A REVIEW OF THE FISCAL STIMULUS PLAN TAKEN BY THE CHINESE GOVERNMENT IN 2008

By

GAO Feng

THESIS

Submitted to
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ABSTRACT

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The 4-trillion RMB fiscal stimulus plan carried out by the Chinese government in late 2008 is illustrated in this paper as regard to its background, sources and uses. A comparison between the 2008 stimulus and the previous stimulus initiated in 1998 by the Chinese government is drawn. Then the stimulus package was analytically approached by using IS-LM model. A simple regression method is also applied to check how much expectation links to growth. Some relevant data seem to indicate the preliminary effects of the 2008 stimulus package. The practices of Chinese government's stimulus plan could shed light on some important aspects of economic policy.

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I. INTRODUCTION

In the year 2007, the US subprime mortgage crisis began to spread from financial sector to real economy, from US to the rest of the world. With Lehman Brothers' collapse in September, 2008, the financial crisis reached a new high. Most of the macro-economic indicators continued to worsen. By then people's confidence in world economy's future was crashed heavily.

Before this sudden global plunge, China's economy was in good shape. Various indicators showed that the Chinese economy was experiencing expansion rather than recession, inflation rather than deflation in the first half of 2008.

However, the outside shock soon took its toll on China's economy. It was more and more evident that in a globalized economy, no country could thrive or survive alone. The impact of the made-in-America financial crisis was heavy and quick on China. In the years running up to the financial crisis, China's economy growth had become more relied on foreign trades. Export had been taking a bigger share in China's GDP since China joined WTO in 2001. In 2008, its foreign trade dependency was as high as about 60 % (Li Ping, 2010).

In late 2008, the shock on foreign trade was transmitted to other sectors of China's economy. Together with the previous tightening macroeconomic policies taken by the Chinese government, the outside shock hit China's economy as a second beat.

Faced with both external turmoil and internal difficulties, the Chinese government reacted quickly. In November 2008, Chinese government announced a massive stimulus plan of 4

trillion RMB ($ 586 billion at the then exchange rate) to boost aggregate demand, and more importantly, to revive people's confidence.

This paper is to examine the contents and effects of the massive stimulus policy of the Chinese government in encountering the 2008 global economic crisis. It will dig into the details of the robust fiscal policy and find out sources of this huge stimulus (i.e., where the government raises the fund) and the use of this huge fund (i.e., where the government spends the money), and most importantly, how it works.

Ten years before, in 1998, the Chinese government implemented a similar fiscal stimulus plan when suffering from the impacts of the Asian Financial Crisis. This paper also compares the current stimulus plan with the previous one, contrast the similarities and differences, and analyze the stimulus plans with IS-LM model and regression method.

So far, the 2008 stimulus policy has passed its official time frame of two years. With dusts and mists settling down, relevant data are becoming more and more available. I use these dada to examine and analyze the short-term boosting effect of this biggest-ever fiscal stimulus in China. By drawing a preliminary picture of the stimulus policy's effects, this paper also tries to evaluate the stimulus operation and shed light on some important aspects of economic policy.

Some major findings are that 1) the Chinese government appears having realized the usefulness of Keynesian economics and applied it in real economic regulations, especially when in recession, 2) for the current period in China fiscal stimulus might be more effective than monetary stimulus in terms of boosting demand, 3) the two fiscal stimulus plans since

China’s transition from a “planned economy” to a “market economy” both seemed to be effective in promoting aggregate demand and economic growth, at least in short term, 4)and people’s confidence seems to forerun economic growth, thereby when applying fiscal stimulus the Chinese government appears to have also used some tricks to boost people’s confidence.

II. THE BIGGEST EVER STIMULUS PLAN IN CHINA'S HISTORY: TRIGGER, SOURCES AND USES

1. Why is it?---a Keynesianism believer encounters an unprecedented global economic crisis

Because of a history of 4-dacade planned economy (from the foundation of the new China in 1949 to 1980s), China's economy has a strong gene of government intervention. When China's policy makers aim to transit China into a market economy, the pro-intervention Keynesianism has a natural appeal.

Furthermore, as the most populous country in the world, China needs a growth rate of at least 8%- 9% annually to absorb the 9-12 million Chinese that join the labor force each year (Wang Jingdong, 2009). Employment and social stability are the top concerns for the Chinese policy makers who are running such a big country.

With the issue of employment at its center, Keynesianism's logic originates from the theory of "effective demand". Its basic point is that social employment depends on effective demand, and government can boost the demand when a recession is caused by short of it.

Before the 2008 global financial crisis, due to the tightening macroeconomic polices since 2004 which aimed to curb the overheated economy, China's domestic growth had been witnessing a slow-down since late 2007. From 2007 to the first half of 2008, the central bank of China raised the reserve rate 15 times to a record high of 17.5%, and raised interest rate 6 times in a row.

Besides the internal cooling down, the external economic situation for China was suddenly getting worse in late 2008. The global financial crisis was eroding real economy with devastating force. Therefore, the shock on the real economy of America and other developed countries led to less demand for China's export and less Foreign Direct Investment (FDI) to China, as shown in Figure 1 and Figure 2.

Figure 1: Growth Rate of China's Export, % (Jul. ---Dec. 2008)

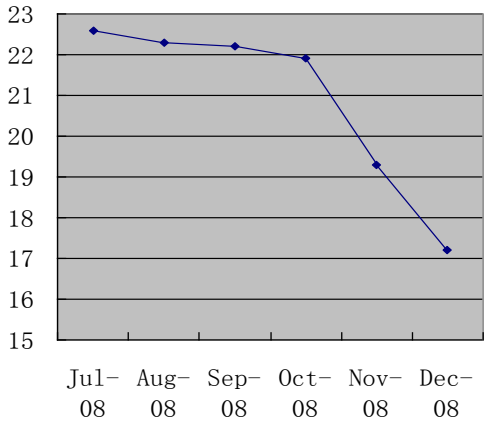
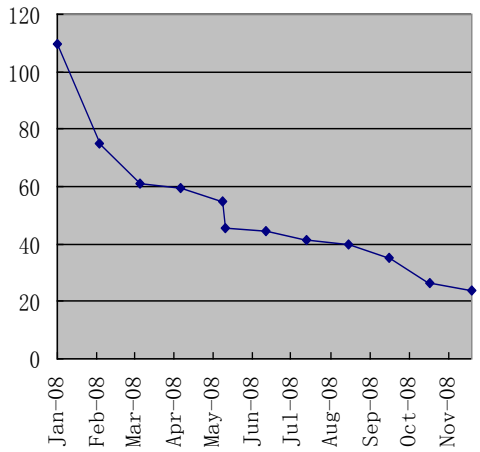


Figure 2: Growth Rate of FDI in China, % (Jan. ---Nov. 2008)



Source: National Bureau of Statistics, China

The two adverse factors, internal and external, overlapped and dragged the aggregate demand dramatically down. In the third quarter of 2008, Chinese economic growth decelerated to 9%, compared to the 13% annual growth rate in 2007 and 11.6% in 2006. China's stock prices plunged even more than that on Wall Street that same year (Figure 3). The property markets in major cities went into deep freeze, too (Figure 4). In November 2008, the World Bank revised its forecast for China's 2009 growth to 7.5 percent, down from an estimated 9.2 percent in June 2008.

Figure 3: Stock Market Performance

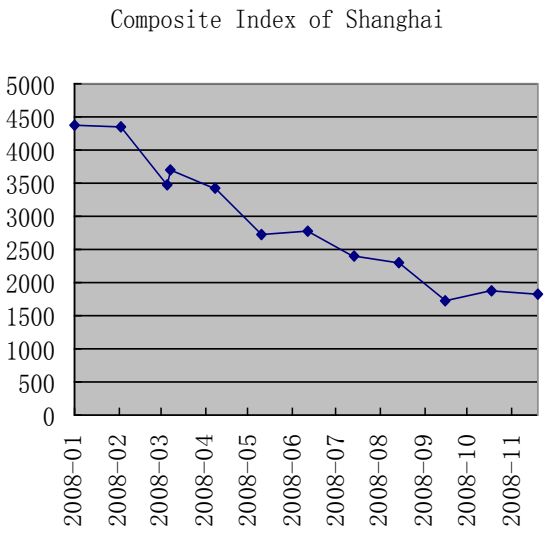
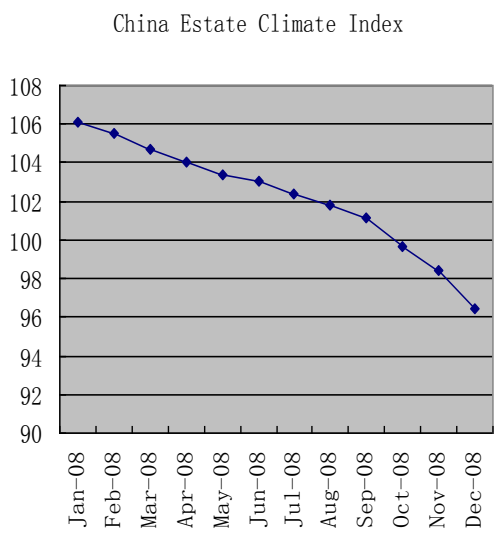


Figure 4: Property Market Performance



Source: National Bureau of Statistics, China

Entering the second half of 2008, the Chinese central bank sensed the seriousness of the downward pressure and began to loosen monetary policy. The interest rate was lowered successively 4 times for a total of about 2 percentage points, but major economic indicators like quarterly GDP growth rate did not seem to turn better, as illustrated in Figure 5 and Figure 6.

Figure 5: Weighted Average of Interbank Rate, %

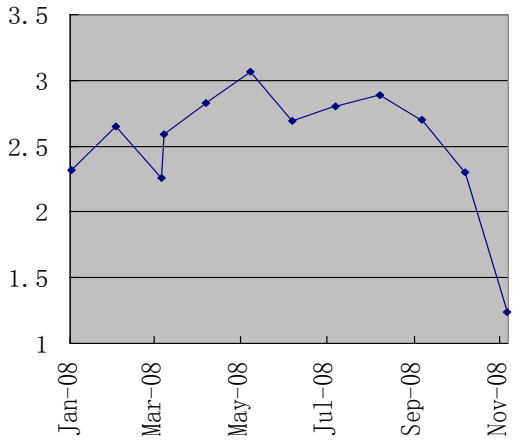
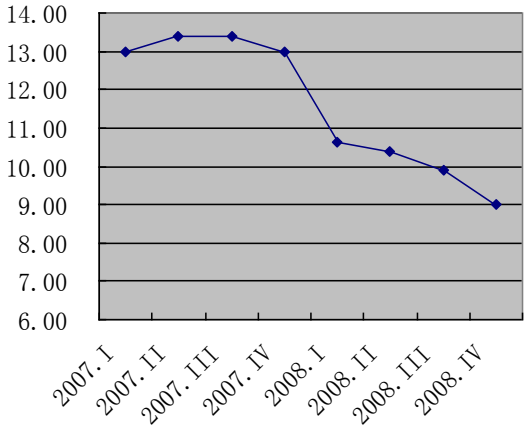


Figure 6: Real Economic Growth, %



Source: National Bureau of Statistics, China

Then it was deemed that monetary policy alone would not be effective or would not be effective quickly. Moreover, the lack of confidence might absorb much of the liquidity injection. In this situation, fiscal stimulus seemed to be a must for combating the demand-dragged economic downturn.

2. Where is it from?---money matters but confidence matters too

The 4-trillion-yuan stimulus represents about 15% of China's GDP in 2007, one-third of the fixed-asset investment of 2007 and two-thirds of the Chinese government's budget in 2008. The huge size of the pump-priming reflects the government's determination to boost its economy.

However, this huge number was not all about money. It turned out to be a soft number. As long as several months after the stimulus' announcement, how to fund this big stimulus was still not clear from official information. At long last, in March 2009 (four months after the stimulus announcement), the central government disclosed that it would only initiate 1.18 trillion RMB ($ 173 billion at then exchange rate) outlay, in a cross-three-year spectrum: 104 billion Yuan for 2008, 487.5 billion Yuan for 2009 and 588.5 billion Yuan for 2010. The rest of the money comes from an estimation of following investments by the local governments, commercial banks and other social resources. And the total amount of investments within two to three years is expected to be 4 trillion RMB. It seems like a joke, but it is exactly how the Chinese government conjured up the astronomical stimulus number.

Table 1: Sources of the 4-trillion Stimulus

	Sources	Amount (Bil RMB)	Proportion (%)
Initial central government expenditure	long-term debt	1180	29.5
	budget-stabilization fund		
	budget surplus from previous year		
Expenditures to be triggered by the central government's initiative	local government expenditures	2820	70.5
	policy-guided loans		
	company bonds		
	medium-term notes		
	commercial bank loans		
	social/private investments		

Source: National Development and Reform Commission, China

This "bluffing" strategy adopted by the government deserves scrutiny. The big head line of 4-trillion Yuan turned out to be both a fiscal and psychological stimulus. This shows the art of public policy in encountering an unprecedented crisis and panic: the government just makes a big promise and let the public know it is ready to do whatever is necessary, so there is no need to panic. In Section IV I will give more analysis in this regard.

3. Where it goes to? --- a multi-aspect stimulus plan goes beyond government expenditure

The stimulus plan outlined 10 general aspects: 1) accelerating the construction of public housing, 2) building more rural infrastructures such as large-scale irrigation and power grids,

3) expanding railways, highways and airports, 4)improving grassroots' health services and education services, 5)fighting environmental degradation and promoting energy-efficiency, 6) upgrading the economic structure and supporting research and development in technical innovation; 7) accelerating the rebuilding of earthquake-ravaged area in May 2008. 8) It also promises income-increase for urban and rural residents, tax relief, and higher direct subsidies to farmers and tax rebate for export-oriented industries. 9) Funds will also be used to encourage financial institutions to lend to infrastructure projects, small businesses, and potential home and car buyers. 10) In addition, a comprehensive reform of the corporate value-added-tax (VAT) system would be pushed forward. New VAT rules would allow companies to reduce expenditures on new machinery and other capital equipment.

Table 2: Breakdown of the Uses of the 4-trillion Stimulus

Investment	Amount (billion RMB)	Proportion (%)
Urban area low-income housing and other social welfares	400	10
Rural area development (infrastructure and welfare)	370	9.25
Railway, highway, airport, canal	1500	37.5
Education and health	150	3.75
Ecology engineering and environment improvement	210	5.25
Innovation, upgrading and restructuring of industries, including tax-cuts and tax rebates for some industries	370	9.25
Earthquake-hit area rebuilding	1000	25

Source: National Development and Reform Commission, China

As analyzed before, the 4-trillion-stimulus is a soft number; therefore the package breakdown

for each item can not be hard either. Regardless of this, from Table 2, it is clear that the major field of investment is infrastructure. It is argued by some economists that if a country's infrastructure is not complete, government investment in infrastructure could act as a "down payment" and attract other sources of investment to follow up, which may have a bottle-neck releasing effect in the long-run (Ahmed &. Miller, 2000; Lin, 2009). As a developing country, China's infrastructure system is far from complete or sufficient. Public investment on infrastructure might have a bigger effect in driving aggregate demand.

Besides, we can also see from the ten major aspects announced by the central government that the stimulus plan is not only about investment but also about consumption subsidies and export promotion via tax cuts. This demonstrates that the stimulus plan is a comprehensive approach that goes beyond government spending.

The sources and uses of the stimulus show that the Chinese government tries to minimize the impact of the global economic recession and maintain a vigorous economic growth through an all-over boosting of the demand side.

III. COMPARISION WITH THE 1998 FISCAL STIMULUS

1. The 1998 stimulus plan

A. Background

In early 1990s, after withstanding an international and domestic turmoil for socialism, the Chinese government realized the critical importance of freeing up its economy from the "planned model". Due to inexperience, in the reform and freeing-up process China's inflation reached a record high of 27.7% in 1994. Thereafter, the central government took various measures to curb inflation and cool down the economy. In 1997 China's economy realized a so-called "soft landing". The GDP growth rate fell from 13.5% in 1993 to 8.8% in 1997, about one percentage point drop each year. However, the momentum of slowing down did not hold when the year turned into 1998. In the first half of 1998, the GDP growth rate was further down to 7%. Moreover, the price index showed a trend of negative growth and a deflation seemed to be in the corner. Before 1990s, China's economy was marked by an outstanding character of insufficient supply and most of its economic crises came from lack of supply. In 1998, China's economy for the first time in history showed an excess of supply and insufficient demand.

Externally, in July 1997 the Thailand government gave up fixed foreign exchange regime and pushed down the first domino block of Asian Financial Crisis. Within half year, many Asian countries' currency depreciated dramatically, their stock markets plunged and the economic growth stalled or even went negative. The external crisis' impact on China's economy was quick and heavy. For example, in the first half of 1998, China's export growth slowed down dramatically to 7.6% from 26.6% in the previous year and in May 1998 the export turned to a

negative growth which was a rare phenomenon in several years.

Beside the economic activities per se, China encountered a once-in-a-century flood in the summer of 1998. With no doubt, the flood would also take a heavy toll on the economy. Many economists and politicians worried that the coming years would be very difficult for China's economy.

B. Main features

The "pro-active" fiscal policy taken by the Chinese government since 1998 was indeed an expansionary fiscal policy, which entailed an expansion of government expenditure. That usually means a deficit for the government. From 1998 to 2003, the Chinese government's fiscal book showed a consistent and growing deficit. The deficit-to-GDP ratio increased from 0.74% in 1997 to 1.09% in 1998. And the following years witnessed a growing momentum: 1.94% in 1999, 2.52% in 2000, 2.29% in 2001 and 2.62% in 2002, which was approaching a warning level of 3% recognized by the international society.

In August 1998, the standing committee of the Chinese National People's Congress approved the expansionary fiscal policy, which reversed the direction of economic policy adopted in the previous several years. Beside scheduled debt issues, the central government therein issued additional 100-billion-yuan (1.5% of GDP) long-term construction bonds, which would raise funds solely for infrastructure constructions. The 100-billion-yuan bonds were sold only to the "big four" state-owned commercial banks: Industry and Commerce Bank of China(50 billion), Agriculture Bank of China(20 billion), Bank of China(10 billion) and Construction Bank of China(20 billion), with a term of 10 years and annual interest of 5.5%. The government separated the 100-billion-yuan debts evenly into two packages, which were

absorbed by 1998 and 1999 budget respectively. Therefore, a 50-billion-yuan additional government spending was recorded in 1998 and the deficit that year was increased from 43 billion sharply to 93 billion Yuan. The reason why the 100-billion-yuan bonds were issued solely to the big-four state-owned commercial banks was that the saving rate of residents and private sectors was high (about 40%) and the excess of deposits over loans in commercial banks was huge (1.02 trillion Yuan or 13% of GDP), and also importantly, as the banks were controlled by the government, selling bonds to them at a predetermined price with a predetermined amount would save time and reduce transaction cost.

In the second quarter of 1999, faced with a situation that the fixed-asset investments were still weak, exports continued decreasing and consumption demands remained low, the central government decided to further expand the fiscal policy. In addition to an original 50-billion-yuan long-term construction bond issue plan at the beginning of the year, the central government added another 60-billion-yuan long-term bond issue in the middle of the year. The money was going to infrastructure, technology upgrading and replacement in some key industries, R&D in heavy industries, environment preservation and education.

In 2000, the economy showed some positive turnarounds in the first half of the year. The central government decided to continue the pro-active fiscal policy to consolidate the fundamentals of economy. In addition to a 100-billion-yuan long-term bond issue plan at the beginning of the year, the Ministry of Finance issued 50 billion Yuan long-term bonds during the year. The money was used to accelerate those projects previously initiated by the government.

In 2001, the central government kept its expansionary policy and issued 150 billion Yuan

long-term bonds, in which 100 billion were for the in-process projects and 50 billion for the development of the backward Western Area of China. In the following years of 2002, 2003 and 2004, the central government issued 150 billion, 140 billion and 110 billion Yuan long-term construction bonds respectively, just to finish the uncompleted projects. During the later years, the government's large amount issue of debt could be seen as a "have-no-other-choice" decision. It was somewhat hijacked by the in-process projects.

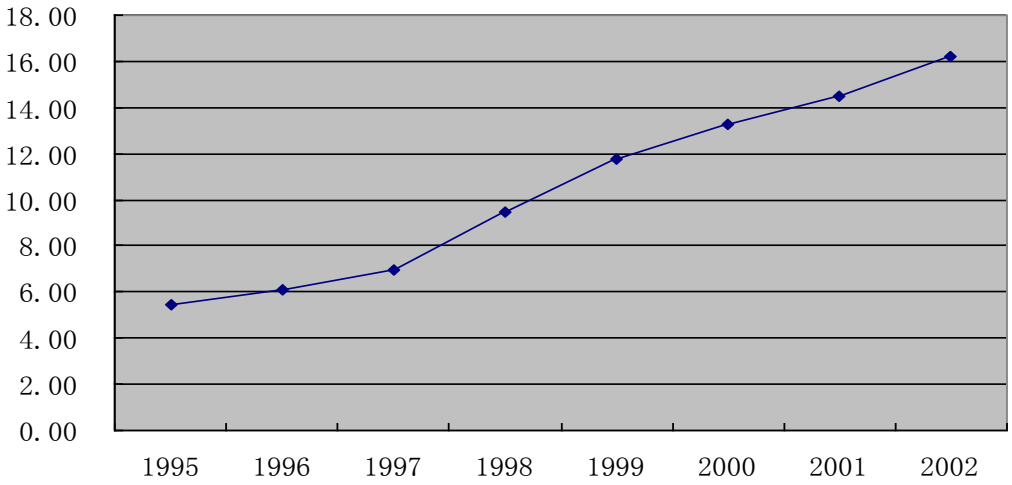
Table 3: Chinese Government Debts, 1995-2010

Year	Total Issue of Government Debts (Bil RMB) (1)	Growth Rate of Debt Issue (%) (2)	Balance of Government Debts (Bil RMB) (3)	Balance of Government Debt to GDP ratio (%) (4)	Issue of Long-term Construction Bonds (Bil RMB) (5)
1995	154.98	--	330.03	5.43	--
1996	196.80	26.99	436.14	6.13	--
1997	247.71	25.87	550.89	6.98	--
1998	322.88	30.35	786.23	9.47	100.00
1999	370.21	14.66	1041.06	11.77	110.00
2000	415.54	12.24	1301.00	13.28	150.00
2001	448.35	7.90	1561.80	14.45	150.00
2002	566.00	26.24	1933.74	16.24	150.00
2003	602.92	6.52	1749.00	12.94	140.00
2004	672.63	11.56	1919.96	12.01	110.00
2005	704.20	4.69	2877.40	15.56	80.00
2006	888.33	26.15	3556.80	16.44	60.00
2007*	798.12	(10.16)	3786.55	14.25	50.00
2008	855.82	7.23	3777.15	12.03	30.00
2009	1628.07	90.23	4473.77	13.14	500.00
2010	1777.82	9.20	5204.81	13.08	600.00

*Note: In 2007, the Chinese government issued 1550 billion Yuan special debt to purchase 200 billion US

dollar from the central bank of China and established an investment company, and this debt was not included in the above data.
Sources: National Bureau of Statistics, China; Ministry of Finance, China

Figure 7: Government Debts Relative to GDP, %



Sources: National Bureau of Statistics, China; Ministry of Finance, China

From 1998 to 2004, the average annual growth rate of GDP was about 10%. The debt issue grew during this fiscal expansion period at a 14% average annual rate, which was much faster than the GDP growth. Consequently, the pro-active fiscal policy left a relatively big debt burden for the government. At the beginning of 2003, the accumulated government debt balance had increased to 16% strong of GDP from 7% in 1997.

C. Economic performance following the 1998 stimulus plan

The economic indicators in the following years showed that China somewhat offset the shock of Asian Financial Crisis, improved the macro-economic environment, boosted aggregate demand, arrested deflation and pushed the economy back onto the track of its potential growth. It was estimated that the stimulus plan carried out from 1998 to 2003 drove the

economy up by 1.5 to 2 percentage points each year, which was essential to the annual growth rate of 7%-8% through the period（Jia Kang, 2008）. The economic performance following the stimulus plan, though not in a complete course-and-effect logic, demonstrated some effectiveness of the Keynesian approach.

Table 4: Main Economic Indicators since the 1998 Stimulus Plan

(% change from previous year)

Year	GDP (1)	Total Retail Sales of Consumer Goods (2)	Total Investment in Fixed Assets (3)	Export (4)	CPI (5)	Contribution Rate of Government Debt to GDP Growth (%) (6)
1998	7.3	6.80	13.89	0.50	-0.8	20.86
1999	7.9	6.80	5.10	6.10	-1.4	27.46
2000	8.6	9.70	10.26	27.86	0.4	14.44
2001	8.1	10.10	13.05	6.78	0.7	16.09
2002	9.5	11.80	16.89	22.36	-0.8	12.55
2003	10.6	9.10	27.74	34.58	1.2	6.81
2004	10.4	13.30	26.83	35.42	3.9	4.68
2005	11.2	12.90	25.96	28.40	1.8	---

Sources: National Bureau of Statistics, China; Ministry of Finance, China; "China's Pro-active Fiscal Policy: A Documentation of the Projects Invested by the Government Debts 1998-2004"

First, aggregate demand recovered. Investment contributed a lot to the economic growth. In 2004, the contribution rate of investment to economic growth was 50%, up from 30% in 1997. Consumption gained a momentum of stable growth. The total retail sales of consumer goods rose from 3339 billion RMB in 1998 to 5950 billion RMB in 2004, with a growth rate rising from 6.8% to 13.3%. Consumption's driving power for economic growth was enhanced.

Export regained an uprising momentum, increasing from $183.7 billion to $593.4 billion with a growth rate up to 35.4% from a trivial 0.5% in 1998. The GDP's growth rate from 1999 to 2004 years ran in a high corridor of 8-11%. Deflation was stalled. CPI turned from negative to positive. Other price index became robust too.

Second, potential productivity in the long run was improved. Because of the expansion of government investment, the infrastructure got upgraded in a short time. Railways, highways, airports and canals got expanded or renewed. The high way in China was increased from 4700 km in 1997 to 25100 km in 2002, railway extended by 5500 km, and 35 airports got built or renewed. A number of irrigation works and water conservancies were constructed. In rural areas, running water system, electricity grid and inter-county highway network were further developed. A number of industries got improved in terms of technology and structure.

Third, social welfare further developed. Urban residents' housing, transportation, drinking water and heating systems were improved. Education and health care were provided more efficiently and more equally. And the Western China Development project was initiated which would level the playing ground for the people in the backward areas.

2. Comparisons of the two stimuli of 1998 and 2008

A. Both of the stimulus plans were made to fight an internal slowdown as well as an outside shock, but fundamentals seemed better in 2008.

For the 1998 stimulus, it was due to insufficient domestic and external demands. From 1993 to early 1996, the Chinese authority tightened control on money supply. In 1997, the economy realized a "soft landing", but since then the problem of weak demand became more

and more obvious. Besides, the imbalance of China's economic structure caused by long-time duplicate construction became more serious. Under the pressure of weak domestic demand the Chinese economy was faced with a sharp drop in growth rate. Externally, in July 1997, as the Thailand government announced giving up fixed foreign exchange regime, a financial landslide erupted and spread to many other Asian countries. The Asian Financial Crisis quickly transformed to an economic recession. Russia, Latin America and the United States, which acted as China's main trade and investment partners beside Asian countries, were affected one after another. Therefore, crisis and recession in these countries crashed China's foreign trade volume and investment inflow. Export volume decreased a lot. In 1998, the China's export-GDP ratio was about 20%. In the first quarter of 1998, the export growth was 13.2%, in April it was 7.8%, -1.8% in May, 1.6% in June, 3.5% in July, and -2.9% in August, far below previous year's 20% average growth rate. Foreign investment shrank hugely. Because of the Asian Financial Crisis, many counties suffered from deflation. Thus, companies in those countries could not raise enough funds and their investment in China consequently decreased. Much of the international capital flew back to America and Europe. This resulted in a great reduction of foreign investment in China. Through 1998, most of the months witnessed foreign direct investment (FDI) decreasing.

In the run-up to the 2008 stimulus plan, from 2005 to 2007, the Chinese economy was growing in a corridor of tame inflation. During that period, the Chinese government adopted a moderate and then tightened economic policy. In 2008, those tight policies began taking effects and unfortunately coincided with an international financial turmoil, just like the situation 10 years before. Since the third quarter of 2008, the downside pressure on China's economy became really serious. In September 2008, as Lehman Brothers collapsed and the American government took charge of Fannie Mae and Freddie Mac, the subprime mortgage

crisis in the U.S. upgraded to an overall financial crisis. Many global financial institutions successively went bankruptcy or nationalized. The whole world then fell into a swirl of financial turmoil, and the world economy was heavily shocked. The main economies such as America and Europe slipped into recession, emerging-market countries were experiencing a cold autumn. In this integrated world, every country and region is closely interrelated to each other, be them emerging or developed markets. For China, situation could not be rosy alone, especially when China's export-GDP ratio had been standing at 40% for several years up to 2008. In the second half of 2008, almost every month witnessed export growth rate declining continuously.

Table 5: Main Economic Indicators Prior to the Two Stimulus Plans

(% change from previous period)

	GDP (1)	Total Retail Sales of Consumer Goods (2)	Total Investment in Fixed Assets (3)	Import and Export (4)	CPI (5)	Employment in Urban Area (6)
1997 Q1	10.4	16.8	13.9	11.6	4.0	-0.3
1997 Q1-2	10.2	14.1	13.8	13.1	2.8	-0.1
1997 Q1-3	9.6	12.5	11.2	13.7	1.8	-0.4
1997 Q1-4	9.3	10.4	10.8	12.1	0.4	-1.2
1998 Q1	7.6	7.6	10.3	8.5	0.7	-1.5
1998 Q1-2	7.2	7.5	13.8	5.2	-1.3	-2.0
2007 Q1-2	13.4	15.4	26.7	23.3	3.2	2.4
2007 Q1-3	13.4	15.9	26.4	23.5	4.1	2.3
2007 Q1-4	13	16.8	25.8	23.5	4.8	2.7
2008 Q1	10.6	20.6	25.9	24.6	8.0	2.6
2008 Q1-2	10.4	21.4	26.8	25.7	7.9	2.7
2008 Q1-3	9.9	22.0	27.6	25.2	7.0	2.7

Sources: China Statistical Year Book and National Bureau of Statistics of China

From Table 5, economic indicators show that in 1998, China's economy was suffering from a more serious slump than in 2008. In 1998, consumption growth dropped dramatically but in 2008 it was still increasing (Column 2). In 1998, the growth of import and export plunged quickly from 11.6% to 5.2%, but in 2008, the trend was much stable (Column 4). For CPI, in 1998, China's economy faced a serious deflation, while in 2008, the CPI was still positive (Column 5). As for the very important issue of employment, in 1998, the unemployment was serious while it was moderate in 2008. The budget revenue had grown to 5.1322 trillion (20.6% of GDP) in 2008 from 987.6 billion RMB (11.7% of GDP) in 1998. This gave the government more arsenals for fiscal intervention in 2008. The fundamentals in 2008 seemed to be better than that in 1998.

B. Both stimulus plans expanded government's expenditure and resulted in higher deficits in absolute and relative terms.

From the two figures below (figure 8 and 9), we can see during the two expansion periods, deficits stood at a much higher level than normal periods, but still remained at a low proportion of GDP (less than 3%). This reflects Chinese government's reservation and risk-control when applying deficit as a fiscal tool. Reckless countries that are easily exposed to debt crisis should learn this from China.

Figure 8: Government Deficits

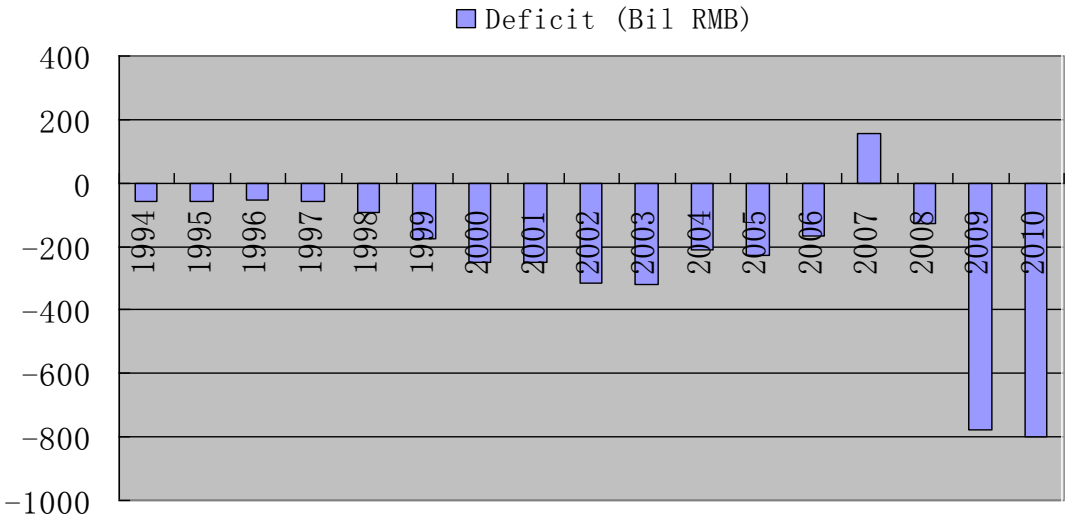
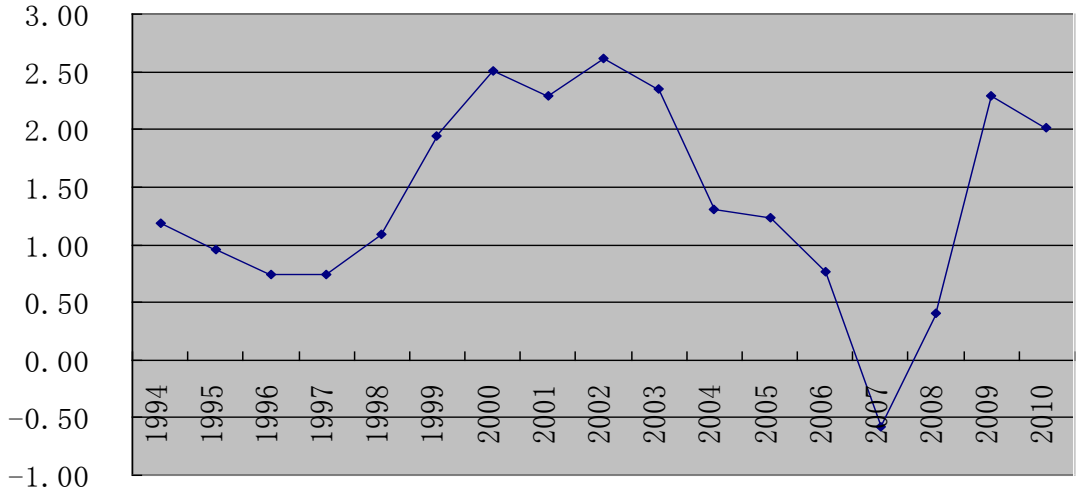


Figure 9: Government Deficit Relative to GDP, %



Source: National Bureau of Statistics of China

C. The government's policy response was much quicker in 2008 than in 1998

Opponents to fiscal stimulus often argue that because of time lag in the recognition of recession, delay in administration and the time lag of the policy effect, fiscal policies mess

things up rather than fix things up. But in China, the 4-trillion stimulus plan, as many other fiscal policies taken before, did not go through the legislation i.e. the People's Congress to get approval. Pundits and politicians decide what is good for the people and immediately put it into effect. Therefore, the headache problem of time lag in public policy is eliminated to a large extent here in the one-party-ruling China.

As for the 2008 stimulus, it responded even more quickly and systematically to the crisis than the 1998 stimulus. Just two months after the Lehman Brothers collapsed the Chinese central government announced the 4-trillion stimulus plan. By contrast, the 1998 stimulus came out one year after the Asian financial crisis erupted which also lacked a systematic strategy and led to a year by year discretion on the fiscal stimulus. As stated in the previous session, for the 1998 stimulus the central government made yearly fiscal policy based on previous year's economic performance and outlook on future economic trend rather than a whole stimulus-package. Besides, sometimes the government even changed budget plan in the middle of year. This reflected that Chinese government was not confident in counter-cyclical management in 1998. By contrast, the 2008 stimulus was a complete package for a two-year spectrum. It could demonstrate that the Chinese government became more mature and confident on the use of fiscal tools. Consequently, the 2008 stimulus package would probably eliminate much time-lag.

D. The two stimuli both emphasized on the infrastructure investment but specific measures of 2008 were more comprehensive than that of 1998

From Table 6, it is clear that both stimuli took infrastructure investment as the main leverage to boost aggregate demand. The difference is that the 2008 stimulus of public spending was not only confined to investment, but also included consumption subsidies and tax rebates. In

the 4-trillion stimulus plan, the Chinese government gave handsome subsidies (about 10% of total price) to durables consumptions like autos and home appliances. This was most welcomed by the common people and encouraged private consumptions. In a retrospective view, the consumption subsidies and export tax-rebate are estimated to be 600 billion Yuan for the year 2009 alone (Cong, 2010). Therefore, the 2008 stimulus went beyond traditional Keynesianism to expand government spending only, but also tried to encourage private consumption and export.

Table 6 also shows that social welfare and technology innovation were more emphasized in the 2008 stimulus. With more supply of public goods like education and health care, the government aimed to encourage people's consumptions on other goods. Meanwhile, with more investments on technology innovation, the government expected to enhance long-term productivity and optimize the economy's structure.

Another distinct feature of the 2008 stimulus fiscal policy is its tax-reduction measures while in the 1998 stimulus the central government didn't cut tax much. The main reason is that in 1998, the tax base in China was narrow and weak. In 1998 tax revenue to GDP ratio was only 11.6%, much lower than the average level of developing countries, no mention developed ones. The fiscal burden on people and enterprises at that time was not tax but various administrative fees and fines charged by the local governments. Therefore, from 1998 to 2003, the central government took extensive efforts to regulate these unreasonable charges by the local governments. By 2008, after years of fast economic development and regulations on tax collection, the tax revenue for the central government grew fast, standing at a level of 17% of GDP, and this rendered the central government a more flexible space to cut tax.

Table 6: Comparison of the Specific Measures of 1998 and 2008 Fiscal Stimuli

Category	1998	2008
Infrastructure Construction (1)	1. Irrigation systems for agriculture and forestry; 2. Transportations and telecommunications 3. Urban infrastructure 4. Technology improvement and industry upgrading 5. Electricity grid upgrading in rural area 6. Infrastructure in education, culture, health and tourism 7. State grain reserve depots 8. Environment protection 9. Infrastructure in law enforcement agencies	1. Low-income housing construction 2. Infrastructure in rural area 3. Railway, highway and airport 4. Rebuilding projects in the 2008 Sichuan earthquake-hit area
Tax Cuts and Administrative Fee Elimination (2)	1. Lower the tariff on a number of commodities, lower the consumption tax on a number of commodities, lower taxes on banks, insurance companies and securities exchange 2. Cut the regulation tax on fixed assets investment 3. Increase export rebate rate 4. Favorable tax policy for some strategic projects like "development of the west region" and "revitalization of northeast China" 5. Eliminate 1913 items of fee-charging and lower 479 items of fee-charging.	1. Overall reform on value added tax 2. Lift the tax threshold for individual income 3. Temporary exemption for saving deposit interest 4. Cut tax on securities exchange 5. Cut tax on residential housing transaction 6. Cut taxes related to real estate transaction 7. Lower or eliminate administrative fees 8. Raise the export rebate rate, lower and eliminate tariff on a number of items 9. Favorable tax on vehicle purchasing 10. Elimination of agriculture taxation
Income Redistribution (3)	1. Increase the salary of government employees, increase spending on retired people 2. Improve the quality of social security, and increase pensions for those working for private sector 3. Increase tax on the interest gain of saving deposit	1. Increase subsidies to peasants, increase the state-purchasing price for grains 2. Increase pension for the people retired from companies, create personal pension account for retirees 3. Uplift the level of minimum wage 4. Push business equities to buy insurances of pension,

		unemployment and accident for the employees 5. Tighten control on the income of state-owned entrepreneurs, especially those enjoying natural monopoly.
Transfer Payment (4)	1. Give more favor to the central and western regions of China which were less developed 2. Give money to the local governments which carried out environment protection and agriculture taxation reform	1. Enhance the transfer payment to central and western regions
Social Welfare Enhancement (5)	1. Establish a medical, educational and unemployment social security mechanism 2. Raise pension level for retirees	1. Reform on the taxation related to agriculture, emphasize on relieving burdens from peasants 2. Guarantee the budget for young generation's 9-year free and compulsory education. 3. Increase education loans and state financial support for students from poor families 4. Carry out an overall medical aid plan in rural area, expand the medical insurance coverage on urban residence; provide basic medi-aid to the people retired from bankrupted companies 5. Improve the medical service for the grassroots 6. Establish an official basic medicine list 7. Try to ensure a minimum welfare for the people 8. Improve the unemployment insurance mechanism Enhance the control on food's safety and drugs' safety
Technology Innovation, Energy Efficiency, Emission Reduction and Environment	1. Support R&D and technology upgrading in some key industries	2. Support the main projects on science and technology 3. Support the fundamental and commonweal R&D 4. Favorable tax policy for entrepreneurs' R&D 5. Promote the development of hi-tech industries and equipment-manufacturing industry 6. Support a number of big projects on energy-efficiency and emission reduction

Protection (6)		7. Push the reform on fuel pricing and improve the resource tax system 8. Establish and improve the charging mechanism on the use of mineral resources and compensation on environmental damage 9. Further promote reforestation on farming land 10. Further improve the state fund for compensation on forest ecology improvement 11. Favorable tax policy for small and medium entrepreneurs

Sources: National Development and Reform Commission; Ministry of Finance, China

E. Financial markets were more developed in 2008 than ten years before and brought in both opportunity and challenges for the fiscal stimulus.

In 1998, the market value of "A share" stocks in China was 588.3 billion Yuan, about 7% of that year's GDP. In 2008, its market value grew to 14.72 trillion Yuan, about 49% of GDP. The development of financial market could be a two-sided sword for the stimulus plan. On one hand the sophisticated market could match the demand and supply of funds more efficiently and reduce transaction cost, but on the other hand, the massive financial market itself might tie up a huge amount of money, leaves money circulate in the financial system, blowing up asset bubbles while delaying fund supply to production activities (Qiu Ying, 2009). Besides, the so-called "wealth effect" does not appear to affect Chinese people much. The extremely high and consistently rising saving rate could stand as evidence. Therefore, the government might be cautious when injecting money into the economic system and guide it to where it is truly deserved.

In fact, immediately after the 2008 stimulus plan kicked off, Chinese financial regulators made systematic regulations regarding the use of government funds and related bank credits, limiting their flow into asset market. It seems the Chinese regulators reached a consensus that money's circulation in asset market does more bad than good for the economy's recovery.

3. Lessons

Fiscal stimulus spending on infrastructure could increase long-term growth potential for a developing country like China. In the 7 years from 1998 to 2004, the Chinese

government issued 910 billion Yuan long-term construction bonds specifically to fund infrastructure, with a focus on releasing bottlenecks to growth (Lin, 2009). The huge amount issues of long-term bonds were used to promote constructions of infrastructure, upgrade technologies for state-owned enterprises and optimize the structure of industries. In the following period of the stimulus (2002-2008), average annual GDP growth reached 10.8%, 1.2 percentage points higher than the average annual growth rate of 9.6% from 1979 to 2002. The corresponding increase in government budget revenues allowed government debts to decline from more than 16% of GDP at the beginning of 2003 to 12 % in 2008.

The Chinese experience of fiscal stimulus suggested that for a developing country if public spending is invested in projects that release the bottleneck of growth, the investment would generate high returns to pay for their costs and debts. Therefore, budget deficit might be unavoidable when the government carries out fiscal stimulus. As long as the deficit is limited within a certain proportion of GDP, it seems not necessary to worry about it too much. It was from the 1998 situation-forced experience, the Chinese government realized that deficits and debts were not definitely bad things. This realization overthrew the government's decades-long concept of "bearing neither domestic nor foreign debts". Chinese policy makers' mindset regarding fiscal stimulus and fiscal deficit had changed since the 1998 stimulus and thus they reacted much quicker in the 2008 crisis.

Furthermore, the Chinese government's investment seems not to have "crowding out" effect but have a "crowding in" effect. This is partly demonstrated in Table 7. Private sectors' investment remained a stable proportion while the government threw out

huge amount of money. This means the private sectors also were increasing spending as the government was. This might be explained by reasons that 1) government investments were focused on public areas which originally do not attract private investment, 2) the interest rates in China were not totally decided by the market and 3) the savings by residents and enterprises were very high (more than 40%), i.e., there were large excess of deposits over loans on banks' balance sheets and fund supply was abundant. 4) Another important reason could be that government's actions would bolster confidence and revive people's animal spirits, then private investments just "herd" with the government investment and are "crowed in" (Akerlof & Shiller, 2009). It was estimated by some Chinese economists that government's stimuli drove 2-3 times more non-government funds into investments.

Table 7: Sources of Fixed Asset Investment, 1998-2004

Year	Breakdown of Sources for Fixed Asset Investment (%)			
	State Budget	Domestic Loans	Foreign Investment	Self-raising Funds and Others
1998	4.2	19.3	9.1	67.4
1999	6.2	19.2	6.7	67.8
2000	6.4	20.3	5.1	68.2
2001	6.7	19.1	4.6	69.6
2002	7.0	19.7	4.6	68.7
2003	4.6	20.5	4.4	70.5
2004	4.4	18.5	4.4	72.7

Source: National Bureau of Statistics, China

IV. SOME ANALYTIC UNDERSTANDING OF THE STIMULUS PLAN

1. Application of IS-LM model

According to the Keynesian macroeconomic theory, aggregate demand is the key to the short-term fluctuations in national income. Here I apply IS-LM model to analyze China's stimulus plans. The IS-LM model is roughly stated in the following two equations:

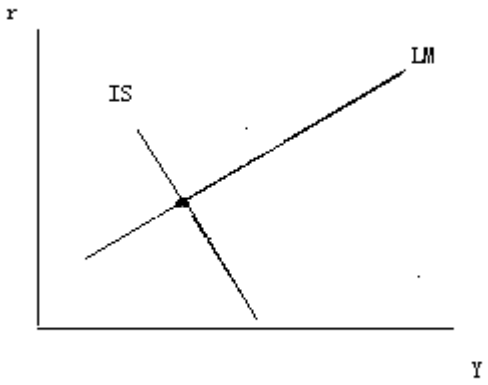
Y=c(Y-T) +I(r) +G

M/P=L(r, Y)

Where Y is GDP, c is Marginal Consumption Propensity, T is tax, I is Investment, r is interest rate, G is Government Spending, M is Money Supply, P is Price, L is Liquidity Demand.

The first equation represents equilibrium in goods and services market, and the second equation represents equilibrium in money market. This model is to examine the relationship between variables in short term. Therefore, P is assumed to be fixed, M, G and T are exogenous, c is also assumed to be stable in a short time. Then r and Y adjust to maintain the IS-LM equilibrium, as illustrated in Figure 10. Government's fiscal policy is incorporated in the IS curve while monetary policy in the LM curve.

Figure 10



The IS curve equation could be further decomposed into the following sub-functions:

C=a+cY (Consumption Function)

S=Y–C (Saving Function)

I=e–dr (Investment Function)

G=T+b (Government Spending Function)

Y=C+I+G (GDP Identity for a Closed Economy)

Where C is aggregate consumption, a is compulsory consumption and c is Marginal Consumption Propensity, Y is income, S is saving, I is investment, e is max investment, r is interest rate and d is the coefficient of interest rate's effect on investment. T is tax and b is deficit. Combine and reorganize the above equations, we get the IS curve:

r=(a+e+G)/d–(1-c)/d ·Y

The slope of this IS curve is **–(1-c)/d**. Other things being equal, the smaller of c and d, the bigger of (1-c)/d and the steeper of the IS curve. For China, its c (CPM) seems to be relatively small compared with other countries. There could be a handful of reasons for this: a tradition of thrift, low social welfare protection, saving for children's education and a widening gap between rich and poor, just to name a few. As for d, the coefficient of interest rate's effect on investment, it is assumed not significantly different from zero. This is because China's interest rate is not formed through market mechanism but thoroughly by the central government's order and therefore the correlation between interest rate and investment in China is not strong (Mao, 2009). Consequently, the IS curve's slope is steep.

The LM curve equation could be further decomposed into the following sub functions:

$M/P=L(Y)+L(r)$

$L(Y) = k \cdot Y$ (money demand from transactions in real economy)

$L(r) = -h \cdot r$ (money demand from speculations and investments)

Where M is money supply, P is price level, L is liquidity demand, k is the coefficient of output's effect on liquidity demand, -h is the coefficient of interest rate's effect on liquidity demand. When applied in practice, the economic variables on both sides of the equations are taken log form. Therefore, k and h measure the elasticity or sensitivity of money demand to output(Y) and interest rate (r). Combine and reorganize the above equations, we get the LM curve:

r=(k/h)·Y-M/(P·h)

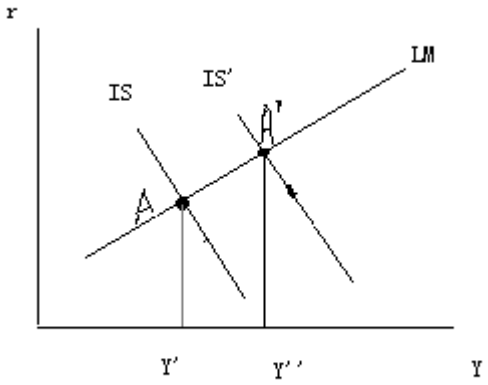
For the LM curve, its slope is **k/h.** It is obvious that the bigger of h and smaller of k, the flatter of the LM slope. To see if LM's slope is flat or steep is just to compare k and h and see which one is bigger. And this is boiled down to the question of "money demand is more sensitive to GDP or to interest rate".

In China, as its financial market is developing at an ever-fast speed in the recent decade and people have more choices to invest (or say speculate with) their money, money demand becomes more and more sensitive to the interest rate than it is to GDP. It seems to be a paradox: as mentioned before, the interest rate is mainly decided by the government, and investment is not strongly correlated to interest rate, then why money demand is more sensitive to interest rate than it is to GDP? Money flows to higher return, be it real investment or virtual speculation. As the government lowers interest rate (especially when the real interest rate turns negative), individuals may withdraw a chunk of their money and put it into asset market; institutional investors would also suddenly demand a lot of money for speculation. By contrast, as GDP grows, additional transactions may ask only for a matching amount of money. Therefore, money demand may be more sensitive to interest rate than GDP.

This is only a simplified qualitative explanation of why h is bigger than k, and real situation may be more complex and subject to change with different environments. Some empirical studies have also shown that China' IS curve is relatively steep and LM curve flat (Yang, 2006; Wen, 2010), as the shape showed in Figure 10.

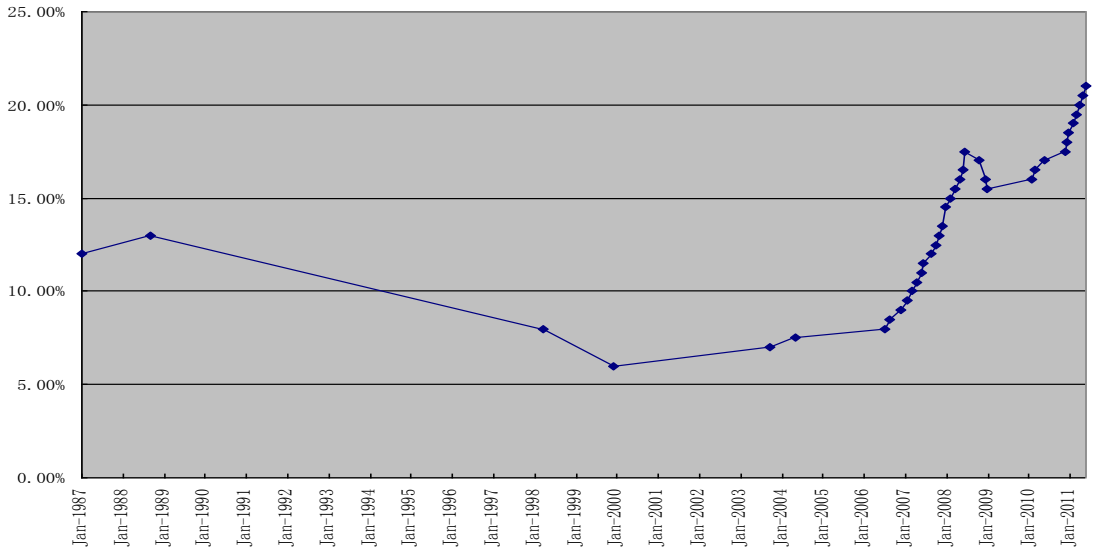
When the steep IS curve shifted to the right, it would increase output more than a flat IS curve.

Figure 11



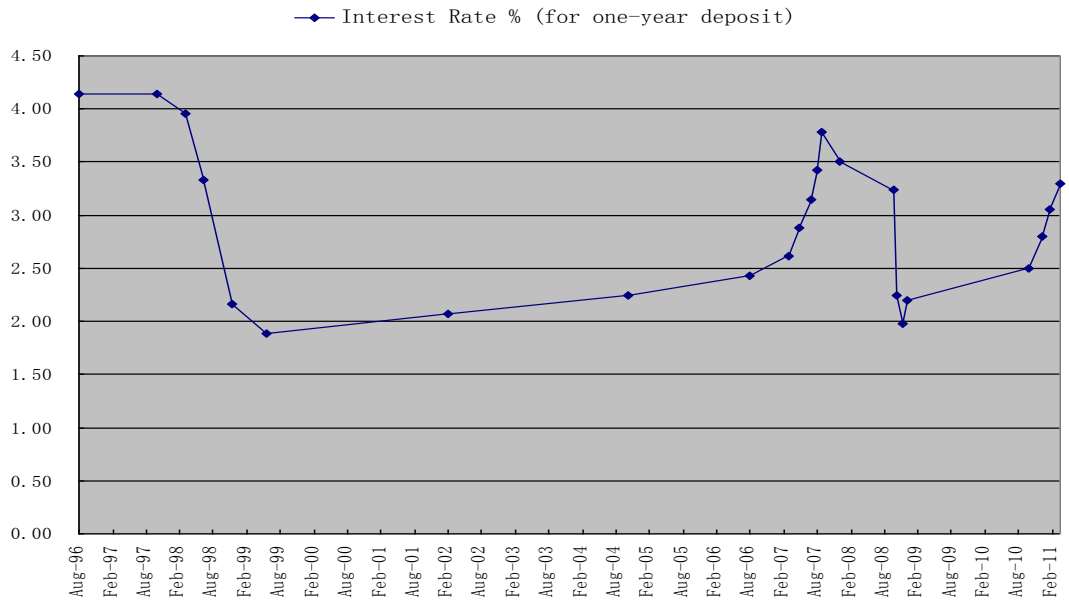
In addition, during both of the fiscal stimulus plans, the Chinese government adopted a loose monetary policy: lowering both required reserve ratio and interest rate.

Figure 12: Chinese Banks' Required Reserve Ratio, 1987-2011



Source: People's Bank of China

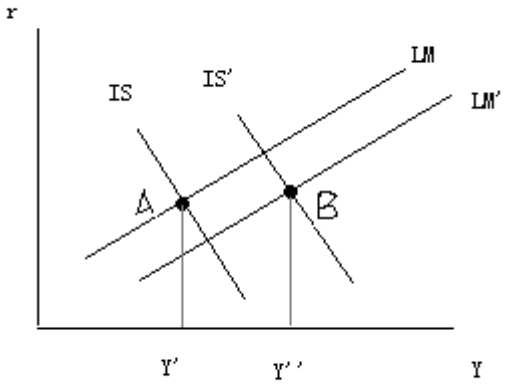
Figure 13: Deposit Interest Rate Set by the People's Bank of China, 1996-2011



Source: People's Bank of China

Therefore, the LM curve was also shifted toward right. The fiscal boosting could be more effective than coming alone. As illustrated in Figure 14, the new equilibrium moves from point A to B.

Figure 14



When applying the GDP identity, GDP=C+I+G+NX, to analyze the Chinese government's stimulus plan, we can find that in 2008 the government's fiscal boosting intentions are not just focused on "G" (government spending), but also on "C" (private consumption) and NX (net export) through tax reduction and subsidies to consumer durables as illustrated before in table 6. Furthermore, if the government investment as a down payment could trigger private investment to follow up, then even "I" (private investment) could also rise. Therefore, Chinese government's 2008 fiscal stimulus appears to be a comprehensive therapy to boost each components of the demand side of the GDP identity and shift IS curve much further to the right.

At the mean time, we should be aware that in a crisis or recession, when workers and factory lie idle, the IS curve is pulled leftward, thus reduces aggregate demand; a fiscal boost is just to push the IS curve rightward back to its potential position, not to overstretch it.

2. Expectation management

Besides the real money in the stimulus plan, psychological factor also appeared to influence economic growth. In the Chinese government' 4-trillion Yuan stimulus package, a larger part is soft number, i.e. the money expected to be invested by other agents rather than the central government's expenditure. As Gao Peiyong (2010) put it: "The 4-trillion investment plan is nothing more than an estimation of the total investment amount that could be triggered by the initial 1.18 trillion public spending".

Why the Chinese government counts the chicken before they are hatched? What causes the Chinese government to adopt this "expectation-management" strategy? Do

people's expectations matter for China's economy? How much is the influence on the output? Here I build a simple regression model to check the relation:

$$\mathbf{Y_t=a+bC_{t-1}+e}$$

Where Y_t is the *GDP growth rate* in quarter t

C_{t-1} is the Consumer Confidence Index (CCI) in quarter t-1

"a" and "b" are parameter to be estimated, "e" is residual

There are several notices to the model building:

1) Why use only one independent variable to examine the volatility of GDP growth?

Since this model is to check psychological impact on GDP growth, on the right side of the model, I just used one confidence index to represent people's psychological status. Real economic factors like consumption and investment are not incorporated as independent variables because this model is to check the impact of economic agents' outlook on real economic output. And it is also assumed that at a certain point in time there would only be one aggregate outlook. I use the CCI as a proxy of this aggregate outlook.

2) Why use CCI as the psychological variable, not other index measuring people's outlook for the future?

The Chinese government has been collecting and publishing monthly CCI since 1998 and the data is more complete than other index measuring people's perspective like Investors' Confidence Index. Moreover, all investors are at the same time consumers, therefore I assume CCI would represent people's general outlook on future economic

situation.

3) Why use a time-lag of one-quarter period?

The measuring mechanism of China's CCI reveals that the index is to reflect people's confidence in the near future. I assume this "near future" is the next 3 months.

I collected the quarterly data of CCI and GDP growth from the third quarter of 2003 to the third quarter of 2008 (just prior to the Chinese government's 4-trillion stimulus), and then regress GDP growth (Y_t) on the previous quarter's CCI (C_{t-1}).

Table 10: Results from Regressing Y_t on C_{t-1}

	Coefficient	Standard Error	t-Statistic	p-value
Intercept	-35.0936	12.9563	-2.709	.0144
C_{t-1}	0.4174	0.1173	3.558	.0022
Residual standard error	1.087			
R-squared	0.413			
Observations	20			

From the above regression output, it seems that CCI at the end of one quarter has statistically significant explanatory power for the next quarter's GDP growth rate. And generally speaking, one unit of CCI change in the current quarter is associated with 0.417 percentage point change of GDP growth rate in the next quarter. Therefore, the model could be written as:

$$\mathbf{Y_t = -35.09 + 0.417 C_{t-1} + e}$$

Where Y_t is the GDP *growth rate* in quarter t

C_{t-1} is the Consumer Confidence Index (CCI) in quarter t-1

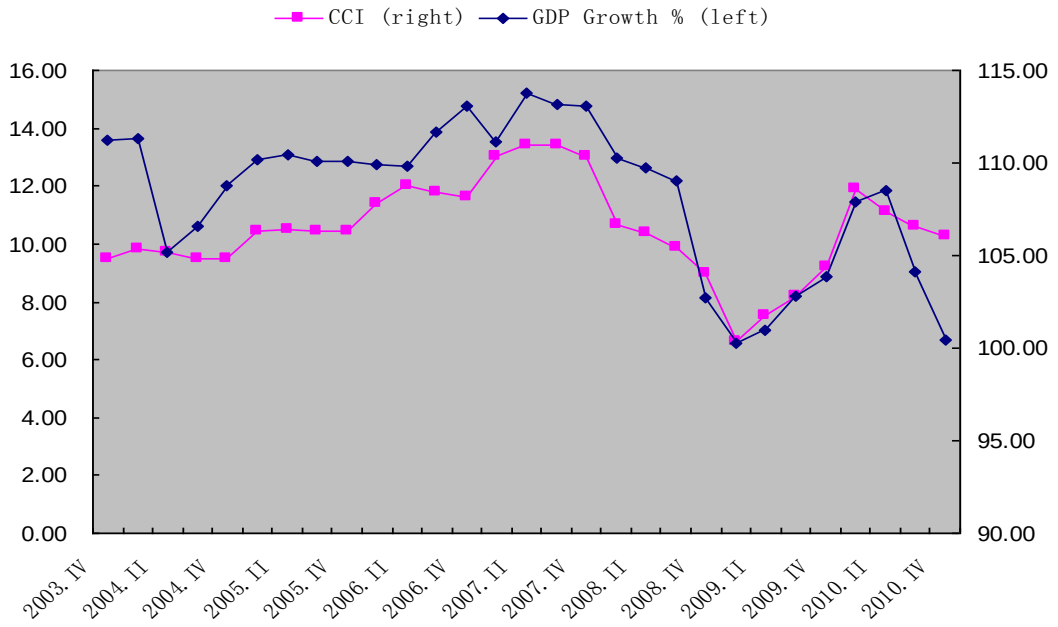
The model sheds some light on the relationship between CCI and GDP growth. My conjecture is that this relationship probably had been observed by the Chinese policy makers and applied in the "4-trillion" stimulus trick. The famous saying of Chinese Prime Minister Wen Jiabao may give a hint to the trick: "When in economic crisis, confidence is much more important than gold and money." This is similar to the famous remark by former US President Franklin Roosevelt: "The only thing we have to fear is fear itself". So people's confidence really matters when in crisis. The government's first priority should probably be to remain confidence, and then maintain growth.

Therefore, it is not a surprise that when the Chinese central government announced the 4-trillion stimulus plan, no concrete information was released. And the Chinese media, tightly controlled and censored by the government, all applauded and appraised the stimulus plan without any in-depth report as their professionalism required. In public opinion, there were no skeptics about the validity or soundness of the stimulus plan. A uniform, optimistic public opinion on the stimulus plan strengthened people's confidence in government's determination and the economy as a whole, which in turn would probably strengthen the effect of the stimulus itself.

Facts proved some effectiveness of this trick. Following the central government's announcement (not implementation yet) of the stimulus plan, local governments and state-owned companies, being swelled by confidence, began pouring money on major investments that they would otherwise have skipped. Commercial banks also freed their tied hands and threw money out. Other economic institutions and individuals were doing similar things: just spend money. Figure 15 shows that GDP growth

significantly coordinates with CCI movement before and after the November 2008 stimulus initiation.

Figure 15: China's Quarterly GDP Growth Rate and CCI, 2003-2010



Source: National Bureau of Statistics, China

3. Preliminary effects of the 2008 stimulus

From the previous section, we know that besides infrastructure investments the 2008 stimulus puts much more emphasis on social welfare than the 1998 stimulus. By raising social welfare standards, such as paying the medical bills for the people, the government tries to raise people's consuming capacity and consumption propensity. The Chinese government seems more and more convinced that for a big country like China, its domestic consumption is the sustainable and reliable driving force for economic growth which is not much exposed to outside volatility. Also, to cultivate a vigorous domestic consumption would help relieve the problem of global imbalance

and reduce foreign pressures on China's trade policy.

Into the second half of 2010, the overall GDP growth went on a stable recovery and the growth structure was rebalancing: consumption was gaining more momentum, while export was decreasing and investment stabilizing (Table 8). And during the year of 2009, the current account surplus declined to just above 6% of GDP, a fall of over 3 percentage points. Internal demand seemed to be taking on larger weight.

Table 8: Main Economic Indicators since the 2008 Stimulus Plan

Year	Month	GDP (cumulative year-on-year % change)	Total Retail Sales of Consumer Goods (% change from same month of last year)	Total Investment in Fixed Assets (cumulative year-on-year % change)	Export (% change from same month of last year)
2008	9	9	23.2	27.6	21.5
	10		22	27.2	19.2
	11		20.8	26.8	-2.2
	12		19	26.1	-2.8
2009	1	6.1	18.5		-17.5
	2		11.6	26.5	-25.7
	3		14.7	28.6	-17.1
	4	7.1	14.8	30.5	-22.6
	5		15.2	32.9	-26.4
	6		15	33.6	-21.4
	7	8.1	15.2	32.9	-23.0
	8		15.4	33.0	-23.4
	9		15.5	33.3	-15.2
	10	9.1	16.2	33.1	-13.8
	11		15.8	32.1	-1.2
	12		17.5	30.5	17.7
2010	1	11.9			21
	2		22.1	26.6	45.7
	3		18	26.4	24.3
	4	11	18.5	26.1	30.5
	5		18.6	25.9	48.5
	6		18.3	25.5	43.9
	7		17.9	24.9	38.1
	8		18.4	24.8	34.4

Source: National Bureau of Statistics, China

V. CONCLUDING REMARKS

This paper examines the Chinese government's 4-trillion stimulus plan regarding its trigger, source and use, compares it with the 1998 stimulus regarding economic backgrounds, deficit expansion, policy responding time, specific measures and financial market's maturity, and then analyzes the fiscal stimulus with IS-LM model and checks the relation between expectation and growth with a simple regression model.

It is found that the Chinese government's fiscal stimulus policy follows the logics of Keynesian economics and the IS-LM model could explain the policy to a large extent. Moreover, since the IS curve seems steep and LM curve flat in China, the government focuses on fiscal stimulus while applies loose monetary policy as a support. Debts and deficits are main features of the fiscal expansion. Infrastructure is the main area to spend the stimulus money.

It is also discovered that the 4-trillion stimulus plan comprises of both hard number and soft number. The hard number of 1.18 trillion Yuan is an incremental government expenditure, which might have Keynesian multiplier for a developing country encountering recession. The soft number of 2.82 trillion Yuan, though just an estimation of the "crowding in" effect of the initial 1.18 trillion Yuan public spending, could also be seen as a trick of expectation management.

So far, the 2008 stimulus has been in place for about 2 years and its positive effects on economic performance are gradually releasing. The macroeconomic indicators

following the stimulus somewhat demonstrate the vitality of Keynesian economics in anti-recession operation.

Meanwhile, the Chinese government's trick in the 2008 stimulus plan indicates that public policy should pay attention to its signaling effect on people's expectation, especially for the economic policies aiming to influence people's activities. Being aware that expectation may affect demand, the government could arrange propaganda campaign for its stimulus policy and lead people to form an optimistic outlook on the consequences of the policy, such as "a fiscal stimulus would result in an economic recovery". The Chinese government has a strong hand on media, so policy propaganda would not a problem. Once a certain expectation is getting weight and breaking a critical point, all the other expectations would converge into this expectation（Zhao Jingmei，2008）. Since the announcement of the 4-trillion stimulus plan, no opposite opinions or skepticism could be found in the Chinese media. Government's absolute influence on domestic media helps form a uniform, positive expectation on the future economy. And this expectation, together with some initial effects of public spending, in turn would drive up people's economic activities and help further boost demand and growth.

For all the analysis, two main pointers stand out. First, when in recession, Keynesianism seems still effective for a developing country whose infrastructure is far from complete. Second, agents' expectation appears to forerun economic growth, and if handled properly, it could probably help enhance government's stimulus, although this entails more delicacy in propaganda and public sentiment management.

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