Investigation of commercial potential and prospects of development in Iran-Azerbaijan business relations using gravity model

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Article Info	Abstract
	Economic and commercial relations between Iran and the Republic of Azerbaijan were formed from the early years of Azerbaijan's independence, and in a short period of time, Iran became the largest trading partner of Azerbaijan. But after 1997-98, the trade relations between the two countries became unstable and took a downward trend. Why the two countries could not achieve mutual economic-commercial dependence or sustainable regional economic dependence? The reason for this question can be addressed from different aspects. In this study, from the perspective of economic development, international politics, social and historical factors the level of bilateral economic-commercial relations has been investigated and the potential of mutual trade between the two countries has been calculated and evaluated using the gravity model for the time period of 1991-2018. The obtained results show, although the two countries despite having effective and positive connecting factors on economic and commercial relations such as proximity to production and consumption centers, extensive customs and border facilities, free zones and common markets, cultural and linguistic commonalities, have not been able to sufficiently benefit from the potentials and positive effects of the above linking factors to expand business relations. However, estimation model shows that if the above factors and existing capacities are optimally used, more stable economic relations and the volume of mutual trade between the two countries can be expanded to at least twice (100%) the current volume and by removing obstacles such as financial, banking and customs obstacles, the volume of exchanges can be expanded even several times.

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Extended Abstract
Background
All countries seek to expand their international scientific, technical, economic and commercial relations in order to achieve optimal growth and development. In the development strategy of all countries, foreign trade and benefiting from the profits of the global economy, especially the development of exports, has a special place. The expansion of exports has been especially noticed since the 19th century and it has been mentioned as the engine of growth and development. For this reason, while paying attention to increasing exports, countries are seeking to reform the economic structure and change export goods from raw materials to manufactured and industrial goods. The expansion of trade agreements, the creation of various international and regional economic cooperation shows the world's movement towards economic integration and benefiting from the benefits of global trade. In such a situation, the increase and consolidation of economic and commercial cooperation in the form of bilateral or multilateral trade agreements and regional cooperation can be easily realized and beneficial for countries with the economic conditions of Iran and Azerbaijan. Examining the trade trend between the two countries shows that despite the existence of potentials, commonalities and positive connecting factors, the volume of commercial exchanges between the two countries is at a low level compared to the existing capacities. In this study, while estimating the existing trade potential between the two countries using the attraction model, the necessary solutions to increase the volume of trade exchanges and use the existing capacities have been presented.

Aims
The main purpose of the research is to investigate the economic-commercial relations and commercial potential between Iran and Azerbaijan and the impact of its expansion on the economic growth and development of the two countries in the conditions of economic convergence and ways to expand these relations.

Methods
The gravity model theory is one of the most important theories in foreign trade and it is used to explain the impact of factors affecting mutual trade, such as geographical proximity, size and similarity, and economic development. This theory is based on Newton's law of gravity. This means that mutual trade is directly proportional to the volume of gross domestic product (GDP) and inversely proportional to the distance. The mentioned theory was used in the 1960s by the Jan Tinbergen to explain the mutual trade flows and developed. In various studies, it was found that if two countries have the same GDP per capita, the volume of trade between them is higher than if they differ in terms of GDP per capita. The gravity model in its simplest

form is considered as follows:

$$T_{ij} = F(GDP_i, GDP_j, DIS_{ij})$$

Tij: mutual trade flow between importing country i and j
GDPi: gross domestic product of the exporting country i
GDPj: gross domestic product of importing country j.
DISij: distance between two exporting and importing countries i and j.

The volume of bilateral trade flows has a direct relationship with the GDP of the two countries and an inverse relationship with geographical distance. In this research, a gravity model has been used to investigate the commercial potential between the two countries of Iran and Azerbaijan. The statistics related to the variables considered in the model were collected and entered into the model in 2018.

$$Tij= F (GDPi,GDPj,DISij,LINij)$$
$$LogTij= \alpha+\beta1.logGDPi+\beta2.logGDPj+ \beta3.log\ DISij+ \beta4.logLINij +Uij$$
$$LINij= (PGDP_i - GDP_j)^2.$$

Findings

Using the gravity model and taking into account the variables of size (volume) and economic similarity and the distance between the countries and the presented formula, the potential of bilateral foreign trade between Iran and Azerbaijan and their other major trading partners has been estimated. In this model, countries from different regions and continents with geographical distances and with different economic conditions are considered. In estimating the model, relevant statistics were collected using UNCTAD statistical data, statistical yearbooks of Iran Customs and Azerbaijan Statistics Committee in 2018, and using the theory of attraction and the method of least squares (OLS)[1], the mutual trade potential between the two countries has been estimated. According to the gravity model, it is expected that the coefficients of the economy of the exchange countries have a positive sign, and the coefficients of the geographic distance variable and the Linder variable have a negative sign.

Model estimation result

$$LT_{ij}= -18.82+0.98LGDP_i+1.064LGDP_J-0.84LDIS_{ij}-0.081043LLIN_{ij}$$
$$R\text{-squared} = 0.696409\ Adjusted\ R\text{-squared} = 0.693769$$

The result of estimating the model coefficients shows that all the coefficients of the estimated model variables have the expected signs and all the coefficients are highly significant.

Discussion

- In the conditions of the integration of the regional economy and the increase in the dependence of the countries' economies, the

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1. Ordianeri Least Squares

expansion of economic-commercial relations for growth and development is an undeniable necessity for all countries, including Iran. Bilateral or multilateral cooperation, especially with neighboring countries in the form of trade agreements and regional integration, is an effective and useful way to gradually enter global markets.

- Economic and commercial relations between Azerbaijan and Iran were formed in the early years of independence of this country and expanded rapidly due to cultural, historical and linguistic similarities. But after 1997, Iran's share of Azerbaijan's trade volume gradually declined due to reasons such as lack of attention to marketing methods, customs and financial barriers, and the weakness of economic diplomacy and despite the existence of effective and positive connecting factors on economic and trade relations such as neighborhood, common borders, extensive customs facilities, etc., the two countries have not been able to benefit from the potential and positive impact of the aforementioned factors to expand trade relations sufficiently.

- The result of gravity model estimation shows that the expansion of Iran's bilateral trade has a direct relationship with the variables of its GDP and the country of the trading partner and economic similarity, and it has an inverse relationship with the variable of geographical distance of its trading partners and the mentioned variables can be meaningfully explained by the gravity model theory.

- Considering the growth of gross domestic product and the increase in economic similarity between Azerbaijan and Iran, the proximity of the markets of the two countries, and considering the results of the estimation of the obtained model and coefficients and the existing potentials, the volume of bilateral and reciprocal trade between the two countries can be expanded and developed at least twice the current volume

Conflict of interest
The authors declared no conflicts of interest.

Authors' contributions
All authors contributed to the original idea, study design.

Ethical considerations
The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Data availability
The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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