

## **EFFECT OF FOREIGN DIRECT INVESTMENT ON PRIVATE SECTOR EMPLOYMENT LEVELS IN KENYA**

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### **ABSTRACT**

Foreign direct investment in all economies is a major contributor to the economic growth. The attraction of foreign investors is a fundamental goal for state policymakers all over the globe, and especially in developing countries, where lack of capital is one of the key constraints to economic prosperity. The statistical trend indicates that there is a slow increase in private employment creation in Kenya. The purpose of this study was to assess the effect of Foreign Direct Investment on private sector wage levels in Kenya. Purposive sampling method was used to select a sample of macroeconomic data on FDI and Private employment levels for 30 years between 1985 and 2014. Error correction model was developed from the data, which was used to make inferences on the relationship between FDI and private employment levels. Inferential statistics were obtained by applying the PcGive Ox-metrics and E-views. Prior tests on unit root were done using Augmented Dickey Fuller (ADF) test and Phillips Perron (PP) tests in comparison with the mackinnon critical value of standard neyman pearson framework. Also co integration was done through the use of Engle – granger (EG) approach and the Johansen Juselius approach to determine whether a long-run relationship exists.

**Keywords:** Foreign Direct Investment and Private Employment Levels

### **INTRODUCTION**

#### **Background of the Study**

FDI is defined as involving an equity stake of 10 percent or more at the plant level. Heyman *et al.* (2007) use 50% cut – off in defining foreign ownership. This implies that for a firm to be regarded as having foreign investment, it has to have more than half its stake owned by foreign owners. Most researchers typically use this cut –off to define foreign direct investment. According to (Mella, 2013) use of higher quality equipment can lead to more productive labour. This implies that jobs that emerge as a result of FDI inflows in the developed countries tend to enhance the aggregate productivity of the labour force in the developing countries.

In 1990, total world FDI amounted to 176 billion dollars. By the year 1992, the figure had multiplied by eight, adding a total of 1433 billion dollars (UNCTAD, 2011). The developing countries received 20% of world FDI in 1980's. The number increased to 32% during 1992 – 1994. By 1997, the number increased to 37% (UNCTAD, 2011). The level of FDI inflows in developing countries increased from 10 billion dollars to 163 billion dollars between 1986 and 1997. This accounted for about 45% of the total FDI flows to developing countries. The FDI in the world rose to US\$1,271 billion in 2000. China is the largest recipient of FDI in Europe and the second country with the largest FDI inflows in the world, after the United states (KIPPRA, 2014).

According to Mathew (2009), the FDI level to percentage of GDP has been ranging less than 0.5% since the year 2010 to 2012 in Kenya. The level of FDI has achieved only 1.55% of GDP in the year 2014, which indicated a small increase from 0.68% in the year 2013. This implies that Kenya achieved a total FDI of 990 million dollars in 2014 which was higher than 500 million dollars in 2013.

According to Saibar *et. al* (2012), private sector workers should be higher than their public sector counterparts. The reason behind this is because of less corruption in the private sector as compared to public sector. Also, the labour mobility and wage conditions in the private sector catalyze the growth of the private sector employments levels.

According to Public Service Commission report (2015), There has been however a small increase in the private employment levels to 1.5 million in the year 2013 and to 1.7 million in the year 2014. Given the weakness of the economy's structural transformation, many young Kenyans will find themselves unemployed or, more likely, underemployed in informal jobs with low productivity and pay. In addition, the labour force is growing rapidly: around 17.5 million people in Kenya entered working age in 2014 up from 16.9 million in 2013 (KNBS report, 2015).

Since 1985, Kenya has witnessed an increase in flow of foreign direct investments. Although there has been an increase in FDI, the increase has been identified to be too low. The percentage of foreign direct investments to GDP in Kenya has increased to 1.54% (900 million dollars) in the year 2014 (World Bank report, 2015). There has been however a small increase in the private employment levels to 1.5 million in the year 2013 and to 1.7 million in the year 2014. This trend indicates that there is a slow increase in private employment creation in Kenya. Therefore this study sought to find out the effect of foreign direct investment on employment levels in the private sector in Kenya.

## **MATERIALS AND METHODS**

The study used the causal research design. The researcher obtained the data of FDI and private employment levels from the World Bank data bank, KIPRA and the Kenya National Bureau of Statistics. A checklist was used to collect data on FDI and private employment levels for the time series data of fiscal years 1985 to 2014. The dependent variable included was employment levels in private sector. The independent variable included was the foreign direct investment levels.

The analysis was done with help of e-views and ox- metrics for analysis. Additional terms or length of the lags in the first differences were based on the Akaike Information Criterion [AIC] and the Schwarz Information Criterion [SIC] to whiten the noise process. Determination of the optimal length of the lag was based on the minimum value of AIC and SIC. In other words extra lags [t-1, t-2, t-3 ..... t-n] were added until the autocorrelation disappears. Data was log linearized and Unit root test was then conducted using Augmented Dickey Fuller test (ADF) to test the stationarity of the data. Here the researcher compared the test statistic with Mackinnon critical value of standard Nyman Pearson framework to determine the stationarity status. Skewness goodness of fit test was used to determine the normality of the data. According to Aczel&Sounderpadian (2002), data is normal and unbiased when skewness statistic is between the range of  $\pm 3$ . Skewness statistic proves that the bell-shaped curve is stretched or not stretched to one side. Granger causality was tested to determine the type of causality that exists between the variables. Cointegration test was carried out to determine whether there exist long – run equilibrium between the variables. Cointegration test involves testing stationarity of the model estimate residuals. The existence of cointegration led to the estimation of the error correction model using the Ordinary Least Square (OLS) method.

The researcher carried out diagnostic tests on the model to ascertain whether the assumptions of the ordinary Least Square holds. They include autocorrelation, multicollinearity and heteroscedasticity tests.

Multicollinearity is the general intercorrelation among explanatory variable (Gujarati, 2003).. Multicollinearity was detected using coefficient of determination ( $R^2$ ). If  $R^2$  is high in excess of 0.8 or very low with few significant t – ratios, then multicollinearity is present. Multicollinearity leads to large variances and standard errors of OLS estimators which makes it more difficult to estimate the true value of the estimator. Multicollinearity is eliminated by transforming the variables.

Heteroscedasticity occurs when the variance of the error term is not constant in each period and for all values of the independent variable. In this study, heteroskedasticity was tested by use of residual plots. The plot is a graph of regression standardized residuals against regression

standardized predicted variables. Heteroscedasticity is present when the width of the residuals increases or decreases as the predicted variables increases.

Autocorrelation occurs when the variances of the error term are sequentially interdependent. Autocorrelation is detected by use of Durbin Watson (DW) test. A DW of zero implies that there exist positive autocorrelation, while DW equal to four implies high negative correlation level. A DW of value between 2 and 2.5 implies that there is no correlation.

According to Gujarati (2003), the error correction model estimates variables that have long – run equilibrium relationship. The following Econometric model would be developed to reflect on effects of FDI on private employment levels.

$$\Delta \ln(P_V E)_t = \beta_0 + \beta_1 \Delta \ln(FDI)_t + \beta_2 DP_l + \beta_3 DP_s + e_t$$

Where:

$\beta_0$  : Private employments levels that is independent of FDI levels

$\ln(P_V E)$  : Natural logarithm of private employments

$\ln(FDI)$ : Natural logarithm of Foreign Direct Investments

$\beta_2 DP_l$  : Dummy variable for plant level controls

$\beta_3 DP_s$  : Dummy variable for Political instability

$e_t$  : Error term

## **RESULTS AND DISCUSSIONS**

### **Normality Test**

The normality test was done using skewness so as to determine whether the data was normal. Data is normal if its skewness lies between -3 and +3. The results were summarized as below.

	FDI	PvE
Mean	1.26E+08	1024626.
Median	54517276	996650.0
Maximum	9.44E+08	1669400.
Minimum	394430.6	599800.0
Std. Dev.	2.09E+08	304431.0
Skewness	2.948397	0.463239
Kurtosis	10.98835	2.229300
Observations	30	30

Since the value of skewness for the data of all the variables was in the range of  $\pm 3$ , it implies that the data of all the variables was normal and unbiased. Skewness statistic proves that the bell-shaped curve is stretched or not stretched to one side.

### Unit Root test

Unit root test was done using ADF in e-views and the following results were obtained.

Variable	LEVEL	ADF-Test Statistic Value	Critical Value (5% sig. level)	Status
FDI	Level	-5.316156	-3.5796	Stationary
Private Employment	Level	-1.620984	-3.5796	Not stationary

The unit root test for FDI at level form indicated that the data was stationary, while for private employment showed that the data was integrated by order 2 and had to be differenced twice to become stationary. The ADF value for the second differenced data on private employment was -5.515646. This value was less than the MacKinnon value of -3.5943, hence stationary.

### Cointegration Test

Cointegration test is done through the use of Engle – granger (EG) approach and the Johansen Juselius approach. This study used Engle – granger (EG) 2 step approach. The test involved estimating the variables using OLS and then testing whether the residuals of the results are stationary. The results were presented as below

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Variables	Statistic	Lag 0	Lag 1	Lag 2	Status
	AIC	-7.484	-7.516	-7.552	
FDI & PvE	t-ADF	-5.010	-4.615	-3.351	Stationary
	AIC	-7.324	-7.353	-7.275	

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The results indicated that a lag length of 1 minimized the AIC (Akaike information criterion) value. The ADF value at a lag length of 1 for the residuals was -4.615 which less than the mackinon critical value was. Hence the residuals were stationary. This implied existence of cointegration between FDI and private employment level.

### **Diagnostic Tests**

#### **Autocorrelation Test**

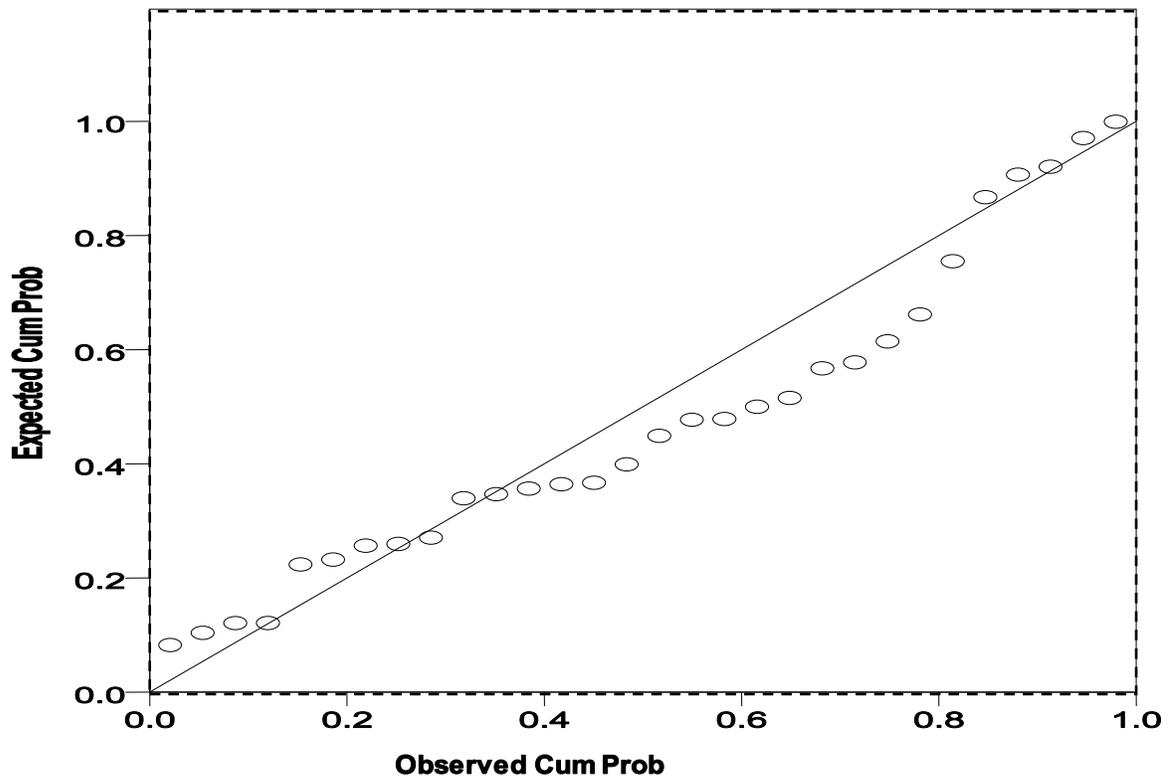
Existence of autocorrelation is not a problem; the problem is the strength of the autocorrelation. A DW of zero implies that there exist positive autocorrelation, while DW of 4 implies high negative correlation level. A DW of value between 2 and 2.5 implies that there is no autocorrelation. A DW value of 2.911 indicated weak negative autocorrelation since the value lies between 2.5 and 4.

#### **Multicollinearity Test**

Existence of multicollinearity is not a problem; the problem is the occurrence of strong multicollinearity. A coefficient of determination of 0.639447 and all significant coefficients implied that multicollinearity is absent.

#### **Heteroskedasticity Test**

A residual plot was developed as below so as to test heteroscedasticity.



The results from the figure showed that the plot of the residual values lied on a straight line. This implied that the variance of the residuals was constant, hence absence of heteroscedasticity.

### **Error Correction Model**

The results of Cointegration tests indicated that there exists a long – run relationship between all the variables. This allowed for estimation of the error correction models. According to (Gujarati, 2003), the model estimates variables that have long – run equilibrium relationship. A lag length of 1 was used since it minimized the AIC and Schwarz SC value. The results were summarized as below.

Variable	Coefficient value	Std error	t-value	p-value
Constant	-0.00569256	2.681e-17	-2.123e+14	0.0000
LNFDI	0.00349131	1.303e-18	2.679e+15	0.0000
DP <sub>s</sub>	0.00743900	3.928e-18	1.894e+15	0.0000
Residuals	1.15592e-16	1.405e-16	0.823	0.4204

R-squared 0.639447

Table above indicates that the coefficient of foreign direct investments is 0.0290886 and the coefficient of the dummy for political stability is 0.0293329. The value of R-squared was 0.639447 and adjusted R-squared was 0.022510. This indicates that the foreign direct investment levels predicted 63.945% of the private wage level. The remaining 36.06% was predicted by the error term. The model was represented as below.

$$\Delta\Delta(LNPVE) = -0.00569256 + 0.00349131LNFDI + 0.00743900DP_s$$

The results indicated that there exist a significant positive relationship between foreign direct investments and private employment levels, since the p- value is less than 0.05 and the coefficient of FDI was 0.00349131. An increase in foreign direct investments by one unit increases private employments by 0.00349131 units. A decrease in foreign direct investments by one unit decreases private employments by 0.00349131 units. The model also indicated that an increase in political stability leads to increase in private employments levels.

The results were in consistence with the study by Malik and Saima (2013) who conducted a study on the impact of foreign direct investment on employment level in Pakistan using a data time span of 1970 – 2011. The study used Johansen Co –integration approach to analyze the long run relationship between the dependent and independent variable and found a significant relationship between FDI and private employment levels.

## CONCLUSION

The study concluded that increase in FDI levels has a significant increases employment levels in private sector and 63.95% of FDI levels would predict private employment levels at 5% significance level. The study recommended that government should increase the level of FDI into Kenya so as to increase the employment levels in private sector, since there is a significant positive relationship between the two variables.

## REFERENCES

1. Aczel, A., & Sounderpadian, J. (2002). *Business Statistics fifth edition*. New York: Irwin: McGraw hill companies.
2. Bera, A. K. & Kim, S.J. (2002), Testing constancy of correlation and other specifications of the BGARCH model with an application to international equity returns, *Journal of Empirical Finance* 9, 171-195.
3. Granger, C. W. J., & Hatanaka, M. (1964): *Spectral Analysis of Economic Time Series*, Princeton University Press, USA
4. Gujarati, D.N. (2003). *Basic Econometrics*. 4Th Ed. New York: McGraw – Hill Inc.
5. Heyman, F., Sjöholm, F. & Gustavsson Tingvall, P. (2007). Is there really a foreign ownership wage premium? Evidence from matched employer–employee data. *Journal of International Economics* 73(2): 355–376.
6. Malik, D., & Saima, S. (2013). impact of foreign direct investments on employment levels in pakistan. *journal of law, policy and globalization*, 10(2224-3259), 11.
7. Mathew, N. (2009). *Foreign Direct Investments in kenya*, *Economic journal*, 18. Retrieved from <https://mpra.ub.uni-muenchen.de/34155/>
8. Mella, A. (2013). Wages in the Manufacturing sector, *journal of Economic development and growth*, 46. Retrieved from: Andres.mella Jimenez de [munana.967@student.lu.se](mailto:munana.967@student.lu.se).
9. Republic of Kenya (2015). *Economic survey report in Kenya*, Publisher: KNBS, Nairobi, 339. website: <http://www.knbs.or.ke>
10. Saha, S., Roy, P., & Kar, S. (2014). Public and private sector jobs, unreported income and consumption gap in India: Evidence from micro-data. *The North American Journal of Economics and Finance*, 29, 285-300.