

# China's Exchange Rate Policy and the United States' Trade Deficits

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## Abstract

The United States' trade imbalances with China of recent years have given rise to the critical views of a number of American politicians and interest groups who attribute the Sino-American bilateral trade deficits to China's interventions in the currency markets. This paper critically examines the Chinese exchange rate policy debate and discusses Chinese financial and capital account control reform of the recent years. It shows that ultimately, Sino-American debate on exchange rate policy is a matter of difference of opinion in sequencing of policies China has adopted to reduce capital account control and make her exchange rate regime more flexible.

Furthermore, using the empirical results from a recent study which are based on a regional general equilibrium model, the paper suggests alternative methods of addressing American concerns about China's role in contributing towards global financial stability and American trade deficits with China. Using the final demand elasticity of exports it is observed that Chinese expansionary fiscal stimuli do have powerful effects in inducing additional exports for the United States and other Chinese trading partners.

**keywords:** Chinese exchange rate, exchange rate policy, U.S.-China trade deficit

# 1 Introduction

A great deal of discussions in mass media and extensive debates among politicians about the detrimental effects of the United States' trade imbalances have taken place recently. The discussions and debates have been highly critical of the U.S. trade imbalances in general; however, most of the negative comments are reserved for U.S. trade deficits vis-à-vis China.

For almost two decades, the United States has experienced substantial trade deficit with China, with some influential centers in America arguing that these trade deficits were primarily the result of undervalued renminbi, the Chinese currency (See congressional testimonies by Goldstein (2003), Taylor (2003), and Bergsten (2006)).

The critiques of China's exchange rate policy declare China as a "currency manipulator" and find it "... imperative that the Treasury immediately and forcefully enter into negotiations with the Chinese Government to resolve this matter" (Robinson, Jr., 2003). In a more recent congressional testimony on China's exchange rate policy Bergsten (2006) states that "The administration should notify China immediately that if it fails to carry out a significant appreciation of at least 10 percent in the next month or so, it will be labeled a "currency manipulator." China, however, for a variety of reasons to be discussed below, resists such "immediate", precipitous moves and has adopted gradual financial liberalization policies in parts to address the U.S. concerns.

In this paper, I will critically examine the Chinese exchange rate policy debate and discuss Chinese financial and capital control reform of the recent years. Furthermore, using the empirical results based on a regional general equilibrium model, I suggest alternative methods of addressing American concerns about China's role in contributing towards global financial stability and American trade deficits with China.

## 2 China's exchange rate policy

China's exchange rate policy in 1950s and 1960s was mostly determined by the nation's geo-political, security, and strategic interests, and economic calculations played little or no role in the exchange rate determination. However, on January 1, 1970, China, in a currency reform, substituted 10,000 renminpiao for one renminbi (RMB) (alternatively called yuan) and its value was fixed at an official rate of 2.46 yuan to a dollar.

After the collapse of the Bretton Woods regime of fixed exchange rates based on dollar with dollar linked to gold, the pressure grew for RMB revaluation and the official rate was set at 2.26 yuans to a dollar, on December 23, 1971. The rapidly depreciating dollar during this period led Chinese monetary authorities to tie the yuan to the Hong Kong dollar and the British pound sterling. However, the free floating Hong Kong dollar and its rapid depreciation forced Chinese monetary authorities to sever the link between Hong Kong dollar and RMB, and on August 19, 1974, the effective rate of the yuan was pegged to a trade-weighted basket of 15 currencies, without identifying the currencies in the basket.

With the beginning of economic reform in China, markets were allowed to play increasingly important roles by the policy makers, and from 1981, a dual exchange rate system emerged, whereby, the official fixed exchange rate was complemented with market-determined exchange rate in the swap centers.

The establishment of the swap centers in 1988 was to centralize the foreign currency transactions of the exporters, importers, and other currency dealing entities which exchanged currencies in fragmented exchange rate markets. A sharp depreciation of the currency in the swap market in early 1990s, resulted in a highly over valued official rate. In 1994, the swap and the official exchange rates were unified when the official rate was devalued from 5.8 RMB/USD to 8.7 RMB/USD, and the exchange rate regime was officially defined as a managed floating system. Furthermore, it was decided that the People's Bank of China (PBOC) should announce, on a daily basis, a weighted average rate for the yuan against the US dollar, the Hong Kong dollar, and Japanese yen based on the foreign exchange transactions during the previous day's trading. The bounds for the daily fluctuation of yuan against the dollar was set to be 0.3%. (For detailed discussions of China's exchange rate policy, see Liu, 2004).

The new rate remained more or less stable until July 21, 2005, when China revalued the RMB by 2.1 % to RMB 8.11/USD, and announced that it would switch from dollar-peg to a basket-peg, and would allow for more flexible floating of the currency.

Since July 2005, the currency's exchange rate vis-a-vis USD has appreciated by a little more than 7 percent with the exchange rate standing at RMB 7.506/USD, at the time of this writing in early October 2007.

### 3 China's exchange rate policy debate

Notwithstanding the uncertainty associated with the existence and size of RMB undervaluation, the critics of China's exchange rate policy claim that pegging of the RMB to USD is a major contributing factor to the imbalances in favor of China (over \$256 billions for 2006). China, on the other hand, responds that the U.S. trade imbalance with China is a reflection of productivity differential between these countries, and that the current nominal RMB-dollar exchange rate has little, if any, impact on the current balance of trade between the two nations. Moreover, it is claimed that any appreciations of the RMB would have at best only a temporary positive effect on America's trade balance with China unless China, at least implicitly, agrees to follow a deflationary monetary policy relative to depreciating dollar to make the revaluation effective [see Higgins and Humpage (2005), and McKinnon (2007)]. Furthermore, it is stated that, China may suffer a fate similar to Japan when, in early 1990s, under pressure from Americans and Europeans appreciated its currency which led to a decade-long deflation, zero interest rate, and liquidity trap in that country<sup>1</sup>(Mckinnon and Schnabl, 2005).

Given this divergence of views, it is instructive to view China's exchange rate policy controversy from Chinese and American perspectives.

#### 3.1 Chinese exchange rate policy controversy from Chinese and American perspectives

From Chinese perspective, any radical departure from the present exchange rate policy necessitates answering two pivotally important questions. First, does a new currency regime allow greater flexibility on the part of Chinese authorities to adopt a market-based monetary and credit policy? Second, would the new currency regime have a destabilizing effect on the country's financial system and export promotion strategy of economic growth in the absence of well-developed forward, spot, and swap currency markets?

From the American perspective, the paramount question is whether China is willing to play an important role in global financial stability. Specifically, the U.S. policy makers are eager to know whether China is willing to adopt

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<sup>1</sup>Japan appreciated yen from 360 yens to a dollar in 1971 to 80 yens to a dollar in April 1995.

Purchasing power parity theory predicts deflation in Japan over the long-run as yen is revalued, that is, as fewer units of yen are required to purchase one dollar.

a less intrusive exchange rate policy and by doing so signal its intention to accept the principle of shared responsibility in reducing global imbalances in general and the U.S. trade imbalance with China in particular. The U.S. authorities believe that by adopting non-interventionist policies in the currency markets, China would become an active partner in bringing about global economic and financial stability?

In addition to the above mentioned concerns for an immediate revaluation of RMB, as requested by the United States, the Chinese authorities have a number of socio-political considerations in mind that act as strong countervailing forces against the United States' pressure for China to sharply revalue the currency. These factors include Chinese aversion to succumb to foreign dictates as well as domestic economic consideration such as placing the agricultural sector of the Chinese economy in a competitive disadvantage position by arbitrarily revaluing RMB. Additionally, given China's stated goal of gradual financial liberalization, the debate has been reduced to the issue of policy sequencing, as is described below.

### **3.2 Sequencing capital account liberalization and floating exchange rate policies**

One of the major issues in financial reform of emerging economies is the sequencing of capital account liberalization policies and adopting more flexible exchange rate regime. The order in which financial liberalization and exchange rate system reform are implemented may have profound undesirable financial consequences.

Removing capital account controls before instituting a floating exchange rate regime may attract massive speculative capital inflows, triggering inflationary pressure that would require large revaluation of the currency with the latter's adverse effect on the ongoing export-lead economic growth. There is evidence that speculative capital inflow into China is happening already (see Yang, 2005). Alternatively, relaxing capital account controls could have the undesirable consequences of capital flights, events that may force the Chinese monetary authorities to devalue the currency under duress.

Presently, it appears that Chinese monetary and exchange rate authorities are following the scenario of first removing capital control and subsequently adopting a floating exchange rate regime. As evidence that China is following capital account liberalization-flexible exchange rate sequence, we draw

reader's attention to the following policy changes by the Chinese authorities.

### **3.3 Recent policies for capital account liberalization and RMB convertibility in China.**

On March 18, 2006, the People's Bank of China (PBOC), the Chinese central bank, announced major changes in China's capital account control policy. The PBOC stated that the sharp rise in its foreign currency reserve holdings (amounting to \$1.43 trillions in early October 2007) requires major changes in capital control policies. The policy changes consisted of relaxing restrictions on private holdings of foreign currencies. For example, according to the new rules, Chinese residents could purchase up to \$20,000.00 worth of foreign currencies, a 150% rise from its previous allowable sum of \$8000.00. Furthermore, Chinese institutions were allowed to open foreign currency denominated accounts at the commercial banks. Moreover, qualified Chinese insurance companies (companies with genuine needs for foreign exchange transactions) were allowed to invest in foreign securities, and Chinese commercial banks were permitted to invest in overseas securities on behalf of their clients, Wu(2006). Finally, the capital control was further relaxed by the State Administration of Foreign Exchange (SAFE) announcing on August 20, 2007, that the citizens of China are free to purchase any amount of foreign currencies for investment in the Hong Kong stock market(Wu, 2007).

In line with China's capital account liberalization policies, China Investment Corporation (CIC), a government-owned enterprise, with a registered capital of \$200 billions, started its operation in early October 2007. The company is to invest in overseas financial markets with the principal purpose "...to make profits". Moreover it aims to ease the pressure of rising foreign exchange reserve in China and plans to absorb market liquidity (China Business, 2007).

What is the rationale of the Chinese authorities in adopting this particular policy sequencing? The Chinese reason that developing viable, well-functioning spot and forward markets is a prerequisite for adopting a more flexible exchange rate regime. A well-developed currency market is needed for Chinese banks and enterprises to hedge against foreign currency exposure. In light of well-known currency markets volatility, absent the forward and swap markets, the banks and enterprises would be exposed to unacceptable currency risks, argue the Chinese authorities.

Looking at Sino-American exchange rate policy dispute from this angle, it becomes abundantly clear that the fundamental difference between China and the United States on China's exchange rate policy is sequencing of reform: Americans prefer a floating exchange rate regime operating before completion of capital account liberalization in China, and China prefers capital account liberalization before instituting a full-fledged floating exchange rate regime.

## 4 Is renminbi undervalued?

The traditional approach to measuring the effect of exchange rate variation on trade balance uses export and import demand elasticity. This model predicts that the exchange rate depreciation/appreciation may have measurable effect on the size of trade balance between two countries, and forms the basis of argument proposing RMB revaluation as a cure to deal with U.S. trade deficit with China. This theory was tested recently by Bahmani-Oskooee and Wang (2007) who used disaggregated U.S.-China trade data at two-digit and three-digit industry levels. The results indicate that a long-run appreciation of dollar has significant effects on traded goods between the two economies.

Both the theory and empirical results based on the elasticities approach to trade adjustment use the real exchange rate of a currency and are totally silent about the role of the long-run equilibrium yuan plays in U.S.-China trade adjustment. Accordingly, the validity of arguments criticizing China's policy on the grounds of undervaluation of yuan hinges on the presence and size of an undervalued long run equilibrium RMB exchange rate.

The empirical results on RMB's long run equilibrium value are mixed, however, a recent work that estimates behavioral equilibrium RMB shows that the effective rate has moved in a narrow band of plus and minus 5 percent of the long-run equilibrium exchange rate over the last 25 years (Wang, Hui, Soofi, 2007).

This result justifies the current Chinese capital account liberalization and pegged exchange rate policies. The empirical observation of a narrow band within which the effective RMB exchange rate has fluctuated over the last several decades, negates the assertion that the U.S. trade imbalance with China is due to an undervalued RMB. Moreover, China's policies to allow full convertibility of RMB is tantamount to allowing market forces to appreciate the currency over the medium and long run, if not immediately.

Based on the observation of a small real effective RMB movements, there is no urgent need for a deliberate exchange rate revaluation that under the best of circumstances would have a short run effect on the real economic variables. Economic fundamentals will revalue the currency over the long-run. This does not mean that there are no other methods of dealing with the issue of U.S. trade deficit vis-à-vis China. Alternative methods to address the immediate concerns of the United States are available.

These alternative policies include encouraging expansionary fiscal policy in China, lowering of import tariffs, eliminating export subsidies, higher wages for Chinese workers<sup>2</sup>, and distribution of PBOC's reserve holdings among Chinese public and enterprises. There are signs that some or all of these measures are currently underway or are under consideration by Chinese authorities.

Given the important role expansionary fiscal policy could play in restoring U.S-China trade balance, in the next section, we discuss the positive effects of Chinese government's expansionary fiscal policy on U.S. trade imbalance with China.

## **5 The impact of expansionary fiscal policy on trade balance**

The Chinese central government policy of stimulating domestic aggregate demand by increasing spending could be an avenue by which it could address Americans' concern about U.S. trade deficit with China.

According to macroeconomic theory, increased government spending would boost national income, resulting in a higher private consumption spending, and higher demand for imports. The rise in imports and assuming no change in exports (at least initially and immediately after the rise in government spending) lead to a deteriorating balance of trade in the country that increased government spending.

Of course, the theory doesn't guarantee that worsening aggregate trade balance would occur with respect to all trading partners. Each trading partner will have its own peculiarity and would react differently in response to

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<sup>2</sup>Higher wages in China, in the absence of a commensurate rise in labor productivity, could result in higher inflation and a subsequent real appreciation of RMB; thus improving the term of trade in favor of the United States and other countries.

the rising import demand. To calculate the magnitude of a rise in Chinese imports from the U.S. that is induced by an increase in Chinese government's spending, we use the empirical results from a recent study involving the economies of 10 Pacific Rim countries including China and the United States.

Using a set of international inter-industry flows of goods (export-import) in a regional general equilibrium model, Soofi and Moussavi(2004) measured the economic linkages among 10 Pacific Rim nations. These linkages show the degree of interconnectedness of the real sectors of the economies under study.

Bank of Korea and the Institute of Developing Economies of Japan have taken the lead on this research front by compiling The Asian International Input-Output Table 1995 (AIIO95). These inter-industry transactions as well as sector by sector export tables contain data for China, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, Thailand, and the USA.

The 56 sectors in the AIIO95 table have identical definitions and all transaction values are expressed in the United States dollar, making cross-country comparisons of the industries meaningful. However, to make simulations and presentation of the empirical results manageable, the study aggregated the 56-sectors into only seven sectors: Agriculture, Mining, Manufacturing, Trade & Transport, Construction, and Services. Since quantification of trade flows by the last two sectors faces major conceptual difficulties, they were excluded them from the analysis. It is useful to note that calculations of the results based on simulation of disaggregated 56-sector tables are feasible even though doing so requires considerable computational resources. Clearly, such detailed results are more useful for policy analysis at industry level .

In Soofi and Moussavi (2004) the sensitivity of each economy to the global changes in policy variables, such as changes in the government expenditure, is measured by estimating the final demand elasticity of the export of the  $i^{th}$  sector in the  $j^{th}$  country, with respect to an autonomous change in the final demand vector of the  $k^{th}$  country. Note that, the export elasticity is defined as the percentage change in the exports of the  $j^{th}$  country resulting from a change in the final demand of the  $k^{th}$  country.

## 6 Empirical results

The results of the simulations based on the model in Soofi and Moussavi (2004) appear in 20 tables in the appendix<sup>3</sup>. I also present the data for three leading economies in the region, namely, China, Japan, and the United States in Table 1.

Note that Table 1 reports the export elasticity coefficients, for four sectors. These coefficients show induced exports in a trading economy that are due to a 1% increase in spending in all sectors of an economy by the government of the countries listed in the first column of Table 1.

Note that the impact of a rise in the final demand on the mining industry's exports is minimal and in some cases negative, even though the small negative numbers are due to the computations which for all practical purposes could be considered zero. One possible explanation for the larger negative effects is that as the export and domestic demand are stimulated by higher final demand spending of a foreign government, the mining sector exports are reduced to meet the additional demand by the domestic industries.

### 6.1 China-Japan-U.S. Trade Dependency

Once again, the discussions below are based on measurements of the sensitivities of exports of the countries to the changing final demand (consumer spending, private investment, government expenditure, exports, and imports) of the three trading partners.

We illustrate trade dependency of these economies by elaborating the entries in Table 1. For example, we may ask questions such as "How much does the export of each sector of the United States' economy change (exports to all countries in the model and not only to China), if, for example, Chinese government increase spending by 1% in each sector of the Chinese economy?" Alternatively, we ask "how much do the exports of Chinese industries change, if the United States' government increase spending by 1%?"

By reviewing Table 1, we conclude that a 1% rise in the final demand expenditure by Chinese government, increase U.S. agricultural exports to all 9 countries in the model by 0.7246%, U.S. mining exports by 0.175 %, manufacturing exports by 0.6138%, and U.S. trade and transport exports by

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<sup>3</sup>The data in these tables are based on the model in Soofi and Moussavi (2004) and were calculated in my collaborative work with Dr. Moussavi. However, due to space limitation, the tables were not published in Soofi and Moussavi (2004).

0.8655%. By the same token, a 1% increase in U.S. government expenditure would induce additional Chinese exports of 0.019829%, 0 %, 0.5171 %, and 4.53743%, by agricultural, mining, manufacturing, and Trade & Transport sectors, respectively.

It is clear from the data in Table 1 that Chinese spending would have the most powerful effects on the exports of Japan and the United States<sup>4</sup>.

To further illustrate this point, let's suppose that each country would raise its autonomous expenditure in the agricultural sector by \$1,000,000.00. Then as a result of the additional million dollar autonomous spending by China, induced Japanese agricultural export is \$6,598.6, while U.S. induced agricultural exports would be \$7,260.00. Compare these numbers with the effects of the same size autonomous agricultural spending by Japan that results in \$319.54 induced Chinese agricultural exports and \$640 additional American agricultural exports.

Based on these findings, we conclude that American Agriculture, Mining, and Manufacturing sectors stand to gain a great deal from economic expansion in China. Consistent with economic theory, expansion of Chinese economy would induce additional American exports to China. Specifically, compared to the other economies in the model, China's economic expansion would have the strongest effect on U.S. agricultural exports.

To summarize, we note that any Chinese stimuli would induce more exports (with the exception of Trade & Transport sector) from Japan and America, than the other two countries' stimuli would induce exports in China, Japan, and the United States.

## 7 Summary and conclusions

Based on a cursory review of Chinese financial and exchange rate liberalization policies of the recent years, it is quite clear that China is moving toward a floating exchange rate regime. In this context, the Sino-American debate over China's exchange rate policy may be reduced to policy sequencing debate, with America wishing China to adopt a completely floating exchange rate regime before removing capital control, and China wishing to liberalize its financial system, remove capital account controls, and then establish a floating exchange rate regime.

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<sup>4</sup>Compare the numbers in the first block at the top with the numbers in the second and third blocks of the table.

The empirical results presented in the tables of the appendix to this paper have an important policy implication for the current Sino-American exchange rate policy debate. They show that China can lower or eliminate her trade surplus with the United States by adopting expansionary fiscal policy. However, the ability of China to affect this outcome to a large extent depends on the U.S. government's desire or ability to address the United States' structural budget deficits.

I recognize the limitations on policy applications of the estimated coefficients due to the static nature of input-output analysis. Moreover, further works in providing probability distributions or statistical inference for the estimated coefficients are required.

Table 1. Export Responses of China, Japan, and the United States to 1% Rise in the Final Demand Spending by Each Country in the First Column of the Table

	Japanese Response	U.S. Response
China:		
Agriculture	0.65986%	0.72460 %
Mining	0.166090%	0.17500%
Manufacturing	0.631505 %	0.61380 %
Trade&Trans.	1.003692 %	0.86550 %
	Chinese Response	U.S. Response
Japan:		
Agriculture	0.031954 %	0.066400 %
Mining	-0.000222 %	-0.000300 %
Manufacturing	0.429690 %	0.414100 %
Trade&Trans.	3.951000 %	3.879000 %
	Chinese Response	Japanese Response
U.S.A:		
Agriculture	0.019829 %	0.030575 %
Mining	-0.000120 %	-0.000117 %
Manufacturing	0.517100 %	0.527751 %
Trade&Trans.	4.537430 %	4.874518 %

Source: Soofi and Moussavi (2004)

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