The Impact of FDI on GDP Growth and Unemployment in Yemen

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ABSTRACT

The paper aims to investigate the impact of FDI on GDP growth and Unemployment in Yemen from 1998 to 2018 by employing the Augmented Dickey-Fuller test to study the stationarity of the time series data, the Johansen Cointegration test to test the existence of the long-run relationship between the variables, the Granger causality test to find out the causal relationship between the dependent and the independent variables. Findings show that foreign direct investment and GDP growth were stationary at first difference while the unemployment rate was found to be stationary at the second difference. The cointegration test approved the existence of a long-run relationship between the variables. The Granger causality test suggests that causality runs from FDI to Unemployment, not GDP. Adding to these tests, diagnostic tests were performed to check the reliability of the results, which show that the findings are consistent. Moreover, the study also proposes that the government of Yemen should emphasize different factors other than mentioned in the study in order to sustain the economy and create more job opportunities in Yemen.

Keywords: Foreign direct investment, GDP growth, unemployment

1. INTRODUCTION

Foreign Direct Investment (FDI) is an investment made by a resident enterprise or direct investor into the enterprise that resides in another country; this often includes establishing operations or acquiring tangible assets. In recent years FDI becomes an emphasis that attracts the attention in economic development as it is considered a significant driver in the globalization process, which brought the integration of the economic system to several countries. It raises opportunities, increases productivity, and is connected with the world economy Anyanwu [1].

Besides FDI contributions to help the developing countries to have sustainable growth, it provides countries with new technologies, employment, higher recruiting standards as well as leads to a well-developed economy that connects both industrialized and developing countries.

Since several studies [2, 3], conducted about the importance of FDI in sustaining economic growth and job creation in developing countries, Yemen was one of those countries which attempted considering the attraction of several foreign corporations and create a suitable environment for them.

With the political instability the country is going through, Yemen has witnessed a high unemployment rate in the past ten years. In the year of 2011, the unemployment rate was reported at 13.16%, and the economic growth rate dropped for the first time in decades to reach – 12% (World Bank data). At the time, the country was struggling with political problems due to the Arab spring. In 2012, the government adopted the policy of encouraging foreign investment in the country to help the economy and create more jobs.

Despite the fact that several kinds of literature were conducted to study the impact of FDI on GDP growth and Unemployment, and the importance of FDI in building a strong economy and creating jobs, many scholars have shown conflicting evidence regarding the question to what extent FDI affects the economic growth and Unemployment in the host country. The impact of FDI on Unemployment and economic growth differs from a country to another. Chowdhury and Marvotas [4] suggested that it would take time to find out precise results of one country that could help to reveal some findings regarding whether FDI has an impact on 'jobless rate' and GDP growth. Considering this suggestion, data was collected about Yemen from the year 1998 to 2018. The study will be conducted by applying different econometric tests to find ascertaining results of whether FDI has a positive impact on economic growth and Unemployment in Yemen during the past two decades.

2. LITERATURE REVIEW

Over the last decades, several studies have been conducted on the impact of FDI on GDP growth and job creation. The findings of empirical analysis have shown an unclear picture of the relationship between them. There are controversies on the relationship between FDI, GDP growth, and Unemployment. Different empirical studies and theoretical models conducted about different countries or periods often show inconsistent results. Therefore, this

part will mainly discuss the history of researches regarding the same topic.

2.1. The Impact of FDI on GDP

A study by Al-Iriani and Al-Shamsi [5] tested the impact of FDI on GDP growth in the GCC countries (Gulf Cooperation Council) countries; the study was obtained by heterogeneous panel cointegration techniques, which shows a strong link from FDI to GDP and vice versa. Iqbal [6] examined the relationship between FDI and GDP growth from 1983 to 2012; they concluded that FDI has a positive impact on GDP growth in the host country. They also added that FDI impact might be more situation and culture related, and the effect might differ from a country to another. Similarly, Agrawal and Khan [7], who investigated the FDI impact on both China and India, they claimed that the impact of FDI on Chinese GDP growth is more significant than its impact to the Indian's economic growth, due to the Chinese big market size, accessibility to export market, developed infrastructure, and Government incentives. Furthermore, Agrawal [8] used a database covering five Asian countries; India, Pakistan, Bangladesh, Sri Lanka, and Nepal. By employing cross-section analysis panel data, he suggested that there is a relationship between foreign and domestic investment and GDP. He asserted that the impact of FDI on GDP was negative during and prior the 1980s and positive in the early nineties. Furthermore, Reza [9] conducted an empirical analysis by using annual data from 1990 to 2015 on the relationship between FDI inflows and GDP. They concluded that there is a positive relationship running from FDI inflows to GDP in the long-run and short run. Alfaro [10] carried out an analysis of the impact of FDI on growth in different sectors, namely primary, service, and manufacturing. The findings showed there is a negative impact on growth for the primary sector; nonetheless, the manufacturing industry shows a positive relationship, which implies that FDI increases the growth in the manufacturing industry of the host country. Theoretically, the benefits of FDI are limited to the industrial sector. In brief, the result of the study showed a positive and insignificant effect of FDI on economic growth, which implies that FDI might always be helpful to the host economies as it mostly depends on the nature of the economy in the host country.

Many studies have shown a positive link between FDI and Economy growth however, a study conducted by Athukorala [11] on the Impact of FDI on GDP growth on Sri Lanka suggested that FDI does not influence the GDP growth, and also the direction of causation is from GDP to FDI, not the other way around which contradicts a study done by Owolabi-Merus [12] who investigated the impact of FDI on economic growth on the sample of annual data for the period 1981–2013 in Nigeria. His findings indicate that there is unidirectionally causation running only from FDI to GDP. Gupta and Singh [13] used the VECM technique to examine the cause and effect relationship between FDI and GDP over the period 1992-2013 in the

BRICS countries; the findings showed that the higher economic growth in Brazil, China and Indian cause higher Inward FDI. Contrarywise, the study concludes that Inward FDI and GDP are not cointegrated in Russia and South Africa.

2.2. The Impact of FDI on Unemployment

Unlike the abundant studies concerning the relationship between FDI and GDP, the literature on FDI and unemployment linkage seems to be relatively less. Kurtovic [14] examined the long relationship between FDI and Unemployment using data from 1998 to 2012; they discovered a positive relationship between FDI and the reduction of Unemployment in the countries of Western Balkans. On the contrary, Chella and Phiri [15] employed the ARDL method to conclude that FDI has no significant influence on unemployment reduction while domestic investment has an impact contributing on employment growth in South Africa. Additionally, Zdravkovic [16] studied the impact of FDI on Unemployment in transition countries from 2000 to 2014 using a panel cointegration framework. The findings of the study indicate that the effect of FDI on Unemployment is either loose or does not exist. However, a recent study by Bayar and Sasmaz [17] discussed the effect of FDI and domestic investment on Unemployment throughout 1994 – 2014. They stated that there is a positive relationship between FDI and Unemployment in the long run but a negative relationship with the domestic investment in the 21 emerging economies.

Craigwell [18], through his study of FDI and Employment in the English and Dutch-speaking Caribbean, suggests that an increase in the FDI leads to higher employment as it is considered a factor for job creation. Sha and Tao [19] showed that for every 1% increase of FDI, a 0.13% increase in employment. On a similar approach, Braunstein and Epstein [20] found out that there is no independent effect of FDI on employment in the Chinese provinces; in case there is an existed positive impact found, the potential FDI and employment are nevertheless is small.

Furthermore, a recent study was done by Vacaflores [21] by performing dynamic data analysis from 1980 to 2006 for 12 Latin American countries. His research suggested that FDI has a positive and significant effect on employment in the host countries, which hugely affects the male labor force. A study by Mickiewicz [22] tested the effect of FDI on employment in 4 CEE countries (Czech Republic, Hungary, Slovakia, and Estonia). This study found a positive correlation between FDI and Employment in those countries. The researchers also noted that the diversity of the FDI plays a significant role in the sustainability of the economy in the host countries in which will lead to more various types of skill transfers and spillovers.

Regarding the above literature, it is evident that the impact of FDI on GDP growth and Unemployment depends more on the country, and it can either be positive or negative

and sometimes inconclusive depending on the conditions of the economy in host countries. Moreover, the various results are due to the different methodologies applied in different researches using different countries and different periods of time. The next part of this research will discuss the methods performed in this research.

3. RESEARCH METHODOLOGY

This study is conducting quantitative analysis to investigate the impact of FDI on Unemployment and GDP growth by taking several econometrics tests. Unite root analysis (ADF test), Co-integration test, Granger Causality test, will be used in the empirical study.

This part will include the steps to the methodology, which consists of the data analysis used in this research. There are a total of two independent variables, which are Unemployment and GDP growth, whereas FDI is considered as a dependent variable. In order to measure the impacts of FDI on GDP growth and Unemployment rate, an annual time series data method was used from 1998 to 2018. The study has a total of 21 observations. The data of the research has been obtained from The World Bank and Statista.

3.1. Multiple Regression Model

$$LOGGDP = \beta_0 + \beta_1 LOGFDI + e \qquad (1)$$

Where

LOGGDP is the natural logarithm of GDP growth.

β_0 = The intercept of equation (1)

$\beta 1$ = The slope coefficient of foreign direct Invetsment.
LOGFDI = The natural logarithm of Foreign Direct Investment.
e = the error term for equation (1)

$$LOGUN = \beta_0 + \beta_1 LOGFDI + e \qquad (2)$$

Where

LOGUN = the natural logarithm of the Unemployment rate.
α_1 = is the intercept of equation (2)
$\beta 1$ is the slope coefficient of Foreign Direct Investment.
LOGFDI is the natural logarithm of foreign direct investment.
e = The error term for equation (2)

3.2. Unit Root Test

The unit root test is a critical econometric procedure to investigate the stationarity of the data; if the data is non-stationary, the R square will be high in which will indicate the relationship between the variables does not exist. The result that comes from the non-stationarity does not

contain economics meaning where there is no relationship between variables since R square is very high, resulting in spurious regression among the variables Talla [23]. Therefore, before running our analysis and testing for causality, it is significant to run the data to investigate the stationarity of data using the augmented dicky fuller test (ADF). The Null and alternative hypothesis are as follow
H0: δ =1 unit root   (Variables is not stationary)
H1: δ <1 no unit root   (Variable is stationary)
If the coefficient is less than one, then the hypothesis of y contains a unit root is rejected, the rejection of the null hypothesis means the variables are stationary and have a unit root test. However, if the coefficient is $\geqslant 1$, we do not reject the null hypothesis and conclude that variables are not stationary.

3.3. Johansen Cointegration Test

According to Hussein, Rafique, and Nawaz [24] cointegration test is used to identify the long-term equilibrium association between the dependent and independent variables. Finding cointegration in a model implies that there is a long-term relationship between dependent and independent variables. If the null hypothesis is rejected, we, therefore, accept the alternative hypothesis, which concludes that cointegration exists between the variables.

3.4. Granger Causality Test

According to Nasir [25], the Granger causality is a statistical hypothesis test to examine whether the times series variables are useful for forecasting using the prior values. The Granger test is used to examine the causality between variables involving the F-tests, which is used to test the significance between dependent and independent variables. Furthermore, it tests the relationship between two variables; suppose we have A variable that granger causes B; in other words, A helps to predict B in which does not necessarily imply that B has effects on A. In order to test the granger cause of variables, it is essential to study the p values for each variable as the level significance of P values plays a significant role in finding out the results.

4. DIAGNOSTIC CHECKING TESTS

4.1. Heteroscedasticity

Heteroscedasticity occurs when there is unequal variance across all observations; it is typically encountered in cross-sectional data that is collected by observing outcomes at the same time. When heteroscedasticity problems happen, the OLS still linear and unbiased, and the variance will become inefficient; therefore, it will usually affect the

Table 1 Lag order selection criteria

Lag	logL	LR	FBE	A/C	SC	HQ
0	-103.3835	N/A	119.6776	13.29794	13.44280	13.30536
1	-87.65549	23.59209*	53.29175	12.45694	13.03638	12.48661
2	-80.57893	7.96112	79.32430	12.69737	13.71139	12.74929
3	-62.40126	13.63326	39.86655	11.55016	12.99876	11.62434
4	-37.56557	9.313382	19.84826*	9.570697	11.45388	9.667131
5	1068.764	0.000000	N/A	-127.5955*	-125.2777*	-127.4768*

hypothesis tests, which are based on the T and F distribution in which will make it unreliable. Moreover, Long and Laurie [26] argued that heteroscedasticity underestimates the standard errors and the variances, which results in making both T statistics and f statistics inaccurate. Therefore, the ARCH model is considered essential in determining the quality of the models used in this research.

4.2. Jarque Bera test (Normality Test)

The normality distribution test is considered as a necessary test to check the error of the assumption in the regression model. Gujarati & Porter [27] claimed the normality of a test helps to detect the significance and confidence of the model. No normality leads to the incorrect p values for the overall F and T-test. Based on E-views, the normality can be determined if the P-value is more than (1%, 5%, and 10%) in which we won't reject the null hypothesis and conclude that the error term is normally distributed.

4.3. Autocorrelation Test

Autocorrelation is the same as the Heteroscedasticity problems where there is no efficiency in the variables. There are different methods to detect the existence of autocorrelation problems in the model, and they are the Durbin Watson D and H test and Breusch Godfrey (LM test). The Durbin Watson H and D test are used to test the first-order correlation, while the Breusch Godfrey test (LM test) is used to examine the autocorrelation problem that has a higher order of correlation. Therefore, the Breusch

Godfrey test is conducted to check the autocorrelation of the model.

5. RESULTS AND DISCUSSION

5.1. Lag Order Selection

Table 1 shows that the lag of order 4 is sufficient for this model based on the Final predictor error (FPE). However, Schwarz information criteria (SIC), Akaike information criterion (AIC) and Hannan-Quinn information criterion (HQ) selected lag of order 5. Table 1 illustrates the results for Lag order selection by VAR. The Endogenous variables selected are LUN, LGDP and LFDI as the Unemployment rate, Gross domestic product, and FDI inflow (GDP %) rate respectively. The sample size is from 1998 to 2018, whereas the included observations for this test are 16.

5.2. Stationary Test

The stationary test is conducted for each of the variables using a lag of 5 by SC or Lag of 4 through the final prediction error. According to the Table 2 after doing the ADF test for stationary, results show all variables at level are non-stationary, and at first difference, they were all stationary except for one variable, which is unemployment rate however, the findings show that all variables at second difference have critical values less than 0.05 therefore, we can reject the null hypothesis H0 which mean that all variables are stationary from the second difference.

Table 2 Augmented dickey-FULLER test (ADF)

Variables	Stationary at level		Stationary at first Difference		Stationary at Second Difference	
	Intercept	*Trend & Intercept*	*Intercept*	*Trend and intercept*	*Intercept*	*Trend and intercept*
LFDI	-2.7719*	-2.8674	-6.2973***	-6.6517***	-4.446832***	-4.457606**
LGDP	3.2202	1.6326	-7.5190***	-10.2105***	-3.987772**	-5.034760***
Unemployment rate	-1.1263	-2. 0638	-3.2106**	-3.1522	-5.788959***	-5.684866***

Note: *, **, *** denotes the rejection of null hypothesis at 10%, 5% and 1% significance levels.

Table 3 Johansen cointegration test

Hypothesized NO. OF CE(S)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob
None*	0.627596	36.39575	29.79707	0.0075
At most 1*	0.504135	17.62799	15.49471	0.0235
At most 2*	0.202550	4.300393	3.841466	0.0381

5.3. Johansen Cointegration Test

The cointegration test is used to investigate the long-run relationship between the dependent and the independent variables. As for this study, the analysis was performed to prove the cointegration between FDI to GDP growth andthe Unemployment rate in Yemen by comparing both Critical values and probability. According to Table 3. we can confirm the existence of cointegration between the variables. From the table, we reject the null hypothesis for the none, at most 1 and at most 2, which means that three cointegration quotations exist in the model.

5.4. Granger Causality Test

The results emanating from Table 4 indicate there is a causal relationship that runs from Unemployment to FDI and unemployment to GDP, however the table shows that FDI does not granger cause GDP as well as it does not granger cause unemployment. Therefore, we can conclude that there is uni-direction causation that runs from Unemployment to GDP and from unemployment to FDI since the P values are less than the significant value 5% for both variables, which are represented by 0.0164 send 0.0398 respectively. Kholdy [28], with a similar result to this study, investigated the impact of FDI on GDP growth by using Data from 10 Asian economies carrying out the granger causality test. He did not find any causation between FDI and GDP. Regarding unemployment Aktar and Öztürk [29], who investigated the impact of FDI on unemployment, he found out that there is no causal relationship between FDI and Unemployment.

On the contrary, a study was done by Zhang [30] running the granger causality test, and he found out the FDI enhances the economic growth in China. According to Pan Long Tsai [31], the factors that have an impact on economic growth differ from time to another. He added that FDI impact on GDP varies based on the geographical locations.

6. DIAGNOSTIC CHECKING RESULTS

Based on E-views, if the p-value of Chi-Square is less than the significant level of 1% 5%, we reject the null hypothesis. From Table 5, we can see the p values for all the tests are higher than the significant value 5%; therefore, we accept the null hypothesis H0, which denotes that the model has neither Heteroskedasticity nor serial correlation problems. Jerque -Bera test indicates that the residuals are normally distributed because the p-value is 0.824966 greater than the significant value 5%. Therefore, the diagnostic tests that we carried out in the study suggest that the results of this study are reliable.

7. CONCLUSION

This paper investigates the impact of FDI on Economic growth and Unemployment in Yemen through applying the Augmented Dickey- Fuller technique in testing the unit root and the stationarity of the variables, Cointegration test, and Granger causality test for the causation between FDI GDP growth and Unemployment using time series data from 1998 to 2018. Several Diagnostic tests were also applied to test the reliability of the results.

Table 4 Granger causality test

Null Hypothesis	Obs.	F-Statistic	Prob	Decision
LGDP does not granger cause LFDI	19	0.98353	0.3984	Fail to Reject Null
LFDI does not granger cause LGDP	19	0.05256	0.9490	Fail to Reject Null
LUNEMPLOYMENT does granger cause LFDI	19	4.09549	0.0398	Reject Null
LFDI does not granger cause LUNEMPLOYMENT	19	0.87696	0.4377	Fail to Reject Null
LUNEMPLOYMENT does not granger cause LGDP	19	5.59109	00164	Reject Null
LGDP does not granger cause LUNEMPLOYMENT	19	0.77281	0.4804	Fail to Reject Null

Table 5 Diagnostic checking test

Test	Hypothesis H0	T- Stat	P-value	Result
ARCH	No Heteroscedasticity	5.017259	0.2855	There is no heteroskedasticity in the model
Breusch-Godfrey	No serial correlation	5.937565	0.2039	There is no serial correlation in the model
Jarque-Bera	Residuals are normally distributed	0.384826	0.824966	Residuals are normally distributed

From the findings of this study, there is evidence that there is a long-run relationship between foreign direct investment, economic growth, measured by GDP growth, and Unemployment in Yemen for the period under review. Additionally, the granger causality test revealed that FDI does not granger causing Unemployment and GDP Growth; however, unemployment can act as a cause for FDI, which shows that it is important that the policymakers in Yemen improve intensive capital such as infrastructural facilities such as ; machinery, equipment, building schools and launching projects in order to create more jobs opportunities and improve the economy to attract foreign investors. Diagnostic tests were also applied, and their null hypothesis was not rejected, which implies the residuals are normally distributed, with no heteroscedasticity and no serial correlation.

Based on the results of the study, a few suggestions can be made; firstly, the attraction of FDI is not the only way to eradicate the Unemployment in the country. Still, it can be a way to support the country's economy as a whole as well as reducing poverty. Secondly, understanding the impact of FDI on GDP growth and Unemployment is essential; therefore, extensive researches should be done to have a clear understanding of the contribution of FDI on GDP growth and Unemployment. Finally, political parties should reach an agreement to make the country safer and more stabilize in order to attract foreign investors.

REFERENCES

[1] J.C. Anyanwu, Why does foreign direct investment go where it goes? new evidence from African countries, Annals of Economics and Finance, 13(2) (2012) 433-470.

[2] F.K.A. Al-Rabeei, The effects of economic policies on the investment environment on the arabic countries, Journal of Human Science, 23(2005)1-37.

[3] F. Erdal, E. Tatoglu, Locational determinants of foreign direct investment in an emerging market economy: evidence from turkey, Multinational Business Review, 10(2002) 21-2.

[4] A. Chowdhury, G. Mavrotas, FDI and growth: a causal relationship, UNUWIDER Research Paper (25) (2005) Unuwider.

[5] M. AL-Iriani, F. AL-Shamsi, Foreign direct investment and economic growth in the GCC. countries a causality investigation using heterogeneous panel analysis, 27th Annual Meeting of Middle East Economic Association, Chicago, U.S.A. January 4-7, (2007).

[6] N. Iqbal, N. Ahmad, Z. Haider, S Anwar, Impact of foreign direct investment (FDI) on GDP: a case study from Pakistan," International Letters of Social and Humanistic Sciences, 16(2014) 73-80.

[7] G. Agrawal, M.A. Khan, Impact of FDI on GDP: a comparative study of China and India, International Journal of Business and Management., 6(2011).

[8] P. Agrawal, Economic impact of foreign direct investment in South Asia. Indira Gandhi Institute of Development Research, Bombay, India, (2000).

[9] R. Tunviruzzaman, M. Sultanuzzaman, F. Hongzhong, and W. Banban, The impact of foreign direct investment inflows on economic growth: evidence from Bangladesh, Journal of Business and Retail Management Research, 12(2018) 212-223.

[10] L. Alfaro, Foreign direct investment and growth: does the sector matter, Harvard Business School, (2003).

[11] W. Athukorala, The impact of foreign direct investment for economic growth: a case study in sri Lanka. International Conference on Sri Lanka Studies, (2003).

[12] O. Owolabi-Merus, How important is foreign direct investment to economic growth? new evidence from Nigeria, MPRA paper 65796. Pacific Business Review International, 7(2015)11-16.

[13] P. Gupta, A. Singh, Causal nexus between foreign direct investment and economic growth: a study of BRICS nations using VECM and granger causality test, Journal of Advances in Management Research, 13(2016) 179-202.

[14] S. Kurtovic, B. Siljkovic, M. Milanovic, Long-term impact of foreign direct investment on reduction of unemployment: panel data analysis of the western balkans countries, Journal of Applied Economics & Business Research, 5(2015).

[15] N. Chella, A. Phiri, Long run cointegration between foreign direct investment, domestic investment and unemployment in South Africa, Munich Personal RePEc Archive Paper Number 82371(2017).

[16] A. Zdravkovic, M. Dukic, A. Bradic-Martinovic, Impact of FDI on unemployment intransition countries: panel cointegration approach, Industrija, 45(2017)161-174.

[17] Y. Bayar, M. Sasmaz, Impact of foreign direct investment on unemployment in emerging market economies: a cointegration analaysis world emerging market economies, International Journal f Business and Economic Sciences Applied Research, 10(2017) 90 - 96.

[18] R. Craigwell, Foreign direct investment and employment in the English and Dutch-speaking caribbean, (2006).

[19] W. Sha, A. Tao, The employment effect of FDI analysis: Empirical analysis based on cointegration theory, Finance and Economics, (2007) 112-117.

[20] E. Braunstein, E.Gerald Bargaining Power and Foreign Direct Investment in China: Can 1.3 Billion Consumers Tame the Multinationals?.Political Economy Research Institute (2002) 1-41

[21] D.E. Vacaflores, Was Latin America Correct in Relying in Foreign Direct Investment to Improve Employment Rates, Applied Econometrics and International Development, 2011(11) 101-122.

[22] T. Mickiewicz, S. Radosevic, U. Varblane, The Value Diversity: Foreign Direct Investment and Employment in Central Europe During Economic Recovery, University of Sussex. (2000) Working paper No. 05/00.

[23] J. T. Talla, Impact of Macroeconomic Variables on the Stock Market Prices of the Stockholm Stock Exchange (OMXS30), Jönköping International Business School (2013) 1-48.

[24] A. Hussain, M.Rafique, M. Nawaz, Macroeconomic determinants of stock price variation: An economic analysis of KSE Index, Pakistan Journal of communities and Social Science, 2013(1) 28-46.

[25] N.M. Nasir, N.M. Hassan, Z.A. Nasir, Z. A., & M.F.M. Harun, Macroeconomic Factors as the Determinants of Stock Market Return in Malaysia: Multivariate Cointegration and Causality Analysis," Terengganu International Finance and Economics Journal, 2013(3) 38-49.

[26] J.S.Long, H.E. Laurie, Correcting for Heteroscedasticity with Heteroscedasticity Consistent Standard Errors in the Linear Regression Model (1998).

[27] D.N. Gujarati, D.C. Porter, (n.d.), Essentials of econometric (4th ed.), New York, United States: Douglas Reiner.

[28] S. Kholdy, Causality between foreign investment and spillover efficiency, Applied Economics 1995(27) 74-749.

[29] I. Aktar, L. Ozturk, Can Unemployment be Cured by Economic Growth and Foreign Direct Investment in TURKEY?, International Research Journal of Finance and Economics, 2009(27), 203-211.

[30] K. H. Zhang, How does FDI interact with economic growth in a large developing country? The case of China. Economic System, 1999(21) pp. 291-304.

[31] P. Tsai, Determinants of FDI and its impact on economic growth. Journal of economic development,1994(19) 137–16.but