The Impact of Exchange Rate Fluctuations on the Market’s Index at Emerging Market: Evidence from Palestine

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**ABSTRACT**

In this study, the researcher investigates the influences of exchange rate and stock market index in Palestine exchange. Least Square Testing approach has been used on daily data ranging from January 2012 to December 2021. The researcher investigates the impact in the long term from 2012 to 2021 and in the short term in one year, 2021. Findings of the study suggest that USD exchange rate negatively affects the stock index of Palestine exchange in both the long and short term.

**Keywords:** Exchange rate, Emerging market, Regression model, Stock index.

I. INTRODUCTION

Financial markets are one of the country’s economic components that are influenced by many factors: internal factors such as employment rate, domestic production level, import and export levels, foreign currency reserves, interest rate, etc., and external factors such as political stability, global supply chain, global energy price, etc., (Bagh et al., 2017). Since 1970 many countries adopted a floating exchange rate which increased international trade around the world (Khan, 2019; Mechri et al., 2018).

Many studies mention that the exchange rate fluctuations have become a crucial factor that impacts decision-making where the amount of profit is changed according to the fluctuations. Many scholars find out that when the currency is depreciated, it’s a chance to increase the amount of export and vice versa where it’s appreciated (Sikhosana & Aye, 2018).

As it will be mentioned later; in the literature review section, many researchers study the impact of the exchange rate fluctuations, but it still needs more investigations as the results are contrary for different reasons such as the length of the period, the covered periods, and the economic development level of the country. The coming parts include the problem statement, literature review, methodology, results, and conclusions.

II. PROBLEM STATEMENT

Many studies find that the impact of exchange rate on the stock market is positive (Bagh et al., 2017; Mechri et al., 2018; Sikhosana & Aye, 2018). On the other hand, many studies find a negative impact of the exchange rate (Khan, 2019; Singhal et al., 2019). Therefore, such inconsistency in research results is a real problem, and it necessitates further research in this area. Hence, this study aims to investigate the impact of the USD exchange rate fluctuations on the market indexes at the Palestine exchange. This study is expected to have two main contributions: First, Palestine exchange is an emerging market and is a recent market where the first trading began in February/1997. Second, the state of Palestine doesn’t have its own currency because it’s still under occupation. Thus, the stocks are traded in the market by US dollar and the Jordanian Dinar. According to what have been mentioned above, the researcher is going to answer the following question: what is the impact of exchange rate fluctuations on the market’s indexes at Palestine exchange?

III. LITERATURE REVIEW

Many studies examine the impact or relationship between the exchange rate and the stock return or market’s index. In the following section, the researcher is going to investigate some of these studies. The section will be divided into studies that reveal positive impacts and others that reveal negative impacts

A. *Studies that Reveal Positive Impact*

Based on the traditional approach which states that the depreciation of domestic currency encourages export which facilitates maximizing the profit and stock return, Bagh *et al.* (2017) studied the effect of exchange rate volatility on the stock index at Pakistan stock exchange based on monthly data from 2003 to 2015. Using the Augmented Dickey-Fuller statistical test, the results revealed a positive and statistically significant relationship between exchange rate volatility and stock index of Pakistan. In addition, Mechri *et al.* (2018) found out a positive impact of the exchange rate on the stock market price where they investigated the Tunisia and the Turkish market by the Multiple Regression model to study the effect of exchange.
rate fluctuations on gold and oil. Similarly, a positive effect was figured out by Singhal et al. (2019) where they used daily data from the Mexican stock exchange as an emerging market from 2006 to 2018. They utilized ARDL Bound testing co-integration approach.

Using ARDL, too, Kwofie & Ansah, (2018) found out that in the short and long term, there is a positive relationship between exchange rate and stock return. In the same line but by expanding the period to twenty years from 1996 to 2016 and using a multivariate Exponential Generalized Autoregressive Conditionally Heteroskedastic (EGARCH) model alongside other asymmetric GARCH models, GJR GARCH and APARCH were adopted to measure the impact of exchange rate on the South Africa stock return. Results revealed that there are bi-directional volatility spillover effects between the two markets in the short-run. Also, these effects are asymmetric (Sikhsan & Aye, 2018). Moreover, Blau (2017, 2018) examined differently the volatility of exchange rate on the levels of kurtosis and skewness in ADRs over a 12-year period and he found out that more exchange rate stability leads to more stock return stability. Furthermore, by GARCH model from 2001 to 2016, Abed Qader, (2017) measured the impact of exchange rate volatility on the developed markets: Canada, UK, and Japan. Results showed that the exchange rate affects significantly the dynamics of the conditional return of stock markets returns.

In Indian markets, Mokadem, (2020) distinguished between short and long term impacts. She found that there is an impact in the short term for the USD and Indian rupee on the capital goods companies, and this effect has vanished in the long term. On the contrary, Mitra (n.d.) showed that there is a positive effect in the long term where he uses GARCH and Co-integration from 2008 to 2016 to test the long term effect. In addition, through a comparison between pre and post-financial crises by Arbitrage Pricing Theory, a positive effect is discovered. On the other hand, in a study that investigates the impact of fluctuations pre and post a financial crisis, a controversial result in Pakistani market is detected. a positive and negative investor’s reaction pre the crisis and positive investors reacted only to positive shocks of the exchange rate in long run (Sheikh et al., 2020). Moreover, there is high and persistent volatility in the Nigerian stock market returns. Exchange rate inflation significantly impacts stock market return volatility in Nigeria (Okechukwu et al., 2019). Exchange rate changes have a significant effect on the past and the current volatility of the BRICS stock indices. Besides, ARDL estimations reveal that exchange rate movements have a significant effect on short- and long-term stocks market indices of all BRICS countries (Mroua, 2019).

B. Studies that Reveal Negative Impact

Khan (2019) studied the effect of exchange rate on the stock return at Shenzhen stock exchange from 2008 to 2018. Based on the ARDL statistical test, the results showed that there is a negative and statistically significant impact on the Shenzhen stock exchange. In the same line, from 2010 to 2015 by GARCH model, British Pound and USD have a negative effects on Colombo stock exchange (Perera, 2016). Exchange rate shocks cause less short-run volatility in the stock markets of Singapore and Hong Kong though the long run convergence to the baseline in all of the four countries takes approximately equal amount of time (Yang, 2017). In the Indonesian market, the GARCH model is applied and the exchange rates have a significant negative impact on companies (Fahlevi, 2019; Putra & Robiyanto, 2019). Similarly, the period of 2007 to 2015 was investigated by a multiple regression model. The strengthening of the rupiah against the US dollar was a positive signal for market participants where they still have confidence in Indonesia’ s economic condition (Siregar & Diana, 2019). Changes in exchange rate were significant, and negative linkages influenced low on Johannesburg Stock Exchange (JSE). The presence of long run co-integration was the reason for the absence of causal effect during the study period (Baranidharan & Alex, n.d.). In Chinese financial market although the conventional structural VAR (SVAR) approach fails to examine the contemporaneous effects, the Markov switching SVAR model captures the volatile structure of the Chinese financial market and the result was that no significant interconnections exist between stock returns and exchange rates changes (Cuestas & Tang, 2021).

IV. METHODOLOGY

In this short section, the researcher is going to point out the data collection tools, statistical tests used, and the different periods tested to get results.

Test: The researcher applied a quantitative method. The least square method is adopted to measure the impact of the USD exchange rate difference on the logarithm of Palestine exchange indexes (Quds, Industries, Investment, Service, Banks, and Insurance).

Data: Daily USD exchange rate is collected from investing.com and the daily Quds. Industries, investment, and service index data are collected from the official Palestine exchange website www.pex.ps

Periods: Two different periods are tested to investigate the difference between long and short term periods. These periods are:

- Period (1): from 2012 to 2021 covers 10 years.
- Period (2): from January 2021 to December 2021 covers one year.

V. STATISTICAL RESULTS AND DISCUSSION

The statistical analysis is applied in two stages; stage one is a long term analysis to investigate the impact of the USD exchange rate on the market’s indexes which is between January 2012 and December 202. The second stage investigates the impact of the USD exchange rate on the market’s indexes in the year 2021. Results are shown in the following tables (Table I and II).

In the long term as shown in Table I, the analyses show that there is a significant impact of USD exchange rate on the indexes as the entire constants coefficient and exchange rate probability is less than 0.05. It is worth highlighting that the impact is negative in the long term since its range is between 0.13 and 0.99, where the R square which interprets the explanatory of the model is the range between 10 to
46%. These results harmonize with Baranidharan & Alex (n.d.), Cuestas & Tang (2021), Khan (2019), Perera (2016), Putra & Robiyanto (2019) and Yang (2017).

### Table I: The Analysis from January 2012 to December 2021

| Index | R square | Probability (F-stat.) | Coefficient |
|-------|----------|-----------------------|-------------|
| Quds  | 0.129    | 0.00                  | 6.71 0.00 -0.134 0.00 |
| Industry | 0.196    | 0.00                  | 8.26 0.00 -0.658 0.00 |
| Investment | 0.196    | 0.00                  | 4.69 0.00 -0.401 0.00 |
| Services | 0.196    | 0.00                  | 3.24 0.00 -0.151 0.00 |
| Banks   | 0.196    | 0.00                  | 5.89 0.00 -0.282 0.00 |
| Insurance | 0.196    | 0.00                  | 7.76 0.00 -0.993 0.00 |

In the short term as shown in Table II, the analyses show that there is a significant impact of USD exchange rate on the indexes as all the constants coefficient and exchange rate probability is less than 0.05. It is worth mentioning that the impact is negative in the long term as its range is between 0.12 and 0.46, where the R square which interprets the explanatory of the model is the range between 06 to 15%. These results harmonize with Baranidharan & Alex (n.d.), Cuestas & Tang (2021), Khan (2019), Perera (2016), Putra & Robiyanto (2019), and Yang (2017). Finally, in the long term, the insurance sector is the most affected whereas the banks’ sector is the least affected. However, in the short term; the service sector is the most affected whereas the insurance sector is the least affected.

### VI. CONCLUSIONS

The exchange rate influences the Palestine exchanges’ indexes in the long and short term but the explanatory power in the long term is greater than the explanatory power in the short term. Also, the effect in the long term is greater than the effect in the short term.

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