The Impact of Liberalization of the Egyptian Pound on Domestic Prices and Some Other Variables (1990 – 2016)

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Abstract

Over the past 25 years, Egypt has undergone a variety of exchange rate regimes where it applied the flexible exchange rate regime since 2003. The shift to the flexible exchange rate regime in Egypt aims to attract capital inflows and enable the economy to absorb real external shocks and to simulate exports.

However, on the other side Egypt has witnessed high inflation rates since the liberalization of the Egyptian pound, an increase in the value of the debt, and non-increase in the exports.

Keywords

Affect – Liberalization – Egyptian pound – Inflation – other variables

مقدمة

وعلى مدى السنوات ال 25 الماضية، خضعت مصر لمجموعة متنوعة من أنظمة سعر الصرف حيث طبقت نظام سعر الصرف المرن منذ عام 2003. ويهدف التحول إلى نظام سعر الصرف المرن في مصر إلى اجتذاب تدفقات رأس المال إلى الداخل وتمكين الاقتصاد من استيعاب الصدمات الخارجية الحقيقية ومحاكاة الصادرات.

لكن على الجانب الآخر شهدت مصر معدلات تضخم مرتفعة منذ تحرير الجنيه المصري وزيادة قيمة الدين وعدم زيادة الصادرات.

الكلمات الدالة

تؤثر – التحرير – الجنيه المصري – التضخم – متغيرات أخرى

The Impact of Liberalization of the Egyptian Pound on Domestic Prices and Some Other Variables (1990 – 2016):
An Applied Study
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I.   Introduction:

In a surprise move, the Egyptian government announced the floating of the Egyptian pound on November 3, 2016 as part of the comprehensive reform program and by the support of the international community, aiming to address the current macroeconomic and structural imbalances that weighed on the Egyptian economy; the CBE hereby announced its decision to move immediately.

Some economists believed, as recommended by some of the economic theories, that the floating of the Egyptian pound was the best practice to refresh the economy and a good decision to face the Fluctuate exchange. In addition, there were opinions in favor of flexible exchange rates presuming they insulate better than real output shocks, because exchange

rates can adjust and stabilize the demand for domestic goods by diverting spending. However, this argument weakens with the existence of foreign debt models, and high imports with low currency exchange rate.

In fact, exchange rate depreciations in many emerging market economies over the past decade typically have been associated with financial distress and output contractions. Consequently, recent research has reconsidered the stabilization properties of a flexible exchange rate regime when exchange rate movements affect financial conditions, and these, in turn, influence economic activity.

As known, the transition to a flexible exchange rate regime does not come in the wake of a financial crisis, because this change leads to many problems in the economy. Contrary to this and despite recommendations of economic theories, at the time when Egypt suffers from a shortage of foreign currency due to a weakening in global trade and reduction in the Suez Canal's receipts, the sharp drop−off in tourism revenues due to fears of political instability, coupled with downward on remittances from Egyptian workers in the Gulf, and the decline

in the total source of the foreign income, Egypt took this difficult decision.

If we consider this step as an attempt to settle the dispute caused by a combination of exchange rate policies, and the increased use of international reserves to support the currency, and try to raise interest rates to stimulate the economy, we assume that the government must put road map before taking this decision.

We all understand the impact of international currency exchange system on our economy's prosperity, so the exchange rate is one of the most important determinants of the level of economy, and plays a vital role in the level of trade. Let us explain the role of exchange rate in trade.

The only way a country can buy more than its production is to import. To pay for those imports, a country needs foreign currency. If it has foreign currency in reserve, it can use its foreign currency reserves to pay for the goods. Alternatively, it can borrow foreign currency and increase its foreign debt. In addition, if the money that pours into the country from exports is greater than the money that leaks out on imports, the amount of foreign currency in the country increases. This additional money enables people to spend more in the country

and this spending enables that country to prosper, raise wages, create jobs, produce and sell more goods and services.

The movement of exchange rate affects trading relationships with other nations. A higher currency makes a country's exports more expensive and imports cheaper in foreign markets. A lower currency makes a country's exports cheaper and its imports more expensive in foreign markets. A higher exchange rate leads to lower balance of trade, while a lower exchange rate would increase balance.

When there is a decline in exports and increase in imports, the country must make up a compensation of foreign currency by borrowing money, and hence the country is forced to use the second Alternative, that means increasing its foreign debt.

When a country is forced to choose the second Alternative: external debt to compensate the shortage in the foreign currency, we observe the External debt in some countries greatly contribute to the economic growth of country if it used to finance investment expected to yield an adequate consumption in the face of aggregate supply. It can also bridge the gap between domestic savings and investment, But

unfortunately, most developing countries face acute external debt problems. The debt problems stem from the inefficient use and control of borrowed funds and low returns of investments and inadequate policy framework for debt management and international developments in interest rates. What makes the debt problem worse, the failure of these countries to plan how to repay that money before receiving them and the limits that this debt imposes on future.

II.   Objective

The main purpose of conducting this research is to investigate the impact exchange rate on inflation and debts. By collecting data on both variable Exchange rate and inflation, we want to show how these variables affect each other.

III.   Research Methodology

This Study is based on secondary and time series data. The study is long−term analysis, to check the impact of Exchange rate on inflation in Egypt. For this purpose, we collected the 25 years data of Exchange rate and inflation, for the period from 1990 to 2015. The data

collected for our study is from the website of world Bank. We apply the test of Correlation and Regression in software to check the relationship between Exchange rate and inflation. In our research, the purpose of study would be descriptive, because substantial year data is at hand and how this exchange rate affected inflation in the past. The type of investigation would be correlational study because we are interested in delineating the important variables associated with the problem.

IV.   The hypothesis of this research

The hypothesis of this research is "Exchange rate has Positive effect on domestic prices and some other variables.

1) The second part showing developments in (Exchange rate-Inflation-Debt -Investment and net Exports):

I. The exchange rate developed:

Only some months have passed since the government shifted to a flexible exchange rate regime. Evaluating the exchange market is not limited to this short period, but we cover the period since the first floating and the effects of the new regime on inflation, debt, and trade.

It is the first time Egypt floats the pound without putting any controls by the central bank, as it did in the past, leading to a significant reduction in the value of the pound against foreign currencies, especially the dollar. When the government took this decision, it assumed that the potential to attract capital inflows would increase and enable the economy to absorb the real external shocks and simulate exports, but until this time it did not achieve those objects.

We all remember the previous floating for the Egyptian pound on January 28, 2003; and what happened from the modest depreciation following the float. However, the exchange market did not work well. There was inability of some firms to obtain foreign currency from banks at the announced rates, and some transactions took place in the parallel market at rates higher than the average rate announced by the Central Bank.

When examining the two floating decisions that Egypt took, we find it applied two approaches to administrate the market. The first approach is administrative and the other is market.

The administrative approach revolves around rationing foreign currency according to priority goods or customers, or forcing foreign currency earners to surrender their proceeds. The problem with this approach is that it had limited success in the past and it did not lead to stability in the exchange market or efficient allocation. Instead of that, it developed the parallel market, even though punishment was severe on the time. In addition this approach goes against the spirit of exchange rate flexibility and delays the process of converging toward exchange rate equilibrium.
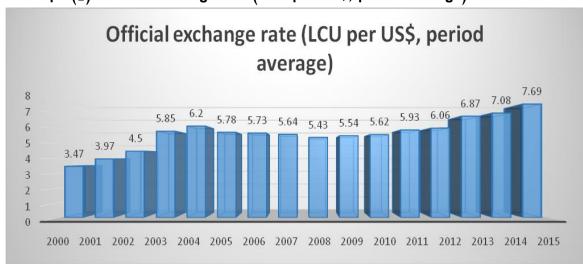
The second approach, which rests on the principle of making the market more attractive for market participants to go through the official channels. It involves such measures as allowing the rate to float with minimum restrictions, while intervening indirectly, for example, by making more dollars available through open market operations if market rates deviate considerably from equilibrium. Other measures include fostering competition, not collusion or tacit agreements, among banks with respect to quoted rates or spreads. To ease the pressure on the pound, authorities raise the interest rate temporarily and/or secure additional resources from abroad.

That Reliance on market forces and competition does not mean that the market needs no rules. On the contrary, market participants should operate according to a clear set of rules, for example, regarding disclosure, cash transactions, inter-bank dealings as well as dealings between banks and customers.

The government saw in the second floating it applied the market−based approach, and put some rules to control the market.

What seems evident is that there is no sign of significant overshooting in the first floating (i.e., a decline in the value of the pound beyond equilibrium), contrary to prediction and observed exchange rate behavior elsewhere following currency floatation. In fact, the official value of the pound went from LE4.50/US$ on January 28, 2003 to LE5.85/US$ on February 25, 2003, a depreciation of 30%. The modest depreciation in Egypt can be traced in part to the fact that the float banks were allowed to charge a commission that made their LE /US$ rate similar to that of the parallel market.. (See Figure 1 for nominal and real exchange rate developments in Egypt during 2000−2015).

We find that the exchange rate from 2003 to 2011 was stable and fixed. After the revolution in Egypt, the official value of the pound went from LE5.93/US$ in 2011 to LE7.69/US$ in 2015, a depreciation of 30 again.

Shape (1) Official exchange rate (LCU per US$, period average)

Official exchange rate (LCU per US$, period average)

Year	Value
2000	3.47
2001	3.97
2002	4.5
2003	5.85
2004	6.2
2005	5.78
2006	5.73
2007	5.64
2008	5.43
2009	5.54
2010	5.62
2011	5.93
2012	6.06
2013	6.87
2014	7.08
2015	7.69

Prepared by researcher

Since the government announced the floating of the Egyptian pound on November 3, 2016, the official value of the pound went from LE8.86/US$ on 3 November 2016 to LE18.15/US$ On 27 March 2017, a depreciation of 105%.
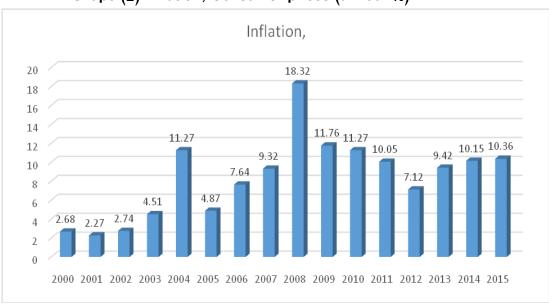
II.   The Inflation development

It has been argued that the shift to a flexible exchange rate regime could cause inflation, leading to contraction of output, and negatively affect certain groups of society. Are these adverse effects likely to be significant in Egypt?

Egypt proved to be no exception. Available empirical evidence suggests that countries with flexible exchange rate regimes experience higher inflation than countries with fixed exchange rate regimes. The prices movement following the float indicate that this is actually happening. The question is where will the inflation go, and how can it be controlled under the new regime.

The floatation came at a time of economic downturn with economic growth hovering around 4% in 2015 compared with an average of 7% in 2008. Therefore, it is not likely that the float regime has any effect on shifting demands from imported goods to produce local goods.

In addition, the exchange rate affects inflation through its effect on domestic prices compared to foreign goods, which in turn affects domestic and foreign demands for domestic goods, hence aggregate demand. The exchange rate affects the

consumer price index (CPI) directly through its effect on the prices of imported goods.

Shape (2) Inflation, Consumer prices (annual %)

Prepared by researcher

When we look at CPI published by the Central Agency for Public Mobilization and Statistics on January 10, 2017 increased by 3.13% (m/m) in December 2016 compared to 4.85% (m/m) in November 2016. The annual rate increased to 23.27% in December from 19.43% in November. The monthly increase mainly driven by higher prices of core food

items due to cost−push effects in addition to continued supply shocks related to rice and sugar. The remaining increases were concentrated in healthcare as well as café and restaurant services, while the contribution of retail items narrowed following their significant contribution in the previous month. Given the increase in core items, core CPI computed by the Central Bank of Egypt accelerated by 4.35% (m/m) in December 2016 compared to 5.33% (m/m) in November 2016 and the annual rate increased to 25.86% in December from 20.73% in November.

In addition, in February 2017, Egypt's consumer prices raised to 30.2% year−on−year accelerating from a 28.1% increase in the previous month. It is the highest inflation rate since November 1986, mainly boosted by a 41.7% increase in cost of food and beverages (37.2% in January). The inflation rate accelerated for the fourth month after the central bank raised rates and floated the currency allowing it to rough halve value in November. Annual core inflation, which excludes food and fuel, jumped 33.1% compared to 30.86% gain in the previous month, the highest level since at least 2008 where record 18.32%. The average Inflation Rate in Egypt 9.10% from

1958 until Feb 2016, reaching an all−time high of 35.10% in June of 1986, also record the Second high 30.2% in Feb of 2017. Therefore, the Central Bank has declared that controlling inflation is now the target of monetary policy.

Look at the following shape that shows the development of inflation from April 2016 to February 2017.

Shape (3) development of inflation from April 2016 to February 2017.

EGYPT INFLATION RATE

SOURCE: WWW.TRADINGECONOMICS.COM | CENTRAL BANK OF EGYPT

III. Other variables

i. Net Exports

In addition to the effect of exchange rate on inflation, there are factors suggesting that the shift to a flexible exchange rate regime is likely to lead to significant contraction.

The float of exchange rate pushes firms with dollar liability to bankruptcy and this leads to a fall in the output. In addition, higher interest rates to prevent significant depreciation would discourage investment and lead to lower growth. Decreasing exports elasticity makes firms unable to take advantage of a more competitive exchange rate.

The inflation produced from the depreciation of exchange rate influences the export response. The rising costs erode the improved profitability from increasing exports and restrict the firms' ability to lower their foreign currency export prices, leading to reduction in exports again.

Such increases in per−unit production costs may arise for a number of reasons. The depreciation of exchange rate increases the price of imported inputs which enter in domestically production goods, hence raising per−unit production costs for any firm using such inputs. This leads to lower marginal profit on exports and price hikes by suppliers, particularly if these suppliers themselves face supply

constraints. In addition, rising consumer prices for domestic goods, particularly of final goods, whether domestic products or imported, can also lead to demands for increased wages. Considering the second order effects of depreciate exchange rate, we see that depreciating does not guarantee an increase in exports. Export responses to depreciating the exchange rate and predicting exports are not symmetric. Asymmetric export responses may arise if domestic prices and wages are upwardly flexible. The positive export response from depreciation will be muted, but the negative effect of depreciate exchange rate is exacerbated.

The following table shows the exports & imports of goods and services & external balance on goods and services during the period (2000−2015).

When we look at the table of Exports, we note the graduated increase in the exports from 2000 to 2007, where it started in 2000 with 16.1 billion US$, even reached to 39.5billion US$ in 2007. After that, the exports increased in 2008 to become 53.8 billion US$ with percentage increase 36% compared with 2007. Another graduated decrease happened until 2015 reaching to 43.7 billion US$ with percentage decrease about 33.4%. An exceptional increase happened in 2013 where the

exports reached 49.1 billion US$, then exports decreased again.

When we look at the table of imports, we notice the movement of imports that continued the increase from $2002-2015$ non-stop, started with 22.7 billion US$ in 2002 until reached to 71.6 billion US$ in 2015, with the percentage increasing about to triple what it was in 2002.

We do not forget to point out the period of Egyptian Revolution in 2011. The economy so far is not stable because of this period, and it is reflected on the exports from goods and services, and on all components of economy.

There are some extensive studies showing the literature on exchange rate volatility of trade. Contrary to the view that an increase in volatility reduces the level of trade, the review shows that the impact is actually ambiguous. Though some studies argue that the exchange rate volatility reduces the level of trade, when the effect is measured, we find it is relatively small. The volatility has an impact on trade depending on some assumptions, such as the range of exports responses to depreciation of exchange rate.

In the theoretical literature, differences in assumptions have meant that there is considerable ambiguity in the theoretical predictions made by various models. In a general equilibrium setting where other variables are changing as the exchange rate changes, the relationship between the exchange rate and export competitiveness is also ambiguous.

ii. Investment

The effect of exchange rate on the Foreign Direct Investment

The role of FDI for growth in developing countries is very important. The foreign direct investment does not only play its vital role in capital formation in developing countries, but it is a source of technology transfer and innovative skills from developed to developing countries. For the development of the least developed countries, these countries offer incentives to foreign investors in order to attract more Foreign Direct Investments, which is a component of a country's national financial accounts.

The Foreign direct investment means investing of foreign assets into domestic structures, equipment and organizations. It does not include foreign investment into the stock markets.
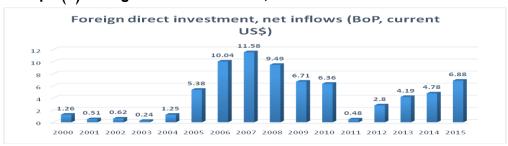
Foreign direct investment is thought to be more useful in a country than investments in the equity of its companies, because equity investments are potentially "hot money" which can leave at the first sign of trouble, whereas FDI is durable and generally useful whether things go well or bad.

There are some studies which explain that exchange rate is the most important factor in an open economy. It has direct effect on the macroeconomics factors such as FDI and GDP. Investors and Policy maker focus on the exchange rate of country where they invest their money. Some analyzers believe that the depreciation of currency creates competitive advantages in international trade. It makes the domestic goods cheaper and increases the demand of the export and international demand on goods, affecting FDI, and ultimately GDP.

If the depreciation of currency does not lead to cheap exports because of increases in inflation, and does not attract FDI, it does not create competitive advantages for this country. Therefore, the Foreign Capital flows tend to countries that have strong governments, dynamic economies and stable currencies. The nation must have a relatively stable currency,

stable political regime and economic growth to attract investment capital from foreign investors. Otherwise, the prospect of exchange losses inflicted by currency depreciation may deter overseas investors.

When reading in this table, you see that net inflows of FDI in 2006, 2007 and 2008 the biggest years absolutely during the period from 2000 to 2015. After that, the net inflow volatility between rise and down even reached to 6.88 in 2015.

Shape (4) Foreign direct investment, net inflows from 2000-2015

Source: Done by the researcher

If we look at the first quarter in 2017, we find the rise in net inflows of foreign direct investment in Egypt from about US $ 1.4 billion to US $ 1.9 billion. Such a Rise in FDI in Egypt was an Out of the rise in net inflow for oil sector investments to US $ 495.5 million (versus US $ 154.1 Million), and the increase in net Inflows for Greenfield investments to post some US $

1.4 billion (Versus about US $ 1.1 billion). The sectorial breakdown of total FDI Inflows as described in chart Shows that the oil sector has the largest share of 52.9%. Regarding the other sectors, the Majority of FDI went to the services Sectors, with the 10.9% distributed as follows: the financial Sector (4.3%), the real estate Sector (0.7%), and other Services sectors (5.9%). The Share of the manufacturing sector was 1.5% and the construction Sector 1.0%. The remaining Portion is acquired by undistributed Sectors.

iii. The Debt

Egypt's external debt (public and private – all maturities) increased by US$ 12.1 billion (25.2%), to post US$ 60.2 billion at end of September 2016 (compared with, US$ 48.1 billion at end of June 2015, compared with, and US$ 46.1 billion at end of June 2014. The increase was traceable to net disbursements of loans, facilities and bonds, thereby causing the debt balance to rise by US$ 4.5 billion. Alongside the appreciation of most currencies of borrowing versus the US dollar by US$ 0.1 billion.

a. Breakdown by Maturity

By original maturity, external debt reaffirmed its usual pattern of long−term external debt predominance at end of September 2016. Long−term external debt accounted for US$ 35.2 billion or 58.6% of the total, whereas medium−term external debt reached US$ 17.0 billion or 28.2% and short−term external debt accounted for the smallest portion of US$ 8.0 billion or 13.2%.

b. By residual maturity

Medium and long−term external debt increased, as it represented 77.8% of the total debt. In comparison, they accounted for 86.8% of the total by original maturity. Similarly, short−term debt showed an increase, as it represented 22.2%, compared to 13.2% classified by original maturity.

c. Breakdown by Type

- **Medium− and long−term external debt** accounted for 86.8% of total debt, of which: Rescheduled bilateral debt reached about US$ 4.6 billion or 7.7% of total debt.

- **Other bilateral debt** amounted to about US$ 5.5 billion or 9.3% of total debt.

- **Buyers & Suppliers credit** reached about US$ 5.1 billion or 8.4% of total debt.

- **International and regional organizations** debt reached about US$ 15.6 billion or 25.9% of total debt.

- **Government bonds** and notes reached about US$ 2.7 billion or 4.4% of total debt at end of September 2016. These include (i) US$ 884.4 million of sovereign notes issued in April 2010 and falling due in 2020 &2040; (ii) US$ 500.0 million of the 5–year Treasury bonds issued in June 2012 and falling due in June 2017; (iii) US$ 1.3 billion of the Global Medium Term Notes (GMTN) issued in 2015 and falling due in 2025.

- **Long–term deposits** placed at the CBE by some Arab countries valued at US$ 18.6 billion (30.9% of total debt).

- **Short–term debt** increased by about US$ 948.1 million to about US$ 8.0 billion or 13.2% of total debt.
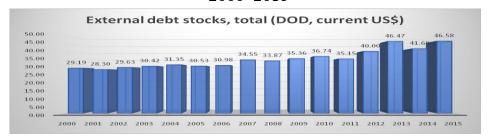
d. External Debt Indicators

The ratio of short–term external debt to net international reserves increased to 40.7% at the end of September 2016 from 17.1% at the end of September 2015. In addition, its ratio to total debt registered 13.2% (against 6.1%). The external debt per capita increased to US$ 618.2 at the end

of September 2016 from US$ 474.3 at the end of September 2015. As for the external debt in terms of international comparison, debt is within manageable limits. Based on IMF classification comparing Egypt's key debt indicators with those of other regional country groups shows that:
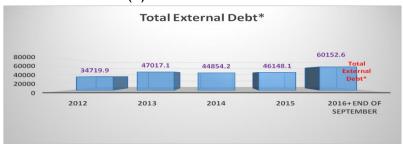
- Egypt's debt stock to GDP (16.3%) is among the world's best levels (16.3% for Asian developing countries and 68.3% for East and Central Europe).

- Egypt's medium-and long-term external debt to total external debt at the end of September 2016 represented 86.8% (94.1% for Sub-Saharan Africa and 61.3% for Asian developing countries).

- Egypt's debt service ratio registered 27.2% during July/Sept. 2016/2017 (57.5% for East and Central Europe, and 20.1% for Sub-Saharan Africa).

Shape (5) External debt stocks, total (DOD, current US$) from 2000-2015

Source: Done by researcher

Shape (6) Total External Debt from 2012-2016

Source: Done by researchers

Shape (7) Medium& long-term debt from2012- 2016

Source: Done by researcher

Shape (8) External Debt /GDP (at current market prices) from
2012/2013–2016/2017

Source: Done by researcher

Quick look at Egypt's Economic Performance

As we see from the table, the current GDP suffered weakness Percentage growth through the period from 2001 to 2015, the years 2006, 2007, and 2008 where the GDP growth started in year 2001 with 3.54% and ended in 2015 with the 4.2%. We do not forget that the reason to decrease the GDP in the years (2011–2014) was the Egyptian revolution, a reason for many problems of economy.

In addition, when we observe the last two years, we find over the course of FY 2014/2015, Egypt's real GDP growth (at factor cost) picked up to 3.1% (from 2.2% in FY 2013/2014). The higher growth rate reflects the noticeable improvement in
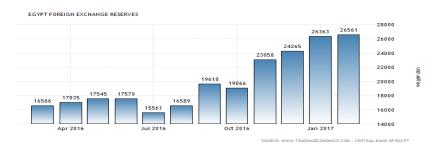
economic performance, especially in Q1 (July/Sept.) In addition, Q2 (Oct. /Dec.) the growth rate reached 4.5% and 3.7%, respectively. However, such an increase was met by a sluggish growth in Q3 (Jan. /March) and Q4 (April/June), registering only 2.2% and 2.1%, in order. Meanwhile, the real GDP growth at market prices augmented to 4.2% in the year under review, compared to 2.2% in the year of comparison.

Shape (9) annual GDP growth

Source: Done by the researcher

Source: The central Agency for public mobilization and statistics

Net international reserves (NIR) increased by US$ 2.3 billion or 9.4%% in FY $2016/2017$, to end the year at US$ 26.6 billion and to cover 4.0 months of merchandise imports.

2) The third part: Data Analysis

I.   Correlation Analysis

Correlation analysis shows the relationship among different variables. The correlation ranges from -1 to $+1$. The significant relationship among different variables lies from 0.01 to 0.05. The significance value more than 0.05 shows the insignificant relationship among the variables. The Mathematical signs like $+$, $-$ show the direction of relation. The $+1$value shows the perfect Positive relation and -1 value shows the perfect negative relationship. The zero value shows that there is no any relationship among the variables.

II.   Regression Analysis

Multiple Linear Regression analysis used to show the accuracy and appropriateness of model and how much independent variable influence on the dependent variable in our study by calculating the correlation between the exchange rate of the Egyptian pound against the U.S. dollar and the inflation rate,

which was calculated from the consumer price index during the period from $1990-2015$.

To build a model we must first determine the variables:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \epsilon_i$$

Where:

Y: inflation

X_1: real Exchange rate

X_2 money supply

X_3: Wholesale price index $(2010 = 100)$

The model is based on the study of the interactions between the general price level by using the consumer price index and between three variables: Exchange rate of the Egyptian pound against the U.S\$ – Money supply – Wholesale price index $(2010 = 100)$.

Before applying the model, we should test the variables. In order to assess a unit root tests were performed using the augmented dicky fuller (ADF) which shows stationary behavior, so we took the variables and then, after that, we applied Regression between the exchange rate and inflation rate.

Table No (I) represents the method of the regression used where it has shown that the program has entered all the independent variables in the linear regression equation:

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	X3, X2, X1[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Y

Table No(2) shows the three correlation coefficients, namely the simple correlation coefficient R, with 0.97 and R2, which is 0.95, and finally the corrected parameter adjusted R2, which is 0.94, which means that the independent variables were able to explain 0.94 of the changes in CPI(Y) and the rest (0.06) due to other factors.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.951	.938	4.52761

a. Predictors: (Constant), X3, X2, X1

In ANOVA, mostly F-value considered on significant level. If significant value lies among 0.01 to 0.05, then it said the model is good. The group of independent variables has the

ability to reliably predict the dependent variable, otherwise the group of independent variables fails to show a significant relationship with the dependent variable, or in other words, the group of independent variables does not reliably predict the dependent variable. Note that this test is used to test overall significance with the group of independent variables used together to reliably predict the dependent variable and is not used for single independent variable to predict the dependent variable.

Table No (2) ANOVA, presents variance analysis, in which the explanatory power of the model as a whole can be defined by F statistic. As seen from the high variance analysis table for F ($P < 0.0001$) it confirms the high explanatory power and shows the high level of significance, and the group of independent variable Exchange Rate can be used reliably to predict the INFLATION (the dependent variable). So this research proved that the model is very good and fit for research. The group of independent variables can predict the dependent variable:

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4374.508	3	1458.169	71.133	.000[a]
	Residual	225.492	11	20.499		
	Total	4600.000	14			

a. Predictors: (Constant), X3, X2, X1

b. Dependent Variable: Y

Table No (4) represents the values of the regression coefficients and the statistical significance tests for these transactions.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.106	19.782		3.999	.002
	X1	-4.928	1.611	-.563	-3.059	.011
	X2	1.590E-02	.007	.392	2.146	.055
	X3	.175	.637	.043	.275	.789

a. Dependent Variable: Y

Table no (5) can summarized as follows.

dependent variable		independent variable		
Y	constant	x1	x2	x3
The p value	79.1	−4.93	1.6	0.17
T test values	3.99	−3.059	2.146	0.275
significantly	0.002	0.01	0.055	0.789

We analyzed the effect of changes on exchange rate on inflation in Egypt in the period from January 2003 to December 2015 since the first liberalization of the Egyptian pound. We observed the significant influence of exchange rate

movements on the level of prices. We detected a stable relationship between exchange rate and inflation rate in the research period, because authorities sought the stability of exchange rate and inflation.

III. Conclusion

In this research, we measured the relationship between Exchange rate and inflation. We found, there is positive significant relationship between Exchange rate and inflation. It also satisfied the hypothesis of this research: "Exchange rate has Positive effect on domestic prices". It is illustrated in this research that exchange rate has positive impacts on domestic prices. In regression analysis, R square value is 95%, which shows that the research model is appropriate and the exchange rate has 56.3% effect on domestic prices. In the ANOVA model P value is significant because $0.002 < 0.05$, so this result also shows that the independent variable Exchange Rate influences the dependent variable.

We conclude that there are some of the potential losers from the liberalization of Egyptian pound: firms with dollar liability, and earners of fixed income, especially civil servants and pensioners.

As we saw the liberalization of the Egyptian pound led to an increase in the inflation, hence eroded their real income. In addition there are impacts on the Importers who have to pay higher prices for imports, and whether they are able to pass the increase in prices to consumers or not.

The net impact on the government budget is also clear. It depends on the expected increase in expenditures to meet external debt obligations, and the additional cost of imports of basic goods compared with the expected increase in revenues from higher import duties and greater dividends/transfers from the Suez Canal and exports of oil and gas.

IV.   <u>Recommendation</u>

As the results mentioned earlier suggest that, the policy makers in Egypt must take into consideration the effect of exchange rate on macroeconomic variable. The policy makers must take notice of the likely impact of the exchange rate on each macroeconomic variable in Egypt. Therefor we can offer some suggestions regarding the conduct of monetary policy in both the short and medium runs.

1– The government must absorb the price increase of imported basic goods (e.g., wheat, sugar, edible oil) and try to support it to improve the negative impact on earners of fixed income. The government must consider increasing the salary because the situation is worse.

2– Even under the liberalization of the Egyptian pound, the most central banks intervene to control the situation through some tools in the monetary policy. The exchange rate influences total demand, through its direct impact on the consumer price index (CPI) which affects the prices of exported goods. Therefore, the government must put policy to target inflation.

3– Inflation targeting requires raising the nominal interest rate by more than 1% by the central bank. This aspect often called the (Taylor principle.) According to this principle, interest rate could be set taking into account the output gap (the difference between actual and potential GDP). Therefore, Inflation target does not have to be annual CPI or single number. Instead, it could be a range for a number of years.

4- Because there is a link between inflation and exchange rate, it is difficult to avoid long-term swings in the exchange rate resulting from volatility of capital inflows. To solve this situation we must avoid more misalignment and working on the centralization crawling around equilibrium exchange rate and intervene tactically if the situation needs it.

5- The Key to the success and avoiding big problems is how expectations are managed in the future, and dealt with rightly. We should announce a consistent macro framework with clear targets, put some measures concerning market-based exchange rules, and benefit from the support of international institutions. The sooner such measures are taken, the sooner benefits from the floating of the pound can be realized.

6- As for firms with dollar liability, firms that earn revenue in local currency, which have to meet their debt obligations to banks in the currency of borrowing, they will face difficulties. They are required to put plans with their creditors to graduate the debt to pass this stage.

7– Work is needed to encourage small industries facing exports, by developing a plan to stimulate industrial exports that are more important.

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