The impact of some macroeconomic variables on tea imports in Iraq for the period 2004-2024

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Abstract

Tea is one of the basic necessary consumer food commodities important in Iraqi society, as it occupies a prominent place in the daily dietary lifestyle of citizens, whether in the countryside or the city. Due to the limited local production of this commodity and its inadequacy to cover the increasing local demand, Iraq relies heavily on imports from foreign markets to meet its consumer needs. The manuscript aimed to identify the strengths and weaknesses of tea imports in Iraq for the period 2004-2024 through SWOT analysis, and to determine the impact of macroeconomic variables (GDP, agricultural output, money supply, crude oil price, and exchange rate) on tea imports in Iraq for the period 2004-2024 using a specific model (VECM) with semi-annual data to achieve the study objectives. The results showed that GDP has a positive and significant relationship with tea imports. The results also indicated that agricultural GDP has a significant, but negative, impact on tea imports. The money supply had a significant and direct relationship with tea imports, a result consistent with the money supply's effect on sugar imports. This indicates that increased liquidity in the economy leads to higher import volumes. The results also showed a significant and direct relationship between the official exchange rate (OER) and tea imports. The results also indicated a positive and significant relationship between oil prices and tea imports. This reflects the nature of Iraq's economic structure, where oil constitutes the primary source of government revenue and, consequently, the foundation of the country's economic and commercial activity. Increased oil prices enhance the financial capacity of the state and individuals and stimulate economic activity, leading to increased demand for tea as a major consumer good that is entirely imported, the research recommends continued support for the agricultural sector to reduce import pressure and increase self-sufficiency in other goods. It also recommends rationalizing import policies during periods of high agricultural production, renewing oversight of imported products to minimize waste, and promoting local alternatives such as Iraqi herbal drinks, which can reduce reliance on imported beverages.

Keywords: Tea , import, SWOT, VECM, Oil price, Iraq

Introduction

The basic food commodities sector is a cornerstone of global food security, meeting broad consumer needs and directly impacting inflation and living standards [10] . Among these commodities, tea occupies a prominent position in international trade due to its close connection to the daily dietary habits of diverse populations, as well as being one of the most traded commodities in global markets ,Recent decades have witnessed remarkable growth in tea trade volume, driven by increased consumer demand, diversifying tastes, expanding industrial applications, and changes in production and distribution patterns [7]. Tea imports are influenced by a complex interplay of factors, including exchange rate fluctuations, climate change impacting production levels in producing countries, subsidy and tariff policies, and rising transportation and energy costs, all of which affect final import prices. Globally, tea is a fundamental component of the food and beverage industries, making it a strategic important commodity subject to sharp price and production fluctuations due to climate change and rising production costs [7]. These dynamics make the study of tea imports both an economic and developmental issue, especially for countries heavily reliant on imports to meet their consumption need [9].

Iraq occupies a significant position in this context, being a major importer of food commodities, including tea, due to limited domestic production and insufficient agricultural and industrial capacity to meet internal demand [14]. Data from the Central Statistical Organization and the Ministry of Trade indicate that Iraq's tea imports represent a substantial portion of its total food import bill [13]. The quantities and value of these imports are affected by fluctuations in oil prices (the primary source of government revenue), the exchange rate of the Iraqi dinar against foreign currencies, and trade policies and customs restrictions [8]. Furthermore, political and economic conditions, such as periods of instability and fluctuating oil revenues, further complicate the balance between supply and demand for this commodity, posing challenges for economic policymakers in import management and strategic stock planning [11]. Tea is considered one of the items on the ration card, and therefore the state spends millions of dollars on it, in addition to imports by local merchants.

Despite the crucial importance of tea imports to achieving Iraqi food security, a clear research gap exists in the local economic literature. Most previous studies have focused on general analyses of foreign trade or on specific agricultural commodities such as grains and oils, while specialized research that comprehensively addresses the economic and institutional factors affecting tea imports specifically is scarce [4]. Furthermore, Iraqi economic literature lacks modern quantitative models linking macroeconomic variables (such as money supply, exchange rate, national income, and oil price) to changes in the volume and value of imports of these commodities. This leaves a knowledge gap for researchers and policymakers. Hence, the importance of this study, which seeks to bridge this gap through a comprehensive analysis of the factors affecting tea imports in Iraq, using modern statistical and economic tools that allow for an understanding of the long-term and short-term relationships between economic variables and import volumes.

Iraq relies heavily on imports of basic food commodities, including tea, to meet domestic demand. The fluctuations in macroeconomic variables resulting from price volatility have clearly impacted tea imports, significantly affecting the agricultural sector's contribution to the GDP. Therefore, the problem statement can be formulated as follows:

• What is the actual state of tea imports in Iraq for the period 2004-2024?

• To what extent have macroeconomic variables (GDP, agricultural output, money supply, crude oil price, and exchange rate) impacted tea imports in Iraq for the period 2004-2024?

Study Objectives:

1. To identify the strengths and weaknesses of tea imports in Iraq for the period 2004–2024 through SWOT analysis.

2. To determine the impact of macroeconomic variables (GDP, agricultural output, money supply, crude oil price, and exchange rate) on tea imports in Iraq for the period 2004–2024 using a specific model (VECM).

This study hypothesizes that the macroeconomic variables (agricultural output, global food prices, crude oil prices, exchange rate, money supply, and global agricultural output) have varying degrees of impact on tea imports in Iraq during the period 2004-2024.

Study Scope:

- The study's timeframe is 2004-2024, based on semi-annual data.

- The study's geographical scope is the Republic of Iraq in general.

Material and Methods

Prepare samples:

Vector error correction model (VECM). The concept of this model is based on the assumption that there is a long-term equilibrium relationship, and despite its existence, it is rarely achieved, as the difference between the two values at each time period is represented by the equilibrium error, and this error or at least part of it is modified or corrected in the long term, so this model was named the error correction model [1]: The vector error correction model (VECM) is used when the variables included in the model have the joint integration property, and this is a necessary condition for applying this model. Which is an auto-regressive vector model (VAR) with an error correction term added to it in order to overcome errors in describing the models [5]. The presence of joint integration between the studied variables indicates the existence of a long-term equilibrium relationship. In this case, there must be a causal relationship in at least one direction, which is revealed by the Granger causality test. However, the form and direction of the causal relationship, not just the direction, is reached by using the vector error correction method (VECM) [3]. The VECM model identifies the relationships between economic variables in the long and short term, as the differences in the variables with lags represent the causal relationships and their form in the short term. The significance of the parameters in the short term is identified by using the Wald test to verify the acceptance or rejection of the null hypothesis that states that the estimated parameter is not significant, by looking at the probability level of the chi-square value. If the probability level is less than 5%, the null hypothesis is rejected in favor of the alternative hypothesis to confirm the significance of the estimated parameter and vice versa. While joint integration embodies the form of the relationship in the long term, the VECM model can be represented by the following two equations [2]:

$$\Delta Y_t = a_1 + \sum_{i=1}^{n} a_j\,\Delta Y_{t-j} + \sum_{i=1}^{n} \beta_i\,\Delta \mathrm{X}_{t-i} + P_1 \mu_{t-1}$$

$$\Delta \mathrm{X}_t = a_2 + \sum_{j=1}^{n} \beta_i\,\Delta \mathrm{X}_{t-j} + \sum_{j=1}^{n} \beta_j\,\Delta \mathrm{Y}_{t-i} + P_2 v_{t-1}$$

Δ refers to the differences of the variables, while μ_(t-1) and v_(t-1) refer to the error correction limits. The error correction limit indicates the existence of a long-term equilibrium relationship if it is negative

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and significant. The error correction limit measures the amount of correction (speed of adaptation) of the imbalance that occurs in the short term to reach the equilibrium value in the long term [10].

This represents:

- IMPT: Value of tea imports (in millions of dinars).

- GDP: Gross Domestic Product (in millions of dinars).

- AGDP: Agricultural GDP (in millions of dinars).

- M1: Money supply (in millions of dinars).

- 0ER: Official exchange rate of the Iraqi dinar against the US dollar.

- OP: Oil price (USD/barrel).

- k: Number of lags.

- i'sβ: Short-term parameters.

- i'sφ: Long-term parameters.

- εi: Random error.

Results and Discussion

To investigate the stationability of the study variables, the Extended Dickey-Fuller Unit Root Test (ADF) was used for the economic indicators. The results are shown in Table (1), and the variables represent (Tea Imports IMPT, Gross Domestic Product (GDP), Money Supply (M1), Exchange Rate (OER), and Oil Price (OP). The results of the Extended Dickey-Fuller (ADF) in Table (1) indicate that most of the variables were not stationary at the initial level. Upon retesting after accounting for the initial difference, these variables became stationary. This result leads us to use the VECM method.

The results showed the presence of a unit root in the time series for most variables at their original levels, confirming the absence of stationarity and thus accepting the null hypothesis that a unit root exists in the time series data. However, after taking the first difference of the variables and performing the unit root test, the results indicate that stationarity is present at the first difference for all variables. This means rejecting the null hypothesis and accepting the alternative hypothesis, confirming that the time series for the variablesare stationary at their first difference.

After establishing the stationarity of the time series and confirming that most of the variables used in the study are stationary at the first difference, we can use cointegration to test for the existence of a long-term equilibrium relationship between the model variables.

Cointegration (Johansen-Joselius).

Unit root tests for time series stationarity (the augmented Dickey-Fuller test) proved that most of the model variables are stationary in the first difference, meaning they are first-order integrals (1)~l. This indicates that the time series of the variables under study are of the same degree, suggesting the possibility of a cointegration relationship between the study variables. The cointegration between the model variables will be determined using the Johansen-Joselius methodology (Johansen-Joselius 1990), which is considered one of the best methods used to estimate the cointegration vector and confirm its oneness. This is based on the trace test (traceλ) and the maximum possible values test (max), which demonstrate the existence of a long-term equilibrium relationship between the economic variables in the study sample. The results are shown in Table (2)

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Table (1): Results of the ADF unit root test for the study variables

UNIT ROOT TEST RESULTS TABLE (ADF)
Null Hypothesis: the variable has a unit root

		IMPT	GDP	AGDP	M1	OER	OP
	At Level						
With Constant	t-Statistic	1.2748	-1.2491	-1.8096	0.8790	-2.2105	-2.5114
	Prob.	*0.9970*	*0.6316*	*0.3653*	*0.9928*	*0.2088*	*0.1277*
		n0	n0	n0	n0	n0	n0
With Constant & Trend	t-Statistic	-2.3294	-2.6806	-2.1880	-4.6914	-3.4703	-2.4159
	Prob.	*0.3971*	*0.2534*	*0.4702*	*0.0096*	*0.0774*	*0.3611*
		n0	n0	n0	***	*	n0
Without Constant & Trend	t-Statistic	2.5157	1.0078	0.4713	3.9694	-0.5962	-0.1730
	Prob.	*0.9945*	*0.9109*	*0.8075*	*0.9998*	*0.4463*	*0.6112*
		n0	n0	n0	n0	n0	n0
	At First Difference						
		d(IMPT)	d(GDP)	d(AGDP)	d(M1)	d(OER)	d(OP)
With Constant	t-Statistic	-3.5676	-4.5535	-3.8590	-3.7981	-4.4791	-4.0974
	Prob.	*0.0236*	*0.0024*	*0.0094*	*0.0135*	*0.0038*	*0.0057*
		**	***	***	**	***	***
With Constant & Trend	t-Statistic	-4.6131	-4.3991	-3.7428	-3.6984	-4.4238	-4.0002
	Prob.	*0.0001*	*0.0138*	*0.0441*	*0.0553*	*0.0166*	*0.0274*
		***	**	**	*	**	**
Without Constant & Trend	t-Statistic	-0.4558	-4.1006	-3.8210	-2.2300	-4.2908	-4.1960
	Prob.	*0.5002*	*0.0003*	*0.0007*	*0.0283*	*0.0003*	*0.0003*
		n0	***	***	**	***	***

Notes:
a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not Significant
b: Lag Length based on SIC
c: Probability based on MacKinnon (1996) one-sided p-values.

This Result is The Out-Put of Program Has Developed By:
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Source: Eviews 10 software output.

Table(2). Results of the Johansen-Joselius cointegration test for the study variables for the period (2004-2024)

Date: 11/12/25 Time: 11:06
Sample (adjusted): 2006 2024
Included observations: 19 after adjustments
Trend assumption: Linear deterministic trend
Series: IMPT GDP AGDP M1 OER OP
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.999510	268.6324	95.75366	0.0000
At most 1 *	0.949620	123.8276	69.81889	0.0000
At most 2 *	0.901422	67.05262	47.85613	0.0003
At most 3	0.558775	23.03134	29.79707	0.2445
At most 4	0.321745	7.485529	15.49471	0.5219
At most 5	0.005727	0.109128	3.841466	0.7411

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.999510	144.8048	40.07757	0.0001
At most 1 *	0.949620	56.77498	33.87687	0.0000
At most 2 *	0.901422	44.02128	27.58434	0.0002
At most 3	0.558775	15.54581	21.13162	0.2525
At most 4	0.321745	7.376401	14.26460	0.4456
At most 5	0.005727	0.109128	3.841466	0.7411

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Eviews 10 software output.

After conducting the cointegration test between the variables, it was found that there are a number of cointegration vectors between these variables. The results of the trace λ test shown in Table (Trace Statistics), which amounted to 268.6324, are greater than the critical value of 95.7536. Furthermore, the prop value of 0.0000 is less than 5%, which means rejecting the null hypothesis and accepting the alternative hypothesis R>1, which states that there are three cointegration vectors and that the equation is integral. As for the statistic (maximum eigenvalue), it indicates that the statistical value of (144.8048) is greater than the critical value of (40.07757) and the probability value (prob=0.0001) is less than 5%, which means rejecting the null hypothesis (r=0) and accepting the alternative hypothesis that there are three vectors for cointegration and that the equation is integrated, which indicates the existence of a long-term equilibrium relationship between the study variables and that they are moving in the same direction in the long run despite the existence of some deviations in the short run. Based on the cointegration test results, the Vector Error Correction Model (VECM) will be used.

The results of the three tests (AIC, HQ, SC), used to determine the optimal lag period for the VECM, shown in Table (3), indicate that the second lag period is the lowest for all variables. This is because its value is the lowest compared to the other values in the three tests, as stipulated by those tests. Therefore, this lag period will be used in estimating this model. This means that the VECM used to determine the direction of the relationship between the variables under study will include the first lag period.

Table(3) Results of the number of optimal lag times for the duration

VAR Lag Order Selection Criteria
Endogenous variables: IMPT GDP AGDP M1 OER OP
Exogenous variables: C
Date: 11/12/25 Time: 12:08
Sample: 2004S1 2024S2
Included observations: 38

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2801.674	NA	6.05e+56	147.7723	148.0309	147.8643
1	-2407.319	60.12978*	3.11e+50*	132.7010*	137.6138	134.4489*
2	-2467.449	83.06918	7.29e+50	133.9710	137.3323	135.1669
3	-2530.581	442.3098	2.63e+51	135.3990	137.2090*	136.0430

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: Eviews 10 software output.

Results of the Vector Error Correction Model (VECM) Estimation:

The results in Table (4) indicate that GDP has a positive and significant relationship with tea imports. An increase of one unit in agricultural output leads to an increase in the import value of 0.099 units on average and in the long run. This result is consistent with the result obtained in the sugar import model. This can be explained by the fact that tea is a staple commodity in Iraqi society that is entirely dependent on imports. Therefore, any improvement in economic performance indicators and an increase in national income automatically leads to an increase in the demand for tea and consequently an increase in its import volume. The results also indicated that agricultural GDP has a significant, but negative, impact on tea imports. That is, the higher Iraq's agricultural GDP, the lower its tea imports, and vice versa. This is due to a range of structural, behavioral, and economic factors that link agricultural activity to the level of import dependency. Improved agricultural performance reduces pressure on other food imports. When the agricultural sector grows, increasing the production of local goods (such as grains, vegetables, and dates) and raising relative self-sufficiency in many basic commodities, this increased activity reduces overall demand for imported goods, including those without local production, such as tea. When the government manages to secure a greater portion of food security domestically, the financial pressure on imports decreases, which is reflected in a reduction in tea imports. This may also be due to government spending on agricultural infrastructure, which compels the state to reduce purchases of non-productive goods like tea. As allocations for agricultural development increase, the funds directed towards importing consumer goods decrease.

The reason for this may also be related to government spending on agricultural infrastructure. This compels the state to reduce purchases of non-productive goods like tea. The more agricultural development funds are allocated, the less money is directed towards importing consumer goods. The money supply had a significant and direct relationship with tea

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imports, a result consistent with the money supply's effect on sugar imports. This indicates that increased liquidity in the economy leads to higher import volumes. This is explained by the fact that monetary expansion increases the purchasing power of individuals and the commercial sector, which in turn leads to increased demand for imported consumer goods, particularly basic food commodities like tea, which are characterized by low demand elasticity.

The results also showed a significant and direct relationship between the official exchange rate (OER) and tea imports. While a higher exchange rate would typically increase import costs and reduce demand for imported goods, the Iraqi context has unique characteristics that make the relationship direct. This is because tea is a basic commodity with inelastic demand. It is a staple for all households, and daily consumption cannot be easily reduced. Its price elasticity is also low. Therefore, even if the dollar rises and import costs increase, demand remains constant or even rises. This motivates traders to import more despite the higher costs. Due to the lack of domestic tea production, an increase in the exchange rate does not reduce imports but rather leads to their stabilization or increase. The results also indicated a positive and significant relationship between oil prices and tea imports. This reflects the nature of Iraq's economic structure, where oil constitutes the primary source of government revenue and, consequently, the foundation of the country's economic and commercial activity. Increased oil prices enhance the financial capacity of the state and individuals and stimulate economic activity, leading to increased demand for tea as a major consumer good that is entirely imported. Table (4) shows the results of the long-term analysis:

ISSN 2072-3857

Table (4) Results of vector error correction estimation for a long-run model for the period (2004-2024):

Vector Error Correction Estimates
Date: 11/12/25 Time: 11:24
Sample (adjusted): 2005S1 2024S1
Included observations: 39 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
IMPT(-1)	1.000000
GDP(-1)	-0.099403 (0.01707) [-5.82325]
AGDP(-1)	0.006604 (0.00109) [6.05871]
M1(-1)	-0.000544 (0.00014) [-3.88571]
OER(-1)	-82.59229 (13.3992) [-6.16396]
OP(-1)	-468.1094 (110.452) [-4.23814]
C	97248.31

Source: Eviews 10 software output.

As is known in the model, long-term parameters are interpreted inversely to the signal. The results of Table (5) also indicate short-term parameters, the most important of which is the value of the error correction factor (ECM), which indicates that the system is being adjusted to a state of equilibrium at an adjustment rate of (62%) per annum, which is a fairly good rate.

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Table () Results of error correction vector estimation for a short-run model for the period (2004-2024)

Error Correction:	D(IMPT)	D(GDP)	D(AGDP)	D(M1)	D(OER)	D(OP)
CointEq1	-0.626619	537.3059	-32.75243	24.06214	-6.17E-05	0.000325
	(0.25672)	(282.605)	(10.6023)	(48.3909)	(0.00047)	(0.00012)
	[-2.44085]	[1.90126]	[-3.08919]	[0.49724]	[-0.13234]	[2.65180]
D(IMPT(-1))	0.744242	-354.5350	12.20316	-18.13558	-6.43E-05	-0.000163
	(0.30731)	(338.289)	(12.6913)	(57.9258)	(0.00056)	(0.00015)
	[2.42183]	[-1.04802]	[0.96154]	[-0.31308]	[-0.11527]	[-1.11378]
D(GDP(-1))	-0.000595	0.621351	0.001519	0.085277	-2.34E-07	2.08E-07
	(0.00039)	(0.42933)	(0.01611)	(0.07352)	(7.1E-07)	(1.9E-07)
	[-1.52674]	[1.44724]	[0.09433]	[1.15998]	[-0.33068]	[1.12079]
D(AGDP(-1))	-0.005668	-1.185726	0.346050	0.525453	-7.31E-06	1.49E-06
	(0.00356)	(3.91507)	(0.14688)	(0.67039)	(6.5E-06)	(1.7E-06)
	[-1.59363]	[-0.30286]	[2.35603]	[0.78381]	[-1.13217]	[0.87724]
D(M1(-1))	0.001499	-0.059159	0.086103	0.623597	2.24E-06	-1.87E-07
	(0.00106)	(1.16648)	(0.04376)	(0.19974)	(1.9E-06)	(5.1E-07)
	[1.41464]	[-0.05072]	[1.96753]	[3.12206]	[1.16464]	[-0.37066]
D(OER(-1))	98.21218	-34783.69	1749.996	8499.303	0.625471	-0.045223
	(112.006)	(123298.)	(4625.69)	(21112.6)	(0.20335)	(0.05340)
	[0.87685]	[-0.28211]	[0.37832]	[0.40257]	[3.07590]	[-0.84679]
D(OP(-1))	946.7036	-36870.77	6433.073	-186098.0	0.145392	0.129138
	(764.351)	(841414.)	(31566.7)	(144077.)	(1.38767)	(0.36444)
	[1.23857]	[-0.04382]	[0.20379]	[-1.29166]	[0.10477]	[0.35434]
C	257.2541	3768785.	-212434.6	878032.2	-6.612252	-0.413331
	(5075.62)	(5587346)	(209616.)	(956731.)	(9.21474)	(2.42005)
	[0.05068]	[0.67452]	[-1.01344]	[0.91774]	[-0.71757]	[-0.17079]
R-squared	0.881852	0.364622	0.535474	0.425450	0.360620	0.435207
Adj. R-squared	0.862105	0.221149	0.430581	0.295713	0.216243	0.307673
Sum sq. resids	8.93E+09	1.08E+16	1.52E+13	3.17E+14	29424.66	2029.528
S.E. equation	16969.95	18680881	700836.8	3198761.	30.80880	8.091270
F-statistic	48.44710	2.541407	5.104960	3.279328	2.497777	3.412485

Source: Eviews 10 software output.

The correlation coefficient (R^2) was 88%, and the weighted R^2 was 86%. This means that the independent variables explain 86% of the variation in the dependent variable. And 14% is due to other factors not mentioned in the model, whose effect was absorbed by the random variable. The F-value was significant, and the p-value was 0.0000, which is less than 5%, indicating the overall significance of the model.

After completing the model estimation, and to confirm the accuracy of the results obtained above, some important tests must be performed:

Serial Correlation (LM) Test: This test is used to ensure that the estimated model is free from autocorrelation. The Breusch-Godfrey test was used to detect autocorrelation, and the test results are shown in Table (6).

Table (6) Results of the Autocorrelation Test for Errors (LM Test)

VEC Residual Serial Correlation LM Tests
Date: 11/12/25 Time: 11:59
Sample: 2004S1 2024S2
Included observations: 39

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	42.24893	36	0.2191	1.210261	(36, 90.6)	0.2324

Source: Eviews 10 software output.

The results in the table above indicate that the probability value of the F-statistic, F(1.21) = 0.2324, which is greater than 5%. This means accepting the null hypothesis (which states that there is no autocorrelation between random residuals) and rejecting the alternative hypothesis. This indicates that the model is free from the problem of autocorrelation between random residuals, which strengthens the possibility of relying on the model's results in analysis, prediction, and policymaking.

The Heteroskedasticity Test: This test is used to detect heterogeneity of variance. The following results were obtained:

Table (7) Results of the Heteroskedasticity Test

VEC Residual Heteroskedasticity Tests (Includes Cross Terms)
Date: 11/12/25 Time: 12:00
Sample: 2004S1 2024S2
Included observations: 39

Joint test:

Chi-sq	df	Prob.
26.45771	567	0.4933

Source: Eviews 10 software output.

The results above indicate that the model is free from the inconsistency of variance problem, based on the Chi-sq value of 0.4933, which is greater than 5%. This means accepting the null hypothesis (which states that there is no inconsistency of variance) and rejecting the alternative hypothesis, thus indicating that the model is free from the inconsistency of variance problem. This strengthens the acceptability of the model's results.

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Model quality test (unit root test): From Figure (1), it is observed that the model achieves stability because the points fall within the circle boundaries.

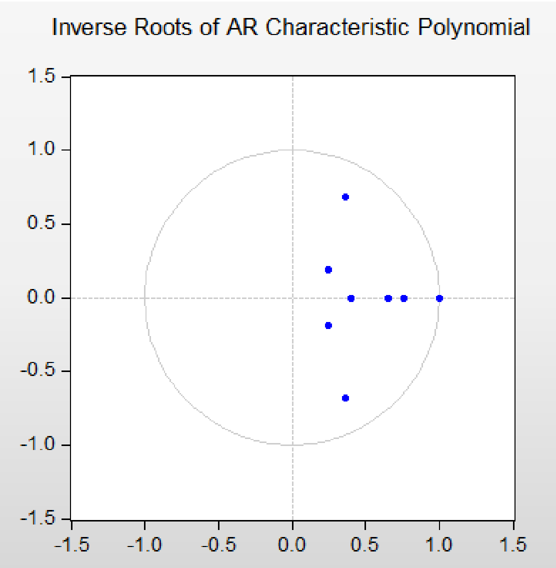

Figure (1) shows the results of the model quality test (unit root test).

Source: Prepared by the researcher based on the outputs of the EViews 10 statistical software.

SWOT Analysis of Tea Imports in Iraq 2004-2024

Studying the reality of tea imports is a crucial step in understanding the dynamics of the Iraqi food market, identifying the strengths and weaknesses of this sector, and pinpointing potential development opportunities and challenges. To this end, SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis is an effective analytical tool that contributes to assessing the current state of this vital economic activity and providing practical recommendations to enhance food security, improve import efficiency, and reduce excessive external dependence.

First: Strengths

1- Stable and high domestic demand for tea as a basic consumer good in Iraqi society.

2- The openness of the Iraqi market to global markets and the diversity of import sources, which provides flexibility in supply.

3- The ease of goods entering through Iraqi border crossings and ports thanks to the development of transportation and trade networks after 2010.

4- The presence of a vibrant private sector with experience in dealing with international markets and managing import operations. 5- Lower customs duties on food commodities encourage imports and ensure an ample supply in the local market.

Second: Weaknesses

1- Near-total reliance on imports to meet local tea demand due to the absence of effective domestic production.

2- Fluctuations in exchange rates and their direct impact on import costs and the price of goods in the local market.

3- Weak storage and distribution infrastructure, leading to partial spoilage of materials or increased transportation and storage costs.

4- The lack of unified standards and strict quality control for imported goods, allowing the entry of low-quality products.

5- Delays in administrative and customs procedures at some border crossings, increasing import time and costs.

Third: Opportunities

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1- The potential to diversify trade origins to reduce dependence on a limited number of exporting countries, thus enhancing price and quality competition.

2- Encouraging the local private sector to establish tea packaging and processing projects to reduce the import bill. 3- Leveraging regional and international trade agreements to facilitate trade and reduce import costs.

4- The development of e-commerce and digital trade, which can contribute to improving purchasing and import mechanisms.

5- Increasing consumer awareness among citizens regarding quality and healthy varieties, which will lead to improved import standards.

Fourth: Threats

1- Fluctuations in global tea prices and their impact on the balance of payments and foreign currency reserves.

2- Geopolitical tensions and global supply chain disruptions that may lead to shipping delays or increased transportation costs.

3- Inflation and rising domestic prices, which weaken consumer purchasing power and affect demand.

4- The risks of smuggling and the entry of substandard goods through channels, which negatively impact the formal market.

5- Excessive reliance on the US dollar in foreign trade, which makes Iraq vulnerable to fluctuations in global monetary policy.

Fifth: Challenges

1- The lack of local alternative tea production, which makes the Iraqi market hostage to global market volatility. 2. Continued pressure on the trade balance due to the high value of food imports.

3. Difficulty in controlling the quality of imported goods given their diverse origins.

4. Fluctuations in the exchange rate and the resulting volatility in domestic prices.

5. Weak coordination among government agencies (customs, trade, agriculture, and health) in managing food imports.

Conclusio and Recommendations

The researcher concludes that the positive impact of the relationship between domestic production and tea imports is that improved economic performance and a rise in Iraq's GDP lead to increased purchasing power for individuals and an expansion of commercial and service activity, thus raising the demand for tea as a basic consumer good. Since Iraq relies entirely on imports to supply tea, economic growth directly translates into increased import volumes. The inverse relationship between agricultural GDP and tea imports indicates that improved domestic agricultural production contributes to enhancing food security and reducing pressure on consumer imports in general. It also reflects the government's tendency to support the agricultural sector at the expense of reducing imports of non-productive goods such as tea. The direct relationship between the exchange rate and tea imports suggests that as the dollar appreciates and the Iraqi dinar weakens, tea imports increase. This reflects the unique the distinctive characteristics of the Iraqi market, which experiences increased hoarding and speculation, and expanded informal imports during periods of exchange rate fluctuations. Furthermore, tea is an inelastic commodity in terms of demand. The positive relationship between oil prices and tea imports reflects the rentier nature of the Iraqi economy. Higher oil prices lead to increased national income and government spending, and higher domestic demand, which in turn leads to increased tea imports. The rise in oil prices

ISSN 2072-3857

is also accompanied by an improvement in foreign currency reserves, which facilitates import operations. Based on the findings of the study, the study recommends the following:

The research recommends continued support for the agricultural sector to reduce import pressure and increase self-sufficiency in other goods. It also recommends rationalizing import policies during periods of high agricultural production, renewing oversight of imported products to minimize waste, reducing waste and loss is achieved by rationalizing both imports and consumption through guidelines, behaviors, and changes in dietary habits. and promoting local alternatives such as Iraqi herbal drinks, which can reduce reliance on imported beverages. Furthermore, it recommends stabilizing the exchange rate through clear monetary policies to curb speculation and unjustified import increases, strengthening border controls to prevent unregulated expansion of essential goods imports, and regulating imports through quotas or controls to prevent excessive import volumes during periods of currency fluctuation. The research also recommends raising consumer awareness to reduce the culture of excessive hoarding, which exacerbates demand when the dollar rises. The study further recommends diversifying the economy and reducing dependence on oil to lessen the sensitivity of local markets to oil price volatility. It suggests using oil surpluses to establish a strategic reserve of essential food commodities and strengthening food security policies by supporting local production of arable goods, reducing the import bill, and adopting sound fiscal policies during periods of high oil prices to avoid excessive imports that create structural imbalances.

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Appendices

Appendix (1): Tea import data and factors affecting them for the period 2004S1-2024S1

YEAR	IMPT (1)	GDP (2)	AGDP (3)	M1 (4)	OER (5)	OP (6)
2004S1	6161.5	53499239	3693768	10148626	1453	36.05
2004S2	3375.4	63705163.5	4378963	10773876	1470	43.345
2005S1	589.3	73911088	5064158	11399125	1487	50.64
2005S2	3680.7	84989124.5	5316572	13429593	1406	55.86
2006S1	6772.2	96067161	5568986	15460060	1325	61.08
2006S2	5148.7	104014195.5	5531599	18590614	1270	65.08
2007S1	3525.3	111961230	5494212	21721167	1215	69.08
2007S2	1798.2	135202407	5768115	24955551	1193.5	81.765
2008S1	71.1	158443584	6042018	28189934	1172	94.45
2008S2	52.9	145037897	6437285	32744982	1171	77.755
2009S1	34.6	131632210	6832552	37300030	1170	61.06
2009S2	173.4	147368474.5	7599392	44521760	1170	69.255
2010S1	312.1	163104739	8366232	51743489	1170	77.45
2010S2	3617.9	190861287	9142275	57108709	1170	92.455
2011S1	6923.8	218617835	9918317	62473929	1170	107.46
2011S2	7970.6	237172452	10201633	63104900	1168	108.455

ISSN 2072-3857

2012S1	9017.5	255727069	10484949	63735871	1166	109.45
2012S2	7970.6	265236472	11765403	68783418	1166	107.66
2013S1	6923.8	274745875	13045856	73830964	1166	105.87
2013S2	13645.0	271004331.5	13087240	73261706	1166	101.08
2014S1	20366.3	267262788	13128623	72692448	1166	96.29
2014S2	18073.7	231732900.5	10644697	69063937	1166.5	72.88
2015S1	15781.1	196203013	8160770	65435425	1167	49.47
2015S2	26332.1	197488691	7996409	68084226	1174.5	45.115
2016S1	36883.0	198774369	7832047	70733027	1182	40.76
2016S2	60911.3	213733679	7215216	73859806	1183	46.595
2017S1	84939.7	228692989	6598385	76986584	1184	52.43
2017S2	53483.3	248805931.5	7085325	77407784	1183	61.105
2018S1	22026.9	268918874	7572265	77828984	1182	69.78
2018S2	31830.7	273401871.5	8992003	82299993	1182	66.91
2019S1	41634.5	277884869	10411741	86771002	1182	64.04
2019S2	49024.1	247649231.5	11771334	95062002	1204.5	55.35
2020S1	56413.7	217413594	13130927	1.03E+08	1227	46.66
2020S2	58901.8	260052753.5	11550718	1.12E+08	1265.5	61.375
2021S1	61389.9	302691913	9970509	1.2E+08	1304	76.09
2021S2	92666.8	342878032.5	10446648	1.24E+08	1377	78.01
2022S1	123943.7	383064152	10922787	1.29E+08	1450	79.93
2022S2	74792.3	356555276	11515144	1.42E+08	1375	81.44
2023S1	25641.0	330046400	12107500	1.56E+08	1300	82.95
2023S2	45640.7	346704200	12323150	1.55E+08	1310	81.42
2024S1	65640.4	363362000	12538800	1.55E+08	1320	79.89

Column (1): From the League of Arab States, Arab Organization for Agricultural Development/Yearbook of Statistics (all volumes) at the following link: https://www.aoad.org/AASYXX.htm

Columns (2,3,4,5,6): Ministry of Planning/Central Bureau of Statistics, and Central Bank/Statistics and Research Department.

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