



The Impact of Exchange Rate Fluctuations on the Stock Market Performance

Evidence from Egypt

تأثير تغيرات سعر الصرف علي اداء الاسهم في البورصة المصرية

Submitted by

Heba Abd El Moniem Fouad

Faculty of commerce

Ain Shams University

Under the supervision of:

Prof. Dr. Hayam Wahba

**Professor of Finance
Business Administration Dep. And
Vice Dean of post graduates
Faculty of Commerce Ain Shams
University**

Prof. Dr. Farid Moharam

**Professor of Accounting
Faculty of Commerce
Ain Shams University**

Acknowledgment

First and foremost, thanks for Allah, for granting me with this opportunity and for the conferment of capability and strength to proceed this thesis successfully.

With tremendous pleasure, I would like to express my profound and sincere gratitude to ***Professors and mentors; Prof.Dr. Hayam Wahba and Prof. Dr. Farid Mohram,*** who have been a great source of inspiration, motivation, guidance and support throughout the way and for their exemplary and academic advice and supervision for this study.

I am genuinely grateful to have the opportunity to work with them.

Special thanks to ***Dr. Marwa Elmaghawry, Dr.Doa Ayman and Laila Gamal*** for their genuine help.

Last but not the least; I would like to thank my ***Family*** for their continuous support encouragement and for their love, affection and sacrifice. As i would like to express my profound gratitude to my ***colleagues*** for their love and support.

Ultimately, I am thankful to ***God***, without whose intervention, this opportunity to

Further my life's goal could not have been realized.

Thank you.

Abstract:

The influences of the macroeconomic variables on the stock market performance have been the core center of the theoretical and empirical investigations. Capital movements have made the macroeconomic variables specifically the exchange rates one of the fundamental determinants of the stock performance. The relationship between the macroeconomic variables and the stock market performance would have an implication on the economic policies and the capital budget, since any negative economic shocks will be reflected on the stock market return. It will also help public authorities to build successful strategies and take the right decisions towards their monetary policy. This study attempted to investigate the impact of exchange rate fluctuations, interest rate and inflation rate, examples of the macro economic variables, on the stock market performance in Egypt.

This study applied time series data. The sample of this study was monthly data from February 2012 to December 2017. This period was selected specifically to cover the floatation of the Egyptian pound period. The study selected independent variable (exchange rate fluctuations) and moderating variables (interest rates and inflation rates); the most common factors affecting the stock market performance in previous literature. The dependent variable was the Egyptian stock market performance, where EGX30 monthly return was taken as a proxy for it. It was concluded that there is a direct significant relationship between exchange rate fluctuations and the Egyptian stock market performance, while there was a weak direct relationship between interest rate and Egyptian stock market performance. On the other hand, there was a negative relationship between inflation rate and the Egyptian stock market performance. Based on the conclusion of this study, the government should manage exchange rates which will be safeguard for the performance of the Egyptian stock market.

Contents

1.Introduction.....	2
1.1. Overview.....	2
1.2. Literature review	5
1.3. Study Questions.....	11
1.4. Study Hypothesis.....	11
1.5. Study model	13
2.1. Introduction	15
2.2. Exchange rate	15
2.3. Volatility	18
2.3.1. Exchange rate fluctuations	18
2.4. Stock market performance:	20
2.5. The relationship between exchange rate and stock market performance.	23
2.6. Theories linking Exchange rate fluctuations and stock market return:	24
2.6.1. The arbitrage pricing theory (APT)	24

2.6.2. The Economic Theory	26
2.6.3. The Purchasing Power Parity:	27
2.6.4. The portfolio adjustment theory	28
2.6.4.1 Flow oriented model	29
2.6.4.2 Stock oriented model.....	29
3.1. Introduction	32
4.1. Introduction	56
4.2. Data.....	56
4.3. Research model:	59
4.4. Research Hypothesis:	60
4.5. Variables measurement:.....	60
4.6. Correltion matrix	61
4.7.Augumented dickey filler :	62
4.8.Error correction model:.....	63
4.9.Model forecasting:.....	67

5.1. Discussion:	69
5.2. Conclusion:	71
5.3. Recommendations:	75

List of tables

Table 3-1: Empirical studies' results on the impact of exchange rate fluctuations on the stock market performance.....	45
Table 4-1: Variables measurement	60
Table 4-2: Descriptive.....	61
Table 4-3: Correlation matrix	62
Table 4-4: Augmented Dickey filler test	62
Table 4-5: Error Correction Model	64
Table 4-6: White stability test	64
Table 4-7: Ramsey RESET test for model specification.....	66
Table 4-8: Variance Inflation Factor.....	66
Table 4-9: Goodness of fit tests:	67

List of figures

Figure (4-1): Model forecasting	67
---------------------------------------	----

List of Abbreviations

APT	Arbitrage pricing theory
TSE	Tehran stock exchange
VAR	Vector auto regression
GARCH	General auto regression correlation heteroscedasticity
SHAI	Shanghai A-share index
SHBI	Shanghai B-share index
SZAI	Shenzhen B-share index
HIS	Hang Seng index
CBE	Central Bank of Egypt
ECM	Error correction model

Chapter One:

Introduction

1. Introduction

1.1. Overview

The influences of the macroeconomic variables on the stock market performance have been the core center of the theoretical and empirical investigations. Capital movements have made the macroeconomic variables specifically the exchange rates one of the fundamental determinants of the stock performance. The relationship between the macroeconomic variables and the stock market performance would have an implication on the economic policies and the capital budget, since any negative economic shocks will be reflected on the stock market return. It will also help public authorities to build successful strategies and take the right decisions towards their monetary policy. The expected return is sentient to the economic performance.

Recently increasing the international diversification, gradual abolishment of capital inflow barriers, foreign exchange restrictions or adoption of flexible exchange rate limitations have increased the investment opportunity in the emerging countries (Mahfoudh, 2012). The sensitivity of the emerging countries is due to the different legal economic legislations and institutional restrictions. Exchange rate fluctuations have obviously increased as a result of introducing the floating exchange rate regime in the early 1970s. Consequently, the relationship between the exchange rate fluctuation and international stock market became more uncertain. (Merchi et.al, 2018).

Hence; the current international financial system and increasing its importance with time have brought many researchers to study the relation between exchange rate fluctuation and stock market, especially after the continuous financial crisis that hit the world in 1990s and 2008 financial crisis. In addition, the relation between both variables had been examined taking into consideration other macro-economic

variables such as (GDP _ gold price _oil price). However, exchange rate fluctuations remain the most important determinant that grabs all researchers' attention.

Background to the study

Theoretically, many theories attempt to illustrate the relation between the macro- economic variables and the exchange rate. The arbitrage pricing theory (APT) developed by (Stephen Ross, 1976) stated the asset pricing model was based on the idea that asset's return can be predicted using the relationship between the portfolio returns and the return of a single asset through a linear combination of many independent macroeconomic variables. Macroeconomic variables are defined as a branch of economics that influence the performance, structure behavior and the decision making of the whole economy (Akers, 2001), the APT failed to specify the macroeconomic factors that impact on the exchange rate (Fabozzi,2015). While Ross (1987) attempt to illustrate the influence of four factors: investor confidence, inflation, gross domestic product, and shift in the yield curve; they endorsed that the APT shouldn't be limited to these factors. The economic theory assumes the significant variables in understanding the behavior of the stock prices predicting the various trends and movements in the exchange rates including interest rates, inflation rate, money supply and price level.

Interest Rate is the percentage amount paid on the principle as a cost of borrowing and reward for lending. The interest rate is a major macroeconomic factor which is directly related to the economic growth. Inflation Rate is the rate where general level of price level of goods and services is rising, while the domestic currency is falling. Inflation rate is measured through the consumer price index. Exchange rate is the price at which one currency can be exchanged for another currency. The relationship between the exchange rate and the stock market fluctuation is illustrated by the stock-oriented model and the goods market theory.

In this context: two approaches have supported the existence of a significant relation among exchange rate and stock market. These approaches are the traditional approach and portfolio approach, which have been debated from long period of time, but still different opinions exist among the researchers (Bagh et.al, 2017). Goods market theory (Flow oriented model) (traditional approach) which was introduced by (Dornbusch & Fisher 1980). The traditional approach suggests that the exchange rate fluctuations causes stock prices movements, where this concept is based on the macroeconomic view since the discounted present value of a firm's expected future cash flow is represented by the stock prices. Consequently, any factor will impact the firm's cash flow will be reflected upon the stock prices according to the efficiency of the market as the Efficient Market Hypothesis suggests (EMH). Branson et.al. (1977) developed the Portfolio balance approach or 'stock-oriented model' that contradicts with the flow models where movements in stock prices can cause exchange rate fluctuations via capital account transactions.

Empirically, the relation between the stock return and the macroeconomic variables had been examined by numerous studies. It was found that stock prices critical to macroeconomic variables as exchange rates, inflation, and interstate, GDP. Macroeconomic variables have considerable impact either positive or negative on the performance of the stock market. The theoretical and empirical evidence of studies showed that exchange rate fluctuations have a high impact on the stock return.

Egypt exchange market:

The study documented Egypt's exchange rate developments during the period selected in this study. Historically, Egypt adopted a fixed exchange rate regime. The central bank of Egypt had fixed the Egyptian pound to the U.S dollar. Recently, after mass crisis of January 2011 revolution. The Egyptian pound has witnessed a depreciation to reach 6.72 /\$. Besides, the deterioration in the foreign exchange reserves as a repercussion of the uncertainty in political conditions in Egypt in the wake of revolution.

As a consequent, capital flows in terms of foreign direct investment were severely influenced and fall. The central bank of Egypt liberalized the Egyptian pound in 3 November, 2016; that daring decision was taken a step of the economic reform. At the end of March 2017, according to forces of supply and demand in the foreign exchange market and after the liberalization of the Egyptian pound. The dollar and the Saudi Riayl increased by 104.2 percent, the United Arab Emirates (UAE) dirham increased by 104.1 percent, Kuwait dinar by 102.2 percent.

The influence of the depreciation of the Egyptian pound differs between adverse and positive impacts. The positive influence of deprecation is enhancing the exports. Although, domestic firms that relay on importing intermediate goods are disadvantaged. Besides, depreciation of the domestic currency weakens the foreign investors' confidence in the economy. (Central bank of Egypt website)

1.2. Literature review

Many researchers have focused their studies on investigating the relationship between the macroeconomic variables and the stock performance in developed and emerging countries. Some financial economists postulated that the main purpose of fluctuations is rooted in the unanticipated new information that impacts the expected return on a stock. On the other hand, some researchers championed that fluctuations are breaded mainly by changing the trade volume, practices or patterns driven by some factors as adjustment of some macroeconomic policies, change in investors' tolerance of risk and increasing of uncertainty (Gabriel&Ugochukwu, 2012).

K. Kennedy, F. Nourizad (2016) examined the influence of the exchange rate of the U.S.D and the EURO on the stock market volatility taking into consideration the control over some variables (monetary announcements, terrorist attack, money supply fluctuations, negative reruns bear markets and derivatives) that affect the stock return, the data was collected weekly from the period 1999 the first week to the third week of 2010. The GARCH model was used to examine the influence of the foreign

exchange rate volatility on the stock market return, where the volatility was the dependent factor. It was concluded that there was a positive relationship between the exchange rate volatility and the stock market return.

Also, **Alizadeh et.al (2015)** attempted to highlight the relation of the exchange rate on the stock prices and stock return across various industrial operating sectors on Tehran stock exchange. The data was collected monthly during the period 21 March 2009 to 20 March 2013, for 73 companies listed in TSE for four sectors (Petrochemical, Automotive, Nonmetallic minerals and pharmaceutical). Augmented Dick –Fuller Model was applied by the researcher. The results concluded that there is a positive influence of the exchange rate on the stock return.

In line with, **Mburu David (2015)** who examined the relationship between exchange rate volatility and stock market performance; he also tested the effect of inflation, money supply and interest rate volatility as control variables, while the stock performance was used as the dependent variable and the exchange rate to be the independent variable. The researcher collected secondary data from the National Bureau of Statistics and from the Central Bank of Kenya website, the data was analyzed using the regression analysis. The study concluded a weak positive relationship between the exchange rate volatility and stock market performance and an insignificant positive relationship between the money supply, inflation, interest rate and the stock index performance of Kenya.

Besides, **Chkili and Nguyen (2014)** who attempt to examine the relation between exchange rates and the stock market returns for five countries (Brazil, Russia, India, China and South Africa) during a period associated with high economic and political risks. The data was collected weekly from March 1997 to February 2013 resulting with 832 observations. The stock prices were collected from the Pacific exchange rate data base and was explicit to local currencies, while the exchange rates were collected each country versus the U.S dollar. Markov switching model (Univariate analysis) elucidated that stock return of these countries is divided into two