

STATISTICAL ASSESSMENT OF THE IMPACT OF THE INDUSTRIAL SECTOR ON ECONOMIC GROWTH IN THE REPUBLIC OF UZBEKISTAN

To'rayeva Zilola Turg'unovna

Toshkent moliya instituti Statistika va ekonometrika kafedrası o'qituvchisi

Abstract

(Matthew 24:14; 28:19, 20) Jehovah's Witnesses would be pleased to discuss this protruding work. (Matthew 24:14; 28:19, 20) Jehovah's Witnesses would be pleased to discuss these answers with you. Particularly, if we see that the industrial sector is developed in the region, we can assess the specialty of the regions in this area. For our analysis below, we used industrial products and YAHM indicators for 2020.

Introduction

According to him, although the minimum amount of industrial products (value) is produced in the province of Surxondary throughout the country, it is not in the last position for the production of gross domestic product in general. (Matthew 24:14; 28:19, 20) That is, as this region specializes in cups of agriculture, the growth of gross domestic product corresponds to the share of the agricultural network. It is well-known for the production of industrial products that the city of Tashkent is operating, and the city of Tashkent ranks first in YAHM.

Given the variation of industrial products produced throughout the region in 2020, the division between the regions can be seen to be very strong. In 2020, an average of \$25686.94 billion (U.S.) was produced in the region, and the provinces of Anchorage, Nabopolassar, Tashkent, and Tashkent produced industrial products worth less than this average. The volume of industrial production in the remaining 10 territories did not reach the average value level. The fact that the regions producing agricultural products performed less or more than the average can be further reflected in the following image .

Industrial production does not have a normal distribution, i.e. industrial production volumes are not evenly distributed by the regions. Therefore, a comprehensive approach is later needed to improve the production capacity of industrial production nationally, that is, a special emphasis should be placed on each area.

Generally speaking, we can see in the following graph the link between the production of industrial products in regions and their YAHM indicators.

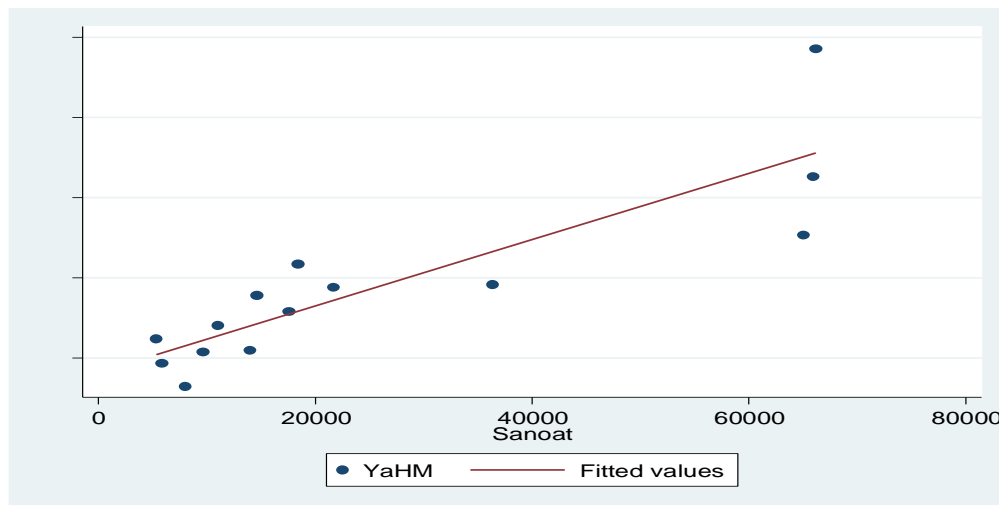


Figure 1. Graphical expression of the link between YAHM and industrial products

As seen in the graph, there is a proper link between industrial products and YAHM indicators, and as the value of agricultural products increases, the YAHM indicators of the relevant god are also increasing, and the power of connection is at a high level.

Figure 2.3.3 shows that the bonding power between indicators, i.e. the correlation coefficient, is $r=0.8693$, which explains the presence of a high level of correct connectivity between industrial products and YAHM indicators.

Source	SS	df	MS	Number of obs	=	14
Model	4.7467e+09	1	4.7467e+09	F(1, 12)	=	37.11
Residual	1.5349e+09	12	127906572	Prob > F	=	0.0001
				R-squared	=	0.7557
				Adj R-squared	=	0.7353
Total	6.2816e+09	13	483199792	Root MSE	=	11310

YaHM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Sanoat	.828297	.1359677	6.09	0.000	.5320488	1.124545
_cons	16376.87	4618.918	3.55	0.004	6313.113	26440.63

Figure 2. Regression analysis results.

We can refer to the table in Figure 2.3.4 for analytical expression of the link between variables. According to him, the link between industrial products and YAHM indicators can be expressed through the Equation $U=0.83x + 16376.87$. That is, when industrial production increases to 1 unit, the corresponding YAHM indicator increases to 0.83 units. Figures 2.3.4a, 2.3.4b, 2.3.4v provide the results of the ANOVA analysis.

Number of obs	=	14
F(1, 12)	=	37.11
Prob > F	=	0.0001
R-squared	=	0.7557
Adj R-squared	=	0.7353
Root MSE	=	11310

Figure 3. F test results.

According to him, the model identified will be tested for the Fisher test. The Fisher test prohibits choosing the following two alternative hypotheses:

H0: the model does not have statistical significance;

H1: The model has statistical significance.

The results of the analysis indicate that the model we have produced has statistical significance, i.e. the condition has been met, meaning $37.11 F_{haqiqiy} > F_{jadval} > 4.7472253$ means that the chief hypothesis will be rejected and an alternative hypothesis will be adopted. However, the fact that the probability level is also > 0.05 0.0001 indicates that the model is reliable.

This indicates that the determination coefficient in the country is 75.57% of the industrial production rate or 3/4 percent of the total amount of industrial production in factors affecting YAHM. (Matthew 24:14; 28:19, 20) Jehovah's Witnesses would be pleased to discuss these answers with you. R^2

The adj R-squared = 0.7353 indicator is called the adjusted determination coefficient, which helps you choose the optimal one of the few models compiled (2.3.6-rasm).

It is important to also evaluate the model parameters in determining the quality of the model. We can study the statistical reliability of model parameters using the T test. From Figure 2.3.6, we can find out the coefficients of model parameters, the average errors in them, as well as the statistical meaning as required by the T test, as well as the confidence intervals of their parameters.

In this case,

$$U = 0.83x + 16376.87 \\ (0, 1359677) \quad (4618.918)$$

The standard error must be smaller than the parameter value.

The T test prohibits selecting the following two alternative hypotheses:

H0: model parameters do not have statistical significance;

H1: Model parameters are of statistical importance.

Even at this time, the results of the analysis indicate that the model parameters we produced have statistical significance, i.e.

$$t_{haqiqiy} > t_{jadval} \\ t_a (6.09) > t_{jadval} (2.1788128) \\ t_b (3.55) > t_{jadval} (2.1788128)$$

The condition has been met, which means that the head hypothesis is rejected and an alternative hypothesis is accepted. However, the fact that the probability level is also > 0.05 $0.004(0.000)$ shows that the model parameters are reliable.

We can also say from the table of coefficients,

at parameters 0.5320488 to $1.124545 < < \text{oraliquid}$,

The b parameter $< \text{can be changed in the confidence range of } 6313.113 \text{ b } 26440.63.<$

Because the model parameters are determined by the ECKU, it is intended to check them in accordance with the terms of Gaus-Markov. Only then is the model fully verified.

1) The number of observations under Gaus-Markov terms must be 6 times the number of characters ($k=2$, $n=14$, condition $n=6k=6*2=12$);

2) \hat{Y}_x The sum of values of our model $= 0.83x + 16376.87$ must be equal to the sum of empirical data $\Sigma Y = \Sigma \hat{Y}_x = 527146.06$, which can also be seen on average $= 37653.29; \bar{Y}$

3) When evaluating model reliability, its criterion for ghetoskadas (getrogen) or gomoscadas (gomogenic) is important. According to him, the model $\hat{Y}_x \varepsilon$ must not be connected to the residues (or by the factor character). Below we can check the terms of the model's homoscity using a number of methods. Learn From Jesus' Example of Watchfulness, 2 / 157-rasm)

(2.3.8) Jehovah's Witnesses would be pleased to discuss these answers with you.

For example, an order such as cor residual model industry is issued to see the connection between characters in a correlational way. From the level of dependence in Figure 8, it is possible to know that the residual has no power to connect with the model or the factor mark. That is, the correlation coefficient of the residue with a model or factor character is 0.

Gomoskedasty can also be detected through IM tests and Breusch-Pagan tests. In this case, the following hypotheses are accepted or rejected:

H0: the model has a homoscedasticity characteristic;

H1: the model has a heterosexuality characteristic.

In the "Stata" program, an `imtest` command is given to perform an IM-test test, and the following table is generated in the main window:

Source	chi2	df	p
Heteroskedasticity	7.34	2	0.0255
Skewness	3.75	1	0.0527
Kurtosis	1.25	1	0.2639
Total	12.34	4	0.0150

4-rasm. IM-test natijasi.

Through Picture 4, we can see that by ghetoskadas line $r = 0.0255$, this means that since it is smaller than 0.05, the head hypothesis is rejected, the alternate hypothesis is accepted, and the model is recognized as having a ghetoskadas property.

When we do the Breusch-Pagan test by issuing a **similar** `hettest` order $<$, we witness $p 0.05$, which means that we can see that the model also developed does not meet the requirement of homoscity (Fig. 2.310).

We can also see that by issuing a hungry residual command, there is no interseasonal connection, i.e. if the sticks in Figure 2.2.13 are not embedded outside the bounded figure (form), then the connection between the remains is not transmitted.

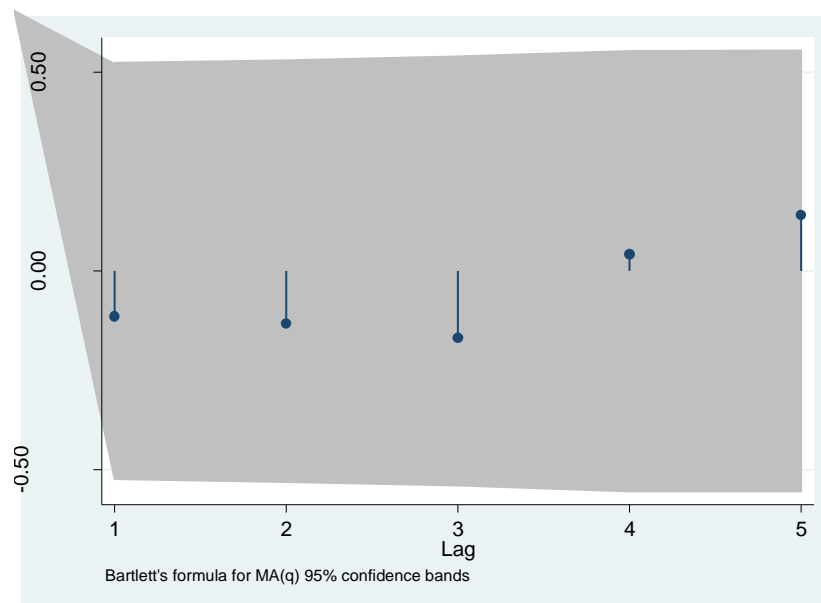


Figure 5. Graphical expression of non-autocorrection residues

Another of the most common ways to detect autocorrection on residues is the Darwin-Watson test. To do this test, when we issue the estat dwatson command in the Stata program, the following entry appears in the main window:

-Watson d-statistic(2, 14) = 1.765472.

This figure on the Darwin-Watson test is high [0; 4) Varies in the interval. If this figure is d-statistic < 2, it means that a link between the remains of the model is not transmitted.

(5) When evaluating the quality of the model, there is a special emphasis on the condition that the remains have a normal distribution. This condition can be verified in 3 different ways. As a result of the investigation, one of the following hypotheses is recognized:

H0: residual distributed normally;

H1: residual is not distributed normally.

To see the normal distribution of model residues in a graphical way, a command such as **akdensity residue** is given, producing the following image (2.3.14):

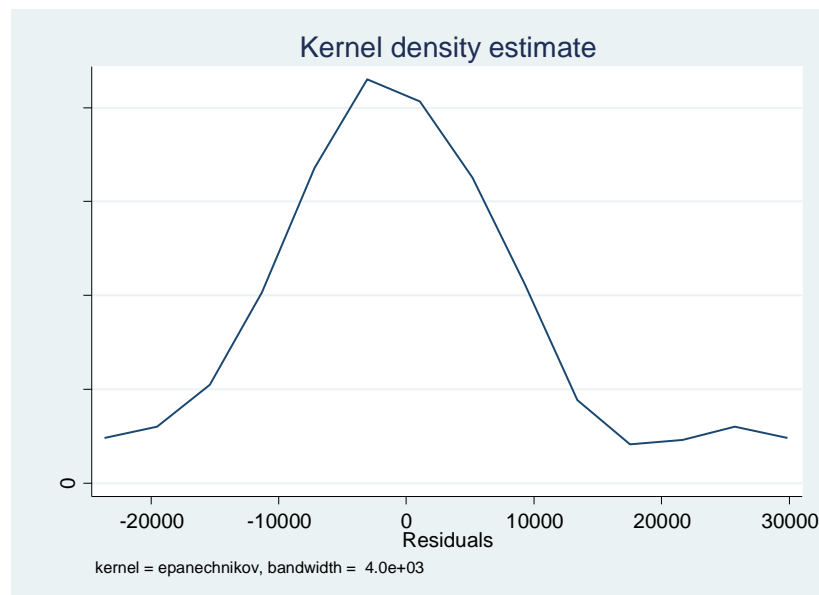


Figure 6. Normal distribution of residues

It is also possible to determine the normal distribution of residues using the Shapiro-Wilk W test, the Breusch-Godfrey LM test.

For example, when we issue a `swilk` residue **command in the Stata application**, the following table appears in the main window (Figure 6):

Instead, the $y = 0.83x + 16376.87$ model and model parameters compiled through the Stata program have statistical significance based on the results of the F test and T test. However, when we analyzed the model parameters under the Gaus-Markov terms, we were sure that some aspects of it did not meet the requirements. That is, in the structured model, there is a tendency to ghettoskadast. This means that we need to revise the model because it violates the terms of Gaus-Markov. To do this, we need to increase the number of observations or change the model appearance to a curved regression equation by making it linear, or look for the optimal variant of the model in a more different way.