The Global Financial Crisis and China's Policy Response

by

Kar-yiu Wong[*]

University of Washington
and
University of International Business and Economics

May 30, 2011

(First Draft. Please Do Not Quote.)

1. Introduction

The global financial crisis that started with the collapse of the Lehman Brothers in 2008 shocked the world, and was considered to be the worst economic situation since the Great Depression in the thirties. Many economies in various parts of the world were adversely affected, with substantial drop in the levels of their national income, employment, and stock market prices. The governments of these economies struggled to find ways to fight against the shock, to ease the employment damage, and to improve the conditions of the economies. However, nearly three years after the out-break of the financial crisis, many economies are still feeling the pain of the shock and are not seeing the end of their struggle in the near future.

Asia has not been immune from the present crisis, and many economies in the region experienced economic recession. However, as a contrast with the Asian financial crisis that occurred 11 years ago, the Asian economies this time showed their stability, vitality, and flexibility. Many of them were among the first economies in the world that recovered from the economic hardship. They are now seeing again economic growth and improvement in their production and employment.

Among these Asian economies, the performance of the Chinese economy during the periods of the financial crisis was especially remarkable and amazing. Table 1 shows the growth rates of China from 1990 to 2009, measured in terms of the annual growth rates of real GDP and real per capital GDP. Except for a few years, the growth rates of China were above 9 percent, and for a few years, the growth rates were above 12 percent.[1]

It is interesting to note that China's growth rates dropped slightly during the two recent financial crises: the Asian financial crisis at the end of the 1990s and the global financial crisis in 2008. This shows that China, as part of the world economy, cannot be totally immune from the economic difficulties in other economies. For example, China felt about the impact of the financial crisis in 2008 already, and its GDP and per capita GDP dropped, and in 2009, there were further drops. However, the growth rates were still some of the highest in the world, especially when many countries were still trapped by economic hard issues at home and abroad.

This paper examines how China responded to the financial crisis and how it performed in this period. In particular, it analyzes some of the policies the government chose and how these policies worked to improve the economic conditions and growth of the economy. The effectiveness of these policies will be studied and compared.

---

[1] These growth rates are spectacular: GDP growing at annual rates of 10 percent can be doubled in a mere seven to eight years and tripled in 12 years.

This paper is organized as follows. Section 2 examines some of the features of the financial crisis, and how it was transmitted from the United States to other economies, especially those in Asia. There are two transmission channels through which the shock waves were sent to other economies: the financial sector and foreign trade. For most Asian economies, the financial crisis was transmitted mainly through the trade channel, partly because of strength and stability of their financial sectors, and partly because traditionally the US has been the biggest market for most of their products.

Section 3 of this paper focuses on the Chinese economy and on how it withstood the financial shocks from the US and other countries. Section 4 examines major policy responses of China. Section 5 gives a comparison of these policies. Section 6 concludes.

2. How Asia Was Affected by the Financial Crisis?

The epic center of the 2008 global financial crisis was at the United States. Its break-out is commonly marked by the fall of the Lehman Brothers Holdings Inc. on September 15, 2008, when it filed for Chapter 11 bankruptcy protection. Despite the impacts caused by the fall of Lehman and later events, the crisis can be traced back to many factors that occurred before. Among those factors, probably the most important one is the housing market bubble in the United States.

The US housing market boomed in early 2000s and peaked in 2006. The burst of the housing market bubble in 2007 led to the subprime mortgage crisis. At that time, many people had already recognized that the subprime mortgage crisis could have big impacts on the financial sector of the United States. However, very few people could have imagined about the size and extent of the financial crisis that broke out the next year. Both the financial and real sectors of the US were severely crashed, and the shock waves quickly hit nearly all countries in the world.

The question is, why and how could the housing market bubble in the US cause so much damage to the economies in other countries? After all, most people in other countries had not purchased any houses or real estate properties in the US. Why were they affected by the US housing market bubble? Why were they hurt? Why were their economies affected?

To answer these questions, we need to examine how the US economy and other economies are linked, and how the shock waves could be transmitted from the US economy to other economies. Two main transmission channels can be identified.

The first channel comes from the financial linkages between the US economy and other economies. Noticing the continuous rise in the housing demand in the 2000s, a lot of financial institutions in the US approved loans to many people who might not have the required financial background and credit history, and the loans would not have been approved based on the normal loan conditions. As long as the housing prices kept on rising, both the borrowers and the lenders were happy with the loans.[2] In order to get the financial resources to offer the loans, many of these financial institutions issued bonds and other financial derivatives in the local and foreign financial markets. Not only were the financial institutions in other countries involved, but so were many individuals because the bonds were split into small units so that many ordinary people could afford to buy.[3] It is through these bonds and derivatives that other countries were sharing the risk of the US housing market bubble. When the US housing market collapsed, many people in the world suffered.

The second channel for the transmission of the housing market bubble was through export demand. The 2007 subprime mortgage crisis and the 2008 financial crisis caused a downturn of the economies in the US and European countries. GDP fell and unemployment rose. As a result, their demand for goods and services from Asia dropped substantially. The effect was more severe after the financial crisis, which caused substantial damage to the US and European economies. As these economies are the main export markets of many Asian products, the drop in the foreign export demand was shown to be very damaging.

In addition to these two channels, others might also exist. For example, the US housing market bubble could lead to an over-optimism in another economy and could partly fuel a housing market bubble in the latter economy. For most Asian economies, these two channels are regarded as the two most important and common ones, and out of these two, the second one is especially crucial and could be used to explain many of the economic problem these economies faced during the financial crisis. This paper focuses on the trade channel and examines how the Asian economies may have been affected in the financial crisis through a change in their foreign export demand.

3. Impacts on the Chinese Economy

This section analyzes how the Chinese economy had been affected by the crisis. We will examine the policy responses of the Chinese government in the next section.

---

[2] These loans are called subprime mortgages. Both the lender and borrower of a subprime mortgage loan were based on the premise that the housing prices would keep on rising so that if the borrower had difficulty in paying back the loan, the house/apartment could be sold at a price higher than the outstanding loan.
[3] These bonds are called mini-bonds.

The financial sector of the Chinese economy had experienced very little effect from the financial crisis in the US and Europe. That is mainly because the China financial sector is still relatively closed: Capital flow is under effective control by the government. As a result, inward and outward capital movements are not significant. In particular, public sale of the bonds and derivatives issued by the US housing mortgage firms virtually non-existed in China. As a result, the Chinese financial sector was shielded from the subprime mortgage and the financial crises that shocked most parts of the world.

The impact of the financial crisis on the Chinese economy occurred mainly through the trade channel, i.e., the drop in the foreign export demand. Consider Table 2, which shows the values of exports of goods of China to the rest of the world from 1990 to 2009.[4] It is clear from the table that the trend of foreign export demand was upward, except in 2009.[5] The export of goods dropped from ¥10,039 billion in 2008 to ¥8,203 billion in 2009, or a huge drop of ¥1,837 billion, or 18 percent. However, if it is believed that the foreign export demand would have increased should there be no financial crisis, then the drop in the export demand would be even greater.

In order to have a better idea of the size of the impact of the financial crisis, we ran a simple (OLS) regression (for the period from 1990 to 2008) of the export value against two variables, t and t^2, where t is the time trend variable, with $t = 1$ for the year 1990, $t = 2$ for 1991, and so on. The result is

$$\hat{E} = 14.08 - 4.30t + 0.46t^2,$$
$$(4.40)\ (1.01)\ (0.05)$$

(1)

where the figures in parentheses are the corresponding standard errors; $R^2 = 0.9693$. If we use this equation, then the estimated export in 2009 would be equal to ¥11,232 billion. From this number, the drop in China's export value in 2009 would be around ¥3,029 billion, or a 27 percent drop.

To see what this plunge in foreign export demand meant to the Chinese economy, let us consider the simple output market in the economy. Its equilibrium condition is

$$Y = C + I + G + E - M,$$

(2)

---

[4] The period for our analysis started from 1990, about ten years after the opening up of the Chinese economy. We presume that by 1990, the Chinese economy would have reached its equilibrium path as an "open" economy.
[5] The present analysis refers to export of goods. It should be noted that in the disaggregation of GDP according to the expenditure approach, the net exports of goods *and* services are shown. However, the online database shows export of goods and import of goods, but not export and import of goods and services separately. Therefore Table 1 and subsequent analysis focuses on exports and imports of goods only.

where Y is the GDP of the economy, C the household consumption demand, I the investment demand, G the government consumption demand, E the external export demand, and M the import demand of the economy.[6]

In our simple framework, we assume that I, G, and E are given exogenously. We explained earlier that the global financial crisis in 2008 led to a big drop in China's foreign export demand. In the Keynesian economy, such drop in the autonomous demand could have a multiplier effect on the economy's national income. Table 3 shows the components of the GDP of China from 1990 to 2009. The table shows that household consumption demand and investment demand are the two biggest components.

Even if we do not take into account the trend factor, the drop in foreign export demand of goods in 2009 was ¥1,837 billion. Assuming a multiplier of 2, the financial crisis could have cause a drop of China's GDP by ¥3,674 billion in the long-run, which is about 11.7 percent of China's GDP in 2008. This shows how devastating the financial crisis was to the Chinese economy.[7]

The experience of the Chinese economy during the financial crisis was similar to those of many other Asian economies. On the whole, the financial sectors of these Asian economies are healthy enough to withstand the blow of the financial crisis. The main channel for the shock waves of the crisis from the US and European economies to reach the Asian economies was still the trade channel. Stories similar to the above one can be used to describe many other Asian economies.

4. Policy Responses

We now examine several policies for a country like China, which experienced a drop in the exogenous foreign export demand.

4.1 Fiscal Policy

Consider again the simple output market of an economy described by (2). Define the functions of the variables in the following way:

---

[6] As mentioned, the export and import in GDP equation should be export and import of goods and services. The database provides net export of goods and services, but not export and import separately.
[7] This analysis should be interpreted carefully. The multiplier effect is a long-run effect, and the impact in one year would be much smaller than that.

$$C = C_0 + c(Y - T)$$
$$I = I_0$$
$$G = G_0$$
$$E = E_0$$
$$M = M_0 + m(Y - T)$$
$$T = T_0 + tY,$$

where the subscript "0" denotes the autonomous part of a variable, c (m) is the marginal propensity to consume (import), T is the income tax, and t is the income tax rate. For simplicity, we assume that I, G, and E are given exogenously

Substituting the demand functions into (2) and rearranging terms to give

$$Y = \frac{C_0 - cT_0 + I_0 + G_0 + E_0 - M_0}{1 - c(1-t) + m}, \tag{3}$$

which yields a multiplier equal to

$$\alpha = \frac{1}{1 - c(1-t) + m}. \tag{4}$$

As the foreign export demand dropped because of the miserable economic conditions in the US and Europe, the GDP of the importing economy suffered. In the case of China, the drop in the foreign export demand of goods in 2009 was ¥1,837 billion from the figure in 2008 (or ¥3,029 billion as compared with the estimated export value in the same year). How is the drop in foreign export demand compared with the government budget?

In 2009, the government expenditure was ¥4,440 billion. In order to fill the gap caused by the drop in the foreign export demand, the government expenditure has to be increased to ¥6,277 billion. Alternatively, there has been suggestion that the tax (including income tax and business tax) be reduced by the same amount.[8]

It is clear that during the 2008 financial crisis, the drop in the foreign export demand is too big for the government budget.[9] It is difficult, both economically and politically, for the government to have such a big rise in its budget balance, either in the form of an increase in the government expenditure or a decrease in taxes, to make up the drop in foreign export demand. Thus we conclude that it is not feasible to rely only on an anti-cyclical fiscal policy to counter the negative impact of the present financial crisis.

---

[8] In the present Keynesian model, a tax reduction is less effective than an increase in government expenditure of the same amount in improving national income.
[9] The drop in the export of goods and services could be greater than the drop in the export of goods.

4.2 Domestic Demand

Another response suggested for countries like China to minimize the damage caused by the present financial crisis is to encourage domestic (household) consumption. The reason is that both export demand and consumption demand are components of national income. It is therefore argued that domestic consumption be encouraged to make up the drop in export demand.

The argument for domestic demand has not been made clear in the publication. Let us try to provide a more detailed analysis.

4.2.1 Household Consumption Demand

The national income equation (2) shows that the national income of an economy depends positively on household consumption demand and foreign export demand. This means that if there is a drop in foreign export demand, then the household consumption demand could be adjusted upward to counter the negative impact of the change in the export demand on the national income. This is the rationale behind the recent argument that domestic demand should be encouraged to help local production, which is directly related to domestic employment.

As mentioned, household consumption demand can be divided into the autonomous component, which is independent of the national income level, and the endogenous component, which depends on the national income level. Both components can be increased to provide the positive effect on national income. However, the procedure and the effects about encouraging these two components are different. The autonomous component of the consumption demand may be required to change over certain periods, but not necessarily indefinitely. For example, if the foreign export demand drops only temporarily, then the autonomous component of household consumption can be promoted in only those periods with a drop in export demand. For the endogenous component, a change in the marginal propensity to consume, c, will be required. An increase in c means an increase in consumption over many periods (or even indefinitely), and will lead to a change of the magnitude of the income multiplier.

In the case of China, how domestic demand can be increased has not been explicitly explained, but it is apparent that increases in the autonomous component and the endogenous component have been encouraged. It is therefore interesting to see how much these two components have changed during the financial crisis. However, to identify changes in these two components is not straightforward, especially when we lack sufficient data.[10]

In this paper, we will examine changes in the autonomous component of the household consumption demand, assuming that the marginal propensity to consume is not affected by the financial crisis. From equation (2), it is clear that if the sum of the autonomous parts of

---

[10] The global financial crisis broke out in 2008, and at the time of writing this paper, only the 2009 data are available.

household consumption demand and the export demand is kept constant, then the GDP will remain unchanged. In other words, the condition we seek for no change in GDP is

$$\Delta C_0 = -\Delta E_0, \tag{5}$$

i.e., the autonomous part of the household consumption demand is numerically equal to the drop in the export demand. If we want to maintain the level in 2009, then the rise in household consumption demand needed will be ¥1,837 billion, or if we want to make up the drop in export demand as compared with the estimated level, the rise in household consumption demand needed will be ¥3,029 billion.

To examine how much effort China has done to encourage household consumption, we ran a regression (for the period from 1990 to 2008) of the household consumption against the current year GDP, t, and t^2, where as defined earlier, t is the time trend variable, with $t = 1$ in 1990. The result is given below:

$$\hat{C} = 18.7 + 0.279Y + 210.9t - 5.1t^2$$
$$(95.6) \ (0.016) \quad (18.6) \quad (1.6) \tag{6}$$
$$R^2 = 0.9990$$

where Y is the GDP. The equation explains quite well the household consumption demand. Equation (6) suggests that the marginal propensity to consume is about 0.279. Table 4 shows the observed and estimated household consumption from 1990 to 2009.

Based on (6) and assuming that the marginal propensity to consume remains unchanged, we estimate the household consumption demand in 2009, which is equal to ¥11,833 billion. The observed household consumption demand in that year is ¥12,113 billion. The observed household consumption demand is greater than the estimated household consumption demand by ¥281 billion, or about 2.4 percent.

The increase in household consumption demand, however, is not enough to make up the drop in foreign export demand. Let us now turn to the change in import demand.

4.2.2 Import Demand

The national income equation (2) shows that GDP of the economy depends on the net export of goods and services, $E - M$. So if a drop in the foreign export demand is matched by a drop in the import demand of the same magnitude, then the GDP could remain unchanged. This provides another way for the economy to counter-act the adverse impacts of the financial crisis.

Import demand, like household consumption demand, can be disaggregated into an autonomous component and an endogenous component. Both of these two components can be encouraged. In the case of China, changes in these two components can hardly be identified

because of the lack of data. Following what we did for the consumption demand, we will focus on the autonomous component of the import demand, and will try to see how that component may have changed during the financial crisis.[11] As explained earlier, the lack of data forces us to focus on the import of goods.

We ran a simple regression to find out how the autonomous component of the import may have changed in the financial crisis, using the data in the period from 1990 to 2008. The following regression result was found:

$$\hat{M} = 518.5 + 0.135Y - 240.0t + 22.4t^2$$
$$(314.7)\ (0.051)\quad (61.1)\quad (5.3)$$
$$R^2 = 0.9853$$

(7)

Equation (7) suggests that the marginal propensity to import is equal to 0.135. Table 5 shows the observed and estimated import of goods of China from 1990 to 2009.

Using equation (7), we estimate the import demand in 2009, assuming that the GDP grew to what was observed. The estimated value was ¥9,336.3 billion. On the other hand, the observed import was ¥6,861.8 billion, which is ¥2,474.5 billion, or 26.5 percent lower than the estimated value.

The regression result suggests that China did a very good job in terms of lowering its import demand. The drop in the import demand (observed import demand minus the estimated import demand) is close to (equal to 82 percent of) the drop in foreign export demand (observed export demand minus the estimated export demand). If we add the increase in household consumption demand to the change in import demand, then the total increase in domestic consumption is equal to ¥2,755.5 billion, which is about 91 percent of the drop in foreign export demand. In other words, the increase in consumption demand nearly made up the drop in foreign export demand during the global financial crisis.

5. Policy Comparison

We have described three policy options for China during the current global financial crisis as a way to alleviate the impacts of the crisis on the economy: fiscal policy, increase in household consumption demand, and drop in import demand. These three policies are different in terms of their effectiveness and in terms of how much each of them counter-acts the impacts of the financial crisis.

---

[11] In the GDP calculation, *E* and *M* represent the export and import of goods and services, respectively. However, the online database shows the net export (export minus import) only, but not the individual export and import series. So the analysis provided here refers to the export and import of goods only.

Without attempting to provide a complete comparison of these three policies, we will try to see how different they are. First, we note that fiscal policy is generally not sufficiently because the size of the impacts of the financial crisis on local production is quite big. An increase in the government expenditure to fully compensate the economy for the drop in foreign export demand is too big for the Chinese government. So it is not feasible to depend entirely on the government budget to provide the gap in demand.

Second, increasing domestic consumption is generally a more effective way of reducing the adverse effect of the global financial crisis and the subsequent drop in foreign export demand. Increasing domestic demand can occur through a rise in household consumption demand, a decrease in import demand, or both. We showed that domestic consumption in China increased a lot in 2009, nearly good enough to make up the drop in foreign export demand. That is quite remarkable.

We also showed that the change in import demand is much greater than the change in household consumption demand (the observed value minus the estimated value). This suggests that during a financial crisis like the present one, it is much easier to change in the import demand than the household consumption demand.

We want to see whether that last point is also true for other Asian economies. While Table 5 shows the aggregate import of China in those years, we want to determine how some of the countries might have changed their import demands. We consider four different groups of countries: the US, Europe[12], ASEAN,[13] and Japan and Korea as a group. For each group, we found out the export of Chinese goods from 1992 to 2009.[14] We then ran a regression of the export, using the data from 1992 to 2008, against t and t^2, where t is the time trend with $t = 1$ in 1992 and so on. We used the resulting equation to estimate the export from 1992 to 2009.[15] We then determine the difference between the observed export in 2009 and the estimated export in the same year. The results are given in the last row of Table 6.

The results are quite interesting, and may be a bit surprising. The drops in the export demand from the US and Europe are expected, and they reflect the effect of the economic recession in these countries. The drops in the export demand from other Asian countries are less expected, and are in fact much more than those from the US and Europe, both in a percentage sense and in

---

[12] Europe includes Austria, Belgium, Luxembourg, Cyprus, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom.

[13] ASEAN, which stands for the Association of Southecast Asian Nations, includes Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Burma (Myanmar), Cambodia, Laos, and Vietnam.

[14] Earlier data are not available in the database.

[15] We might include the GDP of the relevant country(ies) in the regression as an additional explanatory variable, but that will be more difficult as some of the groups involve a lot of countries.

an absolute sense. Since these Asian economies did much better than the US and European economies, why did we find substantial drops in export from these Asian economies?

The answer to this question can be found from the above analysis about the response of the Chinese economy to the financial crisis. Because the government budget balance cannot solely depend on to counter-act the drop in foreign export demand, the Chinese government has been promoting domestic demand. Of the two options of raising domestic demand, lowering import is easier than raising household consumption for the case of China.

We believe that many other Asian economies received similar experience and took similar approach to maintaining the aggregate demand. This means that they also relied more on a decrease in import than on an increase in the household consumption demand. When they imported less, China experienced a drop in the export to these countries. As a matter of fact, this effect was so significant that the drops in the export to ASEAN and Japan plus Korea as a whole in 2009 were much greater than the drops in the export to the US and the European countries.

While both a drop in import and a rise in household consumption represent an increase in aggregate demand and thus would have positive impacts on national income, they have different welfare implications. On the cost side, it generally is easier to discourage import than to encourage household consumption. The former is like a substitution between domestic goods and foreign goods: Households consume more of the goods produced locally but less of the foreign goods. The latter, however, requires an increase in the autonomous part of consumption. Such a change in the consumption behavior of the households could be more difficult, at least in the short run. That is probably what many other Asian economies were facing after the financial crisis, and thus chose to substantially cut their imports in 2009.

These two policies can also be compared on the welfare side. Limiting the import of foreign goods will work against trade liberalization, and will have adverse effect on the (static and possibly dynamic as well) gains from trade. When many (Asian) economies are using a similar policy, the effect on intra-regional trade could be very damaging. Furthermore, a reduction in one economy's import is a reduction in the export of another economy. This means that while this policy may help an economy's aggregate demand, it hurts another economy's aggregate demand. This is what China experienced in 2009.

So far, we have only one year's statistical data after the financial crisis. We do not know for how long these Asian economies will have to rely on reduction in their import demand as a way to improve the aggregate demand situation.

As a matter of fact, there is another policy for the governments to increase aggregate demand: They should *increase* the import demand (especially the import from other Asian economies)

and household consumption simultaneously. On the one hand, they can increase the aggregate demand, and on the other hand, they will improve intra-regional trade. They will be helping each other.

6. Concluding Remarks

This paper examines the impacts of the 2008 global financial crisis on China and how China responded to the impacts. The financial crisis did hit the Chinese economy, causing a drop in its growth rate, but as compared with many other economies in the world, China did quite well, maintaining growth rates close to 10 percent.

China's policy response to the negative impacts of the financial crisis consisted of expansionary fiscal policies and encouraging domestic demand. We argued that because of the size of the impact on the aggregate demand, it is difficult for the economy to rely on the government expenditure to make up the gap created by the fall in foreign export demand. The Chinese government appeared to be aware of this difficulty, and thus had been encouraging an increase in domestic demand. There have been two main ways of raising domestic demand: increasing household consumption demand and lowering import demand.

For China, the drop in import demand was much greater than the increase in household consumption demand in 2009. Thus we saw a substantial decrease in the import of goods. This phenomenon could also be found in other Asian economies in 2009.

While both a drop in import demand and a rise in household consumption demand can cause an increase in aggregate demand, they have different welfare implications. For an economy, it may be easier to change in import demand in the short-run, and thus is usually what a government would prefer to fill the gap in the aggregate demand. However, that is detrimental to foreign trade and could diminish what an economy can gain from foreign trade. This is what governments should consider when finding ways to improve national income.

Table 1: Growth Rates of China, 1990 – 2009

Year	GDP	Per capita GDP
1990	3.8	2.3
1991	9.2	7.7
1992	14.2	12.8
1993	14.0	12.6
1994	13.1	11.9
1995	10.9	9.7
1996	10.0	8.8
1997	9.3	8.2
1998	7.8	6.7
1999	7.6	6.8
2000	8.4	7.5
2001	8.3	7.6
2002	9.1	8.3
2003	10.0	9.3
2004	10.1	9.4
2005	11.3	10.7
2006	12.7	12.1
2007	14.2	13.6
2008	9.6	9.1
2009	9.1	8.5

Note: GDP and per capita GDP are at 2000 constant US$

Source: World Development Indicators

Table 2: China's Observed and Estimated Exports of Goods, 1990 – 2009

		¥ billion
Year	Total Export	Estimated Export
1990	298.6	1,023.4
1991	382.7	731.4
1992	467.6	531.5
1993	528.5	423.8
1994	1,042.2	408.3
1995	1,245.2	484.8
1996	1,257.6	653.5
1997	1,516.1	914.4
1998	1,522.4	1,267.4
1999	1,616.0	1,712.5
2000	2,063.4	2,249.8
2001	2,202.4	2,879.2
2002	2,694.8	3,600.7
2003	3,628.8	4,414.4
2004	4,910.3	5,320.3
2005	6,264.8	6,318.2
2006	7,759.5	7,408.3
2007	9,345.6	8,590.6
2008	10,039.5	9,865.0
2009	8,203.0	11,231.5

Source: All China Marketing Research, various years

Table 3: GDP by Expenditure Approach, 1990 – 2009

¥ billion

Year	GDP	HH Consum.	Govern. Consum.	Fixed K Formation	Change in Inventory	Net Export
1990	1,934.8	945.1	264.0	482.8	191.9	51.0
1991	2,257.7	1,073.1	336.1	607.0	179.8	61.8
1992	2,756.5	1,300.0	420.3	851.4	157.3	27.6
1993	3,693.8	1,641.2	548.8	1,330.9	240.9	-68.0
1994	5,021.7	2,184.4	739.8	1,731.3	302.8	63.4
1995	6,321.7	2,837.0	837.9	2,088.5	458.5	99.9
1996	7,416.4	3,395.6	996.4	2,404.8	473.7	145.9
1997	8,165.9	3,692.2	1,121.9	2,596.5	400.3	355.0
1998	8,653.2	3,922.9	1,235.9	2,856.9	274.5	362.9
1999	9,112.5	4,192.0	1,371.7	3,052.7	242.4	253.7
2000	9,874.9	4,585.5	1,566.1	3,384.4	99.8	239.0
2001	10,902.8	4,943.6	1,749.8	3,775.5	201.5	232.5
2002	12,047.6	5,305.7	1,876.0	4,363.2	193.3	309.4
2003	13,663.5	5,765.0	2,003.6	5,349.1	247.2	298.6
2004	16,080.0	6,521.9	2,233.4	6,511.8	405.1	407.9
2005	18,713.1	7,265.3	2,639.9	7,423.3	362.4	1,022.3
2006	22,224.0	8,210.4	3,052.8	8,795.4	500.0	1,665.4
2007	26,583.4	9,561.0	3,590.0	10,394.9	699.5	2,338.1
2008	31,490.1	11,059.5	4,175.2	12,808.4	1,024.1	2,422.9
2009	34,502.4	12,113.0	4,439.7	15,668.0	778.4	1,503.3

Source: All China Marketing Research, various years

15

Table 4: China's Observed and Estimated Household Consumption, 1990 – 2009

		¥ billion
Year	Total Consumption	Estimated Consumption
1990	945.1	764.4
1991	1,073.1	1050.2
1992	1,300.0	1374.9
1993	1,641.2	1811.7
1994	2,184.4	2347.5
1995	2,837.0	2865.2
1996	3,395.6	3315.6
1997	3,692.2	3659.4
1998	3,922.9	3919.9
1999	4,192.0	4162.4
2000	4,585.5	4479.4
2001	4,943.6	4860.3
2002	5,305.7	5263.6
2003	5,765.0	5788.3
2004	6,521.9	6526.2
2005	7,265.3	7314.4
2006	8,210.4	8337.4
2007	9,561.0	9587.1
2008	11,059.5	10979.3
2009	12,113.0	11832.7

Source: All China Marketing Research, various years

Table 5: China's Observed and Estimated Imports of Goods, 1990 – 2009

		¥ billion
Year	Observed Import	Estimated Import
1990	257.4	562.1
1991	339.9	432.9
1992	444.3	372.2
1993	598.6	415.6
1994	996.0	556.4
1995	1,104.8	738.3
1996	1,155.7	937.3
1997	1,180.7	1,134.5
1998	1,162.6	1,341.1
1999	1,373.6	1,588.7
2000	1,863.9	1,922.0
2001	2,015.9	2,336.0
2002	2,443.0	2,810.5
2003	3,419.6	3,393.5
2004	4,643.6	4,129.3
2005	5,427.4	4,939.2
2006	6,337.7	5,912.3
2007	7,328.5	7,044.9
2008	7,952.7	8,296.1
2009	6,861.8	9,336.3

Source: All China Marketing Research, various years

Table 6: Changes in the Export Demand of China from Different Countries

US$ million

Year	US Obs E	US Est E	Europe[a] Obs E	Europe[a] Est E	ASEAN[b] Obs E	ASEAN[b] Est E	Japan & Korea Obs E	Japan & Korea Est E
1992	8.9	14.2	10.7	19.7	4.4	10.6	13.8	25.0
1993	10.7	12.7	15.9	16.5	6.3	7.4	23.6	22.4
1994	13.9	11.8	18.1	14.5	7.2	5.5	26.5	21.1
1995	16.1	11.8	20.6	13.9	9.9	5.0	29.1	21.3
1996	16.2	12.4	19.1	14.6	10.8	5.8	29.2	22.9
1997	16.3	13.8	18.4	16.7	12.5	8.0	29.1	25.9
1998	16.9	16.0	20.0	20.0	12.6	11.5	28.3	30.3
1999	19.5	18.8	25.9	24.7	14.9	16.3	33.8	36.1
2000	22.4	22.5	31.3	30.7	22.2	22.5	41.5	43.4
2001	26.2	26.8	36.4	38.0	23.2	30.0	43.0	52.0
2002	27.3	31.9	39.8	46.6	31.2	38.8	53.7	62.0
2003	33.9	37.7	55.0	56.5	47.3	49.0	74.5	73.5
2004	44.7	44.3	70.6	67.8	63.0	60.6	94.9	86.3
2005	48.7	51.6	74.0	80.4	75.0	73.5	100.9	100.6
2006	59.3	59.6	90.7	94.3	89.5	87.7	116.1	116.2
2007	69.5	68.4	111.1	109.5	108.5	103.3	134.5	133.3
2008	81.6	77.9	132.7	126.0	117.0	120.2	151.4	151.8
2009	77.8	88.1	127.8	143.9	106.7	138.4	131.7	171.6
	−11.8%		−11.2%		−22.9%		−23.2%	

Notes: (1) [a]Europe: Austria, Belgium, Luxembourg, Cyprus, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom.

(2) [b]ASEAN: (Association of Southeast Asian Nations) Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Burma (Myanmar), Cambodia, Laos, and Vietnam.

(3) The regression of each variable was run against t and t^2, where $t = 1$ in 1992, and so on.

(4) The last row gives the percentage drop in the observed export as compared with the estimated export for each group of countries.

(5) These are the export of goods.

Source: United Nations, Comtrade Database.