Exchange Rate Volatility and Tourism Stock Prices: Evidence from Egypt

Nagla Harb Sayed Ahmed AbdAllah[1]

Alexandria University

ARTICLE INFO

Abstract

Tourism is a key stimulator of economic growth and foreign currency in Egypt. As an export sector, it could affect and be affected by changes in exchange rate. This paper investigates the dynamic relationship between exchange rate and tourism stock prices and examines the effect of exchange rate volatility on tourism stock prices in the Egyptian Exchange (EGX). Exchange rate is proxied by the USD/EGP official values. Granger causality test and ARCH/GARCH models are employed. Results provide an evidence of a unidirectional causal relationship between the tested variables from exchange rate to tourism stock price. The estimations of the GARCH model reveal that exchange rate variance accelerates stock price variance, and depreciation in the EGP against USD enhances tourism stock performance. Findings provide decision-makers, financial managers, and investors with a better understanding of how exchange rate volatility affects the stock performance of tourism companies in the EGX, and offer researchers new directions for future research.

Introduction

With the development of the tourism industry and its increasing contribution to the national economy of Egypt, it is manifesting itself as a sun rise industry. Its role as a locomotive for economic development and a main source of foreign currency has become increasingly prominent. According to the World Travel & Tourism Council (WTTC) (2019), in 2018 the Egyptian tourism industry grew by 16.5%. A rate that is significantly higher than the Egyptian GDP growth rate (5.6%) (cbe.org.eg), and the global travel and tourism industry growth rate (3.9%) (WTTC, 2019). It contributed to the GDP by 11.9% and added $12.2 billion to the foreign revenues (WTTC, 2019). Such figures show that tourism can provide massive business opportunities to Egypt and accelerate its economic growth.

In 2016, due to the foreign currency shortage, the Central Bank of Egypt (CBE) decided to abandon the managed float and allow the Egyptian currency to float freely. Following this decision, the value of the Egyptian currency plummeted. The Egyptian pound (EGP) devalued by 32.3% and continued to lose value. As an illustration of the continued depreciation of the EGP's value, before the float decision, in October 2016 a U.S. dollar (USD) was worth 8.8 EGP, as per May 2017, the exchange rate was 18.1 USD/EGP (cbe.org.eg). Egyptian authorities argued that the devaluation of the EGP would lead to improvements in the balance of trade, a positive effect on the tourism sector in terms of inbound arrivals and receipts, as well as a positive impact on foreign direct investment, and that stocks would become cheaper to foreign investors.

---

[1] naglaalex40@gmail.com

Exchange rate has been demonstrated in literature as a major determinant of performance of the tourism industry in a destination, mainly in terms of foreign tourist arrivals, travel costs, tourism competitiveness, and corporate profits (e.g. Agiomirgianakis *et al.,* 2014; Ruane and Claret, 2014; De Vita and Kyaw, 2013; Alalaya, 2010; Webber, 2001; Crouch, 1993). Obi *et al.,* (2015) state that the exchange rate is a key risk factor found to particularly impact inbound tourism. Chang et al., (2013) affirm that exchange rate fluctuations present a risk to firms in the tourism industry. Greenwood (2007) presents evidence of the direct influence of exchange rate on the spending behavior of inbound tourists during their visit, as they spend less when the value of the domestic currency appreciates. Several empirical studies attempt to examine the impact of exchange rate on the tourism industry in different destinations in terms of tourism flows and revenues (See for example: Sharma and Pal., 2019; Karimi *et al.,* 2018; Falk, 2015; Agiomirgianakis *et al.,* 2014; Saayman and Saayman, 2013; Tang, 2013; Alalaya, 2010; Quadri and Zheng, 2010). The relation between the exchange rate and the performance of firms in the tourism sector has not been grossly examined yet. Scarce research attempt to examine the relation between exchange rate and stock performance of tourism companies at various destinations. However, to the best knowledge of the researcher, no study could yet be found to look into this interaction in Egypt. This study is therefore the pioneer in this field of research. It is motivated by the important role played by the tourism industry in enhancing economic growth and its contribution to foreign earnings in Egypt, the significance of capital markets in transferring financial resources to the tourism sector and securing its sustainable growth and development, and finally the gap in tourism literature on the macroeconomic variables and their impact on the equity market.

By using econometric methodology, this research aims at investigating the dynamic relation between exchange rate and tourism stock prices and identifying the impact of exchange rate volatility on tourism stock prices in the EGX. Identifying factors that influence tourism stock performance in the equity market is very important and of major interest to decision-makers, financial executives, and investors.

1- Literature Review

There is a consensus in literature that exchange rate is a major determinant of tourism industry in destinations. It has been suggested that destination choice, expenditure behavior and length of stay are more likely to be influenced by fluctuations in foreign exchange rates for international tourists (Akar, 2012; Webber, 2001). Theoretically, an appreciation in a destination's currency implies that inbound tourists need to spend more and weakens the competitiveness of the destination. While with the domestic currency depreciation, more potential inbound visitors are willing to visit the destination and can extend stay period and increase expenditure (Crouch, 1993).

Several empirical researches attempt to investigate the relation between exchange rate and tourism demand and revenues. For example, Gan, (2015) applied four models to explore the relationship between various economic variables, including exchange rate, and the tourism demand, measured by tourist arrivals and expenditure, in 218 countries panel, between 1995-2012. Results reported that a depreciation of national currency helps boosting the arrivals and the spending level. Saayman and Saayman (2013) employed Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and Autoregressive Distributed Lag (ADL) models to examine the impact of exchange rate volatility on tourism in South Africa between 2003 and

2010. Results specified that when volatility raises tourists seems to be taking lower risks and spending less, also increased currency volatility leads to arrivals decrease. Similarly, De Vita and Kyaw (2013) used (GARCH) model to examine the relationship between exchange rate volatility and German tourists in Turkey from 1996 to 2009. Results recognized exchange rate as a significant determinant of tourism demand in Turkey. Several studies have shown that the exchange rate has no significant effect on tourism demand. For example, Quadri and Zheng (2010) studied the relation between exchange rates and international arrivals in Italy and found that the exchange rates have no impact on 11 out of the 19 countries under review. Similarly, Vanegas and Croes (2000) found that the exchange rate has no significant impact on the tourism demand from the USA to Aruba.

Moving from establishing the relation between exchange rate and tourism demand and expenditure, to focusing on investigating the relationship between exchange rate and the performance of tourism companies, and more precisely stock prices, theoretically, explaining the relation between exchange rate and stock prices in general could be built on various macroeconomic approaches including the Dividend Discount Model (DDM), and the Portfolio Balance Approach (PBA).

The Dividend Discount Model (DDM) assumes that a firm's intrinsic value is equivalent to the present value of all anticipated future dividends (Corelli, 2017). Building on this theory export-based firms that receive their revenues in foreign currencies and pay their costs in domestic currency would be affected by the fluctuations of the domestic currency against foreign currencies from the side of revenues. The depreciation of domestic currency would increase revenues. As a result, the profit would increase leading to higher earnings and return on investment (ROE) and hence higher stock price for the firm (Muzindutsi, 2011). Muzindutsi (2011) asserts that the impact of exchange rate on the value of a firm will depend upon its exposure to exchange rate. Similarly, Abdalla and Murinde (1997) and Soenen and Hennigar (1988) affirm that the response of domestic firms to real exchange fluctuations tends to differ from the response of multinational corporations.

The Portfolio Balance Approach (PBA) assumes that investors and companies hold their financial assets in combination of domestic bonds and foreign bonds. Exchange rate fluctuations affect the wealth of investors and companies that hold assets denominated in foreign currency. Thus, changes in currency risks (as a result of exchange rate fluctuations) may lead to the adjustment of the portfolio. The adjustment directly impacts the demand and supply for the domestic and the foreign stocks. This shift in the demand/supply for stocks may in turn influence the exchange rate (Stavárek, 2005; Moffett *et al.,* 2003; Granger *et al.,* 2000). In developing countries, where exchange rates are volatile, "Capital Flight" may also elucidate the relation between exchange rate and stock prices. It demonstrates that foreign currency devaluation is often the trigger for large-scale capital flight, as investors flow from the country before their assets lose too much value (Yalta, 2010; Suarez, 1990).

Stepping to empirical studies that test the link between exchange rate and stock performance in general, although the topic has been widely examined, there is no agreement regarding the interaction between stock prices and exchange rates. Empirical studies have produced mixed results, and it seems to be a market structure case. (See for example Mechri *et al.,* 2019 in two countries from MENA zone; Sani and Hassan, 2018 in Nigeria; Walid *et al.,* 2011 in emerging countries; Aydemir and Demirhan 2009 in Turkey; Azar, 2013 and Kim,

2003 in USA; Anshul and Biswal, 2016 and Singh, 2015 in India ; Nieh and Lee 2001, in G7 countries; Suriani *et al.,* 2015 in Pakistan; Zhao, 2010 in China; Wu 2000 in Singapore)

In Egypt, Parsva and Lean (2011) examined the macroeconomic determinants of stock prices in 6 Middle Eastern countries including Egypt, using monthly data from 2004 to 2010. They applied Johansen cointegration model and the Granger causality test to their research. Egypt's findings proved the existence of two-way causality between stock price and exchange rate. Micheal (2018) analyzed the dynamic relation between stock market and exchange rate in Egypt using Engle-Granger cointegration method from January 2009 to December 2017. Results reported a unidirectional causality relationship between the tested variables specifying that exchange rate has a causal impact on stock prices in the Egypt.

Focusing on the tourism industry, studies that investigate the interaction between the two variables are very rare. Bogdan (2019) investigated the impact of four macro-variables, including exchange rate, on the stock returns of the hospitality companies in Croatia for July 2008- July 2018, using Vector autoregression (VAR) model. Results suggested that the exchange rate doesn't Granger-cause the stock returns in the hospitality industry.

Demir *et al.,* (2017) used VAR methodology to examine the impact of eight macro-economic variables, including exchange rate, on returns of tourism stock in Turkey, over the period 2005-2013, taking the systemic break that took place in 2007 into consideration. The pre-break findings indicated that the exchange rate does Granger cause stock returns of tourism companies. However, the results in the post-structural break period revealed that the exchange rate is not significant.

Chang *et al.,* (2013) examined the size impacts of volatility spillovers for performance of firms and exchange rates with asymmetry tourism industry in Taiwan using two conditional multivariate models, BEKK-AGARCH and VARMA-AGARCH. Data were proxied by returns on tourism stock and returns on exchange rates of the three main markets (USD/NTD, JNY/NTD, and CNY/NTD). The empirical findings indicated that there are size impacts on volatility spillovers from the exchange rate to the performance of firms. Results also showed a negative cointegration between exchange rate returns and stock returns.

Finally, Chan and Lim (2011) explored the relation between hospitality and tourism stock prices and macroeconomic factors on a selected sample of hospitality and tourism companies in New Zealand for the period 1998-2009 using cointegration analysis and Vector Error Correction Model (VECM). The results proved the presence of a cointegration vector between the stock returns of tourism companies and exchange rate.

2- Data and Methodology

The data set consists of monthly data over the period from June 2010 to December 2019 on exchange rate and tourism stock prices. The reason for selecting this period is that exchange rate regime is determined as freely floating in 2016. Sources include 'Monthly Economic Trends' published by the CBE website (cbe.org.eg), and Egyptian Exchange (EGX).

Exchange rate is proxied by the USD/EGP official daily value published by the CBE. In this research nominal exchange rate, which measures the relative price of two currencies is used in order to take into account inflationary effects, as used by Bahmani-Oskooee and Saha (2016)

and Anshul and Biswal (2016). The increase in value means appreciation of USD and depreciation of EGP.

As per December 2019, 18 tourism and hospitality companies are listed and active in the EGX. Measure of stock market price captures the monthly prices of 14 firms of publicly- listed hospitality and tourism companies (Remco Tourism Villages Construction Company RTVC; Orascom Development Egypt ORHD; El Wadi for Touristic Investment ELWA; Marsa Alam for Tourism Development MMAT; Egyptian Resorts EGTS; Egyptian Company for International Touristc Projects EITP; Golden Pyramids Plaza GPPL; Misr Hotels MHOT; Pyramisa Hotels and Resorts PHTV; Al Rowad ROTO; Trans Oceans Tours TRTO; Sharm Dreams SDTI; Golden Coast Elsokhna for Touristic Investment GOCO and Genial Tours GETO). 4 companies were excluded, 3 companies due to insufficient data (Rowad Misr RMTV; El Shams Pyramids SPHT and Sky Light Touristic Development SLTD), 1 company due to interference with the real-estate index (Mena Touristic and Real-estate Investment MENA).

According to the objectives of this research, different econometric-based models are applied.

-Granger causality test: used to investigate the possible causal relationship between exchange rate and stock prices of tourism companies. It is a commonly used technique based on time-series regressions (Engle and Granger, 1987).

-ARCH/GARCH models: applied in modeling the exchange rate volatility in relation to tourism stock returns. GARCH is a Generalized Autoregressive Conditional Heteroscedasticity ARCH model developed by Bollerslev (l986) and Taylor (1986). The ARCH models are widely used to investigate the effects of financial volatility in literature (Engle, 1982; Mechri *et al.,* 2019). The predictive power of the simple and most robust GARCH (1,1) model challenges others (Hansen and Lunde, 2005).

3- Analysis and Findings
(3-1) Descriptive Statistics:
Descriptive statistics are presented in table 1. As shown the mean and median of exchange rate are 10.33 and 7.52 respectively. The minimum value of exchange rate equals 5.52 and the maximum value is 18.7. For all the companies in the sample during the study period the mean and the median of stock price are 8.2, 7.8 respectively, with a minimum value of 5.66 and a maximum value of 11.6.

Table 1
 Descriptive Statistics of Variables

	Exchange Rate	Stock Price
Mean	10.33956	8.203698
Median	7.525123	7.800123
Maximum	18.73594	11.62989
Minimum	5.520487	5.664903
Std. Dev.	5.108841	1.640220
Skewness	0.698131	0.385434
Kurtosis	1.597130	1.904978
Jarque-Bera	18.60855	8.518220
Probability	0.000091	0.014135
Observations	115	115

Figure 1 represents the line plot for stock prices, and figure 2 represents line plot for exchange rate.
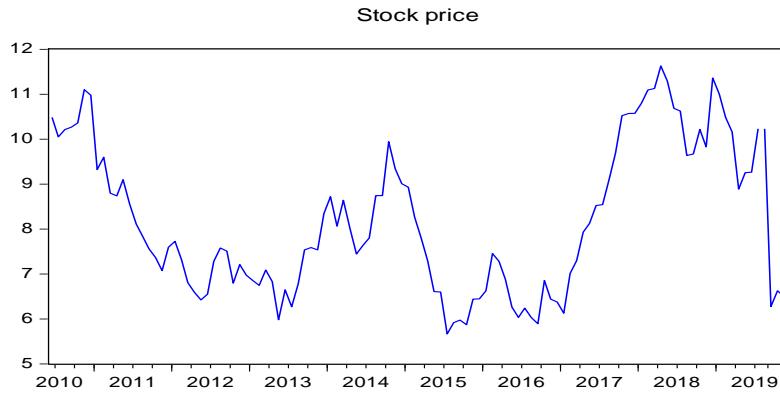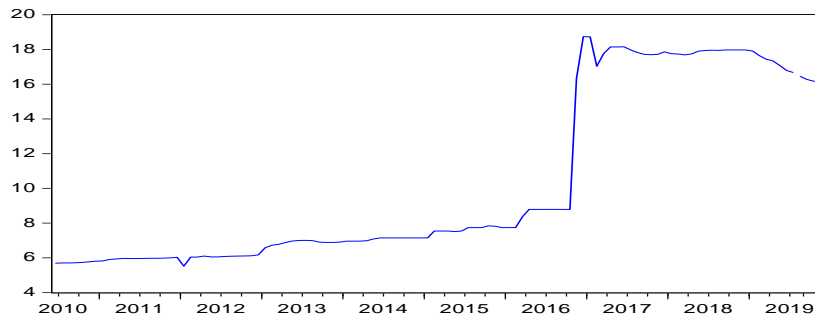

Figure 1. Line Plot for Stock Prices

Figure 2. Line Plot for Exchange Rate

(3-2) Unit Root Test

Analysis requires that the variables should be stationary throughout the investigated period. Augmented Dickey-Fuller (ADF) is applied to determine whether the data series is stationary (has no unit root) or not, by calculating the respective statistics and p-values in the main level (Dickey & Fuller, 1981).

   Table 2 provides the ADF test results. As seen both of the variables under consideration are non-stationary in their levels and become stationary when they are first differenced at the 1% significance level, implying that the variables are first order integrated I (1).

Table 2

 Unit Root Test ADF

Variable	ADF	p-value
Exchange rate	-0.9358	0.7735
First difference of exchange rate	-8.143	0.0000***
Tourism stock price	-2.216	0.2016
First difference of stock price	-10.909	0.0000***

***1% significance.
 Note: Lags are determined using the Schwartz Bayesian criterion.

(3-3) Linear Granger Causality Test

Linear Granger causality test is employed to investigate the causal relationship between the measured variables. The test estimates the following regression model;

$$SP_t = \alpha_0 + \sum_{K=1}^{P} \beta_{1K} SP_{t-K} + \sum_{K=1}^{P} \beta_{2K} ER_{t-K} + \varepsilon_t \, ,$$

Where SP_t is the stock price at time t, ER_t exchange rate at time t and α_0, β_{1K} and β_{2K} are regression parameters. The error term ε_t is assumed to be normally distributed and independent. F-statistics for the Granger causality test the null hypotheses which are "ER_t does not Granger-cause SP_t,": and "SP_t does not Granger-cause ER_t".

The results are reported in Table 3. As shown the null hypothesis that "ER does not Granger-cause SP" is rejected at the 5% significance level, while the null hypothesis that "SP does not Granger-cause ER" is not rejected at all significance levels. This means that there is a unidirectional causality running from the exchange rate to the stock price of tourism companies in the EGX.

Table 3

Granger Causality Test Results

Null Hypothesis	F-Statistic	Prob.
"ER does not Granger cause SP"	3.07155	0.0382[**]
"SP does not Granger cause ER"	1.00305	0.318

[**]*5%, significance.*

Note: Lags are determined based on the Schwartz Bayesian criterion.

(3-4) GARCH Model

To estimate the volatility of returns of tourism stocks in relation to exchange rate volatility GARCH Model is employed. Past square measurement values and past variances are used for modeling the variance at time t. By definition, the GARCH model (1.1) is depicted in two equations:

A- Mean equation:

$$SP = C(1) + C(2) * D(\text{exchangerate}) + \varepsilon_t$$

C1 is the sensitivity of stock price return related to first lag of stock price; C2 is the sensitivity of the stock price return related to the first difference of exchange rate.

B- Variance equation (GARCH model):

$$GARCH = C(3) + C(4) * RESID(-1)^2 + C(5) * GARCH(-1) + C(6) * D(\text{exchange rate}) + \varepsilon_t$$

C3 is the intercept term for variance equation; C4 is the coefficient first lag of ARCH parameter; C5 is the coefficient first lag of GARCH parameter; C6 is the effect of exchange rate volatility on stock return.

- Heteroscedasticity Test ARCH

A first step is to determine the best-fitting autoregressive model for the analysis. The ARCH test is performed to check for ARCH effects in the residuals. The results are presented in table 4.

Table 4

Heteroscedasticity Test: ARCH

F-statistic	1.998062	Prob. F(9,95)	0.0478
Obs*R-squared	16.71204	Prob. Chi-Square(9)	0.0434

Results in table 4 indicate that the null hypothesis "no heteroscedasticity in the residuals" is rejected, then the GARCH (1,1) model is appropriate for the test. Accordingly, GARCH (1,1) model is applied to our test. Results of the mean and variance equations are displayed in table 5.

Table 5

GARCH (1,1) Results

A	Coefficient	Std. Error	z-Statistic	Prob.
AVERAGE_OF_EXCHANGE_RATE	0.199424	0.020196	9.874659	0.0000
C	6.050895	0.194269	31.14705	0.0000
	Variance Equation			
C	0.274272	0.762407	2.779751	0.0056
RESID (-1)^2	0.896812	0.445340	2.013768	0.0440
GARCH (-1)	0.056355	0.125943	2.237012	0.0257
AVERAGE_OF_EXCHANGE_RATE	0.071577	0.168190	2.349786	0.0188
R-squared	0.122552	Mean dependent var		8.203698
Adjusted R-squared	0.114718	S.D. dependent var		1.640220
S.E. of regression	1.543274	Akaike info criterion		3.207052
Sum squared residuals	266.7498	Schwarz criterion		3.351062
Log likelihood	-176.8020	Hannan-Quinn criter.		3.265498
Durbin-Watson stat	0.191847			

In table5 the upper part represents the mean equation; coefficients are positive and statistically significant at the 1% level, indicating that a positive relationship exists between stock return and exchange rate return. The mean of stock return is 6.050895, and the exchange rate can significantly predict its current series by 0.199%, which represents a weak exchange rate effect.

The estimations of the variance equation (GARCH) in table 5 show that the coefficient of the constant term, ARCH term and GARCH term are positive and statistically significant at the 5% level indicating that volatility clustering exists during the study period. The sum of the two estimated ARCH and GARCH coefficients (persistence coefficient) is approximately 0.9 which is close to unity suggesting that volatility shocks are highly persistent, and the effect of current shock remains in the forecasts of stock return variance for many periods in the future.

Moreover, exchange rate coefficient is positive and statistically significant. This implies that exchange rate variance accelerates stock price variance. So, we can infer that the depreciation in the EGP against USD enhances tourism stock performance. The value of the adjusted R-square indicates that exchange rate can explain 12% from the variations in the tourism stock return.

-Post-Estimation Test

The ARCH test is conducted after using the GARCH model to check for heteroscedasticity in the residuals. Results in table 6 indicate that there is no heteroscedasticity in the residuals with a confidence level of 95%.

Table 6

Heteroscedasticity Test

| F-statistic | 0.082741 | Prob. F (1,111) | 0.7742 |
| Obs*R-squared | 0.084169 | Prob. Chi-Square (1) | 0.7717 |

- Autocorrelation Test: Q-statistics Test:

The Q-statistic test is performed to ensure that the model adequately captures the dynamics of the data. In other words, the residuals are free of serial autocorrelation. Results of the Q-statistic test are displayed in Table 7. It seen no significant serial correlation exists in the residuals.

Table 7

Q-statistics Test

	AC	PAC	Q-Stat	Prob*
1	-0.027	-0.027	0.0871	0.768
2	0.121	0.120	1.8019	0.406
3	-0.059	-0.054	2.2187	0.528
4	-0.181	-0.201	6.1556	0.188
5	-0.031	-0.028	6.2751	0.280
6	-0.145	-0.107	8.8611	0.182
7	0.124	0.109	10.752	0.150
8	0.082	0.089	11.598	0.170
9	0.134	0.093	13.845	0.128
10	0.031	-0.019	13.966	0.175
11	0.049	0.066	14.271	0.218
12	-0.133	-0.113	16.573	0.166

Conclusion and Implications

Many studies highlight that the tourism industry performance in a destination is highly affected by exchange rate changes in terms of international tourist arrivals, tourism revenues and firms' performance. Several empirical studies examine the impact of exchange rate changes on tourism demand and revenues in various destinations and provide evidence of the relation between the tested variables. However, the influence of exchange rate changes on the performance of tourism firms, and in particular, the stock performance of tourism firms is still under examination. This paper investigates the relationship between foreign exchange rate volatility and stock price of tourism companies in the EGX. Granger causality model has been used to examine the causal relationship between the tested variables. Further, ARCH/ GARCH models have been employed to test the impact of exchange rate volatility on stock price of tourism companies.

Results of Granger causality test provide evidence of a significant unidirectional relationship between the tested variables from exchange rate to stock price, not vice versa.

The results from the mean equation reveal that a positive significant relationship exists between the tested variables and the exchange rate can significantly predict current series of stock return by 0.199%, a value that reflects a weak exchange rate effect. The estimated normal GARCH (1.1) model also indicates that volatility shocks are highly persistent, and the effect of current shock remains in the forecasts of stock return variance for many periods in the future. Moreover, exchange rate variance accelerates stock return variance.

This result of a positive relationship is consistent with the financial theories and the propositions of the influence of changes in exchange rate on stock price in general and tourism stock price in particular. In Egypt, where inbound tourism is of major importance to tourism firms, this result supports the statements of Muzindutsi, (2011) and Abdalla and Murinde (1997) that the effect of exchange rate on the value of a firm will depend upon its exchange rate exposure. This finding may further endorse the suggestions of the influence of exchange rate on the tourism industry in the destinations where exchange rates are in favor of foreign travelers

Based on the research findings, it is strongly suggested that policymakers ensure the effective application of monetary policy tools to maintain exchange rates at the levels that improve the profitability of tourism companies, accelerate the performance of the stocks of tourism companies and enhance the competitiveness of the tourism sector in Egypt. For executives of tourism companies, it is highly recommended to consider the influence of exchange rate in forecasting the performance of their stocks in the EGX, and also to apply more effective marketing strategies for their stocks. Finally, focusing on one country model in empirical analysis fits well the specific circumstance of a particular market, and provides invaluable data for decision makers. Researchers are therefore encouraged to focus their work on one country or a region and empirically test other determinants of the performance of tourism companies. Additionally, classifying macroeconomic variables into risk factors to tourism industry performance is urgently needed under the highly volatile economic environment globally.

References:

Abdalla, I., and Murinde, V. (1997), "Exchange Rate and Stock Price Interactions in Emerging Financial Markets: Evidence on India, Korea, Pakistan and the Philippines", Applied Financial Economics, Vol.7 No.1, pp. 25-3.

Agiomirgianakis, G.; Serenis, D. and Tsounis, N. (2014), "Exchange Rate Volatility and Tourist Flows into Turkey", Journal of Economic Integration, Vol.29 No.4, pp. 700-725.

Akar, C. (2012), "Modeling Turkish Tourism Demand and the Exchange Rate: The Bivariate GARCH Approach", European Journal of Economics, Finance and Administrative Sciences, Vol. 50, pp. 133-141.

Alalaya, M. (2010), "Short and Long Terms through Co Integration and GARCH Models Applied to Jordan Tourism Income: (1976-2008)", European Journal of Economics, Finance and Administrative Sciences, Vol.19, pp. 134-145.

Anshul, J. and Biswal, P. (2016), "Dynamic Linkages among Oil Price, Gold Price, Exchange Rate, and Stock Market in India", Resources Policy, Vol. 49, pp. 179–185.

Aydemir, O. and Demirhan, E. (2009),"The Relationship between Stock Prices and Exchange Rates Evidence from Turkey", International Research Journal of Finance and Economics, Vol. 1 No.23, pp. 207-215.

Azar, S. (2013), "US Stocks and the US Dollar", International Journal of Financial Research, Vol.4 No.4, pp. 91-106.

Bahmani-Oskooee, M. and Saha, S. (2016),"Asymmetry Cointegration between the Value of the Dollar and Sectoral Stock Indices in the U.S", International Review of Economics & Finance, Vol. 46 No. C, pp. 78-86.

Bogdan, S. (2019), "Macroeconomic Impact on Stock Returns in the Croatian Hospitality Industry", Zbornik Veleučilištau Rijeci, 7(1), pp. 53-68.

Bollerslev, T. (1986), "Generalized Autoregressive Conditional Heteroskedasticity", *Journal of Econometrics*, Vol.31 No.3, pp. 307-327.

Central Bank of Egypt CBE, cbe.org.eg

    https://www.cbe.org.eg/en/EconomicResearch/Statistics

Chan, F. and Lim, C. (2011), "Tourism Stock Performance and Macro Factors",19th International Congress on Modeling and Simulation, Australia, 12–16 December 2011

Chang, C.; Hsu, H. and Mc Aleer, M. (2013), "Volatility Spillovers for Stock Returns and Exchange Rates of Tourism Firms in Taiwan", 20th International Congress on Modeling and Simulation, Adelaide, Australia, 1–6 December 2013

Corelli, A. (2017) Inside Company Valuation, Springer, Switzerland, pp. 15-27

Crouch, G. (1993), "Currency Exchange Rates and the Demand for International Tourism", The Journal of Tourism Studies, Vol. 4 No.2, pp. 45-53.

Demir, E.; Alici, A. and Lau, C. (2017), "Macro Explanatory Factors of Turkish Tourism Companies' Stock Returns", Asia Pacific Journal of Tourism Research, Vol. 22 No.4, pp. 1-11.

De Vita, G. and Kyaw, K. (2013), "Role of the Exchange Rate in Tourism Demand", Annals of Tourism Research, Vol. 43 No.4, pp. 624–27.

Dickey, D. and Fuller, W. (1981), "Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root", Econometrica, Vol. 49 No.4, pp. 1057-1072.

Engle, R. (1982), "Autoregressive Conditional Heteroskedasticity with Estimates of the Variance of U.K. Inflation", Econometrica, Vol. 50 No.4, pp. 987-1008.

Engle, R. and Granger, C. (1987), "Co-Integration and Error-Correction: Representation, Estimation and Testing", Journal of Econometrics, Vol. 55 No. 2, pp. 251-276.

Falk, M. (2015), "The Sensitivity of Tourism Demand to Exchange Rate Changes: An Application to Swiss Overnight Stays in Austrian Mountain Villages during the Winter Season", Current Issues in Tourism, Vol. 18, pp. 465–76.

Gan, Yi (2015), "An Empirical Analysis of the Influence of Exchange Rate and Prices on Tourism Demand", Project Submitted as Partial Requirement for the Conferral of a M.Sc. in Business Administration, ISCTE-IUL, Business School, and Department of Economics

Granger, C.; Huang, B-N. and Yang C. (2000), "A Bivariate Causality between Stock Prices and Exchange Rates: Evidence from Recent Asian Flu", The quarterly review of economics and finance : Journal of the Midwest Economics Association ; Journal of the Midwest Finance Association, Vol.40, pp. 337-354.

Greenwood, C. (2007), "How Do Currency Exchange Rate Influence the Price of Holidays?", Journal of Revenue and Pricing Management, Vol. 6 No. 4, pp. 272-273.

Hansen, P. and Lunde, A. (2001), "A Comparison of Volatility Models: Does Anything Beata GARCH (1,1)?", Working Paper, Center for Analytical Finance, pp. 1-51.

Kim, K. (2003), "Dollar Exchange Rate and Stock Price: Evidence from Multivariate Cointegration and Error Correction Model", Review of Financial Economics, Vol. 12 No.3, pp. 301-313.

Karimi, M.; Khan, A. and Karamelikli, H. (2018), "Asymmetric Effects of Real Exchange Rate on Inbound Tourist Arrivals in Malaysia: An Analysis of Price Rigidity", International Journal of Tourism Research, Vol. 21, pp. 156-164.

Mechri, N.; Ben Hamad S.; Peretti, C. and Charfi, S. (2019), "The Impact of the Exchange Rate Volatilities on Stock Market Returns Dynamic: Evidence from Tunisia and Turkey", hal 01766742v2f. https://hal.archives-ouvertes.fr/hal-01766742v2/document (accessed on 20/9/2019)

Micheal, J. (2018), "The Dynamic Relationship between Stock Prices and Exchange Rate- An Egyptian Experience", International Journal of Research in Economic and Social Sciences, Vol. 8 No.2, pp. 1-7.

Moffett, M.; Stonehill, A.; and Eiteman, D. (2003) "Fundamentals of Multinational Finance", Addison Wesley, Boston.

Muzindutsi, P.(2011), "Exchange Rate Shocks and the Stock Market Index: Evidence From the Johanseburg Stock Exchange", A dissertation submitted in fulfillment of the requirements for the degree of Master of Commerce School of Economics and Finance Faculty of Management Studies University of KwaZulu-Natal.

Nieh, C. and Lee, C. (2001), "Dynamic Relationship Between Stock Prices and Exchange Rates for G-7 Countries", The Quarterly Review of Economics and Finance, Vol. 41 No.4, pp. 477-490.

Obi, P.; Sil, S. and Abuizam R. (2015), "Tourism Stocks, Implied Volatility and Hedging:

A Vector Error Correction Study", Journal of Accounting and Finance, Vol.15 No.8, pp. 30-39.

Parsva, P. and Lean, H.H. (2011), "The Analysis of Relationship between Stock Prices and Exchange Rates: Evidence from Six Middle Eastern Financial Markets", International Research Journal of Finance and Economics, Vol. 66, pp. 157-171.

Quadri, D. and Zheng, T. (2010), "A Revisit to the Impact of Exchange Rates on Tourism Demand: The Case of Italy", Journal of Hospitality Financial Management, Vol.18, pp. 47–60.

Ruane, M.and Claret, M. (2014), "Exchange Rates and Tourism: Evidence from the Island of Guam", Journal of Economics and Economic Education Research, Vol.15 No.2, pp. 165-185.

Saayman, A. and Saayman, M. (2013), "Exchange Rate Volatility and Tourism - Revisiting the Nature of The Relationship", European Journal of Tourism Research, Vol. 6 No.2, pp. 104-121.

Sani, B. and Hassan, A. (2018), "Exchange Rate and Stock Market Interactions: Evidence from Nigeria", Arabian Journal of Business and Management Review, Vol. 8 No.1, pp. 1-5.

Sharma D. and Pal, D. (2019), "Exchange Rate Volatility and Tourism Demand in India: Unraveling the Asymmetric Relationship", Journal of Travel Research, First https://doi.org/10.1177/0047287519878516 (accessed on 9/9/2019)

Singh, G. (2015), "Relationship between Exchange Rate and Stock Price in India: An Empirical Study", The IUP Journal of Financial Risk Management, Vol. XII No. 2, pp. 18-29.

Soenen, L. and Hennigar, E. (1988), "An Analysis of Exchange Rates and Stock Prices- The US Experience Between 1980 and 1986", Akron Business and Economic Review, Vol. 19 No.4, pp. 7-16.

Stavárek, D. (2005), "Stock Prices and Exchange Rates in the EU and the USA: Evidence of their Mutual Interactions", Journal of Economics and Finance, Vol. 55, pp. 141-161.

Suarez, L. (1990), Risk and Capital Flight in Developing Countries, IMF Working Paper. International Monetary Fund, USA.

Suriani, S.; Kumar, D.; Jami, F. and Muneer, S. (2015), "Impact of Exchange Rate on Stock Market", International Journal of Economics and Financial Issues, Vol. 5, pp. 385-388.

Taylor, S. (1986), "Modeling Financial Time Series", Wiley and Sons: New York.

Tang, C. (2013), "Temporal Granger Causality and the Dynamic Relationship between Real Tourism Receipts, Real Income and Real Exchange Rates in Malaysia", International Journal of Tourism Research, Vol. 15 No.3, pp. 272–84.

Vanegas, M. Sr. and Croes, R.R. (2000), "Evaluation of demand US Tourists to Aruba". Annals of Tourism Research, Vol. 27 No.4, pp. 946-963.

Walid, C.; Chaker, A.; Masood, O. and Fry, J. (2011), "Stock Market Volatility and Exchange Rates in Emerging Countries: A Markov-State Switching Approach", Emerging Markets Review, Vol. 12, pp. 272–292.

Webber, A. (2001), "Exchange Rate Volatility and Co-integration in Tourism Demand", Journal of Travel Research, Vol. 39, pp. 398-405.

World Travel and Tourism Council WTTC (2019), Egypt 2019 Annual Research: Key Highlights. https://www.wttc.org/economic-impact/country-analysis/country-data/#undefined (accessed on 12/9/2019)

Wu, Y. (2000), "Stock Prices and Exchange Rates in VEC Model—The Case of Singapore in the 1990s", Journal of Economics and Finance, Vol. 24 No.3, pp. 260-274.

Yalta, Y. (2010), "Effect of Capital Flight on Investment: Evidence from Emerging Markets, Emerging Markets", Finance & Trade, Vol. 46 No.6, pp. 40-54.

Zhao, H. (2010), "Dynamic Relationship between Exchange Rate and Stock Price: Evidence from China", Research in International Business and Finance, Vol. 24 No.2, pp.103-112.

أثر تقلبات أسعار الصرف على أسعار الأسهم السياحية: دراسة تطبيقية على مصر

نجلاء حرب
جامعة الإسكندرية

معلومات المقالة	الملخص
الكلمات المفتاحية سعر الصرف؛ شركات السياحة؛ سعر السهم؛ نموذج GARCH؛ مصر. **(JAAUTH)** المجلد 17، العدد 2، (2019)، ص 55-68.	يلعب القطاع السياحي دورا هاماً كأحد المحفزات الرئيسية للنمو الاقتصادي ومصدراً للعملات الأجنبية في مصر. وكأحد قطاعات الصادرات يمكن للقطاع السياحي أن يؤثر ويتأثر بالتغيرات في أسعار الصرف. وتسعى هذه الورقة البحثية لتحليل وقياس العلاقة الديناميكية بين أسعار الصرف وأداء الشركات السياحية المقيدة في البورصة المصرية (EGX)، كما تختبر أثر تقلبات أسعار الصرف على أسعار الأسهم السياحية في البورصة المصرية، وتستند الدراسة إلى مجموعة من أساليب الإقتصاد القياسي لتحقيق أهدافها من بينها اختبار السببية Granger ونماذج ARCH / GARCH. وقد توصلت الدراسة إلى وجود علاقة سببية أحادية الاتجاه من سعر الصرف إلى أسعار الأسهم السياحية. كما أوضحت تقديرات نموذج GARCH أن تباين أسعار الصرف يؤدي إلى تباين أسعار الأسهم، وبمعنى آخر يؤدى انخفاض قيمة الجنيه مقابل الدولار الأمريكي إلى تعزيز أداء الأسهم السياحية في البورصة المصرية. وتمثل نتائج هذه الورقة البحثية أهمية خاصة لصانعي القرار والمدراء الماليين والمستثمرين، حيث تؤدي إلى فهم أفضل لمدى تأثير تقلبات أسعار الصرف فى أداء أسهم شركات السياحة والضيافة في مصر، كما تقدم اتجاهات جديدة للباحثين في القطاع السياحي.