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Specifying the Drivers of Terms of Trade in Egypt: Vector Error Correction Model Approach

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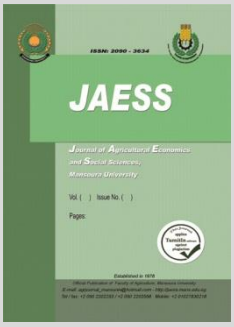

ABSTRACT

Terms of Trade (TOT) affects international trade, acting as an engine for development. It refers to the relative price of exports in terms of imports. A rise or improvement in a country's TOT often denotes that export prices have increased while import prices have either held steady or decreased. In contrast, export prices may have decreased, but not by as much as import prices. Export prices may have remained stable while import prices have fallen, or they may have simply climbed faster than import prices. An improved TOT can come about in any of these conditions. Since the previous work has only focused on TOT as one of the driving factors affecting macroeconomic variables in the Egyptian context, this work attempts to specify the drivers of TOT as a dependent variable. Vector Error Correction Model is employed to identify the movement between the variables, using the available yearly data (1985-2020). The results prove that TOT is affected positively by inflation and exchange rate and negatively by the deposit interest rate in the long term. However, it is negatively impacted by the inflation rate in the short term. Policymakers might utilize fiscal and monetary policies to control inflation and direct TOT in the short run. Future investigations are necessary to validate the kinds of conclusions that can be drawn from this study.

Keywords: Terms of trade; Fiscal policy, Monetary policy, Vector Error Correction Model, Egyptian economy.

INTRODUCTION

International trade provides consumers with a greater choice of products and services, promotes greater efficiency, and stimulates innovation. Before reaching any conclusions, the deficit in the current account must be put into context. A developing country's current account deficit could result from the need to import many goods and services to assist its economy in development. Initially, the period of intensive investment leads to a more robust economy in which the developing country may witness a decline in imports and a rise in exports, gradually reducing or hopefully eliminating the deficit in its current account (Buckle & Thompson,2020).

Terms of trade (TOT) refers to the relative price of exports in relation to imports (Obstfeld & Rogoff, 1996). Its function in development and open macroeconomics issues has long been debated in several ways. A rise or improvement in a country's TOT frequently indicates that export prices have risen while import prices have remained stable or reduced. Export prices, on the other hand, may have fallen, but not by as much as import prices. Export prices might have remained unchanged as import prices fell, or they could have risen faster than import prices. In any of these circumstances, there will be an improvement in TOT.

In his famous book, The Wealth of Nations, Adam Smith describes, for example, how a high price of exports in terms of imports is necessary for the mercantilist strategy to reach a higher level of prosperity (Smith, 1776). TOT can shift, either increasing or decreasing a nation's wellbeing. Several factors can affect it, such as demand, supply, or government policy changes. Productivity improvements, in some circumstances, can worsen a country's TOT. A country can also adopt a "beggar-thy-neighbor" approach by exploiting its currency or enacting the optimum tariff to manipulate TOT to its benefit (Krist, 2013). Since commencing economic reform in 2016, Egypt has seen solid and stable economic development. In November 2016, despite the liberalization of exchange rate liberalization being an essential step in correcting its misalignment and alleviating the resulting foreign currency shortages, it was inadequate to guarantee a substantial upturn in export performance (Youssef & Zaki, 2019).

Egypt has been among the African countries that recorded positive growth despite the unfavorable effects of the COVID–19 outbreak. According to IMF estimates, GDP growth continued to decrease, falling to 3.3 percent in 2021 from 3.6 percent in 2020. Furthermore, the government was already in a strong position before the pandemic since it had launched an economic reform program that included fiscal consolidation, the establishment of a floating currency rate, and significant subsidy cutbacks. Inflation fell further and remained below the target range, reaching 4.5 percent in 2021 due to appropriate monetary policy. Changes in Egypt's TOT had direct welfare repercussions in the short and long term (Aneja, 2021).

The debate on the causal direction among TOT, exchange rate, interest rate, and inflation variables has been one of the central questions in the literature on TOT. Therefore, identifying the fundamental theories, concepts, and ideas is necessary to explain the causality issue between the defined variables. The aim here is to investigate what determines TOT movements. The setup motivates a time series analysis using the Vector Error Correction Model

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(VECM) for the period (1985 – 2020). This analysis finds evidence for the causal direction between TOT and the studied macroeconomic variables, contributing to understanding the impact of fiscal and monetary policies on TOT and hence international trade.

The first part provides a summary of the literature review, the second section describes the methodology, and the third section discusses the results. In the fourth part, the conclusion is drawn.

Literature Review

Since the groundbreaking study of Harberger as well as Laursen and Metzler in 1950, the relationship between TOT and macroeconomic variables has been a prominent research topic. The authors maintain that a favorable TOT shock increases savings in addition to net exports; since an increase in the purchasing power of exports boosts real income in a Keynesian context with a marginal propensity to consume less than unitary. When TOT deteriorates, savings and net exports fall. This will lead to a fall in the purchasing power of exports, lowering real income.

As international trade payments are made in either local or a foreign currency, the current account balance affects a currency's value (Buckle & Thompson,2020). The most prominent prior work in the Egyptian setting is reviewed in Table (1). The following are the conclusions that may be drawn from the previous research:

First, an unsustainable deficit in Egypt's current account can be corrected through the exchange rate adjustment in a floating exchange rate system. Consequently, the significant deficit requires a domestic currency depreciation against foreign currencies. The relative price of exports in global markets should fall, allowing exports to be more competitive. Meanwhile, the relative price of imports should rise, driving up the cost of imports. This will result in a reduction in the current account deficit and possibly turn it into a surplus.

Second, inflation worsens the Egyptian pound's purchasing power—that is, as prices increase, the pound buys fewer foreign products and services. With a persistently high level of inflation, its value falls.

Finally, unless they are driven by inflation, higher interest rates generally increase capital flows into Egypt because they make investments more attractive, all other factors being equal. Increased investments create a demand for the Egyptian pound, and higher interest rates push its value higher. Conversely, high interest rates can also reduce capital inflows if investors expect they may cause higher inflation and currency depreciation.

Although many authors have conducted studies using several methods, the causal direction from the key variables to TOT remains to be addressed.

Table 1. Summary of the selective relevant studies.

Author	Period	objective	Methodology	Conclusions
Aneja (2021)	1990 - 2019	Examining the relationship between terms of trade (TOT) and GDP.	ARDL Mode	The presence of a long-run and short-run link between the GDP and TOT Prebisch–Singer's hypothesis is partially validated
Elhendawy (2022)	1980-2019	Investigating the long-run relationship between external debt service and exchange rate	VEC Model	The dependent variable (USD/EGP) (+) terms of trade, Gross capital formation, final consumption expenditure, and broad money growth. (-) Deposit interest rate, external debt service, and gross savings
Elish& Hammam (2018)	1990 - 2015	Examining the dynamic connection between three macroeconomic imbalances: the misalignment of the exchange rate, current account, and output gap	VAR Model	Positive shocks in the misalignment of the real exchange rate result in a deficit in the current account.
Zaki *et al*. (2019)	Monthly data 2005–2016	Examining the impact of a devaluation of the exchange rate on exports.	Gravity-type model	The price of exports (in foreign currency) falls due to the depreciation, but the quantity does not increase.
Helmy *et al*. (2019)	2003 - 2015	Exploring the nexus between the exchange rate & prices.	SVAR Model	Although the exchange rate pass-through is significant, it is incomplete and sluggish with the price indices [IMP, CPI, and PPI]. The effect is more evident for CPI because it includes many subsidized commodities and goods with administered pricing and the government's price manipulation activity (i.e., export ban).
Abdelgany (2020)	1990 - 2018	Examining the determining factors of the exchange rate	ARDL & ECM Models	The real exchange rate is significantly and favorably impacted over the long term by both broad money and foreign exchange reserves. Trade openness and foreign exchange reserves both significantly affect and favorably connect to the real exchange rate in the short term.
Lemaire (2018)	Quarterly data 2002 - 2017	Drawing causal interpretation from the interaction of the main macroeconomic variables (rates of real GDP growth, monetary policy, inflation, and real effective exchange rate)	VAR Models	As a channel for monetary policy transmission, the exchange rate takes precedence over the interest rate. The impact of the external sector on the Egyptian business cycle is more ambiguous.
Emam (2021)	2005 – 2019	Investigating the drivers of interest rate	ARDL & NARDL Models	Egypt's monetary policy has been accommodating to inflation. Output, inflation, and exchange rate shocks are all addressed by an asymmetric response from the Egyptian Central Bank.

ARDL: Autoregressive distributed lags; ECM: Error correction models; NARDL: Non-linear Autoregressive Distributed Lag; SVAR: Structural VAR; VAR: Vector autoregressive.

Source: Author's compilation.Methodology

The aim here is to specify the drivers of TOT in Egypt using annual data on the inflation rate, deposit interest rate, and exchange rate as explanatory variables within the period (1985-2020). All data was gathered from World Bank

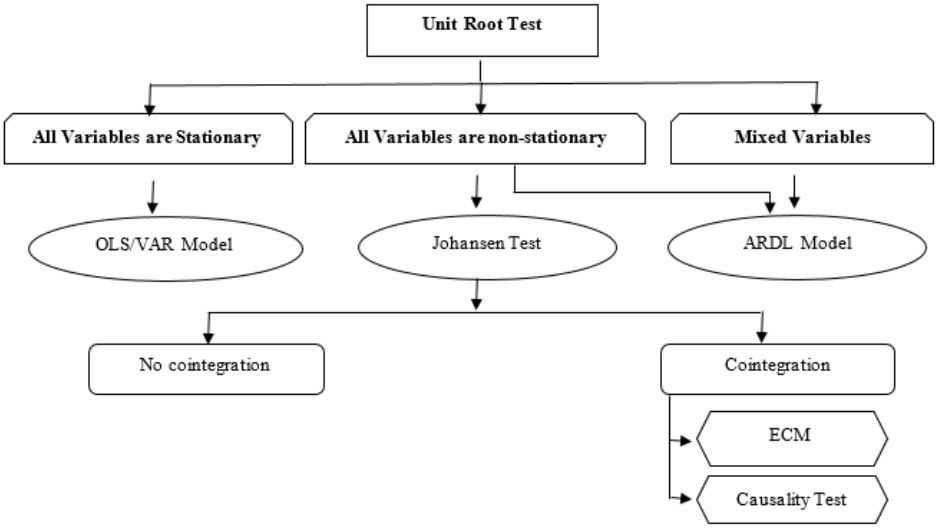
statistics (2022), ensuring data relevance and content. It was analyzed using EViews12.

The most important aspect of the study is selecting an appropriate approach for time series data. The wrong model specification or the use of the incorrect method results in biased and unreliable estimations. Unit root tests are used to first establish whether the series is stationary. Additionally, different techniques are required for stationary time series analysis compared to non-stationary series analysis.

The methodology is substantially more straightforward for stationary variables because OLS or VAR models can produce unbiased estimates. However, these models will not be convenient in the case of non-stationary variables. When certain variables are stationary, but others are not, a new challenge arises. Due to various other concerns in time series models, the method selection criteria in Figure (1) can be the most basic approach.

If the variables are not stationary, taking the first difference will make them stationary. If the long-run trend is persistent, it can be converted to stationary by introducing a time variable into the regression or by removing trends and cycles using filtering techniques like the Hodrick-Prescott (HP) filter. Nonetheless, when the variables are modified to be stationary by differencing, de-trending, or filtering, the information about their long-term relationships may be lost.

A unit root test is carried out as the first stage in the analysis of the time series. The OLS method can be used if each and every one of the studied variables is stationary. However, via differencing, a non-stationary series may be converted into a stationary one. A time series is deemed to be integrated of order one (I(1)) when it becomes stationary following the first differencing. Similarly, if the time series needs two differences to become stationary, the order of integration will be 2, i.e., I(2). If stationary at level (without differencing), I(0) is denoted.



ARDL: Autoregressive distributed lags; ECM: Error correction models; OLS: Ordinary least squares; VAR: Vector autoregressive.
Source: Shrestha & Bhatta (2018).

Figure 1. Model selection map in time series analysis.

Even while it is possible to use the OLS approach after differencing all the variables into stationary forms, the long-run information will be lost since differencing only captures short-term change. Therefore, it is not advised to use this method to analyze non-stationary variables.

The VAR model allows the regressand and regressors to use their own past values to establish reverse causality. Exogenous variables are not needed in the basic VAR model since it assumes that all regressors are endogenous. Selection methods including the Akaike Information Criterion (AIC), Hannan Quinn criterion (HQC), and Schwartz Bayesian Criterion (SBC) are frequently used to determine the optimal lag length.

Applying OLS or other similar methods in the case of non-stationary series can lead to "spurious regression." That is, the presence of a significant relationship between two uncorrelated variables. Despite being in disequilibrium in the short run, long-term equilibrium between two or more variables may exist. The cointegration test method was created by Engle and Granger in 1987 to examine nexuses among non-stationary variables. Hence, when two or more variables are connected to forming a long-term equilibrium relationship, they are called "cointegrated." That is, one variable pulls the other over the period, and thus both have the same movement. Because the Engle-Granger method has certain flaws, Johansen (1988), as well as Johansen and Juselius (1990), developed better cointegration tests.

Error correction models

It is possible to develop the Error Correction Model (ECM) if the variables are I(1) and a cointegration relationship exists.

Consider the subsequent bivariate relationship.

$$Y_t=\mu+\beta_1 x_t+\varepsilon_t \quad (1)$$

By transforming Equation (1), a relationship between cointegration and ECM is established based on the representation theorem of Engle and Granger (1987).

The cointegration equation between Y_t and X_t is as follows:

$$\varepsilon_t = Y-\mu-\beta_1 x_t \quad (2)$$

The ECM for Y_t and X_t are as follows:

$$\Delta Y_t = \mu_y + \alpha_y \varepsilon_{t-1} + \sum_{h=1}^{l} \alpha_{1h} \Delta Y_{t-h} + \sum_{h=1}^{l} b_{1h} \Delta X_{t-h} + u_{yt} \quad (3)$$

$$\Delta X_t = \mu_x + \alpha_x \varepsilon_{t-1} + \sum_{h=1}^{l} \alpha_{2h} \Delta Y_{t-h} + \sum_{h=1}^{l} b_{2h} \Delta X_{t-h} + u_{xt} \quad (4)$$

where,

u_{Yt} and u_{Xt} are stationary white noise processes for some number of lags l.

In the multivariate situation, the model can be advanced similarly. The estimated coefficients represent the cointegration equation's long-run relationships among the variables. The coefficients of ECM demonstrate how deviations from such a long-run relationship impact the changes in these variables in the subsequent period. The parameters αY and bX of equations (3) and (4) measure the adjustment speed of X_t and Y_t, respectively, toward the long-run equilibrium.

Causality test

Any of the following three relationships may exist if two variables, Y and X, are cointegrated: X affects Y, Y affects X, or X and Y affect one another. The unidirectional relationship is explained in the first two, while the bidirectional relationship is represented in the third. When two variables are not cointegrated, they are independent.

Granger (1969) developed the causality test method to verify the convenient pattern. It is claimed that X "granger causes" Y if the prediction of the future value of Y is improved by present and lagged values of X. The following is a simple Granger causality model:

$$\Delta Y_t = \sum_{i=1}^{n} \alpha_i \Delta Y_{t-i} + \sum_{j=1}^{n} \beta_j \Delta X_{t-j} + u_{1t} \quad (5)$$

$$\Delta X_t = \sum_{i=1}^{n} \lambda_i \Delta X_{t-i} + \sum_{j=1}^{n} \delta_j \Delta Y_{t-j} + u_{2t} \quad (6)$$

Equation (5) demonstrates that the current value of ΔY is related to its past values and the past values of ΔX. Similarly, Equation (6) suggests that ΔX is associated with its past values and that of ΔY.

The null hypothesis is β_j=0, In Equation (5), which means "ΔX does not Granger cause ΔY." Similarly, in Equation (6), the null hypothesis is δ_j =0, stating that "ΔY does not Granger cause ΔX." The rejection or non-rejection of the null hypothesis pertains to the F statistic.

Diagnostic tests

Diagnostic tests explore the reliability of estimated coefficients. The type of diagnostic test is determined based on the modeling technique utilized. Lag structure and coefficient, as well as residual diagnostics, are the most widely investigated diagnostic tests. As the regression models attempt to minimize errors (i.e., residuals), residual diagnosis is considered the most critical test.

R^2 is among the common tests for goodness of fit, showing a correlation between two variables (the closer to 1.0, the better the fit). In multivariate regression, adjusted R^2 is chosen instead of R^2. This is because the latter increases as more variables are introduced, while the former increases merely when a new variable enhances the prediction power. The Durbin-Watson (DW) statistic determines if residuals have autocorrelation. As a result, if the DW value is close to two, the model is 'autocorrelation free.'

The error terms must be "white noise," independently and identically distributed; therefore, the residual diagnostics determine if the error terms are so. Several tests are widely used to perform these diagnostics: heteroskedasticity, correlogram, and Lagrange multiplier (LM).

The stability tests determine if the estimated model's parameters stay stable over sub-samples of data. Finally, the Variance Decomposition Analysis (VDA) and the Impulse Response Function (IRFs) evaluate how well shocks to variables are illustrated by other variables involved (Palamalai *et al.*, 2014).

VDA shows how much of a variable's forecast error variance may be explained by impulses in that variable in addition to the other variables considered. If a variable illustrates most of its own shock, it is considered to be relatively exogenous since it does not enable variations from other variables to contribute to its explanation.

In VECM, IRFs track the dependent variable's response to shocks to each of the other explanatory variables across time. A shock to one variable immediately affects that variable and spreads the effect to the other variables.

A model that passes all the residual tests and tends to be stable could be employed in analysis and forecasting.

RESULTS AND DISCUSSION

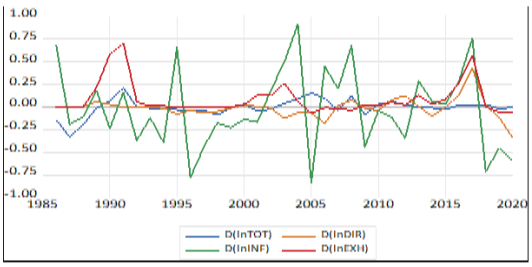
The current study examines the long and short run relationships between terms of trade (TOT) as the dependent variable and exchange rate (EXH), deposit interest rate (DIR), and inflation rate (INF) as explanatory variables. It exploited the available up-to-date database to investigate such a relationship by applying VECM.

Following the sequence of econometric analysis procedures, testing for stationarity is the first step. The Augmented Dickey-Fuller (ADF), a widely used unit root test, was conducted. The findings demonstrate that the variables are nonstationary at level (I(0)) and become stationary once the first difference is taken (I(1)) (Table (2) and Figure (2)).

Table 2. Augmented Dickey-Fuller test (ADF) test for unit root.

Series	Level			First Difference		
	Constant	Constant & Trend	None	Constant	Constant & Trend	None
lnTOT	-2.17	-3.95**	-0.48	-3.47**	0.06	-3.54**
lnDIR	-2.16	-3.17	-0.59	-4.33**	-4.27**	-4.40**
lnINF	-1.98	-1.99	-0.85	-6.57**	-6.48**	-6.62**
lnEXH	-1.94	-3.36	1.59	-3.35**	-3.37	-2.96**

**** indicates significance level at 5%**
Source: Author's calculations.



Source: Author's calculations.

Figure 2. Differenced and stationary data.

The next step involves an investigation of the long-run nexus among variables. An appropriate lag length must be set before applying the Johansen cointegration procedure. Based on the most popular criteria, the optimal lag length was determined to be one (Table (3)).

Table 3. VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-29.47	NA	8.94e-05	2.02	2.21	2.09
1	86.90	197.47*	2.06e-07	-4.05	-3.15*	-3.75*
2	103.90	24.73	2.03e-07*	-4.11*	-2.48	-3.57
3	114.26	12.56	3.23e-07	-3.77	-1.42	-2.98

LR: sequentially modified LR test statistic; FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion.
Source: Author's own calculations

The Johansen cointegration procedure was employed to analyze the long-run nexus. As a result, the Trace test reveals that one cointegrating equation exists at a 5 percent significance level (Table (4)).

Table 4. Johansen Co-integration Test Statistics

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.53	49.22	47.86	0.04
At most 1	0.39	24.45	29.80	0.18
At most 2	0.17	8.33	15.49	0.43
At most 3	0.06	2.10	3.84	0.15

*** Indicates rejection of the hypothesis at a 5 percent significance level:**
****MacKinnon-Haug-Michelis (1999) p-values**
Source: Author's calculations

The normalized cointegrating equation for terms of trade (lnTOT) is given in Table (5). It shows the significant and positive impacts of both the exchange rate (lnEXH) and inflation (lnINF) on terms of trade. However, the deposit interest rate (lnDIR) has a significant and negative impact on TOT in the long term.

Table 5. Normalized cointegrating coefficients.

lnTOT	lnEXH	lnINF	lnDIR
1.00	-0.14**	-0.19**	0.41**
Standard Error	0.02	0.02	0.07
T-statistics	6.77	8.16	5.91

Note: The signs are reversed to produce the correct interpretation
Source: Author's calculations.

When the Egyptian pound depreciates by 1 percent against the US dollar, TOT will improve by 0.14 percent. This is because TOT will deteriorate directly after the devaluation, causing domestic demand to shift from foreign demand to domestic production of substitute goods, which improves TOT in the long term.

Furthermore, for every 1 percent rise in inflation, TOT will improve by 0.19 percent because the rise in export prices exceeds import prices in the long term. However, a 1 percent increase in the deposit interest rate is likely to worsen TOT by 0.41 percent, as investors believe that high interest rates will cause higher inflation and currency depreciation. This will increase their cost of capital, leading to a decline in capital inflows and hence deteriorating TOT in the long run.

VECM results comprise estimating the adjustment speed coefficient and short-run properties of the series. The ECT (-1) term is negative and statistically significant at 5 percent, demonstrating that short-term dynamics converged towards long-term equilibrium. The adjustment coefficient was estimated to be 0.58, implying that the speed of adjustment toward long-run equilibrium is 58 percent (Table (6)).

Table 6. Short run causality results.

Variable	Coefficient	Standard Error	T-Statistic	p-value
ECM(-1)	-0.58	0.08	-7.63	0.00
Δ (lnTOT(-1))	0.20	0.10	1.99	0.06
Δ (lnDIR(-1))	0.01	0.10	0.08	0.94
Δ (lnINF(-1))	-0.08	0.02	-3.98	0.00
Δ (lnEXH(-1))	0.11	0.06	1.91	0.07
C	-0.01	0.01	-1.19	0.24
R-squared		0.78		
Adj. R-squared		0.74		
Sum sq. residuals		0.06		
S.E. equation		0.05		
F-statistic		19.45		
Log likelihood		58.26		
Akaike AIC		-3.07		
Schwarz SC		-2.81		
Mean dependent		0.00		
S.D. dependent		0.09		
Durbin-Watson statistic		2.19		

Source: Author's calculations.

In the short term, the coefficient of the first difference of lnINF lagged one period for TOT as a dependent variable, which is statistically significant, indicating the existence of short-run causality. The adjusted R^2 implies that the model explains 78 percent of the variation in TOT. A value of DW (2.19) suggests the nonexistence of autocorrelation.

The Granger-causality test was conducted after VECM estimation. Based on the chi-squared statistic, the finding indicates the unidirectional short-run causality from inflation to TOT (Table (7)).

Table 7. VEC Granger causality test.

Dependent variable: D(lnTOT)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(lnINF)	15.87	1	0.00
D(lnDIR)	0.01	1	0.94
D(lnEXH)	3.65	1	0.06
All	17.55	3	0.00

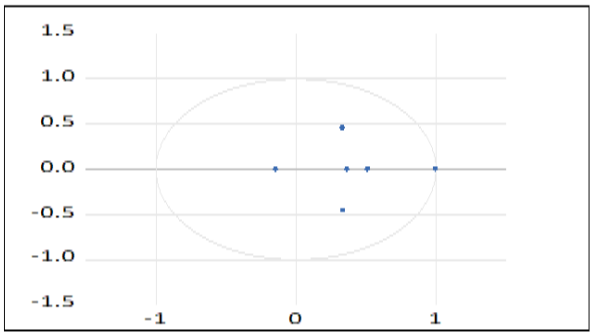
Source: Author's calculations.

To ensure the model's adequacy, a range of statistical tests must be checked: normality, heteroskedasticity, and serial correlation. The results confirm that the model is properly defined (Table (8)). As for stability diagnostics, all the inverse roots are found inside the unit circle, implying that the model is stable (Figure (3)).

Table 8. Diagnostic test results.

Test	Value	P-value
Jarque-Bera Normality Test	6.33	0.61
VEC Residual Heteroskedasticity Tests	121.93	0.07
VEC Residual Serial Correlation LM Tests	10.74	0.83

Source: Author's calculations.



Source: Author's calculations.

Figure 3. Inverse Roots of AR Characteristic Polynomial.

The result of variance decomposition analysis for the TOT variable over a 10-year horizon is presented in Table (9).

Table 9. Variance Decomposition of Terms of Trade.

Variance Decomposition of lnTOT					
Period	**S.E.**	**lnTOT**	**lnINF**	**lnEXH**	**lnDIR**
1	0.048049	100.0000	0.000000	0.000000	0.000000
2	0.072651	83.00999	2.070579	7.020756	7.898672
3	0.104706	54.80664	14.28999	9.507049	21.39632
4	0.137127	39.29184	18.77885	8.567779	33.36152
5	0.164453	32.43072	18.50562	7.382565	41.68110
6	0.186834	29.33513	17.19828	6.563464	46.90312
7	0.205952	27.75278	16.09022	6.057416	50.09959
8	0.223189	26.73653	15.35992	5.742455	52.16110
9	0.239282	25.94513	14.90392	5.526563	53.62439
10	0.254499	25.29026	14.59130	5.359621	54.75882

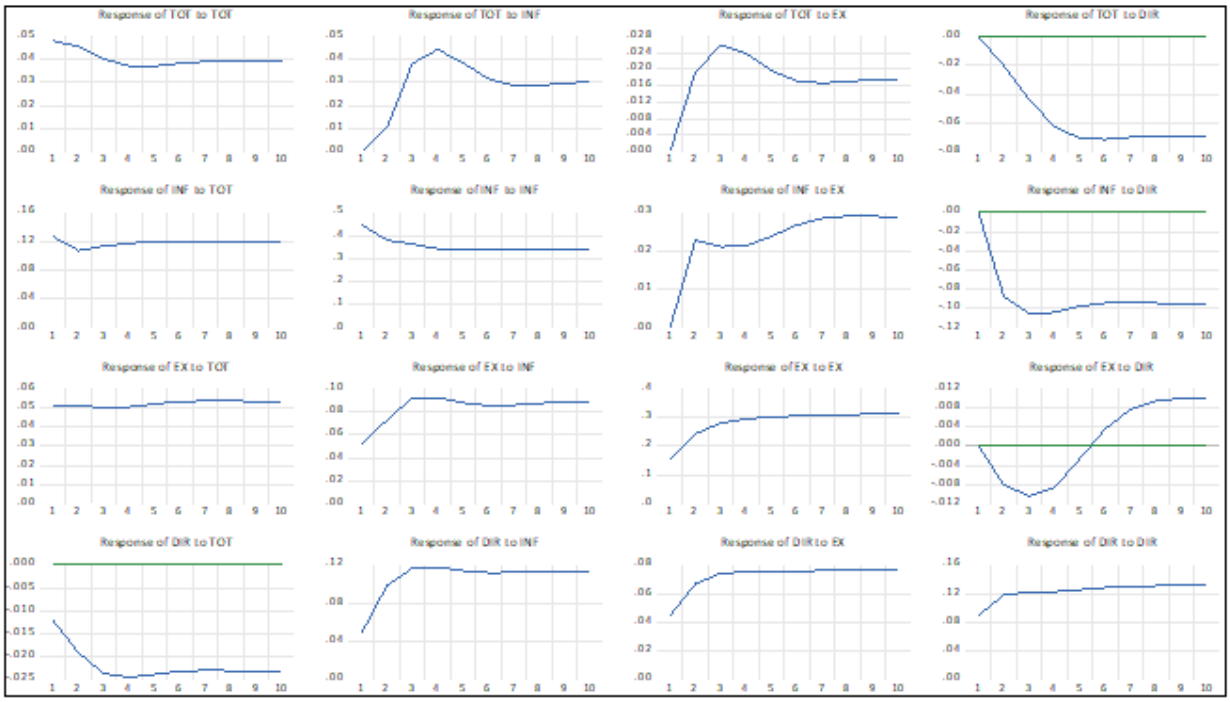
Source: Author's calculations.

All the variability in TOT is illustrated by its own innovation before declining to 25.29 percent at the end of the forecast period (10 Years). For longer horizons, the variation in TOT might be caused by the other variables, specifically,

INF, EXH, and DIR. Both INF and EXH diminish their explanatory power throughout the horizon, while DIR increases towards the end of the 10-year mark. In the tenth year, the shock explained by changes in DIR, INF, and EXH on TOT reaches approximately 55, 15, and 6%, respectively.

Figure (4) illustrates the response of TOT to one standard deviation shock in TOT and the remaining three variables. A shock in TOT immediately decreases TOT and marginally continues its negative effect to the end of the forecast horizon. TOT has a positive and permanent effect to shocks in both INF and EXH. However, it has a negative and permanent response to a shock in inflation.

Generally, the results of IRFs for the sample period seem to be consistent with those from VDA.



Source: Author's calculations.

Figure 4. Impulse response function one standard deviation innovations.

CONCLUSION

To better understand the determinants of terms of trade (TOT), the vector error correction model (VECM) is used with yearly data during the period (1985-2020). The findings indicate that both inflation and exchange rates have significant and positive effects on TOT. However, the deposit interest rate has a significant and negative impact on TOT in the long term. On the other hand, the inflation rate is the only variable that negatively influences TOT in the short run. In practice, policymakers might utilize fiscal and monetary policies to control inflation and direct TOT in the short run.

No previous work has comprehensively examined the key drivers of TOT in the Egyptian setting. However, relying on aggregated counts (yearly series) is the main limitation of the current work. Future studies could fruitfully construct a dynamic computable general equilibrium model to simulate and forecast a wide range of policy effects on terms of trade in the medium and long term.

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محددات شروط التجارة في الاقتصاد المصري: نموذج تصحيح الخطأ الموجه

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الملخص

تؤثر شروط التجارة (Terms of Trade) على التجارة الدولية، حيث تعمل كمحرك للتنمية. وهي تشير إلى السعر النسبي للصادرات إلى الواردات. غالبًا ما يشير الارتفاع أو التحسن في شروط التجارة في بلد ما إلى زيادة أسعار التصدير مع ثبات أو انخفاض أسعار الاستيراد. في المقابل، قد تنخفض أسعار الصادرات، ولكن ليس بقدر الانخفاض في أسعار الاستيراد. وربما تظل أسعار التصدير مستقرة بينما تنخفض أسعار الواردات، أو قد ترتفع ببساطة بسرعة أكبر من أسعار الاستيراد. جميع تلك الحالات تشير إلى تحسن إيجابي في شروط التجارة لدولة ما. في هذا الإطار، تهدف الدراسة الحالية إلى تحديد العوامل الرئيسة المؤثرة على شروط التجارة؛ بغية مساعدة متخذي القرار في وضع السياسات المالية والنقدية الموجهة لزيادة الرفاهية المجتمعية. لتحقيق الهدف البحثي؛ تم الاعتماد على السلاسل الزمنية السنوية المتاحة لمتغيرات الدراسة خلال الفترة (1985-2020)، وتحليها باستخدام منهجية متجه تصحيح الخطأ (Vector Error Correction Model). ولقد أشارت النتائج إلى معنوية التأثير الإيجابي لكل من سعر الصرف ومعدل التضخم على شروط التجارة في المدى الطويل، أما سعر الفائدة على الودائع فقد أثر سلباً. أما في المدى القصير، يعد معدل التضخم هو المتغير المعنوي والذي يؤثر سلباً على شروط التجارة. بناءً على ذلك، يمكن لصناع السياسات المالية والنقدية تحسين شروط التجارة من خلال السيطرة على معدل التضخم في المدى القصير. وبالرغم من أن الدراسة الحالية تعد إضافة للدراسات السابقة في مجال التجارة الدولية، حيث تتناول دراسة العوامل الرئيسة المؤثرة على شروط التجارة بشكل أكثر شمولاً. إلا أن الاعتماد على سلاسل زمنية سنوية، دون تجزئتها إلى وحدات زمنية أقل، تعد من أهم محددات الدراسة. وفيما يتعلق بالدراسات المستقبلية، يمكن تطبيق نموذج التوازن العام الحسابي الديناميكي (Dynamic Computable General Equilibrium Model) للتعرف على الاثار الديناميكية للمتغيرات المدروسة على شروط التجارة وذلك على المستويين الكلى والقطاعي.

الكلمات الدالة: شروط التجارة، السياسة المالية، السياسة النقدية، نموذج تصحيح الخطأ الموجه، الاقتصاد المصري.