




THE EFFECT OF DIRECT FOREIGN INVESTMENT ON STOCK PRICE VOLATILITY IN THE SAUDI MARKET



 Suha Alawi

Assistant Professor of Finance, Department of Finance, Faculty of Economics and Administration, King Abdulaziz University, Saudi Arabia.

Email: salarwi@kau.edu.sa



ABSTRACT

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Vision 2030 serves as an area of interest for showcasing the various factors which can impact the Saudi stock market. This study investigated the effect of foreign direct investment on stock price volatility in the Saudi market. Considering that the optimal investment decisions are based on understanding the fluctuations that can take place on the returns with time, it was important to determine the volatility. The study covers 2005 to 2018 and developed its model based on the independent and dependent variables. For instance, foreign direct investment, FDI inflow rate, interest rate, exchange rate, and inflation rate were treated as independent variables in the model. Stock price volatility was treated as a dependent variable. The results showed that foreign direct investment had insignificantly positive impact on stock price volatility. Amongst the control variables, the FDI inflow rate was found statistically significant and positive, whereas the interest rate was found negatively insignificant to stock price volatility. However, the exchange rate was found to be negatively insignificant to stock price volatility. The study concluded that Saudi investment was unable to provide better business opportunities.

Contribution/ Originality: Following the initiative of the 2030 Saudi vision, Saudi Arabia has made substantial efforts for developing its economy by attracting foreign direct investment. This study contributes to the existing literature by investigating the effect of foreign direct investment on stock price volatility in the Saudi market.

1. INTRODUCTION

The dynamic business landscape and the progressive globalization has increased the avenues for cross border investments by a multinational corporation (MNCs) and firms (Ngeny and Mutuku, 2014). Several studies have advocated foreign direct investment (FDI) as the stimulating tool for developing the country's economy as well as paving the path for its sustainable development (Sauvant and Mann, 2018). FDI is viewed as the salient tool which can accelerate the growth of developing countries given their skill gap, undeveloped infrastructure, as well as deficiency of capital (Tan and Tang, 2016). Traditionally, researchers have argued that the inflow of FDI improves a country's economic stance as well as their capital stock, whereas, contemporary researchers have highlighted it as a source for channeling international technology in the region. Recent literature has stated technological change as a pivotal tool for economic stability (Azam and Ahmed, 2015). Ngeny and Mutuku (2014) has pinpointed that the knowledge spillers in the economy may occur through imitation, strong network, competition as well as training.

According to the reporting of [International Monetary Fund \(2015\)](#) FDI served as the salient source for external finance for the most deficit countries from 2012 to 2014. Studies stated that foreign direct investment is generally preferred across open economies that instill skill labor, and modernized infrastructure where the growth prospects are significant ([Ditta and Hassan, 2017](#)).

Interest rates and exchange rates were also found to drive FDI to countries. Paperwork by [Vesarach \(2014\)](#) has pinpointed that the interest rates act as a stimulating agent for FDI across the Asian economies. It recommended that the countries offer competitive interest rates to attract foreign direct investment to the region, notably for developing countries. Similarly, [Alshehry \(2015\)](#) highlighted that this attainment of FDI improves the host country's technological infrastructure which enables it to enhance its management efficacy and escalate the production of goods and services.

[Bianco and Loan \(2017\)](#) while sketching the macroeconomic uncertainty and economic crises have characterized the global economic environment through two factors i.e. price and exchange rate volatility. The impact of exchange rate volatility on FDI has been studied by [Chowdhury and Wheeler \(2008\)](#) in the context of the developing countries revealing that FDI was positively impacted by exchange rate volatility. [Kiplagat \(2016\)](#) study on Kenya has also stated a positive strong relationship with FDI highlighting that it ascertains a high level of FDI inflow. [Hanusch et al. \(2018\)](#) also supported that volatility in the exchange rate impacts MNCs' location decisions. Similar results have been drawn by previous studies such as [Chaudhary et al. \(2012\)](#) and [Dhakal et al. \(2010\)](#) studies on Asian and East Asian economies.

A recent study by [Al Rahahleh and Kao \(2018\)](#) has highlighted that stock market volatility also impacts the working of the economy influencing consumer spending, and the willingness of the investor to hold risk. [Gabriel \(2012\)](#) has further suggested that forecasting stock price volatility is crucial for devising sound investment decisions. [Al Wadi \(2017\)](#) has illustrated the significant impact of stock market volatility on FDI. A study by [Mohanty et al. \(2011\)](#) has demonstrated that stock markets pose a positive and substantial impact on the exposure to oil price shocks and the changes in the oil prices which pose asymmetric effects on stock market returns at both the country and industry levels.

In the context of the developing countries, Saudi Arabia has made substantial efforts for developing its economy by attracting FDI. Prior to 1999, the inflow of FDI in the oil sector was not crucial, whereas, in the recent years, the outflow of the investments has exceeded in the country evident from the increased earnings through oil exports and the limited capacity of the economy to sustain all its financial resources. This promotes attracting FDI for the non-oil sectors for diversifying the country's financial resources and decreasing its investment outflows. The diversification of FDI into non-oil sectors is also promoted in its Saudi Vision of 2030, which has accelerated the country's efforts for attracting FDI for improving the country's economic stance ([Alshuwaikhat and Mohammed, 2017](#)).

Reflecting upon the literature, it was observed that the research was confined to the relationship between oil price changes and Saudi stock prices, and the benefits FDI provided to the country's economy. However, limited work was found which had used an integrated approach for evaluating the relationship which exists among the various variables which affect FDI in the country ([Al Wadi, 2017](#)). More comprehensive information is required for further understanding the context of the emerging market, notably the Saudi Market. Considering the increased avenues, its Vision 2030 plan has opened, it serves as an area of interest for examining the various factors which can impact the Saudi stock market.

Given this, this study investigated the effect of foreign direct investments on stock price volatility in the Saudi market. It is assumed, that the understanding of the Saudi stock market is an area of interest for the international investors who are planning to invest in the emerging market of Saudi Arabia. It is essential to determine the volatility of returns, considering that the optimal investment decisions are based on understanding the fluctuations that can take place on the returns with time.

2. METHODOLOGY

2.1. Study Framework

This research investigated the causal relationship between the study variables i.e. the FDI inflow rate, interest rate, exchange rate and inflation rate with stock price volatility by using the cointegration framework presented by Johansen (1991;1995). The presented framework was used to assess the presence of the long-term equilibrium relationship between the above-mentioned variables. This was based on the estimation calculation by Equation 1:

$$Dy_t = \alpha + \phi c_t + \sum_{i=1}^{k-1} \Gamma_i Dy_{t-i} + \Pi y_{t-k} + \varepsilon_t \quad (1)$$

Here,

D = First difference

y_t And y_{t-i} = GDP per capita natural logarithm of the variables

K = order

A = Intercept

C_t = Trend Term

ε = Error Term

In it, Π determines the number of cointegrating vectors which exists among the study variables. The model of Johansen (1991;1995) had provided two cointegration assessments: the trace test and the maximum eigenvalue test. If the assessment highlighted the presence of cointegration among the variables, then the framework of Vector Error Correction (VEC) was used for estimating the cointegrating equation. Prior to this, the stationary tests of augmented Dicky–Fuller (ADF) and Phillips–Perron (PP) were used (Dickey and Fuller, 1981; Phillips and Perron, 1988). If the test results of unit root assessment indicated that the variables had one-unit root, the data was then transformed through variable differencing preceding their investigation. In case the variables were integrated and possessed the same integration order, then cointegration was observed (Engle and Granger, 1987). The existence of a cointegrating relationship set the base for the VEC specification, which was done through Equation 2.

$$Dy_t = \alpha + \lambda ECT_{t-1} + \beta Dy_{t-1} + \varepsilon_t \quad (2)$$

Here,

ECT = lagged error-correction term

λ = ECT coefficient

ECT_{t-1} = Adjustment speed from short-run too long run

The coefficient represented the dependent variable deviation from the equilibrium in the long-term. The adjustment speed of the coefficient must have a negative sign the intensity of which should be greater than that of unity. The variable first difference and ECT_{t-1} were used for the calculation of the short-term estimation. Lastly, Granger causality tests were applied for assessing the causality direction between the variables in the short- and long-term (Granger, 1988). In it, the significance of the lagged independent variable coefficient β was assessed, which was carried out by the standard χ^2 Wald test. With ECT, the use of the error correction model provided

another way of assessing the causality test. λ significance specified the direct relationship of the long-term equilibrium with the dependent variable.

3. SELECTION OF VARIABLES AND HYPOTHETICAL DEVELOPMENTS

3.1. Dependent Variables

The study covered the period from 2005 to 2018 and developed its model based on the independent and dependent variables. Stock price volatility served as a dependent variable (Y) in this paper. The data related to the variables were gathered through the World Development Indicators of the World Bank¹.

The annual stock rate that is provided through DataStream served as an important variable in incorporating stock price volatility. The given range was however divided by the average of lower and higher prices obtained per year. The available range then served as the average for the upcoming years available, and this provided a variable that was similar to the standard deviation. However, a square root transformation was applied to attain a given variable since standard deviation was easily affected through extreme values (Hussainey *et al.*, 2011).

3.2. Independent Variables

Foreign direct investment (x_1), the FDI inflow rate (x_2), interest rate (x_3), exchange rate (x_4), and inflation rate (x_5) were treated as independent variables in the model.

4. EXPLANATORY VARIABLES

4.1. Foreign Direct Investments

For various developing nations, the concept of foreign direct investment is of great importance. The major role of FDI is to open ways for financial and economic resources, its development, provision of managerial skills, marketing expertise along with maximum job opportunities. According to Gay (2016) the transformations in the structure of the FDI significantly affect the stock market. Bennett and Raab (2017) argued that FDI is considerably linked with organizational and regulatory reforms as well as fair trading therefore, increasing the capital flows within the state. Shah (2017) stated that stock market capitalization was directly linked with the inflow of FDI. The enhanced investor's base and participation further increases the rate of capital flows. We assumed that change in the structure of the FDI significantly affects the stock price volatility i.e. that the stock development is based on the investor's participation. Therefore, we assumed that:

H1: *There is a positive relationship between FDI and stock price volatility.*

4.2. FDI Inflow Rate

Flow of foreign direct investment helps in recording the value of transactions that are made across the border, in the given time duration i.e. a year. Financial flows are usually based on the debt transactions of intercompany, equity transactions, and the reinvestment of received earnings. Theoretically, FDI inflow positively influences the economy of the host country. However, at a firm level it has been seen that FDI inflow rate increases the entire productivity (Liang, 2017). Domazet (2018) stated that FDI inflow brings in new technologies within the organization while maintaining the international standard of quality thus, increasing the liquidity of stock market. So, the following relationship was expected:

H2: *There is a positive relationship between FDI inflow rate and stock price volatility.*

¹ <http://datatopics.worldbank.org/world-development-indicators/>

4.3. Interest Rate

Interest rates are often examined in the context of the monetary economy, where the invested amount and the returned amount are usually of the same nature (Hagedorn, 2016). This helps in determining the rate of return. It is termed as the overall profit of an identified magnitude. DeFusco and Andrew (2017) believed that a deduction in the interest rates increases the borrowing of loans and decreases the interest of people towards the investors. Ferrer *et al.* (2016) claimed that a decrease in interest rate increases the equity prices since people borrow loans at lower cost and move their money from bond market to equity market thus, causing the stock prices to increase significantly. Hence, the following relationship was expected:

H3: *There is a positive relationship between interest rate and stock price volatility.*

4.4. Exchange Rate

The exchange rate serves as an important factor in determining and increasing the value of trade. It is further referred to as the most important price indicator that provides a greater effect over economic growth of a country (Zhang and Zhang, 2018). The stability to any country's financial market is provided through the developed exchange rate. The cost of the currency of one country that provides increasing or decrease effect over the economy of another country is the basic phenomenon of exchange rate. According to a study conducted by Sui and Sun (2016) a long-term association exists between the exchange rate and stock prices. A downward pressure on the exchange rates leads to the lower stock prices because investors withdraw their capital from certain companies thus decreasing the demand for domestic currency. Reboredo *et al.* (2016) determined that the volatility spillover effects exist from the exchange rate to stock prices and vice versa. So, we assumed that:

H4: *There is a positive relationship between exchange rate and stock price volatility.*

4.5. Inflation Rate

The annual growth rate of a country that is expressed in prices is said to be the inflation rate and is usually measured for a short span. Shivakumar and Urcan (2017) claimed that the actual effects of the inflation are caused by the illusion of income. Bernanke *et al.* (2018) argued that a rise in the expected inflation rate ultimately increases the nominal yields. Gilchrist *et al.* (2017) further added that in the absence of interest rate, inflation rate increases and significantly influences stock development. Then we assumed that:

H5: *There is a positive relationship between inflation rate and stock price volatility.*

Table 1 defines the variables used in our model.

Table-1. Description of variables.

Category	Acronyms	Description/Calculation
<i>Dependent variables</i>		
Stock price volatility	NSFR	It is the variation of a trading price series over time.
<i>Independent Variables</i>		
Foreign direct investments	FDI	Investment made by a firm or an individual
FDI inflow rate	FDIIR	Value of inward direct investment made by non-resident investors in the reporting economy
Interest Rate	IR	Proportion of a loan that is charged as interest to the borrower
Exchange Rate	ER	The value of one currency for the purpose of conversion to another.
Inflation Rate	IR	Overall increase in the Consumer Price Index

5. STATISTICAL ANALYSIS OF DATA

5.1. Descriptive Statistics

Table 2 provides descriptive statistics including the mean, standard deviation, maximum value, minimum value and total observations.

Table-2. Descriptive Statistics.

Variables	Units	Mean	Std. Dev.	Min.	Max.	Obs.
Foreign direct investment	US\$	255.328	415.284	-144.165	2415	200
FDI inflow rate	%	59.855	11.022	36.35	87.31	200
Interest rate	%	8.249	1.321	5.892	10.792	200
Exchange rate	%	12.544	4.143	3.46	20.252	200
Inflation rate	%	40.252	25.24	2.38	104.214	200

Table 2 reports descriptive statistics for foreign direct investment (FDI), FDI inflow rate, interest rate, exchange rate, and inflation rate that were used in the present study. The descriptive statistics have been reported through different parameters including the mean, standard deviation, maximum range, minimum range, and observations. FDI refers to the investment made into business located in another country whereas, the FDI inflow rate defines the value of inward direct investment in the reporting economy, made by non-resident investors. The interest rate was the amount charged by the lender for using their assets that is expressed as percentage of the principal. The exchange rate was defined as currency value of one nation to another nation or economic zone. However, the inflation rate was stated as the increase in consumer price index that provides the average price for different goods.

Foreign direct investment had the mean value of 255.328 million USD with a standard deviation of 415.284 million USD. Its minimum value was -144.165 million USD while the maximum value was 2415 million USD with 200 observations. The FDI inflow rate had the mean value of 59.855 percent with a standard deviation of 11.022 percent. Its minimum value was 36.35 percent while the maximum value was 87.31 percent with 200 observations.

The interest rate had the mean value of 8.249 percent with a standard deviation of 1.321 percent. Its minimum value was 5.892 percent while the maximum value was 10.792 percent with 200 observations. The exchange rate had the mean value of 12.544 percent with a standard deviation of 4.143 percent. Its minimum value was 3.460 percent while the maximum value was 20.252 percent with 200 observations. The inflation rate had the mean value of 40.252 percent with a standard deviation of 25.240 percent. Its minimum value was 2.38 percent while the maximum value was 104.214 percent with 200 observations.

5.2. Test of Hypotheses (Multivariate Analyses)

5.2.1. Panel Unit Root Analysis

Table 3 provides the panel unit root analysis including Levin *et al.* (2002); Im *et al.* (2003) Augmented Dickey and Fuller (1979) statistics. Estimation was based on the ten percent significance level.

The panel unit root analysis reported that time series variable was stationary and possessed a unit root. The application of the unit root test showed that the result was stationary at the ten percent level. It was measured along the constant without trend and constant means at the 1st level.

Estimations shown in the above table proved that all the variables found were statistically insignificant at the ten percent level in both the constant and constant with intercept stages; thereby, no unit root was found at the ten percent level. Afterwards, at the 1st difference analysis, all the variables were found statistically significant proving that the unit root was possessed by all variables and therein, non-stationarity was achieved at the 1st difference in both the constant and constant with intercept stages.

Table-3. Panel Unit Root Analysis.

Test Summary		Constant		Constant and Intercept	
		I(0)	I(1)	I(0)	I(1)
Foreign Direct Investment	LLC	0.155	0	0.735	0
	IPS	0.27	0	0.367	0
	ADF	0.118	0	0.71	0
FDI inflow rate	LLC	0.311	0	0.528	0
	IPS	0.969	0	0.335	0
	ADF	0.77	0	0.568	0
Interest rate	LLC	0.107	0	1	0
	IPS	0.148	0	0.694	0
	ADF	0.294	0	0.811	0
Exchange rate	LLC	0.108	0	1	0
	IPS	0.796	0	0.56	0
	ADF	0.325	0	0.507	0
Inflation rate	LLC	1	0	1	0
	IPS	0.191	0	0.826	0
	ADF	0.591	0	0.968	0

5.3. Panel Cointegration Analysis

Table 4 provides the Pedroni (1999) panel cointegration test results and the assessment was based on the five percent significance level.

Table-4. Pedroni Panel Co-integration Test.

Test Summary	Statistics	Prob.
Panel v-Statistic	0.251	0.401
Panel rho-Statistic	0.141	0.556
Panel PP-Statistic	-3.827	0
Panel ADF-Statistic	-4.972	0
Group rho-Statistic	0.719	0.764
Group PP-Statistic	-8.915	0
Group ADF-Statistic	-7.662	0

The table reported the results of the Pedroni panel cointegration test that included various asymptomatic properties. A total of seven panel cointegration statistics were present. These tests were distributed in two parts. For instance, the first part was based on the within dimension approach, including the panel v statistic, the Panel rho Statistic, the Panel PP Statistic and the Panel ADF Statistic; whereas, the second part was based on the between-dimension approach, including the Group rho Statistic, the Group PP Statistic and the Group ADF statistic.

In Table 4, four statistics were found significant at the ten percent significance level comprising Panel PP-Statistic, Panel ADF-Statistic, Group PP-Statistic and Group ADF-Statistic. It proved the existence of co-integration proving the existence of a long-term relationship amid co-integrated variables. Table 4 also provided the results of the panel co-integration test using the Kao (1999) residual technique for estimating the long-term relationship amid co-integrated variables.

Table-5. Kao-Residual Panel Cointegration Test.

Test Summary	t-Statistic	Prob.
Augmented Dickey-Fuller (ADF)	2.974	0.002

The table showed that the Kao-Residual panel cointegration test follows same approach as the Pedroni tests. The only difference was that it stipulated cross-section specific intercepts and homogeneous coefficients on the first-stage regressors.

The results in Table 5 proved that the Augmented Dickey and Fuller (1979) statistics were found statistically significant at ten percent and therefore, a long-term relationship exists amid cointegrated variables using the Kao (1999) residual technique.

5.4. Hausman Test

For estimating the misspecification of random-effect analysis, the Hausman (1978) test was used and the results are provided in Table 6.

Table-6. Hausman Test.

Test Summary	Chi-Sq. Statistic	Prob.
Cross-section random	0	1
Period random	0	1
Cross-section and period random	0	1

The table reported the Hausman Test results for the correlated random-effect for testing the model misspecification in the random-effect model.

It was shown in the above table that the cross-section and period random were found statistically insignificant accepting the null hypothesis of no misspecification. Henceforth, the random-effect analysis for the pooled OLS technique was used.

5.5. Pooled OLS using Random-Effect Analysis

Table 7 provides the results of the pooled OLS analysis using the random-effect test. Estimation was based on the ten percent significance level.

Table-7. Fixed Effect Pooled OLS Analysis.

Independent Variables	Coefficient	Std. Error	t-Statistic	Prob.
FDI Inflow Rate	18.435	9.544	1.931	0.055
Foreign Direct Investment	0.001	0.001	1.207	0.229
Interest Rate	5.563	1.097	5.07	0
Exchange rate	-0.083	0.148	-0.561	0.576
Inflation rate	-0.09	0.024	-3.695	0

Dependent Variable: Stock price volatility
R-Square: 0.175; Adj. R-Square: 0.158
F-Statistics (Prob.): 10.322 (0.000).

The table reported that the fixed effect pooled OLS analysis was used for testing the model misspecification in the fixed-effect model for ROA.

The results have shown that foreign direct investment (0.001, $p > 0.10$) had an insignificantly positive impact on stock price volatility and thus H1 was rejected. Amongst the control variables, the FDI inflow rate (5.563, $p < 0.10$) was found statistically significant and positive and H2 was accepted, whereas the interest rate (-0.083, $p < 0.10$) was found negatively insignificant in relation to the stock price volatility and H3 was rejected. However, the exchange rate (-0.090, $p < 0.10$) was found to be negatively insignificant in relation to stock price volatility and H4 was rejected. R-square was found to be 0.175 proving that a 17.5 percent variability in employment could be predicted by the combination of all predictors. The results have shown that the inflation rate (0.090, $p < 0.10$) had a significantly positive impact on stock price volatility and thus H1 was accepted.

5.6. Granger Causality Analysis

Table 8 provides the results of the Granger (1969) causality analysis and estimation was based on the ten percent significance level.

Table-8. Granger Causality Analysis.

Null Hypothesis	F-Statistic	Prob.	Remarks
EMP does not Granger Cause CDI	0.06	0.942	No Causality
CDI does not Granger Cause EMP	0.057	0.944	
LOG(GDPC) does not Granger Cause EMP	0.134	0.875	Unidirectional
EMP does not Granger Cause LOG(GDPC)	3.197	0.043	
GE does not Granger Cause EMP	0.679	0.508	No Causality
EMP does not Granger Cause GE	1.008	0.367	
HED does not Granger Cause EMP	1.935	0.148	Unidirectional
EMP does not Granger Cause HED	3.351	0.037	

The table shows that the Granger causality analysis helped in the determination of causality between two or more variables within a specific time series. The results have shown that there was no causal relationship between stock price volatility and foreign direct investment and the exchange rate. However, employment had a significant unidirectional causal relationship with the natural FDI inflow rate and inflation rate.

6. DISCUSSION

This study investigated the effect of foreign direct investments on stock price volatility in the Saudi market. The study assumed that understanding the Saudi stock market was an area of interest for international investors planning to invest in Saudi emerging market. In 1973, the fixed exchange rate transformed to the transient exchange rate. The economists were against the transient exchange rate at the time. Several theories were recommended by these economists regarding the association between exchange rate and global trading - that it might disturb or enhance the flow of trade in different countries.

The findings have shown a significant and positive impact of FDI and inflation rate on stock price volatility and thus H1 and H5 were accepted. This finding was supported by previous studies, which showed a significant and positive impact of FDI and inflation rate on stock price volatility (Musyoka and Ocharo, 2018; Demir, 2019).

However, the findings have indicated an insignificant but positive impact of the FDI inflow rate, interest rate, and exchange rate on stock price volatility and thus H2, H3 and H4 were rejected. This finding was supported by previous studies, which showed an insignificant but positive impact of the FDI inflow rate, interest rate, and exchange rate on stock price volatility (Okwuchukwu, 2015; Ho and Odhiambo, 2018).

According to Bahmani-Oskooee and Saha (2016) there are some traders who were unable to carry such losses; therefore, they needed to lower trade volume to reduce the chances of any loss because of the floating exchange rate. The volatile exchange rate coefficients indicated negative findings with distinct significance levels in these models. It was reported that investments were unalterable and thus, the value of portfolio was raised providing more investment opportunity for such portfolios. This causes a reverse association between unreliability and investment. Considering the previous studies regarding unalterable investment, it was observed that increased unreliability hampers the investment by risk averse portfolios whenever there is improper market competition or when the cost of capital stock is more than the adjustment cost. Therefore, the firms tend to avoid increased capital within an organization because of so much unreliability. Chowdhury and Wheeler (2015) argued that under these circumstances different firms try to make fewer investments.

There are some firms which show less interest in making investments during eruptive or unreliable circumstances. Other firms tend to acquire the opportunity under such circumstances to receive higher returns on equity. It is therefore, significant for the investors to formulate better investment plans to make investments in the OBOR-related countries, keeping in mind the certainty of exchange rate fluctuations. Some previous studies follow these consequences with proof from other countries. For example, Iamsiraroj (2016); Asamoah *et al.* (2016); Latief and Lefen (2018) observed important and negative impacts of exchange rate volatility on FDI.

Large market size and trading volume comparable to multiple listed companies characterizes the Saudi equity market. However, the Saudi market has inadequate important financial investors who generally possess dominating positions in a majority of business markets and are an important source of international trading. Masih *et al.* (2010) argued that individual investors are the main source of 90% of the total trading. Thus, these significant features of Saudi equity market can explain the importance of the number of trades that represents the information in a better way rather than trading volume. In trading volume, multiple small investors develop a huge amount of trading transactions. A study conducted by Choi *et al.* (2012) also claimed that coexistent information can enhance the asymmetric impacts of imperfect news on volatility. Thus, the reduction in the tenacity could be recompensed by raising the leverage impacts.

7. CONCLUSION

The consequences of the current study showed evidence that direct investments are insufficient for increased development of employment in Saudi Arabia. Therefore, it was concluded that investment is unable to provide better business opportunities. The GDP per capita is significant for increasing employment in Saudi Arabia. It is impossible to enhance productivity without providing employment to individuals. It is also impractical to envision the rate of employment in Saudi Arabia through government expenditure. It is also observed that higher education in Saudi Arabia has further lowered the rate of employment. Therefore, it can be concluded that higher education in Saudi Arabia causes the reduction in employment in different organizations,

7.1. Future Directions

The data which is collected and analyzed in the current study is from the period of 2005 to 2018. Future researchers could use a greater sample to explore more intense consequences of the research. In the current study, the country Saudi Arabia is selected, however future researchers can consider other countries for their study. It is also suggested to involve other economic characteristics influencing the employment namely, foreign direct investment of different countries, gross domestic product, trade relations, interest rate, and remittances. Future scholars can also utilize the distinct statistical approaches for analyzing the effects of dependent and independent variables more consciously.

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