

## Impact of Fiscal Policy Tools on Attracting Foreign Direct Investment in Libya from 2000 to 2015

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تأثير أدوات السياسة المالية على جذب الاستثمار الأجنبي المباشر في ليبيا من 2000  
إلى 2015

### ملخص

تبحث هذه الورقة في تأثير أدوات السياسة المالية على اجتذاب الاستثمار الأجنبي المباشر إلى ليبيا بين عامي (2000-2015) ، وقد تم اعتماد نهج كمي باستخدام تحليل الانحدار الذاتي ، والذي تتبعه العلاقة السببية ورد فعل التأثير في فيرنر جرانجر (IRF) الاختبارات. نتائج تحليل العلاقة بين الاستثمار الأجنبي المباشر في ليبيا وبعض أدوات السياسة المالية تتفق مع نماذج الانحدار التي تحلل الناتج المحلي الإجمالي ، ومعدل ضريبة الشركات، ورأس المال البشري (قوة العمل) بالإضافة إلى ذلك ، قيمة R متعددة القنوات و0.825 ("R" تمثل قيمة العمود) درجة عالية من الارتباط بين درين واتسن =  $(d = 1.892)$  Durbin Watson وجميع المتغيرات في النموذج ، لأن هذه القيمة تقع في النطاق  $(a = 0.05 > 0.562 < 2.220 < D)$  ، في اختبار الأهمية العامة ، قيمة P ، التي تم حسابها باستخدام اختبار F ، أقل من مستوى الأهمية 0.05، لذلك ، يوفر نموذج الانحدار هذا الخيار الأنسب. هذا يعني أن اختبار المعنوية ( $F (0.024 Sg)$ ) يُظهر علاقة ذات دلالة إحصائية بين المتغيرات عند مستوى الدلالة 0.05 ( $\beta = 1.212$  ،  $p = < 0.05$ ) يحدث ذلك إذا كان هناك متغيرين فقط (يعتمدان على الناتج المحلي الإجمالي ومعدل الضريبة على الشركات) يؤثران على المتغير التابع وهو (الاستثمار الأجنبي المباشر) ومع ذلك فإن المتغيرات الأخرى لا تؤثر بشكل كبير على قيمة الاستثمار الأجنبي المباشر، فقد كان الناتج المحلي الإجمالي ونسبة الضريبة على الشركات مرتبطة إيجابياً بمستويات الدلالة 0.01 و0.05 على التوالي. وهذا يعني أن الاستثمار الأجنبي المباشر يدعم النمو

الاقتصادي الليبي الكلي ؛ ومع ذلك ، من خلال النظر في العلاقة بين الاستثمار الأجنبي المباشر وجميع المتغيرات الأخرى ، كانت ضئيلة في مستويات 0.01 أو 0.05 ، هذه العلاقات التي لا معنى لها أو النتائج غير المهمة حدثت بسبب الوضع الأمني بشكل رئيسي في (2011) نتيجة لعدم الاستقرار السياسي.

**الكلمات المفتاحية:** السياسة المالية ، الاستثمارات الأجنبية المباشرة ، الناتج المحلي الإجمالي ، الاقتصاد الليبي.

### Abstract

This paper examines the impact of fiscal policy tools, which help attracting FDIs (foreign direct investments) to Libya between 2000 and 2015, a quantitative approach has been adopted using self-regression analysis, which is followed by Werner granger's causality and impact reaction (IRF) tests, the consequences of analyzing relation between FDI in Libya and certain financial policy instruments agree with regression models analyzing GDP, institutional tax rate, and human capital (work force), In addition, the R multichannel value and the 0.825 ("R" column) value represent high correlation between Durbin Watson  $d = 1.892$  and all the variables in the model, because this value lies in the range  $0.562 < D < 2.220$  ( $\alpha = 0.05$ ), in the general significance test, the P value, which was calculated using the F test, is below the significance level 0.05, so, this regression model provides the most appropriate choice. This means that the F test (0.024 Sg) shows statistically significant relation between the variables at 0.05 significance level ( $\beta = 1.212$ ,  $p = <0.05$ ). It happens if only two variables (dependent on GDP and corporate tax rate) affect FDI, which is a dependent variable; however, other variable / factors do not considerably affect the FDI value, the GDP-corporate tax ratio was positively correlated at 0.01 and 0.05 significance levels respectively. This means that the FDIs support the overall Libyan economic growth; however, by looking at the link between FDIs and all the other variables, they were insignificant at 0.01 or 0.05 levels, these meaningless relationships or insignificant outcomes

occurred mainly because of the Libyan Civil War-2011, and the consequent political instability that is on the rise since 2012.

**Key Words:** Fiscal Policy, Foreign Direct Investments, GDP, Libyan Economy.

### Introduction

Fiscal policy is a highly significant instrument of economic policy for reducing economic and developmental problems, and addressing economic crises and shocks. Fiscal policy is a very significant factor that affects foreign investment, foreign investments are crucial for the economic development; so, almost all the countries make efforts to attract foreign investment, the Libyan government has invested considerable effort and time to attract foreign investment because the Libyan economy has been suffering as a consequence of economic setbacks and the security issue, Libya started receiving FDIs in the oil exploration sector, but due to international sanctions and poor economic policies of the Libyan government, only a small part of the total FDI target could be achieved. *Community Studies Journal*

This paper is an effort to analyze the effects of fiscal policy on attracting FDIs for Libya, the Libyan authorities have taken many steps to overcome economic problems, create a good investment climate and attract maximum FDI, An Arab Foundation report disclosed that between 2000 and 2006, Libya was having low levels of foreign investment as it stood on the rank of 12 out of 22 Arab countries. Another report published by the Arab Organization for Investment Guarantee (2012-2013) indicated that Libya was ranked 14th for FDIs among the Arab states (Hamoudi, 2016, p. 2).

The research question for this paper is: "Is the current fiscal policy helpful to attract FDI between 2000 and 2015?"

### Methodology

For identifying relations between the studied variables, we used descriptive analysis and statistical analysis techniques for analyzing the data. We utilized multiple-regression for analyzing the data.

## Research Model

This study used the theoretical model as well as the multiple regression analysis because it is a suitable technique to predict a variable's unknown value with the help of known variables.

The theoretical model describes link between FDI, the dependent variable, and independent variables such as GDP, corporate income tax, human capital, budget surplus, and government expenditure.

The multiple regression helps predicting the Y value for given X values such as X1, X2, ...Xn; therefore, the regression equation will be:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon.$$

## Data Collection Techniques

For achieving the study objectives through finding relations between the studied variables, the data has been analyzed using SPSS program. This data was gathered from 2000 to 2015.

### Data Collection

The data of the paper are collected from various sources including the Libyan Foreign Investment Promotion Authority, the Central Bank of Libya, the Documentation and Information Center, the World Bank, the Arab Investment Corporation .

## Definition of Terms

### Definition of financial policy

Fiscal policy is a very significant economic policy tool pursued by the state to influence macroeconomic conditions. Fiscal policy has an impact on financial assets (Erdogan, 2006) for making contributions and raising the production levels for achieving the economic balance. The financial policy is also defined as an instrument, by which, the government increases expenditure to control the economy.

### Definition of Gross Domestic Product (GDP).

It means the sum of the value of all final services and goods produced in a country's geographical boundaries during a financial year (Hamoudi, 2016, p 8).

## Definition the Government Expenditure

The government spending represents all the capital that a government spends, which is affected by any form of government funded operations. The government expenditure is financed by tax revenues.

## Previous Studies

Several studies examined the impact of fiscal policy on foreign investment (Bello, 2005) and it was conducted to analyze fiscal policy impact on FDI growth in sub-Saharan Africa, focusing on several selected countries including Ghana, Kenya, Nigeria and South Africa identifying financial and non-financial factors influencing FDI growth, and focuses mainly on fiscal incentives. The results show that the market size and the human capital are the most significant determinants of FDI. As the study (Rădulescu, Druicab, 2013) This study was conducted to analyze the fiscal policy impact on FDIs. Another objective of this study was examining the fiscal and budgetary policy impact on FDI in the Romanian economy.

over a period of 11 years (2000-2010). This study analyzes the significance of financial factors for FDI. The recent evidence clarified that political stability, infrastructure, economic and transportation costs, and taxes may affect the investment decisions. As the study (Gondor, Nistor, 2012) was conducted to analyze fiscal policy and FDI based on evidence from some emerging EU economies. This study uses a pooled data set consisting of several annual observations. This study focuses and highlights the overall experimental relationship between FDI and fiscal policy, and provides reasons behind this relationship.

## History and prospects of FDI in Libya

During the later part of the last century, foreign direct investments supported growth and development in the economies of developing countries (Büthe & Milner, 2008, p.741). FDI affects a number of macroeconomic indicators, Foreign direct investment is an important financial source (ULUSOY, 2010), which is important especially in the developing countries. After the oil discovery (1958), Libya became oil exporter in 1962, which contributed

about 30 percent of the GDP (Massoud, 2013, p.4). This led to a significant increase in FDIs from 1964 to 1969. After the regime change in Libya (1969), Libya faced issues with the Western countries as well as the Security Council, which had a negative effect on FDIs resulting in economic contraction in all economic sectors. During the early 1990s, the Libyan government pursued trade liberalization policies, which reduced or eliminated most of the trade barriers, and reduced the government intervention. The Libyan economy and investment environment have witnessed tremendous development and changes, so the Libyan authorities started privatizing public sector and such plans were initiated in the late eighties, reforms were introduced to improve the overall investment climate. They included creation of private business institutions, development of the Libyan Investment Authority (LIA), and introduction of investment-friendly laws in Libya, which created a favorable investment climate that facilitates the economic growth. After the lifting of the sanctions (2004), a new economic era began, which encouraged investment and development activities in Libya, Until 2010, the Libyan government introduced several reforms in its economic program, because the public sector failed to manage economic sectors, and the government pledged to take measures and improve the macroeconomic management but still, the government is facing challenges while attracting FDIs; so, there is a gradual improvement in the Libyan economy. In 2010, In 2011, a revolution came on February 17, which was a new beginning as it was led by the National Transitional Council, which means that the reforms were initiated for further trade liberalization but Libya is a developing country, so it is more likely to gain the benefit of FDI because it has plenty of natural resources and a suitable geographic location.

### **Reality the Fiscal Policy the Libyan Economy Public Expenditure Policy in Libya**

In Libya, public spending is characterized by consumption spending. The public expenditure has two main components: the first one is the consumption expenditure, while the second one is the capital expenditure, the public consumption was 16.1% of

GDP, private consumption was almost 24% of GDP, and the public investment was 10.9% of GDP. It is important to note that oil and gas sector financed approximately 99% of both consumer and capital expenditures.

### **The Libyan Public Revenue Policy**

A substantial proportion of public revenues come from oil and gas sales, which is about 95%. The GDP growth was 6.5% in 2000; however it fell to 3.5% in 2001, and continued at a similar rate in 2002. The high GDP in 2000 shows the booming oil sector. Higher oil prices improved state revenues in 2002-2003, and continued to grow them to 6.8% in 2007, 8% in 2008, when the oil and gas sales increased providing more than 99% of total export revenue and 78% of the government revenues in 2007.

### **Data preparation, analysis, and discussion**

For assuring satisfactory and reliable results, multiple linear regression models were used to determine relation between FDIs and the Libyan fiscal policy. For this purpose SPSS statistical program was used for the study period (2000-2015), also called as period of disparity in Libya, in this case, a multiple regression model was used to verify the link between variables representing financial policy instruments such as human capital, GDP, and government expenditure (GEX). In this study, Y represents the dependent variable, and X represents independent variable. In this case, basic linear regression equation could not be used in its classical form to study relationships. The equation is as follows:

$$Y_i = \beta_0 + (\beta_1 X_i) + \epsilon_i$$

This study seeks to verify the relation between FDI and all independent variables (GDP, GBS, HC, CTR, and GEX). Since there are several independent variables and only one dependent variable, Multiple Linear Regression was needed.

The above equation has been modified to include the multiple independent variables as follows:

$$F = f (\text{GDP, GBS, HC, CTR, GEX})$$

$$FDI_i = \beta_0 + (\beta_1 * HC_i) + (\beta_2 * GDP_i) + (\beta_3 * CTR_i) + (\beta_4 * GBS_i) + (\beta_5 * GE_i) + \epsilon_i$$

After statistical analysis, it is shown in Table 1 that the mean and standard deviation of FDI are 1236.5 and 1401.322, followed by Gross domestic product 49.96 and 21, human capital 1.65 and 0.19, government budget surplus 6.59 and 25.86, and government expenditure 40.46 and 15.57 respectively.

By analyzing Table 1, we can observe that the values of standard deviations for all the variables are small. This shows that the values in our data set are close to the mean; however, the mean and standard deviation for the government budget surplus are 6.59 and 25.86 respectively, so the standard deviation is larger, which means that the values in the data set are farther away from the mean.

Table 1 illustrates link between independent variables, which include Libyan financial policy instruments, and the dependent variable FDI. Table 1 shows that only GDP of the country ( $r = 0.713$ ,  $p < 0.01$ ) and value of corporate income tax rate ( $r = 0.569$ ,  $p < 0.05$ ) were positively correlated with FDI. In addition, it can be seen in Table 1 that both strength and direction of the linear relation between the Libyan GDP and FDI is positive (correlation value  $r = 0.713$  close to 1), which indicate a strong relation between variables .

This means that the FDI provides a positive push to economic growth in Libya. For example, this result ( $r = 0.713$ ) may indicate that if the multinational companies of the developed countries could invest their capital in Libya, and also utilize their technology and skilled employees to promote economic growth in Libya, it could holistically improve the Libyan economy. Moreover, this result shows that FDI can enhance the Libyan GDP through employment, productivity and creativity .

Similarly, the relation between FDI and the value of corporate income tax rate is significant and the correlation value ( $r = 0.569$ ) indicates a strong relation between the variables. This means that corporate income tax rate should be considered as a significant FDI determinant. It also means that the Libyan government can impose appropriate corporate tax rate on company profits to

generate economic stimulus for increasing FDIs. That is to say that the government should make appropriate changes in its taxation policies for significant increases in FDI inflows.

Table 1 shows in significant relationship between FDI and the human capital, government budget surplus and government expenditure both at 0.01 or 0.05 significance levels. Insufficient data or the influence of the Libyan Civil War 2011 could be reasons behind the mentioned insignificant relationships.

**Table (1) Means, Standard Deviations and Correlation Analysis**

Variable	Mean	Standard Deviation	FDI	GDP	CTR	HC	GEX	GBS
FDI	1236.50	1401.32	1					
GDP	49.96	21.00	0.713**	1				
CTR	30.15	8.17	0.569*	0.356	1			
HC	1.65	0.19	0.290	0.433	0.086	1		
GEX	6.59	25.86	0.482	0.417	.729**	-0.127	1	
GBS	40.46	15.57	0.199	0.582*	-0.277	0.597*	-0.424	1

\*\* Correlation is significant at the 0.01 level.  
\* Correlation is significant at the 0.05 level.

### Trend Analysis of the Variables

The trend analysis aims at showing the behavior of the dependent and independent variables for a period of 16 years (2000-2015). The correlation analysis shows significant and positive correlation between market size and FDI at  $r = 0.024$  and 5% confidence level. The correlation between the GDP and the FDI was positive and significant ( $r = 0.713$ ,  $p < 0.01$ ;  $r = 0.569$ ,  $p < 0.05$ ), and FDI was found to be positively related with the CTR value.

### Model summary

First the regression model was evaluated using R Square method. The R-Square value was very close to 1.00, so we concluded that the independent variables had an important impact. That is to say,

the R Square value reflects proportion of total variance in a dependent variable (Woodhouse, 2003).

Thus, in Table 2, R Square value indicates that about 68% of the FDI changes are attributable to gross domestic product, corporate income tax rate, human capital, government expenditure, and the budget surplus. This indicates there is substantial goodness-of-Fit for the regression model of this paper. In addition, Table 2 shows many R values, which represent multiple correlations. The Durbin-Watson  $d = 1.892$ , which lies between two critical values ( $0.562 < d < 2.220$ ) while  $\alpha = 0.05$  (Anderson, et al., 2014). Consequently, we can assume that no auto-correlation exists in the current multiple linear regression data.

**Table (2) Model Summary**

Model	R	R Square	Std. Error of the Estimate	Durbin-Watson
1	0.825	0.681	969.35721	1.892

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### Variance Analysis *Community Studies Journal*

The variance analysis provides a reliable Goodness-of-Fit measure for the regression model of this paper. Based on Table 3, the P values for the F-test of overall significance test are less as compared to the significance level, which is 0.05, thus, it is correct to conclude that the regression model has better goodness-of-fit for this paper. That is, the F-test's overall significance (0.024) shows that this model is statistically significant. Here; the interceptor is not significant for this model. The model shows 68% variance for the FDI.

**Table (3) ANOVA Table**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20059060.021	5	4011812.004	4.269	0.024
	Residual	9396533.979	10	939653.398		
	Total	29455594.000	15			

### Coefficients (Parameter Estimates)

Looking at Table 4, it is obvious the values of human capital, the surplus budget and government expenditure did not affect the dependent variable FDI. Here, all the three independent variables are unimportant both at 0.01 or 0.05 confidence levels. Also, it was noted that the same table statistics pertaining to the correlation between the investment value range from 1.69 to 9.18. These values are less than the base of the thumb, which is 10 (Rufay, Baker, and Bonton, 2013), indicating that multiple classification is appropriate for the current model.

**Table (4) Coefficients (Parameter Estimates)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3117.990	2396.280		-1.301	.222		
	Gross Domestic Product	80.884	34.109	1.212	2.371	.039	.122	8.192
	Value of Corporate Income Tax Rate	72.882	46.579	.425	1.565	.149	.432	2.313
	Value of Human Capital (Labor Force)	599.612	1687.412	.083	.355	.730	.590	1.695
	The Value of The Government Budget Surplus	-34.167	28.071	-.631	-1.217	.251	.119	8.414
	The Value of Government Expenditure	-65.433	48.715	-.727	-1.343	.209	.109	9.182

We also noted that only two independent variables (GDP, corporate income tax rate) have an effect on the dependent variable at the level of 0.05 ( $\beta = 1.212$ ,  $p < 0.05$ ).

The equation will be as follows:

$$FDI_i = \beta_0 + (\beta_1 * H C_i) + (\beta_2 * G D P_i) + (\beta_3 * C T R_i) + (\beta_4 * G B S_i) + (\beta_5 * G E X_i) + \epsilon_i$$

$$FDI_i = -3117.990 + 599.612 * H C_i + (80.884 * G D P_i) + (72.882 * C T R_i) + (-34.167 * G B S_i) + (-65.433 * G e X_i) + \epsilon_i$$

Therefore, the Table 4 indicates the following results:

- A direct relation exists between the FDI volume and the rate of corporate income tax in Libya .
- No direct relation exists between the human capital size and quality and the FDI size and value.
- Positive as well as significant relation was found between the GDP size and FDIs in Libya.
- No positive relation was found between surplus budget and FDI in Libya.
- There is no correlation between government spending and FDI flows to Libya.

Therefore, the currently available data only supports the hypothesis pertaining to the GDP and corporate income tax rate ( $\beta=1.212$ ,  $p<0.05$ ). In case of GDP,  $r = 0.569$ ,  $p<0.05$ , and hence, GDP and the corporate income tax rate were positively linked to FDI at  $p\leq 0.01$  and  $p\leq 0.05$  respectively.

Moreover, the link between FDI and GDP is both significant and positive at 0.01 level. The relation between FDI and the corporate income tax rate is both significant as well as positive at 5%. The relation between FDI and the remaining independent variables is insignificant at 0.01 and 0.05. Insignificant relations or unimportant effects might have been so because of either insufficient data, the impact of Libyan Civil War, or political instability since 2012.

## Results

Libya needs diversified income sources with a broad production base, and the private sector needs to play its role by finding its areas of investment and production with clear vision and objectives based on balanced strategies. After conducting this research, we reached the following conclusions as they confirm the validity of the main hypothesis, upon which, the study was based. The R Square values indicate that about 68% FDI variations took place because of GDP and corporate income tax rate, but other variables such as human capital, budget surplus and government spending had insignificant impact on the FDI.

## Recommendations

Based on findings, this paper presents some practical recommendations, which might affect the future climate of foreign investments in Libya. Some factors have an impact on the FDI environment in Libya regardless of the use of fiscal policy for positive influence or increasing FDIs in Libya.

- The Libyan economy is suffering because of lack of qualified human resources. The government should develop the national workforce and raise its productive efficiency and build specialized administrative and technical cadres.
- There is a need to strengthen the national economic competitiveness and remove the bureaucratic restrictions imposed on the private sector in terms of industrial investment.
- Improving infrastructure conditions is important for assessing the attractiveness of the investment state that helps establishing transparent and stable institutional structure for financial and investment planning.
- Developing the capacities and competencies of FDI promotion institutions to meet the challenges and attract FDI. There is a need to introduce a better taxation policy and banking reforms.

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