

The Global Economic Recession and Challenges to China's Export-led Growth Strategy¹

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1. **Abstract:** The export-led growth strategy has integrated the Chinese economy with the rest of world and made the Chinese economy heavily dependent on external demand. The empirical analysis based GDP accounting suggests that external demand contributed more than 40% to the annual growth of the Chinese economy from 2003-2007. China's exports and FDI flows fell sharply in the wake of the global financial crisis. The collapse of exports and FDI inflows threatens the sustainability of China's export-led growth strategy. China's experiences in coping with the Asian financial crisis—the first external shock suggest that, boosting private consumption such as housing demand performed a far more important role than fiscal stimulus. High unemployment and the biased income distribution toward the corporate constraint the consumption capacity of Chinese individual consumers. Rebalancing the growth path to a domestic consumption driven one requires policies targeting job creation. Collecting dividends from SOEs to fund social safety nets will alleviate the income disparity and reduce precautionary savings of households. For maintaining sustainable growth in the long term, investment in technology innovation and environmental protection should be strengthened.

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1. Introduction

The “once-in-a-century” financial crisis drags the global economy into a recession. The scale and in-depth of the current recession exceeds any crisis we experienced after the great depression. All of the major economies, the US, Japan, Germany and UK have fallen into recessions. The US dollar centered global financial system and the unprecedented globalization warrant the financial turbulence and the post-crisis shocks to spread into all parts of the world. Despite of non-liberalized capital account, the fast growing Chinese economy has lost the growth momentum due to the sharp contraction in external demand. The collapse of China’s export growth since the eruption of the global financial crisis are threatening the sustainability of its export-led growth strategy.

Thanks to the tight controls on capital account, Chinese banks have very limited exposures to sub-prime loans and related derivatives. The restrictions on overseas’ portfolios investment buffered these banks from the global financial crisis. China’s banking system escaped the direct damage of the financial turmoil. According to the estimates, Chinese banks’ losses arising from subprime assets amounted US\$2.8 billion, about one percent of total bank assets (James, et al, 2008). In spite of a series of bankruptcies of financial institutions in the US and Europe, the stability of China’s financial system remains intact. In 2008, the non-performing loan ratio of major commercial banks decreased to 2.45%, 4.28 percentage points lower than that in the year before (PBC, 2009).

On the other hand, the export-led growth strategy has integrated the Chinese economy with the rest of the world. The business cycle of the Chinese economy has gradually followed that of the global economy. Exports and FDI inflows function as two channels for external shocks being transmitted to the Chinese economy. It is inevitable that the Chinese economy has been affected by the global recession. In the wake of the global financial crisis, the growth of the Chinese economy fell to 6.8% in the 4th quarter of 2008, further down to 6.1% in the first quarter of 2009.

More than a decade ago, the Chinese economy encountered the first external shock: the Asian financial crisis, which substantially undermined the growth of the economy. Compared with the Asian financial crisis, the negative impact of the current global recession is more severe, as all of the major economies, which are markets of made-in-China products and sources of FDI in China, are in recessions. It is a

consensus that the Chinese economy has been heavily dependent on external demand. It, however, remains an empirical question to what extent the growth relies on external demand. For assessing the impact of the external demand on the Chinese economy and prescribing right policies to steer the economy through the global economic recession, it is essential to have an accurate measures on the contribution of external demand to the growth of the Chinese economy. This paper first identifies the pitfalls in conventional measures used for assessing the contributions of external demand, then uses a simple GDP accounting approach to estimate the contribution of external demand to the growth of the Chinese economy.

The sudden evaporation of external demand and the uncertainty on the future recovery challenge the export-led growth model and require a shift in China's growth model. Another important question is how the Chinese economy could rebalance its growth strategy and gradually switch to a domestic demand driven path. If history could be a prediction of future, China's experiences in dealing with the Asian financial crisis may provide some insights for the required structure changes. This paper will also analyze fiscal and monetary policies implemented by the Chinese government in coping with the Asian financial crisis, in particular, the role of the housing reform in boosting domestic demand. Finally the paper will discuss rebalancing strategies for long-term economic growth.

2. The Collapse of External Demand and the Chinese Economy

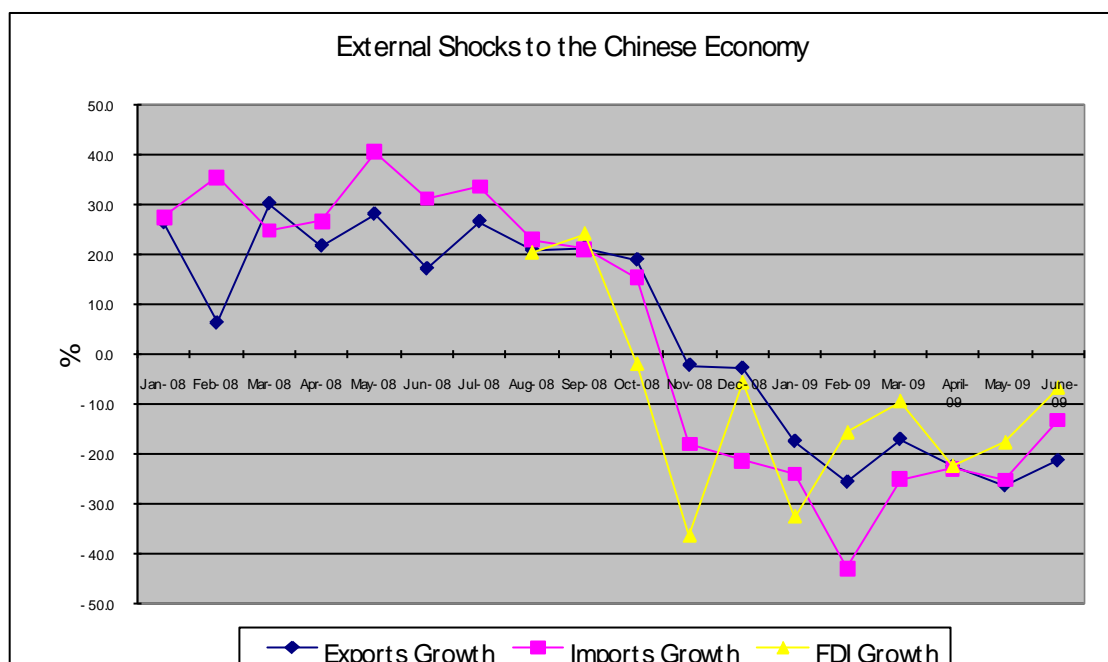
The collapse of housing markets and plunging stock prices evaporated the wealth of consumers around the world. Massive layoffs and rising unemployment rates threaten job security and increase the uncertainty of future. Panicked consumers are holding off their consumption, leaving huge inventories to firms, which in turn cut production and investment. As a result, external demand for Chinese products plunged sharply. Insufficient demand emerges as a major threat to the prosperity of the "World Factory" China. Following the eruption of the sub-prime crisis in Sept of 2008, China's export growth immediately turned to negative in Nov. and Dec, a complete reversal of the long lasting double digit growth. Meanwhile, FDI dropped -18% and -21% respectively, much more than exports. As a result, the GDP grew only 6.8% in the fourth quarter of 2008.

As the US, EU and Japan fell into deep recessions, China's exports plumped further. In May of 2009, exports fell -26.4% year on year, the largest drop since the

beginning of the financial crisis. From Jan to June of 2009, exports amounted US\$521.5 billion, representing 21.4% decrease compared with last year. During the same period, imports plunged 25.4% year on year to US\$424.6 billion. As imports dropped more than exports, in the first of 2009 China still recorded US\$96.9 billion surplus, which was only 1.3% lower than in the last year. (China Customs General, 2009). The decrease in China's imports is mainly caused by the slowdown in exports. Processing exports—exports made of imported parts and materials, compose about 55% of China's exports. The declination in exports reduced the demand for imported parts and components used for processing exports. Because of the 4 trillion stimulus package, China's domestic demand for raw materials such as iron ore rose drastically, slowing down the fall in imports. In June, imports decreased 13.2%, eight percentage points lower than in May.

Foreign direct investment into China also declined sharply. In the first six months of 2009, total utilized FDI fell 17.9% year-on-year to US\$43 billion. Examining the sources of FDI suggests that the US companies cut their direct investment substantially. Their investment totaled US\$1.4billion, 16% lower year-on-year while companies from 15 EU countries only reduced their investment by 1.3% (Chinese Ministry of Commerce, 2009). The sharp contraction of both exports and FDI was the major reason that the economy grew only 6.1% in the first quarter of 2009, the lowest since 2000. Supported by more than 28% of money supply growth and 7.3 trillion new bank lending, the Chinese economy expanded 7.9% in the second quarter of 2009, an impressive recovery compared with the previous quarter. On the other hand, the sign of external demand recovery remains unclear. The revival of export and FDI growth depends on the stabilization and the recovery of the US economy and other major economies. The heavy dependence on external demand indicates that the road to recovery for the Chinese economy faces a lot of challenges.

Figure 1



Sources: Chinese Ministry of Commerce and Chinese Customs General

3. The Dependency of the Chinese Economy on External Demand

Since the beginning of the economic reform, export-led growth strategy has been adopted by the Chinese government. In the last three decades, exports and FDI in China had functioned as critical growth engines of the Chinese economy. In the literature on the Chinese economy, the ratio of exports/trade to GDP is usually employed as a proxy to describe the dependency of the Chinese economy on external demand. GDP is calculated as the sum of all value added produced within an economy, while exports compose not only value added but also original values of intermediate inputs. If all intermediates for exports are produced domestically, the ratios could be an appropriate measurement for the contribution of external demand. In the case of China, however, due to a large portion of its exports belongs to processing exports, only \$0.47 value added was produced by Chinese workers for every \$1 of China's exports (Fung, 2009). The ratio tends to inflate the importance of external demand.

Using net exports—exports minus imports to assess the contribution of external demand is another typical approach. In China's Statistics Yearbook (NBS, 2008), net exports are identified as one of three demand components in the GDP accounting. The weight of net exports in the growth of the economy is considered as the contribution of external demand. The well-known database compiled by Economist Intelligence Unit also defines external demand as net exports. This approach is misleading and greatly

underestimates the importance of exports. The method simply ascribes all leakages of the Chinese economy toward foreign goods and services to exports and ignores the leakages through consumption and investment. As a matter of fact, both domestic consumption and investment consist of demands for imports. In other words, imports serve not only export demand, but also the demand of domestic consumption and investment.

To accurately measure the contribution of external demand to the growth of the Chinese economy, we use the standard GDP accounting to reclassify the aggregate demand into domestic and external demand. Following the standard GDP accounting identity, GDP of the Chinese economy can be written as

$$GDP = C + I + EX - IM \quad (1)$$

The consumption and investment of the government are included in C and I respectively. Since imports IM compose two parts: processing imports and ordinary imports, we can write imports IM as

$$IM = IM^P + IM^D \quad (2)$$

Where IM^P denotes processing imports and IM^D the ordinary imports for domestic consumption and investment. Similarly, investment I can be written as

$$I = I^F + I^D \quad (3)$$

Where I^F represents the investment with foreign fund and I^D the investment with domestic funds.

Substituting (2) and (3) into (1) and rearranging the terms yields

$$GDP = (C + I^D - IM^D) + (EX + I^F - IM^P) \quad (4)$$

The first term is the domestic consumption and investment demand adjusted with the leakage via imports. It measures actual domestic consumption and investment demand for domestic outputs. The second term represents actual external investment and consumption demand for products of Chinese economy.

Let $DD = C + I^D - IM^D$ and $ED = EX + I^F - IM^P$, then equation (4) can be simplified as

$$GDP = DD + ED \quad (5)$$

Hence, GDP growth rate g_t can be calculated as

$$g_t = (1 - \alpha)g_t^D + \alpha g_t^F \quad (6)$$

Where $g_t^D = \frac{(DD_t - DD_{t-1})}{DD_{t-1}}$ denotes the real growth of actual domestic demand;

$\alpha = \frac{ED_{t-1}}{GDP_{t-1}}$, the weight of the external demand in total GDP; and

$g_t^E = \frac{(ED_t - ED_{t-1})}{ED_{t-1}}$ the real growth of actual external demand for Chinese economy.

Following equation (6), it is straightforward to estimate the weight and contribution of actually external demand to the growth of the Chinese economy.

For estimating the contribution of external demand to the growth of Chinese economy, we use FDI to proxy the external demand I^F and domestic investment I^D is defined as total capital formation minus FDI. We employ the data published in China Statistics Yearbook 2008 and annual statistic report on Chinese Economy in 2008 to estimate the contribution of external demand to the growth of the Chinese economy from 1997 to 2008. Table 1 reports all the estimates.

Table 1: The Contribution of External Demand to the Growth of the Chinese Economy

Year	GDP growth (%)	Contribution of Actual External Demand ED (percentage point)	Contribution of Actual External Demand as % of total growth
1997	9.3	2.5	27.3
1998	7.8	0.3	4.4
1999	7.6	0.5	7.2
2000	8.4	3.5	42.1
2001	8.3	1.5	18.3
2002	9.1	2.7	29.5
2003	10.0	4.6	45.8
2004	10.1	4.9	48.8
2005	10.4	4.3	40.9
2006	11.6	5.0	43.2
2007	11.9	4.7	39.9

Sources: China Statistics Yearbook and the author's estimations.

The estimates suggest that the dependency of the Chinese economy on external demand is very high. During the high growth period from 2003 to 2007, in which GDP grew more than 10% every year, on average more than 40% of the growth was due to external demand. In the year of 2004, 49% of the growth was attributed to external demand. China officially joined the WTO in Dec. of 2001. The estimates indicate that the dependence on external demand has been strengthened. In other words, rather than

being decoupled from the world economy, the Chinese economy has been further integrated with the world economy.

The impact of external demand could also be illustrated from the down cycle of the Chinese economy. After the Asian financial crisis, the economy grew only 7.8% and 7.6% in 1998 and 1999. The slow down was mainly caused by the weakened external demand, which accounted for only 0.3 and 0.5 percentage point of the economic growth in the two consecutive years after the crisis. As external demand gradually recovered, the growth of the Chinese economy accelerated. From 1999 to 2004, the annual growth rate jumped from 7.6% to 10.1% while the contribution of the external economy surged from 7.2% to 49%. Even the share of external demand decreased slightly in recent years, it still accounted for 40% of China's GDP growth in 2007.

The extraordinarily high dependence on the external demand explained why the Chinese economy suddenly lost the growth momentum following the global financial crisis. Facing with the sharp contraction of external demand, the Chinese government kicked off \$587 billion stimulus package and tried to implement both fiscal and monetary policies to achieve 8% real growth target in 2009. In the first half of 2009, the broad money supply M2 rose a record high of 28.5% and newly issued bank loans surged to 7.3 trillion Yuan, more than doubled that in the same period of 2008. The ultra loose monetary policy and the smooth implementation of the fiscal stimulus lifted the growth rate of the Chinese economy to 7.9% in the second quarter of 2009. The drastic increase in fixed assets investment shows the ability of the Chinese government to quickly mobilize bank loans and start large infrastructure projects for boosting domestic demand. Achieving 8% growth will not be difficult as long as the Chinese government keeps its commitment on the target. However, the Chinese economy has been shaped as a world factory. Its production capacities in manufacturing have been developed to meet the global demand. The sudden contraction in external demand caused a substantial portion of these capacities redundant. It is questionable whether infrastructures oriented investment boom would be able to absorb the layoff workers and excess production capacity. In the short term, it is unrealistic to expect that easy credits and massive investment infrastructures could solve in the structure problems of the economy and the imbalance between domestic consumption and external demand.

3. Copping with the Asian Financial Crisis

Current global economic recession represents the second serious external shock to the Chinese economy since it started the transition to an open economy three decades ago. In 1997, the economy suffered the first external shock: the Asian financial

crisis. The Chinese government employed both expansionary monetary and proactive fiscal policy and gradually steered the economy out of the shadow of the crisis. The experiences of coping with the Asian financial crisis may provide some insights for fighting with the current global recession.

Before the outbreak of the sub-prime loan crisis, the Chinese economy was considered overheated and threatened by rising inflation. The People's Bank of China (PBC) tightened its monetary policy by raising reserve ratios and interest rates. It is very interesting that the Chinese economy was in the similar situation when it encountered the Asian financial crisis. Having experienced more than 20% inflation in 1994, the overly heated Chinese economy achieved a soft landing in 1996 with a much lower inflation of 8.3% (NSB, 2002). As the economy continued to cool off, the Asian financial crisis occurred. The non-liberalized capital account and fixed exchange rate regime shielded China's banking system from direct attacks of the crisis. Nonetheless, the impacts of the crisis were transmitted through declining export and FDI inflows, which retarded overall economic growth and raised unemployment.

Several Asian economies such as Indonesia, Korea, Malaysia, Philippines and Thailand were battered by the crisis and experienced substantial contractions associated with capital flight and unexpected large currency depreciations. Their demand for Chinese goods and services plunged sharply. Because of the pegging to the dollar policy, Chinese Yuan experienced significant real appreciations against the currencies of the Asian countries hit by the crisis, thus undermining the competitiveness of Chinese exports and its attractiveness to FDI (Xing and Wan, 2006). In 1998 China's exports to Asia decreased 9.9% and the growth of total exports down to zero. Annual FDI inflows fell 7.9% to US\$58.9billion, and further decreased 11.4% to US\$40.4 in 1999 (NBS, 1998 &1999).

The export-led economic growth strategy implemented since the beginning of the economic reform has developed China as a world factory. The unexpected contraction in external demand broke the equilibrium and the economy turned into a scenario with excessive production capacity. Deflation rather than inflation emerged as a major challenge as consumer price index fell into the negative territory in 1999. It is the first time that the Chinese economy faced insufficient demand. The external shock undermined the growth momentum of the Chinese economy. As a consequence, China's GDP grew 7.8% in 7.6% in 1998 and 1999 respectively, much lower than 9.3% in 1997.

Counter-cyclical Fiscal Policy

Responding to the deterioration in external demand and striving to achieve 8% growth target, the Chinese government started to adopt expansionary monetary and proactive fiscal policies for stabilizing the economy and countering the negative impact of the financial crisis. The fiscal stimulus primarily focused on infrastructure projects such as highway, railway, airport, etc.. The Chinese government started to issue long term construction bonds to raise funds for these projects. In 1998, 100 billion Yuan long-term bonds were issued. In the following year, the government issued additional 110 billion Yuan long-term bonds to strengthen the counter-cyclical fiscal policy. The raised funds were mainly allocated for unfinished infrastructure projects and technology upgrading in some key industries. The proactive fiscal policy continued until 2002. From 1998 to 2002, total 660 billion Yuan long-term bonds were issued to finance various public infrastructure projects. For implementing the fiscal stimulus and offsetting the shortage of external demand, the fiscal deficit of the Chinese government surged to 315 billion from 92 billion yuan during the period. The fiscal deficit to GDP ratio, a standard measure for fiscal expansion, rose to 2.6% from 1.1% (Table 3).

How effective was the proactive fiscal policy? An empirical analysis by China Academy of Social Science (Wang, 2003) and the evaluation by the China's Ministry of Finance (Jia, 2003) both concluded that the expansionary fiscal policy was successful and contributed substantially to the growth of the economy. According to the studies, during the four year period, the stimulus packages raised the GDP growth rate by 1.2 to 2.0 percentage point every year and created 7.5 million new jobs.

Table 3: Fiscal Stimulus and Chinese Economy in the Post Asian Financial

Year	1998	1999	2000	2001	2002
Fiscal Stimulus* (billion Yuan)	100	110	150	150	150
Fiscal Stimulus/GDP (%)	1.2	1.2	1.5	1.4	1.3
Contribution to GDP growth* (percentage point)	1.5	2.0	1.7	1.8	1.2
Fiscal Deficit (billion Yuan)	-92.2	-174.4	-249.1	-251.7	-315.0
Deficit/GDP (%)	1.1	2.0	2.5	2.3	2.6

Source: China Statistic Yearbook and Wang (2003)

Expansionary Monetary Policy

To coordinate with the counter-cyclical fiscal policy, PBC reversed its monetary policy from tightening to loosing immediately. Just two months after the crisis started, PBC cut one year deposit rate 1.8 percentage points to 5.47%. Three more cuts were carried out in 1998. As a result, one year deposit rate was lowered to 3.78% at the end of the year from its high of 7.47% in 1997, and one year loan rate down to 5.31% from 10.08% (Table 4). The consecutive interest cuts, however, failed to boost money supply. The broad money supply M2 grew in 1998 only 14.8%, almost 5 percentage points lower than in previous year. In spite of an additional 1.53 percentage point cut introduced in 1999, the growth of broad money supply continuously fell to 12.3% in the following year. The falling price levels also suggest the ineffectiveness of the monetary policy. Consumer prices fell consecutively in 1998 and 1999 and had almost zero growth in 2000 and 2001, then slipped again in 2002. Even though the Chinese economy resumed the growth momentum and grew 9.5% in 2002, the deflationary pressure remained as the consumer price index failed to rise. Deflation merged as a major threat to the economy.

Table 3. China's Monetary Policy during the Asian Financial Crisis

	One year deposit rate	One year loan rate	real deposit rate	real loan rate
23/08/96	7.47	10.08	-0.83	1.78
23/10/97	5.67	8.64	2.87	5.84
25/03/98	5.22	7.92	6.02	8.72
01/07/98	4.77	6.93	5.57	7.73
07/12/98	3.78	6.93	4.58	7.73
10/06/99	2.25	5.85	3.05	6.65
21/02/02	1.89	5.31	2.69	6.11

Sources: China Statistics Yearbook

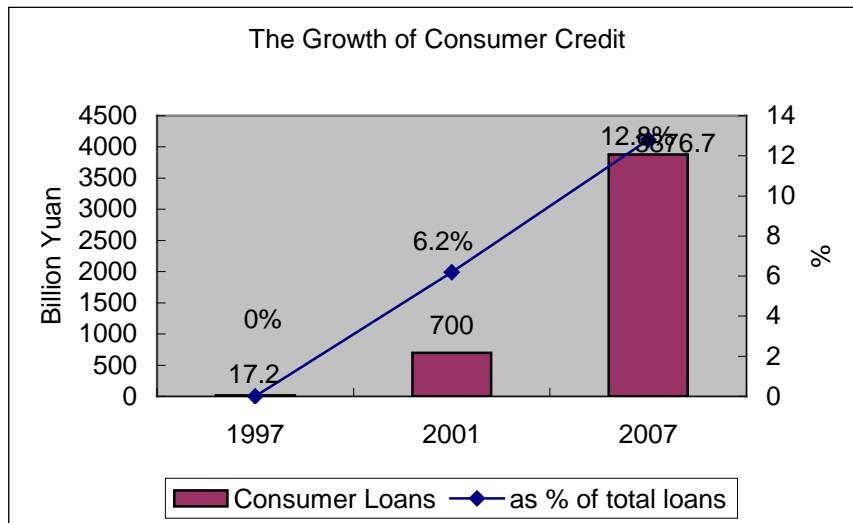
A few reasons attributed to the failure of the monetary policy. First of all, because of sharp falling price, real interest rates rose rapidly in spite of four consecutive cuts on nominal interest rates. From 1997 to 1998, one year real deposit rate rose to 4.58% from -0.83% while one year real loan rate surged to 7.73% from 1.78% (table 3). The rising real interest rates dampened domestic investment demand and eventually reduced the money supply. Moreover, in the wake of the Asian financial crisis, China's four largest stated owned banks were struggling with non-performing loans, which

greatly hampered their abilities as financial intermediates to issue new loans and expand money supply (OECD, 2002). Last, not the least, for helping these banks write off their non-performing loans, PBC intentionally maintained high gross profit margins on commercial loans. That is why PBC did not cut commercial loan rates more aggressively and maintained relatively high real interest rates even though the overall price level fell into a negative territory.

Housing Reform and Private Demand

Besides the fiscal and monetary policies, it is important to mention that, China's housing reform, introduced during the Asian financial crisis, performed a critical role in boosting private domestic demand. The private consumption induced by the housing reform is far more effective and sustainable than the fiscal stimulus. In 1998, the Chinese government decided to abolish completely welfare housing system and introduced housing allowances to subsidize purchasing commercial houses. For promoting the housing reform and developing a commercial housing market, PBC relaxed regulations on consumer loans, in particular housing loans. The push for the housing reform represents an alternative strategy to expand domestic demand and foster a new domestic demand oriented growth engine for the economy (Hou, 2005). Without well developed credit market, the consumption of Chinese consumers depended on only current disposable income and savings. The liberalization on consumer financing provides a mechanism by which Chinese consumers are able to spend their future income, thus boosting current aggregate demand. The policy initiatives on housing reform greatly stimulated the demand for commercial housing and consumer loans.

Figure 2



Source: PBC (2009) and He and Fan (2002)

At the end of 1997, the outstanding consumer loans was 17.2 billion Yuan, negligible compared with total banking loans. By 2001, the outstanding consumer loans surged to 700 billion, about 6.2% of total banking loans and equivalent to 7.3% of China's GDP. Housing mortgage accounted for 80% of the total outstanding consumer loans (He and Fan, 2002). From 1998 to 2001, the post Asian financial crisis period, the incremental consumer loans 693 billion yuan far exceeded cumulative long term bonds 510 billion Yuan issued by the government for stimulating the economy. In addition, the housing demand has strong linkage impacts on other industries, driving up demand for durable goods such as furniture, large electronic appliances, etc.. Housing demand and related demand for durable consumption goods belong to private demand, which is generally more efficient than public spending in boosting economic growth. Hence, the housing reform has performed a more important role in boosting domestic demand than the fiscal stimulus. The most recent data indicate that consumer loans accounted for 12.7% of total loan outstanding by 2008 (PBC, 2009).

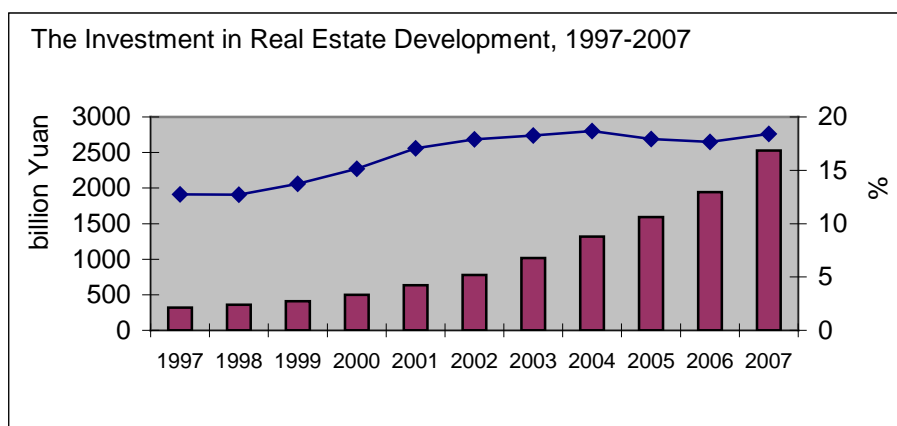
Besides the rapid expansion in consumer credits, the housing reform also drove the explosive growth of real estate investment. The rising housing demand fueled the growth of real estate investment. For meeting the surging demand for private housing, investment in housing construction in urban areas of China rose drastically. In 1997, real estate investment amounted 318 billion Yuan, accounted for 12% of total annual fixed assets investment. By 2002, the investment in real estate development in urban areas more than doubled and jumped to 779 billion Yuan, about 18% of total fixed assets investment. Real estate development has strong linkage effects on other sectors

such as steel, aluminums cements, glasses, etc. The rapid output growth of these sectors in recent years was in part due to the linkage effect of real estate sector.

Figure 3

Given the size of housing demand, its impact on real estate investment and durable consumption goods, it is fair to say that, the rising housing demand contributed much more to the growth of the Chinese economy in the post Asian financial crisis period than the counter-cyclical fiscal stimulus. Moreover, consumption on housing and durable goods belongs to private consumption, which is generally more effective than public consumption. Compared with the incremental fiscal spending, the housing reform matters more for stabilizing Chinese economy and promoting its growth in the post Asian crisis period. The experiences of China in coping with the first external shock suggest that, besides fiscal and monetary policy, there exist rooms for boosting private domestic demand. Innovative policies hold the key for successfully revitalizing private investment and consumption. The Chinese governments should explore potential consumption demand by removing barriers and abolishing regulations which hinder private investment.

Figure 3



Sources: China Statistics Yearbook

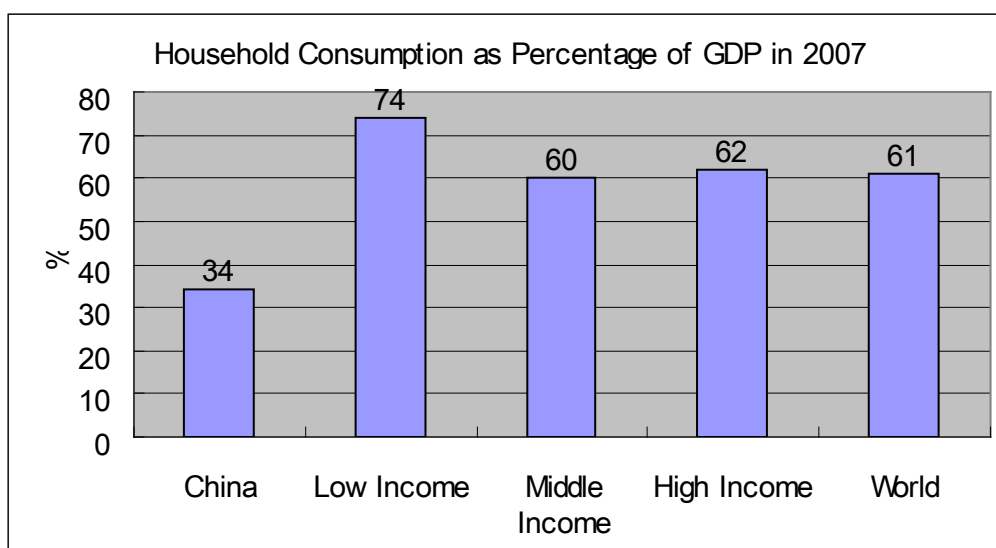
4. Rebalancing Strategies for China's long-term Sustainable Growth Stimulating Consumption by creating Jobs and Re-distributing the Profits of State-owned Enterprises

By encouraging greater consumption and stimulating investment, the Chinese government can increase domestic demand and reduce over dependence on external demand. The impressive GDP data in the second quarter of 2009 shows the ability of the Chinese government to quickly mobilize the huge amount of financial resources and

bank loans into various large infrastructure projects. The questions are how long this kind of investment boom will last and how effective the investment will be able to promote necessary structure changes. More than 50% capital formation rate indicates that investment has played its part in supporting the growth of the economy. Excess investment in short term may lead more over capacity in the future. Boosting domestic consumption, in particular private consumption, is fundamental to achieve a more balanced growth.

In international perspective, household consumption in China accounts for a relatively small share of China's GDP. In 2007, household consumption accounted for 35% of total GDP, much lower than the world average of 61% and the averages of any income groups (Figure 4). Even more striking trend is that the share of household consumption decreased steadily.

Figure 4



Source: World Development Report, World Bank, 2009.

Culture factor such as Chinese people have relative high preference to save and lacking social safety nets are often cited as major reasons of low consumption in China. There is no doubt that these factors affect consumption behaviors of Chinese consumers. High unemployment and biased income distribution between workers and corporate in China also contribute to the low share of consumption in China's GDP.

China's high unemployment rate in urban areas is one of the major reasons responsible for low share of household consumption in GDP. The high unemployment reduces the share of labor in GDP, thus making consumption lag behind the economic growth. The unemployment rate in China's urban area rose to 9.4% in 2008 (Chinese Academy of Social Sciences, 2009). High urban unemployment has been associated

with the rapid economic growth for more than a decade. Rural migrants are blamed for sustained high unemployment in urban areas. It is true that massive rural migrant labor who cannot find jobs in cities raised urban unemployment. However, in recent years, college graduates in China have been facing tough job markets too. Many college graduates have joined the forces of unemployment. The unemployment rate of college graduate increased to 14% in 2008 (MyCOS, 2009). According to China's Ministry of Education, only 68% of 2009 college graduates found jobs by the end of June 2009.

It is worthy to mention that high GDP growth associated with low job creation is a unique phenomenon of the China's growth model. From 2001 to 2007, the elasticity of employment to GDP averaged about 0.2, implying that a one percent GDP growth induces 0.2% increase in employment (Table 5). Jobs created are far less than needed. Currently small and medium enterprises (SME) employ 75% of urban labor. But, they benefit very little from the 4 trillion Yuan stimulus, which are mainly allocated to large public projects and state-owned sectors. In addition, SMEs in China remain discriminated by China's financial institutions and face difficulty in obtaining necessary financial supports for their operations. To boost domestic demand, job creation should be given high priority. Alleviating the difficulty of SMEs in obtaining bank loans and supporting the development of SME will result in more jobs. Further, abolishing restrictions on private investment in health services, postal services, railways etc will also be more effective in promoting employment.

Table 4 Employment and Economic Growth in China

	Total Employment (million)	Yearly Employment Creation (million)	elasticity of employment to GDP
2001	730.25	9.40	0.16
2002	737.4	12.19	0.18
2003	744.32	10.20	0.14
2004	752	20.50	0.27

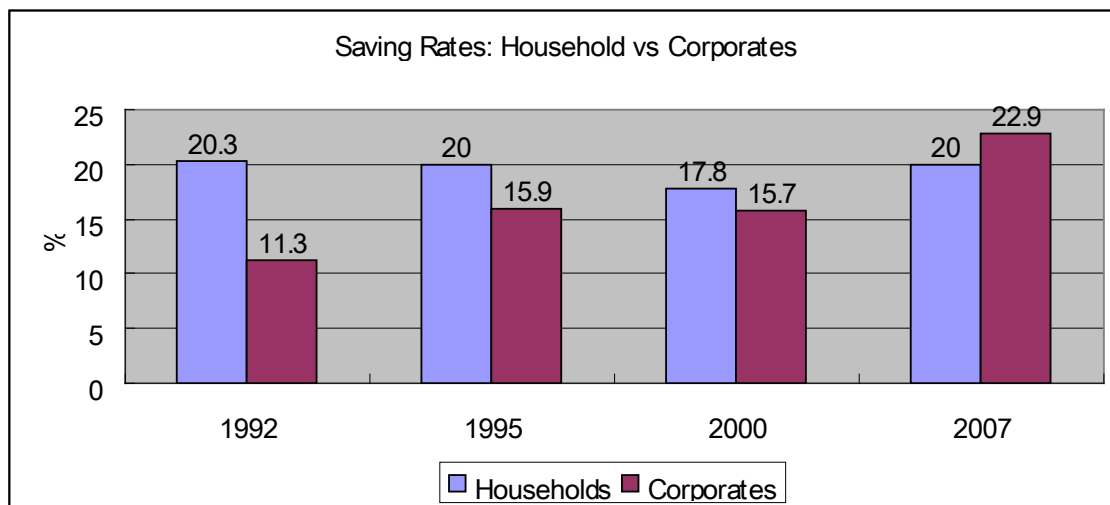
2005	758.25	19.20	0.25
2006	764	19.80	0.23
2007	769.9	17.10	0.19

Sources: China Statistics Yearbook and author's calculations

China's high saving rate calculated by GDP accounting is argued as a major reason for low household consumption. However, decomposing the saving into household, corporate and government suggests that the increase in corporate saving rather than household saving attributed to the rising saving rate. The household saving rate has remained roughly constant at 20% since early 1990s. On the other hand, the corporate saving more than doubled from 11.3% to 22.9% from 1992 to 2007 (figure 4). The constant household saving rate suggest that Chinese households did not save relatively more than before. The declining share of household consumption in GDP is not caused by more conservative consumption behavior, but their shrinking share in the national income. Alleviating the biased income distribution between households and corporate would encourage individual consumption.

Imperfect labor market, in which excess labor supply remains, is one of the reasons causing the low wage growth and the low labor share in the national income in China. Empirical studies show that, wages in China grew much lower than workers' productivity and were equivalent to about 30 to 25% of marginal revenue of labor (Fan, 2009). The monopoly of state-owned enterprises (SOE) in various sectors such as telecommunication, banking, insurances, oil etc, also contributes the biased income distribution. In 2007, stated-owned and controlled companies earned net profits of 1.62 trillion Yuan, representing 6.5% of China's GDP and equivalent to 31.8% of fiscal revenue. The SOEs under the jurisdiction of the central government accounted for 1.1 trillion, about 68% of the record profits (China Ministry of Finance, 2008). It is well known that these large centrally-administered SOEs, such as China Mobile, China National Petroleum Corporation etc. enjoy monopoly profits. However, these SOEs have paid no dividends to either central government or local governments which own or have majority controls over them since 1994 (Kuijs, Mako, and Zhang, 2005).

Figure 5



Source: Zhou (2009)

The government as sole owner of SOEs is entitled to all their after-tax profits. The reform on SOEs has shifted social responsibilities such as education, health care, pensions to individuals and the government. The shedding of these obligations partially contributed to the rise in SOEs profits. China's social safety nets such as unemployment insurance, pension system, health care system are underdeveloped due to lack of financial resources. It is justified to collect dividends from SOEs to fund these public goods. Moreover, leaving huge cash to SOEs reduce the efficiency of investment and managers of SOEs may not make investment decision to the best interests of share holders, but themselves. The extraordinary high compensation of the executives in China's large SOEs is a typical example. Collecting dividends from SOEs to fund social security, health care system, and primary education and enhancing income transfers to low income families will alleviate the disparity of the income distribution and boosting private consumption.

Promoting R&D Investment

Empirical studies suggest that productivity growth contributed substantially to the rapid growth of the economy. Efficiency improvement due to the transition from a centrally planned economy to a market oriented one played a critical role in the China's productivity growth. With the given technology, efficiency improvement has reached its limits as market mechanism gradually plays more and more important roles in resource allocation in the Chinese economy. Further productivity growth should come from technology progress and innovations, which are the resources for long-term income growth.

China has been recognized as a global factory and made-in-China products

are available at every corner of the global market. Most of its exports, however, are labor intensive and low value added. China surpassed the US, Japan and EU as the largest exporter of information communication technology (OECD, 2005). China's high-tech exports surged to US\$347.8 billion in 2007, about 28% of its total exports (Chinese Ministry of Science and Technology, 2008). Nonetheless, detailed examinations on the structure of high-tech exports according to the forms of trade and producers suggest that, most of the so-called high-tech exports is indifferent with the exports of toys, clothing and other labor intensive products. In 2007, processing exports accounted for 85% of the total high tech exports. Labor used for assembling/processing rather than technology is the only contribution of Chinese workers to these high-tech exports. In terms of commodity classification, these exports belong to "high-tech". The involvement of Chinese workers in the production processes of these exports indicates that, China actually exports low skilled labor rather than technology via "high-tech" exports.

In addition, foreign funded firms rather than indigenous domestic firms are the major producers of high-tech exports. They accounted for 87% of the total. Actually, the share of foreign funded firms rose from 68% in 1996. The rising share of foreign funded firms is partly due to the relocation of production capacities by multinational enterprises into China (Table 5). Therefore, China still has a long way to go before becoming a real technology giant.

Table 5 The Reality Check on China's High-tech Exports

Year	Value(billionUS\$)	Processing Trade (%)	Foreign Funded Firms
			(%)
1996	12.7	86	68
2003	110.3	93	84
2007	347.8	85	87

Sources: China's Ministry of Science and Technology.

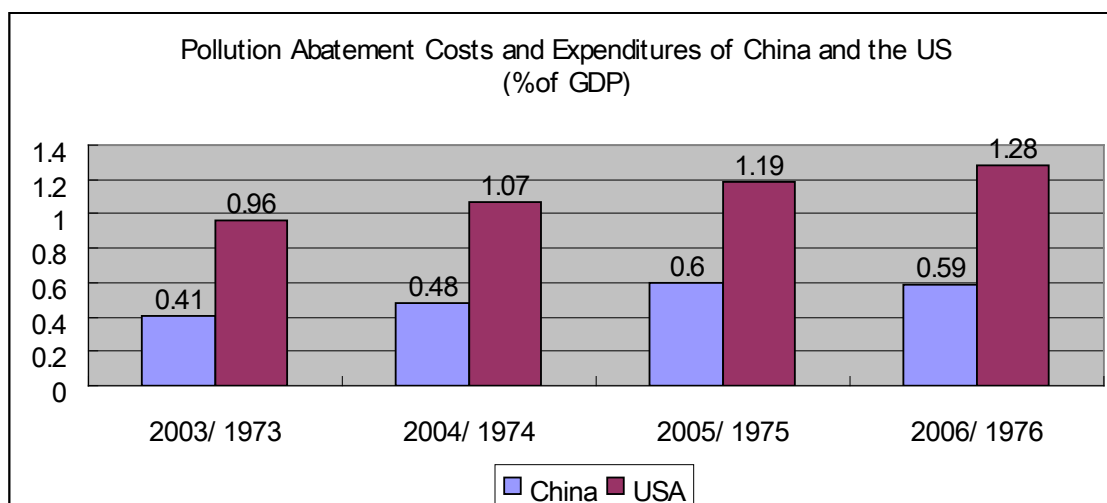
The low value added and the dominance of foreign invested firms in China's high-tech exports implies the urgency for Chinese indigenous firms to engage in technology innovation. China's R&D investment rose substantially from 0.71% of GDP in 1990 to 1.49 % of GDP in 2007, but remains lagging behind industrialized countries such as the US, Japan and the UK. The R&D intensity of Chinese companies, the ratios of R&D input to sales, is even lower, about 0.7% (Tong and Zhu, 2009). For increasing productivity growth, improving the structure of trade and the value added of exports, the Chinese government should use various fiscal policies to encourage R&D activities of enterprises and increase its investment in the research of science and technology.

Investing on Environment Protection for Sustainable Development

Besides the global economic recession, environmental deterioration has been threatening the sustainability of the Chinese economy. The present growth model is environmentally unsustainable. Water pollution and shortages represent a major environmental crisis faced by the Chinese economy. Nearly half of China's 640 major cities face water shortages and 100 face severe shortages. China's six largest cities—Beijing, Shenyang, Chongqing, Shanghai Xian and Guangzhou—rank among the most polluted cities in the world (World Resources Institute, 2009). According to the estimates of Carbon Dioxide Information Analysis Center (2009), China's CO₂ emission from fossil-fuel burning, cement manufacturing, and gas flaring surpassed the US as the largest emitter with 1.7 billion metric ton in 2006. China's overdependence on coal and fast growing cement industry are mainly responsible for the surging CO₂ emission.

On the other hand, China's investment on environmental protection from both the government and corporate remains much less than required for preventing further environmental degradation and maintaining the sustainability of the environment and the ecosystem. In 2006, China's pollution abatement and control expenditures amounted 125 billion Yuan, about 0.6% of GDP. Figure 5 shows China's expenditures on environmental protection from 2003 to 2006 along with that of the US from 1973 to 1976, the period just after the major revision of the US Clean Air Act. Compared with the US spending in the early 1970s, China's investment on pollution abatement and controls are much lower. Of the 4 trillion Yuan stimulus, only 5% was allocated for natural resource preservation and pollution control.

Figure 6



Source: The U.S. EPA(1990) and author's calculation based on China statistics

yearbook.

The concerns on plausible detrimental impacts of strict environmental regulations undermine the investment on environmental protection and pollution controls. The empirical research based on the experiences of the manufacturing industries in Germany, Japan, the Netherland, and the United States suggests that tight environmental regulations did not hinder productivity growth of the sectors. On the contrary, technology innovation and production efficiency may be enhanced (Aiken, D. V., et al., 2009). Coal accounts for 70% of China's primary energy consumption and the energy efficiency of China is about one ninth of Japan. The low energy efficiency and highly dependency are one of major factors causing environmental deterioration in China. The Chinese government should increase public investment in pollution abatement and control, and use fiscal subsidies and matching fund programs to facilitate private investment in improving energy efficiency and cleaning coal technology.

5. Concluding Remarks

The collapse of external demand threatens the sustainability of China's export-led growth strategy and pushes China into a crossroad of rebalancing its growth path. Regardless the US and other major economies recover or not, it is unrealistic to expect that external demand for Chinese economy would resumes more than 20% annual growth and last for another decade. The rising saving rate in the US indicates that American consumers started to change their excess consumption behaviors. China will soon surpass Japan and become the second largest economy in the world. If both of the second and the third largest economy continue to rely on the consumption of the first largest economy, the global imbalance will break the equilibrium of the global economy again.

Investment in infrastructure projects is able to increase aggregate demand and help to achieve expected growth target. However, it does not solve the structure problems: over capacity in manufacturing and unemployment due to the sharp contraction in external demand. The experiences of China in coping with the Asian financial crisis imply that stimulating private consumption holds the key for the transition to the domestic demand driven growth path.

Given the high urban employment and the biased income distribution towards the corporate, promoting growth in employment and collecting dividends from SOEs to fund social safety nets will be able to encourage household consumption. Abolishing restrictions on private investment in health care sector such as hospitals, postal services, railway, etc. will enhance both private investment and create jobs, eventually

raising domestic consumption. For the sustainable growth in the long run, investment in technology innovation, environment protection and energy efficiency should be strengthened.

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