

ECONOMETRIC ASSESSMENT OF FACTORS INFLUENCING TO FOREIGN TRADE

Yadigarov T.A.¹, Allahverdiyev D.I.² (Republic of Azerbaijan)
Email: Yadigarov250@scientifictext.ru

¹Yadigarov Tabriz Abdulla oglu - PhD in Economics, Senior Fellow;

²Allahverdiyev Dagbeyi Isa oglu - PhD in Economics, Senior Fellow,
INSTITUTE OF ECONOMICS OF ANAS,
BAKU, REPUBLIC OF AZERBAIJAN

Abstract: the article analyzes the dynamics of foreign trade on the basis of statistical data, comments on the role of monetary policy in the regulation of economic development and the value of broad money. The impact of the large monetary mass in the Republic of Azerbaijan on foreign trade turnover was assessed in the Eviews software package. The article examines the adequacy of the created model and determines its suitability for use in all forecasting.

Keywords: trade turnover, broad currency mass, correlation coefficient, regression level, monetary credit.

ЭКОНОМЕТРИЧЕСКАЯ ОЦЕНКА ФАКТОРОВ, ВЛИЯЮЩИХ НА ВНЕШНЮЮ ТОРГОВЛЮ

Ядигаров Т.А.¹, Аллахвердиев Д.И.² (Азербайджанская Республика)

¹Ядигаров Табриз Абдулла оглы – кандидат экономических наук, старший научный сотрудник;

²Аллахвердиев Дагбей Иса оглы - кандидат экономических наук, ведущий научный сотрудник,
Институт экономики НАНА,
г. Баку, Азербайджанская Республика

Аннотация: в статье на основе статистических данных анализируется динамика внешней торговли, комментируется роль денежно-кредитной политики в регулировании экономического развития и значение широкой денежной массы. Влияние большой денежной массы в Азербайджанской Республике на внешнеторговый оборот оценивалось в программном пакете Eviews. В статье также исследуется адекватность созданной модели и определяется ее пригодность для использования в целях прогнозирования.

Ключевые слова: торговый оборот, широкая денежная масса, коэффициент корреляции, уравнение регрессии, денежный кредит.

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Introduction. It is important to evaluate the impact of work and services of different sectors of the economy on economic development and the relationship between them, as well as the use of economic and mathematical methods in the calculation of individual economic forecasts of economic sectors. Foreign trade policy, carried out by each country, integrated into the world economy, has a significant impact on the development of foreign economic relations and stimulates economic development. Foreign trade policy is aimed at balancing imports and exports, maintaining macroeconomic stability in the country and preventing inflation, expanding foreign economic relations and optimizing monetary and financial and financial arrangements [2].

The main part. In general, the broad money mass plays an important role in the development of foreign trade as a monetary unit, it is also important to study the impact of the broad currency on the foreign trade turnover of the country. In order to assess the impact of the broad currency on the factors affecting foreign trade in the Republic of Azerbaijan, we use the following table.

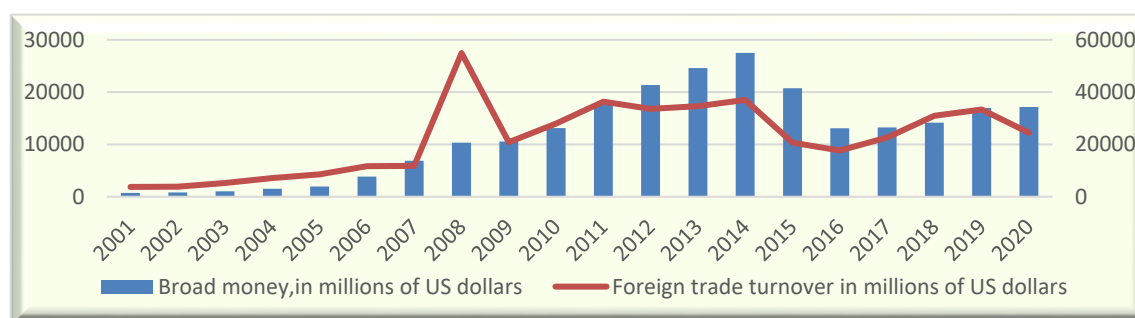


Fig. 1. Graph. Broad money supply and foreign trade dynamics in the Republic of Azerbaijan for 2001-2020

Source. (4) and (5) and compiled by the author.

According to graph 1, EViews, MatLab, MS Excel, MathCad, etc. are ready mathematical software packages for regression analysis of the relationship between foreign trade turnover and broad money supply in the Republic of Azerbaijan for 2001-2020. can be used. For this purpose, using the software package Eviews, we obtain the following result based on the data in Table 1.

Table 1. The result of the EViews software package

Dependent Variable: Y
Method: Least Squares
Date: 06/07/21 Time: 06:17
Sample: 2001 2020
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X	1.2199	0.26209	4.65472	0.0002
C	7869.6	3774.09	2.08518	0.0516
R-squared	0.5462	Mean dependent var	22337.57	
Adjusted R-squared	0.5210	S.D. dependent var	13833.01	
S.E. of regression	9573.7	Akaike criterion	21.26607	
Sum squared resid	1.65E+09	Schwarz criterion	21.36565	
Log likelihood	-210.6607	Hannan-Quinn criter.	21.28551	
F-statistic	21.666	Durbin-Watson stat	1.857183	
Prob(F-statistic)	0.0001			

Source. The Eviews application was developed by the author based on the software package.

Based on the results obtained from the EViews application software package, the regression equation will be as follows:

$$Y = 1.21998899715 * X + 7869.69291301 \quad (1)$$

As can be seen from the table, there is a relatively high direct link between the variable Y and X on the scale of Chedok (0.5-0.7) above the average ($R_{yx} = 0,52$). With the help of Fischer's criterion, it is possible to verify the statistical significance of the regression equilibrium system as a whole. When the F-Fisher criterion is compared with the value $F_{tab.}(a; m; n - m - 1)$ it turns out that the criterion $Fisher > F_{tab.}(0,05; 18; 1) = 4,41$. ($21,7 > 4,41$). This means that the level of regression as a whole is statistically significant. This means the adequacy of the installed model (2). This means that the level of regression as a whole is statistically significant [1]. This means the adequacy of the installed model (1). The result of autocorrelation in the model can be determined from the Darbon-Watson statistics in table 1, obtained from the EViews application software package. As can be seen from the table, DW is equal to 1.86. In this case, the Darbon-Watson crisis points for the $\alpha = 0,05$ significance level with 1 explanatory variable $m = 1$ and $n = 20$ observations will be as follows [1, 3]. $d_l = 0,932$, $d_u = 1,147$. Since $d_l = 0,932 < DW = 1,86 < 4 - d_u = 2,853$, there is no autocorrelation [2. p.311]. This means that the regression equation as a whole is statistically significant, and the constructed model $Y = 1.22 * X + 7869.7$ is adequate. It is also important to assess the degree of impact of the broad money supply in the Republic of Azerbaijan on foreign trade by the coefficient of elasticity. The elasticity coefficients calculated on the basis of these indicators will be as follows for the built model.

$$E = \frac{\alpha_1 \times \bar{x}_1}{\bar{y}} = \frac{1,22 \times 11859,02}{22337,57} = 0,6477$$

Calculations show that a 1% increase in the volume of money supply in the Republic of Azerbaijan leads to a 0.65% increase in foreign trade turnover.

The coefficient of determination in this dependence is 0.546 according to the report. The fact that the coefficient of determination $R^2 = 0.546$ means that the corresponding regression equation is explained by 54.6.0% of the variance results, and 45.4% by the influence of other factors. The dynamics of the Fitted and Actual values, as well as the residuals between them, according to the regression equation of the established model (1) and the Eviews application software package, are given in the graph below [1].

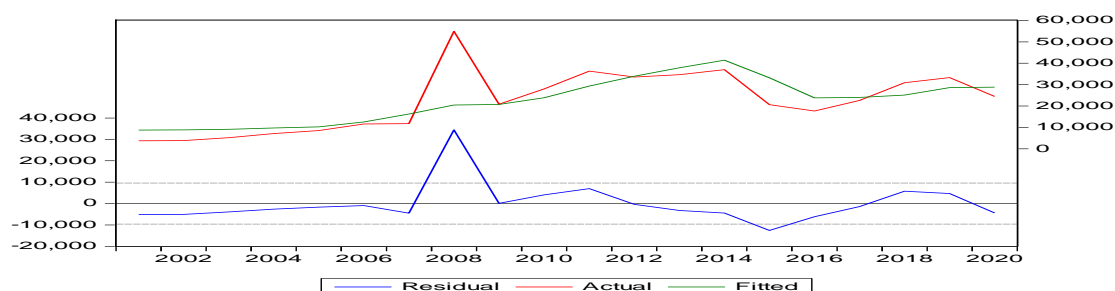


Fig. 2. Graph. Dynamics of actual values and balances obtained by the regression equation

Source: The Eviews application was developed by the author based on the software package

According to the Eviews application software package, if we graphically describe the dynamics of foreign trade with a large money supply in the Republic of Azerbaijan, we get the following result.

The following graph shows the annual prices and standard errors of foreign trade income found by the regression equation obtained under the Eviews application software package, as well as a number of characteristics of the use of the equation for forecasting purposes, shown.

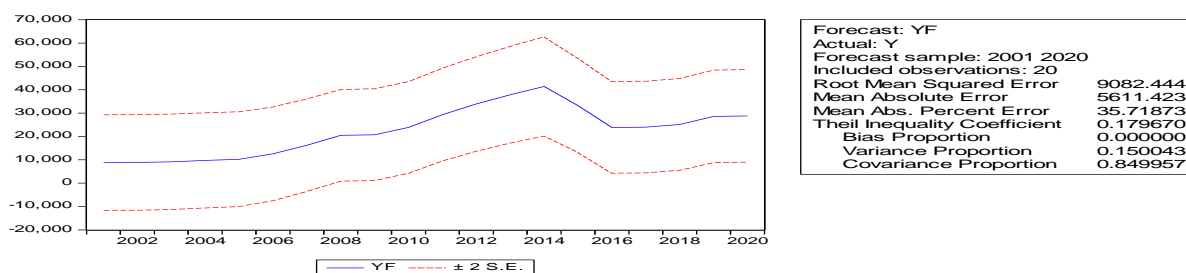


Fig. 3. Graph. Prognostic characteristics of regression equations

Source: The Eviews application was developed by the author based on the software package/

Using the graph, it is also possible to determine the forecast prices of foreign trade in the Republic of Azerbaijan.

The result. As a result of the research, based on the Eviews application software package, it was determined that there is a correlation between the broad money supply and foreign trade turnover in the Republic of Azerbaijan expressed by the regression equation $Y = 1.22 * X + 7869.7$. Based on the established contact equation, it was determined that a 1% increase in the volume of money supply in the Republic of Azerbaijan leads to a 0.65% increase in foreign trade turnover. In this regard, the volume of money supply should be increased. The share of the broad money supply in the GDP of the Republic of Azerbaijan is 6-8 times lower than in developed countries. Therefore, in order to develop a broad money supply, all segments of the middle-level financial markets in Azerbaijan must be developed and improved. In the future, after the development of this sector, the inclusion of securities, promissory notes, debt securities, bonds in monetary aggregates will increase trade turnover, which will have a positive impact on the regulation of economic growth and the development of the real sector. The obtained regression equation graphically describes the prices and standard errors of trade turnover in the Republic of Azerbaijan for years, as well as a number of characteristics of the use of the equation for forecasting purposes.

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