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THE RELATIONSHIP BETWEEN SAUDI STOCK MARKET AND EXCHANGE RATE MARKET

*Ola Amin Baghanim*¹, *Faisal Rana*²

¹College Of Business, Effat University,

Qasr Khuzam St., Kilo. 2, Old Mecca Road P.O.BOX 34689, Jeddah 21478, Saudi Arabia

Obaghanim@Effatuniversity.Edu.Sa

²College Of Business, Effat University,

Qasr Khuzam St., Kilo. 2, Old Mecca Road P.O.BOX 34689, Jeddah 21478, Saudi Arabia

Farana@Effatuniversity.Edu.Sa

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ABSTRACT:

This paper aims to investigate the impact of stock market on the exchange rates and the way around in Saudi Arabia. The Questions to be answered are: Dose exchange-rate market has an affect on stock market in Saudi Arabia? Or Does stock market has an affect on exchange-rate market? Is there a correlation between the Stock Market prices and the exchange rates? The importance of study being that that the result will help to determine the directional relationship moving from the Stock Market to Exchange Rate Market or vise versa, and to modify steps that can be taken by government to improve the economic in Saudi Arabia. The study is based on secondary data for the period from 2010 to 2015. Ordinary Least Square Regression model and correlation is used for examining the relationship of the two variables, which are Saudi Stock Prices and Exchange Rates Prices. The results showed a significant statistical relationship between Stock Prices and Exchange Rates Prices; also, support the positive relationship of between Exchange Rate Prices and Stock Prices. Such results might have implications for international portfolio management and currency hedging.

INTRODUCTION:

Saudi Arabia is a nation in the Middle East and it fringes the Persian Gulf and the red ocean. This nation is the main exporter of worldwide oil in dislike the

vast majority of its landscape arrive being inhabitable and to a great degree hot [1]. Saudi Arabia contributes about a fifth of the world's oil saves. There are present advancements being knowledge comprehensively [2]. These improvements are, for example, air contamination, most recent type of innovation, new wellsprings of vitality and furthermore new and quicker methods for transport. Saudi Arabia isn't a special case to these difficulties [3]. The undertakings include discourse on the present improvements in economy, business patterns, back market and how it influences Saudi Arabia. Saudi Arabia as of now has a midway arranged economy. The nation is known to have the biggest economy among the Arab nations, other than that, it is known for its oil-based economy [4]. Oil is the real supporter of improvement Saudi Arabia [5]. The Saudi trade advertises is called Tadawul, which was framed in 2007 after its being affirmed by the chamber of priests as a business entity [6]. It is considered as the biggest securities exchange in the Middle East having a market capitalization around of \$570 billion [6]. It is for security trade and securities vault focus, additionally a gives stage to rundown and exchange securities, and additionally store, exchange, clearing, settlement and library of responsibility for exchanged on the trade. The organization has a capital of SAR 1,200,000,000 partitioned into 120,000,000 offers. SAMA is the Saudi Arabia Monetary Agency; that was overseeing the market until 2013 [7]. Presently CMA, or, in other words Market Agency, is the one in charge. CMA presently is the controller of the Saudi Stock market; they put the lead, and directions to ensure the financial specialists [7]. Trade rates are the channel that interfaces residential market to the world market. As indicated by Alhayky and Houdou [8] that every nation is searching for a conversion standard administration that influence them to accomplish the four objectives "First, keep up stable swapping scale which can draw in Foreign Direct Investment (FDI) and balance out relative cost by decreasing vulnerability danger of the swapping scale. Second, lessen inflationary strain to secure household cost. Third, hold outer equalization, which exists when parity of installment is near zero. Fourth, keep up full work level, additionally called 'inside parity'. Be that as it may, nations confront struggle between these objectives. Saudi Arabia is an open economy, without any limitations on money convertibility. The settled swapping scale administration infers that Saudi Arabia's budgetary market is profoundly coordinated with outside money related markets, and specifically the US advertise [9]. In the household showcase, the exchange instrument makes US loan costs the predominant factor in deciding riyal financing costs [10]. In the money related market the share trading system and the remote market have constantly considered as a delicate sections that can without much of a stretch be influenced by any encompassing components. As per Saleh [11] there is no hypothetical agreement on if there is an immediate impact of the two markets on one another, yet there are middle of the road factors that build up the connection between them, for example, riches, interest for cash, and financing costs. A portion of the monetary hypothesis that expresses that there is a communication between the stock costs and the trade rates are "stream situated model" and "stock-arranged model". Stream situated model showing the impact of the swapping scale on the stock exchange expresses that the

deterioration of cash builds global intensity, which expands the residential yield. Systematic will influence the organizations' current and future expected income and their stock cost. In all likelihood the reason is that numerous organizations get in remote monetary forms to support the task. The bearing of the effect expands upon whether the organization depends on trading or bringing in. Stock-situated model is about the effect of the stock costs on the swapping scale, expresses that capital inflows will be pulled in when the stock costs increment that will rise the interest for residential cash, which will make the conversion scale appreciate. Along these lines, because of change the swapping scale development influences process the local stock value [8]. From past observational investigations done with respect to this subject a few demonstrates that there is a connection between the two markets, others demonstrate that there is no connection. Likewise, a large portion of the writing inspected diverse created countries and some developing markets, yet it's poor in Arab nations. This purpose of the paper is to investigate if there is a relationship between Saudi stock market and exchange rates in KSA. This study will be conducted within the Saudi stock market. From 2010 to 2015. This research will be a quantitative non-experimental applied research. The research will be using Ordinary Least Squares (OLS), which is one of the techniques used in the liner regression model to measure the relationship between the stock market and exchange rate market in Saudi Arabia.

METHODOLOGY

The technique utilized for philosophy in this exploration would be clarified in this section. With the mix of range of abilities and mode or approach of reasoning, the basic assessment of various highlights and qualities of an expert work is required in research philosophy. Research strategy alludes to bringing up issues towards the featured data in contrast with appraisal and assessment criteria.

Hypotheses

Hypotheses are formulated for the study is, H1: There exist a positive relationship between Saudi stock Market and exchange rates markets H2: There exist a negative relationship between Saudi stock Market and exchange rates markets.

Quantitative Approach

Research states that the importance of quantitative research is the collection of numerical data as well as analysis for various sorts of measurements. Though quantitative research is tough to design, but result achievement of precise and accuracy can help to judge statistics. Quantitative approach would help us to understand the responses out of blend of questions. One of the reasons for carrying qualitative approach along with quantitative is to gather data according to data that will be collected from the financial reports. All the data would provide distinct information that would be feasible for this research and findings. More over the data selection would be carried among from different

data reports and the aim would collection of data as well as remarks that would definitely consider as value adding feature for this research.

Secondary Data

The background information would be provided by the information gathered and discussed in literature review of this research. Similarly the topics used in this research would be helpful for confirmation or modification of findings from different stock market studies in Saudi Arabia. The data used in this analysis for both variables was monthly-observed data from 2010 to 2015, consists of the following series; 1) Saudi stock market data represented by Tadawul All Share Index (TASI). Obtained from Investing.com, source of financial and technical assistance it has a historical data for different financial and economics figures across the world.As we can see from the (Figure1),the highest price the Saudi stock has reached are 11,112.12 in Aug 2014 due to the approval by the Saudi Arabian government for direct foreign investment to trade in Tadawul All Share Index (TASI). And the lower price is 5,941.63 in Feb 2011 due to intensification of regional uncertainty. The average stock price trade is 7,595.41214.



Figure 1. Stock prices from 2010 to 2015.

2) USD/EUR exchange rates will be observed, instead of USD/SAR since the Saudi Riyal is pegged to US dollars, it will be useless. The data are obtained from OANDA website, which is specialized in exchange rates markets. From the (Figure 2)it is see that the USD depreciated against the EUR to 0.6917 in Apr 2011, which is the lower price the USD reached due to weak US GDP data that was declared in that period. And it has appreciated to 0.9317 recently in Nov 2015, which is the maximum price. The average exchange rate price for the USD against EUR is 0.77572.

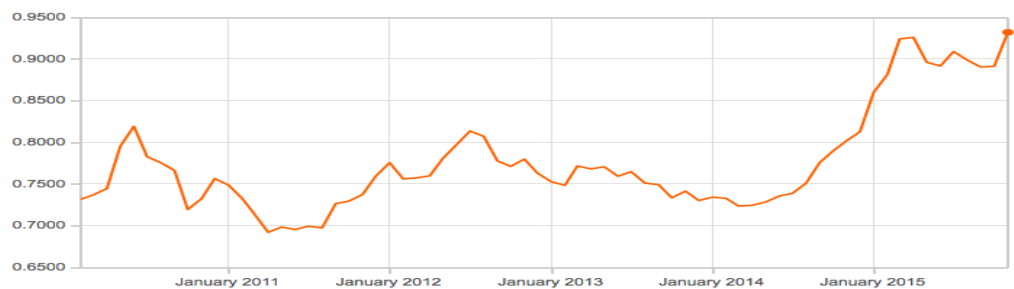


Figure 2. USD/EUR rates from 2010 to 2015***The Model***

The model that will be used in this study to find the relationship between the stock market prices and exchange market prices is Ordinary Least Square (OLS). The OLS regression equation used to identify the relationship between the stock market and exchange rates, and to find if they have an impact on each other. The regression was done on two models, In the first model (MODEL 1), stock prices used as the dependent variable while in second model (MODEL 2), exchange rate is used as dependent variable, the equations used are as follows,

MODEL 1: $SP = \alpha_1 + \alpha_2(ER)$

Where: SP = Stock Price (dependent variable), α_1 = estimated intercept, α_2 = estimated slope, ER = Exchange Rates (independent variable)

MODEL 2: $ER = \alpha_1 + \alpha_2(SP)$

Where: ER = Exchange Rates (dependent variable), α_1 = estimated intercept, α_2 = estimated slope, SP = Stock Price (independent variable).

RESULT AND DISCUSSION***Descriptive statistics***

To analyze the variables a descriptive statistics was done on both variables. The descriptive statistics give overall view of frequency and distribution of the variables (Stock prices, and Exchange rates) that used in the model. Positive skewness values of both variables are indicating that the mean values are clustered to the left at the lower values. The positive kurtosis shows that the distribution of the data is peaked at the center for the exchange rates, while in stock prices the distribution is flattered indicated with the negative kurtosis value. (Table 1).

Table 1 Descriptive statistic

	Stock prices (log)	USD/EUR (log)	
Mean	3.874379433	-0.111568008	
Standard Error		0.008679304	0.003950922
Median		3.853233676	-0.119672412
Mode		#NA	-0.135192371
Standard Deviation		0.072616267	0.033055781
Sample Variance		0.005273122	0.001092685
Kurtosis		-0.746239521	0.341737304
Skewness		0.616808397	1.049468935

Range	0.271891319	0.12935832
Minimum	3.773905604	-0.160082224
Maximum	4.045796923	-0.030723905
Sum	271.2065603	-7.809760589
Count	70	70

Also, Correlation Coefficient is used to investigate the relationship between Stock Prices and Exchange. The result shows significant relationship between the variables. The two variables are positively correlated, which means an increase in the stock price would lead to an increase in the exchange rates prices as shown in Table 2.

Table 2. Correlation

	stock prices (log)	USD/EUR (log)
stock prices (log)	1	
USD/EUR (log)	0.290633016	1

Regression results

In this study we conduct OLS regression Model to investigation the relationships between Stock Prices (SP) as depended variables, and the Exchange rate prices (ER) as independent variable in (MODEL 1). Also, the relationship between Exchange rate prices (ER) as depended variables, and Stock Prices (SP) as independent variable in (MODEL 2). To answer for the hypotheses, the investigation mainly seeks to find in the causal effect of SP upon ER, and vice versa. Excel is used to obtain the results of the variables. Residual Plot figures show that the variables in both models are randomly patterned, which express that linear regression is most appropriate to use as shown in Figure 3 and Figure 4.

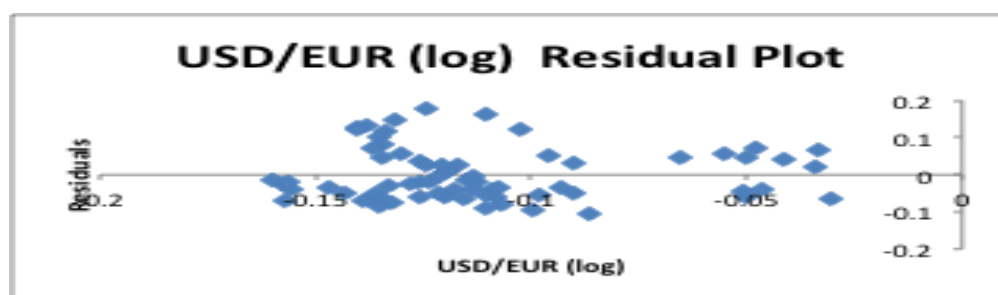


Figure 3. Residual Plot



Figure 4 . Residual Plot

In this model SP is used as the dependent variable and ER is the independent variable. Table 3 shows the result attained from Model 1. The equation used in this model is $SP = 3.945 + 0.638(ER)$. Table 4 shows the result attained from Model 2. In this model variables are used opposite to the MODEL 1 where ER now is the dependent variable and the SP is the independent variable. The equation used in this model is $ER = -0.624 + 0.132(SP)$.

Table 3: Regression outputs for MODEL 1

	Coefficient	Standard Error	t-stat	P-value
Intercept	3.945610775	0.029643498	133.1020651	6.15271E-84
USD/EUR (log)	0.638456696	0.254899458	2.504739323	0.014656244

Table 4: Regression outputs for MODEL 1

	Coefficient	Standard Error	t-stat	P-value
Intercept	-0.624146763	0.204678981	-3.049393544	6.15271E-84
stock prices (log)	0.132299576	0.052819698	2.504739323	0.014656244

The results achieved from the models prove that there is a statistically significant relationship between exchange rate and stock prices, as well as a relationship between stock prices and exchange rates prices. The OLS estimations indicate that a 1-percentage point increase in exchange rate leads to 0.63 percentage point increase in stock prices. In addition, that a 1 percentage point increase in stock prices leads to 0.13 percentage point increase in exchange rate, which can be represented in the Line Fit Plot (Figure 5 & Figure 6). Moreover, the p-values are the same for the two models, which is 0.01 less than 0.05, which means the variables are significant and null hypothesis can be rejected. Further more, the value of the t-Stat are greater than 1.98 in both models, which is also an indicator of how significantly the variables are affecting each other. The R-square shows that 8

percent of the variations in stock prices are explained by exchange rate movements.

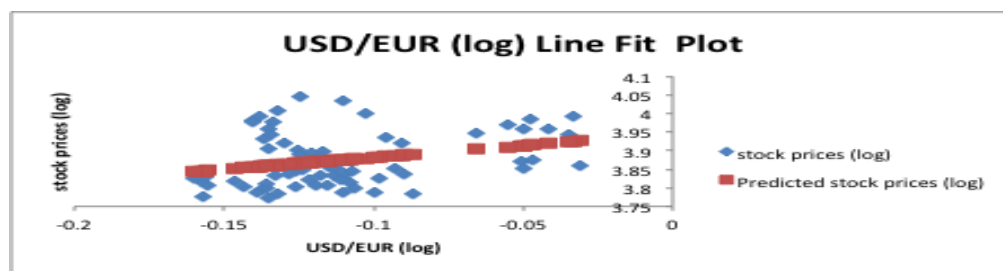


Figure 5. Line Fit Plot

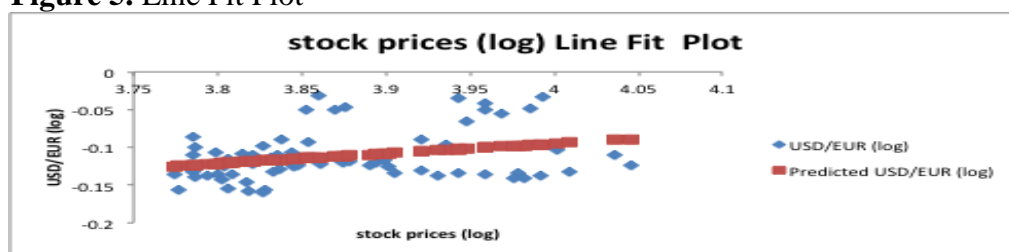


Figure 6: Line Fit Plot

In this manner in general An OLS relapse was led with two models same factors however changing the depending and free factor. In general, the consequences of the two models exhibited a noteworthy connection between the stock costs and trade rates costs. Discoveries uncovered that ER and SP affect one another, the expansion in the SP will cause a thankfulness in the money ER, likewise, a gratefulness in the cash ER will expand the SP. It likewise uncover that Saudi Stock market is very related with the U.S. showcase. Two issues are staying for the consequence of this investigation. First is the absence of memorable perceptions for factual investigation gathered in Saudi Arabia, which will clearly be comprehended with the progression of time. Second issue is the typical contention that intermediaries for investigation don't completely clarify their hypothetical partners. This issue keeps on showing up in any type of relapse examination including financial hypothesis. The intermediaries for this paper were picked rely upon past research directed [12].

CONCLUSION

This paper examined relationship between stock prices and exchange rates for Saudi Arabia for the period 2010 to 2015. Monthly data were used to apply ordinary least square regression model. The results from the analysis exhibit that there is an impact between stock prices and exchange rates on each other, and this supported the positive relationship hypothesis. Since stock prices and exchange rates are related, investors are able to use information gathered from one exchange rate to anticipate the behavior of other stock market. Moreover, Saudi Arabia can use exchange rate as a policy tool to attract foreign portfolio in vestment. The policy implications are that Saudi government should

complete to conduct and maintain of wise macroeconomic and microeconomic policies and keep to improve and emphasize legal and sympathetic environment. The findings provide evidence support the microeconomic as well as the macroeconomic theories of the interrelationship between exchange rates and stock prices. Flow-oriented model demonstrating the effect of the exchange rate on the stock market states that the depreciation of currency increases international competitiveness, which increases the domestic output. Orderly will affect the firms' current and future expected cash flow and their stock price. Most likely the reason is that many companies borrow in foreign currencies to fund the operation. The direction of the impact builds upon whether the company relies on exporting or importing. Stock-oriented model is about the affect of the stock prices on the exchange rate, states that capital inflows will be attracted when the stock prices increase that will rise the demand for domestic currency, which will make the exchange rate appreciate. Thus, as a result of conversion the exchange rate movement affects process the domestic stock price [8].

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