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CBE and FX Devaluation: Bitter Enemies or is it Just a Matter of Time? Analyzing the Impact of an EGP Devaluation on Egypt's Trade Balance

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CBE and FX devaluation: Bitter enemies or is it just a matter of time? Analyzing the impact of an EGP devaluation on Egypt's trade balance

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Abstract: *After the 2011 revolution, Egypt's central Bank (CBE) changed its stance from a managed floating exchange rate regime to stabilizing the EGP, even though the market kept pushing for a devaluation to adjust Egypt's trade competitiveness given the deteriorating state of the economy in general and the external balance specifically. This paper tries to judge the behavior of the Central Bank by looking at the possible effects of a real devaluation on Egypt's trade competitiveness. Using an ARDL model, we study both the 2003 devaluation and the 2013 partial devaluation, and conclude that the impact of a real devaluation on Egypt's trade balance is statistically insignificant. We further show that a J-curve effect is not present given the stationary characteristic of the real exchange rate. In effect, we do not find any positive incentives regarding trade competitiveness, for the Central Bank to consider devaluation as a possible remedy to improving Egypt's external balance of payments.*

Keywords: Devaluation, Trade Balance, Autoregressive Distributed Lag (ARDL) Model

JEL classification: E42, E52, E58

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I Introduction

Nominal devaluation has always been a debatable topic on policymakers' agendas. Even after the First generation model of Krugman (1979), some Central Banks continue to fight their way in fixing their domestic currencies after any negative shocks on the economy, even though market participants play against the formers' will. Unfortunately for the former, this process often leads them to deplete reserves significantly and/or raise policy interest rates, leading to eventual currency devaluation in most cases. Egypt's Central Bank (henceforth CBE) became a classic example of the above dilemma ever since the January 2011 Revolution. However, Egypt's geopolitical location always mandated that Egypt get foreign aid to support its balance of payments deficit. This provided the CBE with some ammunition (international reserves) to continue stabilizing the EGP relatively longer than other central banks.

Yet still the debate remained; why did the CBE, which adopted a De-facto floating regime in 2003 and changed its objective to targeting inflation–from a nominal exchange rate anchor previously-suddenly decide to keep the EGP stable, even though the January 2011 Revolution and the economic turbulence that followed mandated a proportionate depreciation?

A possible answer to the above question may lie in the inherently contractionary effects of devaluation on the economy. Whether this is the case or not, the CBE doesn't seem to be deviating from its stance. Indeed, in December 2012, international reserves reached a critical low of $14 billion and the CBE introduced an orderly depreciation that lasted for 3 months. After the second June 2013 Revolution, the GCC pledged $12 billion in aid to Egypt and by November 2013, the CBE allowed the EGP to appreciate slightly ever since, even though the economy remained subdued. This suggests that the EGP will remain stable over the coming period so long as foreign aid keeps pouring in.

This paper tries to answer the following question: Does devaluation in the real effective exchange rate have a significant impact (either contractionary or expansionary) on Egypt's trade balance? Section II reviews the related literature. Section III explains the methodology and the empirical results. Section IV concludes.

II Review of the Literature

Assuming a nominal devaluation does lead to a real devaluation even partially, the impact of a real-devaluation on any economy could be studied by looking at its static or dynamic effects on two different sections; (1) domestic expenditure/ demand, (2) trade balance effect. Krugman and Taylor (1978) found

that the expenditure reducing effect is more likely to be the case, when looking at the effect of a real devaluation on either output or the trade balance, as compared to the expenditure switching effect[2].

Edwards (1989) proposed two terms: actual and equilibrium real exchange rates (ARER & ERER respectively). He postulated that ERER was a function of three real components: external fundamentals[3], domestic fundamentals[4], and technological progress in the country, while ARER was function of nominal monetary variables in addition to the above real factors. He showed that the impact of a real devaluation differed, depending on the extent of deviation/ misalignment of ARER from ERER. If there were a small deviation in the short run, then a real devaluation of ARER would not lead to expansionary effects, as it would increase the extent of misalignment. He also noted that a natural ARER appreciation would not hurt the economy if it was accompanied by improvements in any of the above real factors. With respect to the effect on the trade balance, the Marshall-Lerner-Robinson, or MLR, condition, due to Marshall (1923), Lerner (1944) and Robinson (1937) is generally referred to[5].

Empirically, the Bahmani-Oskooee and Miteza (2002) panel study showed that Egypt's devaluation in the early 1990s, which followed the exchange rate based structural adjustment program (ERSAP), led to a real devaluation in the long run for Egypt, as well as most of the sample countries. However, they did not test the effect of the real devaluation on output or the trade balance. Bahmani-Oskooee and Kandil (2008) divided devaluation into anticipated and unanticipated devaluation, and tested their effects on 14 MENA countries (including Egypt) in the same period. They found that the effect of an anticipated devaluation was expansionary in Egypt's case, but varied among other countries, depending on the extent to which the aggregate supply utilized imported inputs, as well as the extent to which a positive supply shock is possible. They also found that an unanticipated[6] devaluation had a temporarily expansionary short run-effect on output, but led to a contractionary effect on the long term. With regard to country specific studies, Yusoff (2007), Brada et al (1997), Celik and Kaya (2010) and Guechari (2012) estimated the impact of the real exchange rate[7] devaluation on the trade balance in Malaysia, Turkey and

[2]Following Krugman and Taylor (1978), the expenditure switching effect occurs when agents respond to a devaluation, which leads to increasing the price of imported tradable goods, via consuming non-tradable goods or domestically produced tradable substitutes. Meanwhile, exporters of tradable goods will reap the profits due to their relatively higher prices. The expenditure reducing effect is the opposite of the former effect and leads to a reduction in output.

[3] Which include capital movements, world real interest rates and terms of trade.

[4] Which include import tariffs, export subsidies, other taxes and subsidies, and the structure of government expenditure on tradable and non-tradable goods.

[5]As cited in Celik and Kaya (2010), the effect of devaluation on the trade balance would be positive if the sum of export and import demand elasticities were greater than unity. However, due to the different and lagged-response of exports and imports to devaluation, the trade balance could deteriorate on impact, before improving later on, leading to the J-curve effect.

[6] Following Bahmani-Oskooee et al (2007), they regressed the actual REER which they calculated on its four lagged values, assumed the fitted values as the anticipated REER and the error term as the unanticipated rate.

[7] There is a difference between real exchange rate and REER, the latter is estimated and accounts for changes in terms of trade, while the former is calculated and does not account for terms of trade.

Algeria, respectively. Using Johansen co-integration and vector error correction models for long/short run effects, respectively, they found mixed results.

Mongardini (1998) tested the impact of the ERSAP and capital account liberalization that Egypt undertook in the beginning of the 1990s. Using an ARDL model on monthly data from 1987 to 1996, he tried to estimate the equilibrium real exchange rate (ERER) of Egypt and determine to what extent there was a misalignment between it and the actual real exchange rate (ARER) of Egypt. He found both the ERER and ARER to have appreciated from 1990 to 1996, with the misalignment falling to 7% from 20% in 1991. He also found that debt rescheduling with the Paris Club has contributed to the appreciation of the ERER by 122%, followed by an improvement in total factor productivity (26.9%), followed by the Gulf war (8%)[8]. Furthermore, he found that the ARER appreciation worsened the terms of trade, which in turns contributed negatively by 28.4% in the ERER appreciation. He concluded that a nominal devaluation was not warranted as a policy cure to Egypt due to decreasing misalignment between ERER and ARER.

Similar to Mongardini (1998), Al-Shawarby (1999) tried to test for both the short term and long term effects of REER on Egypt's exports at the disaggregate level[9], controlling for real GDP and World GDP. Using co-integration tests on annual data from 1970-1997 to capture the long term effect and VECM on monthly data from 1990 to 1998 to capture the short term effect[10]. She found the REER effect on merchandize, semi-finished and finished exports to have been positive but economically insignificant, while the effect on fuel exports and primary goods (cotton) were both positive, and significant and marginally significant, respectively. The effects were similar across the short and long run. She however noted that the liberalization of the capital account and decrease in tariffs may have eased the net devaluation of the REER due to their appreciation effects, thereby neutralizing the net devaluation effect on exports.

El Ramly (2008) tried to test the impact of the REER but on a different phase, namely Egypt's 2003 devaluation. Using a VAR approach on annual data from 1982 to 2004, she found the following: First, the import and export demand elasticities of Egypt were relatively low. Second, REER fluctuations were exogenous. Third, a short term contractionary effect would last for as much as 4 years, before turning into an expansionary one. And fourth, REER fluctuations significantly contributed to real GDP volatility[11].

[8] He used a dummy variable for the Gulf war and found that it led to increasing international oil prices, thereby improving Egypt's exports.
[9] She divided exports into semi finished, finished, merchandize, fuel and cotton exports and tested the effect of REER movements on each one separately.
[10] Both Mongardini (1998) and Al-Shawarby (1999) undertook a lot of rigid assumptions as well as complicated interpolations to transform variables that were present in annual/ quarterly frequency into monthly series. Thereby creating new sets of variable frequency and testing their effect on the trade balance and exports. The reason behind using monthly data is the scarcity of annual data that were present at the time, leading them to consume a lot of degrees of freedom.
[11] Noting that, El Ramly (2008) did not test for co-integration between the variables to conclude a solid long term effect.

III Methodology and empirical results

Our key contribution to the literature –mentioned above- is that we utilize a relatively abundant monthly dataset, meanwhile testing for the impact of two devaluations; namely the 2003 and the latest devaluation beginning January 2013. This was not the case in the previous studies on Egypt, where data frequency was mainly annual, with some notable exceptions (Mongardini, 1998 and Al-Shawarby, 1999). Even the latter studies, which utilized monthly data to overcome this issue, tried to interpolate variables that had more rigid frequencies to be included in the monthly dataset, such as domestic and World GDP as well as Egypt's terms of trade, which is included in the estimation of REER, a key variable in these studies. To the best of our knowledge, there are no other studies, aside from ours, that attempted to test Egypt's 2013 devaluation, and this is a key contribution that this paper aims to add to the existing literature.

Regarding the dataset, this paper tries to test the impact of Egypt's real effective exchange rate (REER) on the trade balance, while controlling for some important variables. The trade balance was derived from The International Monetary Fund's Direction of Trade Statistics (DOTS). REER is the proxy for ARER postulated by Edwards (1989), and is estimated using the International Monetary Fund's Direction of Trade statistics (DOTS), and the International Financial Statistics (IFS) databases. We chose the top ten import partners as well as export partners in 2009, 2010, and 2011[12]in the estimation. This yielded 14 countries that include two oil exporting countries[13]. We note here that we use trade weights as a proxy for terms of trade because the latter was only present in annual frequency[14]. Other control variables include international oil and wheat prices[15], derived from the US Energy Information Agency and the US department of Agriculture, respectively. We further control for a dummy for the FX auction system[16], Lehman crisis and the EGP devaluation in 2003[17]. We do not control for domestic GDP or partner country

[12] The three years were taken because they represented Egypt before the revolution and afterwards. This should give us partner countries whose bilateral trade with Egypt can be assumed to be sustainable over time.

[13]The fifteen countries are: USA, China (Mainland), Germany, France, Italy, Spain, UK, Russia, India, Brazil, Turkey, South Africa, Saudi Arabia, Kuwait and Lebanon. We assume that most of the imports from Kuwait and Saudi Arabia to be oil related. As a result, we will control for oil price fluctuations using an international oil price variable. Lebanon was excluded from the estimation due to data scarcity.

[14]To avoid interpolation of the terms of trade which is present in annual frequency only, we use partner country trade weights. Following El Ramly (2008), Egypt's exports plus imports from country 'I' to Egypt's total exports and imports, are used instead of the terms of trade.

[15]Egypt is one of the top importers of wheat internationally.

[16]Starting late December 2012, the CBE introduced an FX auction system that limits the supply for foreign exchange to banks. It was introduced to control the supply of foreign exchange in the market as well as the demand from banks, thereby easing any devaluation hat may occur. We are including a dummy for it in our model because it may have a negative/positive impact on imports/ trade balance respectively. It is noteworthy to highlight that the system led to a black market in the foreign exchange market as well as an orderly depreciation in the EGP in front of the USD and other international currencies. After June 30 revolution, the GCC aid helped tame the black market slightly. The system is still in place till the time of publishing this paper's first draft.

[17] It will be seen later on that their presence in the model is necessary to insure stationary characteristics of WTI oil price and REER respectively.

GDP in the estimation[18]. Our dependent variable is the change in Egypt's trade balance (Imports minus exports). Data frequency is monthly from 2000: 01 to 2013:06, which includes both devaluations (2003 and 2013).

With respect to the methodology, we follow the literature in adopting either; Vector Error Correction Models (VECM) and Johansen Co-integration, following Engle and Granger (1987) and Johansen (1991) respectively; or an Autoregressive distributed Lag (ARDL), following Pesaran et al (2001). VECM and Johansen co-integration assume all variables are integrated of the same order, while ARDL does not. However, ARDL cannot be run on variables that are integrated of the second order - I(2). Furthermore, ARDL does provide consistent estimates asymptotically, compared to VECM and Johansen co-integration.

To narrow down our model selection, we undergo unit root tests, following Zivot and Andrews (1992) (henceforth the ZA-test) and Dickey and Fuller (1979). Because we are studying two periods of devaluation, we will use the ZA-test to estimate potential structural breaks in the monthly series. Zivot and Andrews (1992) showed that augmented Dickey-Fuller tests may fall into type II error if a present structural break was not accounted for. Table 1 shows the ZA test statistic for the main variables under our study. It is clear that REER and WTI are stationary at the level, conditional upon controlling for the embedded structural breaks; a crash in January 2003 and a trend structural break beginning at the time of the Lehman crisis.

Table 1: REER and WTI are stationary conditional upon controlling for the 2003 devaluation and the Lehman crisis in the model:

Variable (level)	Trade Balance	REER[1]	WTI spot oil price[2]	Hard red winter wheat price
ZA t-statistic	-3.5	-5.3	-5.5	-3.6
5% critical value	-5.1	-4.9	-5.1	-5.1
Estimated Structural Break	2008:08	2003:01	2008:10	2008:10

1 REER is stationary with a structural break in the intercept. **2** WTI is stationary with a structural break in the intercept as well as the trend.
Source: Author's calculations using E-views.

Table 2 shows further the Augmented Dickey Fuller tests on the remaining variables; Trade balance and US-HRW wheat price spot, to insure that none of the variables are I(2).

[18]As cited in Al Shawarby (1999), Senhadj and Montenegro (1998) stressed the importance of including both domestic real GDP and world GDP to control for the ability and willingness to increase Egyptian exports respectively. It should be noted that Al-Shawarby (1999) interpolated a monthly real GDP, but found the interpolated GDP to have an insignificant effect on Egypt's exports. We ran the same exercise on quarterly data on our variables, this time including domestic and world GDP; however we did not include the results here for the sake of space. The results were more or less similar to the monthly data results and did not change the impact of the REER significantly. The results are readily available upon request.

Table 2: Augmented Dickey Fuller tests show the trade balance and wheat price to be stationary at the first difference:

Variable (First Difference)	Trade Balance	Hard red winter wheat spot (HRW)
ADF t-statistic	-13.0	-9.0
5% critical value	-2.9	-2.9

Source: Author's calculations using E-views.

Based on the above, it is clear that an ARDL model will be more suitable in our case.

Second, Toda and Yamamoto (1995) highlighted that the Granger Causality test, following Granger (1969), may have a non-standard distribution when some of the variables are not stationary. They developed a procedure that mimics the Granger Causality test while overcoming this issue. Table 3 lists the results of the Toda Yamamoto procedure. We could not reject the null of no causality from REER to the trade balance or vice versa.

Table 3: Toda and Yamamoto procedure for Granger causality testing[1]:

Null hypothesis:	P-value
REER does not cause the trade balance	0.8539
Trade balance does not cause REER	0.1422

1 Toda and Yamamoto (1995) highlighted that t-statistics of granger causality test have a non-standard distribution when some of the variables are not stationary. They developed a procedure that overcomes this issue.
Source: Author's calculations using E-views.

In order to derive the ARDL equation, we first assume a conventional error correction model equation:

$$LnTB_t = \beta_0 + \beta_1(L)LnTB_{t-j} + \beta_2(L)\sum_{i=1}^{I} REER_{it} + \beta_3(L)WTI_t + \beta_4(L)LnHRW_t + \beta_4 FX_t + \beta_5 Lehman_t + \beta_6 Dev_t + z_t + \xi_t \quad (1)$$

Where 'z_t' is the error correction term, 'LnTB' is the log of the trade balance (imports minus exports), '$\sum_{i=1}^{I} REER_{it}$ 'is the summation of the estimated real effective exchange rate of Egypt with respect to each trading partner. WTI is the international oil spot price, '$LnHRW_t$' is the log of the hard red winter wheat spot price. 'FX' is a dummy that gives '1' for the months that witnessed the introduction of the FX auction system, and '0' otherwise. 'Lehman' is a dummy that gives '1' for the months starting in October 2008 until the end of the dataset, 'Dev' is a dummy that gives '1' for January 2003, and '0' otherwise. 'ξ_t' is an iid error term.

'z_t' can be thought of as the OLS residuals series from the long run co-integrating regression:

$$TB_t = \alpha_0 + \alpha_1 HRW_t + v_t \quad (2)$$

Where z_{t-1} can be estimated as $z_{t-1}=c_0 - c_1 HRW_{t-1}$, with c_0, c_1 being OLS estimates of α_0, α_1.

Based on the above, we can write an ARDL equation as follows:

$$LnTB_t = \beta_0 + \beta_1(L)LnTB_{t-j} + \beta_2(L)\sum_{i=1}^{I} REER_{it} + \beta_3(L)WTI_t + \beta_4(L)LnHRW_t + \beta_4 FX_t + \beta_5 Lehman_t + \beta_6 Dev_t + \theta_7 TB_{t-1} + \theta_8 HRW_{t-1} + \xi_t \quad (3)$$

Where the long run impact of the wheat price (lagged) on the change in the trade balance can be calculated as: (θ_7/θ_8)*(-1). However an F-test must be run to test for the presence of long run co-integration between wheat price and the trade balance. Given that the F-test distribution is non-standard (Pesaran et al, 2001); we should compare it with the critical bounds given by Narayan (2004). If a long term relationship exists, we can use an OLS regression on the level to show the long run results, and a VECM to model the short run impact on the stationary variables and the differenced non stationary ones.

Before proceeding further, we needed to determine the appropriate lag lengths for the exogenous and endogenous regressors using Schwarz Information criterion. Table 4 shows the results of the lag selection, followed by Table 5 with the ARDL results.

Table 4: Schwarz Information Criterion results:

Schwarz information criterion	Endogenous variable (REER)	Exogenous variables (DHRW and WTI)
No lag	11.65251	10.3417*****
1st lag	10.2072*****	10.38684
2nd lag	1025567	10.42847
3rd lag	1023686	10.49222

Note: * indicates the optimal lag length. **Source:** Author's calculations using E-views.

Table 5: ARDL equation results:

Dependent Variable: Log of Trade balance (Imports minus exports)

Method: Least Squares

Sample (adjusted): 2000M02 2013M06

Included observations: 161 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	P-value
Intercept	-6.16	28.6	-0.22	0.83
$LnTB_{t-1}$	0.51	0.08	6.39	0.00
REER	-34.6	19.3	-1.80	0.07
$REER_{t-1}$	23.2	19.2	1.21	0.22
WTI oil price	0.56	0.27	2.07	0.04
$LnHRW_t$	-0.24	0.16	-1.50	0.13
Lehman crisis dummy	-22.7	14.3	-1.59	0.11
Devaluation dummy	-48.8	38.4	-1.27	0.21
FX-auction dummy	-4.94	18.7	-0.27	0.79
TB_{t-1}	-0.01	0.01	-1.29	0.20
HRW_{t-1}	7.59	4.08	1.86	0.07
R-squared	0.61	Adjusted R-squared		0.59
F-statistic		23.63207		

Source: Author's calculations using E-views.

A key assumption of the ARDL estimates is that the error term does not exhibit serial correlation. On testing the above residuals with a LM test, the residuals did exhibit serial correlation in the 1st, 2nd, 9th and 12th lag. To overcome this issue, we control for a moving average term with the same lag orders and re-ran the test. This time, we did not reject the hypothesis of no serial correlation at the 5% significance level. Table 6 shows the final ARDL results (no serial correlation present), and Table 7 shows the LM test results.

Table 6: ARDL results with no serial correlation:

Dependent Variable: Log of Trade balance (Imports minus exports)

Sample (adjusted): 2000M02 2013M06

Included observations: 161 after adjustments

Variable	Coefficient	Std. Error	T-statistic	P-value
Intercept	-5.37	19.6	-0.27	0.78
$LnTB_{t-1}$	0.68	0.09	7.85	0.00
REER	-29.0	17.4	-1.66	0.10
$REER_{t-1}$	22.6	17.0	1.32	0.19
WTI oil price	0.32	0.19	1.69	0.09
$LnHRW_t$	-0.12	0.13	-0.94	0.35
Lehman crisis dummy	-9.71	9.11	-1.07	0.29
Devaluation dummy	-39.4	31.2	-1.26	0.21
FX-auction dummy	-2.32	12.8	-0.18	0.86
TB_{t-1}	-0.01	0.01	-1.56	0.12
HRW_{t-1}	5.59	3.12	1.79	0.08
MA(1)	-0.29	0.08	-3.53	0.00
MA(2)	-0.13	0.07	-1.79	0.08
MA(9)	-0.20	0.05	-3.67	0.00
MA(12)	-0.38	0.08	-4.49	0.00
R-squared	0.71	Adjusted R-squared		0.68
F-statistic		25.4		

Source: Author's calculations using E-views.

Table 7: Breusch-Godfrey Serial Correlation LM Test results:

Residual lags[1]	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
P-value	0.71	0.95	0.23	0.32	0.76	0.09	0.09	0.22	0.24	0.98	0.26	0.69

1 Null hypothesis: Residual lags do not exhibit serial correlation. We do not reject the null at the 5% significance level.
Source: Author's calculations using E-views.

Table 8: Narayan 2004 F-statistic critical values:

Critical values for F-test	5% Significance level	
k=exogenous variables	I(0) series (Lower Bound)	I(1) series (Upper bound)
1	2.2267	6.3100
2	2.2300	5.4333
3	2.2040	4.9600
4	2.1650	4.7300
5	1.8551	4.5600
6	1.8763	4.4371
7	2.1144	4.3788

Note: k=2 in this paper. **Source:** Narayan (2004).

Table 9: Wald Test for presence of long run co-integration between wheat price and the trade balance

Test Statistic	Value	Degrees of freedom	Probability
F-statistic	2.25	(2, 146)	0.1090
Chi-square	4.50	2	0.1054

Source: Author's calculations using E-views.

Given that the F-statistic (2.25) lied between the upper and lower bounds at k=2, we could not conclude whether there existed a long term relationship between wheat price and the trade balance or not. This is further supported if we look at the t-statistics of TB_{t-1} and HRW_{t-1} and compare them with the t-critical values (-2.86, -3.53) in table CII(iii) in Pesaran et al (2001). Indeed in the latter case, we did not reject the null hypothesis of no statistical significance of either coefficient. Based on the above; a normal VAR on the differenced variables to estimate the impact of REER on the change in the trade balance should be run (Table 10):

Table 10: VAR results

Dependent variable: $LnTB_t$		
Repressors	**Coefficient**	**T-statistic**
Intercept	-27.30	-1.37
Log of trade balance (1 lag)	0.60***	9.67
REER (1 lag)	3.12	0.31
Log of wheat price	-0.05	-0.33
WTI	0.62***	2.96
Devaluation dummy	-48.2	-1.24
Lehman crisis dummy	-21.6**	-1.97
FX-auction dummy	-9.21	-0.59
R-squared	0.59	
Adj. R-squared	0.58	

Note: **, *** indicate statistical significance at the 5% and 1% levels respectively.
Source: Author's calculations using E-views.

The VAR results show that REER is not statistically significant in impacting the change in the trade balance. This is consistent with our causality test results (conducted at the beginning of this paper), which also showed no causality between the two variables. Also, the devaluation dummy did not have a statistically significant impact on the trade balance, which shows that devaluation in the EGP may not necessarily lead to an improvement in the trade balance. This is contrary to El Ramly (2003) who showed a J-curve effect as a result of the 2003 devaluation. Further on, the FX-auction system imposed by the CBE in late 2012 until the date of the publishing of this paper is also not statistically significant. This highlights that the CBE was correct in refusing to devalue the EGP, at least from the perspective of trade competitiveness. However, it shows that the introduction of the system failed to limit imports of luxury items. This may have been the case due to the presence of a significant Black market in the foreign exchange during the time span of our dataset, which may have provided the foreign exchange to import traders, albeit at a costly price. Trade balance does seem to exhibit an autoregressive process, where any deterioration shock in the previous month will continue to deteriorate the current month's trade balance by 60 percent of the previous month's shock. On testing the impulse response functions (Annex I), such an impact will continue for about 10 months, after which the shock impact fades. One surprising result is that the Lehman dummy was statistically significant with a negative sign. This shows that, compared to before the Lehman crisis, the impact of the crisis on the trade balance deterioration is negative (i.e.: it led to an improvement in the trade balance, relative to the no-Lehman crisis period). This can be reasoned as the period that was prior to the crisis involved a commodity price surge internationally, which led to deterioration in the trade balance, until the crisis erupted.

IV Conclusion

In this paper, we tried to partially answer a question; why the CBE refused to let the EGP depreciate at market supply and demand (floating regime) and kept clinging on foreign aid to stabilize the EGP until the economy and Egypt's balance of payments improve. There were two possible reasons in our view that may help us to understand the CBE's behavior in the foreign exchange market. One was potential inflationary pressures that may occur upon any devaluation, the other was the insignificant/contractionary effect of a real EGP devaluation on trade competitiveness. We tried to look into the latter and concluded that devaluation in the real effective exchange rate did not have a statistically significant impact on the trade balance. We further showed that, controlling for an appropriate structural break in the series, the real effective exchange rate was stationary, unlike the trade balance at the level. As a result, there were no short and long run effects of the real effective exchange rate on the trade balance. This contradicts with El Ramly (2003), which showed that the real devaluation may have a negative impact in the short run, but a positive one in the longer term. Our results support the CBE in its intention not to devalue the EGP, so long as it retains some ammunition (international reserves) to do so. Further research should try to look into the impact of a nominal

devaluation on the inflation, as well as domestic output, to help frame a robust picture on the importance of stabilizing/devaluing the EGP.

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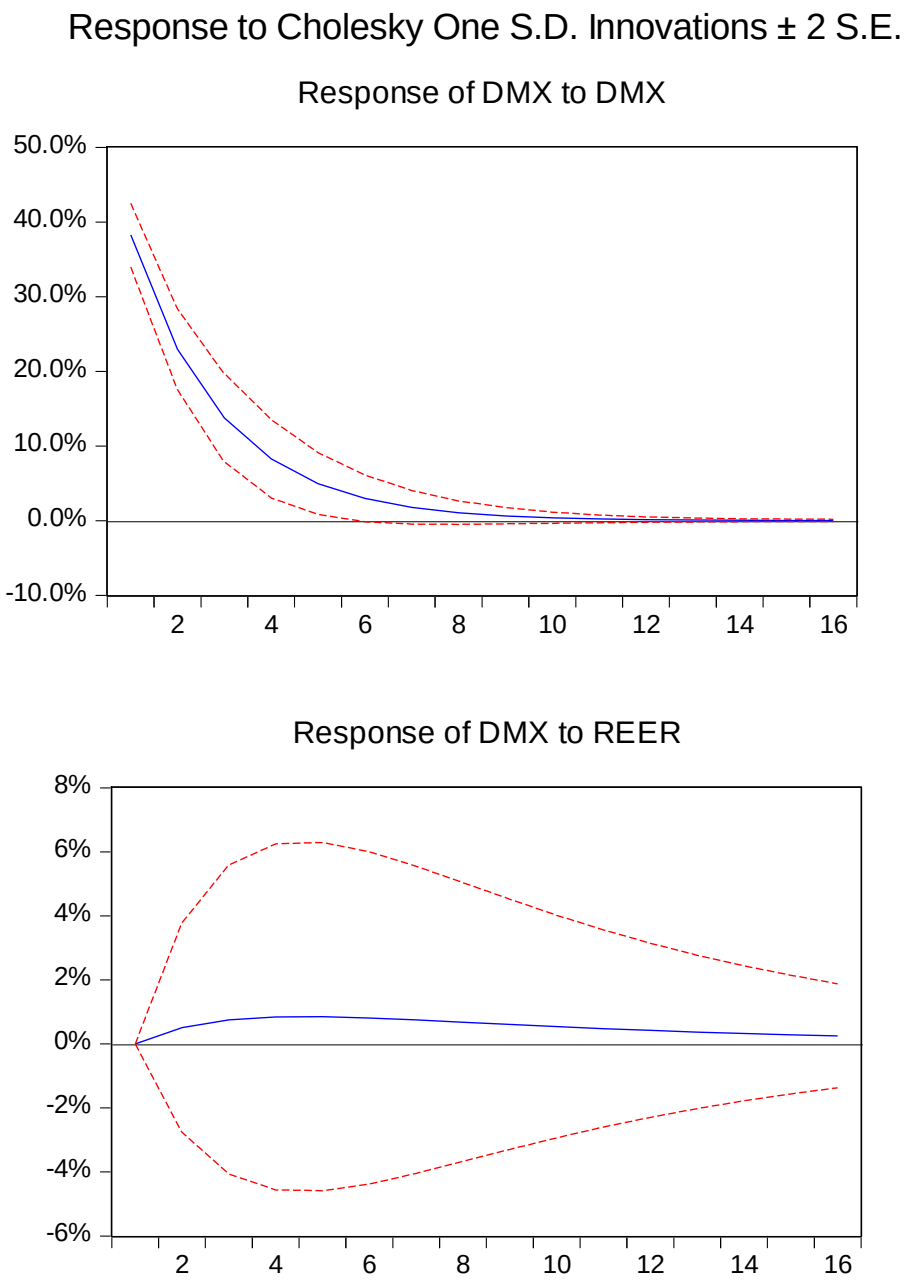
Appendix I



Source: Author's calculations using E-views. Note: X-axis represents number of months beginning from the initiation of the shock (impulse). DMX is the log of the trade balance (imports minus exports), REER is the real effective exchange rate at the level, an increase in REER means depreciation.