

Performance of Exports after floating of Exchange Rate in Egypt Empirical study (Jan 2016–Apr 2018)

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Abstract

The paper investigates the performance of Exports after floating of exchange rate in Egypt over the period from Jan–2016– Apr–2018. The analysis was based on monthly time series data, to check the impact of Exchange rate US Dollar on performance of Exports. We collected the data and applied multiple Regression (OLS) to measure the relation between floating exchange rate and the performance of Exports. Where the results represented that the change in exchange rate had significant impact on performance of Exports in short run, which means that floating exchange rate helped the exports to increase. This paper expects that the inflationary effect of monetary growth in the long – run could be detrimental the competitiveness of export.

Keywords:

Performance– Exports – floating – Exchange Rate – Egypt

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Introduction:

The Egyptian government announced the floating of the Egyptian pound in the November 3, 2016 as part of the comprehensive reform program. We all understand the exchange rate is one of the most important determinants of the level of economy in general and it plays a vital role in the level of trade. So the impact of the decision of movement from fixed to floating exchange rate on our economy's prosperity maybe the important step to the comprehensive reform program.

But although, the impact of exchange rate on trade balance remains a controversial topic. Where, traditional theory saw that a depreciation of a local currency might stimulate the exports with other nations. While empirical studies show discrepancies in the results and No consistent positive impact

on all economies after the devaluation of their domestic currencies. However, the influence on the exports depends on some assumptions, such as the Responsiveness range of exports to the depreciation of exchange rate, the price elasticity of demand, financial structure and capital intensity in the country.

The main aim of this paper is to examine the impact of exchange rate on exports in Egypt, mainly from Jan 2016 until Apr 2018.

I. The problem

the behavior of exchange rate influenced on the trade balance activity , where the flexible exchange rate regime has directly effect on the exports and maybe causes the increasing in future profit for exporters and the economic growth increasing. Therefore, we try in this paper to investigate the relation between the floating exchange rate and Exports performance after floating.

II. The hypothesis of this paper

There is a Positive relationship between the exchange rate floating (i.e., a decline in the value of the pound), and Exports performance in Egypt through the period (2016–2018).

III. Objective

The relationship between depreciate of exchange rate and performance of exports had been investigated in several researches but No consistent results have been up to now.

Therefore, the main Objective of conducting this paper is to investigate the hypothesis and know the range impact of floating exchange rate on the performance of Exports in Egypt

IV. Research Methodology

This paper had based on the monthly time series data, to check the impact of Exchange rate US Dollar on Exports in Egypt through the period from (Jan 2016 to Apr 2018), We applied the deductive and descriptive approach and we used the software of Correlation and Regression model to check the

relationship “between” floating exchange rate & the performance of Exports. For this purpose, collected the important variables associated with the problem, for 28 monthly data, its collected from the website of central bank of Egypt and central Agency for public Mobilization and statistics (cap mas).

V. Literature Review

This part represents the relevant theoretical literatures, which measure the impact of exchange rate on Exports and the linkages between exchange rate and Exports.

- When we observe the traditional school, especially **Marshall–Lerner conditions**, which state the exchange rate depreciation was expected theoretically to be accompanied by increasing in money supply according to IS–IM model, which lead to reduce in interest rate and an improvement in investment, therefore the Increasing in the investment would to lead increasing in the income and output. Also theoretically expected, the depreciation of

exchange rate would to have positive effect on export because it made the domestic goods cheaper to foreign consumers. Also would reduce the imports, because the imported goods would be higher price relatively to domestic goods. Thus, lead to increasing the net exports and income, where the Marshall–Lerner condition is satisfied.

- **According to IS–IM model**, the exchange rate did not have direct effect on the output, but indirectly through the money supply channels. In the model, the relationship between exchange rate and gross domestic product cannot be determined directly because there was an effect from the depreciation of exchange rate on the domestic interest rate, which may be positive effect or negative.
- **Another view to IS–IM model**, the depreciation of exchange rate must be lead expansion in output if the price elasticity of demand for export and the price elasticity of demand for imports were greater than the unit elasticity. Therefore, the depreciation of exchange rate would promote

the trade balance, alleviate BOP deficit and consequently increased the output and employment. The mechanism behind these positive effects make the industries of export more competitive in international markets, stimulate domestic production of tradable goods and induce domestic industries to use inputs that are more domestic.

- According to **(Mundell Fleming model)**, the depreciation of exchange rate will stimulate the exports to become more competitive in international markets, through the prices relatively lower and switch the expenditure effect from foreign goods to domestic goods. In addition, the imports will be relatively more expensive than domestic production.

- **(Yin-Wong Cheung, Rajeswari Sengupta 2013)** this is a study on the real effective exchange rate (REER) effects on the share of exports of Indian non-financial sector firms for the period 2000-2010. Where This empirical analysis reveals that on general, there was been a strong and

significant negative impact from depreciation of exchange rate on Indian firms' export shares.

- **(Kandil, Magda & Dincer, Nergiz Jul 2010)** Other empirical study investigated the effects of exchange rate on demand and supply in Turkey. The expected depreciate in exchange rate, which had significant negative effects on shrinking of export growth across many sectors. In line with the movements in the country to apply the stabilization programs. Where the IMF requires the devaluation of the currency to stabilization programs of developing countries monitored. The evidence indicates to the Random fluctuations in the exchange rate had asymmetric effects on sectorial export growth, increased contraction of export demand and currency appreciation over time. In contrast, the effect of depreciation of exchange rate to stimulate the export had lost momentum over time.

- **(Kifle Wondemu and David Potts 2016)** This Empirical literature shows that the growth impact of exports is much

stronger when the export as a basket is vertically and horizontally diversifies. This study shows the role of the real exchange rate in enhancing export supply and promoting export diversification in Ethiopia and Tanzania. The empirical results suggest that, while overvaluation is harmful to exports, undervaluation of the real exchange rate boosts export supply as well as export diversification. A high rate of growth in exports is associated with periods of undervalued currencies. A major share of the difference in performance of export between the two countries can be explained by differences in real exchange rate policy. Tanzania had maintained an undervalued real exchange rate for a long time and as a result, performs better in terms of export and diversification. However, export expansion achieved through undervaluation raises the rate of inflation for Tanzania. Tanzania managed to maintain an undervalued real exchange rate through the accumulation of reserves and a high rate of inflation.

VI. The exchange rate developed:

As a known in Empirical literature that the behavior of exchange rate play Vital role in the trade balance activity that push some countries to reduce the exchange rate. Therefore, when the government announced the floating of exchange rate, that decision came the first time without putting any constrains on movement of exchange rate by the central bank, as it was doing in the past. The decision came to line with the economic reform program that enables the Egyptian economy to face current economic challenges. This was lead to a significant reduction in the value of the pound against foreign currencies, especially the dollar, where the government decided to apply the market-based approach from the first moment. The Reliance on market forces and competition, did not mean this the government no need to put rules On the contrary. Therefore, the government putted some policies to control the market, like using the tools monetary policy Especially the interest rate, where the government increased the interest rate on the Egyptian pound to help people take a decision in transferring the foreign currency to Egyptian pound and attracting this liquid of Egyptian money to the Banks.

Therefore, the reserves from the foreign currency increased, the government unleash its capabilities to achieve the desired growth and operation rates, by adapting with present capabilities and resources When the government took this decision, it assumed that the potential to attract capital inflows would increase and this enable the economy to absorb the real internal shocks and help to increase the exports.

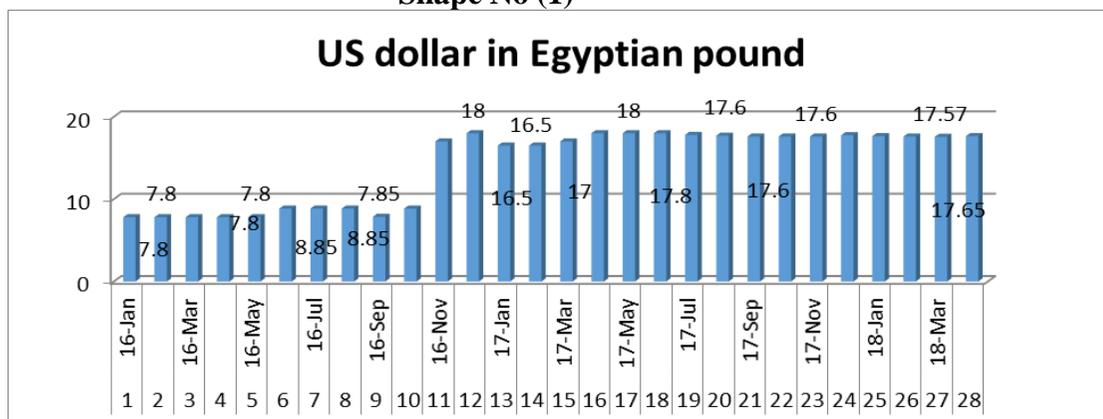
Since announce the floating, that time was not enough to evaluate the effect of exchange rate on Exports yearly, so we tried to evaluate this period through covering the monthly Data.

Where November 3, 2016, the official value of the dollar went from LE8.86/US\$ to LE18.15US\$

Look at the following Shape that shows the development of exchange rate of the dollar through the period from: (Jan-16 to Apr-18).

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Shape No (1)



This data is from the website of central bank of Egypt.

I. Exports developed

The general equilibrium in the theoretical literature indicated to the change on other variables when the exchange rates change. Therefore, we observed in some previous empirical studies, the researchers investigated the significant relationship between increasing the exports and the depreciation of exchange rate. Where, the researchers found a significant relationship between increasing the exports and the depreciation of exchange rate, but this impact on the exports depend on some assumptions, such as No (1) the range of responsiveness of exports to the depreciation of exchange

rate. Where, the depreciation of the exchange rate maybe stimulates the demand of exports or no.

No (2) the nation that is had ability to increase the both investment foreign and local to produce more Tradable goods, which means increase the exports.

Also, when the net exports figure would be positive not negative that indicate to the nation has a trade surplus to contribute in economic growth, which increase the capital accumulation to produce goods. The More exports mean more output from factories and industrial facilities, as well as a greater number of workers employed to keep these factories running.

The conclusions of some empirical studies indicated to that deprecation of exchange rate made the Exports became relatively cheaper in the other countries, which increased the demand for exports and also made the imports on the row material more expensive. Which lead in some country to goes up the inflation, especially the country that had more imports, so the demand for imports should be decreased in some cases.

On other side, when the exports are relatively cheaper overseas to increase the demand for exports also, when the

demand for imports falling. If we combine between the two effects, we found a positive impact on aggregate demand, this is because the price elasticity of demand for exports become more than the price elasticity of demand for imports. So, the increasing in the aggregate demand depends on elasticity of demand for exports.

The relationship between the exchange rate and competitiveness of export seems ambiguous in more studies. but, it clear that, the elasticity of demand and supply and depreciation of exchange rate, all this variables determine the range between growth of exports and Rate of inflation, which, effect also on the growth of output.

In addition to the previous studies , there are some studies showed that the depreciation of exchange rate reduces the level of trade, where the exports was less than imports and the imports was more expensive, so the net exports figure was negative, that indicated the nation had a trade deficit. Therefore, the devaluation of the domestic currency maybe equivalent to a parallel imposition of import tariffs and give the export subsidies at equal rates and did not lead to increase in the exports.

Seems clear from all the previous studies, the differences in assumptions have meant that there is considerable ambiguity in the theoretical predictions made by various models.

In addition, The Evaluation of the exchange rate changes depends on the situation of the economy. If the economy was a recession the depreciation will cause a significant fall in aggregate demand, and will probably contribute to higher unemployment and inflation. But, if the economy is in expansions the depreciation will help reduce inflationary pressures, it also depends on the Range of the exchange rate. If the depreciation leads to stimulate the responsiveness of exports, the economy will be become more competitive, and then the depreciation will be causing an increase of competitiveness.

We will investigate this relation between the floating of exchange rate and the Exports in Egypt through the monthly time from (1/1/2016 to 30/4/2018), it means, we investigate the relation in the 28 month.

II. Descriptive Statistics

The following table shows the statistics of the key variables in this study, namely all dependent variable used and one

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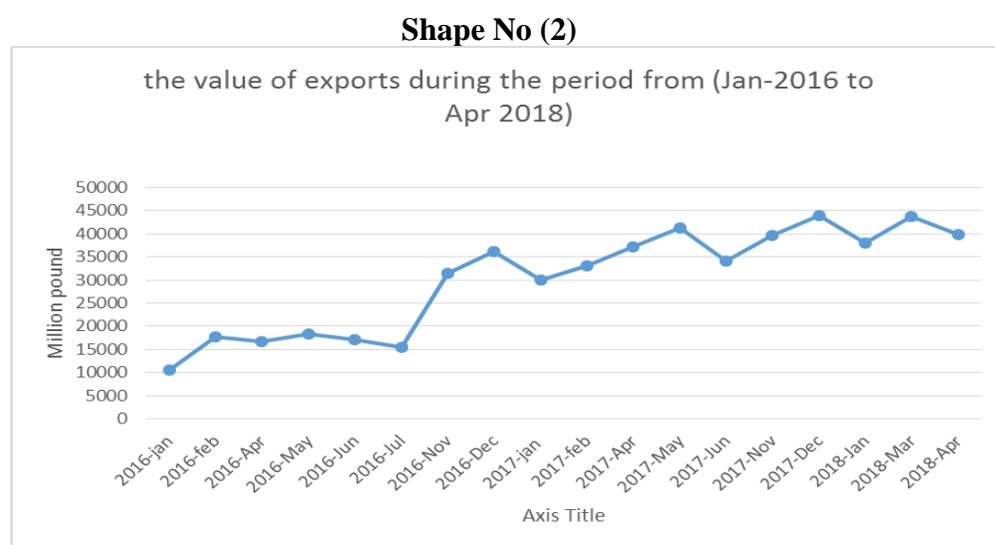
independent variable, only monthly observations from January 2016 until Apr 2018 were used, which means 28 observations for monthly data.

Table No (1) the value of exports and other variables during the period from (Jan-2016 to Apr- 2018)

month	the value of exports	the value of imports	net exports	exchange Rate	inflation	Interest Rate
16-Jan	10628	32926	-22298	7.74	10.10%	6.90%
16-Feb	17615	36100	-18485	8.79	9.02%	7%
16-Mar	17612	37462	-19850	8.79	10.27%	7.10%
16-Apr	16604	40485	-23881	8.79	12.30%	7.20%
16-May	18271	43464	-25193	8.79	12.30%	7.50%
16-Jun	17141	46843	-29702	8.79	13.97%	7.50%
16-Jul	15418	46348	-30930	8.79	13.99%	7.80%
16-Aug	16688	54448	-37760	8.79	15.47%	7.90%
16-Sep	13701	36356	-22655	8.79	14.09%	8.10%
16-Oct	16221	44050	-27829	8.79	13.56%	8.20%
16-Nov	31467	77195	-45728	18.15	19.43%	8.80%
16-Dec	36180	79002	-42822	18	23.27%	10.30%
17-Jan	30030	68557	-38527	16.5	28.14%	10.90%
17-Feb	33140	67534	-34394	16.5	30.25%	11.30%
17-Mar	39303	79356	-40053	17	30.91%	11.30%
17-Apr	37145	71985	-34840	18.15	31.46%	10.90%
17-May	41315	83537	-42222	18.15	29.71%	10.80%
17-Jun	34180	67180	-33000	18	29.76%	11.20%
17-Jul	34489	79253	-44764	17.8	32.95%	12.40%
17-Aug	38677	79739	-41062	17.7	31.92%	13%
17-Sep	32316	86148	-53832	17.6	31.59%	13.40%

17-Oct	39703	96603	-56900	17.6	30.82%	13.30%
17-Nov	39593	90349	-50756	17.6	25.98%	13%
17-Dec	43987	102604	-58617	17.76	21.90%	13.60%
18-Jan	38070	102391	-64321	17.65	17.07%	13.40%
18-Feb	40849	98905	-58056	17.6	14.40%	13.50%
18-Mar	43738	103809	-60071	17.56	13.32%	13%
18-Apr	39829	98190	-58361	17.6	13.12%	12.40%

Source: monthly bulletin of foreign trade date (www.copmas.gov.eg) & central bank of Egypt



III. Regression Analysis

We will Estimate the regression by SPSS software; The OLS equation will constructed as follows:

$$y_{it} = c + \beta_1 EXR + \beta_2 INF + \beta_3 INT + \varepsilon_t$$

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Where:

y_{it} : Export

EXR : Exchange Rate

INF : Inflation

INT : Interest

(1) One-Sample Kolmogorov-Smirnov Test

		export	inflation	Exchange Rate	interest
N		28	28	28	28
Normal Parameters ^a	Mean	2.98E+04	0.2068	14.4204	0.1039
	Std. Deviation	1.10E+04	0.08568	4.37488	0.02409
Most Extreme Differences	Absolute	0.209	0.211	0.326	0.197
	Positive	0.209	0.211	0.258	0.197
	Negative	-0.168	-0.183	-0.326	-0.171
Kolmogorov-Smirnov Z		1.103	1.115	1.723	1.042
Asymp. Sig. (2-tailed)		0.175	0.166	0.005	0.228
a. Test distribution is Normal.					

Look at the table No (1), the first step is to check if the variables follow normal distribution or not, that through using One-Sample Kolmogorov-Smirnov Test. When we applied the test, the result showed all the variables follow Normal distribution. This normality of the variables is the reason to use the conventional OLS estimation model, also the another reason is the regression coefficients must be reliable measures of the elasticity or the responsiveness of the y-variable to changes in the independent variables.

The following Table shows all requested variables entered without remove any variable and Dependent Variable: exports.

(2) Variables Entered/Removed ^b

Variables Entered	Variables Removed
inflation, interest, exchange rate ^a	.

a. All requested variables entered.

Look at the table No (3) estimation by the multiple regression – Model Summary– where the correlation coefficient (R) represent 0.97. which indicate to the strength of the regression equation, that means the independent variables be able to explain about 0.97 of the change in exports (X) and the rest (0.03) due to the other factors, also the R Square (R²) estimated about 0.94, and finally, Adjusted R Square was 0.94.which indicate to the strength of the regression. In addition, the result of Durbin–Watson test was more than 2.

(3)Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.973 ^a	0.947	0.94	2703.012	2.088

a. Predictors: (Constant), interest, inflation, exchange Rate

b. Dependent Variable: exports

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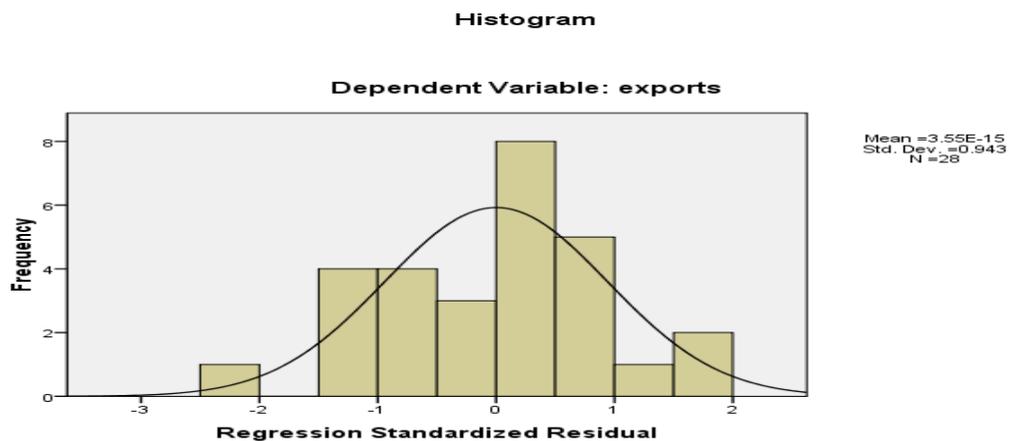
When we observe the table No (4), we find the results of coefficients indicate to a significance result, which means the responsiveness of Exports to changes in the mostly all variables of model, this represented through The Constant value, that was significance (0.00) which means the model had significance. Where the responsiveness of Exports to change in the Exchange rate was a significance (0.00), that indicate Exchange rate was more impact in exports, but the situation on opposite in the variable of inflation , where the value was (0.074), so the change in the exports was non-significance to change in the inflation. In addition, the change in the interest rate had effect to change in the Exports and the value represented a significance that was (0.03), because it less than (005).

(4) Coefficients ^a

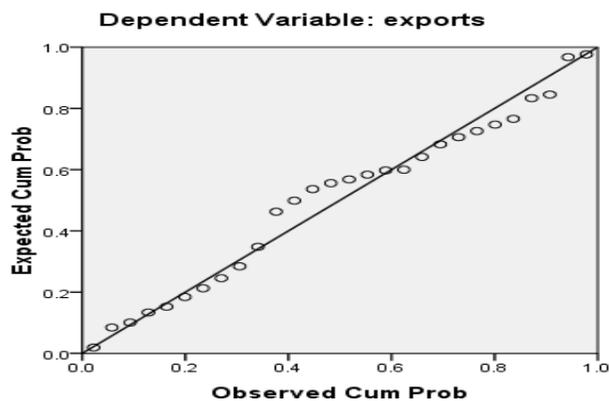
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-10053.630	2366.469		-4.248	.000
Exchange Rate	1928.632	288.189	.764	6.692	.000
Interest	148753.707	44944.948	.324	3.310	.003
Inflation	-16612.334	8879.851	-.129	-1.871	.074

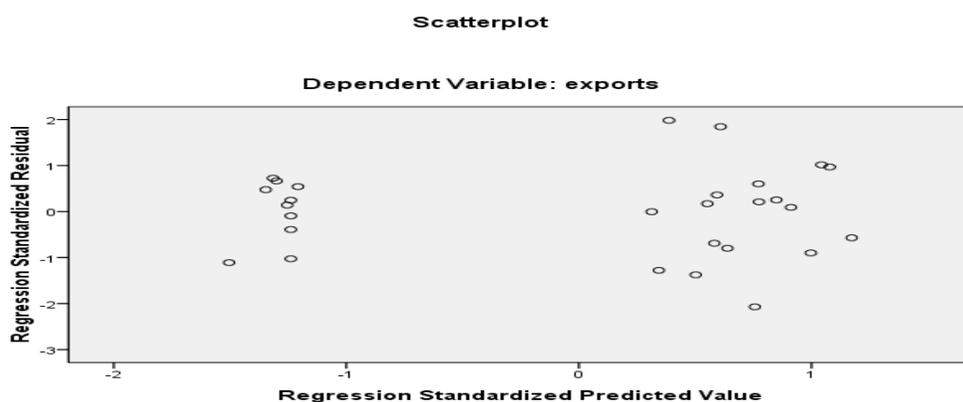
a. Dependent Variable: exports

Charts



Normal P-P Plot of Regression Standardized Residual





IV. Conclusion:

- The regression depicts a positive relationship between changes in floating exchange rate and performance of exports, where the exports increased through investigate period in Egypt. This result means that floating exchange rate helped the exports to increase in this period.
- Clearly, there is opposite effect of inflation rate on the exports through the investigation period, despite it had non-significance in the model in short run. On the other hand, the expected inflationary effects of monetary

growth in the long – run could be detrimental on the competitiveness of export. Where the monetary growth has a cumulative negative effect on the responsiveness of exports.

- To support the competitiveness of export must be apply the expansionary Fiscal policy. Where the expansion of Government spending is likely to stimulate Economic growth, which could be benefit to export industry. On the other hand, must be leaving the Shrinking policy, which lead to Failure to stimulate the Economic growth and would accelerate price inflation in the face of higher growth in government spending, Which lead to the adverse effect of government spending on competitiveness and export growth.

V. The recommend

- We recommend that growth in the real sector, especially the small industries should be improved to enhance

competitiveness of export, create employment, curb inflation and reduce poverty.

- On other side must be cut non-productive imports, that lead to increasing in balance trade deficit
- must be attract the foreign Directed investments from rest of the world, especially the countries we have a strong economic relationship with us
- The monetary growth has effect on the inflation where a cumulative negative effect has. Therefore, we Recommended to support the competitiveness of export through must have been apply expansionary Fiscal policy that affect inflation positively.

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المخلص

تهدف هذه الورقة البحثية لمعرفة قوة الاداء التصديري بعد تعويم سعر الصرف في مصر خلال الفترة من يناير إلى 2016 أبريل 2018. وقد استند التحليل إلى بيانات السلاسل الزمنية الشهرية للتحقق من تأثير سعر صرف الدولار الأمريكي على أداء الصادرات. لذا فقد قمنا بجمع البيانات المطلوبة للتحليل وطبقنا معادلة الانحدار المتعدد (OLS) لقياس العلاقة بين تعويم سعر الصرف وأداء الصادرات. حيث تمثلت النتائج في أن التغيير في سعر الصرف كان له تأثيراً كبيراً على أداء الصادرات على المدى القصير، مما يعني أن تعويم سعر الصرف قد ساعد على زيادة الصادرات بدرجة كبيرة خلال فترة الدراسة. كما توقعت هذه الدراسة أن التأثير التضخمي للنمو النقدي على المدى الطويل يمكن أن يضر بالقدرة التنافسية للتصدير بشكل كبير.