

“Trade openness and economic growth: Evidence from Azerbaijan”

AUTHORS	İlgar Seyfullayev  
ARTICLE INFO	İlgar Seyfullayev (2022). Trade openness and economic growth: Evidence from Azerbaijan. <i>Problems and Perspectives in Management</i> , 20(1), 564-572. doi:10.21511/ppm.20(1).2022.45
DOI	http://dx.doi.org/10.21511/ppm.20(1).2022.45
RELEASED ON	Wednesday, 06 April 2022
RECEIVED ON	Monday, 31 January 2022
ACCEPTED ON	Wednesday, 23 March 2022
LICENSE	 This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

40



NUMBER OF FIGURES

1



NUMBER OF TABLES

4

© The author(s) 2022. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 31st of January, 2022
Accepted on: 23rd of March, 2022
Published on: 6th of April, 2022

© İlgar Seyfullayev, 2022

İlgar Seyfullayev, Ph.D., Associate Professor, International Magistrate and Doctorate Center, Economics and Management Department, Azerbaijan State University of Economics – UNEC; Department of Specialty Subjects, Academy of the State Customs Committee, Azerbaijan.



This is an Open Access article, distributed under the terms of the [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

Conflict of interest statement:
Author(s) reported no conflict of interest

İlgar Seyfullayev (Azerbaijan)

TRADE OPENNESS AND ECONOMIC GROWTH: EVIDENCE FROM AZERBAIJAN

Abstract

A review of modern economic literature shows the lack of consensus on the relationship between the trade openness policy and the economic growth of countries. There is also an opinion that the policy of openness in emerging and resource-rich countries presents more opportunities for growth and development. Is this true, and under what conditions does openness lead to growth? Exploring the nature of trade openness and economic growth relationship in resource-rich emerging countries is the purpose of this paper. Therefore, the economy of Azerbaijan, rich in hydrocarbon resources, has been chosen as the object of this study. Next, the VAR model using ADF tests and Johansen's cointegration was chosen to analyze and evaluate the causal nature of the relationship between openness and growth. Trade openness ratio and GDP per capita growth are model variables. The study covers annual data from 1995 to 2020. It was found that there are no cointegration relationships between variables in the long run. However, there is a unidirectional causal relationship from openness to growth in the short run, and the effect of growth to openness is not statistically significant. The results show that Azerbaijan receives economic benefits from openness by selling oil to the world market. Yet, the short-run nature of such benefits and the lack of feedback from growth to openness suggest specific problems in the diversification and quality of the country's exports.

Keywords

quality of state economic regulation, export diversity, export quality

JEL Classification

F10, O24

INTRODUCTION

The globalization of the modern world and the growing openness of countries to trade leads to fundamental changes in the economic environment. These processes bring both great opportunities and unforeseen risks for the development of countries. The economies of emerging countries, turning into a part of the world system, face completely unfamiliar challenges that give rise to new relationships. Differences in countries due to the structure of the economy, the level of technologies development, institutions and human capital, resource provision, and other factors lead to differences in the opportunities and abilities to benefit from openness and participation in world trade. Growth gaps and deepening inequalities are acutely felt in many countries.

These differences are pushing emerging countries to choose between openness and protectionism or to achieve a balance between these directions.

One can find both negative and positive economic results of protectionism and openness in economic history. As an example of positive protectionism, one can cite the results of the well-known English Navigation Act, which was in force in the 18th -19th centuries. Moreover,

the industrial miracles taking place in the countries of East Asia, starting in the middle of the 20th century, can be recognized as a triumph of openness.

There are many opinions about the relationship between openness and economic growth in economics. The studies that have been conducted provide ample evidence of the benefits (especially in the long run) and the harms of openness to growth. They are also rich in thoughts about the conditions for the effectiveness of an openness policy.

The economy of Azerbaijan is the most suitable object for such a study, as it differs from other countries with the simultaneous possession of two qualities. First, its market institutions are at the stage of formation and development. Second, it is generously rewarded by nature with hydrocarbon resources.

It was found that the use of protectionist measures (customs revenues and exchange rates) does not generate growth in domestic production in a country rich in natural resources (Seyfullayev, 2020). Therefore, this study will explore the relationship between openness and economic growth, inverse to protectionism.

As a result of the study, scientific thought on the relationship between openness and growth can be enriched by empirical findings from an emerging and resource-rich country.

1. LITERATURE REVIEW

The relationship between trade openness and economic growth is widely represented in the economic literature. For example, a study conducted in the West African Economic and Monetary Union countries using the Granger causality test found no causal relationship between openness and growth in these countries. Model results show that openness is more beneficial to countries with a relatively developed industry (Akilou, 2013).

Hye (2012) developed the model and researched this topic on the example of Pakistan. A negative nature of the relationship between openness and growth was observed. At the same time, this model proves that human capital and the openness index together are essential for economic growth. Hye and Lau (2014) found that the openness index has a negative effect on economic growth in the long run, but this effect is positive in India in the short run.

In economic studies, one can also find an example of the positive impact of trade barriers on economic growth. However, such ties are determined by the level of development and capacity of the country's domestic market, as well as the possession of comparative advantages in protected industries (Yanikkaya, 2003). Moreover, Ulaşan (2015) argues that high growth rates are not always associated with weak trade barriers.

A case study of underdeveloped countries covering 1962–2002 shows that there is no long-run relationship between openness and growth in such countries. It also proves that the relationship between these indicators exists only in those included in the sample of the most developed and dependent on openness countries (Prabirjit, 2008).

Fetahi-Vehapi et al. (2015) obtained similar results studying the indicators (trade openness, primary income per capita, human capital, total fixed capital formation, FDI, labor force, and others) of 10 countries in Southeast Asia (1962–2012). GMM results show that countries with higher primary incomes are more likely to benefit from trade openness. At the same time, trade openness creates more favorable conditions for those countries with high FDI and fixed capital formation.

There is also an opinion that the causal relationships of openness and growth change depend on income level. In high-income countries, both in the long and short run, there is a long-term and bidirectional causal relationship between openness and growth driven by increased competition, technological change, and economies of scale. On the other hand, in low-income countries, the impact of openness to growth is negative in the short run, but the negative effect of growth to openness is long-run (Griesa & Redlin, 2012). The reason for this situation can be both an increase in the pro-

density for protectionism and the loss of comparative advantages due to low resource prices.

Based on these findings, one can confirm the following hypothesis: a country can only benefit from openness if it reaches a certain level of development.

Of particular interest is the fact that the relationship between openness and growth changes over time in developed countries. Dar and Amirkhalkhali (2003) show that the relationship between openness and growth also differs among developed countries. They also argue that openness plays a vital role in the impact of capital accumulation and labor on economic growth. Some studies draw attention to the ambiguity and insufficient evidence of the relationship between openness and economic growth. Such hypotheses are explained by the fact that the models do not use factors such as fixed capital and labor force. Keho and Wang (2017) researched the data from Cote d'Ivoire (capital, labor force, trade openness, and economic growth) covering 1965–2014. It was shown that trade openness positively affects economic growth, both in the short and long run. There are also positive relationships between openness and capital growth.

The model developed by Hatemi (2002) proves a bidirectional causal relationship between exports and economic growth in Japan. Moreover, the increase of such a relationship in exports plays a significant role in Japan's economic growth.

The example of India has shown that cointegration links exist between mineral exports, industrial production, and economic growth. Furthermore, a long-run causal relationship has been found, directed from economic growth and industrial production to mineral exports (Sahoo et al., 2014).

Similar results were obtained by Tahir and Azid (2015). They, confirming the positive and statistically significant relationship between openness and growth, showed that investment and labor play an important role in these relationships. In addition, the frequency of price changes in the long run negatively affects growth. These findings suggest that developing countries liberalize trade while paying particular attention to labor force development and investment growth.

Idris et al. (2017) used real and nominal openness indicators in 87 countries covering 1977–2011. The country sample includes both developed and developing countries. It was revealed that there is a bidirectional causal relationship between openness and growth in the sample. These findings are consistent with the endogenous theory that openness creates higher growth opportunities, and economic growth, in turn, supports trade openness.

In the model developed on the BRICS countries (Brazil, India, China, South Africa, and Russia), it is found that in these large countries, there is a unidirectional causal relationship from economic growth to openness. At the same time, openness along with the development of technologies and labor strength has a positive effect on growth (Raghutla, 2020).

The studies also note the role of imports for growth. For example, a model based on Argentina, Colombia, and Peru argues that exports are not always the main driver of growth; the impact of imports on growth may be positive, and GDP growth supports the growth of both trade openness components (Awokuse, 2008).

Çevik et al. (2019), based on the Turkish economy, found that trade openness had a faster impact on economic growth than growth on openness. At the same time, the specific role of imports for economic growth is noted.

The influence of openness on macroeconomic processes also occupies a special place in economic research. Dowrick and Colley (2004) show that the specialization of a country's exports in primary goods is detrimental to economic growth. In their opinion, the openness of trade in the 1960s and 1970s contributed to the convergence of development. Since the 1980s, the growth of the difference in benefits from trade in favor of rich countries has accelerated. They argued that most of the gains from trade came from increased productivity and some from increased investment.

Brülhart's (2011) approach to the emergence of openness-related inequalities is of particular interest. His analysis on the relationship between openness and regional population concentration shows that the relationship between openness and

population concentration in cities, as well as inter-regional inequality, is not statistically significant. At the same time, regions that have access to low-cost foreign trade (border areas, ports, etc.) can benefit more than others. Thus, according to Brülhart (2011), geographic location is an important factor in determining the impact of openness on inequalities.

Giovanni and Levchenko (2009) analyzed the impact of openness on the volatility of production indicators in the manufacturing sector. It was revealed that open sectors are more volatile and openness enhances specialization. The results show that, in general, there is a positive and statistically significant relationship between openness and economic volatility. At the same time, the impact of the volatility of open sectors on the overall economy volatility decreases when their correlation is low.

Haddad et al. (2009) argue that export product diversification plays a more positive role in economic sustainability than market diversification. In addition, it has been determined that the impact of openness on the volatility of an economy with a high product concentration of exports is mainly negative.

The relationship between openness and value added in the manufacturing industries is also a widely discussed topic in the scientific literature. An analysis of the manufacturing sector in Asian countries showed that the positive effect of openness on the manufacturing sector is due to curbing inflation, increasing exports, foreign direct investment, and research and development costs (Hussain et al., 2019).

In some studies, particular emphasis is placed on methodological issues in the analysis of the relationship between openness and growth. For example, Squalli and Wilson (2011) suggested that the ratio of the exports and imports sum to GDP may not fully reflect the level of economic openness. As a result, it may lead to an exaggeration of its impact on economic growth. When determining trade openness, one should also take into account the relative importance of the country's share in world trade.

Huchet-Bourdon et al. (2018) suggest using such indicators as the share of exports in GDP separately, export quality, and export variety. They con-

cluded that the positive effect of the export share on growth increases with the increase in the export variety. Another hypothesis of this study is that openness may cause negative consequences for countries specializing in low-quality exports.

Hausmann et al. (2007) show that countries that export high productivity goods, even after controlling for factors such as primary income per capita, human capital development, and other indicators, show higher growth rates. They viewed entrepreneurial activity as a mechanism for channeling resources from low productive to high productive sectors and suggested that governments should encourage this mechanism.

In the economic literature, there are often such thoughts that the country's specialization in high-quality types of economic activity is more conducive to its development and growth. The positive impact of openness on economic growth is related to the structure and ability to adapt to a changing economic environment (Grossman & Helpman, 1991; Aghion & Howitt, 1998; Barro & Sala-i-Martin, 2003; Rodrik, 2004; Reinert, 2007).

An analysis of the presented approaches and conclusions shows that the openness of trade in the long run mainly has a positive effect on economic growth. However, the relationship of these same variables in the short run varies in an even wider range. But what about the relationship between openness and growth in resource-rich emerging countries?

Based on the existing theoretical postulates, one can also assert the reverse hypothesis that the existence of a causal relationship between openness and growth is a sign of the relative economic development of the country. This feature is also a good indicator for assessing the level of economic regulation quality.

2. METHODOLOGY

Different methods and approaches are used to analyze and determine the causal nature of the relationship between openness and growth. The VAR model seems to be a more attractive method, as this technique allows identifying both cointe-

gration relationships and the behavior of variables in the long and short runs. It also determines the causality direction of relationships. To assess the stationarity of the series, the Augmented Dickey-Fuller test (Dickey & Fuller, 1981) was used. The lag was chosen based on the corresponding criteria. The Johansen test was applied to determine the cointegration relationships between variables. In addition, to identify the causality of relationships, Unrestricted VAR is used. The technique of application and the specifics of these methods are widely covered in the literature (Dickey & Fuller, 1981; Phillips & Perron, 1998; Johansen, 1988; Lütkepohl, 2005; Mukhtarov et al., 2020).

The literature review has shown that the openness ratio (the ratio of the exports and imports sum to GDP – in various dimensions), together with other indicators, is widely used to assess trade openness. The GDP per capita growth rate is also a common indicator for assessing economic growth. The relative nature of both variables allows being confident that the impact of inflationary and other factors on data quality will be negligible. To ensure comparability of the results, all indicators (exports, imports, and GDP) used to calculate the variables are expressed in US dollars. Following the existing theoretical assumptions, the level of trade openness and the GDP per capita growth are taken as model variables. Both

variables are defined on an annualized basis and cover 1995–2020. The level of trade openness is calculated based on data from the Central Bank of the Republic of Azerbaijan (CBAR, 2021), and GDP per capita growth is taken from the World Bank information database (WB, 2021).

3. EMPIRICAL RESULTS AND DISCUSSION

The results of the stationarity estimates of the series, carried out using the ADF test, are shown in Table 1.

The results assert that all model variables are non-stationary at the level, but they become stationary after the first difference. This means that the variables change in the same order, which allows us to apply the Johansen test to detect cointegration relationships. The lag selection was made based on the Akaike Info and Schwartz Criteria. The Johansen test results are shown in Table 2.

According to the results of the Trace test, one can state that at the 0.05% level of statistical significance, there are cointegrating relationships between the two variables. However, this conclusion is not supported by the result of the Maximum Eigenvalue (p-value = 0.0768 > 0.05) test, which

Table 1. ADF test

ADF test	Trend openness				GDP per capita growth			
	level		1st difference		level		1st difference	
	p-value	t-statistic	p-value	t-statistic	p-value	t-statistic	p-value	t-statistic
Intercept	0.59	-1.332 cr.values -2.986**	0.026	-3.297 cr.values -2.991**	0.287	-1.995 cr.values -2.992**	0.012	-3.682 cr.values -2.998**
Trend and intercept	0.838	-1.393 cr.values -3.603**	0.046	-3.668 cr.values -3.611**	0.346	-2.452 cr.values -3.612**	0.033	-3.839 cr.values -3.622**
None	0.452	-0.589 cr.values -1.955**	0.002	-3.365 cr.values -1.956**	0.088	-1.674 cr.values -1.955	0.0003	-3.981 cr.values -1.956**
Result	none		I(1)		none		I(1)	

Note: ** 0.05% level of statistical significant.

Table 2. Johansen test

Trace test		Maximum Eigenvalue	
Eigenvalue	0.4196	Eigenvalue	0.4196
Trace Statistic	16.383	Max-Eigen Statistic	13.058
Critical value (0.05)	15.495	Critical value (0.05)	14.264
Prob. (0.05)	0.0367	Prob. (0.05)	0.0768

Table 3. Unrestricted VAR model

Wald Test:			
Dependent Variable: Trade openness			
Test Statistic	Value	df	Probability
F-statistic	1.151224	(2, 19)	0.3373
Chi-square	2.302448	2	0.3162
Dependent Variable: GDP per capita growth			
Test Statistic	Value	df	Probability
F-statistic	3.953716	(2, 19)	0.0367
Chi-square	7.907432	2	0.0192

does not support the hypothesis that there are cointegrating relationships.

The lack of cointegration between variables leads to the use of Unrestricted VAR to determine the causality of relationships. The Unrestricted VAR results are shown in Table 3.

The model results show that economic growth does not lead to an increase in openness in the short run, but there is a causal relationship from openness to growth (p -value of F -statistic = 0.0367 < 0.05 and p -value of Chi-square = 0.01912 < 0.05).

To assess the reliability of the Unrestricted VAR model results, the paper considers the quality indicators of the model (Table 4).

The coefficient of determination ($R^2 = 0.75$) and the statistical significance of F -statistic (p -value = 0.000015 < 0.05) confirm the adequacy of the model coverage. The absence of autocorrelation (Breusch-Godfrey test, p -value = 0.9768 > 0.05) and heteroskedasticity (Breusch-Pagan-Godfrey test, p -value = 0.421 > 0.05) in the residuals of the model, as well as the normal level of their distribution (Jarque Bera test, p -value = 0.252 > 0.05), allow asserting an acceptable quality of the model.

A literature review showed that the absence of causal relationships between openness and

growth is mainly observed in underdeveloped and some developing countries. The result of this study partially coincides with the results of Hye and Lau (2014), Akilou (2013), Griesa and Redlin (2012), and Prabirjit (2008). Unfortunately, the absence of positive long-run links between openness and growth confirms that the Azerbaijani economy has not yet reached the desired level of development.

The discovered short-run causal relationship from openness to growth in Azerbaijan is also confirmed by the real state of affairs (Figure 1).

Since 2005, the share of hydrocarbon exports has been steadily in the range of 80-90%, and the dependence of oil revenues on world prices significantly increases the volatility of export revenues. Dowrick and Colley (2004) discussed the dangers of a country's export specialization in primary commodities. In addition, the finding of increased growth volatility is consistent with those of Haddad et al. (2009) and Giovanni and Levchenko (2009).

Combining the results of this study with the information from Figure 1, other conclusions can be drawn:

- the meager share of the non-oil sector in total exports and its inconspicuous growth speaks to shortcomings in the "quality" and "diversi-

Table 4. Model quality indicators

R-squared	F-statistic prob.	Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey		Jarque Bera prob.
		F-statistic prob.	Chi-square prob.	F-statistic prob.	Obs*R-squared prob.	
0.750885	0.000015	0.9835	0.9768	0.473	0.421	0.252

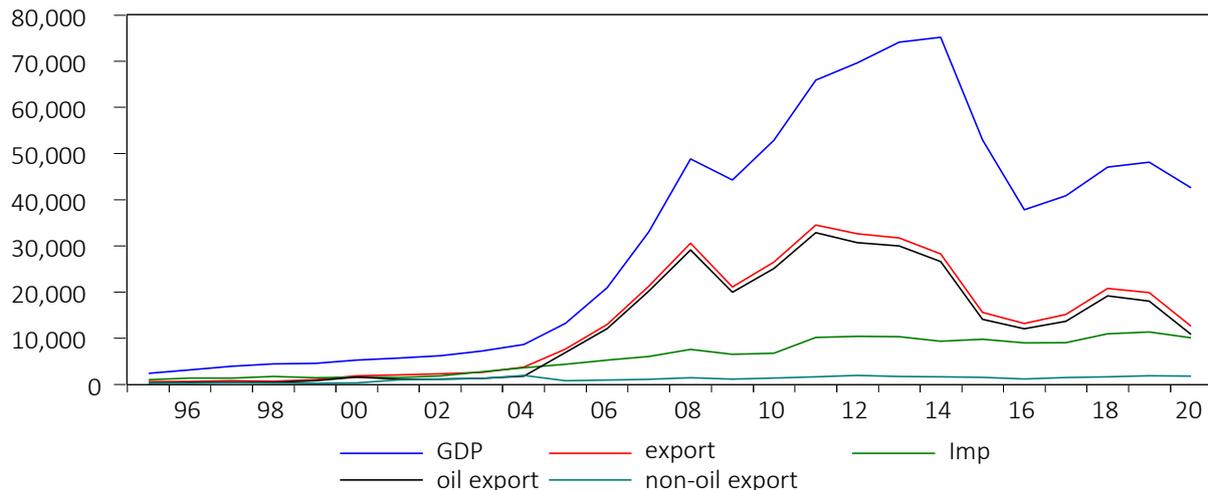


Figure 1. Dynamics of GDP, exports, and imports of Azerbaijan in 1995–2020 (in millions of USA dollars)

ty” of the country’s exports, which is consistent with the findings of Haddad et al. (2009), Hausmann et al. (2007), and Huchet-Bourdon et al. (2018);

- a corresponding increase in imports does not accompany economic growth in Azerbaijan, the

reason for which is its consumer nature. That is, economic growth does not cause a sufficient need for imports of inputs for the manufacturing industry (new machinery and technology, raw materials, components, etc.). The results of Awokuse (2008) and Çevik et al. (2019) confirm the importance of imports for economic growth.

CONCLUSION

The study showed that the relationship between openness and growth in Azerbaijan differs significantly from other countries. The findings confirm no cointegration and no causation between these variables in the long run. Somewhat encouraging is the fact that there is a causal relationship from openness to growth in the short run. However, its short-run nature and the absence of a reverse causal relationship – from growth to openness – cause a certain alarm.

Azerbaijan benefits from openness mainly through the export of primary commodities – crude oil and natural gas. However, the volatility of oil markets makes the causal links between openness and growth short-run. It indicates that the country’s non-oil sector is not yet able to balance losses from hydrocarbon export.

On the basis of such conclusions, it is possible to voice a hypothesis that the correlation between the mining and non-oil sectors of the country is at a rather weak level. The growth of income from the hydrocarbons export provides the government with significant financial opportunities to improve welfare. However, growing domestic demand and government protectionist measures have not yet led to the desired export and import-substituting potential development of the manufacturing industry. Consequently, the current economic structure and the specialization of the country’s exports in hydrocarbons have led to a decrease in the quality and diversity of exports, which is manifested in the absence of long-run causal relationships between openness and growth.

Given the fact that the protectionist measures of the government aimed at supporting manufacturing industries have not yet provided the desired results, a thorough improvement of the mechanism of state regulation and the strengthening of market institutions seems to be the only way out of the vicious circle. In this context, the issue of improving the state regulation quality acquires a critical status.

AUTHOR CONTRIBUTIONS

Conceptualization: Ilgar Seyfullayev.
 Data curation: Ilgar Seyfullayev.
 Formal analysis: Ilgar Seyfullayev.
 Funding acquisition: Ilgar Seyfullayev.
 Investigation: Ilgar Seyfullayev.
 Methodology: Ilgar Seyfullayev.
 Project administration: Ilgar Seyfullayev.
 Resources: Ilgar Seyfullayev.
 Software: Ilgar Seyfullayev.
 Supervision: Ilgar Seyfullayev.
 Validation: Ilgar Seyfullayev.
 Visualization: Ilgar Seyfullayev.
 Writing – original draft: Ilgar Seyfullayev.
 Writing – review & editing: Ilgar Seyfullayev.

REFERENCES

- Aghion, P., & Howitt, P. (1998). *Endogenous growth theory*. Cambridge, MA: MIT.
- Akilou, A. (2013). Is there a causal relation between trade openness and economic growth in the WAEMU countries? *International Journal of Economics and Finance*, 5(6), 151-156. <http://dx.doi.org/10.5539/ijef.v5n6p151>
- Awokuse, T. O. (2008). Trade openness and economic growth: is growth export-led or import-led? *Applied Economics*, 40(2), 161-173. <https://doi.org/10.1080/00036840600749490>
- Barro, R., & Sala-i-Martin, X. (2003). *Economic growth* (2nd ed.). Cambridge, MA: MIT.
- Brühlhart, M. (2011). The spatial effects of trade openness: a survey. *Review of World Economics*, 147, 59-83. <https://doi.org/10.1007/s10290-010-0083-5>
- Central Bank of Azerbaijan (CBAR). (2021). *Makroiqtisadi statistika*. (In Azerbaijani). Retrieved December 1, 2021, from <https://www.cbar.az/page-41/macroeconomic-indicators>
- Çevik, E. İ., Atukeren, E., & Korkmaz, T. (2019). Trade Openness and Economic Growth in Turkey: A Rolling Frequency Domain Analysis. *Economics*, 7(2), 41. <https://doi.org/10.3390/economics7020041>
- Dar, A., & Amirkhalkhali, S. (2003). On the impact of trade openness on growth: Further evidence from OECD countries. *Applied Economics*, 35(16), 1761-1766. <https://doi.org/10.1080/0003684032000129020>
- Dickey, D., & Fuller, W. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, 49, 1057-1072.
- Dowrick, S., & Golley, J. (2004). Trade Openness and Growth: Who Benefits? *Oxford Review of Economic Policy*, 20(1), 38-56. <https://doi.org/10.1093/oxrep/grh003>
- Fetahi-Vehapi, M., Sadiku, L., & Petkovski, M. (2015). Empirical Analysis of the Effects of Trade Openness on Economic Growth: An Evidence for South East European Countries. *Procedia Economics and Finance*, 19, 17-26. [https://doi.org/10.1016/S2212-5671\(15\)00004-0](https://doi.org/10.1016/S2212-5671(15)00004-0)
- Giovanni, J., & Levchenko, A. A. (2009). Trade Openness and Volatility. *The Review of Economics and Statistics*, 91(3), 558-585. <https://doi.org/10.1162/rest.91.3.558>
- Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods. *Econometrica*, 37(3), 424-438. <https://doi.org/10.2307/1912791>
- Granger, C. W. J., & Newbold, P. (1986). *Forecasting economic time series* (2nd ed.). New York: Academic Press. Retrieved from <https://book.asia/book/1309276/9641b9>
- Griesa, T., & Redlin, M. (2012). *Trade Openness and Economic Growth: A Panel Causality Analysis*. University of Paderborn, Germany. Retrieved from https://www.researchgate.net/publication/260321248_Trade_Openness_and_Economic_Growth_A_Panel_Causality_Analysis
- Grossman, G., & Helpman, E. (1991). *Innovation and growth in the world economy*. Cambridge, MA: MIT.
- Haddad, M., Lim, J. J., & Saborowski, C. (2009). *Trade openness reduces growth volatility when countries are well diversified*. World Bank. Retrieved from <https://www.freit.org/WorkingPapers/Papers/Development/FREIT102.pdf>
- Hatemi, J. A. (2002). Export performance and economic growth nexus in Japan: A bootstrap approach. *Japan and the World Economy*, 14(1), 25-33. [https://doi.org/10.1016/S0922-1425\(01\)00071-8](https://doi.org/10.1016/S0922-1425(01)00071-8)

19. Hausmann, R., Hwang, J., & Rodrik, D. (2007). What you export matters. *Journal of Economic Growth*, 12, 1-25. <https://doi.org/10.1007/s10887-006-9009-4>
20. Huchet-Bourdon, M., Le Mouél, C., & Vijil, M. (2018). The relationship between trade openness and economic growth: Some new insights on the openness measurement issue. *The World Economy*, 41(1), 59-76. Retrieved from <https://hal.archives-ouvertes.fr/hal-01987393/document>
21. Hussain, Z., Yousaf, M., Raheem, A., & Rahman, I. U. (2019). The simultaneous effects of investment and trade: A perspective of manufacturing growth in Asian Economies. *Journal of Applied Economic Sciences*, XIV, 4(66), 1074-1083.
22. Hye, Q. M. A. (2012). Long-term effect of trade openness on economic growth in case of Pakistan. *Quality & Quantity*, 46, 1137-1149. <https://doi.org/10.1007/s11135-011-9612-0>
23. Hye, Q. M. A., & Lau, W.-Y. (2015). Trade openness and economic growth: empirical evidence from India. *Journal of Business Economics and Management*, 16(1), 188-205. <https://doi.org/10.3846/16111699.2012.720587>
24. Idris, J., Yusop, Z., & Habibullah, M. S. (2017). Trade openness and economic growth: a causality test in panel perspective. *International Journal of Business and Society*, 17(2), 281-290. <https://doi.org/10.33736/ijbs.525.2016>
25. Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(2-3), 231-254. Retrieved from https://econpapers.repec.org/article/eedyncon/v_3a12_3ay_3a1988_3ai_3a2-3_3ap_3a231-254.htm
26. Keho, Y., & Wang, M. G. (rev.ed.). (2017). The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance*, 5(1), 1332820. <https://doi.org/10.1080/23322039.2017.1332820>
27. Lütkepohl, H. (2005). *New introduction to multiple time series analysis*. Berlin, Germany: Springer Berlin Heidelberg.
28. Mukhtarov, S., Humbatova, S., Seyfullayev, I., & Kalbiyev, Y. (2020). The effect of financial development on energy consumption in the case of Kazakhstan. *Journal of Applied Economics*, 23(1), 75-88. <https://doi.org/10.1080/15140326.2019.1709690>
29. Phillips, P. B., & Perron, P. (1988). Testing for unit roots in time series regression. *Biometrika*, 75, 335-346.
30. Prabirjit, S. (2008). Trade Openness and Growth: Is There Any Link? *Journal of Economic Issues*, 42(3), 763-785. <https://doi.org/10.1080/00213624.2008.11507178>
31. Raghutla, C. (2020). The Effect of Trade Openness on economic growth: Some empirical evidence from emerging market economies. *Journal of Public Affairs*, 20(3), e2081. <https://doi.org/10.1002/pa.2081>
32. Reinert, E. S. (2007). *How Rich Countries Got Rich ... and Why Poor Countries Stay Poor*. London: Public Affairs.
33. Rodrik, D. (2004). *Industrial policies for the twenty-first century*. Harvard University.
34. Sahoo, A. K., Sahoo, D., & Sahu, N. C. (2014). Mining export, industrial production and economic growth: A cointegration and causality analysis for India. *Resources Policy*, 42, 27-34. <https://doi.org/10.1016/j.resourpol.2014.09.001>
35. Seyfullayev, I. (2020). Protectionism and non-resource economic growth: Evidence from Azerbaijan. *Problems and Perspectives in Management*, 18(4), 121-129. [https://doi.org/10.21511/ppm.18\(4\).2020.11](https://doi.org/10.21511/ppm.18(4).2020.11)
36. Squalli, J., & Wilson, K. (2011). A New Measure of Trade Openness. *The World Economy*, 34(10), 1745-1770. <https://doi.org/10.1111/j.1467-9701.2011.01404.x>
37. Tahir, M., & Azid, T. (2015). The relationship between international trade openness and economic growth in the developing economies: Some new dimensions. *Journal of Chinese Economic and Foreign Trade Studies*, 8(2), 123-139. <https://doi.org/10.1108/JCEFTS-02-2015-0004>
38. Ulaşan, B. (2015). Trade openness and economic growth: panel evidence. *Applied Economics Letters*, 22(2), 163-167. <https://doi.org/10.1080/13504851.2014.931914>
39. World Bank (WB). (2021). *GDP per capita growth (annual %)*. Retrieved from <https://data.world-bank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart>
40. Yanikkaya, H. (2003). Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development Economics*, 72, 57-89. [https://doi.org/10.1016/S0304-3878\(03\)00068-3](https://doi.org/10.1016/S0304-3878(03)00068-3)