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**Does the macroeconomic policy
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Abstract:

Schnabl and Freitag (2009) sketch the causal chain that produced the current account surplus in China and the current account deficit of the U.S. (as a part of global imbalances) as follows: declining interest rates in the U.S. cause a redirection of capital flows into the periphery, rising capital inflows into China and other Asian countries trigger currency purchases by periphery central banks, and increasing stocks of foreign reserves on the asset side in the central bank balance sheet are matched by a proportional increase of reserve money on the liability side. To keep the exchange rate stable, foreign reserves are accumulated and reserve money expands. The Peoples Bank of China is trying to fight the inflation pressure with several measures, among them higher interest rates. This attracts even more foreign capital to China. Moreover, it cannot solve a problem that originates in the macroeconomic policy of the global economy's leader. - A crucial point in this argument is the redirection thesis. The empirical evidence does not support this thesis in several respects—there is no evidence for a redirected capital flow away from the U.S. toward China, and there is no evidence that interest rates controlled by the Federal Reserve are the cause of the capital flow to China.

Keywords: global imbalances, current account surplus, current account deficit

JEL classification: F32

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0. Introduction

In the search of the causes of the worldwide recession that began in the U.S. in 2007 and reached Germany a year later, the main focus was on the crisis in the financial system with its roots in an overheated real estate and housing market. Another more structural cause is seen in the global imbalances that evolved in the past decade and that are reflected by rising asymmetries of the current accounts of some global players. How is this phenomenon linked to the real estate and financial crisis in the U.S.? Is there a link that is responsible for these asymmetries? Some authors argue that East Asian current account surpluses are responsible for U.S. current account deficit (Dooley/Folkerts-Landau/Garber 2003, Bernanke 2005) because the East Asian countries keep their exchange rate artificially undervalued, for instance by pegging it to the dollar. Their goal is to promote export-led growth. This feeds over-consumption in the U.S. Other authors argue the other side and are more focused on fiscal and monetary policy. Rising deficits in large countries such as the U.S. are producing rising surpluses in an increasing number of periphery countries, including China (Schnabl/Freitag 2009:14). According to these authors, fiscal and monetary policies in the U.S. are among the main factors causing the global asymmetries.¹

1. The analytical framework

To avoid the over-simplifying terminology of a *center* and its *periphery*, every country that trades internationally is called a *global player*. A few have large economies with strong international trade and financial markets providing internationally used currencies in the world monetary system. By now and in the foreseeable future, the U.S. dollar is the leading international currency. International trade and capital flows are denominated mostly in the U.S. dollar. Backed by the large size of U.S. goods and financial markets, the dollar is *the* dominant international medium of exchange, unit of account, and store of value in the Americas, Asia, the Middle East, and the Commonwealth of Independent States. There are different reasons why other countries and private international agents accept the dollar as common international money; they include low transaction costs, ubiquity, and higher stability compared to their own currency.

Since the euro was created, its international role has been steadily increasing not only in Europe, but also beyond. From this point of view and taking into account the dimension of its international trade, the European Monetary Union (EMU) can be regarded as another important actor in the global economy. To mark the difference between the leading country and the other global players we see the U.S. as a global player exerting *hegemony* (Mansfield 1994:272) and define the U.S. as the *leader*. The rest of the global players are *challengers*. According to the literature, the EMU and its currency can be regarded as one of the challengers of the U.S.'s role in the world economy (Chinn and Frankel 2005). In spite of the fact that China, a large and rapidly growing economy with strong international trade, is pegging its currency to the U.S. dollar, it is a global player that also can be called a challenger because its monetary policy can be changed at any time in the future.

I do not raise the question here of whether there are or have been other challengers in the global economy such as Russia or Japan; for the special purpose of this analysis it is sufficient to focus on the leader and one or two of its challengers. To

¹ With few exceptions, the first paragraphs summarise the author's shared views with Schnabl/Freitag 2009.

make the picture more clear cut in terms of a nation-state framework, the analysis treats the EMU as being represented by its economically leading country, Germany. The European Central Bank (ECB) acts independently from any member state of the EMU. Therefore in this analysis, the EMU is financially represented by the ECB and economically by Germany. This is a simplification, but it plays no crucial role in the discussion of my leading question: Can the global imbalances be explained by the macroeconomic policy of the U.S. as it is done by Schnabl and Freitag?

2. The main actors

2.1. United States

The U.S. is (as is the EMU) a large and—in the view of Schnabl and Freitag (2009:8)—a comparatively closed economy. As a matter of fact, the trade openness (Suzuki/Krause 2005) in 2004 was 0.31 in the U.S., 0.65 in China, and 0.71 in Germany. Monetary decisions made by the Federal Reserve (Fed) are based first on domestic targets such as growth and financial and price stability, even though authorities may feel the burden of responsibility connected with having an international currency (see Chinn/Frankel 2005:7,11-12). By and large, it may be legitimate to classify macroeconomic policies in the U.S. of the past decade as being expansionary (Schnabl/Freitag 2009:4), but this assessment ignores the period from 2004 to 2006 which is characterized by rising interest rates in reaction to the overheating of the domestic market. External targets of macroeconomic policy such as export competitiveness are regarded as secondary by the Fed and the exchange rate is being left to free floating. With two short exceptions among the past 18 years the two prosperous phases of the U.S. economy are accompanied by a rising current account deficit. What was the cause of the deficit? The authors give a very vague answer to this question: “Low interest rates and buoyant domestic activity are likely to contribute to rising imports and increasing current account deficits” (Schnabl/Freitag 2009:15-16.) Why did the flourishing economy of the U.S. not lead to rising exports and increasing current account surpluses like in Germany? According to a widely shared point of view the answer is this—exports are a cause of a flourishing economy instead of an effect. But imports can be regarded this way. Therefore, the account deficit of the U.S. economy is mostly homemade, caused by an overheated consumption, in spite of the fact that the staggering demand in the rapidly developing countries may be one of the causes for lagging exports. Another explanation refers to the increasing food and raw material prices that contributed to the rising current account surplus of countries with this kind of exports (Schnabl/Freitag 2009:18-19), but only from 2008 onward and less valid for trading partners China and Europe.

2.2. Europe

The euro was introduced in 1999 and has gained importance as a regional international currency. It was backed by the substantial size of European goods and financial markets. The euro is used for payment transactions within the EMU and as a vehicle currency between EMU members and non-EMU countries. Some countries with institutional links to the EMU have redirected their exchange rate strategies to the euro (Lithuania, Bulgaria). Foreign reserves are increasingly held in euro-denominated assets (e.g., Russia). According to ECB (2008), private and public agents have increased the use of the euro for their international transactions. Like in the U.S., the macroeconomic policy of the EMU is designed to meet domestic targets

such as price stability, growing output and financial stability, first, but these are supra-national targets. External targets such as exchange rate stability and export competitiveness are regarded as secondary. Therefore, exchange rate is left as free floating. Macroeconomic policies in the euro area tended to be more restrictive than the Fed, because of the priority of price stability. The aggregated current account of the euro area has been balanced by and large. Some members of the EMU such as Greece and Spain have experienced increasing deficits. If we focus to Germany as the economic leader of the EMU, her current account has increased since 2001.

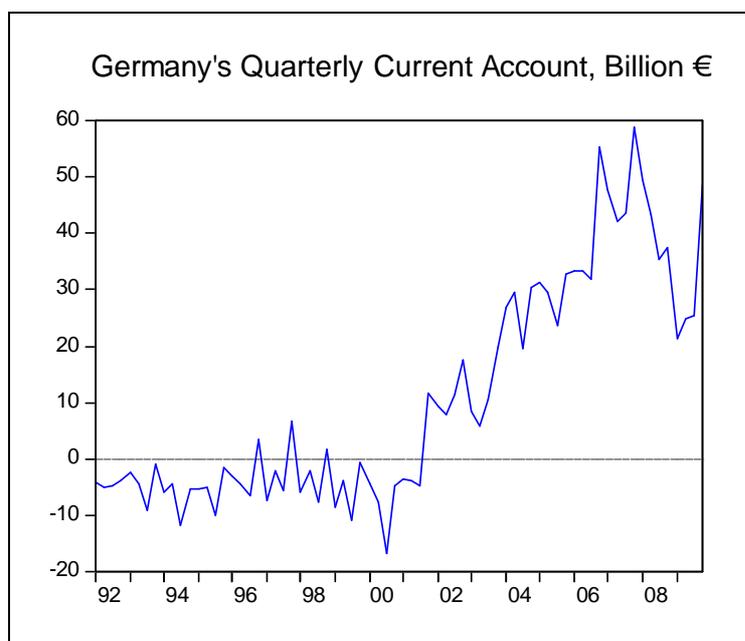


Fig.1: Germany's quarterly current account, in billion €.

2.3. China

China has a big and rapidly growing economy with emerging markets and it has tended to run account surpluses since 1996. There are several reasons why China pursues a soft peg of its currency to the dollar. China still has underdeveloped capital markets; pegging to the dollar provides stable conditions for China's export dependent industrial sector, it secures a loss-free recycling of the revenues generated in dollars abroad, and it is attractive to foreign investors. An appreciation of a currency is an appropriate measure in the case of an increasing current account surplus, but this would worsen the conditions of exports and erode the value of international assets in terms of the Renminbi ("the People's currency" with its unit "Yuan"). On the other hand, there is the danger of importing inflation of the dollar. Soft pegs allow for a restricted kind of exchange rate flexibility. A slow process of appreciation of the Yuan has been underway since 2004 (see Fig.2).

3. The Asymmetries

The exchange rate policies of the three global players, the U.S., EMU, and China, generates three relationships characterized in two types: the (almost) constant rate between China and the U.S. as a consequence of China's pegging to the dollar is contrasted by a flexible rate between the euro and the dollar and between the euro and the Yuan. To summarize the asymmetries between the current accounts of the three big global players, the international position of the U.S. economy is

characterized by a rising deficit, while the EMU (Germany) and China show rising surpluses. This generates increasing pressure on the Yuan being appreciated compared to the dollar, while appreciation of the euro has been steady since its introduction. Looking at the macroeconomic policy behaviour, the U.S. tended to be as expansionary as China, while the EMU had more restrictive fiscal and monetary policies.

3.1. Monetary, fiscal and exchange rate policies

In the Mundell-Fleming framework, flexible exchange rates are dampening the effectiveness of an expansionary fiscal policy due to increases of the interest rate and the tendency to an appreciation of the currency. According to the AS-AD model, fiscal expansion aimed to stimulate a staggering economy is more effective when it is supported by a monetary expansion that keeps domestic interest rates low and softens appreciation pressure. Such a rare coordination of macroeconomic policies is one of the standard examples in macroeconomic textbooks (Blanchard/Illing 2004:155-156). It also can be supposed to be the case in China, because there is no clear institutional separation between the government and central bank. The EMU countries are much more restricted in their scope to carry out discretionary fiscal policies because (i) the ECB is independent from the expectations of the member-states of the EMU and bound to pursue first and foremost price stability; and (ii) the legal limits for government deficits supposed by the Maastricht treaty.

3.2. The redirection thesis

The consequence of dollar or euro pegs is mirrored by the asset side of the central bank's balance sheets. Foreign reserves are the most important item that builds the basis for reserve money creation. "Claims on government and on the private sector play only a marginal role for reserve money creation. From a long-term perspective, when output grows the necessary increase in reserve money is via the accumulation of foreign reserves" (Schnabl/Freitag 2009:11). This is the background for the hypothesis by the authors in the scheme of a center and periphery of the global economy: "As a result interest rates in periphery countries are dependent on the monetary policy of the centers. If interest rates in the center decline, capital flows are redirected towards the peripheries, and the currency of the periphery country appreciates. To keep the exchange rate stable, foreign reserves are accumulated and reserve money expands" (Schnabl/Freitag 2009:11.).

3.3. Claiming a causal link

The redirection of capital flows from the U.S. to China which is supposed to be triggered by declining interest rates of the Fed is the central argument delivered by Schnabl and Freitag: "...the direction of causality matters. Are the complementary trends in global imbalances driven by the centers or the peripheries?" (Schnabl/Freitag 2009:13). Contrary to the view of others who see a causality running from East Asia to the U.S., the authors hypothesise, "We assume a reverse causality: rising deficits of large centers...are assumed to produce rising surpluses in an increasing number of periphery countries" (Schnabl/Freitag 2009:14.). They identify two types of transmission channels that explain how current account deficits (surpluses) in the center are transformed into surpluses (deficits) in the periphery. The first channel is a link between the macroeconomic policies of the center and the

periphery mainly mediated by the exchange rate policies; the second channel consists of relative prices that influence the current accounts of exporting and importing countries. This paper is concerned with the first channel only.

4. The Facts

There is no quarrel over the described asymmetries between the three global players or over the immense accumulation of foreign reserves in China. The question discussed here is this: Can the accumulation of dollars and foreign assets in China be seen as the result of a higher capital inflow caused by low interest rates in the U.S.? A first answer can be found by a simple inspection of the data.

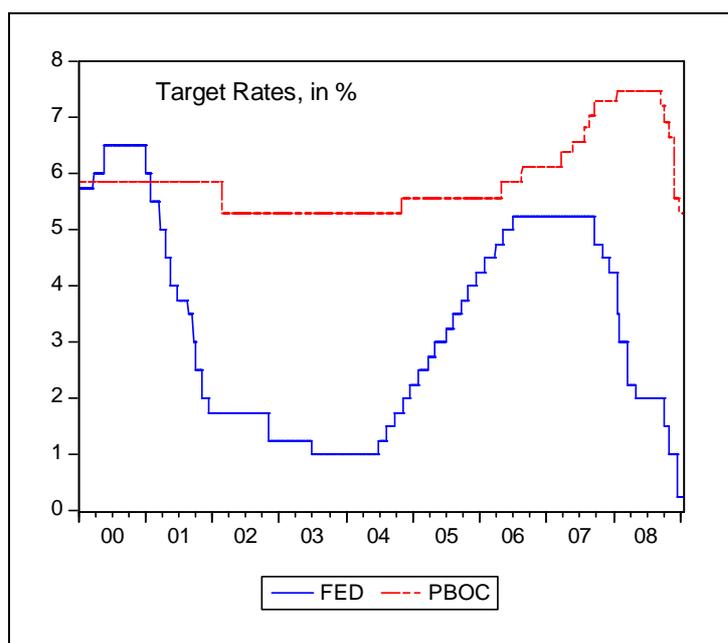


Fig. 2: Target Rates of Fed and PBoC

The interest rates set by the Fed were low compared to those set by the Peoples Bank of China (PBoC) before the crisis broke out. On this background it sounds plausible that American credit conditions (besides those of other countries such as Japan, etc.) fostered capital flows to China. Fig. 3 depicts foreign direct investment (FDI) as one indicator of the capital flows to China and the U.S.

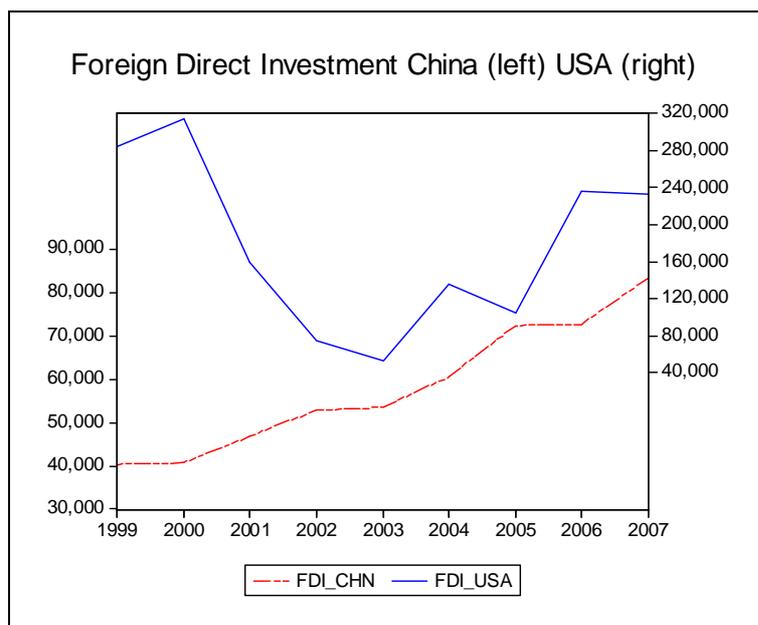


Fig.3: Foreign direct investment, China and USA, in millions \$.

As can be seen in Fig. 3, there was indeed a rising capital flow to China, but this is also true for the U.S., at least since 2003. The thesis disputed here is that capital flows were redirected from the U.S. to China because of the comparatively low interest rates in the U.S. In reality, the opposite was the case. In 2003 the *downward trend of capital flows to the U.S., which was not caused by declining interest rates, but by the events of September 11, 2001, was inverted* and this is the opposite direction of what is asserted. Moreover, the U.S.-FDI was higher than China's all the time. Of course, this is no surprise. Everybody knows that capital flows to the U.S. fuelled the finance and housing bubble that burst in 2007.

There was a steadily growing capital flow to China, too. Looking at Fig. 3, growth rates of both flows seem to be inversely linked together. However, the correlation between the two variables of -0.16 is statistically not different from zero. If we compare Fig. 2 with Fig. 3, there seems to be no sign of a direct causal connection between PBoC's interest rates (as a cause) and the changes of capital inflows to China (as the effect), not to mention between PBoC's interest rates and the capital flow to the U.S. Although the target rates of the PBoC were comparatively higher, they could not hinder the rising capital flow to the U.S. In addition, there is no visible influence exerted by the Fed on the capital flow to China. As can be seen by a comparison of the curves of Figures 2 and 3, the swelling capital flow to the U.S. was *not* caused by larger interest rates set by the Fed; instead it was a *reaction* of the Fed to an overheated capital and housing market at home.

The number of observations is too small to carry out reliable statistical tests. In Tab. 1 the probabilities are reported of testing the hypothesis that the variable x does not Granger cause the variable y . The table may be read in the following way: if there is a higher probability in cell (y_i, x_j) than in cell (y_j, x_i) , it is more plausible that x_i causes y_j compared to the hypothesis that x_j causes y_i .

y \ x	FDI_CHN	FDI_USA	PBoC	Fed
FDI_CHN	--	0.92 (9)	0.77 (6)	0.86 (6)
FDI_USA	0.95 (9)	--	0.25 (6)	0.12 (6)
PBoC	0.20 (6)	0.22 (6)	--	0.51 (6)
Fed	0.53 (6)	0.75 (6)	0.43 (6)	--

Tab. 1: Probabilities of the null hypothesis “x does not Granger cause y,” number of observations in brackets.

According to these tests, it seems to be the case (i) that the foreign direct investment to China influences the target rate of PBoC rather than the other way round, and (ii) that interest rates set by the Fed influence FDI to the U.S. rather than inverted. The differences of the other comparable cells are too small to make even a tentative assertion. As far as the result (ii) can be taken seriously, it is in line with Schnabl's and Freitag's argument—but the evidence is modest. Similar encouraging results may have convinced the authors, that there is a causal relationship. However, there is no evidence for the other part of the causal chain: Interest rates of the PBoC seem to have no influence on China's FDI.

The reason for target rates having only a minor influence on capital flows is simple: target rates of central banks are never a direct cause of capital flows. Capital is attracted by sufficiently higher funds rates on capital markets. This missing link between central banks' monetary policy and the real movement of capital is not mentioned by the authors. It is discussed (among others) by Dooley/Folkerts-Landau/Garber (2003) and by McKinnon and Schnabl (2009).

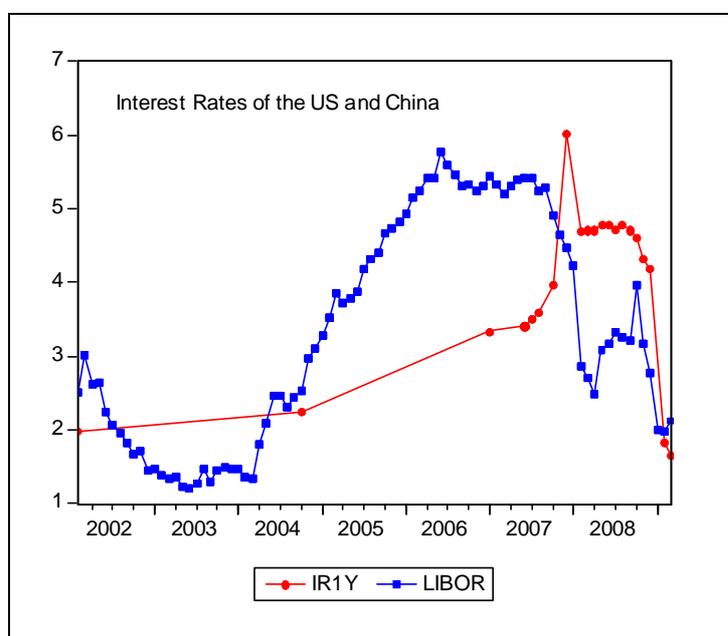


Fig. 4: LIBOR and interest rates of 1-Y-Deposits China (IR1Y)

McKinnon and Schnabl (2009:1) assert a refusal of China's industrial corporations and financial institutions to invest abroad, because (i) they expect a further appreciation of the Renminbi and with it a loss of their foreign investments, and because (ii) the U.S. federal funds rate was low. This was true before 2004 and after 2007 (see Fig. 4), and the question is how the global imbalances that partially caused

the crisis can be explained. Taking into account the interest rates of the U.S. that were higher than those of China from 2004 to 2007, there was *no cause* of a redirection of the capital flow to China, because the U.S. capital market was much more attractive for investors.

As Prof. Schnabl remarked in a personal note to the author, FDI is one of the indicators of a country's capital inflow and only a part of the financial (capital) account comprising other components like foreign-owned assets and other investments. In looking for empirical evidence of what Schnabl and Freitag could have meant, the financial accounts were purged from FDI (see Fig. 5).

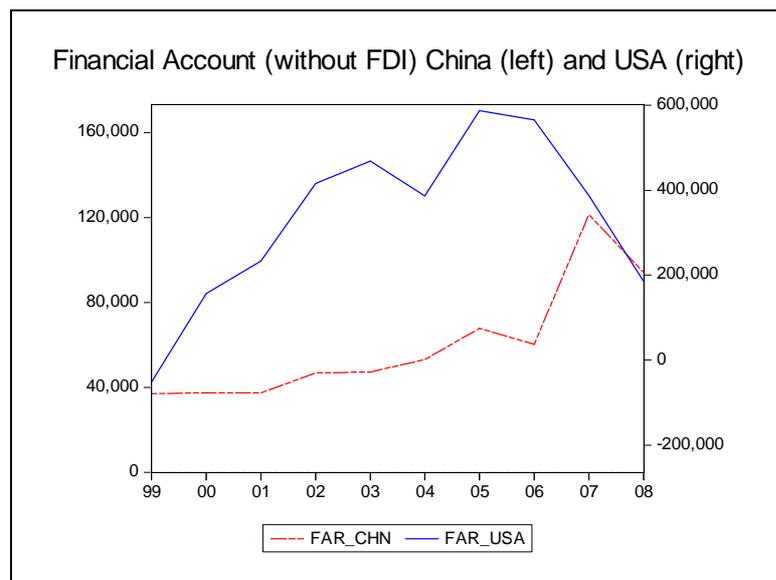


Fig. 5: Financial Accounts (IMF definition) without FDI, in millions \$.

There are two periods in which the reduction of financial inflows to the U.S. is connected with an enhanced inflow to China, 2003 and 2006. The downswing 2006 seems to be linked especially to an upswing of capital flows to China. The problem with the redirection thesis is this—the reduction of US\$178 billion may have fuelled the additional capital flow to China of US\$61 billion; but how can this explain the global imbalances that emerged years before?

Therefore, a similar conclusion can be drawn from Fig. 5 depicting the financial accounts purged from the FDI in China and in the U.S. and including the other indicators of capital flows. *There were no enhanced capital flows to China on the cost of the U.S. which were caused by higher interest rates in China and which would have caused the global imbalances.* There was no redirection of the capital flows away from the U.S. toward China during the years before the crises broke out. As an explanation of the causes of the crisis, the redirection thesis is useless.

Curious as it is, the authors know these facts, but do not draw the consequences. For instance, instead of an enhanced capital flow to China caused by the allegedly lower interest rates in the U.S., the periphery central banks, including PBoC, were expanding the “holdings of U.S. and euro area government bonds,” (Schnabl/Freitag 2009:15) quite the opposite direction of stipulated capital flow.

By the way, the attractiveness of the U.S. capital market was given even in periods when interest rates were lower than those in other countries. Dooley, Folkerts-

Landau, and Garber (2003) offer an explanation for this anomaly. Again,, the challenger China plays a crucial role—China’s current account surplus is used by the officials to buy U.S. securities without regard to their risk and return characteristics. “Their appetite for such investments is, for all practical purposes, unlimited because their growth capacity is far from its limit” (Dooley/Folkerts-Landau/Garber 2003:6). In other words, export-led growth in China leads to current account surpluses and to *more* capital flows from China to the U.S., just the opposite of the disputed proposition. Of course, this is not to say that China is the only one responsible for the global imbalances. Beside China, official sectors of Japan and Taiwan plus private investors in Europe, Canada and Latin America helped finance the U.S. current account deficit. And last but not least, there have been structural and political conditions in the U.S. that fostered over-consumption for decades.

5. Once more: The disputed argument

According to the authors, changes in the monetary stance in the U.S. are likely to lead, independent from the exchange rate regime, to lower rates in China (and other countries of the dollar periphery) for the following reasons: declining interest rates in the U.S. are supposed to cause a redirection of capital flows into the periphery; rising capital inflows into China and other Asian countries trigger currency purchases by periphery central banks; increasing stocks of foreign reserves on the asset side of the central bank balance sheet are matched by a proportional increase of reserve money on the liability side (Schnabl/Freitag 2009:14). What are the consequences of the latter situation related to interest rates whatever the reasons were that led to it?

From the point of view of modern macroeconomic theory, a rising money supply is associated with shrinking interest rates, as long as money demand is constant. This is in line with an overall view in textbooks (Blanchard 2006:389) and with the authors’ argument that interest rates of the periphery converge toward the rates of the center. In the case of China a rising money supply matched a rising money demand in an emergent market (Dooley, Folkerts-Landau and Garber, 2003; McKinnon and Schnabl 2009:3), and as a consequence the interest rates were lowered only slightly one time when the Fed’s interest rates were falling. From 2006 to the mid-2008 the PBoC was continuously reacting with adjustments to interest rates to fight inflation.

A look at the monetary policy of the PBoC raises similar questions. If the currency is or shall be tightly pegged to the dollar, there is no other way to react to a rising capital inflow than to *lower* interest rates set by the central bank, according to the authors (Schnabl and Freitag 2009:15). This measure is thought to *dampen* the capital inflow. On the other side, in front of the danger of an overheating economy accompanied by inflation, the central bank should not *cut*, but *enhance* interest rates. This is exactly what the PBoC was doing.

If central banks do not react to the situation of enhancing capital inflow with an appreciation and try to keep the level of their interest rates, appreciation expectations reinforce capital inflows. To avoid excessive appreciation, interest rates have to change eventually. Under a flexible exchange rate regime, the domestic currency will be appreciated and exports will tend to decline. The central bank will likely react with interest rate cuts—not to ease inflationary and appreciation pressure caused by capital inflows (Schnabl and Freitag 2009:15)—but to ease the consequences of worse terms of trade.

Apparently, the core of the authors' argument is the magnetic effect of high interest rates. There is no doubt that there is such an effect, but it is mediated by the funds rates on a capital market. It may well be that lower interest rates attract less foreign investment; on the other hand, they spur the domestic economy and *this* attracts more foreign capital by means of higher funds rates. This was the case in China. At the same time, the capital inflow to the U.S. was waning and waxing—no redirection to China can be observed. If this critique turns out to be correct, other claims made by Schnabl and Freitag which are consequences are questionable; for example, that fiscal consolidation in periphery countries can be seen as the outcome of low interest levels in the center countries (Schnabl and Freitag 2009:12), that interest rates in the center are directly translated into interest rates changes of periphery countries (Schnabl and Freitag 2009:14), the latter being true only when taken with a pinch of salt (Fig. 2).

6. Conclusions

Let us remember the original focus, the claim to deliver another explanation for the global asymmetries of current account deficits and surpluses. The hypothesis of a redirected capital flow turned out to be wrong in several respects. After fixing indicators in an appropriate way, we could identify periods that confirm the thesis, but neither a plausible link to interest rates nor a possible redirection could be interpreted as one of the significant causes of the crisis in 2007. Of course, the author of this study does not claim to have carried out a proper causal analysis. According to his understanding, this would presuppose sufficient high correlations and a theoretical backed hypothesis referring to a common cause of the variables explored (Saris and Stronkhorst 1984). Both conditions are not in sight. In spite of this, Schnabl and Freitag claim to have discovered one of the causes of the global imbalances that emerged in the past decade, but regression analysis is not the best method to test causal hypotheses. As long as no empirical evidence can be delivered, the redirection thesis must be regarded as mere metaphysics.

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