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Measuring and Analyzing the Impact of Net Exports on Economic Growth in Iraq: A study for the Period of 2000-2018

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Abstract:

The research aims to estimate the impact of exports on the economic growth of Iraq, as previous studies are still controversial about the relationship between export performance and economic growth, especially in the analysis of time series, so this study used time series data for the period 2000-2018 to estimate the relationship . ARDL estimate is used To diagnose this relationship, the data series were chosen on the basis of data availability as the results of the investigation showed a positive long-term relationship between economic growth and export performance, this research confirms the use of the necessary measures to increase the export of products with added value to the Iraqi economy.

Keywords: Export, Economic Growth, GDP, Iraq.

قياس وتحليل صافي الصادرات على النمو الاقتصادي في العراق: دراسة للمده 2000 – 2018

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المستخلص:

يهدف البحث إلى تقدير تأثير الصادرات على النمو الاقتصادي للعراق، حيث لا تزال الدراسات السابقة مثيرة للجدل حول العلاقة بين أداء الصادرات والنمو الاقتصادي، وخاصة في تحليل السلاسل الزمنية، لذلك استخدمت هذه الدراسة بيانات السلاسل الزمنية للفترة 2000 - 2018 لتقدير العلاقة. يستخدم تقدير ARDL لتشخيص هذه العلاقة، وقد تم اختيار سلسلة البيانات على أساس توافر البيانات حيث أظهرت نتائج التحقيق وجود علاقة إيجابية طويلة الأجل بين النمو الاقتصادي وأداء التصدير، ويؤكد هذا البحث استخدام التدابير اللازمة لزيادة تصدير المنتجات ذات القيمة المضافة للاقتصاد العراقي.

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الكلمات المفتاحية : الصادرات، النمو الاقتصادي، الناتج المحلي الإجمالي، العراق.

Introduction:

Exports contribute significantly to building the economy of any country, and it is one of the important mechanisms for increasing the rates of GDP growth by expanding the general frameworks of the market range **(Khan and Saqib, 1993;)**. which is the most important element of access to abroad **(Michaely, 1977)**. The expansion of exports in general helps to reduce the many obstacles that stand in the way of the development process **(Tyler, 1981).** Economic and the importance of export is clear from his ability to repair the deficit in the balance of payments and work to attract domestic and foreign investment and create new job opportunities **(Balassa, 1985).** achieving high growth rates **(Krueger, 1990).** the necessity has become urgent today in relation to The national economy in order to cause a fundamental change in the structure of exports outside the oil sector, as the sharp decline recorded in the proportion of non-oil exports and the imbalance of the export structure is still a source of concern and insecurity for the state, which requires urgent measures to develop these exports and advance the economy Iraqi forward.

The Importance:

The importance of the study is embodied in clarifying the positive relationship between economic growth and exports in pushing forward the Iraqi economy forward through diversifying its sources of income.

The Problem:

The main research problem is embodied in reducing the level of exports of goods and services very seriously in the Iraqi economy, and the dependence of its exports on the rentier resource (oil),which caused a large deficit in the trade balance, and thus caused a decline in the level of economic growth of the country in general.

The Aim:

The research aims to study the relationship between economic growth and export performance of the Iraqi economy, and gross domestic product has been used as an indicator to measure economic growth in the country.

Previous studies:

Export growth may increase the degree of economies of scale. From the above, we review the most important previous studies in this regard: -

Economist Ekanayake (1999) explained in one of his research how exports affect economic growth in underdeveloped countries. The results revealed a significant correlation between export growth and economic growth in South Asian countries. As the study results showed no strong evidence of causation was found in the short term. An observational estimate of the investigation between export performance and economic growth using the Johansen co-integration test and the test of the causal relationship to the Grager found that there was a one-way relationship between exports and turbulent economic performance (2004). Qadous and Saeed (2005) illustrate the relationship between exports and economic growth and emphasized that the results indicate a positive causal relationship between exports and economic growth. Export growth could expand economic returns by multiplying foreign currencies. In this regard, previous studies on the "subjective" growth hypothesis that focuses on the dynamic flow of exports and increasing return to volume have confirmed. Exports may increase long-term growth by enabling the economy to specialize in export products with economies of scale. despite the positive relationship between economic growth and high export rates, the empirical evidence by researchers (Greenaway and Sapsford, 1994a, 1994b; Khan and Saqib, 1993; Ahmad and

Kwan, 1991; Ghartey, 1993; Jung and Marshall, 1985; Love, 1994; Edwards, 1993). More recently on the relationship between growth and export in providing uniform results confirmed the relationship's failure while important literature on cross-sectional studies promotes a relationship between exports and economic growth. Conclusively, therefore, this proposal must be validated to demonstrate the legitimacy of the impact of export performance on economic growth (Ghatak et al., 1995; Kugler, 1991; Dutt and Ghosh, 1994; Afxentiou and Serletis, 1991b). In this vein, past results generally do not suggest a real correlation between long-term export performance and economic growth. The main prerequisite for causality testing is verification of a common integration proposal.

Methodology:

To look at the connection among exports and economic growth, the present paper utilizes ARDL model. The model to determine the relationship of economic growth is determined by Gross Domestic Product (GDP), Exports (E), Imports (I), Consumer Price Index (P) and Terms of Trade (T). The model can be written in the following form

$$GDP = f(E,I,P,T) \quad \ldots\ldots\ldots\ldots\ldots \quad (1)$$

Annual time series data for all these variables from 2000 to 2018 extracted from World Bank open database and WIND database. The ARDL model is applied on this study to investigate the proposed framework proposed by Pesaran *et al*. (2001). This approach is useful for small samples and variables with heterogeneous order on integration for regresses. Furthermore, an unbiased results are estimated using ARDL method for long run relationship (Odhiambo, 2009).

Results and discussion:

Before applying ARDL framework, a standard procedure has followed to estimate the level of integration. For this purpose, Augmented Dickey Fuller has applied. The unit root test is applied using Baum's (2015) modified methodology for time series data. The results are presented in Table 1. It is note that GDP is integrated at I(1) while independent variables have missed integration levels I(0) and I(1). Hence, the first condition has fulfilled that none of the variable is integrated at I(2) (Kouakou, 2011).

Table 1: ADF Estimation

Variables	ADF test	
	I(0)	I(1)
LnGDP	-3.337**	-6.425*
LnE	-3.264	-3.829**
LnI	-2.223	-4.473**
LnP	-3.748*	-3.120**
LnT	-4.865**	-5.058*

*, ** and *** denote significance level at 1%, 5% and 10%, respectively.

To estimate the relationship among variables the preliminary step is ADL bound test estimation. This procedure is useful to determine the long run relationship using unrestricted ECM. This helps to estimate lagged level of variables and their respective significance. The ECM equation is given below to estimate the relationship among economic growth and exports.

$$\Delta GDP_t = \vartheta_1 + \vartheta_2 LnE_{t-1} + \vartheta_3 LnI_{t-1} + \vartheta_4 LnP_{t-1} + \vartheta_5 LnT_{t-1} + \sum_{i=1}^{p} \vartheta_i \, \Delta LnE_{t-i} + \sum_{j=0}^{q} \vartheta_j \, \Delta LnI_{t-j} + \sum_{k=0}^{r} \vartheta_k \, \Delta LnP_{t-k} + \sum_{l=0}^{s} \vartheta_l \, \Delta LnT_{t-l} + \mu_{1t} \quad \ldots\ldots\ldots \quad (2)$$

$$\Delta GDP_t = \delta_1 + \delta_2 LnE_{t-1} + \delta_3 LnI_{t-1} + \delta_4 LnP_{t-1} + \delta_5 LnT_{t-1}$$

$$+ \sum_{i=1}^{p} \delta_i \, \Delta LnE_{t-i} + \sum_{j=0}^{q} \delta_j \, \Delta LnI_{t-j} + \sum_{k=0}^{r} \delta_k \, \Delta LnP_{t-k} + \sum_{l=0}^{s} \delta_l \, \Delta LnT_{t-l} + \mu_{2t} \quad \ldots\ldots\ldots \quad (3)$$

In bound procedure, the joint significance of the lagged levels is tested using *F*-test that has non-standard asymptotic distribution. If the computed *F*-statistic falls above the upper value bound, the null is rejected, indicating co-integration. If the computed *F*-statistic falls below the lower bound, the null hypothesis of no co-integration is accepted. In contrast, if the computed *F*-statistic falls within the bounds, inference would be inconclusive. Following Lee (2010), maximum lag length is determined by the Breusch-Godfrey *LM* test where it fails to reject the null hypothesis of serially uncorrelated residuals at 5% level of significance.

Table 2: ARDL Bound Test Estimation

Specifications	Max. lag length	*F*-test	Lower-upper bound (1%)	Lower-upper bound (5%)	Lower-upper bound (10%)
LnGDP /(Ln*E*, *LnI*, *LnP*, *LnT*)	3	2.37	5.19-6.84	3.62-4.91	2.91-4.10

Tables 3 illustrate the results of bound testing approach. It is clearly detected from the results that it fails to reject the null hypothesis of no co-integration. Hence the results state a long run relationship between economic growth and exports. Further we estimate the long run coefficients for our model. The long run coefficient estimation is run by using the equation estimate co-integration.

Table 3. Coefficient Estimation for Long Run Relationship

Independent	1
InE	2.02
	(0.132)
LnI	-1.72*
	(-0.723)
LnP	-0.20*
	(-0.131)
LnT	-0.46
	(-0.340)
Adj. R^2	0.94
F-statistics	34.99*

*, ** and *** indicate significant at 1%, 5% and 10% level respectively. Numbers in parenthesis are the *t*-statistics. The optimal lags are selected based on AIC.

The above result in table 3 confirms a positive relationship among economic growth and exports. The 1% increase in log exports will bring 2.02% increase in economic growth. The relationship is strong as well as significant. Further the relationship among log imports, consumer price index and term of trade is negative. Henceforth, the results indicate that exports growth has a strong influence on the economic growth of Iraq.

Table 4. Diagnostic Tests

Model	Normality	Arch test	Serial correlation	Heteroscedasticity test	Ramsey reset test
1	2.22	0.3	1.3	13.58	0.14
	-0.1	-0.43	-0.06	-0.51	-0.52

Diagnostic test presented in table 4 supports the model. JB test for normality failed to reject normally distributed residuals. Further LM test is applied autocorrelation and does not present any problem with auto correlated residuals.

Conclusions and Recommendations:

The study explained the relationship between economic growth and export performance for Iraq. GDP is used as an agent of economic growth. A binding ARDL test framework was applied to estimate the long-term relationship between export performance and economic growth. ECM was applied to determine the common complementarity between the proposed variables. After confirming the joint complementarity of the variables, determine the long-term relationship parameter. The results confirmed a positive and significant long-term relationship between economic growth and export performance. These findings mean some suggestions for policymakers to pay attention to increasing the level of exports by producing more oil supplies. Since the country is an oil-based economy, it is necessary to switch from crude exports to exports of value-added products. Moreover, other industries may increase export performance by adding value to the oil industry by imitating higher management practices. This will boost the overall export level and achieve economic prosperity.

Through these results, the researcher provides some recommendations for policy makers to focus on increasing the level of exports through:

1- Diversification of oil commodity production As long as the country is an oil-based economy, it is necessary to switch from crude oil exports to exports of value-added products.

2. Reforming the banking sector: - Through various monetary policy tools in order to stimulate non-oil exports while providing the necessary funding to support the industrial sector.

3- Establishing export-free zones and industrial zones: - The main objective of establishing these zones is to attract investment directed to export.

4- Stimulating investment in industry, by linking grants and incentives provided by the government to industries that enjoy special advantages, such as the rise of the technological component, or the increase of its production from production abroad.

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