set-up promotions. The company seeks hot topics to increase exposure, and broaden the publicity audience.

Conclusion. In summary, the new regulations on small and micro loans have further strengthened the financial support for small and micro enterprises to reduce the burden and restore the development of work, and promote the era of comprehensive rural revitalization. This is ultimately inseparable from the financial support. In the face of the introduction of the new regulations, Zhaoqing Rural Commercial Bank, as the head of the rural financial institutions should be a good policy of the "second hand", tamping down the institutional foundation, good use of the policy strategy, good conductor carrier, the introduction of a distinctive local characteristics of the policy, to pick up the mission to play, to carry out the rural revitalization of the political mission and the responsibility of the times.

Bibliography. *1. Just now, the new 37th microfinance rules are here! [EB/OL]. (2022-04-08) https://mp.weixin.qq.com/s/UyHTE-vkA4R-sL7-Yxdo3Q [2022-05-09]. 2. Li Jinling, MouXiaowei. Study on Financing Dilemma of Rural Small and Micro Enterprises and Its Countermeasures in Jilin Province under the Background of Rural Revitalization Strategy [J]. 2021(2020-5):74-80. 3. XuXiaoming, Hu Hui. Comprehensively Promoting Rural Revitalization in Farmers' Loan Practice and Thinking[J]. Journal of Agricultural Banking, 2021. 4. Liu Bank, Wu Frost, Huang Kaili. Research on the Development of Farmers' Loan Business in the Context of Rural Revitalization[J]. Modern Finance Journal, 2020(10):6.*

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THE INFLUENCE OF GDP AND ENERGY PRICE LEVEL ON ENERGY DEMAND

Resume. *Energy is the driving force of industrial development, and the growth of modern economy cannot be separated from a solid industrial foundation. Energy is therefore vital to economic growth. Therefore, the study of the influencing factors of energy demand is conducive to preventing energy crisis and maintaining long-term stable economic growth. Taking OECD countries as examples, this paper studies the effects of real GDP and energy price index on energy demand through multiple linear regression. It is found that both real GDP and energy price level have a significant impact on energy demand, and energy demand has a positive correlation with real GDP, but a significant negative correlation with price level.*

Key words. *Energy Demand Index, Real GDP, Energy price level, Multiple linear regression.*

Introduction. OECD countries mainly include a number of developed countries in the world, whose economic development level and energy demand account for a very large share of the world. Therefore, it is representative to study the impact of energy demand in OECD countries. In this paper, the data of 23 years of energy demand index (Y), real GDP index (X1) and energy price index (X2) of OECD countries are taken as variables, and the multiple linear regression model of Stata18.0 is used for empirical analysis. In order to make the data more stable and significant in the model regression, the logarithm of the three variables Y, X1 and X2 was first taken as ln Y, lnX1 and lnX2, and then the empirical analysis was carried out, while the variables after logarithm were taken did not affect the economic relationship between them.

Empirical analysis. *Stationarity test.* The classical regression model is based on stationary data variables, while time series data are mostly non-stationary. Therefore, it is necessary to perform the unit root test on the data first. In this paper, the ADF test method is used to test ln Y, lnX1 and lnX2, and it is found that all three data are non-stationary. Therefore, after the first-order difference of the three variables, the unit root test is performed for Δln Y, ΔlnX1 and ΔlnX2. The results are shown in Table 1 below:

Table 1 - Results of unit root test

	Test statistic	Dickey–Fuller critical value		
		1%	5%	10%
ΔlnY	-3.607	-4.380	-3.600	-3.240
ΔlnX1	-3.605	-4.380	-3.600	-3.240
ΔlnX2	-4.363	-4.380	-3.600	-3.240

As can be seen from Table 1, the statistical values of the unit root test Δln Y, ΔlnX1 and ΔlnX2 all fall within the confidence interval of 1%-5%, which can reject the null hypothesis of the existence of unit root. Therefore, Δln Y, ΔlnX1 and ΔlnX2 are of the same order and can be carried out the next co-integration test.

Cointegration test. The main reason for cointegration test is to determine whether there is a long-term stable relationship between two or more time series variables, to avoid false regression, to meet the needs of economic theory and empirical research and other reasons. In this paper, the co-integration test method of Johansen was adopted to test the cointegration of variables. The results are shown in Table 2 below:

Table 2 - Results of Johansen cointegration test

Rank	Trace statistic	Critical value 5%
0	109.2354	34.55
1	24.3047	18.17
2	0.5679*	3.74

As can be seen from the test results in Table 2, when rank=0 and 1, the Trace statistic is greater than the statistical value corresponding to 5% of the Critical value. When rank=2, Trace statistic = 0.5679, which is less than the Critical value of 5% (3.74). Therefore, it can be considered that there are two cointegration relationships among variables ln Y, lnX1 and lnX2.

Construct regression model. After determining the co-integration relationship between variables, the multiple regression model can be constructed as lnYi=α+βlnX1i+γlnX2i. Where α is the intercept term, β and γ are the correlation coefficients of lnX1 and lnX2 respectively, and i represents the year i.

Multicollinearity test. Multicollinearity means that there is a high degree of linear correlation between the independent variables in a multiple linear regression model. This may lead to the instability of the estimated regression coefficient and the deterioration of the predictive power of the model. Therefore, multicollinearity test of variables is required. In this paper, variance inflation factor (VIF) test method is adopted, and the test results are shown in Table 3:

Table 3 - Variance inflation factor

	VIF	1/VIF
lnX2	1.697	0.589
lnX1	1.697	0.589
Mean VIF	1.697	.

According to the test results of variance inflation factor in Table 3 above, the VIF of lnX1 and lnX2 is 1.697, which is far less than 10. Therefore, there is no serious multicollinearity problem between the variables lnX1 and lnX2.

Heteroscedasticity test. Heteroscedasticity means that in the regression model, the variance of the error term is not a constant, but changes with the value of the independent variable. This may lead to problems such as the estimation of the regression coefficient is no longer valid, that is, the standard error of the estimation is inaccurate. In this paper, the White test method is used to test, and the results are Prob>chi2 = 0.2944. Therefore, the original construction of homoscedasticity cannot be rejected, that is, there is no heteroscedasticity.

Autocorrelation test. Autocorrelation refers to the correlation between adjacent observations in time series data; In multiple linear regression, if the residual autocorrelation exists, it may cause the standard error of similar estimates

to be inaccurate and the model's prediction ability to decline. In this paper, the Durbin-Watson test is used for testing, and the value of DW statistic is 0.8078457, which is close to 0 but far away from 2, so it is considered that there is an autocorrelation problem.

FGLS estimates. After checking the existence of autocorrelation in the model, this paper uses FGLS estimation of CO method to modify the model autocorrelation and then regression. Finally, reasonable and accurate model estimation results are obtained as shown in Table 4:

Table 4 - FGLS regression results

lnY	Coef	St.Err.	t-value
lnX1	1.018***	0.037	27.35
lnX2	-0.342***	0.034	-10.07
Constant	1.504***	0.14	10.77

* p<0.1, ** p<0.05, *** p<0.01

Conclusion. According to the results of FGLS regression, the real GDP index is positively correlated with the energy demand index, and the correlation coefficient is 1.018, that is, with the rapid economic growth, the demand for energy will also increase. The energy price index is negatively correlated with the energy demand index, the correlation coefficient is -0.342, that is, with the rise of energy prices, the demand for energy will decrease. Therefore, in order to maintain sustained and stable economic growth, we should actively reserve energy when the economy is weak or energy prices are low, and use reserve energy when the economy is overheated or energy prices are high to lower the cost of energy use. This countercyclical approach reduces the cost of energy use while ensuring the sustainability of energy supply in the process of economic development.

Bibliography. *1. Deng Zhiru, Fan Decheng. Research on Influencing factors of energy demand in China [J]. Statistics and Information Forum,2010, 25(02):65-68. 2. Li Hong, Wang Shuai. Factors affecting implied energy consumption and intensity in China from the perspective of demand side [J]. Resources Science,2019, 43(09):1728-1742. 3.GuanHua, Zhao Liming. Analysis on influencing factors of regional energy demand based on Cointegration theory [J]. Economics and Management, 20.*