0.156
Observation	18

Anova

	df	SS	MS	F	Sig. F
Regression	3	1.220	0.407	16.615	6.885e-05
Residual	14	0.343	0.024		
Total	17	1.563			

	Coef.	Std. error	T-statistic	p-value	Lower 95%
Intercept	3.133	1.423	-2.202	10.850	0.001
Exchange rate (log)	3.466	0.289	3.749	0.010	1.013
GDP log	1.005	0.289	3.478	0.004	0.385
Interest rates	0.026	0.024	1.093	0.293	0.076

DISCUSSION

The GDP in Saudi Arabia extended 3.60 % year on year in the second from last quarter of year 2015. The growth rate found middle value of 4.91% from year 1969 until 2015, achieved untouched high of 27.49% in final quarter of 1974 and recorded low of -11.10% in final quarter of year 1982. The growth rate was accounted by Central Department of Statistic and Information.Saudi Arabia was an oil-based economy. The shipment of oil record for 87% of aggregate fares and 46% of GDP. In achieve specific end goal to expand economy , the administration had been putting resources into information transfers, petrochemicals and characteristic gas abuse and power era divisions.

CONCLUSION

In conclusions, the multivariate regression indicated exchange rates included GDP was impacted stock market volatility but interest rates had not impacted stock market. Besides, two of most common monetary policies effect was exchange rate change and GDP. Nowadays, coordinated market was important for national banks and other budgetary powers to offer data and impart on emergency anticipation measures. In such manner, BIS had been instrumental in provided national banks foundation research on different focal keeping money and market-related issues foe discourse in their standard gatherings. In this study, the result had validated the fact that exchange rate changes and GDP effects had fluctuate effect on the stocks.

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Authors' background

Your Name	Title*	Research Field	Personal website
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*Title can be chosen from: master student, Phd candidate, assistant professor, lecture, senior lecture, associate professor, full professor