

China Central Area's Economic Growth Mechanism Analysis

ANALYSE DE LA VOIE DE CROISSANCE ECONOMIQUE DE LA REGION CENTRALE DE CHINE

Liu Ying¹ Wang Yang²

Abstract: Through the regression analysis of the related data collected from 1991 to 2005 in China different economic areas, this paper has indicated the China central area's economic growth mechanism. The result shows that consumption demand is the dominating factor driving the central area's economic growth, while the investment demand and the exporting oriented economy have relatively little effects.

Key words: central area's economic growth, consumption demand, investment demand, exporting oriented economy

Résumé: A travers l'analyse des données recueillies de 1991 à 2005 dans de différents domaines économiques de la Chine, cet article indique la voie de croissance économique de la région centrale chinoise. Le résultat montre que la demande de consommation est un facteur dominant qui pousse la croissance économique tandis que la demande d'investissement et l'économie d'exportation exercent des effets relativement petits.

Mots-Clés: croissance économique de la région centrale, demande de consommation, demande d'investissement, économie d'exportation

1. INTRODUCTION

According to the related economic theories, the economic growth of one area is mainly influenced by following factors: consumption effects, investments situation and the net export volume. In the formula calculating the GDP on the basis of measuring the expenditure, the GDP is measured by these factors, namely, consumption expenditure, investment expenditure and the net exporting volume. Which factor dominates the economic growth of central China? Through the regression analysis of the related data collected from 1991 to 2005, we get some meaningful results showing the real element affecting the economic growth in central China, Yangzi River delta and the Zhu River Delta. The author adopts the EViews 5.0 software as the main analyzing instrument. The result shows that

consumption demand is the dominating factor driving the central area's economic growth, while the investment demand and the exporting oriented economy have relatively little effects.

In the table1, we generate the conclusion that during the period between 1991 and 2005, consumption was responsible for 61.3% of the economic growth in central area, another 37.2% was originated from investment, and 1.1% was resulted from net exporting; in the Yangzi River Delta, the corresponding proportions were 49.4%、44.2%、6.2%; For Zhu River, the results were 50.1%、44.5%、6.3% respectively. Compared with the Yangzi River Delta and the Zhu River Delta, the consumption effects is obviously playing a larger role in the economic growth in central area, exceeding the former two deltas by 10%. Nevertheless, the contribution of investment and net exporting volume are evidently insignificant.

¹ Management School, Wuhan University of Technology, China.

² Management School, Wuhan University of Technology, China.

*Received 25 November 2006; accepted 1 January 2007

Suppose Y =GDP, Y_1 =Consumption, Y_2 =Investment, Y_3 =Net exporting volume,
Regression model can be listed as follows:

Central area

$$\ln Y = 0.722 + 0.613 \cdot \ln Y_1 + 0.372 \cdot \ln Y_2 + 0.011 \cdot \ln Y_3$$

(30.71) (46.41) (33.57) (7.05)

$R=1.000$, $F=353220.4$ Durbin—Watson=1.287

Yangzi River Delta

$$\ln Y = 0.902 + 0.491 \cdot \ln Y_1 + 0.442 \cdot \ln Y_2 + 0.062 \cdot \ln Y_3$$

(52.88) (38.20) (49.56) (13.83)

$R=1.000$, $F=270901.2$ Durbin—Watson=1.81

Zhu River Delta

$$\ln Y = 0.915 + 0.501 \cdot \ln Y_1 + 0.445 \cdot \ln Y_2 + 0.063 \cdot \ln Y_3$$

(27.50) (17.50) (18.95) (9.76)

$R=1.000$, $F=69929.9$ Durbin—Watson=0.916

Table1 Comparison of Different Factor's effects in Economic Growth Mechanism

	Consumption's effect%	Investment's effect%	Net exporting volume's effect%
Central area	61.3	37.2	1.1
Yangzi River Delta	49.2	44.2	6.2
Zhu River Delta	50.1	44.5	6.3

resources: <http://www.ce.cn/>;

The calculation is based on the fixed price of 1978.

2. THE TREND ANALYSIS OF CONSUMPTION GROWTH'S EFFECTS ON THE ECONOMIC GROWTH IN CENTRAL AREA

According to the data in table2, the growth rate of consumption in central area was relatively higher than the rest regions around the China before 1997, then the rate began to slow down afterward. However, the consumption rates have been climbing gradually year after year in Beijing centered economic area, Yangzi

river delta, Zhu river area and Shandong peninsula. Regardless of the data in 2005, the consumption growth rate in central area has always been lower than the Beijing centered economic area and Yangzi river delta, and lower than Zhu river area and Shandong peninsula more often than not. The year 2005 is a turning point to some extent. The consumption growth rate began to slump, the consumption level in China was stagnated on the whole. Whereas the economic growth was largely driven by consumption, the slump resulted in the clearly weak driven force. The growing rate of GDP in the period witnessed the trend demonstrated by conclusions above.

Table2 Consumption Growth Rates in Various Regions of China Unit:%

Year	Beijing centered economic area	Northeast area	Yangzi river delta	Zhu river area	Shandong peninsula	Central area	Western area	total
1991	14.77	15.34	15.88	17.36	13.26	9.61	13.80	15.67
1993	22.34	23.37	30.28	24.69	17.09	26.76	19.61	26.52
1997	28.92	20.11	28.18	31.04	31.21	29.43	25.44	25.52
2000	16.75	10.86	14.01	18.28	7.63	9.65	11.01	9.81
2005	14.46	9.60	16.28	16.07	17.86	16.34	15.71	11.86

Resources: China Economic Statistic data Base of People's Bank of China

3. INVESTMENT IN CENTRAL AREA HAS GREAT POTENTIAL TO DRIVE THE ECONOMIC GROWTH

Investment rate refers to the proportion of fixed capital in GDP which is calculated in expenditure measuring method. The rate could reflect the part of GDP used for investment. Investment has direct impact in promoting economic growth. A higher rate means the larger contribution to economic growth resulted from investment, and a low rate presumes that the future investment growth would have extreme potential to boost the economic growth. As table 3~6 shows, during 1990 to 2005, the investment rate peaked at 39.01% in 2005; between 1992 and 2005, compared with central area, the investment rates are higher in Beijing centered economic area、Yangzi river delta、and Shandong

peninsula in any specific year. In 1995, the rate of central area is lower than Beijing centered economic area、Yangzi river delta by 12.73% and 11.47% respectively, and in 2005, they are 8.8% and 9.54%. We can see that the gap is shrinking. Nevertheless, the distance between central area and western area is expanding. Since 1990, the gap between investment rates in central area and western area is around 2%. But the gap has been widening since 2001. Till 2005, the rate of western area has exceeded the central area by 10%. Nowadays, the western area has become the region topping the investment list, and the central area may bottom out the list with almost the lowest investment. Therefore, lack of investment may be a serious problem for future investment growth, at the same time, it shows great potential of investment growth in central area.

Table3 Proportions of Fixed Capital in GDP(calculated in expenditure measuring method) in Various Regions Unit:%

Region	Beijing centered economic area	Northeast area	Yangzi river delta	Zhu river area	Shandong peninsula	Central area	Western area
1990	31.03	23.86	26.36	27.11	27.30	20.68	23.03
1991	28.94	25.62	27.34	26.34	30.70	22.66	26.28
1992	32.35	26.84	31.32	33.25	34.52	24.92	29.55
1993	35.70	33.56	39.09	39.65	37.46	28.85	34.32
1994	37.44	32.73	39.79	38.68	32.27	29.79	34.04
1995	41.58	30.30	40.32	38.37	30.26	28.85	32.00
1996	42.61	29.04	41.25	34.37	30.15	29.67	31.02
1997	43.38	27.23	39.66	31.29	30.86	29.38	31.56
1998	45.35	28.69	39.75	33.48	32.77	31.09	35.93
1999	45.01	28.65	38.85	35.14	34.75	31.87	37.21
2000	43.83	29.26	38.36	32.87	37.47	32.50	38.37
2001	44.10	30.04	38.80	32.80	37.83	33.07	40.08
2002	44.43	31.11	40.46	33.07	40.39	34.26	43.11
2003	45.77	34.03	44.77	37.22	42.42	36.88	48.26
2004	46.72	38.29	46.14	39.03	45.40	38.97	49.92
2005	47.81	37.26	48.55	39.56	46.99	39.01	50.03

Resources: China Economic Statistic data Base of People's Bank of China,
Investment rate=Total Fixed Capital/GDP

Table4 Proportion of Inventory Growth in the Investment of Various Regions Unit:%

Region	Beijing centered economic area	Northeast area	Yangzi river delta	Zhu river area	Shandong peninsula	Central area	Western area
1992	14.59	10.34	13.00	8.28	13.07	11.91	9.54
1993	16.71	7.63	11.26	8.50	12.80	9.54	10.52
1994	15.48	6.70	10.63	8.05	14.57	9.36	9.24
1995	13.45	7.46	11.85	6.00	15.66	10.61	10.77
1996	9.61	8.32	10.48	7.33	16.71	10.04	9.12
1997	9.70	6.92	9.47	6.12	17.48	10.65	8.41
1998	9.23	6.76	9.38	5.06	15.58	10.62	7.26
1999	9.09	4.63	8.16	3.28	12.92	9.11	4.72
2000	7.20	3.12	7.39	3.23	11.70	8.00	3.35
2001	6.77	3.31	5.86	3.46	9.99	6.64	4.38
2002	5.86	3.85	4.56	2.24	6.43	5.59	3.05
2003	5.28	2.94	4.25	2.38	4.13	4.02	2.64
2004	5.48	3.76	4.68	2.66	3.82	4.94	3.28
2005	5.03	3.37	4.51	2.75	3.72	4.32	3.04

Resources: China Economic Statistic data Base of People's Bank of China

Besides fixed capital, the investment also covers the increase of inventory. In economic operation and circulation, the nature of inventory lies in providing additional reserves for production and circulation as preparation in advance. There is a proper amount for inventory to guarantee the continuity of production and circulation. If the inventory size exceeds the standard, redundancy may occur. Resources are left unused, generating a waste of wealth. Therefore, the proportion of inventory in investment can be an index measuring the investment impact. In central area, the increase of inventory proportion in investment stays at a middle level compared with other regions around China. The situation has been improving year after year. However, the extend of such improvement is not as significant as some other areas, such as Yangzi river delta, Zhu river delta and western area.

4. POTENTIAL OF CENTRAL AREA'S EXTROVERTED PATTERN IN PROMOTING THE ECONOMIC GROWTH

In light of the data in table 5, we can figure out that 70% of total exporting volume comes from Yangzi river delta and Zhu river delta, the exporting contribution of central and western areas bottom out the list. All these materials demonstrate that extroverted economic pattern has great potential for further growth.

Table5 Exporting Proportion of Various Regions around China Unit:%

Year	Beijing centered economic area	Yangzi river delta	Zhu river area	Shandong peninsula	Central area	Western area
1992	6.58	17.42	41.28	4.99	5.95	6.15
1993	5.66	18.03	43.39	4.87	5.71	5.80
1994	11.02	18.12	41.48	4.85	5.61	5.62
1995	11.55	20.46	38.02	5.48	5.64	5.84
1996	10.49	21.63	39.29	6.08	4.78	4.66
1997	9.90	21.47	40.78	6.00	4.62	4.93
1998	10.41	23.08	41.14	5.68	4.13	4.41
1999	9.93	25.64	39.85	5.94	3.77	3.92
2000	9.75	28.32	36.88	6.23	3.89	3.94
2001	9.48	29.86	35.86	6.81	3.77	3.37
2002	8.86	30.69	36.38	6.48	3.43	3.59
2003	8.48	34.04	34.88	6.06	3.34	3.68
2004	8.56	36.93	32.29	6.04	3.48	3.45

Resources: China Economic Statistic data Base of People's Bank of China

5. CONCLUSIONS

Generally speaking, the economic growth mechanism is

mainly driven by consumption in central area, while investment plays a relatively insignificant role and extroverted economic growth is weak. However, investment and extroverted economic have enormous potential for promoting the economic growth in central area.

REFERENCES

- Paul R. Krugman, Maurice Obstfeld. *International Economics Theory and Policy (Seventh Edition)*. Addison Wesley Longman,2005
- People's Bank of China. *China Economic Statistic*. Beijing: China Financial Publishing House,2006

THE AUTHORS

Liu Ying, Associate Professor, Management School, Wuhan University of Technology. Wuhan, Hubei, 430070, P.R. of China. E-mail:lyfox@public.wh.hb.cn

Wang Yang, Management School, Wuhan University of Technology. Wuhan, Hubei, 430070, P.R. of China.