

**China Development Bank Financial Research Centre**

**The Chinese Economy: Myths and Realities**

by

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# **The Chinese Economy: Myths and Realities**

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## **1. Introduction**

There are many misunderstandings and myths about the Chinese economy. But repeated often enough, and by sufficiently respectable “authorities,” they tend to become accepted as truths. However, accepting these misunderstandings and myths as truths has serious consequences: policy makers base their decisions on these assumed “truths.” And their policies will not have the expected effects if these assumed “truths” turn out to be false. In this lecture I hope to help dispel some of the common myths about today’s Chinese economy.

## **2. The Chinese Economy Today**

China has made tremendous progress in its economic development since it began its economic reform and opened to the World in 1978. China is currently the fastest growing economy in the World—averaging approximately 10 percent per annum over the past 30 years. Between 1978 and 2009, Chinese real GDP grew 18 times, from US\$277 billion to US\$4.99 trillion (2009 prices) to become the third largest economy in the World, after the U.S. and Japan. During the same period, Chinese real GDP per capita grew more than 13 times, from US\$288 to US\$3,706. By comparison, the U.S. GDP (approx. US\$14.12 trillion) and GDP per capita (approx. US\$45,918) were respectively 2.8 and 12.4 times the comparable Chinese figures in 2009.

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Chart 1: Chinese Real GDP in US\$ Since 1952 (2009 Prices)



The Chinese economy has survived the East Asian currency crisis of 1997-8 as well as the global financial crisis of 2007-9 reasonably unscathed. It will likewise survive the current financial crisis affecting some of the member countries of the European Union (Portugal, Ireland, Greece and Spain). If current trends continue, Chinese real GDP will approach the level of U.S. real GDP in less than 20 years' time--some time between 2025 and 2030.

However, despite its rapid growth, China is still a developing economy in terms of its real GDP per capita. An economy is generally considered to be developed if its GDP per capita exceeds US\$10,000 (if we take into account inflation, this threshold should probably be much higher). It will probably take 20 years before China joins the ranks of developed economies, achieving a per capita real GDP of US\$10,000, and another 20 to 25 years before China reaches the same level of real GDP per capita as the United States, some time past the middle of the 21<sup>st</sup> Century (bearing in mind that in the meantime, the U.S. economy will also continue to grow, albeit at rates significantly lower than those of the Chinese economy and that the Chinese population will reach a peak around 2035 and then begin to decline slowly).

Chart 2: Chinese Real GDP per Capita in US\$ Since 1952 (2009 Prices)

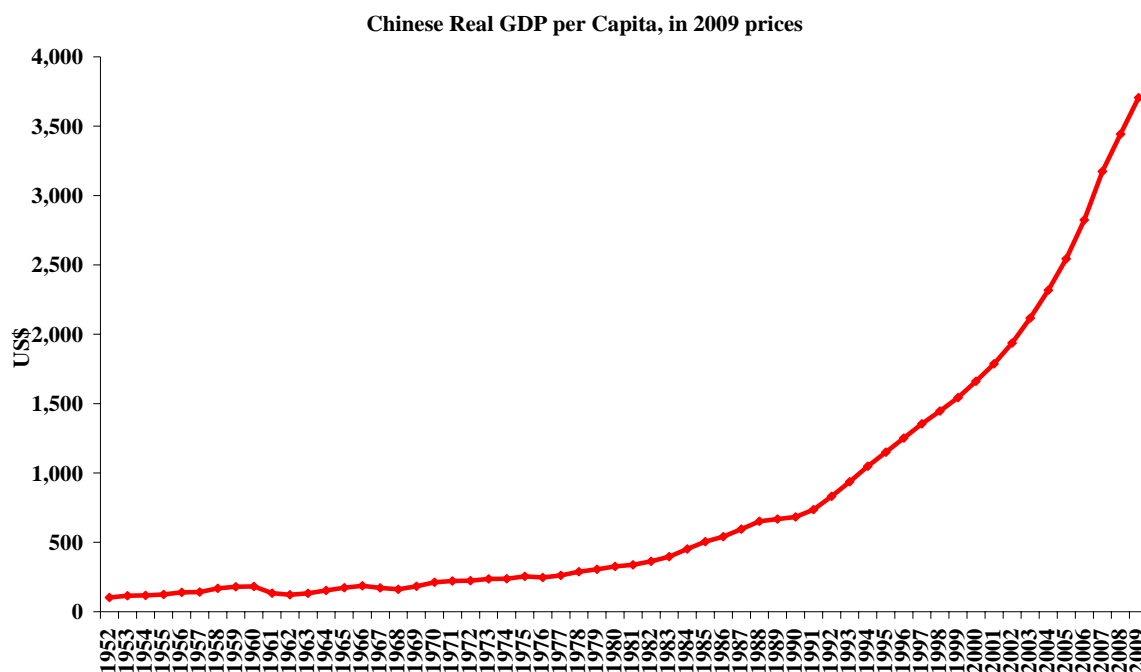


Table 1: Chinese Real GDP and Real GDP per Capita: Past, Present and Projected Future<sup>1</sup>

	1978	2009	2020
	US\$ (2009 prices)		
Real GDP (trill.)	0.277	4.99	10.00
Real GDP/capita	288	3,706	7,100

And despite the many problems that have arisen in the Chinese economy within the past decade—for example, income disparity, environmental degradation, inadequate infrastructure and corruption—it is fair to say that everyone in China has benefited from the economic reform since 1978, albeit to varying degrees, and few want to return to the central planning days. China is one of the very few socialist countries that have managed to make a smooth transition from a centrally planned to a market economy. It is a model for other transition economies (e.g., Vietnam) and potential transition economies (e.g., Cuba, North Korea and Laos).

<sup>1</sup> The projections for 2020 are derived from an econometric model of China of the author's.

### 3. The Seven Myths about the Chinese Economy

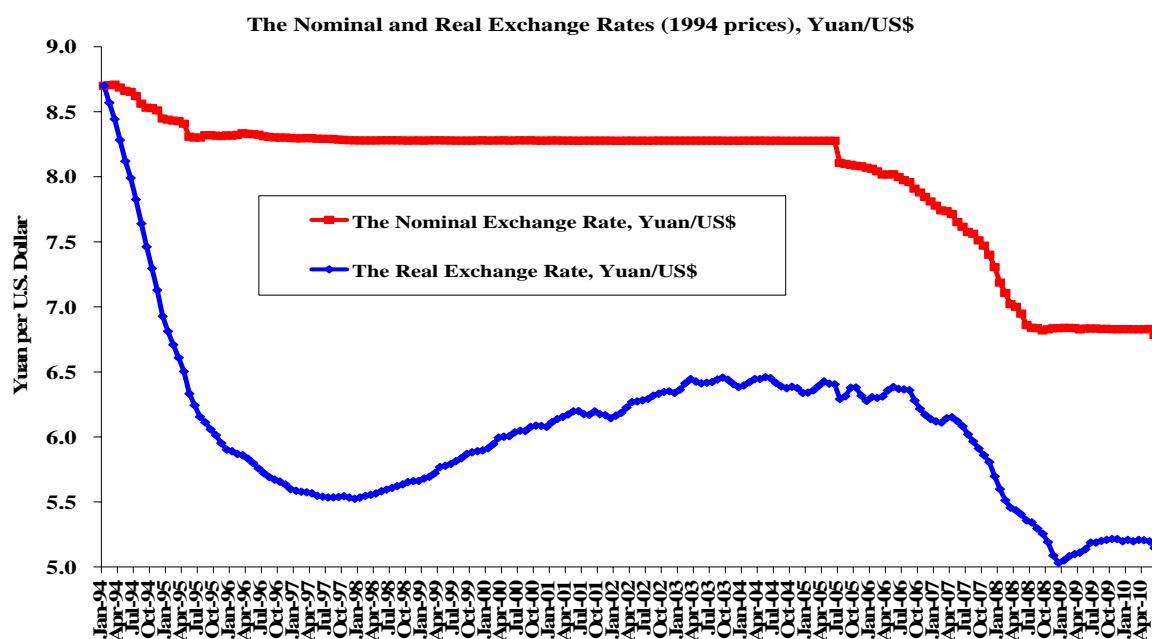
The seven common myths about the Chinese economy that will be discussed in turn in this lecture are:

- (1) The Renminbi (Yuan) is under-valued;
- (2) Chinese trade surpluses caused the global imbalances;
- (3) Chinese economic growth depends critically on exports;
- (4) The economies of China and East Asia cannot be de-coupled from the U.S. and Europe;
- (5) Chinese household savings rates are too high;
- (6) The Chinese economy faces labour shortages;
- (7) Chinese economic power is comparable to that of the United States.

#### (1) Is the Renminbi (Yuan) Under-Valued?

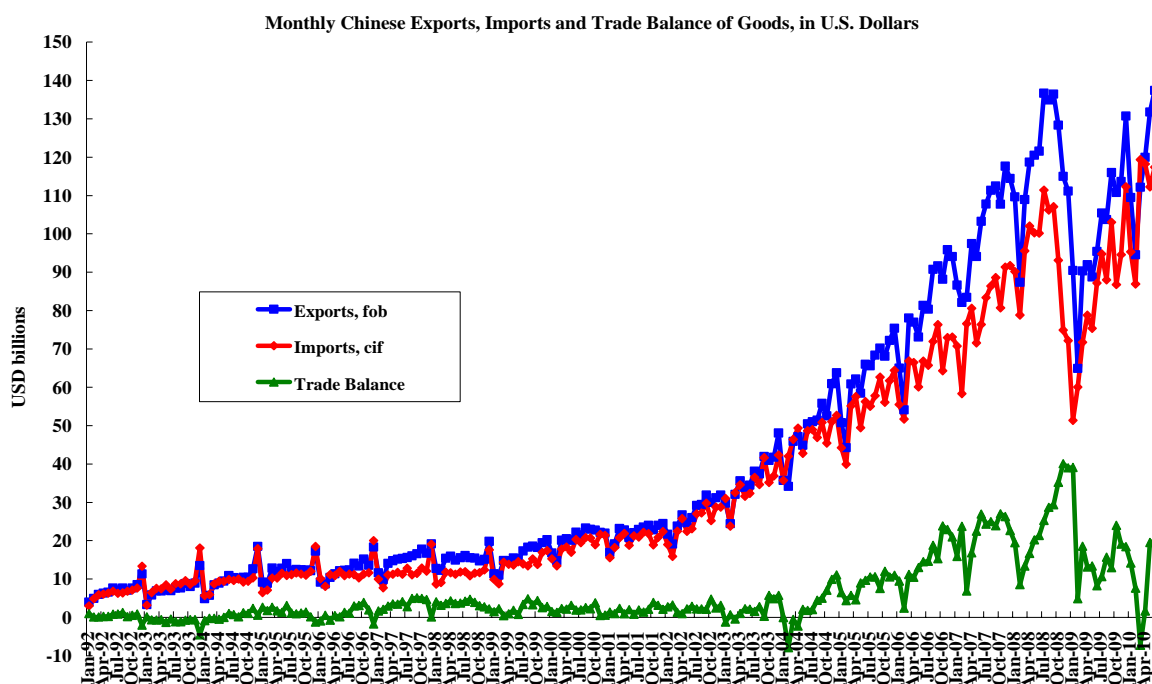
A country's currency is considered under-valued if it runs persistent surpluses in trade in goods and services combined vis-à-vis the entire World. It is considered over-valued if it runs persistent trade deficits vis-à-vis the World. A bilateral trade surplus, even a persistent one, says nothing about whether a country's currency is under-valued because it may still have a near zero or even negative trade balance vis-à-vis the entire World. Most non-oil producing countries have persistent bilateral trade deficits with oil-exporting countries. And that does not necessarily mean the currencies of the oil-exporting countries are under-valued.

Chart 3: The Nominal and Real Yuan/US\$ Exchange Rates



The statistics on Chinese trade balances over the past three decades indicate that China has had essentially balanced trade in goods and services combined with the World until 2005 and that its trade surplus has once again become relatively insignificant, especially relative to Chinese GDP, beginning in early 2010 (see the following chart)<sup>2</sup>.

Chart 4: Chinese Monthly Exports, Imports and Trade Balance of Goods, US\$



In contrast, the large U.S. trade deficit with the World existed since at least 1998, long before China began to have a trade surplus with the World, in 2005. What this means is that while there is evidence that the U.S. Dollar might have been over-valued, there is no evidence that the Renminbi was under-valued prior to 2005.

<sup>2</sup> The Chinese exports and export surplus surged in June 2010, in part because exporters tried to beat the date for the expiration of value-added tax rebates on exports. However, it is believed that such a rate of growth of Chinese exports is only one-off and not sustainable.

Chart 5: Monthly Chinese Surplus and U.S. Deficit with the World, Trade in Goods, Bill. US\$

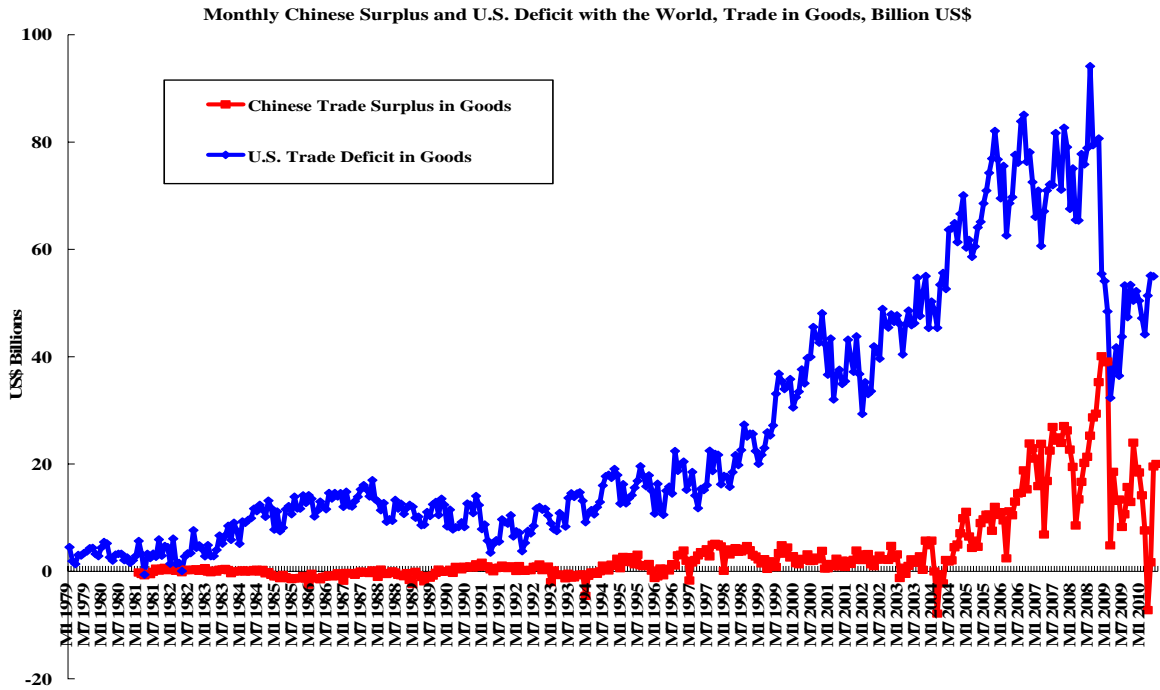
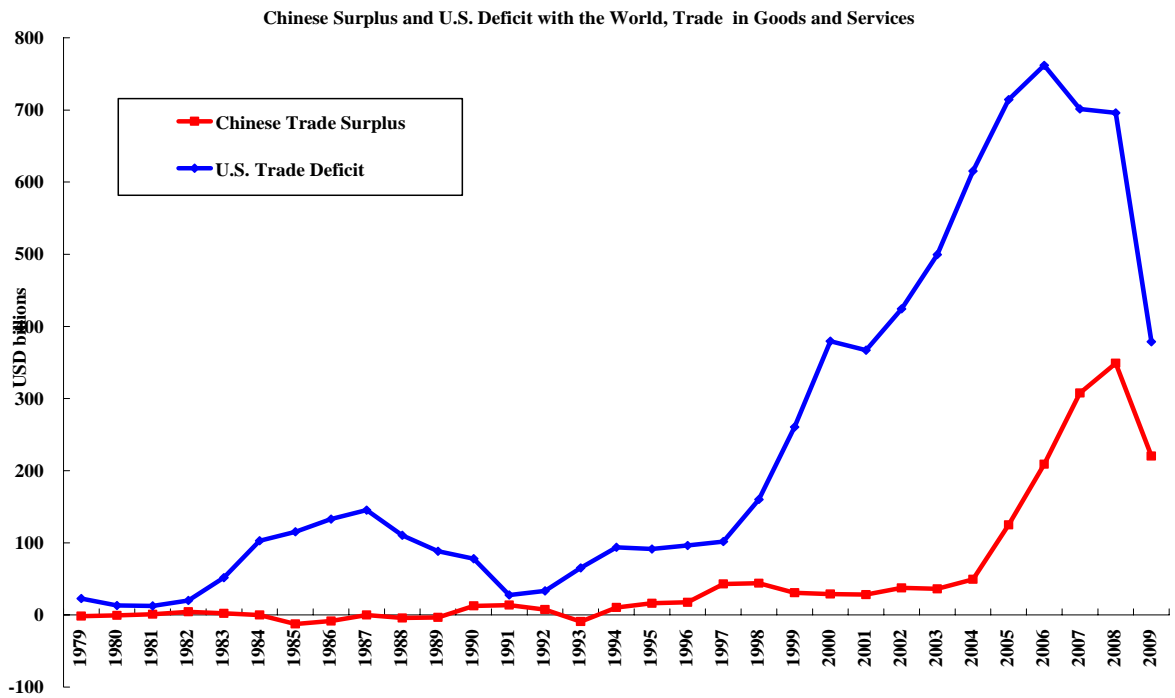


Chart 6: Chinese Surplus and U.S. Deficit with the World, Trade in Goods and Services



Partly in response to the rise in the Chinese trade surplus vis-à-vis the World, the Renminbi was allowed to appreciate in July 2005, and rose 20 percent in nominal terms and 25 percent in real terms by the end of 2008. The Chinese trade surplus vis-à-vis the World reached a peak in 2008 when it began to decline. For 2009, it declined more than 30 percent. It has continued to fall and even turned negative in March 2010. The Chinese export surplus for the first half of 2010 represented a year-over-year decline of more than 42 percent. The long-term goal of the Chinese Government is to reduce the Chinese trade surplus vis-à-vis the World to zero. If the current trend continues, the goal of zero annual trade balance can probably be achieved in a couple of years, without necessarily any large adjustment in the nominal Yuan/U.S. Dollar exchange rate.

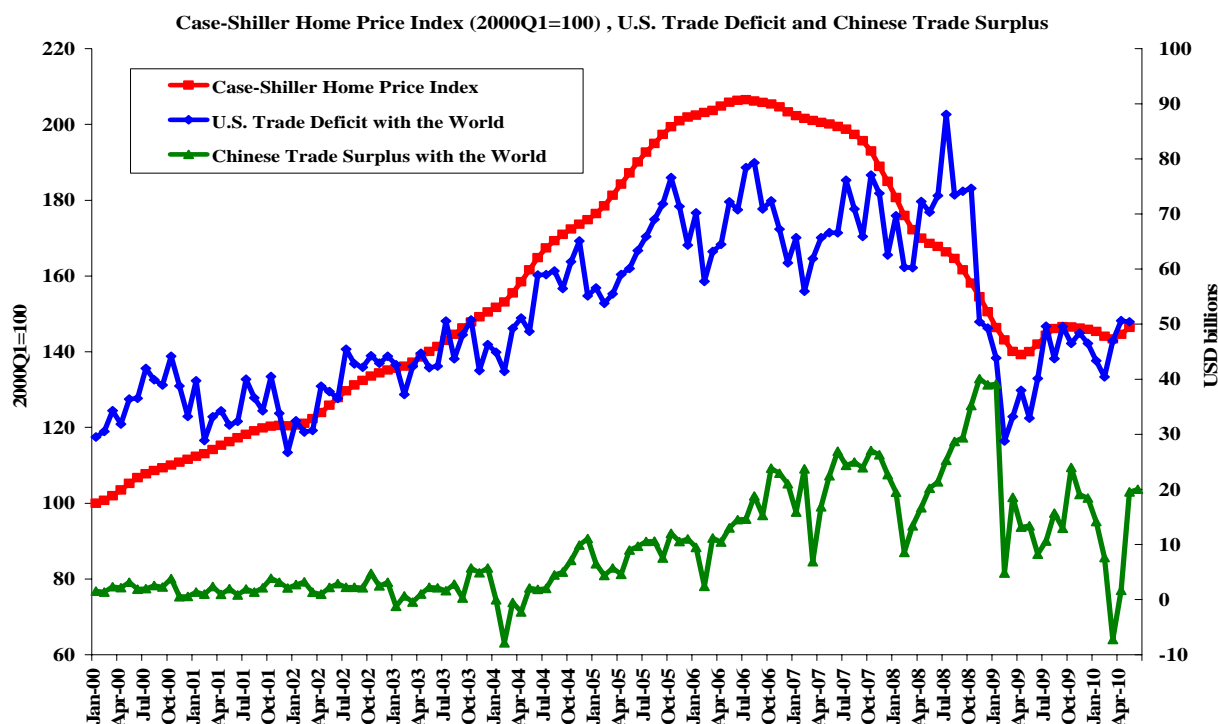
## (2) Did the Chinese Trade Surpluses Cause the Global Imbalances?

Global imbalances have been blamed as a major cause of the current global financial crisis. However, the large U.S. trade deficit with the World existed since 1998, long before China began to have a significant trade surplus vis-à-vis the World. In 2000, U.S. trade deficit was US\$380 billion whereas the Chinese trade surplus was only less than US\$30 billion. Thus, the Chinese trade surpluses could not possibly have been the source of the global imbalances that supposedly fed the global liquidity that ultimately “enabled” the current global financial crisis.

In fact, the Case-Shiller U.S. Home Price Index, which can be taken as a proxy for the speculative asset price inflation caused by the growth of the sub-prime mortgage loans in the U.S., correlates almost perfectly with the U.S. trade deficit with the World but not with the Chinese trade surplus, demonstrating yet once again that the Chinese trade surpluses could not have been responsible for the global imbalances that caused the asset price bubble.



Chart 7: Case-Shiller U.S. Home Price Index, Chinese Trade Surplus & U.S. Trade Deficit

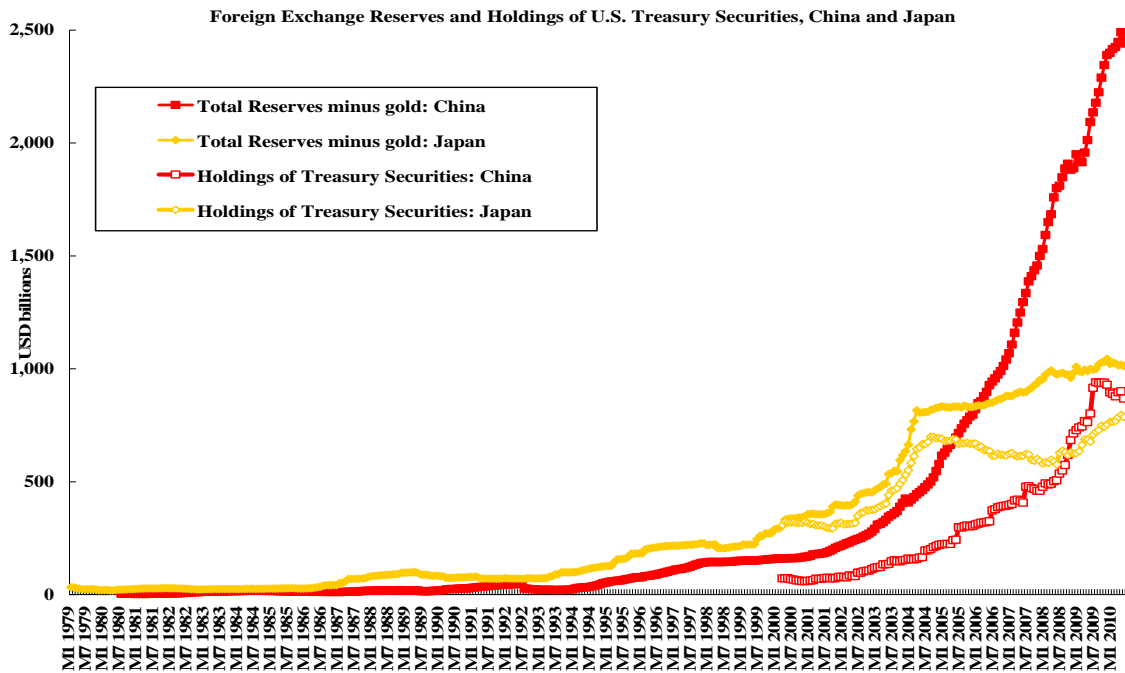


The oil exporting countries and Japan accounted for most of the aggregate trade surpluses vis-à-vis the World,<sup>3</sup> and hence the resulting global imbalances, since 2000. Japan had the largest foreign exchange reserves in the World until it was overtaken by China in 2006<sup>4</sup>, and the Bank of Japan consistently held the largest amount of U.S. Treasury securities in the World until the last quarter of 2008, when holdings of the People’s Bank of China exceeded the Bank of Japan’s for the first time. If any country is to be blamed for the global imbalances since 2000, it should not be China.

<sup>3</sup> The aggregate of trade surpluses in the World is by definition zero. What is meant by aggregate trade surpluses here is the sum over all countries of all their positive trade surpluses vis-à-vis the World.

<sup>4</sup> A significant proportion of the increase in Chinese foreign exchange reserves is due to the inflow of hot money.

Chart 8: Foreign Exchange Reserves and U.S. Treasury Securities Held, China & Japan



(3) Is Chinese Economic Growth Critically Dependent on Exports?

There is a common mis-impression that the Chinese economy is highly dependent on exports, and in particular, on its export surplus, as a source of growth. The fact is that China only began to have a significant trade surplus vis-à-vis the World in 2005, whereas the Chinese economy has been growing at an average annual real rate of growth of approximately 10 percent since 1978. It should therefore be obvious that the trade surplus per se could not have been an important source of growth for the Chinese economy during the past three decades. Chinese economic growth does not depend on Chinese trade surpluses.

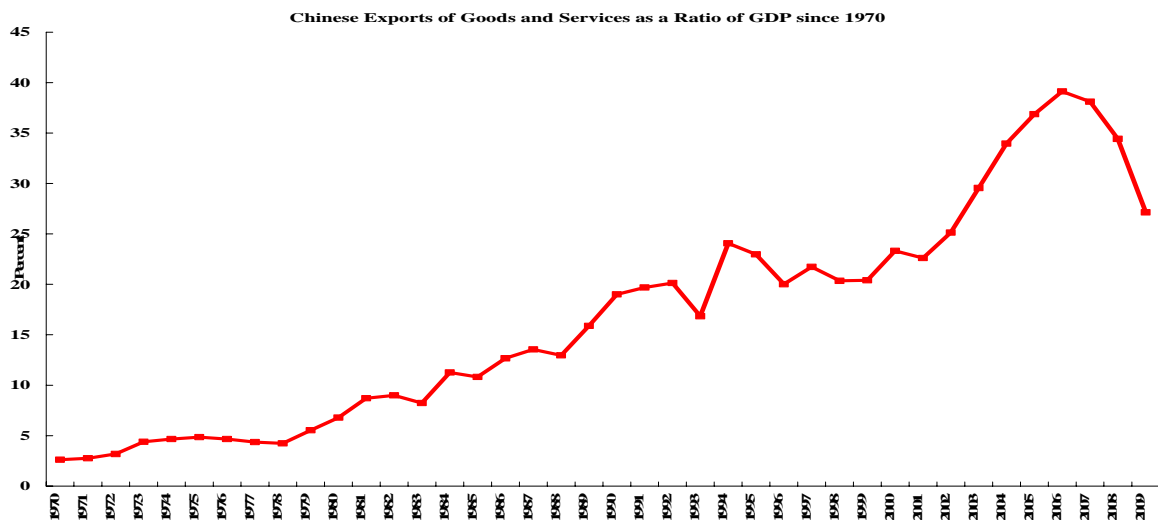
Chinese trade surplus as a percent of Chinese GDP fluctuated between -4.5 percent and 4.5 percent between 1982 and 2004 with an average of less than 2 percent of GDP. It then rose to almost 9 percent in 2007. It has since declined significantly and is expected to be below 2 percent once again in 2010.

Chart 9: Chinese Trade Balance of Goods and Services as a Percent of GDP, 1982-Present



Chinese exports as a proportion of GDP rose steadily beginning in 1978 and reached a peak of almost 40 percent in 2006 and then began to decline to approximately 25 percent in 2009. While this ratio appears large, it is not when compared to Hong Kong, Singapore, South Korea and Taiwan, where exports are more than 100 percent of the respective GDPs. And the ratio of Chinese Exports to GDP actually exaggerates the importance of exports in the Chinese economy because it fails to take into account the low domestic value-added content of Chinese exports.

Chart 10: Chinese Exports of Goods and Services as a Proportion of GDP, 1970-Present



The domestic value-added content of Chinese exports is no more than 30 percent<sup>5</sup>, that is: for every dollar of goods exported, less than 30 cents, on average, consist of domestic value-added—the rest consists of imported raw materials, intermediate goods, components, parts, semi-finished goods, etc. The domestic value-added percentage is even less for the so-called “Processing and Assembly” exports which at one time constituted more than half of Chinese exports. If we multiply the Exports to GDP ratio of say 40 percent (it is currently much lower, at approximately 25 percent) to the domestic value-added content of 30 percent, we obtain 12 percent, which is the upper bound for the percentage of Chinese GDP (value-added) generated by exports.

Now, 12 percent of GDP is a large number, and no economy can afford to lose 12 percent of its GDP overnight. However, if 12 percent of GDP does not grow, or even declines by 25 percent, as long as the other 88 percent of the economy continues to grow, the economy as a whole should do all right, especially if appropriate compensatory economic stimulus measures are taken by the government. A 25-percent decline in Chinese exports should result in a 25 percent times 12 percent or 3 percent maximum decline in Chinese GDP, other things being equal. Thus, the reduction in exports caused by the global financial crisis should be expected to reduce the rate of real Chinese economic growth from 9 percent in 2008 by a maximum of 3 percentage points to no less than 6 percent in 2009, other things being equal. However, the 2-year, 4-trillion Yuan (equivalent to approximately 8 percent of GDP per year) economic stimulus programme launched by the Chinese Government in November 2008 helped make up the short-fall in aggregate demand caused by the decline in exports. The Chinese economy actually managed to achieve a real rate of growth of 9.1 percent in 2009, even with its exports down by 25 percent from 2008 and the U.S. and European economies mired in recession<sup>6</sup>. If there were any lingering doubts on the degree of export-dependence of the Chinese economy, they should have been dispelled by this achievement alone. An 8-percent real rate of growth should be readily achievable for 2010 as well.

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<sup>5</sup> The domestic value-added content of Chinese exports was estimated as 20 percent in studies conducted by Chen, et al (2009) and Lau, et al (2007, 2010) several years ago. 30 percent is used here instead of 20 percent in order to make allowance for a possible increase in the domestic value-added content over the years. If the actual domestic value-added content is less than 30 percent, then the GDP generated by exports will be lower than 12 percent.

<sup>6</sup> The actual year-on-year decline in Chinese exports in 2009 was 16 percent. 25 percent is an estimate of the decline from the peak value in 2008.

Moreover, even if Chinese exports manage to grow by 25 percent per year going forward (which is most unlikely), it will by itself lead to only 3 percent overall economic growth, which is hardly enough for the Chinese economy. That is why China cannot, and will not, rely on exports as a primary source of its future economic growth.

An important implication of the relatively low external dependence of the Chinese economy is that the rate of growth of Chinese real GDP is relatively stable even as Chinese exports and imports fluctuate as widely as the exports and imports of other East Asian economies. (See the following charts on the rates of growth of the exports, imports and real GDP of selected East Asian economies).

Chart 11: Quarterly Rates of Growth of Exports of Goods: Selected East Asian Economies

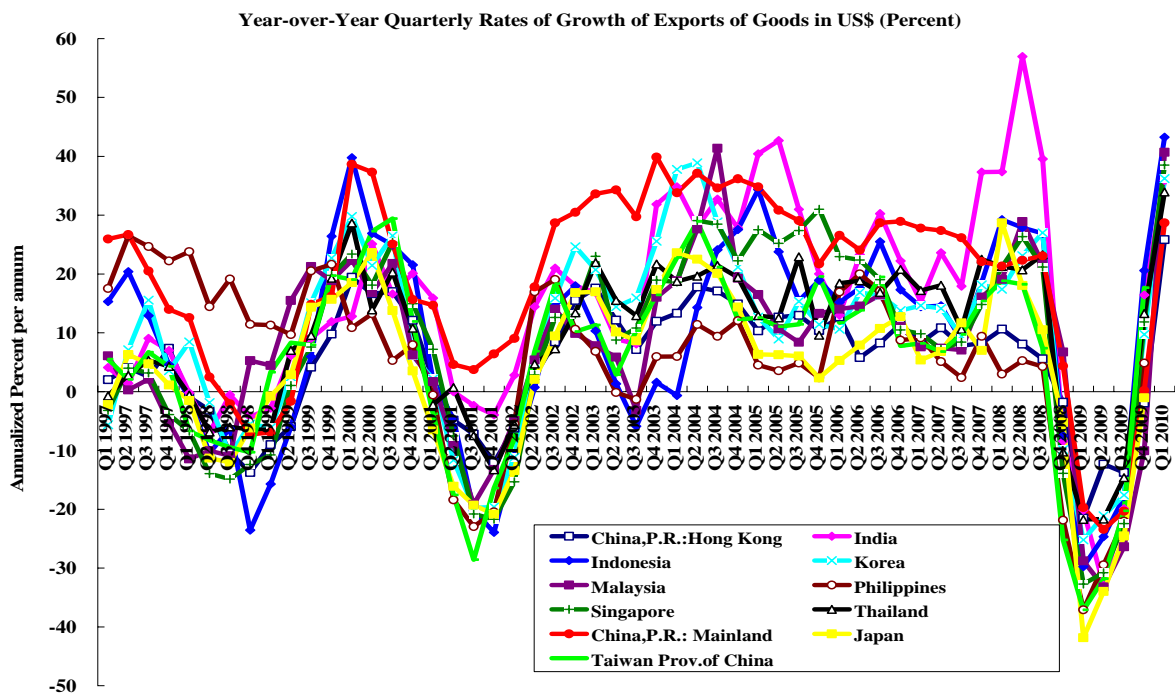


Chart 12: Quarterly Rates of Growth of Imports of Goods: Selected East Asian Economies

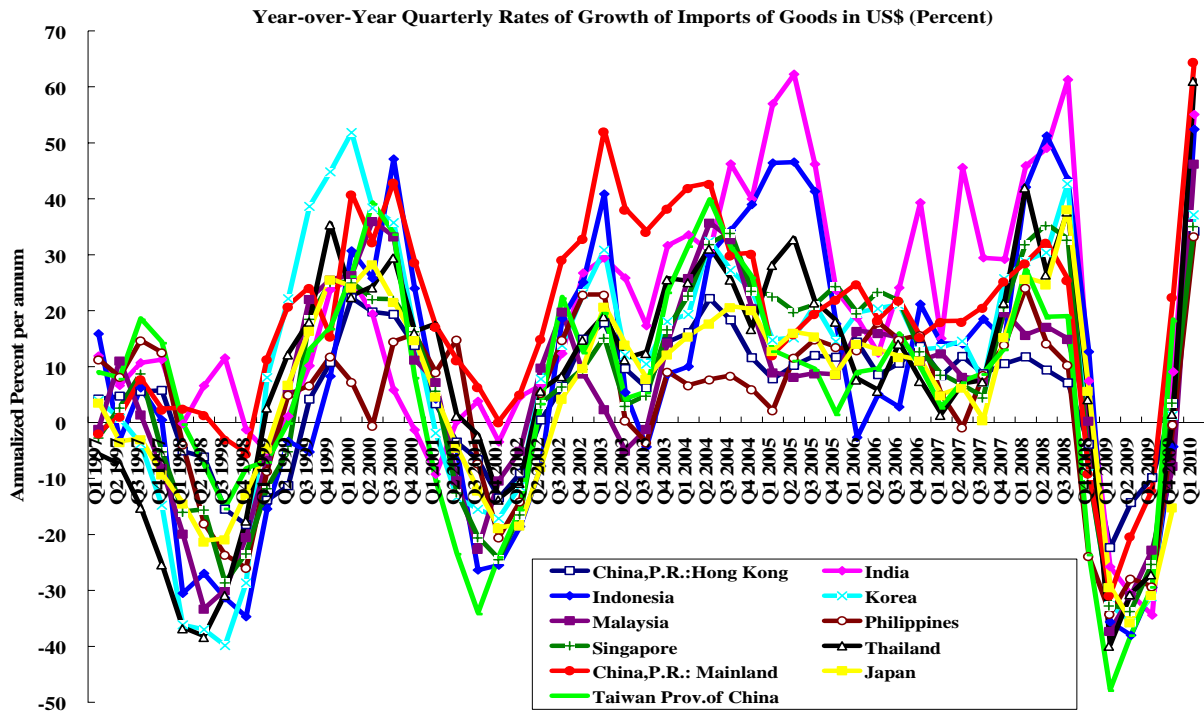
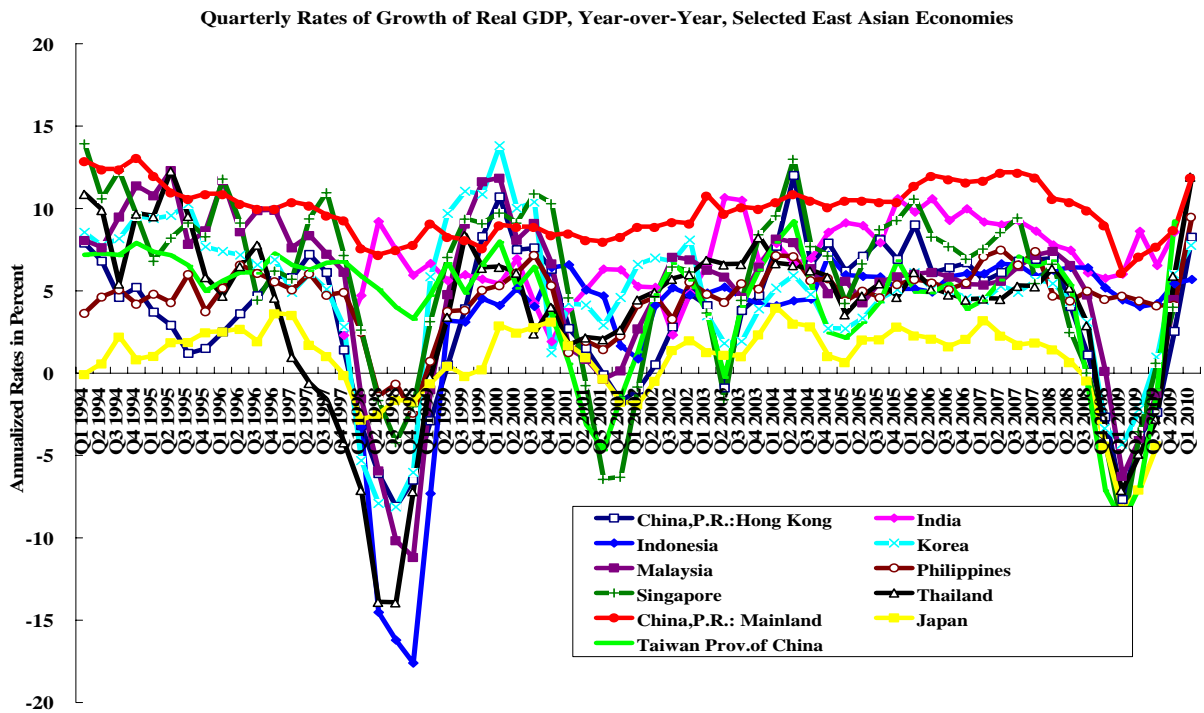


Chart 13: Quarterly Rates of Growth of Real GDP, Y-o-Y: Selected East Asian Economies



Large continental economies, such as the United States, are mostly driven by their internal demands, and not by international trade. Exports have never been very important to the U.S. economy, and the U.S. economy has never been dependent on international trade, except perhaps in the 19th Century. For the Chinese economy it is the same—Chinese economic growth in the future decades will depend mostly on internal demand rather than exports.

(4) Can the Economies of China and East Asia be De-Coupled from the U.S. and Europe?

East Asia as used here is taken to mean the 10 ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) + 3 (China (including Hong Kong, Macau and Taiwan), Japan, and South Korea), that is, approximately, everything east of Bangladesh and west of the Pacific Ocean. The “Partial De-Coupling Hypothesis” says that while East Asia is not immune from the effects of the economic recession in the United States and Europe, it can nevertheless continue growing, albeit at somewhat lower rates. Partial de-coupling is a consequence of the economic centre of gravity of the World gradually shifting to East Asia from the United States and Western Europe and within East Asia from Japan to China (but the shifts are not yet completed).

In the following charts, East Asian and Chinese GDP as percentages of World GDP are respectively presented. Both show very strong trends of growth over the past half a century. In 1960, East Asian GDP, comprising of the GDPs of ASEAN (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) + 3 (China (Mainland only<sup>7</sup>), Japan, and South Korea) was just over 10 percent of World GDP. Today, East Asian economies account for approximately a quarter of World GDP, comparable to the size of the U.S. economy and that of the Euro Zone. Similarly, China’s Share of World GDP has grown--from 1 percent or less in 1960 to approximately 7 percent in 2009.

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<sup>7</sup> Data on 1960 GDP of Hong Kong and Macau are not readily available. That is why the two economies have not been included.

Chart 14: East Asian Share of World GDP, 1960-present

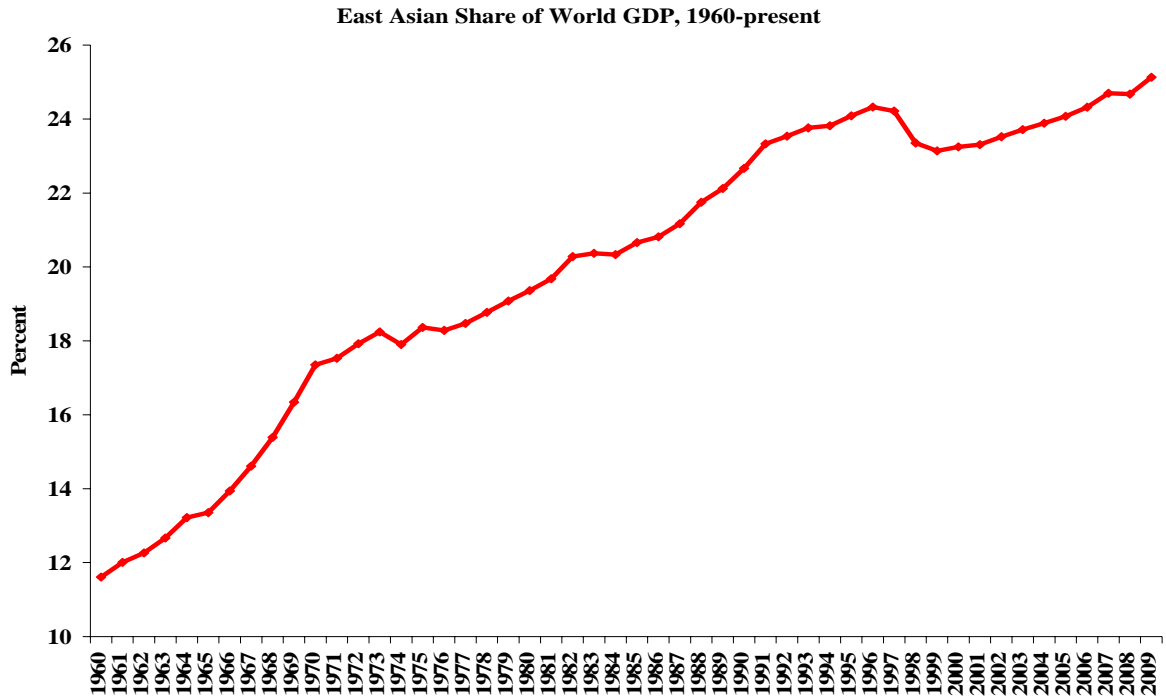


Chart 15: China's Share of World GDP, 1960-present

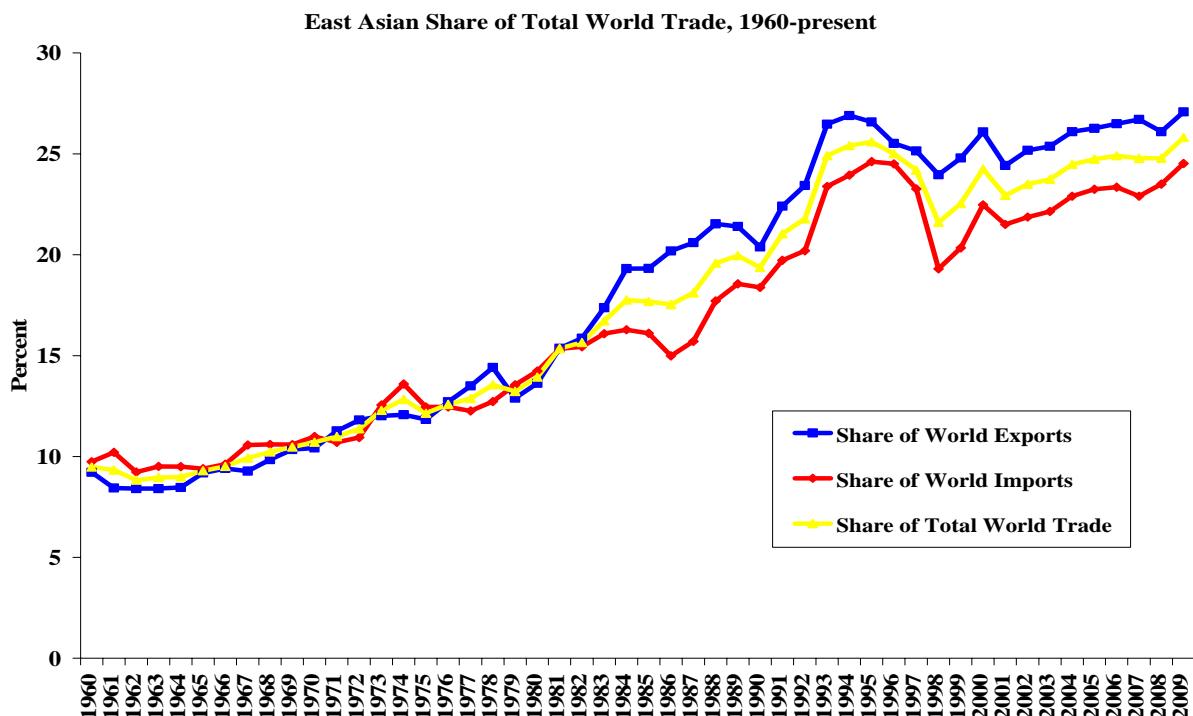




Given the current trends in rates of economic growth, East Asia will surpass the United States in terms of aggregate GDP with China perhaps contributing the highest proportion of the total by 2015. This is what gives credence to the hypothesis of partial “de-coupling” of the World economies—that the Chinese and East Asian economies can continue to do reasonably well despite the current economic problems in the U.S. and elsewhere<sup>8</sup>. However, China, with its GDP accounting for only 7 percent of the World total, and East Asia (excluding Japan) are not large enough to turn around the entire World economy.

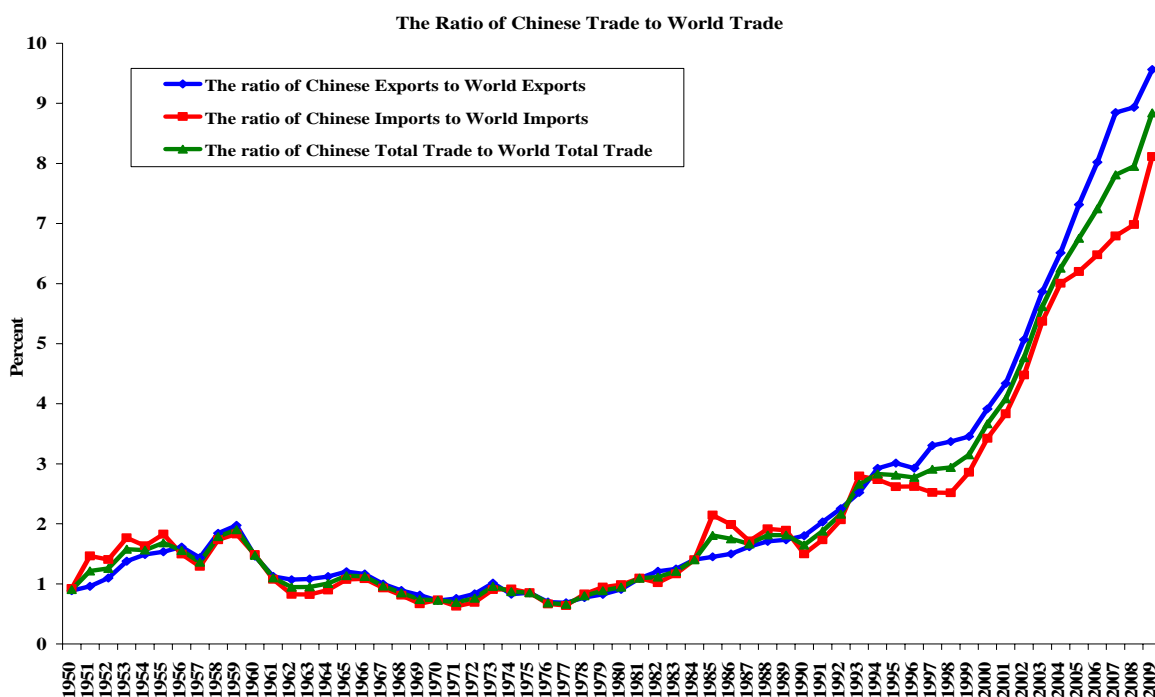
East Asian shares of World exports, imports, and international trade have also grown from approximately 10 percent in 1960 to a quarter in 2009, paralleling the growth of the East Asian share of World GDP (see the following chart). Similarly, Chinese shares of World exports, imports and international trade have also grown. Chinese exports and imports have risen from approximately 1 percent of World exports and imports in 1960 to approximately 10 percent of World exports and imports in 2009.

Chart 16: The Rising Share of East Asian Trade in Total World Trade, 1960-present



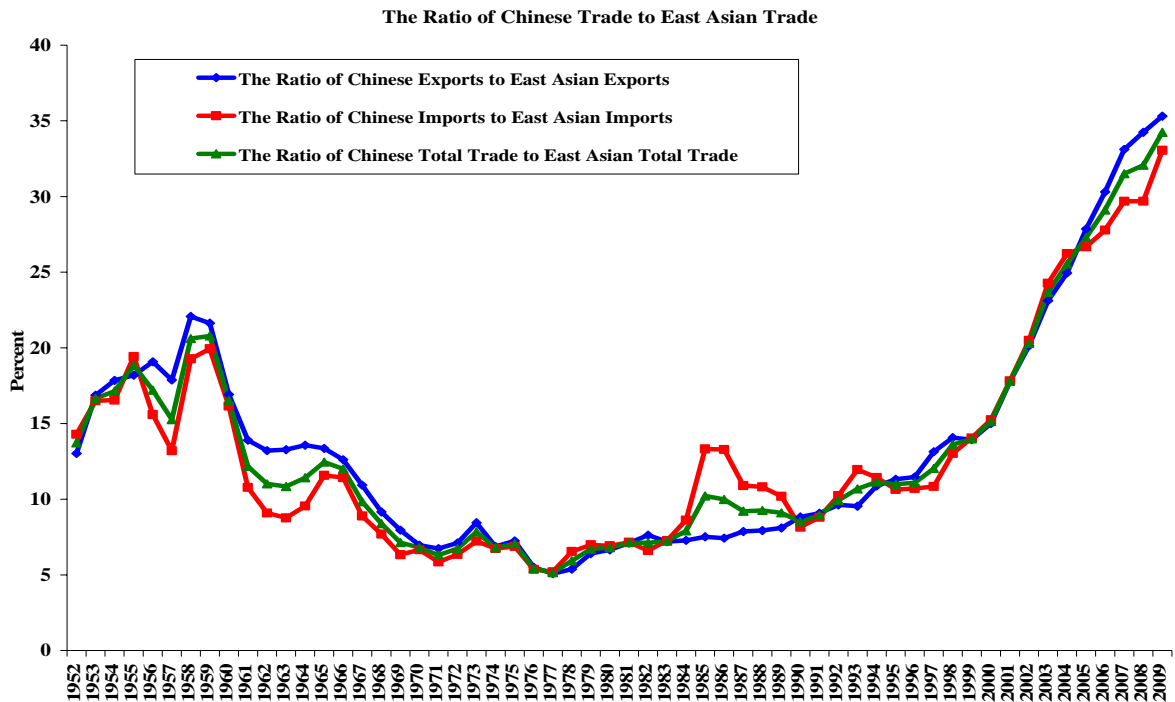
<sup>8</sup> It is important to note that the “de-coupling” works both ways. It is possible, under different circumstances, for the East Asian economies to perform poorly while the United States and European economies prosper, as, for example, during the 1997-1998 East Asian currency crisis.

Chart 17: The Share of Chinese Trade in Total World Trade, 1950-present



The emergence of the Chinese economy on the global market was the one most important new development during the past three decades. Today, China accounts for one-third of East Asian international trade. It has overtaken Japan to become both the largest exporting country and the largest importing country in East Asia. China is the most important export market for almost all East Asian economies and runs trade deficits vis-à-vis almost every other East Asian economy. Japan has become China's largest trading partner since the mid-1990s and China became Japan's largest source of imports in 2002. The recent pick-up in economic activities in Japan is due in no small part to the Chinese demand for Japanese exports.

Chart 18: The Share of Chinese Trade in Total East Asian Trade, 1952-present



Because of the rapid economic growth of China and the rest of East Asia outside of Japan, and the demand and supply that such economic growth has generated, the East Asian economies now trade more with one another than with economies outside of East Asia, including the United States. By the late 1990s, approximately half of East Asian trade is among East Asian economies (see the following charts). And while much of the East Asian trade consists of raw materials, components, and semi-finished goods which are further processed for exporting to developed economies ultimately, much of it has also found itself into the final demands of the East Asian domestic markets. This represents a sea change compared to say thirty years ago when most of the East Asian trade was between East Asia and the United States and Western Europe and not within East Asia itself.

Chart 19: The Share of East Asian Exports Destined for East Asia

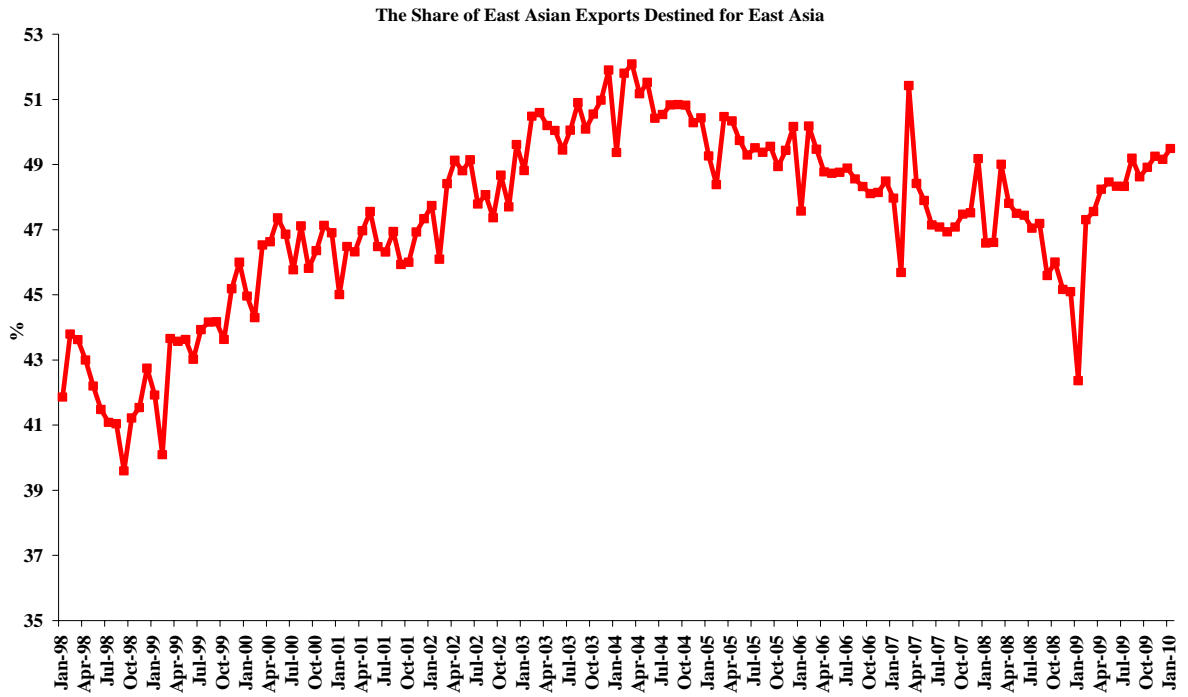
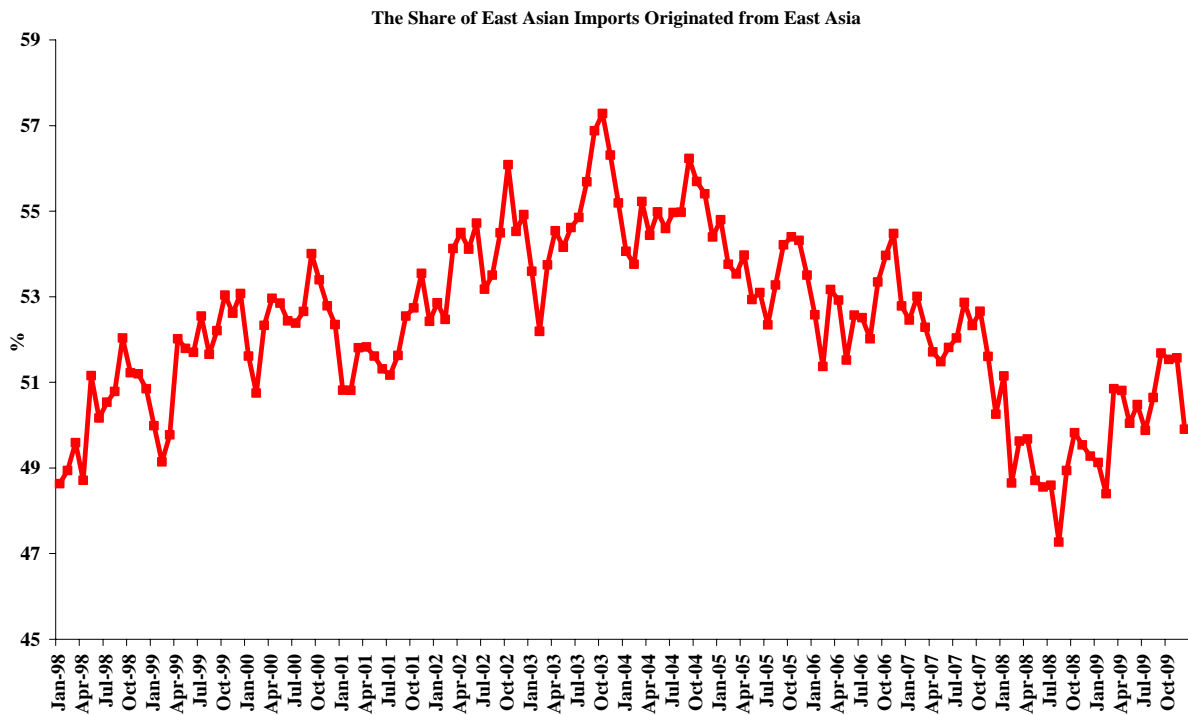


Chart 20: The Share of East Asian Imports Originated from East Asia



Interdependence of the East Asian economies has been rising rapidly over the years and East Asian dependence on the United States and Western Europe has declined. Interdependence of the East Asian economies will rise even further within the next five to ten years as East Asia becomes the only region in the World with a high rate of economic growth and as the ASEAN Free Trade Area as well as its variations (+1 (China); + 3 (China, Japan and South Korea)) become increasingly realities. There is also the more recently concluded Indo-ASEAN Free Trade Agreement which testifies to the possibility of significant World demand and supply growth outside of the United States and Europe.

It is this shifting economic centre of gravity and the rising interdependence of the East Asian economies, that in combination with the regional self-sufficiency in savings, give credence to the hypothesis of “partial de-coupling” of the World economies—that the Chinese and East Asian economies can continue to do reasonably well despite the current economic problems in the U.S. and elsewhere.

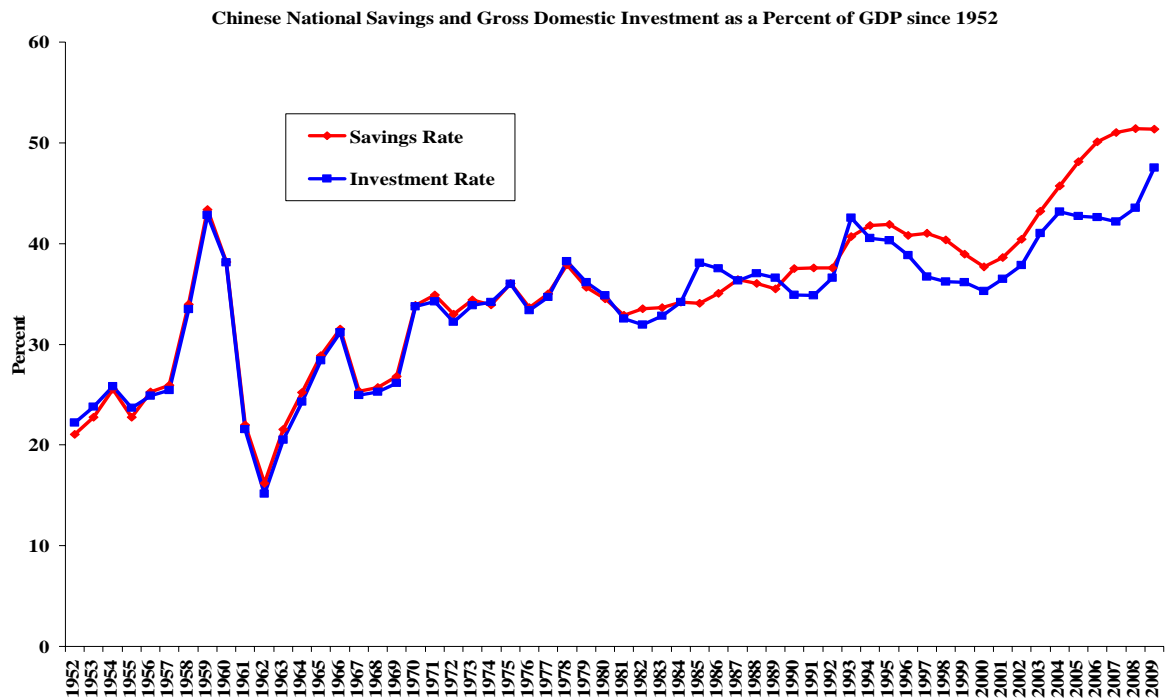
#### (5) Are Chinese Households Saving Too Much?

The high Chinese national savings rate, which has been around 40 percent since the early 1990s and has approached or even exceeded 50 percent in recent years, has also been blamed as a cause of the Chinese trade surplus and hence the global imbalances and ultimately the global financial crisis. A temporarily high national (and household) savings rate can be the result of the rapid growth of real GDP (and real household income)—it takes time for the growth of consumption to catch up to the growth of income<sup>9</sup>. However, a consistently high national savings rate also means, among other things, that the Chinese economy can finance all of its domestic investment needs from its own domestic savings alone, and does not have to depend on the more fickle foreign capital inflows (foreign direct investment or foreign portfolio investment) or foreign loans.

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<sup>9</sup> This possibility was suggested by Prof. David Hendry.

Chart 21: Chinese National Savings and Gross Domestic Investment as a Percent of GDP (1952-Present)



While the high, and some would say excessive<sup>10</sup>, Chinese national savings rate is well known, the equally high and excessive Chinese investment rate is not as well known. Chinese gross domestic investment as a percent of GDP has been above 35 percent since the early 1990s and has exceeded 40 percent for quite a few years and since 2003. Such a high investment rate is significantly beyond the normal absorptive capacity of any economy and has resulted in over-investment and excess capacity in many industries, for example, steel, cement, and glass. China both saves too much and invests too much. However, the excessive savings and excessive investment were in approximate balance and thus there was little or no excess savings to be exported, and hence no trade surplus, until 2005, when China began to have a trade surplus vis-à-vis the World. More recently, the Chinese trade surplus, which has been declining continuously and significantly since 2007, even turned into a trade deficit in March 2010, reflecting the decline in export demand and the rise in domestic demand as a result of the Chinese economic stimulus programme and signalled a significant narrowing of its savings-investment gap.

<sup>10</sup> Few economies, if any, have savings rates in excess of 30 percent and few have the capacity of absorbing gross domestic investment greater than 30 percent of their GDP productivity each year.

The Chinese household savings rate, as distinct from the national savings rate, has been much lower, with the savings rate of the urban households approaching 30 percent. The savings behaviour of Chinese households on the Mainland of China appears to be little different from those in Hong Kong and Taiwan at the same level of per capita household income, with an average savings rate of urban households of approximately 30 percent. Chinese household consumption has actually been growing quite rapidly, as indicated by the double-digit rates of growth of real retail sales, which are much higher than the rates of growth of real GDP or real household income.

Chart 22: Savings Rates of Chinese Urban and Rural Households

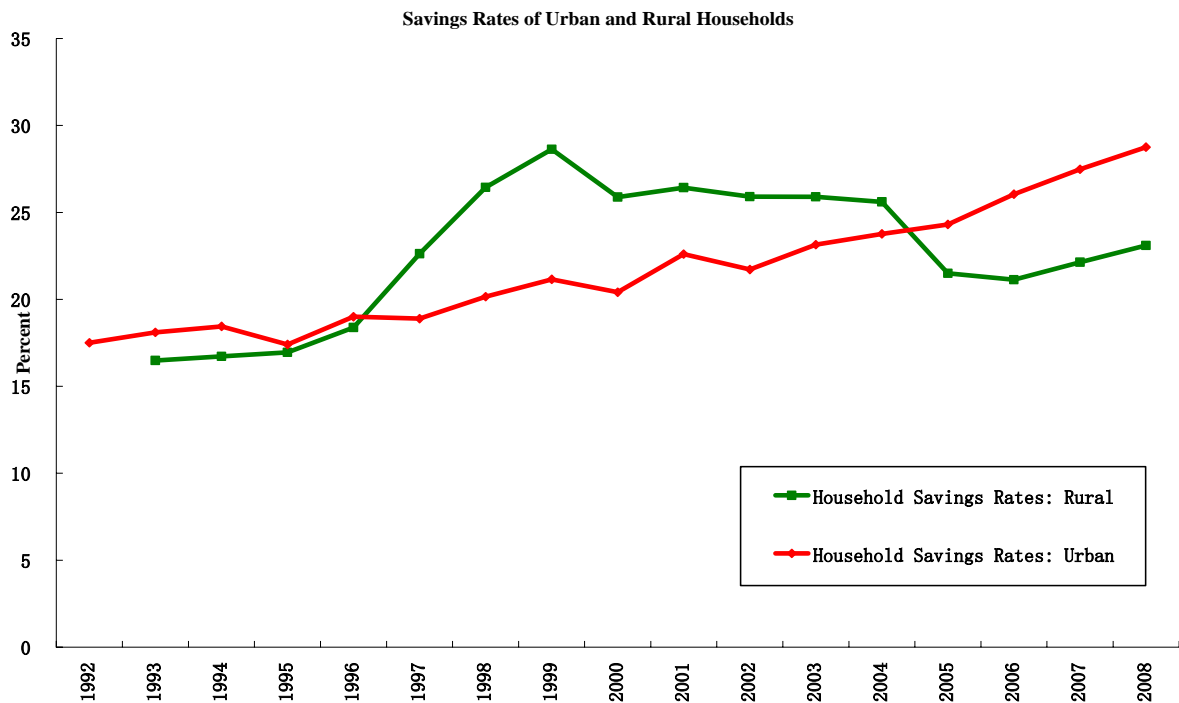
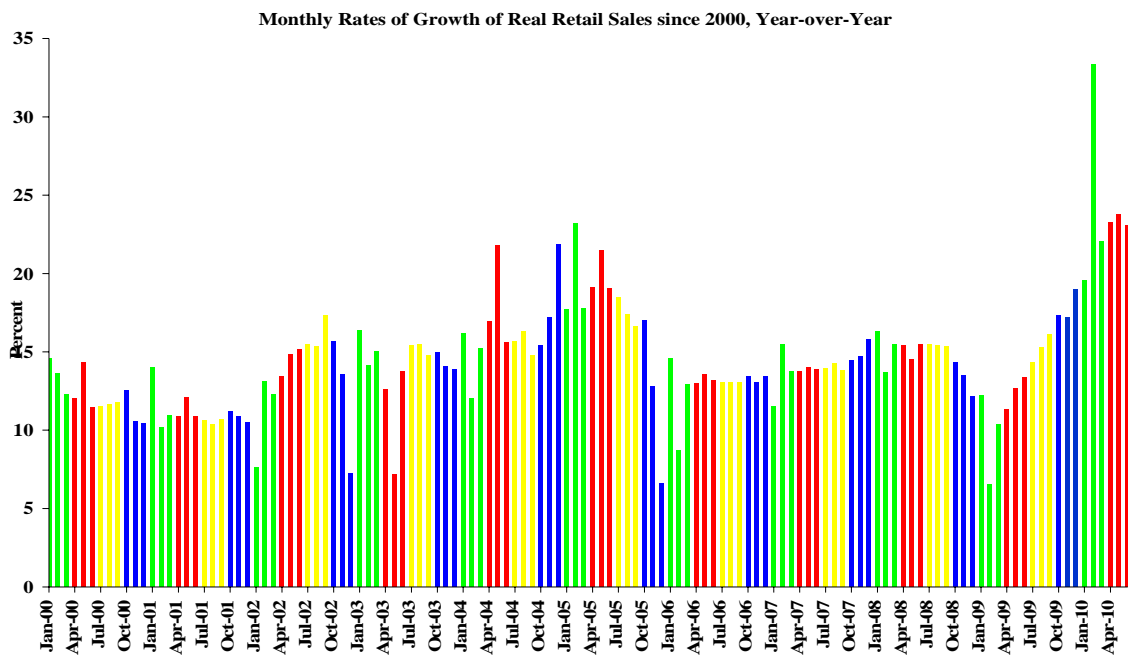


Chart 23: Monthly Rates of Growth of Chinese Real Retail Sales, Year-over-Year



The high Chinese national savings rate of almost 50 percent is not due to an exceptionally high household savings rate, but to (1) the much lower share of GDP received by households as income; in particular, the share of labour is low in China, less than 50 percent of GDP, compared to approximately 70 percent in the developed economies of the West; and (2) the much higher Chinese corporate savings rates—Chinese enterprises typically reinvest almost all of their earnings and distribute little or no cash dividends to their shareholders.

Chinese household real consumption can increase significantly only with a significant increase in household real income, which in turn depends on either rising real wage rates, which are constrained by the abundance of surplus labour, or increasing distribution of cash dividends by Chinese enterprises to their shareholders, including the Chinese Government. Improving the social safety net as well as increasing public financing of services such as education and health care may also help to raise Chinese real household consumption. However, as noted previously, the consumption-savings behaviour of Chinese households on the Mainland of China are already quite similar to ethnic Chinese households in Hong Kong and Taiwan, both of which have reasonable social safety nets in place and substantial public financing of education and health care.



(6) Does the Chinese Economy Face Labour Shortages?

China, like Japan, Taiwan, and South Korea in their early stage of economic development, has an abundant supply of surplus labour. This means China can grow without being constrained by the supply of labour or by rising real wage rates of unskilled, entry-level labour over an extended period of time. Physical capital is very productive under conditions of surplus labour--as long as there is sufficient complementary domestic physical capital, the surplus labour can be transferred to the other two sectors enabling the economy to grow rapidly. This is exactly what the late Prof. W. Arthur Lewis (1954), Nobel Laureate in Economic Sciences, said in his famous paper on surplus labour more than fifty years ago.

The distribution of Chinese GDP by originating sector has become approximately: Primary (agriculture and mining), 10.6 percent; Secondary (manufacturing and construction), 46.8 percent; and Tertiary (services), 42.6 percent. But the bulk of the labour force, more than 40 percent, is still employed in the primary sector, waiting to be transferred to the other two sectors with higher productivity.

Chart 24: The Distribution of Chinese GDP by Sector Since 1952

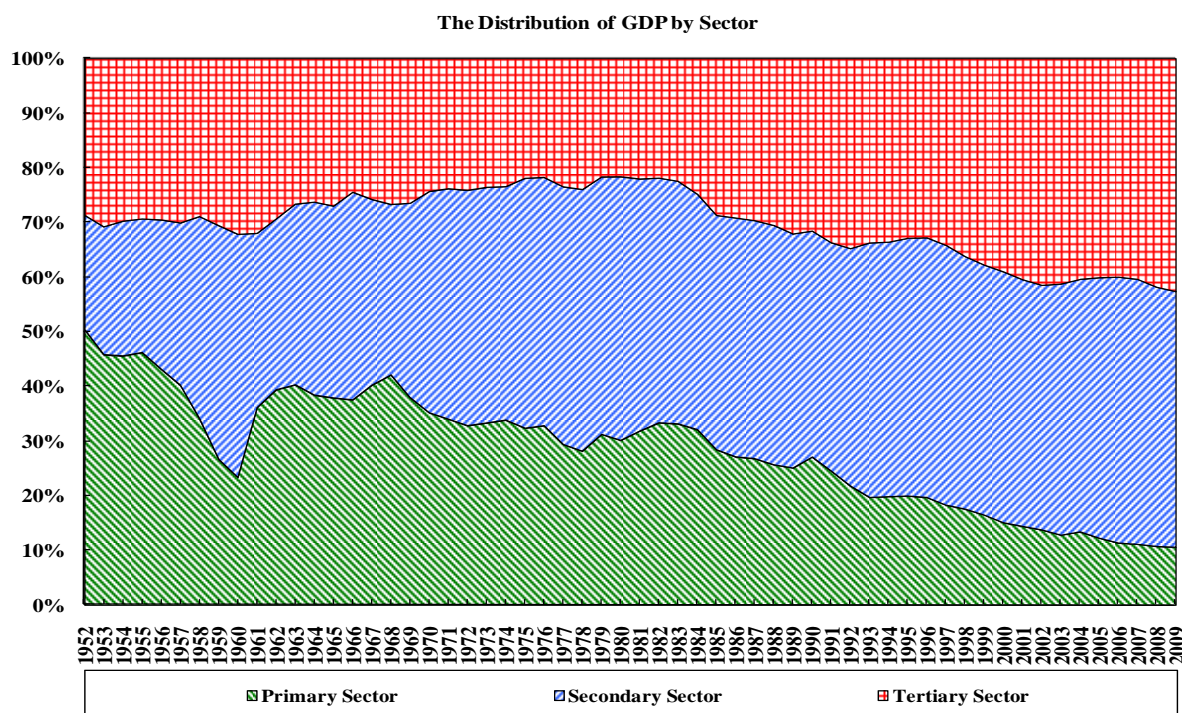
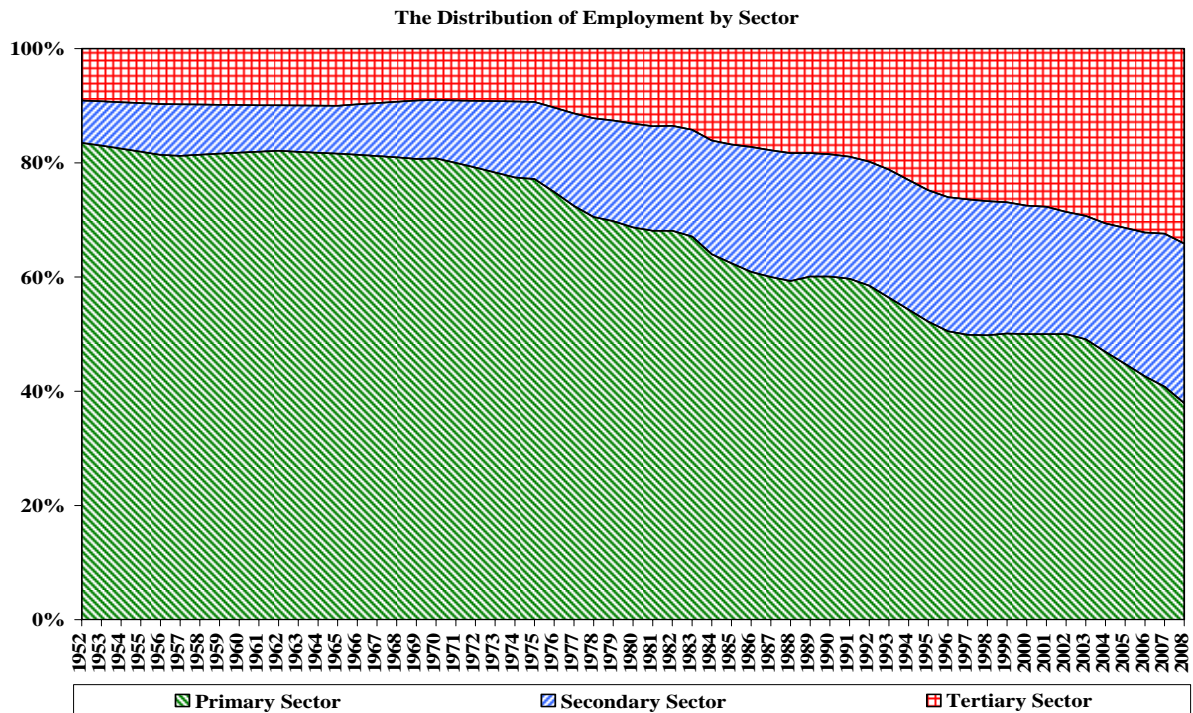


Chart 25: The Distribution of Chinese Employment by Sector Since 1952



As long as the percentage of labour force employed in the primary sector exceeds the percentage of GDP originating from the primary sector, there is little or no upward pressure on the real wage rate of unskilled, entry-level labour in the secondary and tertiary sectors. It took thirty years for the percentage of labour force employed in the Chinese primary sector to decline from 70 percent in 1978 to its current 40 percent, at the rate of approximately 1 percent per year. It will take another 30 years for the percentage of labour force employed in the Chinese primary sector to decline from its current 40 percent to below 10 percent. By that time, 2040, it is expected that the primary sector will account for only approximately 5 percent of Chinese GDP. The Chinese economy will therefore continue to have surplus labour for another three decades or even longer. There will not be any shortage of unskilled, entry-level labour for a long time to come, even though there may be shortages of skilled or experienced labour in the secondary and tertiary sectors.

(7) Is Chinese Economic Power Comparable to That of the United States?

There is much talk that the World economy is now dominated by G-2 (Group of Two)—the United States and China. This is, however, very far from the truth. The United

States accounts for more than 20 percent of World GDP whereas China accounts for only 7 percent of World GDP. (East Asia, including China, accounts for approximately a quarter of World GDP.) China by itself is not large enough by far to turn around the entire World economy. Moreover, Chinese GDP per capita is approximately US\$3,700 in 2009 prices, compared to US\$46,000 for the U.S.

Another measure of economic strength is the rate of technical progress—that is, the ability to produce more output with the same inputs (or equivalently, the rate of growth of total factor productivity). U.S. economic growth has been mostly driven by technical progress whereas Chinese economic growth during the past thirty years has been mostly driven by the growth in the primary inputs—tangible capital and labour.

The U.S. lead in technical progress is attributable to its past and present investment in research and development (R&D). China has begun to invest in R&D in recent years. However, even though Chinese R&D expenditure has been rising rapidly, both in absolute value and as a percentage of GDP, it still lags far behind that of the U.S. by a whole order of magnitude.

Chart 26: China's R&D Expenditure and Its Share of Chinese GDP

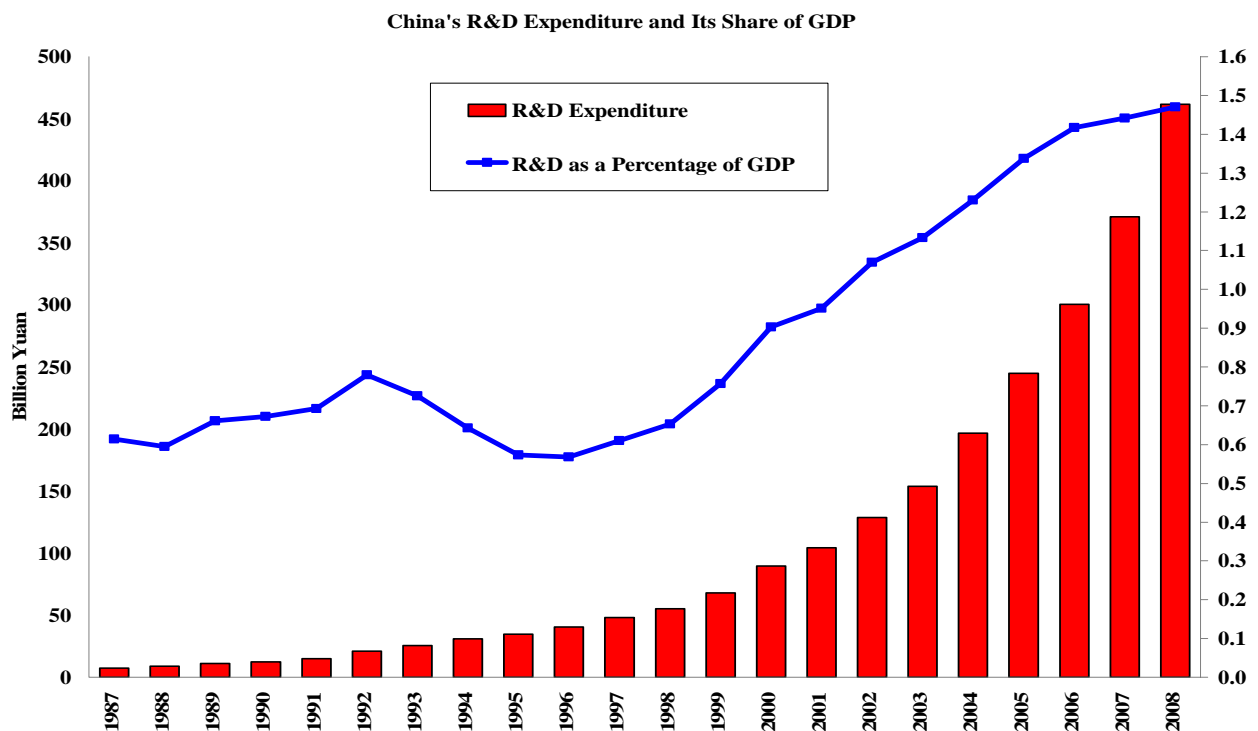
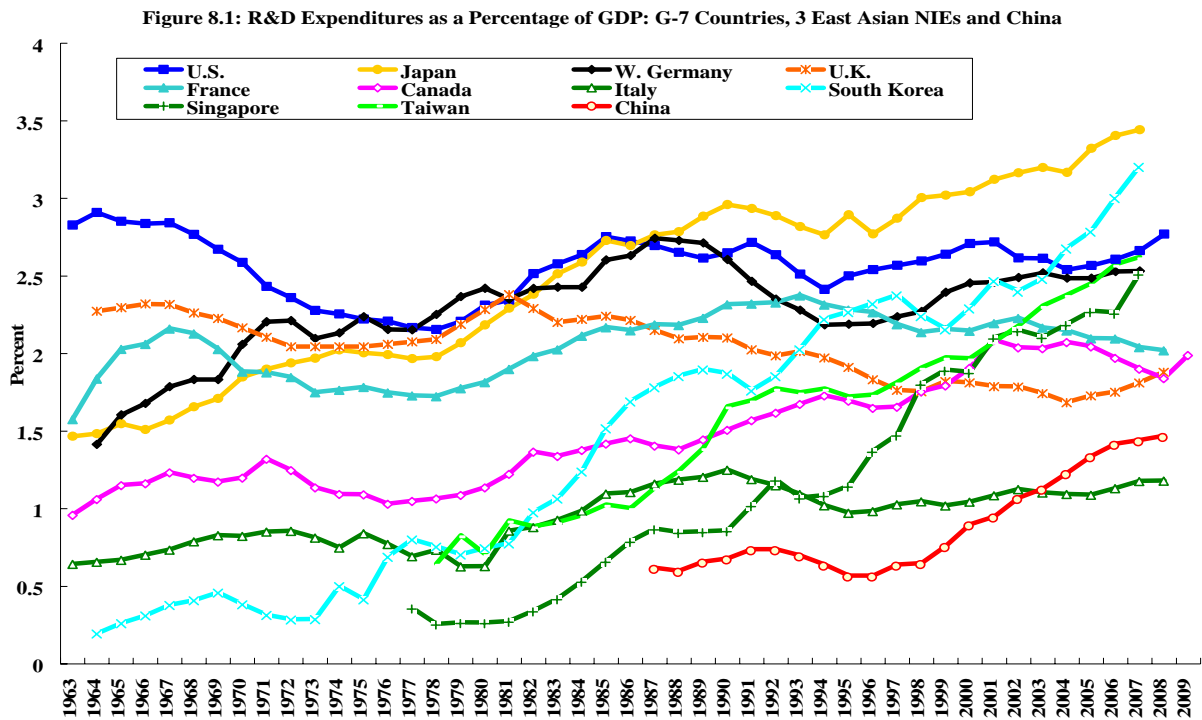
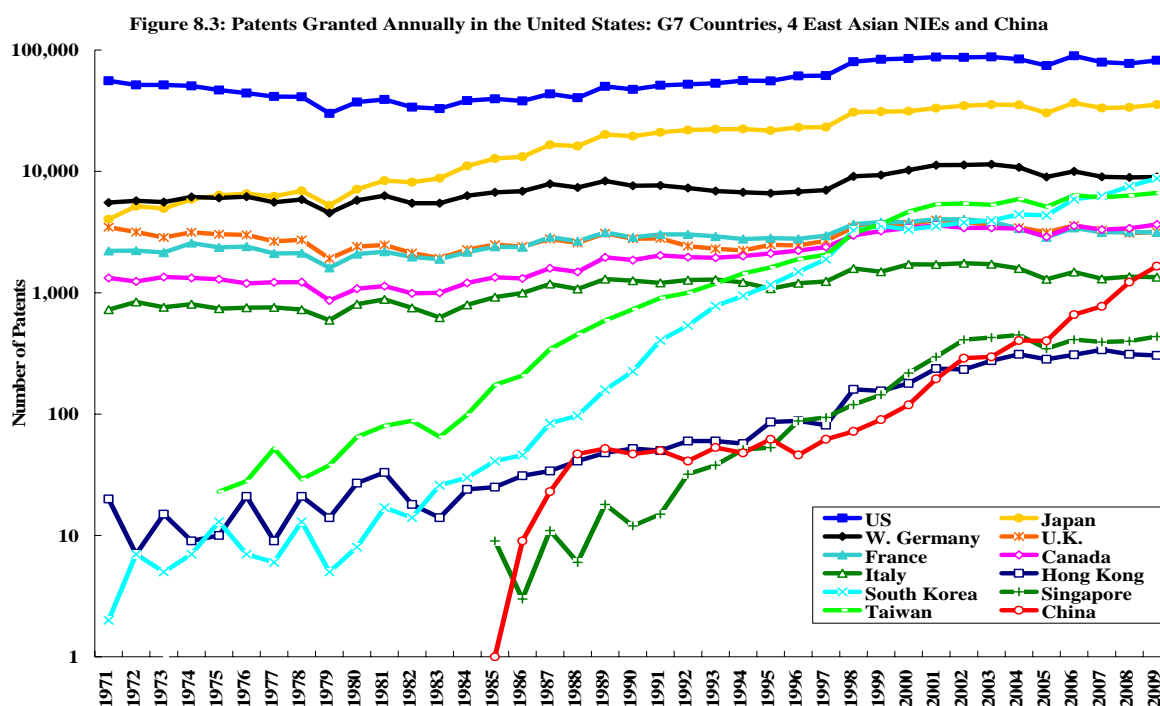


Chart 27: R&D Expenditures as a Ratio of GDP: G-7 Countries, 3 East Asian NIES & China



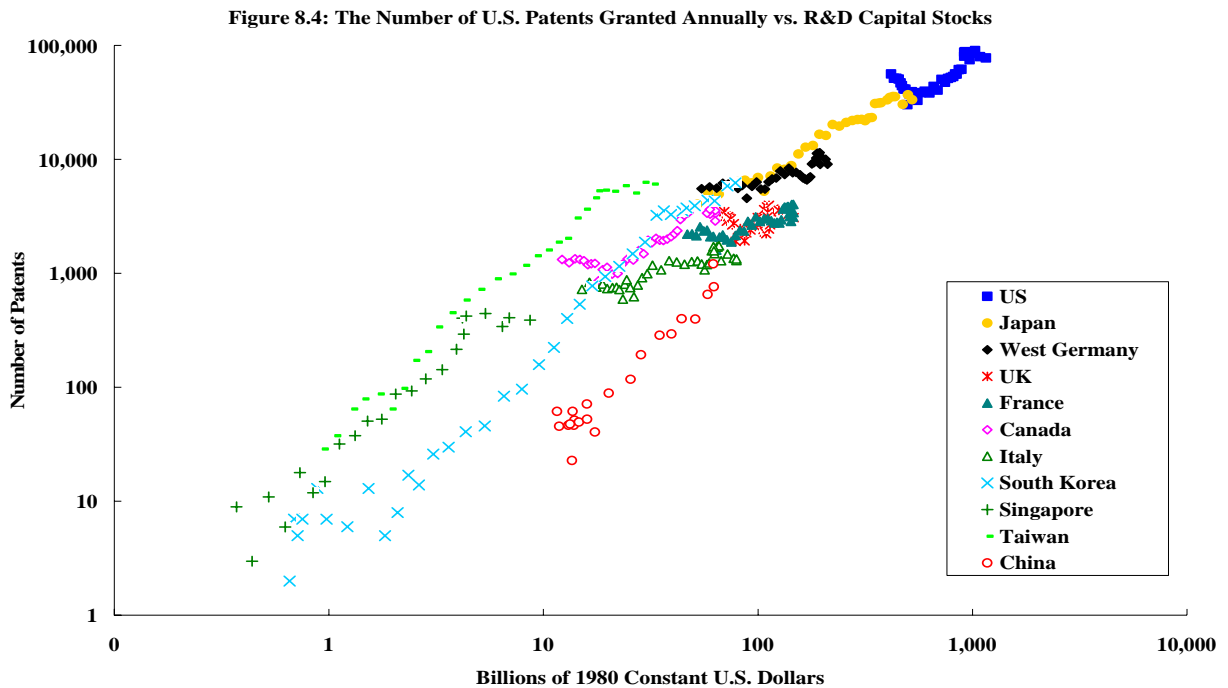
Sustained investment in R&D is essential to innovation. One indicator of national innovative ability is the number of patents created each year. In the following chart, the number of patents granted in the United States each year to the nationals of different countries, including the U.S., over time is presented. The U.S. is the undisputed champion over the past forty years, with close to 100,000 patents granted each year, followed by Japan. China has been catching up rapidly but still lags far behind, with approximately 1,000 patents granted each year. South Korea and Taiwan are still way ahead of China in terms of the number of patents granted in the U.S., averaging approximately 7,000 patents a year each.

Chart 28: Patents Granted in the United States: G-7 Countries,  
4 East Asian Newly Industrialised Economies & China



The stock of R&D capital, defined as the cumulative past investment in R&D less depreciation of 10 percent per year, can be shown to have a direct causal relationship to the number of patents granted (see the following chart, in which the number of patents granted is plotted against the R&D capital stock for each country and each year). Because China has had both a much lower R&D expenditure to GDP ratio and a much lower GDP than the United States, it will take more than a couple of decades before Chinese R&D capital can catch up to the level of U.S. R&D capital (and hence to the number of patents granted each year). China also lags behind the U.S. in terms of human capital even though China has had a long tradition of emphasis on education and learning. The talk about G-2 is simply premature at this time.

Chart 29: Patents Granted in the United States and R&D Capital Stocks, Selected Economies



#### 4. Concluding Remarks

(1) The Renminbi (Yuan) is not under-valued. There is little empirical evidence that the Renminbi (Yuan) is under-valued except for the period between 2005 and 2008, during which the Renminbi actually appreciated by more than 20 percent. If China is able to maintain an approximate balance of trade in goods and services combined under conditions of free trade (WTO conditions), its exchange rate should be neither under-valued nor over-valued, and no artificial adjustment should be necessary.

(2) Chinese trade surpluses did not cause the global imbalances. They simply occurred too late to be held responsible for the irrational exuberance in the United States and European economies.

(3) Chinese economic growth does not depend critically on exports. Chinese economic growth will be marginally, but not critically, affected by a large decline in its exports, as demonstrated by its experience in the past couple of years as well as during the

1997-1998 East Asian currency crisis. International trade will continue to be important, but not critical, to the growth of the Chinese economy.

(4) The economies of China and East Asia are partially de-coupled from the U.S. and Europe. Thus, it should be able to survive financial crises in, and effectively de-couple partially from, the European and U.S. economies. The Chinese economy should be able to continue growing at an average rate of 8 percent per annum for at least another couple of decades, driven by its own strong economic fundamentals and based on its own domestic internal demand.

(5) Chinese household savings rates are not too high—they are comparable to those of ethnically Chinese households in Hong Kong and Taiwan. It is the national savings rate that may have been too high. Chinese household consumption can increase significantly only with significant increases in Chinese household income.

(6) The Chinese economy will not face any labour shortages for at least three decades or more, until around 2040, when surplus labour will begin to disappear in the Chinese economy and the real wage rates of unskilled, entry-level labour will begin to rise.

(7) Chinese economic power will not be comparable to that of the United States for at least a couple of decades, perhaps even longer. Chinese GDP will probably catch up with U.S. GDP in approximately 20 years. It will probably take at least another twenty years, till the middle of this Century, for Chinese per capita GDP to reach a level comparable to that of U.S. per capita GDP.

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