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Analysis on China's Low Household Consumption[1]

ANALYSE SUR UNE CONSOMMATION DES MÉNAGES FAIBLE EN CHINE

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Abstract: Since the economic reform of China in the late 70s, China is going through a rapid economic development, however, the proportion of consumption in the national economy is declining over the past 30 years. In this paper, we first describe the current facts of China's falling consumption rate. Then we propose the factors that lead to this decline and divide them to two categories. One category consists of structural factors, which corresponds to the declining proportion of the disposable income in GDP. The other category consists of behavior factors, and they describe how much the consumption rate is affected by consumer behavior. The research proposed in this paper is based on fundamental statistical data, using time series analysis on Chinese economy as well as international and inter-provincial panel-data analysis. To study on this problem, our research is comprised of two steps. In the first step, we focus on the change of China's disposable income per GDP. In the second step, we study on the change of household consumption as percentage of disposable income.
Key words: Consumption Rate; Economic Structure; National Income Distribution

Résumé: Depuis la réforme économique à la fin des années 70, la Chine est en train de connaitre un développement économique rapide, cependant, la proportion de la consommation dans l'économie nationale est en déclin au cours des 30 dernières années. Dans cet article, nous décrivons d'abord les circonstances actuelles de la baisse du taux de la consommation de la Chine. Nous exposons ensuite des facteurs qui conduisent à ce déclin et les divisons en deux catégories. Une catégorie se compose des facteurs structurels, ce qui correspond à la proportion décroissante du revenu disponible dans le PIB. L'autre catégorie comprend des facteurs de comportement, et ils décrivent à quel point le taux de consommation est affecté par le comportement des consommateurs. La recherche proposée dans le présent article est basée sur des données statistiques fondamentales, en utilisant l'analyse des séries chronologiques sur l'économie chinoise et l'analyse des données de panel internationales et inter-provinciales. Afin d'étudier ce problème, notre recherche est composée de deux étapes. Dans la première étape, nous nous concentrons sur le changement du revenu disponible par unité de PIB de la Chine. Dans la deuxième étape, nous étudions le changement de la consommation des ménages en pourcentage du revenu disponible.
Mots clés: Taux de consommation; Structure économique; Distribution du revenu national

1. INTRODUCTION

Since the economy reform in China, the macroeconomic consumption has declined noticeably, especially in the last 20 years. It has been considered as one of ten major issues in China's economic structural imbalance. Specifically, China's macro-economic consumption rate declined from 62.1% in 1978 to 48.6% in 2008, while per household consumption rate dropped from 48.4% from 35.3%. The decline of the macro-economic consumption rate triggered a series of negative consequences. First, there lacks a domestic market for a large number of products made in China, thus they are confined to the oversea markets. As a result, China's economy becomes highly dependent on export. In 2008, the proportion of net

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export in GDP is up to 8.4%, and export percentage is as high as 41%. The fact that China heavily relies on overseas market to absorb overcapacity, partly leads to global imbalances. Second, inadequate consumption brings high domestic investment.

We demonstrate a run chart of household consumption and government consumption. We can draw a basic conclusion that the decline of China's consumption rate do exist in China's macro-economy. From figure 1 we can see, China's consumption is descending at a constant speed, falling from 48% in mid 1990s to 40% in 2008.

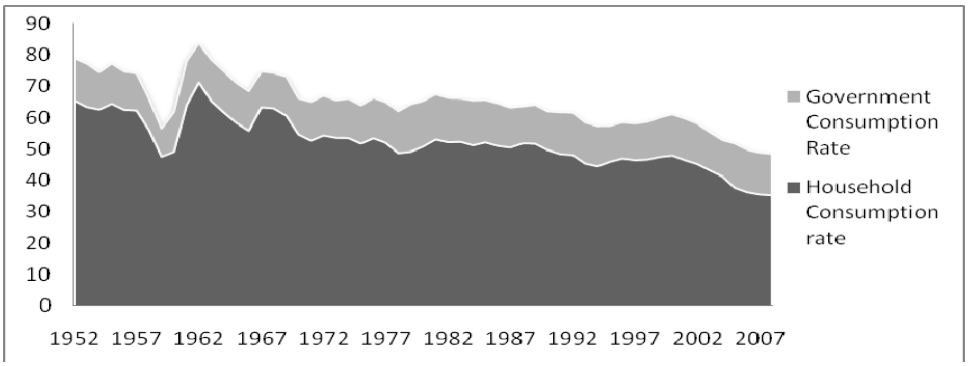

Figure 1: The Pattern of China's Consumptiion Rate (1952-2008)

Sources: China Statistical Yearbook

As a result, fix investment raises from 30% before the reform to 45% and then over 50% in recent years. High fixed investment and low efficiency is worrisome, even though the exact amount of China's fix investment is disputable. High investment directly causes overcapacity in some industries. The final consequence of consumption decline is that people could not receive any benefit brought by high economic growth. Finally, consumption decline prevents common families to receive benefit from economic growth.

Therefore, how to improve consumption rate turns to a major issue in China's economy. To begin to resolve this issue, we should find out why China's consumption rate is so low. The literature about this topic falls into two categories. One category is based on structure theory. They propose that the changes of socio-economic formation, such as the income per GDP, cause the disposable income per GDP of the residents to decline. Consumption is sustained by disposable income. Therefore, the consumption per GDP is descending. Another theory is behavior-method. Most scholars do the research based on traditional behavior theory, in accordance with method and model of consumption research for western developed countries.

To study on this problem, our research is comprised of two steps. In the first step, we focus on the change of China's disposable income per GDP. In the second step, we study on the change of household consumption as percentage of disposable income.

2. EXPLAINATION ON THE PERCENTAGE OF DISPOSABLE INCOME IN GDP

First, we analyze the change of disposable income per GDP. The rate of disposable income in GDP is a key factor to household consumption. There are two data resources for disposable income. One is UN data, and the other is China Statistical Year Book.

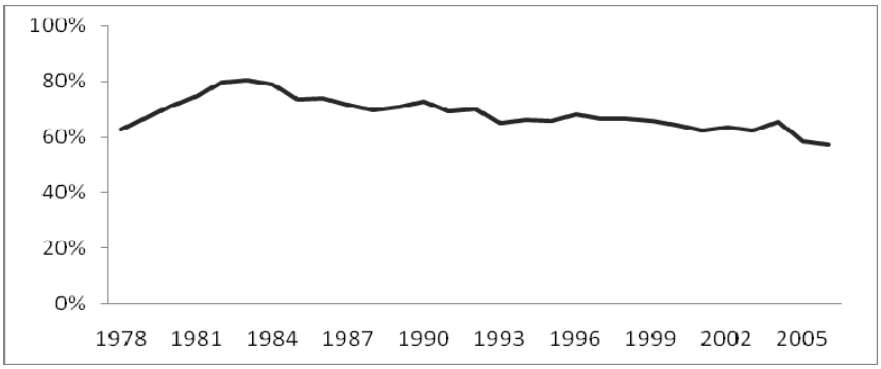

Figure 2: The Rate of Disposable Income in GDP (1978-2006)

Note: The time series of disposable income is based on flow of fund table, and complemented by household consumption survey.

Figure 2 shows the time series of the rate of disposable income in GDP. The time series of disposable income is based on flow of fund table, and complemented by household consumption survey. The figure also shows, the rate of China's disposable income in GDP is continued to fall since the reform and opening-up, which is in accordance with the policy that allocates more income to enterprise and individuals in the early period of reform. With the deepening of economic reform, disposable income rate is falling. The first decline phase is from 1983 to 1987, during which it has declined by 9%. The second decline phase is from 1990 to 1993, during which it has declined by 8%. The third decline phase is from 2004 to 2006, during which it has declined by 7%.

Is disposable income per GDP related to the speed, process and structure of economic development, or not? Figure 3 shows the relationship between disposable income and GDP. The fitting line shows a U-shaped relationship. Disposable income as percentage of GDP is relatively high at the early stage of economic development, declines at mid-term, and rises to a high level at later period.

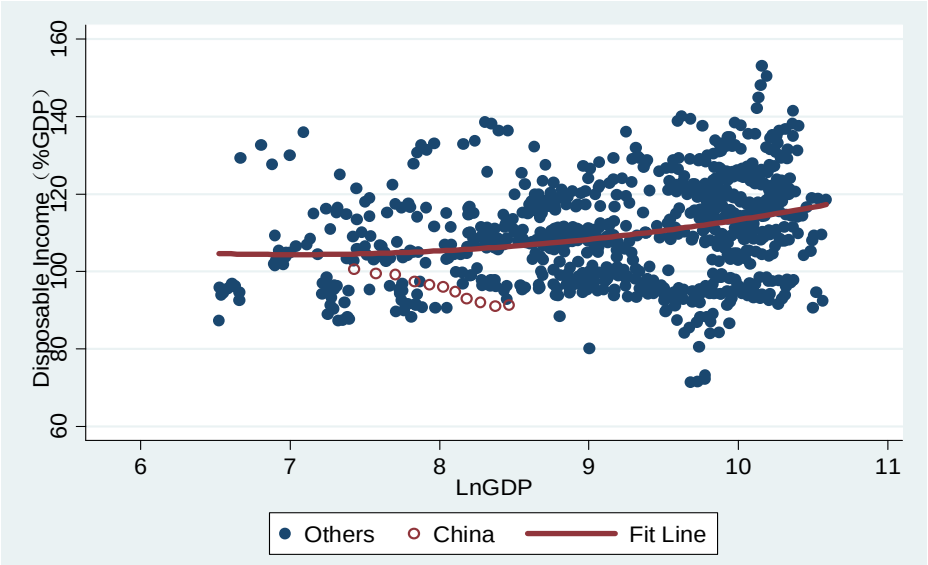

Figure 3: China's Disposable Income as Percentage of GDP in the World

Note: Disposable income is calculated from UN data second-distribution of income system

Then we discuss which factors can explain the proportion of disposable income in GDP. In our opinion, there are five factors. First is the proportion of labor income in GDP, since labor income is an important component in disposable income. Second is government tax, which has a negative relationship with disposable income. It is generally considered that regions with high tax always have high government expenditure, which may occupy the disposable income of residents. The third is development speed, our basic theory is that, in period of rapid economic development, return of capital is relatively higher, and capital income as percentage of GDP is higher. Therefore, labor income as percentage of disposable income and even GDP may decrease. The fourth is the share of tertiary industries. When keeping other condition constant, Industry or manufacturing industry as percentage of GDP is higher, large amount of income will become part of capital income. But capital income cannot be quickly converted into disposable income, so the share of disposable income is low. The fifth is degree of openness. We state that, the percentage of disposable income is relatively lower in countries with higher degree of openness, because generally foreign capital income is higher in countries with higher economic freedom and occupies disposable income of domestic citizens.

First of all, we provide a brief description on the data of disposable income we used in this paper. Our resource is national income accounting system from United Nation Data. We calculate two groups of disposable income of 37 countries from 1965 to 2004. The first group of disposable income has been described earlier. We subtract government income from national disposable income, and get disposable income of residents. The distinction of the data is it includes undistributed profits of enterprise, which may cause the result higher than real value. But we believe that it still can reflect the gap of each country. In order to make our regression result more robust, we calculate another group of disposable from allocation of primary income account. We add transfer payment to disposable income of residents, and subtract tax, finally get disposable income. Through Hausman test, we choose the method of panel data model with fix effects.

Next two tables are regression results we get from two different groups of disposable income. We find that, proportion of labor income in GDP is an important explanatory variable, with 1% significant level. GDP growth rate does not have a significant effect on disposable income. Degree of openness has a weak and unstable negative effect on disposable income, with 10% significant level. Degree of industrialization has a significant positive effect on disposable income, with 1% significant level. What's more, we can see a U-shaped relationship between GDP per capita and

disposable income. From fix effect term, we can see that China's disposable income share is obviously lower than other countries.

Table 1: Result of Cross-Country Regression on Disposable Income Rate

	Reg1	Reg2	Reg3	Reg4
Var	**Di(High)**	**Di(Low)**	**Di(High)**	**Di(Low)**
Labor Share			0.315***	1.181***
			(0.0898)	(0.0831)
GDP GR			-1.74	-0.052
			(0.0640)	(0.0630)
Industrialization			-0.396***	-0.24***
			(0.0634)	(0.0586)
Openness			1.76	-0.083***
			(0.0228)	(0.0209)
LnGDPPC	-32.06***	-54.72***		
	(9.352)	(10.20)		
LnGDPPC^2	1.848***	2.542***		
	(0.502)	(0.545)		
Constant	247.6***	349.7***	108.4***	22.83***
	(43.44)	(47.42)	(5.409)	(4.992)
Observation	581	690	535	514
R-Square	0.05	0.171	0.093	0.414

Table 2: Result of China's Cross-Province Regression on Disposable Income Rate

	Reg1	Reg2
Variable	**DI/GDP**	**DI/GDP**
Labor Share		0.684***
		(0.0934)
GDPGR		10.69*
		(6.019)
Industrialization		-0.0672**
		(0.0275)
Open		0.0252
		(0.0367)
Government Expenditure		0.233
		(0.185)
SOE		0.230***
		(0.0409)
LnGDP	-5.474***	
	(0.375)	
LnGDP^2		
Constant	102.6***	11.27***
	(4.005)	(5.648)
Observations	744	421
R-Square		0.246
No. of Province	29	29

The test can also be done in China's provincial data. We find that labor share is also a very important explanatory variable. Government expenditure has week effect on disposable income. GDP growth rate has positive effect on disposable income. Moreover, the state-owned enterprise share has positive impact, and degree of industrialization has negative impact. If disposable income is only explained by GDP per capita, they show a negative relationship. From fix-effect terms, we can see, Shanghai, Tianjin, Beijing, Liaoning and Jiangsu have low ratio of disposable income in GDP, while Guizhou, Sichuan, Guangxi and Fujian have high ratios of disposable income in GDP.

3. EXPLANATION ON THE PERCENTAGE OF CONSUMPTION IN DISPOSABLE INCOME

In this section, we discuss the ratio of household consumption in disposable income. Figure 4 shows the relationship between household consumption and disposable income from 1978 to 2007. We can see that the ratio of household consumption in disposable income has a big drop from 1978 to 1984, meanwhile, household saving is rising. From 1984

to 1989, the proportion of household consumption in disposable income tends to grow. Since 1990, the proportion remains stable. But since 2000, the proportion descends from 74% to 64%.

Figure 4: Pattern of China's Household Consumption as Percentage of Disposable Income (1978-2007)

Sources: National Yearbook, The time series of disposable income is based on flow of fund table, and complemented by household consumption survey

The proportion of household consumption in disposable income can be further decomposed into 8 parts. From figure 5 we can see that, in urban families, food expenditure share is declining obviously, drops from 49.35 in 1992 to 27.2% in 2007. Clothing expenditure share and resident expenditure share keep stable. And medical expenditure and entertainment expenditure share is rising.

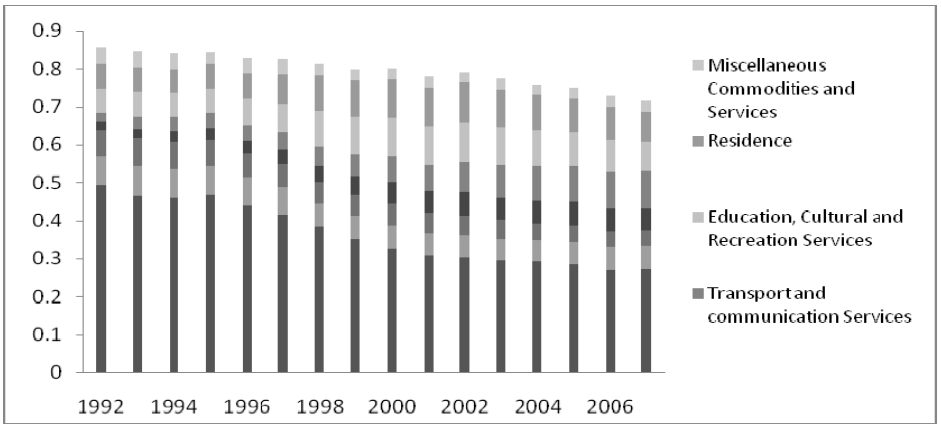

Figure 5: The Distribution of China's Urban Consumption (1992-2007)

Sources: China Statistical Yearbook

We can make international comparison on the proportion of household consumption in GDP. The data resource is United Nation Data. From the comparison we can see that, the proportion is holding without much fluctuation. The proportion of consumption in disposable income is not low in China, which is in average level in international comparison.

Figure 6: Consumption/Disposable Income in the World

Sources: United Nation Database, Disposable Income is calculated from the Secondary Income Distribution System

The test can also be done in China's provincial data. From the Figure 7, we can see that the proportion of each zone is of convergence in recent period. But the gap is apparent among provinces before 2004. Consumption rate is high in Northeast China, while it is low in the South. East and central parts of China are in average level.

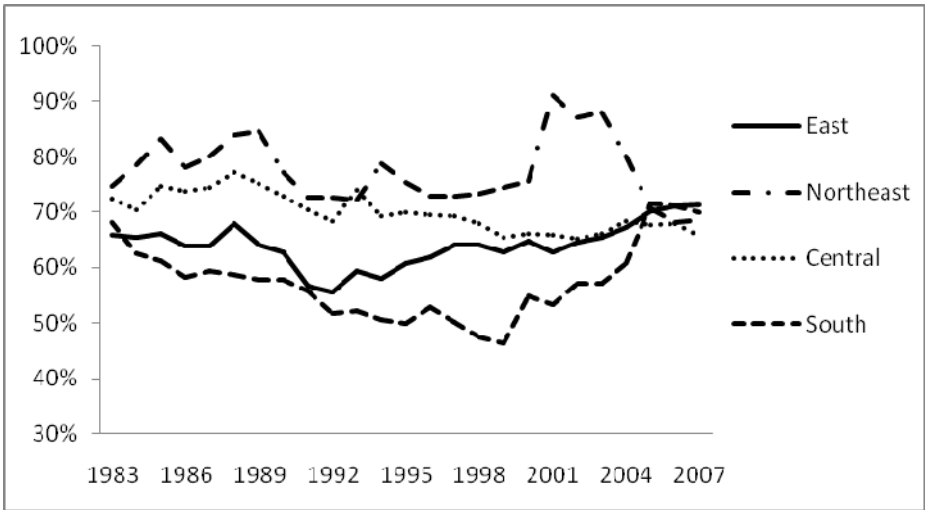

Figure 7: China's Reginal Consumption/Disposable Income (1978-2008)
Sources: China Statistical Yearbook

Theoretically, there are four factors may affect the proportion of household consumption in disposable income. The first factor is habit formation theory. Consumption is formed gradually. According to this theory, countries or distinct with high GDP growth rate always have low consumption rate. The second factor population structure. Countries or distinct with aging problem always have high consumption rate. But in China, as we mentioned in review, some scholars said, aging may cause the proportion declines, because young people are saving for supporting the elderly. The third factor is income gap. Some scholars point out that, there is a U-shaped relationship between income and marginal consumption. In summary, all these factors can cause consumption as percentage of disposable income decline.

According to those theories, we do regression among household consumption as percentage of disposable income, GDP per capita, welfare, financial deepening, degree of openness, aging, and state-owned enterprise share, based on international and provincial panel data. Through Hausman Test, we choose panel data and fix-effect regression model. Because GDP per capita and aging have high correlation with other variable, we eliminate these two variables and make regression again.

Table 3: Result of the Cross-Country Regression on C/Di

	Reg1	**Reg2**
Variable	**C/DI**	**C/DI**
LnGDPPC	-2.978***	
	(0.819)	
Welfare	-0.0593	0.108
	(0.0936)	(0.109)
M2	0.150***	0.0938**
	(0.0357)	(0.0399)
Openness	-0.0563	-0.149***
	(0.0360)	(0.0392)
GDPGR	0.0734	0.125
	(0.0749)	(0.0881)
Old	-0.121	-0.564*
	(0.304)	(0.305)
Constant	80.34***	63.81***
	(5.884)	(2.479)
Observations	218	233
R-Square	0.136	0.106
No. of province	20	20

Table 4: Result of The Cross-Province Regression on C/Di

	Reg1	Reg2	Reg3
VARIABLES	**hc_over_di2**	**hc_over_di2**	**hc_over_di2**
LnGDPPC	-2.444***		
	(0.566)		
Medical	0.245***	0.333**	0.102
	(0.0945)	(0.149)	(0.0899)
Open	-0.0737***	-0.0428*	-0.0828***
	(0.0192)	(0.0234)	(0.0194)
GDPGR	3.925	15.97***	4.330
	(3.785)	(6.096)	(3.841)
SOE	-0.188***	-0.103*	-0.0553**
	(0.0382)	(0.0604)	(0.0232)
Old		0.852	
		(0.579)	
Constant	89.04***	49.90***	66.78***
	(6.146)	(8.815)	(3.391)
Observations	605	328	605
R-squared	0.075	0.121	0.045
Number of province	29	29	29

From the results in table3 and table 4, we can see that, in international comparison, the explanatory variables have weak impact on household consumption as percentage of disposable income. GDP per capita has positive impact at 0.5% significant level. Financial deepening has negative impact at 0.5% significant level. Degree of openness has a weak, unstable and positive impact. The impact of welfare and GDP growth rate is not significant.

In provincial level, GDP per capita, degree of openness, state-owned enterprise share has negative impact on household consumption as percentage of disposable income at 5% significant level, while Health care has positive and significant impact. The impacts of aging and GDP growth rate are not significant.

4. CONCLUSION

In conclusion, the paper starts from the most basic statistical data. We first describe the current facts of China's falling consumption. We hold the opinion that basic facts cannot be interpreted by the change of statistical caliber or statistical error, on the other hand, the decline of consumption as percentage of GDP needs more persuasive economic interpretation. But current literature focuses on the effect of single variable too much, rather than comparison among different factors. Meanwhile, they do not emphasize international comparison.

We attribute the decline of consumption as percentage of GDP to the following two main factors: the first is structure theory, the decline of household disposable income as percentage of GDP; the second is behavior theory, a variety of changes in economic structure causes variation of household behavior, then causes variation of household saving rate, i.e., the change of consumption as share of household disposable income. In this paper, we analyze the change of household disposable as percentage of GDP and consumption as share of disposable income.

We find that, for the percentage of disposable income in GDP, proportion of labor income in GDP is an important explanatory variable. What's more, we can see a U-shaped relationship between GDP per capita and disposable income rate. From fix effect term, we can see that China's disposable income share is obviously lower than other countries.

For the percentage of consumption in disposable income, degree of openness, state-owned enterprise share has negative impact, while Health care has positive and significant impact.

According to our findings, we provide policy suggestions that, to increase China's consumption as percentage of GDP, that trying to increase household disposable income as percentage of GDP. Only by improving this percentage, we can quickly and effectively increase percentage of consumption in Chinese economy. How do we increase the percentage of consumption in GDP? We think that the effective way is not intervening the operation of labor market. The key point should be decreasing China's national tax share, increasing government expenditure facing citizens, and improving China's household disposable income share by government expenditure. After considering the special feature of China's public finance, i.e., central government control a large amount of state-owned property, which need to be reduced in long term, we suggest that, in the long-term, we should adopt higher public finance deficit to increase government expenditure, and try to increase household disposable income share.

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FIGURE LEGENDS

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