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The Fiscal Policy of China's Economic Kinetic Energy Conversion

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Abstract: After a long period of rapid economic growth, China has grown to become the second largest economy in the world. The internal and external environment facing the new era of economic kinetic energy conversion has undergone profound changes. The inherent economic development model is facing unprecedented risks and challenges. How to crack down on the current difficulties and smoothly realize the continuous conversion of new and old kinetic energy of our economy so as to continuously promote the development and improvement of Socialism with Chinese Characteristics and achieve long-term peace and stability in the modernized countries? This is the question of the times and the responsibility of history. In order to classify and examine changes in the impact of several key fiscal expenditure changes on GDP, such as education expenditure, science and technology expenditures, social security and employment expenditures, and energy conservation and environmental protection expenditure, this paper analyzes the dynamic impact of fiscal expenditure on economic growth by constructing a VAR model. Research shows that the interaction between various fiscal expenditures, CPI, M2, and GDP is significant; as the number of periods increases, the contribution of fiscal expenditure to GDP basically increases. Under the framework of the modern fiscal system, the adjustment of China's fiscal policy should be based on changes in the economic environment and the situation. While strengthening demand management, it should focus on supply management and structural adjustment, and strengthen the coordination of fiscal and monetary policies so as to increase the overall effect of macro-control, strengthen the authority and effectiveness of macro-control measures to promote sustainable and healthy economic development.

Keywords: Fiscal Policy, Old and New Kinetic Energy, Kinetic Energy Conversion

1. Introduction

China's economic restructuring and economic development have been for 40 years. At present, Chinese economy is facing a crucial moment in which new and old kinetic energy continue to switch. The driving forces of investment and exports on the economy continue to weaken, the prices of labor, land, and other factors continue to rise, the environmental and resource constraints continue to increase. China is facing a new and profound economic and social reform. In the face of development practices and experiences, in the face of comprehensive strategic planning for deepening reforms, in the face of a series of new contradictions and problems, how can we successfully realize the transformation of the new and old kinetic energy of China's economy and continue to promote the development and perfection of socialism with Chinese characteristics, to achieve long-term peace and stability in modern countries? This is a topic of research with an era of significance. Since the 18th National Party Congress, General Secretary Xi Jin-ping has made major judgments on the new normal of economic development and has identified nine major features of the new normal economic development. Afterwards, he proposed the socio-economic reform guided by the five major development concepts, insisted on striving for progress in the general tone of the work and continued to promote social and economic development. [1] [2] The transformation of new and old economic kinetic energy is the strategic choice under the new normal of China's economy. So in this sense, kinetic energy

conversion is the innovation of national governance, the innovation of socialist political economy with Chinese characteristics, also the correct and profound judgment of the central government on China's economic development stage; Continuously promoting the implementation of the transformation strategy of old and new kinetic energy is not only an internal requirement of the socialist ideology with Chinese characteristics in the new era of Xi Jin-ping, but also an important guarantee for the continuous improvement of global governance, economic transition, and people's living standards. In this process, the government should play its due role as a "visible hand" to regulate and control the economy. In particular, it must use fiscal policy as an effective means of macro-control.

Fiscal policy is a complete policy system consisting of tax policy, expenditure policy, budget policy, investment and financing policy, and national debt policy. As an important means of national macroeconomic regulation and control, as a "visible hand," it has always played an important role in China's economic development, and has played an important role in promoting the conversion of new and old economic energy in China and adjusting economic cycle fluctuations. Therefore, how fiscal policy promotes the transformation of the economy's new and old kinetic energy has always been an important issue in the study of economics. With the continuous changes in the economic environment, China's fiscal policy has been in a dynamic adjustment process. For example, before the mid-1990s, the Chinese government implemented a moderately tight fiscal policy in response to inflation and some overheating in the economy at that time. In the late 1990s, China's economic situation had undergone major changes. There was a problem of insufficient effective demand and deflation. To expand domestic demand and stimulate economic growth, the Chinese government adjusted macroeconomic control policies and implemented positive fiscal policies. After 2003, the overall economic operation was in a rising cycle and there was a phenomenon of local overheating. Positive fiscal policy as a "counter-cyclical" macroeconomic policy has gradually faded out after achieving the policy goal of "expanding domestic demand and promoting economic growth." It has gradually transformed into a sound fiscal policy. The core of a prudent fiscal policy is "flexibility and moderation" and the sign is "double reduction", which means reducing fiscal deficits and reducing long-term construction of national debt. In 2008, the US subprime mortgage crisis led to a global economic crisis. In 2010, Europe suffered successive debt crisis. Faced with the complicated international economic situation, our government had once again initiated a proactive fiscal policy. The active fiscal policy had played an important role in maintaining growth and adjusting the structure. In November 2012, the party's report on the 18th National Congress also mentioned the improvement of the macro-control system and the acceleration of the reform of the fiscal and taxation system. The Third Plenary Session of the 18th CPC National Congress in November 2013 clearly stated that " We should improve the macro control system guided by the national development strategy and plans mainly through fiscal and monetary policies; institutionalize the formulation of macro control objectives and the implementation of policy measures, and enhance the coordination of fiscal, monetary, industrial and pricing policies. We will improve the discretionary monetary policy and ensure that macro control is more proactive, pertinent and coordinated." In 2016, China's "Thirteenth Five-Year Plan" also put forward new requirements for the government's macro regulation and control: innovate and improve macro-control, improve macro-control system, innovate macro-control methods, and enhance coordination of macro-control policies. From these plans and requirements, we can also observe that our government attaches great importance to the macro-control of fiscal policy. It is of great theoretical and practical significance to study how to better play the positive role of macroeconomic control policies such as fiscal policy in the context of the transformation of China's economic old and new kinetic energy.

2. The Evolution and Connotation of the Kinetic Energy Conversion Policy

On October 18, 2015, when General Secretary Xi Jin-ping accepted an interview with Reuters, he pointed out that "China's economic development has entered the new normal and is experiencing the pain of the transformation of old and new kinetic energy, but the fundamentals of the stable development of China's economy have not changed."Since then, "New and Old Kinetic Energy" began to appear in the speech of the state leaders and was repeatedly mentioned. The "Thirteenth Five-Year Plan" pointed out: "To expand the development of new space, enhance the development of new energy". In the 2016 government work report, there were three references to "new and old kinetic energy." There were two "new and old kinetic energy conversions" in the 2017 government work report. In January 2017, the State Council issued the first document for China to cultivate new kinetic energy and accelerate the conversion of old and new kinetic energy, namely, Guobanfa [2017] No. 4 document. The old and new kinetic energy appearing in official government language does not regulate the formal definition. However, from the government documents and leadership speeches issued, its connotation has been continuously enriched and improved.

General Secretary Xi Jin-ping has repeatedly mentioned three basic features of the new normal economy, including shifts in the rate of economic growth, the acceleration of economic structure, and the transformation of economic growth. Under the new normal, the key to the sustained, healthy and stable development of the Chinese economy is to find new momentum for economic growth. What is the new kinetic energy for China's economic growth? New technologies such as new technologies, new industries, new models, and the transformation and upgrading of old productive forces such as traditional industries are new dynamics of China's economic growth. Relative to the new

kinetic energy, traditional kinetic energy is also an important driving force for the Chinese economy. Traditional kinetic energy is mainly driven by factors and investment, relies excessively on resources, energy consumption, investment and exporting a large number of low-value-added labor-intensive products. The old extensive development mode represents the traditional kinetic energy of China's economic development, while stimulating the economy, it also brings a series of problems such as poor quality and poor efficiency. At present, simply relying on traditional kinetic energy can hardly guarantee medium-to-high growth in the economy and it is difficult to push the industry towards a medium-to-high level. China must speed up the cultivation of new momentum and hedge the decline of traditional kinetic energy with the development of new kinetic energy. However, the new kinetic energy takes some time to replace the traditional kinetic energy to complete the conversion, at the moment, it is still necessary to pay attention to prevent the traditional kinetic energy from decaying too quickly. This process is both a painful adjustment process and a hopeful upgrade process. In the process of kinetic energy transformation, the new kinetic energy and the traditional kinetic energy are not fragmented and alternative. While cultivating and developing new kinetic energy, we must also pay attention to transforming and upgrading the traditional kinetic energy so that it can rejuvenate its vitality and vitality. Economic development follows certain rules. Giving full play to the potential of traditional kinetic energy, economic development will encounter bottlenecks. At this time, it is necessary to tap new momentum for economic growth, break through existing difficulties, and realize the conversion of new and old economic energy.

In a nutshell, economic momentum is the element or mechanism that can promote sustainable and healthy economic development. The traditional kinetic energy of is driven by factors and investment. It is the old productivity based on resources and energy consumption, dependence on investment incentives, and exporting low value-added labor-intensive products. The new one is new productive forces such as new technologies, new industries, new models, and the transformation and upgrading of old productive forces such as traditional industries. The transformation of economic kinetic energy is the process of economic development, which is guided by technological innovation and scientific and technological progress, aims to develop the new productive forces such as new technologies, new industries, and new models, transform and upgrade the traditional industries and other old productive forces, so that provide a strong impetus for the development of the real economy and support the smooth transition of economic growth momentum. The transformation is an innovation of national governance, also the central government’s correct and profound judgment on the stage of China’s economic development. It is inevitable and feasible to successfully realize the transition between new and old kinetic energy. The transformation of economic old and new kinetic energy should be closely linked with the reform of the times. This process needs to adhere to "stability for progress," actively promote the supply-side structural reforms, and thoroughly implement the New Vision of Development of innovation, coordination, green, openness, and sharing. This process should give full play to the leading role of innovation, promote the rapid growth of new technologies and new industries so as to promote economic development through institutional innovations; vigorously support modern service industries and strategic emerging industries, actively promote supply-side structural reforms, and strive to create new momentum for economic growth. In the process, we must adhere to the combination of long-term and short-term, and the combination of supply-side and demand-side. The transformation of the new and old kinetic energy of China's economy is carried out against the backdrop of structural reforms on the supply side. This requires that, on the one hand, we must accelerate the elimination of backward production capacity and absorb excess production capacity, on the other hand, we must promote the transformation of traditional energy, especially the real economy. Under the background of the “three phases of superposition”, the main contradiction of China’s economy is the structural problems. There is a problem of structural surpluses and structural shortages coexisting, namely the oversupply of low-end products, the shortage of high-end products and public products. The potential demand for high-quality education, medical care, food, etc. is very high among the public. From the supply side, these suppressed needs can be stimulated. China does not have insufficient demands, but has insufficient demands for payment capacity. It should further adjust the structure of income distribution, improve the social security system, and increase the residents' ability to pay. In the process of the transformation of China's economy from old to new, it is necessary to emphasize supply as well as to focus on demand. It is necessary to give play to the decisive role of the market in allocating resources and to play the role of the government. It is necessary to emancipate and develop the productive forces and to focus on perfecting the relations of production.

3. The Relationship between the Effects of Different Fiscal Expenditure Policies on Economic Growth

3.1. Review

There are many previous studies on the effects of fiscal expenditure on the economy.Hu Kun and Chen Wei-ke(2004)[3] studied the impact of fiscal spending shocks on the economy by constructing a VAR model on the effectiveness of fiscal policies. Fu Yi-ping (2005)[4], Wu Hong-peng and Liu Lu (2007)[5] also used the VAR model to study the impact of financial expenditure on the economy. Wang Wen-fu (2010) [6] constructed a structural vector autoregressive (SVAR) model and analyzed the impact of fiscal expenditure on GDP, consumption, and investment. He believed that fiscal expenditure has a positive external effect, has a positive impact on economic growth, and has a

complementary effect on investment and consumption. hang Bin (2011) [7] used the VAR model of the impact of fiscal expenditure on the industrial structure, and found that short-term fiscal expenditure has a lagging positive effect on the change of industrial structure coefficient; In the long term, the impact of central government expenditure on the change of industrial structure coefficient is positive, while the impact of local fiscal expenditure is negative. Gao Ke-xiang and Xu Tao (2013) [8] constructed a structural vector autoregressive (SVAR) model and analyzed the impact of fiscal expenditure on GDP, prices, interest rates, consumption, and investment. He believed that fiscal expenditure has a weaker impact on GDP. Increasing fiscal spending will have a negative effect on real wages and the unemployment rate while crowding out private investment and consumption. Chu De-yin and Cui Li-li (2014)[9] constructed a nonlinear threshold SVAR model and found that the impact of fiscal policy in different periods has an asymmetric Keynesian effect. Wang Wen-fu (2015)[10] constructed a symbol-constrained SVAR model. He believed that short-term fiscal expenditure will squeeze out private investment, and that long-term fiscal expenditure will have a negative impact on actual output. Chen Shi-yi and Chen Deng-ke (2015)[11] studied that China's fiscal expenditure multiplier is about 0.64, and the fiscal spending multiplier during the economic downturn is about 1.3 times larger than during the economic boom. Lin Yong-qin and Deng Qun-zhao (2017) [12] adopted the provincial panel data of China and applied the spatial crossover vector autoregressive model to construct a spatial Granger causality test model of the relationship between fiscal expenditure and economic growth. The results showed that Granger causality between fiscal expenditure and economic growth is heterogeneous in different provinces. Dai Jin-ping and Liu Jin-cai (2017) [13] believed that there is a threshold effect of the optimal fiscal expenditure scale based on the inverted U shape of relationship between local government fiscal expenditure and the economic growth. Through the calculation of the optimal scale of fiscal expenditure in the eastern, central and western provinces, it was found that many provinces have exceeded or approach the optimal fiscal expenditure scale, and the marginal effect of fiscal expenditure on economic growth has weakened. Zhan Xin-yu and Wang Su-li (2017)[14] used the provincial panel data from 2000 to 2014 in China to analyze the quality effect of provincial fiscal expenditure structure on economic growth. The study found that the overall economic growth quality effect of fiscal productive expenditures and service expenditures is significantly positive, and consumer spending is significantly negative. Zhang Ming-hong, Lu Xiao-jun, and Zhang Zhi-yuan (2016)[15] used Barro's (1990) endogenous economic growth model to explore the effects of fiscal expenditure structure on employment from both theoretical and quantitative perspectives. The results showed that in the short term, the expenditures on science, education, culture and public health have a significant impact on employment, while the impact of social security expenditure is not significant. In the long run, both two have a significant role in promoting employment. Liu Xiao-dong (2016) [16] introduced and used a Singular Spectrum Analysis (SSA) method to analyze the economic growth rate, financial investment in science and technology, and financial education input in Jilin Province. The study found that Jilin Province's financial investment in science and technology has a 3.62-year cycle, and financial education investment has a 5.32-year cycle.

3.2. Research Methods

This paper mainly uses the vector auto regression (VAR) model to analyze the impact of several key fiscal expenditure changes on the dynamic impact of GDP, such as education expenditure, science and technology expenditure, social security and employment expenditures, energy conservation and environmental protection expenditure.

There are usually two models for studying the relationship between macroeconomic variables. In addition to the macroeconomic simulation model, there is a simplified equation. The VAR model is one of the simplified equations, which is based on the statistical properties of the data. It does not need to assume the exogenous and endogeny of the variable, and can process the historical data directly, thus improving the applicability of the model. Sims (1980) used the vector autoregressive model for the first time. He transformed the univariate autoregressive model into a multivariate time-series variable VAR model and constructed each endogenous variable in the system as a function of the lag value of all endogenous variables in the system. Afterwards, VAR models became more and more popular in economic analysis. The VAR model is formulated as: $y_t = A_1 y_{t-1} + \cdots + A_p y_{t-p} + \varepsilon_t, t = 1,2 \cdots T$. y_t is the k-dimensional endogenous variable vector,$p$is the lag order, and the number of samples is T. The k*k-dimensional matrix $A_1, \cdots A_p$are coefficient matrices to be estimated. ε_t is a k-dimensional perturbation vector that can be correlated for the same period, but is not related to its own lag value and is not related to the variable to the right of the equation.

3.3. Variable Selection and Data Sources

In order to further inspect changes in the impact of several key fiscal expenditure changes on GDP, such as education spending, science and technology expenditures, social security and employment expenditures, and energy conservation and environmental protection expenditures, this paper proposes to establish a VAR model for quantitative analysis, and to seek the dynamic impact of financial expenditure policies and other influencing factors on economic growth. This paper proposes to select 8 variables, namely GDP, Consumer Price Index (CPI), Money Supply ($M2$), Educational Expenditure (EE), Science and Technology Expenditure (STE), Social Security and Employment Expenditure (SEE), Energy conservation and Environmental protection Expenditure (EEE), Other Expenditure (OE). This article selects the data for the variable as the monthly data for 2007-2016. In 2007, the classification of government revenues and expenditures has underwent major changes, for example, energy conservation and environmental protection expenditure was newly established expenditure subjects in

this reform. In order to maintain the consistency of the caliber, the data has been selected since 2007.The data used in this paper is mainly obtained from the data released by China Economic Net and China Statistical Yearbook. In order to eliminate the heteroskedasticity of the variable data, the data is subjected to logarithmic processing.

3.4. The Establishment and Test of VAR Model

This paper proposes to formulate the VAR model matrix formulas for GDP, CPI, M2, EE, STE, SEE, EEE and OE as follows:

$$\begin{bmatrix} LNGDP_t \\ LNCPI_t \\ LNM2_t \\ LNEE_t \\ LNSTE_t \\ LNSEE_t \\ LNEEE_t \\ LNOE_t \end{bmatrix} = \begin{bmatrix} \alpha_{10} \\ \alpha_{20} \\ \alpha_{30} \\ \alpha_{40} \\ \alpha_{50} \\ \alpha_{60} \\ \alpha_{70} \\ \alpha_{80} \end{bmatrix} + \begin{bmatrix} \alpha_{11} & \alpha_{12} & \alpha_{13} & \alpha_{14} & \alpha_{15} & \alpha_{16} & \alpha_{17} & \alpha_{18} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} & \alpha_{24} & \alpha_{25} & \alpha_{26} & \alpha_{27} & \alpha_{28} \\ \alpha_{31} & \alpha_{32} & \alpha_{33} & \alpha_{34} & \alpha_{35} & \alpha_{36} & \alpha_{37} & \alpha_{38} \\ \alpha_{41} & \alpha_{42} & \alpha_{43} & \alpha_{44} & \alpha_{45} & \alpha_{46} & \alpha_{47} & \alpha_{48} \\ \alpha_{51} & \alpha_{52} & \alpha_{53} & \alpha_{54} & \alpha_{55} & \alpha_{56} & \alpha_{57} & \alpha_{58} \\ \alpha_{61} & \alpha_{62} & \alpha_{63} & \alpha_{64} & \alpha_{65} & \alpha_{66} & \alpha_{67} & \alpha_{68} \\ \alpha_{71} & \alpha_{72} & \alpha_{73} & \alpha_{74} & \alpha_{75} & \alpha_{76} & \alpha_{77} & \alpha_{78} \\ \alpha_{81} & \alpha_{82} & \alpha_{83} & \alpha_{84} & \alpha_{85} & \alpha_{86} & \alpha_{87} & \alpha_{88} \end{bmatrix} \begin{bmatrix} LNGDP_{t-1} \\ LNCPI_{t-1} \\ LNM2_{t-1} \\ LNEE_{t-1} \\ LNSTE_{t-1} \\ LNSEE_{t-1} \\ LNEEE_{t-1} \\ LNOE_{t-1} \end{bmatrix}$$

$$+ \begin{bmatrix} \alpha_{19} & \alpha_{110} & \alpha_{111} & \alpha_{112} & \alpha_{113} & \alpha_{114} & \alpha_{115} & \alpha_{116} \\ \alpha_{29} & \alpha_{210} & \alpha_{211} & \alpha_{212} & \alpha_{213} & \alpha_{214} & \alpha_{215} & \alpha_{216} \\ \alpha_{39} & \alpha_{310} & \alpha_{311} & \alpha_{312} & \alpha_{313} & \alpha_{314} & \alpha_{315} & \alpha_{316} \\ \alpha_{49} & \alpha_{410} & \alpha_{411} & \alpha_{412} & \alpha_{413} & \alpha_{414} & \alpha_{415} & \alpha_{416} \\ \alpha_{59} & \alpha_{510} & \alpha_{511} & \alpha_{512} & \alpha_{513} & \alpha_{514} & \alpha_{515} & \alpha_{516} \\ \alpha_{69} & \alpha_{610} & \alpha_{611} & \alpha_{612} & \alpha_{613} & \alpha_{614} & \alpha_{615} & \alpha_{616} \\ \alpha_{79} & \alpha_{710} & \alpha_{711} & \alpha_{712} & \alpha_{713} & \alpha_{714} & \alpha_{715} & \alpha_{716} \\ \alpha_{89} & \alpha_{810} & \alpha_{811} & \alpha_{812} & \alpha_{813} & \alpha_{814} & \alpha_{815} & \alpha_{816} \end{bmatrix} \begin{bmatrix} LNGDP_{t-2} \\ LNCPI_{t-2} \\ LNM2_{t-2} \\ LNEE_{t-2} \\ LNSTE_{t-2} \\ LNSEE_{t-2} \\ LNEEE_{t-2} \\ LNOE_{t-2} \end{bmatrix} + \cdots \tag{1}$$

$$+ \begin{bmatrix} \alpha_{18n-7} & \alpha_{18n-6} & \alpha_{18n-5} & \alpha_{18n-4} & \alpha_{18n-3} & \alpha_{18n-2} & \alpha_{18n-1} & \alpha_{18n} \\ \alpha_{28n-7} & \alpha_{28n-6} & \alpha_{28n-5} & \alpha_{28n-4} & \alpha_{28n-3} & \alpha_{28n-2} & \alpha_{28n-1} & \alpha_{28n} \\ \alpha_{38n-7} & \alpha_{38n-6} & \alpha_{38n-5} & \alpha_{38n-4} & \alpha_{38n-3} & \alpha_{38n-2} & \alpha_{38n-1} & \alpha_{38n} \\ \alpha_{48n-7} & \alpha_{48n-6} & \alpha_{48n-5} & \alpha_{48n-4} & \alpha_{48n-3} & \alpha_{48n-2} & \alpha_{48n-1} & \alpha_{48n} \\ \alpha_{58n-7} & \alpha_{58n-6} & \alpha_{58n-5} & \alpha_{58n-4} & \alpha_{58n-3} & \alpha_{58n-2} & \alpha_{58n-1} & \alpha_{58n} \\ \alpha_{68n-7} & \alpha_{68n-6} & \alpha_{68n-5} & \alpha_{68n-4} & \alpha_{68n-3} & \alpha_{68n-2} & \alpha_{68n-1} & \alpha_{68n} \\ \alpha_{78n-7} & \alpha_{78n-6} & \alpha_{78n-5} & \alpha_{78n-4} & \alpha_{78n-3} & \alpha_{78n-2} & \alpha_{78n-1} & \alpha_{78n} \\ \alpha_{88n-7} & \alpha_{88n-6} & \alpha_{88n-5} & \alpha_{88n-4} & \alpha_{88n-3} & \alpha_{88n-2} & \alpha_{88n-1} & \alpha_{88n} \end{bmatrix} \begin{bmatrix} LNGDP_{t-n} \\ LNCPI_{t-n} \\ LNM2_{t-n} \\ LNEE_{t-n} \\ LNSTE_{t-n} \\ LNSEE_{t-n} \\ LNEEE_{t-n} \\ LNOE_{t-n} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \\ \varepsilon_{6t} \\ \varepsilon_{7t} \\ \varepsilon_{8t} \end{bmatrix}$$

3.4.1. Test of Stationarity of Model Variables

The VAR model requires that each variable has a stationarity, and when the variable is unstable, the data needs to be processed differentially. After the ADF test of the variables in the VAR model, it is found that each variable is not stable at a significant level of 5%, and that each variable is stable after its second-order difference.

3.4.2. Selection of Optimal Lag Order

When determining the optimal lag order of the VAR model, generally reference is made to the AIC criterion, the SC criterion, or the HQ criterion. The specific method is to determine the optimal lag order according to its minimum value. According to formula (1), combined with the sample data of the 120th period of this section, the VAR model lag phase selection results as shown in Table 1 are obtained. The results show that according to the AIC criterion and the HQ criterion, the second-order lag are less than the first-order lag, and according to the SC criterion, both two are close. Therefore, combining the above several cases, the optimal lag order of the model is finally obtained to be second-order.

Table 1. *The Choice of Lag Order of VAR Model.*

Lag	LogL	LR	FPE	AIC	SC	HQ
0	318.1167	NA	7.20e-13	-5.256215	-5.068372	-5.179945
1	1054.384	1360.223	8.13e-18	-16.65058	-14.95999*	-15.96415
2	1184.879	223.3890*	2.67e-18*	-17.77761*	-14.58428	-16.48102*

Note: * indicates optimal lag order selection under different standards.

3.4.3. Model Stability Test

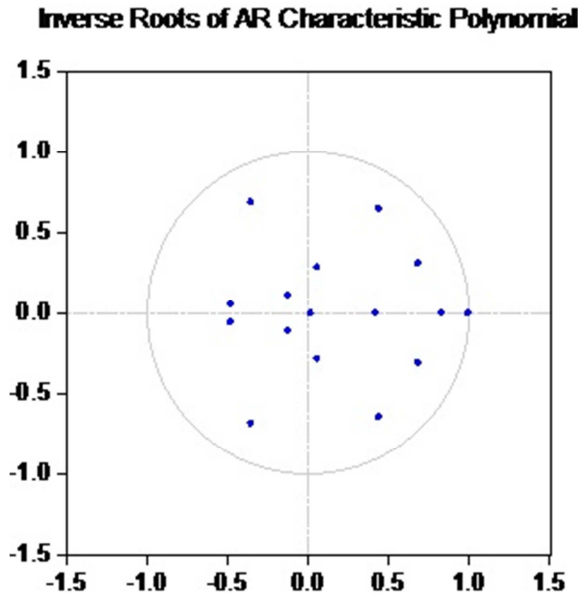

Figure 1. *The unit circle of the inverse eigenvalue of the AR eigenvalue.*

Checking whether the VAR model is stable is the premise of judging whether the model can perform impulse response analysis and variance decomposition. We tested the stability of VAR model, according to formula (1), the reciprocals of all the eigenmodes of the model are less than 1, that is, these points all fall within the unit circle (see Figure 1). The VAR model is stable.

3.4.4. Cointegration Test of Model Variables

Since the variable sequence of the established VAR model is not a stationary time series but a second-order stationary sequence, judging whether there is a cointegration relationship among the variables in the VAR model is a basic premise for establishing a VAR model. According to Table 2 and Table 3, at a statistically significant level of 5%, Trace Test shows that there are at least 7 cointegration relationships among the model variables, and Maximum Eigenvalue Test shows that there are at least 7 cointegration relationships among the model variables. Therefore, regardless of the Trace Test or Maximum Eigenvalue Test, there is a cointegration relationship among the model variables, which is consistent with the basic assumptions of establishing a VAR model.

Table 2. *Cointegration Relation Tables of Variables (Trace Test).*

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.760803	458.5417	159.5297	0.0000
At most 1 *	0.503886	291.1772	125.6154	0.0000
At most 2 *	0.457659	209.1660	95.75366	0.0000
At most 3 *	0.313768	137.5782	69.81889	0.0000
At most 4 *	0.285188	93.52311	47.85613	0.0000
At most 5 *	0.214931	54.24200	29.79707	0.0000
At most 6 *	0.165692	25.92985	15.49471	0.0010
At most 7 *	0.039662	4.734963	3.841466	0.0295

Note: Trace Test shows that there are 8 cointegration relationships at the 5% significance level;
* Indicates rejection of the original hypothesis at the 5% level of significance.

Table 3. *Cointegration relation tables of variables (Maximum Eigenvalue Test).*

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.760803	167.3646	52.36261	0.0000
At most 1 *	0.503886	82.01118	46.23142	0.0000
At most 2 *	0.457659	71.58776	40.07757	0.0000
At most 3 *	0.313768	44.05509	33.87687	0.0022
At most 4 *	0.285188	39.28112	27.58434	0.0010
At most 5 *	0.214931	28.31215	21.13162	0.0041
At most 6 *	0.165692	21.19489	14.26460	0.0034
At most 7 *	0.039662	4.734963	3.841466	0.0295

Note: Maximum Eigenvalue Test shows that there are 8 cointegration relationships at the 5% significance level;* Indicates rejection of the original hypothesis at the 5% level of significance.

Using EViews 9.0 software for regression estimation, the output of the VAR model is obtained. Eight regression equations can be obtained from the VAR model. The test statistic of the VAR model shows that the equation has good goodness of fit. The R^2 of the 8 regression equations are0.990585, 0.994333, 0.999575, 0.682943, 0.785030, 0.855487, 0.840089, 0.869796. It shows that the interaction between various fiscal expenditures, *CPI, M2* and *GDP* is significant. The 8 regression equations are expressed in matrix form as follows:

$$\begin{bmatrix} LNGDP \\ LNCPI \\ LNM2 \\ LNEE \\ LNSTE \\ LNSEE \\ LNEEE \\ LNOE \end{bmatrix} = \begin{bmatrix} 1.438 & 0.093 & 0.314 & -0.012 & -0.011 & 0.044 & -0.011 & -0.058 \\ 0.005 & 0.943 & 0.089 & 0.002 & 0.006 & -0.005 & -0.008 & 0.024 \\ -0.135 & -0.453 & 0.737 & 0.001 & -0.004 & -0.013 & 0.009 & 0 \\ 3.946 & -14.623 & 6.449 & -0.052 & -0.193 & 0.155 & -0.096 & -0.891 \\ 5.256 & -19.630 & 10.414 & -0.200 & -0.195 & 0.147 & -0.159 & -0.748 \\ -1.139 & -5.467 & 1.911 & -0.053 & -0.002 & 0.065 & 0.215 & -0.648 \\ 6.138 & -6.639 & 6.028 & -0.168 & -0.143 & -0.071 & 0.202 & -1.065 \\ 2.857 & -5.912 & 3.579 & -0.101 & -0.194 & 0.166 & -0.008 & -0.431 \end{bmatrix} \begin{bmatrix} LNGDP_{t-1} \\ LNCPI_{t-1} \\ LNM2_{t-1} \\ LNEE_{t-1} \\ LNSTE_{t-1} \\ LNSEE_{t-1} \\ LNEEE_{t-1} \\ LNOE_{t-1} \end{bmatrix}$$

$$+ \begin{bmatrix} -0.676 & 0.130 & -0.072 & 0.004 & -0.004 & -0.079 & 0.012 & 0.018 \\ 0.078 & -0.210 & -0.129 & 0.001 & -0.002 & 0.008 & -0.002 & 0.001 \\ 0.185 & 0.312 & 0.242 & -0.002 & -0.001 & 0.023 & -0.001 & -0.013 \\ 3.531 & 8.049 & -8.035 & -0.054 & -0.164 & 0.266 & 0.116 & -0.720 \\ 3.342 & 5.993 & -11.165 & -0.114 & 0.055 & 0.424 & 0.171 & -1.442 \\ 4.110 & 4.062 & -2.196 & -0.079 & -0.008 & 0.529 & 0.019 & -0.779 \\ 4.447 & -3.315 & -6.376 & -0.025 & -0.051 & 0.398 & 0.491 & -1.906 \\ 2.577 & -2.284 & -4.058 & -0.061 & -0.073 & 0.466 & 0.047 & -0.870 \end{bmatrix} \begin{bmatrix} LNGDP_{t-2} \\ LNCPI_{t-2} \\ LNM2_{t-2} \\ LNEE_{t-2} \\ LNSTE_{t-2} \\ LNSEE_{t-2} \\ LNEEE_{t-2} \\ LNOE_{t-2} \end{bmatrix}$$

$$+ \begin{bmatrix} -1.292 \\ 0.930 \\ 0.591 \\ -0.135 \\ 18.850 \\ -4.788 \\ 7.485 \\ 12.765 \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \\ \varepsilon_{6t} \\ \varepsilon_{7t} \\ \varepsilon_{8t} \end{bmatrix} \tag{2}$$

3.4.5. Granger Causality Test Between Model Variables

Granger causality is a significant test of the VAR model coefficient. Through the Granger Causality Test, it can be considered whether all the lags of a variable have an impact on the current value of other variables. Table 4 shows the test results for various fiscal expenditure variables and GDP.

Table 4. *Granger Causality Test results.*

Granger Causality	Result
CPI is the Granger cause of GDP	No
M2 is the Granger cause of GDP	Yes
EE is the Granger cause of GDP	No
STE is the Granger cause of GDP	No
SEE is the Granger cause of GDP	Yes
EEE is the Granger cause of GDP	No
OE is the Granger cause of GDP	No
GDP is the Granger cause of CPI	Yes
GDP is the Granger cause of M2	Yes
GDP is the Granger cause of EE	Yes
GDP is the Granger cause of STE	Yes
GDP is the Granger Cause of SEE	Yes
GDP is the Granger cause of EEE	Yes
GDP is the Granger Cause of OE	Yes

The above test results show that Money Supply ($M2$), Social Security and Employment Expenditure (SEE) and GDP constitute a Granger causal relationship. $GDP$is the Granger cause of other variables, $GDP$is the Granger cause of other variables,while Consumer Price Index (CPI), Educational Expenditure (EE), Science and Technology Expenditure (STE), Energy Conservation and Environmental Protection Expenditure (EEE), and Other Expenditures (OE) are not the Granger cause of GDP

3.5. Analysis of Dynamic Impact of Various Influencing Factors on Economic Growth

Using the VAR equation established above, give a positive impact on Money Supply ($M2$), Educational Expenditure (EE), Science and Technology Expenditure (STE), Social Security and Employment Expenditure (SEE), Energy Conservation and Environmental Protection Expenditure (EEE), and Other Expenditures (OE), respectively, and use the generalized pulse method to obtain the impulse response plot for economic growth (see Figure 2).

Response to Cholesky One S.D. Innovations ±2 S.E

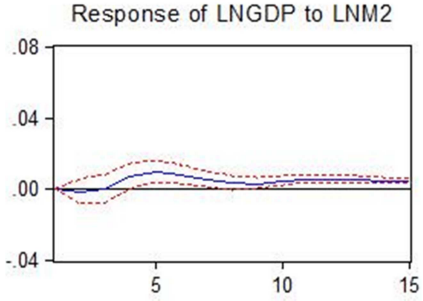

Figure 2 (a)

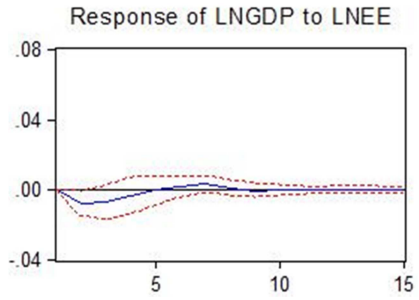

Figure 2 (b)

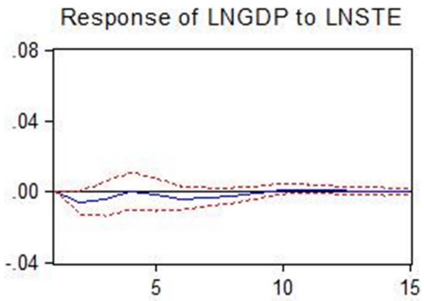

Figure 2 (c)

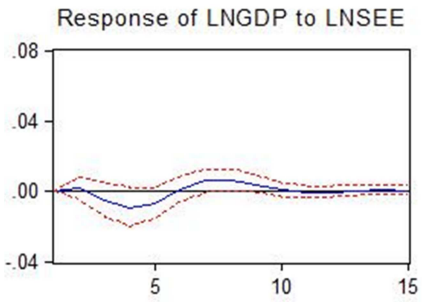

Figure 2 (d)

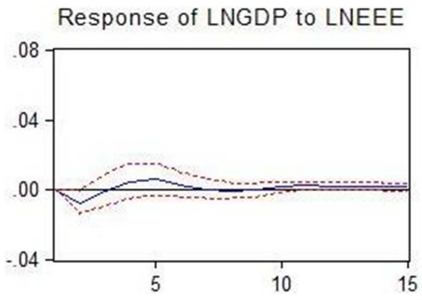

Figure 2 (e)

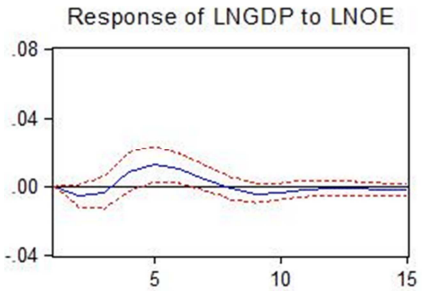

Figure 2 (f)

Figure 2. *(a-f) Impulse response function of M2 and various expenditures on GDP.*

From Figure 2(a), it can be seen that when a positive impact on the Money Supply ($M2$)occurs in the current period,GDPchanges in the opposite direction, with the largest negative value in the second period, and then turns upward. In the third period, it turns positive, and the fifth period is the largest. This shows that the effect of money supply on economic growth has been shown in the third month, showing positive effects in the 4th to 15th months.

From Figure 2(b), it can be seen that when a positive impact on Educational Expenditure (EE) occurs in this period, GDP changes in the opposite direction, with the largest negative value in the second period, and then it turns to rise. In the 6th period, it turnspositive, and the 7th period is the largest. This shows that the effect of educational expenditure on economic growth shows a positive effect in the 5th to 8th months, and then stabilizes.

From Figure 2(c), it can be seen that when a positive impact on Science and Technology Expenditure (STE) is given in the current period, GDP changes in the opposite direction, and in the second period there is a maximum negative value, and then it turns up. In the fifth period, it turns negative again. After the eighth period, the effects become stable. This shows that the effect of science and technology expenditures on economic growth is not immediately apparent, but rather has a greater volatility impact.

From Figure 2(d), it can be seen that when a positive impact on Social Security and Employment Expenditure (SEE) occurs in the current period,GDP reaches a maximum negative value in the fourth period, and then begins to rebound in the sixth. In the 6th period, it turns positive, and the 7th and 8th periods are the largest. This shows that the promotion effect of social security and employment expenditure on economic growth is not immediately apparent, but shows a greater effect in the 7th to 9th months, and then tends to be stable.

From Figure 2(e), it can be seen that when a positive impact on Energy Conservation and Environmental Protection Expenditure (EEE) occurs in the current period, GDP reaches a maximum negative value in the second period, and then begins to rebound.In the third period, it turns positive, and the 4th and 5th periods are the largest. This shows that the effect of energy conservation and environmental protection expenditure on economic growth is not immediately apparent, but rather shows a larger effect in the 4th to 6th months and then stabilizes.

From Figure 2(f), it can be seen that when a positive impact on other expenditures (OE) occurs in the current period, GDP changes in the opposite direction, the largest negative value occurs in the second period, and then it goes up. In the third period, it turns positive, and the fifth period is the largest. This shows that the effect of other expenditures on economic growth is not immediately apparent. It has been the most effective in the 4th to 7th months and has stabilized since then.

3.6. Variance Decomposition

Variance decomposition in the VAR model is used to analyze the contribution of structural shocks that affect endogenous variables. In this model, variance decomposition can be used to examine the contribution of various influencing factors to economic growth. In Table 5, the horizontal axis

indicates the lag order (months), and the vertical axis indicates the degree of contribution (%).

Table 5. *VAR model Decomposition results Unit:%.*

Period	S.E.	LNGDP	LNCPI	LNM2	LNEE	LNSTE	LNSEE	LNEEE	LNOE
1	0.035162	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.056848	92.24994	0.895618	0.135543	2.246088	1.382766	0.040772	1.905641	1.143633
3	0.068075	90.68470	1.868692	0.109361	2.758323	1.404272	0.706228	1.355242	1.113176
4	0.071815	86.31373	2.500770	0.886218	2.760594	1.270985	2.409517	1.555719	2.302466
5	0.074205	80.98845	2.468079	2.405017	2.597009	1.311401	3.235293	1.955901	5.038848
6	0.076290	78.85942	2.394081	3.126979	2.507521	1.582954	3.061044	1.926853	6.541151
7	0.077756	77.71133	2.732333	3.344482	2.526606	1.792637	3.445493	1.854916	6.592205
8	0.078452	76.81910	3.105108	3.401869	2.485454	1.916781	3.910335	1.848283	6.513067
9	0.078774	76.22207	3.252001	3.466092	2.478102	1.925021	4.043702	1.840123	6.772891
10	0.078990	75.81045	3.298634	3.689798	2.476670	1.922833	4.022487	1.845625	6.933503

Variance decomposition results show that: With the increase in the number of periods, the contribution of various fiscal expenditures to GDP has basically risen. The effect of various types of fiscal expenditure has started to appear from the second period. Among them, education expenditure has a greater contribution to GDP in the 3rd and 4th periods, and has a sustained and positive impact in the coming years; Scientific and technical expenditure contributes a lot to GDP after the 7th and 8th periods, perhaps related to scientific and technological achievements requiring a certain period of cyclical conversion and application; The contribution of social security and employment expenditure to GDP has increased significantly since the 4th period; Energy conservation and environmental protection expenditure has a sustained and steady impact on GDP contribution from the second period; Other fiscal expenditures have gradually increased their contribution to GDP. In the tenth period, they contribute the most to GDP.

4. Conclusion Analysis and Policy Recommendations

After a long period of rapid economic growth, China has grown to become the second largest economy in the world. The internal and external environment facing the new era of economic kinetic energy conversion has undergone profound changes. The inherent economic development model is facing unprecedented risks and challenges. How to crack down on the current difficulties and smoothly realize the continuous conversion of new and old kinetic energy of our economy so as to continuously promote the development and improvement of Socialism with Chinese Characteristics and achieve long-term peace and stability in the modernized countries? This is the question of the times and the responsibility of history. The transformation is an innovation of national governance, also the central government's correct and profound judgment on the stage of China's economic development. It is inevitable and feasible to successfully realize the transition between new and old kinetic energy. In the process, we must adhere to the combination of long-term and short-term, and the combination of supply-side and demand-side. It is necessary to emphasize supply as well as to focus on demand. It is necessary to give full play to the decisive role of the market in the allocation of resources and to play the role of the government. We must not only liberate and develop the productive forces but also focus on improving the relations of production.

"Adhering to adapting to the major contradiction in China's economic development, improving macroeconomic regulation and control, making decisions toward discretion, taking problem-oriented strategies, and taking the promotion of supply-side structural reform as the main line of economic work." and "New and old kinetic energy conversion" are important parts of socialist economic thinking with Chinese Characteristics in the New Era of Xi Jin-ping. The Nineteenth Congress made an important proposition: Applying a New Vision of Development and Developing a Modernized Economy. In the context of the transition from a high-speed growth stage to a high-quality development stage in the Chinese economy, fiscal policy has been endowed with richer connotations and more important historical missions. In recent years, China has continuously strengthened and improved the control of fiscal policies, strengthened the mechanism for fiscal control, continued to improve the financial control system, and continuously improved the level of macroeconomic regulation and control, which has effectively promoted the sound and rapid economic and social development. The current orientation of China's fiscal macro-control policies should be to continue to improve the tools, goals, and implementation methods of fiscal policies, and further improve the efficiency and effectiveness of fiscal macro-control. Under the framework of the modern fiscal system, the adjustment of fiscal policy should be based on changes in the economic environment and the situation. While strengthening demand management, it should focus on supply management and structural adjustment, strengthen the coordination of fiscal and monetary policies so as to increase the overall effect of macro-control, and strengthen the authority and effectiveness of macro-control measures to promote sustainable and healthy economic development. Specifically speaking, fiscal policy regulation and control targets should focus on the combination of total volume adjustment and structural adjustment; fiscal policy regulation should focus on the combination of short-term and medium-term; fiscal policy regulation should focus on the

coordination of policy tools; fiscal policy adjustment should be based on changes in the economic situation toward discretion. The regulation of fiscal policy should follow the laws of market economy, with indirect regulation as the main, strengthen the coordination of policies and enhance the overall effect of macro-control.

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