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Abstract

Many developing economies of the world today have been building up massive foreign exchange reserves of industrialized economies. A clear example of this is China. In February of 2005, China surpassed Japan as the world’s largest holder of foreign exchange reserves. After the Asian Contagion period of the late 1990’s, this buildup as a whole could be seen as a healthy development. But with an accumulation of over $1.4 trillion in 2007, questions have arisen if China’s actual reserves are too large relative to “normal demand.” The purpose of this paper is to briefly review both the macroeconomic aspects of China’s reserve holdings, and to examine the treatment of the subject in contemporary international economics textbooks.

This paper was presented May 22, 2008, at the 18th International Conference of the International Trade and Finance Association, meeting at Universidade Nova de Lisboa in Lisbon, Portugal.
What Students of the Global Economy Should Know About Chinese Capital Flows:
More Questions Than Answers

“It’s one thing to save for a rainy day, but one trillion dollars in reserve accumulation is more like building Noah’s Ark.” Ken Rogoff, former chief economist at IMF

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I. INTRODUCTION

Foreign exchange reserves are an important monetary asset for countries competing in the global economy. The IMF defines foreign exchange reserves as, “...those external assets that are readily available to and controlled by monetary authorities for direct financing of payment imbalances through intervention in exchange markets to affect the currency exchange, and /or for other purposes” IMF (1993, p. 53). These reserves commonly quite liquid and consist of currency, securities (i.e. bonds), monetary gold, and special drawing rights (SDRs).

Countries with large trade volumes are prone to risks from random shocks to their external balances, resulting from fluctuations of their foreign exchange earnings. These international reserves serve as a buffer to any potential payment shortages, and are a hedge against undesired macroeconomic adjustments. Foreign exchange reserves also enhance fixed exchange rate credibility, and can be used to pay external debt or act as collateral for international borrowing.

The new era of globalization, which began in the 1990's saw substantial increases in international trade flows, international migration, and international asset flows. For example, in 1990 world aggregate holdings of reserves were roughly $919 billion with China’s share at 3.3 percent. In 2007, world aggregate reserves jumped to over $5 trillion with China’s share slightly over 20 percent.

Since their economic reforms of 1989-90, China has experienced extraordinary economic growth rates. They have also witnessed significant increases in export share. For example, in 1990 China’s export/GDP ratio sat at 15 percent, compared to roughly 40 percent in 2007, see Figure 1 below. Importantly China surpassed Japan as the world’s largest foreign exchange holding in 2006 with over $1.2 trillion. As of January 2008, China’s holding increased to $1.53 trillion, see Figure 2 below.

(INSERT FIGURE 1 ABOUT HERE).

(INSERT FIGURE 2 ABOUT HERE).

An interesting aspect of China’s international reserves holding is its massive size. China’s reserves to GDP ratio is approximately 40 percent in contrast to the world average of 10 percent. This statistical difference has spurred literature in what should be China’s optimal size of reserve holdings. Li (2006) suggests that China’s foreign exchange reserves are not excessive because the need to maintain confidence and to maintain its currency. On the other hand, BIS (2006) suggest they pose a long term problem for the global economy. Specific over accumulation values are mentioned by Xia (2006) and Zheng and Yi (2007) who suggest that given all market conditions China held roughly $400 billion more reserves than was needed in 2005 and 2006, respectively.

With regards to the international trade literature, specifically international trade textbooks, this paper finds surprisingly little discussion on the matter. This article
surveyed the top 6 selling international economics textbooks in the field, including: Sawyer and Sprinkle (2006), Yarbrough and Yarbrough (2006), Carbaugh (2007), Pugel (2007), Gerber (2008), and Krugman and Obstfeld (2009). Much of what was found (main themes) on China’s foreign exchange reserves are reported in section II below. The content and topics covered varied from the international reserves effect on exchange rates to long-run savings rates.

Perhaps one of the greatest puzzles that only the Krugman and Obstfeld (2009) textbook cover is why countries that run current account surpluses with the U.S. and/or Europe do not typically use their dollar and Euro earnings to purchase real assets that will facilitate economic growth in the countries with positive net exports. *The Economist* has it right:

Economic Theory says this should not happen. Richer countries should export capital to poorer ones, not the other way round. Economists have had to get used to seeing this turned on its head in recent years, as rich countries have run large current-account deficits and borrowed from China and other emerging economies (notably oil exporters) with huge surpluses (“Wind of Change: Globalisation is creating a new class of companies; they should fight harder for it,” *The Economist*, January 12th-18th, 2008, pp.12-13).

Yet, although anyone with any teaching experience knows there is a lot more that would need to be said about what constitutes investment—and for that matter, what determines the reward for investing. The remainder of this paper will both discuss the macroeconomic view of the function of financial markets in an economy, and the treatment of the subject in the six aforementioned international economics textbooks.

II. CHINESE CAPITAL FLOWS: WHAT IS KNOWN AND WHAT IS BEING REPORTED

The present paper argues that students of the global economy can hardly ignore the U.S.-Chinese relationship—and to understand the questions economists have about that relationship some basic economic theory is most useful. A standard strategy in helping students understand the role of trade in an economy is to argue that exporting is a way of increasing the productivity of domestic resources.

Briefly, a country produces something, say textiles, exports those textiles and uses the export earning to buy something else, say tractors. Essentially, the resources that went into making the textiles are really being used to “produce” tractors. A country will engage in international trade if by doing so they can get more tractors by exporting (textiles) than by directly producing tractors.

The role of capital markets in this story is to bring time into the story. A country can export textiles, use the exports to buy financial capital (i.e., run a current account surplus and a capital account deficit). The financial capital earns a return in the foreign country; at some future date the capital (and its returns) can be used to purchase tractors.
Thus the resources the country uses to produce exports today turn into tractors tomorrow. How many tractors depends not just on relatively productivities, as in the story without capital markets, but on the standard financial market concerns—how well the funds are invested, the risk posture taken, the business cycles in the country where the funds are invested, etc.

These simple stories explain why we expect deficits and surpluses in capital accounts between countries (independently of speculation per se). The next question is whether we expect capital to flow from developing countries to developed countries or vice versa. The fact that financial returns matters in this story typically supplies the answer. Sawyer and Sprinkle (2006) give a comparative advantage-type explanation.

A distinguishing characteristic of international trade in goods is that developing countries tend to have a comparative advantage in labor intensive products and a comparative disadvantage in capital intensive products. What this implies is that capital is relative scarce in developing countries. As a result the rate of return is relatively high. Fortunately for these countries, there is an external source of capital in the developed countries (2006, p. 288).

This implies that capital flows from developed countries to developing countries. Krugman and Obstfeld (2009) arrive at the same conclusion, and in fact, explain the reasons for the pattern of comparative advantage between developing and developed countries, citing institutions, poverty, and savings rates.

Because of poverty and poor financial institutions, national saving is often low in developing countries. Because these same countries are relatively poor in capital, however, the opportunities for profitably introducing or expanding plant and equipment can be abundant. Such opportunities justify a high level of investment. By running a deficit in its current account, a country can obtain resources from abroad to invest even if its domestic saving level is low (2009, p. 629).

This is the “Economic Theory” that The Economist means, and it certainly can be found in the texts. But the texts certainly mention that things are completely different for China. Pugel (2007) notes

China has a remarkably high household saving rate. For a typical developing country, its low saving rate usually leads to a trade deficit, but China is not typical (2007, p. 9).

Krugman and Obstfeld (2009) provide an explanation for the savings rate:

China’s savers put aside more than 45 percent of GNP every year, a staggering number. Saving is so high in part because of a widespread lack of basic services that the government earlier supplied, such as health care (2009, p. 655).
That there is a high savings rate is beyond question, but it seems likely that it is the case that there exist many excellent investment opportunities in China at the same time. China is the single largest destination for FDI (De la Cruz Gallegos, Boncheva, and Ruiz-Porras, 2008, p. 1). This is not the place to discuss the state of Chinese domestic financial institutions, but, to put it mildly, it is not self-evident that China benefits more by holding dollars than it would by investing in its own economy.

A complicating factor for China that has to be mentioned is that almost all observers believe it has a non-market determined exchange rate. With a market determined exchange rate, a surplus in the current account implies a deficit in the capital account, regardless of the relative financial returns in the two countries, their capital endowments, or anything else. Further, the foreign capital holdings could be completely in private hands.

Many observers believe that China pegs its currency against the dollar (and the Euro and Yen for that matter) in order to promote exports. The general reasoning is that the government believes that employment is a crucial domestic issue, and that it will do everything in its power to increase employment in the industrialized sector of the economy. All of the texts explain this basic argument. A standard treatment is Carbaugh (2007):

The U.S. government charged that China’s currency policy resulted in the Yuan’s being undervalued relative to the dollar by about 28 percent. It cited as evidence China’s huge surplus and large accumulation of dollar reserves (2007, p. 478).

Gerber (2008) makes the argument that China’s support of the Yuan implies that it accumulates dollars, and introduces the important issue of how the capital is held. Somewhat puzzlingly, he both argues that these dollars essentially finance U.S. budget deficits: “Chinese savings finance U.S. government deficits” (2008, 439), and that “a cessation of all [Chinese] purchases [of U.S. bonds] could be countered by a 0.2 to 0.25 percent rise in long-term U.S. interest rates. In other words, the argument that the United States is dependent on China to finance its deficits is highly misleading” (2008, p. 440). The implication is that China’s dollar holdings (type and amount) is not sufficient to intimidate either the U.S. government or economy.

A common argument is that China’s intentions are more defensive than offensive. Pugel (2007) and Krugman and Obstfeld (2009) both argue that China (and other developing countries) might hold dollars for precautionary reasons. “For developing countries … the pace of reserve accumulation has accelerated since the financial crises of the late 1990s (2007, p. 638). Further,

because foreign credit tends to dry up precisely when it is most needed, countries could best protect themselves by accumulating large war chests of ready cash—dollars, euros, and other widely acceptable foreign currencies (2007, p. 638).

Pugel makes a similar “hot money” argument (2007, p. 9).
Krugman and Obstfeld (2009) come the closest to making the argument of the present paper, that Chinese policy should be designed to increase the welfare of Chinese citizens. There may perhaps be a place for precautionary policy (and we can think of a number of other risks that dollars may provide some protection against), but welfare should be the criterion. Krugman and Obstfeld (2009) make the argument that a decrease in the trade surplus would not necessarily spell disaster for the Chinese economy. An increase in private consumption and government spending would offset a decrease in the trade surplus and prevent employment from falling.

By providing a better social safety net, the government would raise private and government consumption at the same time. In addition, there is strong need for expanded government spending on items such as environmental cleanup, investment in cleaner energy sources, and so on (2009, p. 655).

If China pursues such a welfare-enhancing policy it will not accumulate dollars. The question would remain, however, of what it should do with the dollars it has already accumulated. While we would certainly advocate some fund for precautionary motives, it is not self-evident that all of its current holdings of dollars or dollar-assets are needed. Perhaps it is time for the Chinese government to think of transforming some of those dollars into “tractors,” i.e., U.S. produced capital goods that would work in a complementary fashion with Chinese government expenditure on the environment, cleaner energy, or plain old fashioned infrastructure. Notice that these purchases would be financed with the earnings of Chinese production that was done in the past—they would have no effect on “imports” and “exports” as these are typically defined as private transactions. Nor would they affect the exchange rate as they are a swap of dollar assets for real assets. If China either now, or in the future, accumulates more dollar reserves than it could possibly justify for precautionary motives, then it should change its policy and buy “tractors” thereby attending to the welfare of its citizens.
REFERENCES


FIGURE 1
China’s Export to GDP Ratio (1970-2007)

Source: International Financial Statistics Database.
FIGURE 2

Source: International Financial Statistics Database.