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Analysis on the Driving Factors of China's Economic Growth

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Abstract

Investment, consumption and export play an indispensable role in stimulating economic growth. This paper uses the method of econometrics, selects China's data from 1990 to 2020, takes GDP as the dependent variable, social residents'consumption level, total investment in fixed assets, total import and export amount and R&D funds as the independent variables, uses Eviews to make correlation analysis, establishes a multiple linear regression model between the dependent variable and the four independent variables,analyzes the regression results, and then obtains the country's suggestions on promoting China's economic growth.

Keywords

China's Economy; Influencing Factors; Regression Model.

1. The Research Background and Significance

China's economic growth is showing a trend of rapid development, which has been reflected since the reform and opening up. Especially after 1978, the growth rate has reached more than 10% for 16 years. In 2010, China became the second largest economy in the world. In 2017, China's GDP grew significantly, reaching 6.9%, higher than the expected growth of 6.5%.In 2020, China's economic growth showed a trend of rapid development, which has been reflected since the reform and opening up. Especially after 1978, the growth rate has reached more than 10% for 16 years. In 2010, China became the second largest economy in the world. In 2017, China's GDP grew significantly, reaching 6.9%, higher than the expected growth of 6.5%.[1] General Secretary Xi Jinping pointed out at the national commendation meeting for the fight against the COVID-19 epidemic that China has become the first country to resume economic growth since the outbreak of the epidemic and holds the global leading power in the prevention, management and economic recovery of the epidemic. Many economists expect China's GDP to surpass that of the United States and become the world's largest economy within a decade.[2]However, the problems facing China's economic development cannot be ignored. Compared with the developed countries at the present stage, the level and level of China's economic development, especially the per capita income, still lags behind. The economic development has slowed down obviously. How to adapt to the new normal of China's economic development and promote common prosperity has become the main research topic of China's economic development at this stage. Based on the analysis of relevant data in recent 30 years, this paper explores the factors affecting China's economic development and puts forward relevant suggestions to promote China's economic growth.

2. Problems Faced

2.1. Insufficient National Consumption Capacity

At present, there are two obvious deficiencies in the structure of residents' consumption power in our country, namely, the ability of consumption demand and the ability of consumption satisfaction are particularly insufficient, which constitute the double restriction of residents' consumption power from the starting point and the end point of consumption power

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respectively. Insufficient consumer demand is mainly reflected in the aspects of too single consumer demand structure, too low level of consumer demand, too slow change of consumer demand upgrading and so on. There are two main reasons for this deficiency: First, Chinese residents have long advocated frugality, and residents are deeply influenced by traditional consumption culture.[3]Residents generally form the wrong idea of belittling consumption and taking consumption as a shame. They tend to consciously limit and imprison their own consumption demand and excessively restrain the growth and development of consumption demand; Secondly, China's national education and social education are not effective enough in guiding residents to establish scientific consumption concept, improving individual comprehensive humanistic quality, and further enriching and improving residents' consumption demand structure. As a result, the residents' consumption of daily necessities is more limited and they only pay attention to the satisfaction of living consumption demand, while the consumption expenditure used to meet the development consumption demand is obviously too low. Compared with the lack of satisfaction ability of consumption demand, Chinese residents' satisfaction ability of consumption is even more insufficient, which is manifested by the low satisfaction degree and low consumption validity of Chinese residents. This is reflected not only in the satisfaction of life consumption such as food safety issues, but also in the satisfaction of development consumption, for example, residents' satisfaction of consumption such as culture and education, medical and health care, tourism and leisure is generally low. Chinese consumers always pay more attention to production than consumption, pay more attention to purchase than satisfaction, and pay more attention to process than effect. Their lack of awareness of measuring and evaluating the effectiveness of consumption has led to a large number of ineffective, inefficient and negative effects of consumption. More importantly, they cannot form a positive feedback mechanism from consumption behavior to consumption interests and ultimately to consumption demand.

2.2. Scientific and Technological Innovation and Depth of Talent Cultivation

Great achievements have been made in the cultivation of scientific and technological innovation talents in our country. Great progress has been made in the number, quality, structure and mechanism of talents, but there are still some problems that affect the quality of talents training for scientific and technological innovation.[4]Mainly reflected in the following three aspects: First, the scale of scientific and technological innovation talents is relatively small. Compared with the large number of talents in our country, the proportion of scientific and technological innovation talents is seriously insufficient. Science and technology as the primary productive force, the society has a huge demand for scientific and technological innovation talents. We must quickly expand the ranks of scientific and technological innovation talents and improve their strategic position. However, at present, the number of scientific and technological innovation talents is obviously insufficient to meet the needs of the rapid development of society. Second, there is a shortage of high-level scientific and technological innovation talents. At present, there are many problems, such as fewer high-level talents, more versatile talents, less innovative talents and more inherited talents. There are very few talents who truly have the ability of scientific and technological innovation and can independently research and develop, and they cannot keep up with the current demand of social and economic development. These problems have seriously affected China's ability of sustainable development and national competitiveness. Third, the industry lacks research and development strength. At present, the research and development capability of China's high-tech industry is still relatively weak, and the weak links are very obvious. The research and development team of talent-oriented enterprises is still in its infancy, and the level of research and development talents is too low to meet the needs of independent research and development, resulting in a serious brain drain. The above are all the restricting factors of industrial research and development in our country at the present stage.

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3. Variable Selection

3.1. Explained Variable

3.1.1. Gross Domestic Product (GDP)

Gross domestic product (GDP) is the final outcome of the production activities of all resident units in the country over a period of time. It is an important indicator that reflects the overall economic performance of a country or region. In accounting, there are usually three different calculation methods, such as income method, expenditure method and production method.Whether the economy of a country or region is in the stage of growth or recession can be observed from the change of this figure.

3.2. Explanatory Variable

3.2.1. Consumption Level of Residents

The level of residents' consumption refers to the extent to which residents' subsistence and enjoyment needs are satisfied in the process of material and service consumption. Reflected in the quantity and quality of goods and services consumed. The importance of residents' consumption lies in its supporting role in the national economy and its decisive role in the national living standard. If residents do not spend or have no money to spend, they cannot benefit from economic growth. The country's economic growth will also become meaningless.

3.2.2. Total Investment in Fixed Assets

Investment in social fixed assets is the amount of fixed assets that are constructed and purchased in monetary form. The scale, speed, proportion and use of investment in fixed assets can be comprehensively reflected through such indicators. One of the important means of reproduction of social fixed assets is investment in fixed assets. The national economy can purchase advanced technology and equipment through the activities of building and purchasing fixed assets, establish new sectors, further adjust the economic structure and the geographical distribution of productivity, enhance economic strength, and provide favorable material conditions for improving people's lives. This is of vital importance to China's socialist modernization.

3.2.3. Total Export-import Volume

The promotion effect of import and export trade on economic growth is mainly manifested in the total value of import and export, the total amount of trade. Import and export trade is the only way to save production labor and improve economic efficiency. Through foreign trade, we can import our scarce commodities and export our supersaturated commodities to reduce labor costs and fill up the shortage of domestic supply. This indicator is an important indicator to measure the country's openness to the outside world and economic growth.

3.2.4. R&D Expenditure

R&D refers to the development of research and experiments. Specifically, it refers to systematic creative activities in the fields of science and technology, such as basic research, applied research and experimental development, in order to promote the progress of science and technology. Internationally, the scale and intensity of research and development activities are usually adopted to reflect a country's scientific and technological strength and core competitiveness. In theory, the more investment is made in the development of science and technology, the higher the production efficiency, the higher the added value of the products produced and the higher the competitiveness of the national economy and science and technology.

This paper explores the power source of China's economic growth by collecting a series of time series data on China's GDP, residents' consumption level, the whole society's investment in

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fixed assets, total import and export, and R&D expenditures from 1990 to 2020. The data structure is shown in Table 1:

Table 1. Data display

Time	GDP(billion yuan)	Consumption level of residents (yuan)	Investment in fixed assets of the whole society (billion yuan)	Total import and export (billion yuan)	R&D Expenditure (billion yuan)
1990	18872.87	831.1	4517	5560.12	——
1991	22005.63	916	5595	7225.75	——
1992	27194.53	1057	8080	9119.62	——
1993	35673.23	1332	13072	11271.02	196
1994	48637.45	1799	17042	20381.9	222
1995	61339.89	2329.4	20019	23499.94	348.69
1996	71813.63	2763	22974	24133.86	404.48
1997	79715.04	2974	24941	26967.24	509.16
1998	85195.51	3122	28406	26849.68	551.12
1999	90564.38	3340	29855	29896.23	678.91
2000	100280.14	3711.5	32918	39273.25	895.66
2001	110863.12	3967.8	37214	42183.62	1042.49
2002	121717.42	4269.5	43500	51378.15	1287.64
2003	137422.03	4555.3	53841	70483.45	1539.63
2004	161840.16	5071.1	66235	95539.09	1966.33
2005	187318.9	5687.9	80994	116921.77	2449.97
2006	219438.47	6318.9	97583	140974.74	3003.1
2007	270092.32	7453.7	118323	166924.07	3710.24
2008	319244.61	8504.5	144587	179921.47	4616.02
2009	348517.74	9248.5	181760	150648.06	5802.11
2010	412119.26	10575.2	218834	201722.34	7062.58
2011	487940.18	12668.1	238782	236401.95	8687
2012	538579.95	14073.7	281684	244160.21	10298.41
2013	592963.23	15586.2	329318	258168.89	11846.6
2014	643563.1	17220.3	373637	264241.77	13015.63
2015	688858.22	18857.2	405928	245502.93	14169.88
2016	746395.06	20800.6	434364	243386.46	15676.75
2017	832035.95	22968.5	461284	278099.24	17606.13
2018	919281.13	25244.8	488499	305008.13	19677.93
2019	986515.2	27504.1	513608	315627.32	22143.6
2020	1015986.2	27437.9	527270	322215.24	24393.11

4. Empirical Analysis

4.1. Random Set Form of Model

In order to verify the relationship between the above explained variables and the explained variables, we set the model as a quaternary linear regression model:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \mu i \quad (1)$$

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Among them:
Y represents gross domestic product
X1 represents residents' consumption level
X2 represents the investment in fixed assets of the whole society
X3 represents total import and export
X4 represents R&D expenditures

Table 2. OLS regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1110.079	5118.872	0.21686	0.8302
X1	17.70958	2.238671	7.910754	0
X2	0.255629	0.067335	3.796402	0.0009
X3	0.420288	0.037949	11.07508	0
X4	10.6812	2.00225	5.33462	0
R-squared	0.999692	Mean dependent var		368354
Adjusted R-squared	0.999639	S.D dependent var		318284
S.E. of regression	6048.839	Akaike info criterion		20.414
Sum squared resid	8.42E+08	Schwariz criterion		20.651
Log likelihood	-280.7897	Hannan-Quinn criter		20.486
F-statistic	18683.36	Durbin-Watson stat		0.6313
Prob(F-statistic)	0			

The estimated values of $\beta 0$ $\beta 1$ $\beta 2$ $\beta 3$ can be obtained from Table 2 as 17.70958, 0.255629, 0.420288 and 4 respectively. The values of T are 7.910754, 3.796402 and 11.075085.334623 respectively, and the corresponding values of P are 0, 0.00090 and 0 respectively, indicating that the model has passed the T test.

The F value of the model is 18683.36, and its corresponding P value is 0, which indicates that the model has passed the F test. The R^2 statistic is 0.999692, which shows that the equation can explain 99. 9692% change, the goodness of fit of the model is particularly good. Therefore, the equation can be obtained by rounding to four decimal places:

$$Y = 1110.0790+17.7096X1+0.2557\ X2+0.4203X3+10.6812X4+1110.0790 \quad (2)$$

When the year is 2018 and 2019 respectively, the corresponding data are substituted into the equation respectively. After testing, it is found that the obtained GDP is 91,147.341 billion yuan and 98,759.456 billion yuan, which is not much different from the actual GDP of 91,928.113 billion yuan and 98,651.52 billion yuan in 2018 and 2019, with error rates of 0.85% and 0.12% respectively.

4.2. Regression Analysis

From the constructed model, we can see that with the continuous improvement of China's economic construction system, the relevant indicators of GDP have shown an upward trend with a steady increase. Looking at the coefficients of relevant indicators, we can easily find that the consumption level of residents and R&D expenditure have a greater impact on the GDP.Therefore, it can be preliminarily considered that under the existing index system in this paper, the consumption level of residents and R&D expenditure are the more important influencing factors among the driving factors to promote China's economic growth. At the same

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time, the total investment in fixed assets and total import and export of the whole society have a positive impact on growth, which is in line with our expectations. According to the results of this model, it can be judged that with the continuous expansion of China's economic construction scale and the continuous improvement of infrastructure, the social and economic growth model has shifted from resources and investment to science and technology.[5]This coincides with the idea of High-quality economic development advocated by China at this stage. What is obviously different from western countries is that the higher proportion of China's income is the per capita deposit amount, so the potential of consumption to promote economic growth remains to be developed.

5. Related Suggestions

5.1. Improve the Social Security System and Promote Consumption

Consumption is the first driving force for economic growth, but the consumption rate of Chinese residents has always been relatively low or even worse than that of India.[6] In order to drive the growth of our residents' consumption, the fundamental thing is to improve per capita disposable income. It is necessary to allocate the increased GDP to the common people and let the common people dare to take out the money.

5.1.1. Promoting the Consumption of Rural Residents

One is to cultivate a new consumption structure. Compared with the consumption structure of urban residents, food expenditure accounts for a larger proportion of the consumption of rural residents, but the consumption level of durable goods is low, and the expenditure on the product structure of communications, education and entertainment is relatively small. Strengthening the construction of rural infrastructure can greatly improve the consumption environment of rural residents. Rural residents do not have to spend extra money to buy the needed goods in cities, and can meet the local consumption conditions. This will increase the consumption of electrical equipment and high-end products such as electronic products and automobiles, effectively cultivate a new level of consumption, drive the structural upgrading and promote the consumption of rural residents. The second is to improve the consumption environment of rural residents. Its main content is to develop the social security system for rural residents, which solves the residents' worries, improves the cultural integrity of rural residents, fundamentally changes the consumption concept of rural residents, increases the flexibility of consumption decision-making, and enhances their ability to guard against uncertain risks, thus changing their original cautious consumption behavior, reducing the intensity of habit formation, and making it easier to realize rational consumption.

5.1.2. Stimulating the Consumption of Urban Residents

One is to seek a stable economic policy. Clear signal orientation is easy for consumers to form reasonable estimates under stable policies. Correct decisions will increase consumers' confidence and residents' consumption may be more reasonable. Reasonable consumption can increase consumer confidence and further improve consumer awareness. Handling economic uncertainty can affect its sustainable consumption qualitatively. Second, we will continue to deepen and strengthen the reform of the medical and health care system and the pension system. Consumption accounts for a large proportion of the total consumption of the residents, and the continuous growth of urban residents' consumption is a powerful manifestation of the remarkable growth in residents' consumption. The establishment of a sound medical and old-age security system is an important driving force to reduce residents' prudent consumption habits.

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5.2. Increase the Proportion of Investment in Science and Technology, Cultivate High-quality Talents

Education is an industry that needs many infrastructure supports. Without sufficient economic strength, a country cannot maintain a good education level. [7] First of all, the state should increase its investment in education at an annual increasing rate. The investment in education should specify the sharing ratio between the central and local governments to promote the equity of educational resources in urban and rural areas. Secondly, we should pay attention to adjusting the proportion of education-related investment. Education funds should be allocated scientifically and reasonably. In the process, attention should be paid to the combination of China's local conditions to prevent the government from devoting the vast majority of education funds to higher education. Finally, the state should also encourage more enterprises and institutions to carry out different forms of training and education to improve relevant vocational education. It is very important for more comprehensive talents to pay attention to the ways and means of cultivating compound talents and broaden the communication channel between ordinary higher education and enterprise talents cultivation. [8] The government should actively promote the combination of universities and enterprises, and invest scientific and technological funds into scientific research in universities and technological innovation in enterprises.

6. Summary

In order to achieve High-quality economic development, China should rationally adjust its industrial structure and vigorously develop science and education to rejuvenate the country. At the same time, the government should pay attention to the fairness of wealth distribution and promote the construction of common prosperity. We will improve the social security system and strengthen the construction of public infrastructure. The measures taken simultaneously to stimulate the improvement of the residents' consumption level will promote the more stable development of our economy.

References

[1] Gao Fan. Exploring the password for China to create a miracle of economic development [J]. People's Forum, 2021(32):26-31.

[2] Su Xuanchang, Wu Jiajing, Yang Xiaodan. Analysis of China's Economic Growth History and Its Influencing Factors [J]. China Business Theory, 2021,(19):186-188.

[3] Zhang Rong, Zhang Guiwen. Analysis of the Factors Influencing China's Crossing the "Middle Income Trap" under the New Economic Normal and Exploration of Crossing Paths [J]. Economic Issues Exploration 2017(07):31-37.

[4] Mo Kai-wei. Digital technology is a new momentum to promote social, financial and economic development [J]. Journal of Hangzhou Institute of Financial Studies, 2020(12):47-50.

[5] Luo Zhen, Xu Haoxiang. Technological Change, Profit Margin and China's Economic Growth-Based on Marx's Economic Growth Model [J]. Journal of Guizhou University of Finance and Economics, 2021 (06):11-18.

[6] Li Cheng, Yu Haidong. Effects and Mechanism of Economic Policy Uncertainty on Household Consumption: Based on China Household Survey (CFPS) Data [J/OL]. Journal of Guangdong University of Finance and Economics, 2021(06):31-50 [2021-12-13].

[7] Xu xiuwen. analysis of China's economic growth constraints in the new era [J]. modern business, 2017 (33):188-189 .

[8] Geng Mao Cheng. Xi Jinping's important discussion on common prosperity in the new era [J/OL]. Theoretical construction: 1-7 [2021-12-13].