

## **CHAPTER II**

### **THEORETICAL FRAMEWORK**

The second chapter of this research study is a theoretical framework. here we will define the basic concepts and theories related to the research objective. The theoretical framework also shows how other researchers have identified these basic concepts and presented the previous findings to other researchers. For that this chapter will divide into three parts are the literature review, the previous researchers, and hypothesis development.

#### **2.1. Literature Review**

##### **2.1.1. “Causality”**

Based on (Spirkin, 1983) the word causality referred to the cause and effect between two variables, in which causality considered as the genetic relationship of phenomena through which one thing (the cause) under specific conditions leads to, causing something else (the effect). So, we can say that causation is to generate and design one phenomenon by another.

Theories term of causation has been known since a long time ago among philosophers until present, the first person uses the causation to explain specific phenomena was Aristotle, he used it in his explanation about the movement in the universe, in his philosophy, the word 'cause' is also used to mean 'explanation' or 'answer to a why question (Causal

Processes, 1996). Although the causal relationship has been known for a long time, people still have a confusion between causation and correlation, based on (Stigler, Stephen, 2005) correlation is the mutuality in the statistic of two variables or more, it also could be defined as the connection between two things whether it is positively or negatively, while that mutuality or connection it is because of a third factor or more.

### **2.1.2. Overview of financial markets**

When we talk about the financial markets we are talking about the system that facilitate the funds to flow from surplus units to the deficit units. Financial markets have two types. if those markets facilitate the funds in short-term those markets known as Money markets, that's because of the maturity is less than one year, in while the markets that facilitate the flow of long-term funds known as Capital markets (Madura, 2003, p. 3).

For financial markets, whether we talk about Money market or Capital market we should be able to distinguish between the Primary markets and secondary markets, the primary market is the market where new securities are issued and sold directly from the corporations or government agency to buyers. The secondary market is the securities that previously issued can be sold again, the secondary markets for securities are well-known to the public because the transactions of the primary market usually done behind closed doors (Mishkin, 2013, p. 70).

### **2.1.3. Capital market**

According to (Gurusamy, 2009, p. 21) Capital market defined as the place where long-term funds are borrowed and lent, in which the suppliers of capital such as institutional investors and retail investors who buy securities from the users of capital such as Government, business, and individuals to finance their projects. The main purpose of the existence of the capital market is directing the flow of the saving into long-term investments.

In each financial market which we have monition before specific instruments, the capital market has a various number of instruments called the debt and equity instruments with maturities of greater than on year such as stock, bonds. mortgages, etc. capital market instruments have price fluctuation greater than the price fluctuation resulted from money market instrument, which mean investing in capital market will bring high return compared to the return from investing in money market but that also means higher risk as well (Mishkin, 2013, pp. 72-45).

### **2.1.4. Stock market**

A stock market or as it called (equity market) considered as a huge part of the border of the capital market, the stock market represents the platform where ownership claims on firms are traded (Kolb & Rodriguez, 1992). Before discussing deeply the stock market let us know the meaning

of the word stocks. As a financial term, stocks represent the right of ownership. By acquiring stocks certificate, it means that you acquired part of the corporation ownership, and this is how corporations could gain funds to finance their projects by selling part of the corporation's ownership, the people usually tend to buy stocks in an aim to get dividends from the company's profit. there are many kinds of stocks depend on the classifications, in general there are two types based on the classification of the ownership rights called preferred stocks and common stocks, the main two basic difference between them are facts that preferred stocks have the priority to get dividend first before common stock but preferred stockholders they don't have the right of voting compared to common stockholders (Lawrence & William, 1991, p. 29).

#### **2.1.5. Stock market Index**

The word 'index' it is defended in (Oxford Dictionaries) as "A sign or measure of something". The index usually used in financial and economical since terms as an indicator/measurement of the unstable state of variables such as price index, customers index. And output indexes etc. stock market index it is used to measure the stock market performance by measuring the change in the market value of all the companies listed on the market. And index market represents providing a benchmark to track the changes in the market over time, investors use the index value to follow the market trends, the valuation of the index can be based on various

methodologies like market capitalization, weighted average or free float. These indices are used as benchmarks to measure the performance of individual companies as well as portfolios like mutual funds (Cecchetti, 2006, p. 180).

A stock index can give a good idea of how the overall stock market, or a certain portion of the stock market, is performing. This index measures the performance of a group of components. The stock market index measures the performance of the overall market. The simplest way to calculate the return of stock, deciding the period you want to check the return on it, then subtract the starting price from the ending price to determine the index's change during the time period, then divided the index's change by the starting price, and multiply the quotient by 100 to present the index's return as a percentage form.

$$\text{Market Index return} = \frac{\text{Ending Price} - \text{Starting Price}}{\text{Starting Price}} \times 100$$

A positive result percentage that indicates the index increased during the time period which means the index operates a return, while a negative percentage indicates that the index value is shrinking and is producing risk in case of investing in such market.

#### **2.1.6. Forex**

FOREX (Foreign Exchange market), refers to an international exchange market where currencies are bought and sold. The Foreign Exchange Market began in the 1970's when free exchange rates and floating currencies were introduced. In such an environment only, participants in the market determine the price of one currency against another, based upon supply and demand for that currency (Ms.M.Indumath, 2013). Usually, the foreign exchange market called as Forex or FX market, this market considered as the biggest and the most liquid financial market in the world. In the Forex, commercial banks and financial institutions play as and intermediaries to serve who want to exchange their currencies for investments or for an international trade (Madura, 2003, p. 10). the forex market operates 24 hours daily except on weekends

#### **2.1.7. Relationship Between Stock & Foreign Exchange Markets**

Generally, the Economic theory proposes that changes in foreign exchange rates can have an important influence on the stock prices by affecting cash flow and investment and profitability of firms (Noman, 2012). According to (Gang & Ma, 2010) for the explaining the relationship between the stock market and the foreign exchange market there are two basic theories, the first called “flow-oriented model” / “traditional approach” proposed by Dornbusch and Fisher (1980). flow-oriented theory

assume that the appreciation of a local currency should impact the on its exporters, and as result of that the shares of such companies would become less desirable and affect the stock market in an export-orientated country. The second theory is the portfolio balance theory which called “stock-oriented model” proposed by Frankel (1983) and Branson (1993). stock-oriented, exchange rate equates demand and supply of both domestic and foreign financial assets (stock and bonds). An increase in domestic assets will result in increase in the demand of domestic currency, which results in appreciation of domestic currency. (Hau & Rey, 2003) they suggest that foreign exchange and equity market returns should be negatively correlated because of portfolio rebalancing. Anyway the finding in statistic it has a different result with the theories proposed above.

## **2.2. Previous Research Findings:**

The discussion about the stock market and the forex market has pulled enough attention from researchers, the results that has been found from the researchers about the relationship between the stock market prices and the foreign exchange rate were varying from one to another in which, some results indicate the existence of causality between the variables, in other results it shows the absence of causality, and some results it shows the existence of unidirectional causality which means only one variable effect on the other. The result will be present as follows:

The number of studies that have been done in Asia was increasing after the Asian crisis that happened in 1997, that crisis had a huge impact on the Asian economy and pushed many academics to investigate about the impact of the fluctuation of the exchange rate to the stock markets. A study in Malaysia done by (Hamisu, Umar, & Ganthi, 2015) held to investigate about dynamic links between exchange rates and stock prices using the method of Engle-granger causality test, the result suggests that variables were in cointegration in which each variable cause change in the other. In other study in Bangladesh done by (Noman, 2012) his research was mainly build to use the Granger causality test to test causality between stock and foreign exchange markets, his finding that the overall results indicate absence of any causality running between foreign exchange market and stock market in the full sample and in the sub-sample created around the stock market crash. (Kamal & Haque, 2016) their research investigates about the relation between the stock price and exchange rate using a Copula method, using daily return series in the period from 2009-2013, their study case it was in Bangladesh, Sri Lanka and India, the results from copula models indicate the existence of asymmetric dependence, for all pairs in the three countries. a study in Philippine done by (Gabriel, 2013) investigates if the newspaper article-event, other stock markets, and the exchange rate will affect the stock market in Philippine, his research result significant correlations between the closing Forex rate the day before and the present closing Phisix for the two cases. The relation of stock market and forex market has been investigated in Thailand especially after Thailand joint the floating exchange rate, that's why the span of data started in 1997 until 2010



this study done by (Jiranyakul, 2012), the results of the study show that bounds testing for cointegration does not detect the long-run relationship between stock prices and exchange rate. In addition, the non-causality test fails the diagnostic test for multivariate normality in the residuals of the estimated VAR model. However, the two-step approach adequately detects the linkages between the stock and foreign exchange markets. It is found that there exists positive unidirectional causality running from a stock market return to exchange rate return. The exchange rate risk causes a stock return to fall as expected. Moreover, there are bidirectional causal relations between stock market risk and exchange rate risk, but in different directions. In China (Gang & Ma, 2010) they have studied the relationship between the stock and the forex markets by employing the ARDL approach, the result shows existence of cointegration between the Shanghai a Share Index and the exchange rate of the renminbi against the US dollar and Hong Kong dollar since 2005, when the Chinese exchange rate regime became a flexible, managed, floating system. They also found that both the exchange rate and the money supply influenced stock price, with a positive correlation.

There are many studies outside of Asia related to the same topic, In Ghana (John, Michael, & Presley, 2016) the study examined the relation between the stock market and the foreign exchange rate using Engle-Granger causality test for a daily data the period of 1998 until 2011, the results show that there is no cointegration relationship between the two. (Kutty, 2010) find that stock prices lead exchange rates in the short run, and there is no long-run relationship between these two variables after he used the test of Granger causality to analyze the weekly stock

market index in Mexico and the Mexican peso from 1989 until 2006. Another study in Peru (Humala & Rodriguez, 2013) using formal statistics for testing the presence of autocorrelation, asymmetry, and other deviations from normality tests in an aim to find facts about the relation between the foreign exchange and the stock market returns, the result shows identifiable volatility cycles in both forex and stock markets are associated with common macro-financial uncertainty events. The last research to discuss done in Europe by (Derindere & Ismail, 2013) namely in Czech Republic, Hungary, Poland, and Turkey, the study examined the dynamic relation between the stock market and the foreign exchange market, using the Granger causality which resulted that, the stock market cause changes in the foreign exchange markets in all countries participated in this research. The table below will contain a brief summary of the studies that have been done.

**Table 1 Summarize of Previous Research Findings**

<b>Authors and year of publication</b>	<b>Title</b>	<b>Variables</b>	<b>Method and period of analyze</b>	<b>Results</b>
Hamisu S. Ali, Umar Mukhtar, & Ganthi S. Maniam	Dynamic Links between Exchange Rates and Stock Prices in Malaysia: An Asymmetric Cointegration Analysis	-Exchange rate -Stock market index	Monthly data from 1999 to 2014 Using Engle-Granger method.	In the long-run the share prices have significant impact on exchange rates in Malaysia as increase in share prices could lead to appreciation of Malaysian Ringgit
Abdullah M. Noman (2012)	Causality between stock and foreign exchange markets in Bangladesh	-Stock index of (DSE) -The exchange rate	The paper employs the Granger causality tests using monthly data spanning over two decades.	The overall results indicate the absence of any causality running between foreign exchange market and the stock market in the full sample and in the sub-sample.

Authors and year of publication	Title	Variables	Method and period of analyze	Results
Javed Bin Kamal A.K. Enamul Haque (2016)	Dependence Between Stock Market and Foreign Exchange Market In South Asia: A Copula-Garch Approach	-Stock market return -Foreign exchange return	The paper uses the Copula models over the period 2009 to 2013	The results from copula models indicate existence of asymmetric dependence
John Gartchie Gats, Michael Owusu Appiah, and Presley K. Wesseh Jr (2016)	Exchange Rates and Stock Prices in Ghana	-Exchange rates -Stock prices	Augmented Dickey-Fuller test was used and the Engle-Granger two-step cointegration test was used as well. Using daily data spanning from January 2, 1998, to December 20, 2011	Both series are found not to be stationary at levels but stationary after taking the first difference. there is no cointegrating relation between the two variables. The VAR show that in the short-run, the lagged values of the exchange rates help predict changes in the stock prices
Percival S. Gabriel (2013)	How Newspaper-Article-Events, Other Stock Market Indices, And the Foreign Currency Rate Affect the Philippine Stock Market	Newspaper-article-events -Indices of other stock markets -Exchange rate Stock Market Indices (Phisix)	during the 2004 Election Campaign in the Philippines and the 2005 Impeachment Controversy against the Philippine President.	This research found significant correlations between the closing Forex rate the day before and the present closing Phisix for the two cases. Significant models were also derived incorporating several types of newspaper articles, other stock market indices and the previous Forex rate for the two cases.
Komain Jiranyakul. (2012)	Linkages between Thai stock and foreign exchange markets under the floating regime.	-Forex rate, and -Stock market index	The period covers July 1997 to June 2010	The results from the two-step approach show that unidirectional causality between stock and exchange rate return is observed. In which the change in the exchange rate will cause

Authors and year of publication	Title	Variables	Method and period of analyze	Results
				change in the stock market price
Gary Gang Tian & Shiguang Ma. (2010)	The relationship between stock returns and the foreign exchange rate: the ARDL approach	- Stock market index - Exchange rate of renminbi against the US dollar and Hong Kong dollar	-Monthly Data From December 1995 To December 2009. -Analysis Dickey-Fuller Test to Verify the Stationary Variables.	the existence of cointegration between the Shanghai A Share Index and the exchange rate of the renminbi against the US dollar and Hong Kong dollar since 2005, when the Chinese exchange rate regime became a flexible, managed, floating system.
Gopalan Kutty (2010)	The Relationship Between Exchange Rates And Stock Prices The Case Of Mexico	-Stock market index in Mexico -The Mexican peso currency	analyze the weekly data from 1989 until 2006. Use the Granger Causality Test	find that stock prices lead exchange rates in the short run, and there is no long-run relationship between these two variables
Alberto Humala & Gabriel Rodriguez (2013)	Some stylized facts of return in the foreign exchange and stock markets in Peru (2013)	-Foreign exchange returns -Stock market returns	Formal statistics for testing presence of autocorrelation, asymmetry, and other deviations from normality are applied	Identifiable volatility cycles in both forex and stock markets are associated with common macro-financial uncertainty events.
Sinem Derindere & Emrah Ismail	Testing for Causality in Mean and Variance between the Stock Market and the Foreign Exchange Market: An Application to the Major Central and	-Foreign exchange returns -Stock market returns	- employ the causality-in mean/variance test	The stock markets Granger-cause foreign exchange markets for Czech Republic, Hungary, Poland, and Turkey

Authors and year of publication	Title	Variables	Method and period of analyze	Results
	Eastern European Countries			

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Source: previous studies

### 2.3. Hypothesis

In conjunction with the theories that explain the relationship between stock markets and forex markets and how they interact with each other, and also in conjunction with previous research imperial results, the author assumes there will be a causal relationship between stock markets and forex markets in Indonesia and Saudi Arabia. Therefore, the alternative hypothesis will be as follow:

**H<sub>1</sub>: There is causal relationship between the stock market and the forex market in Indonesia and Saudi Arabia during 2002-2016**