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International reserves in the era of quasi-world money

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Abstract: The purpose of this paper is to contribute to the discussion on the modern monetary arrangements from a Marxist perspectives, following the recent developments of the Marxist theory of world money. The paper treats the US Dollar as a *primus inter pares* quasi-world money and challenges the argument of the US hegemony by exploring the behavior of major capitalist states and selected developing countries as far as their official international reserves are concerned. The findings reveal a clear pattern in the behavior of major capitalist states in terms of size and forms, although the degree varies implying a hierarchical structure of the corresponding quasi-world moneys. Although part of a vast literature on international reserves, the analysis focuses on developed countries and treats them individually. The merit of this approach is that it reveals the above mentioned pattern which is blurred when Japan is included. The results imply that current international monetary arrangements promote multipolarity and competition in the geopolitical scene, the evolution of which is historical.

Keywords: International reserves, quasi-world money, US Dollar, Gold

Introduction

One of the main pillars of the alleged US hegemony lies in the special role of the US Dollar in the world market. De Brunhoff (2003) argues explicitly that the Dollar's monetary dominance is based on the US as a global power. Persaud (2004) claims that there can be only one real world money and that the US Dollar will prevail as such. Indisputably, one aspect of the world order is related to the monetary arrangements under the current International Monetary System (IMS), its emergence, nature, function and features.

This paper challenges the mainstream approach that the US Dollar has a unique, almost *sui generis*, role in the current IMS, starting from the observation that this role is played with more or less success by the moneys of other major capitalist states even from the period of the Interwar (Bordo and Eichengreen, 1997). Informed by the Marxist tradition and the recent developments on the theory of money and, in particular, on the form of world money, the US Dollar is treated here as a *primus inter pares* quasi-world money; the stronger but not the only one of the kind. This is an argument for hierarchical structured multipolarity in world order, at least as far as monetary arrangements are concerned.

In order to support this claim, the paper explores one important aspect of world money and the IMS, namely international reserves. The latter have attracted interest because of their accumulation by the so-called emerging or developing economies over the last two decades. Yet, there are two shortcomings in current discussion. First, the reserves of leading capitalist states are poorly analysed. At best, they are examined in aggregate and no conclusions have been drawn on their behaviour, despite the fact that, with the exception of Japan after the 1990s, reserve behaviour has been very peculiar and converging. Second, the composition of reserves is not put under the microscope for both major and dependent capitalist states. The gold component is often confusing, while the vague statistic of foreign exchange does not reveal the composition of corresponding portfolios.

These two shortcomings are addressed in this paper. A sample of thirteen countries, seven advanced (US, UK, Switzerland, Germany, France, Italy, the Netherlands, Belgium) and the famous BRICS (Brazil, Russia, India, China and South Africa), is examined. The time range is from 1948 to 2010 and the period that attracts interest is closely after the collapse of Bretton Woods, namely from the mid-1970s to

the early 1980s. Japan is treated separately due to the peculiarities of the Japanese economy and the lasting crisis that it is experiencing.

The analysis of the behavior of the countries in the sample shows that there are two distinct patterns not only in terms of size, but also of composition of reserves. Although there are common trends, the countries in each group hold different levels of the various forms of reserves. These differences may prove to be enlightening in terms of the position of the money and, consequently, of the country issuing it in the current world monetary order.

The structure of the paper is as follows. The next part criticizes the focus of recent literature on the question of reserve adequacy and discusses the relating questions that refer to reserve measurement. The third part presents the results from the analysis of the sample. The last part comments critically on these results and draws conclusions.

Specifying the question

The literature that treats reserves is quite extended, but is heavily biased towards policy oriented analysis. This is legitimate because reserves seem to be well managed and the main question that arises is that of adequacy. Nevertheless, as soon as the optimum level of reserves is questioned, four issues immediately arise. First, adequacy needs a measure and this is far less a technical matter than a logical question of the purpose of reserves[1]. Moreover, there are many indisputable purposes and therefore a unique *measure* is problematic. Third, reserves are not homogeneous and hence a unique *level* is problematic. And as if that is not enough, there is more than one pattern in the behaviour of countries.

To begin with, the absolute levels are irrelevant; even when they are used it is assumed that the reader compares them with another variable. The only case where the absolute level can be useful is when we have an absolute decrease and this is less rare than might be expected. Hence, various ratios have been proposed as measures.

The most widespread measure compares the level of national reserves with the level of imports (McKinnon, 1979; Cheung and Ito, 2008). In particular, the number of months of imports reserves can "cover"; the rule of thumb in this case being a level

[1] Bird and Rajan (2003) provide an interesting account of the theoretical and operational approaches of reserve adequacy that relates the measures with the purpose of reserves.

worth three months of imports. Another well-known measure is against GDP. Reference should be made to the Guidotti-Greenspan rule, according to which countries should hold enough reserves to redeem foreign debt falling due within a year. Finally, Rodrik (2006) measures reserves of emerging market economies as a share of M2, relating them thus with domestic circulation.

On the other hand, the most prominent destinations of reserves that the literature proposes are the following. First, foreign exchange should be kept to anticipate sudden massive outflows of capital and avoid crisis that would induce output losses and investment contractions. "Absent speedy and credible help from an international lender of last resort, rapid outflows of this type would be difficult to manage without a large war chest" (Obstfeld, Shambaugh, and Taylor, 2008, p.6). Reserves do function in this form as self-insurance (Aizenman, 2008) and in the evolution of the current crisis they have proved indispensable for developing countries in absorbing the effects.

Moreover, after the collapse of Bretton Woods, the stability of the exchange rate had to be managed, primarily through central bank intervention. No matter what scheme a country chose in the first two decades of the post-Bretton Woods era, the necessity of foreign exchange was evident. In the case of pegging the currency to the Dollar this is straightforward. In order for the developing economies to stabilize their currency the central bank had to intervene, buying or selling USD (Eichengreen, 1996). This process has been emphasized through the crises of the IMS that are known as currency crises[2]. "Currency crises […] have become a defining force for economic policy in much of the world" (Krugman, 2000, p.1).

In the case of export oriented countries, and to the degree that developing countries' exports were gaining in significance, supporting the Dollar and keeping it, if possible, overvalued relative to their currencies became a widespread strategy. The reasons that lie behind this strategy are multiple and quite apparent. On the one hand, exporting countries gain competitiveness through an undervalued currency, since their commodities are relatively cheap. On the other hand, keeping the Dollar strong, sustains capital flows from the US to them[3]. The Dollar is supported through open market

[2] "Currency crises have been a recurrent feature of the international economy ever since gold and silver coins were replaced by paper; [they, GL] played a large role in the economic turmoil of the interwar era, in the breakup of Bretton Woods, and in the early stages of the Latin American debt crisis of the 1980s" (Krugman, 2000, p.1).

[3] "The development strategy of fixed exchange rate "trade account" countries requires rapid export growth and large inflows of direct investment in order to absorb rapidly an initial stock of underemployed

operations. Intervention is also made for the support of the exchange rate of the Dollar, so that existing reserves are not devalued. This provides an incentive for the accumulation of even more reserves.

Finally, as far as the patterns in the behavior of countries are concerned, three approaches are presented briefly below. First, the reserve accumulation approach focuses on the years following the Asian Tigers' crisis and on developing countries (Cheung and Qian, 2007; Cheung and Ito, 2008). True, there's a regime break in the end of the previous century which is also shown here, but the trend is evident since the 1980s and is inescapable not to observe since 1990. Some authors recognize that the process was only accelerated by the 1997-8 crisis, overstating the effect of the crisis, but they do not provide for an explanation for the whole period (Aizenman, 2008; Aizenman and Lee, 2008). Another shortcoming of this approach is that it does not examine the reserves of developed countries.

The second approach addresses the issue as a global imbalance. This approach captures both developed and developing countries and relates them through capital mobility and the structure of the IMS. Nevertheless, it fails to raise the issue of the form of money prevailing in the current IMS, focusing mostly on the relation between the US and China (Eichengreen, 2007).

Recently, another approach has been developed by Dooley, Folkerts-Landau and Garber (2003; 2004a; 2004b; 2004c) that relate the reserves of developing countries, with the US deficit through Foreign Direct Investment (FDI) from the latter to the former. In particular, the purchase of US securities and the export of commodities from developing countries act as collateral for the continuing inflow of FDI. According to Dooley et al, Bretton Woods is a system of center and periphery, with FDI flowing from the former to the latter and reserves being accumulated by the periphery. In the 1950s the US was in the center and the periphery comprised of Europe and Japan. After the upgrading of the old periphery to center, there was no periphery until 1989-91, when the Soviet Union was overthrown and the countries of the east bloc took the place of the periphery (2004c).

Their take is insightful and influences the approach followed here. Yet, this explanation does not recognize that, in the 1950s and 1960s, the US Dollar performed

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labor. The primary policy tool is a real exchange rate that is undervalued by conventional measures and accumulation of international reserves" (Dooley et al., 2004a, p.2).

in the world market only with the backing of gold. Up until the collapse of Bretton Woods, the expansion of the US Dollars faced was conditioned upon US gold reserves (Nugée, 2001). The latter were supporting the Dollar with its mere existence as stock, although from time to time it had to flow, especially after the French and others' pressured, in order to buy back US Dollars (Zolotas, 1965, p.10).

Although reserves accrue from hoarding, which is a monetary function, the various approaches do not treat it as such, and hence they avoid drawing insights from the theory of money and the forms of money. A quite distinct approach that does so can be found in the Marxist tradition and is followed here. This line of reasoning has been developed by Marx (1980, 1981b, 1976, 1978, 1981a), Hilferding (1981), de Brunhoff (1976), Arnon (1984) and Lapavitsas (1991, 2000). Very relevant to the matter at hand is the discussion on the forms of world money; the view adopted here is the one elaborated in Labrinidis (2014). In short, in the course of the twentieth century, a new form of money was developed in all advanced capitalist states. The emergence of this new form is parallel to that of the central bank which becomes entitled to issue the king of the bank notes, gradually pools the hoards of the nation and evolves as their trustee (Itoh and Lapavitsas, 1999). Keynes grasped this form as early as 1930 and termed it "managed money" (Keynes, 1971). It is in fact a combined form, central bank credit money declared as legal tender, which prevailed domestically while gold was deified internationally. Note that, while managed money emerges in all capitalist states, only some national moneys of this kind managed to break the geographical limits of their domestic circulation. These were issued by major capitalist central banks, stamped (and guaranteed) by leading capitalist states, and termed quasi-world moneys[4] (Labrinidis, 2014).

Quasi-world money appears more often in the concrete forms of the bank deposit and the banknote. These are related to other forms of money through various channels, one of the most prominent being reserve management. Through this process, hoards of quasi-world money, in other words reserves in the forms of banknotes and deposits, are transformed in particular securities and gold.

In general, we would expect quasi-world money issuers to maintain lower reserves in the forms of banknotes, deposits and securities, compared to non-issuers. For the first two forms, the reason is straightforward, since they can issue them directly.

[4] The term was originally coined by Makoto Itoh.

The same should hold for the so-called securities, since they are actually bonds of the quasi-world money issuers' treasuries.

Furthermore, it is assumed that quasi-world moneys are not equal in strength, in denominating commodities in the world market, in cross-border transactions and, subsequently in forming reserves; this difference should be reflected in the size and composition of their reserves. In other words, apart from the process of economizing on reserves from the central bank, which should hold for all proper central banks and all forms of reserves, one would expect a second process of economizing on particular forms of reserves for quasi-world money issuers. The next part turns to the reserves of selected countries in order to verify whether these trends exist or not.

The last issue that remains unclear refers to gold reserves. The paper follows Anikin (1983) who argued that "the nearest thing to gold seen *as money* are the central reserves belonging to governments or central banks" (p. 65, emphasis in the original). Labrinidis (2014) has argued that gold, in the concrete form of bullion, still performs as world money. From this point of view, the evolution of the gold reserves of the countries in the sample will be enlightening.

The distribution of international reserves in the era of quasi-world money

Overall allocation of reserves for selected countries

The distribution of official reserves can be vividly and eloquently portrayed in figure 1. In that, one may observe the historical evolution between 1948 and 2010 of the share in total world reserves of the thirteen selected countries. All forms of officially held reserves are taken into consideration and gold is estimated in market rates for all years, rather than taking the historical cost. The figure captures the whole picture of the post-WW II period in reference to official reserves and to the selected countries. Hence, some series that are negligible, like the ones of the ECB (below China, dark shadowed) and of South Africa (on top), were included only to illustrate to the reader that they are indeed negligible. The point of figure 1 is to provide a general overview of the basic trends. Each country is treated separately in more detail below.

Note that the series in figure 1are cumulative so that the upper series indicates the share of all thirteen countries to the total. Each country's share accrues if one subtracts the lower point of the series from the upper.

Having said that, one may make various observations. First, in the beginning of the period under examination that starts immediately after World War II, these thirteen countries accounted for three quarters of total world reserves, while at the end of the period they ended up accounting for only half. The group reached a minimum of one third in 2000.

As it is evident from the figure, after WW II the vast majority of international reserves was held by the US. Apparently, in 1948 the US was holding more than half of total official world reserves. During the Bretton Woods regime, the US reserves were depleted to a large extent, while other major capitalist countries, like Germany and France, have seen their share of total world reserves rising. It will be shown below that this redistribution was also a process of transformation of official reserves.

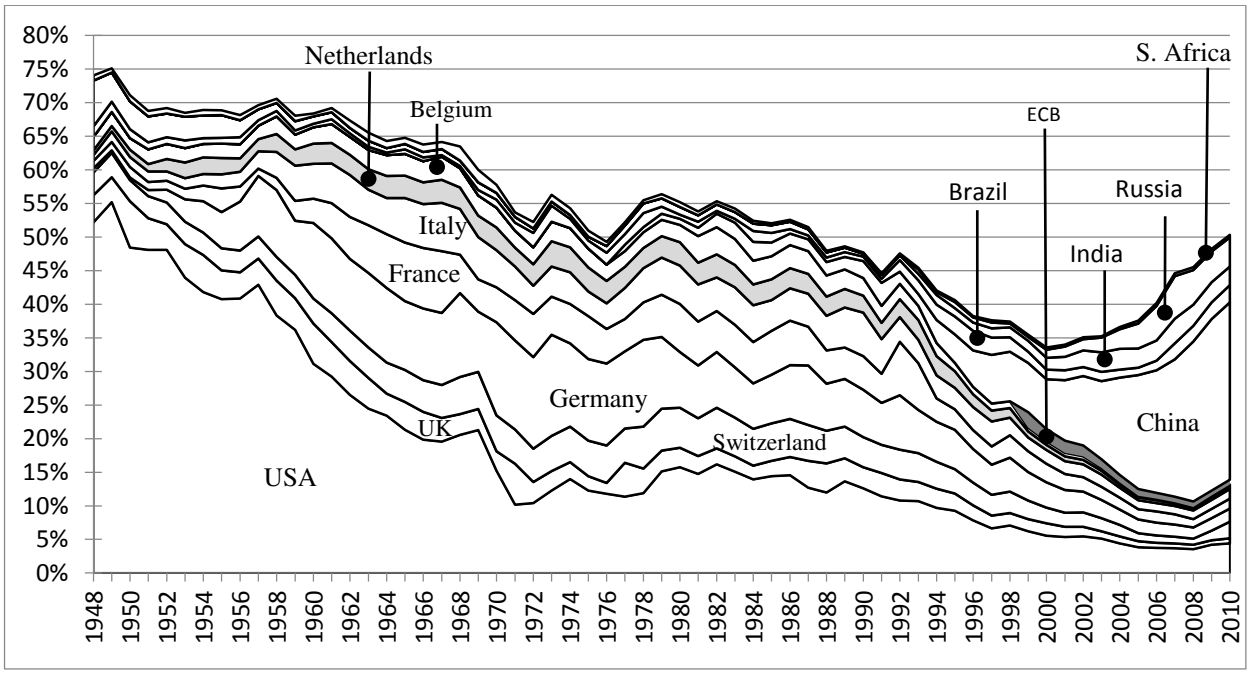

Figure 1 Share in world reserves, all forms, 1948-2010, selected countries. Source: IMF, 2012a; 2012c; own calculations.

From the early 1970s onwards, we observe the official reserves of all issuers of quasi-world money collapsing. At the same time, a series of other countries started accumulating reserves. What is evident is that international reserves have been systematically depleted from major capitalist countries, and hoarded from dependent countries in the imperialist system, with China leading the way. The process in Europe

was accelerated by, and underpinned, monetary unification. This process has been prominent in the last three decades and materialized through capital mobility, on the one hand, and the features of the post-Bretton Woods IMS, on the other. In turn, this process has inflamed capital mobility in a world scale and supported, if not expanded, the function of IMS.

Hence, figure 1 reveals a key finding, namely that the counterpart of hoarding from developing countries is "de-hoarding" from major capitalist countries that issue quasi-world money. It is argued that both processes were possible only after the establishment of quasi-world money and they accrue as standard features of the current IMS that is based on quasi-world money.

Rodrik (2006), in a very insightful paper, observes that the foreign exchange of developing countries "stand at levels that are multiple of those held by advanced countries (in relation to their incomes or trade)" (p.255). The problem here is not so much that Rodrik doesn't take into consideration the gold component of international reserves, but that he doesn't observe that the reserves of advanced countries are actually falling. The reason that leads him to consider the reserves of advanced countries flat and slightly rising is that he incorporates Japan in the group; but Japan is an outlier, and the only one.

Therefore, the figure implies that reserve accumulation, namely, the hoarding process that many developing countries have experienced, has as a counterpart the process of de-hoarding from major capitalist countries and it is not the mere result of a general rise in international reserves. Note that the latter seem to have risen, at least as a percentage of world's GDP, misleading as this measure might be[5].

The accumulating developing economies

It could be said that the characteristic figure is figure 2 and belongs to China. It depicts the total reserves of China in months of imports and it is cumulative. The basic observations though are the same for all the countries examined and will be summarized now. First, there is a clear opposite tendency between the two main components of the reserves, namely gold and foreign exchange; the percentage of gold is falling persistently and after the 1990s it seems negligible. This holds even for South Africa that is a prominent gold producing country. Further, the parts of reserves that

[5] From 3.8 percent of world GDP, world reserves have risen to 15.3 percent (IMF, 2012c; 2012d).

correspond to allocated SDRs and the position in the IMF are negligible for all countries and all measures. In most figures they are hardly observable, squeezed between the other two reserve components.

Second, total reserves are above the three months threshold for the whole period and they skyrocket in the 2000s. This is particularly true for China, Brazil and India, while South Africa and Russia are below the 3-months threshold before the 2000s. Nevertheless, this finding for South Africa and Russia is mostly related to high imports rather than low reserves.

Moreover, third, the process of keeping high and rising reserves is not the result of the Asian Tigers' crisis. Russia is the only country that starts accumulating reserves after the crisis, but this is because of the particularity of this country that changed its socioeconomic system in the early 1990s. All the other countries present certain volatility in reserves that follow shorter or longer cycles before the early 1990s. Before that, they keep high reserves but they see them deplete in various instances that are related to various crises. After that, and well before the crisis of 1997-8, the accumulation of reserves is uninterrupted. For China, the year is 1992; for India and Brazil, it is 1990.

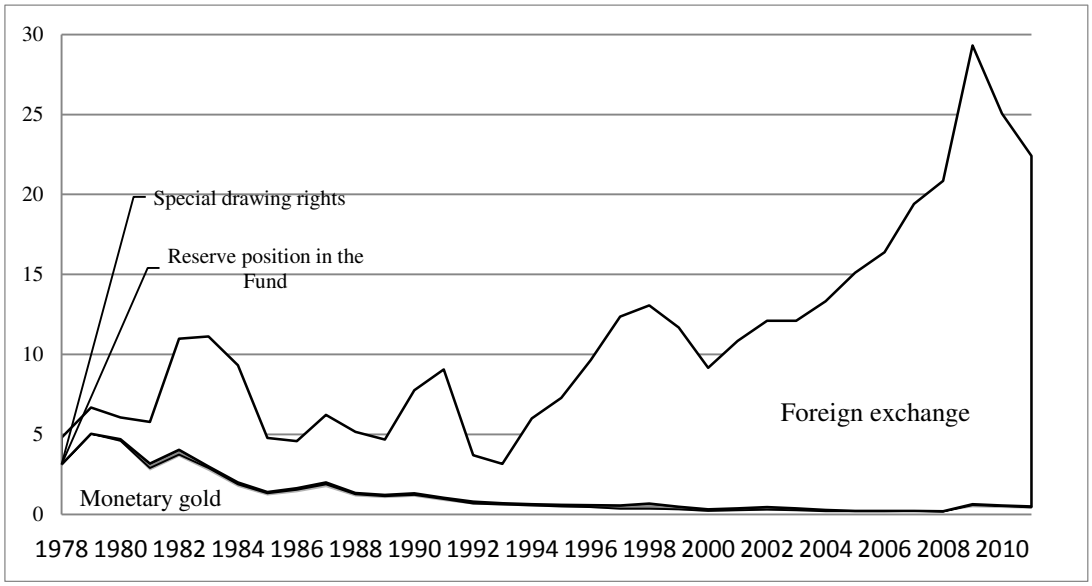

Figure 2 Official reserves of China in months of import, by form, 1978-2010. Source: IMF, 2012a; 2012c; own calculations.

The results are the same if the other two measures are considered, namely reserves over GDP and over FDI. In terms of GDP, the picture is the same as before. The rising trend is evident, although there is significant divergence for the countries of the sample. It is interesting to note that China's reserves are rising since 1980. Of

course, the trend seems flat due to the sharp rise after the 2000. There is an evident regime break that is related to the Asian Tigers' crisis of 1997-8 and is discussed widely in the literature (see, for example, Cheung and Ito, 2008). Nevertheless, from 1980 to 1990 total reserves over GDP have more than doubled for China. It should be stressed that China was holding almost half of its huge GDP in international reserves (48.95 percent) in 2010 and Russia was holding 60 percent in the same year. India, more modestly, was holding 18 percent and Brazil 13.5 percent.

In terms of FDI, the results are poor due to bad data quality, with the exception of China but, where available, the trends are the same for all countries. The next figure portrays the reserves in terms of realized direct investment in China. The falling trend of the golden part of reserves is verified here as well. It is worth noting that even at its lowest point, in 1993, the reserves fully covered all realized foreign direct investment. Of course, this is only one of the purposes of international reserves.

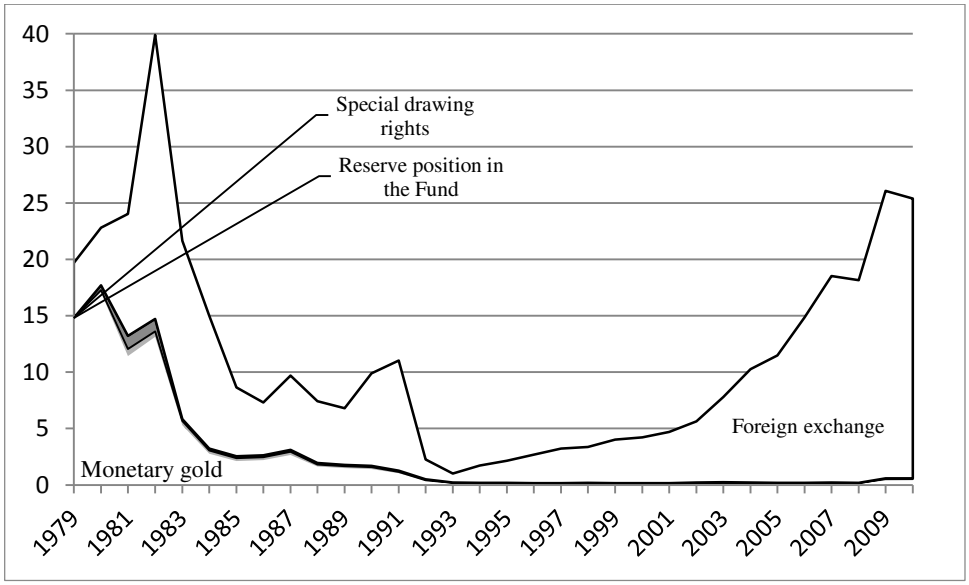

Figure 3 Official reserves of China as a share of FDI, realised value, by form, 1979-2010. Source: IMF, 2012a; 2012c; MOFCOM, 2013; own calculations.

The surge in the reserves in terms of FDI in the early 1980s might be a product of FDI itself. There is a short boom in FDI in the years 1978 to 1981; it declined for 4 years and then it surged after 1985. The sources of this FDI were the major capitalist countries and the bulk of it[6] was flowing between them. Still, the mass of capital that flowed into the developing countries was critical, especially if seen in relation to the

[6] G-5 was host to 57% of this FDI and the OECD developed countries absorbed 81%. Of the share of 19% of developing countries, an overwhelming majority went to a small group of countries: Brazil, Mexico and the Asian newly industrialized countries (Graham and Krugman, 1993).

size of those economies (Graham and Krugman, 1993). FDI by itself contributes directly to the creation of reserves of quasi-world money. Capital flies in, in the form of quasi-world money – USD bank deposits primarily or other quasi-world money bank deposits, like Deutsch Marks, British pounds and, more recently, Euros. This is exactly one of the things that quasi-world money can do; exit the country of origin as a form of capital. The central bank of the host country absorbs this money in exchange for central bank credit money declared locally as legal tender, namely local managed money, which is demanded for the investment.

In the case of China, the trend is clear. FDI flows increasingly in China during the 1980s, and rises from $57mn in 1980 to $3.5bn in 1990. The same holds for the other countries, although there were some breaks due to historical specific reasons. The main argument is that capital has flowed persistently from major capitalist countries that issue quasi-world money, into developing countries from the late 1970s, which is reflected in the acceleration of FDI in these countries.

Let us now examine the reserves of the issuers of quasi-world money and see whether they have abolished the gold component and whether they seem to be anxious in covering both the incoming capital in the form of FDI and the imports of commodities.

The quasi-world money issuers

Starting with the United States, the figures that correspond to the three measures are almost identical. Here, we reproduce the one that corresponds to the months of imports, because it is covers the entire period from 1948 to 2010. Figure 4 shows almost the opposite of what we see for developing countries for the same measure; all trends are reversed. Specifically, the US has never kept any foreign exchange, and her reserves have been in gold throughout the period. While in the beginning of the period, the US kept reserves as high as 30 months of imports, this is misleading because, at the time, her reserves were huge and she could not import practically anything from anyone; therefore imports were really low. Moreover, the two peaks that appear in 1974 and 1979 signal the deliberation of the fixed rate of gold to Dollar and its boom respectively[7].

[7] Nixon's declaration was made in 1971 but until 1973 the rate of gold to Dollar was highly regulated and officially settled. It was finally let completely afloat in 1973. Yet, the boom came in 1979. Both

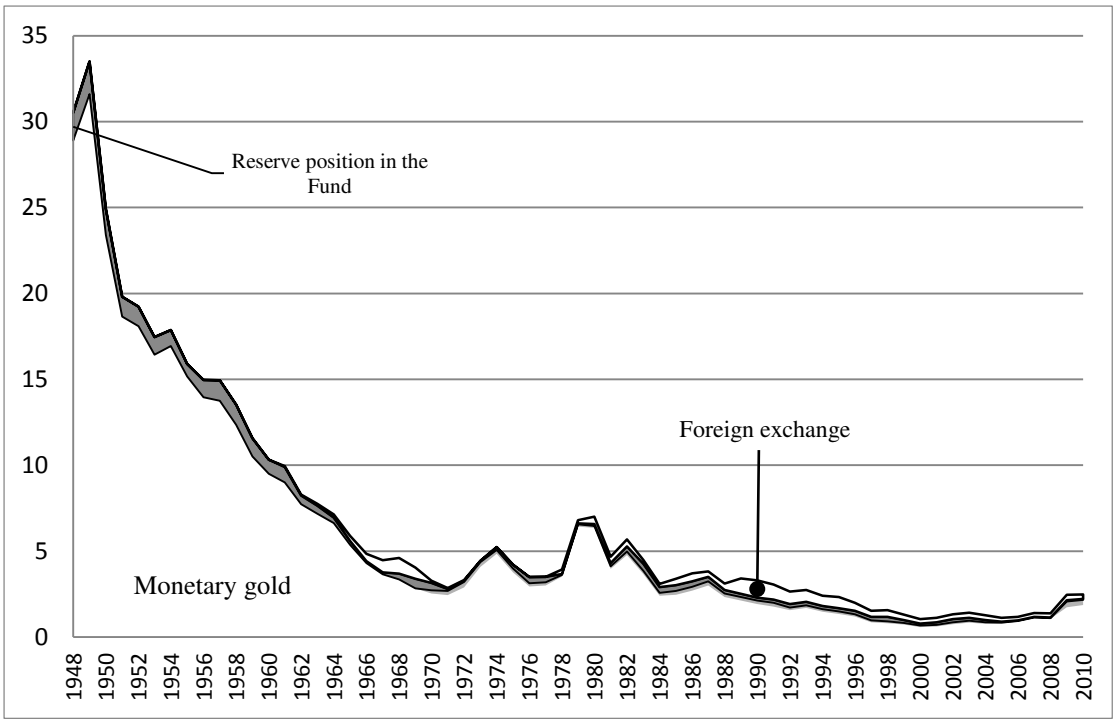

Figure 4 Official reserves of USA in months of import, by form, 1948-2010. Source: IMF, 2012a; 2012c; own calculations.

The same holds for the other two measures. For FDI, there is data since 1980, when the ratio was two to one, but it fell to one to one, only one year later. The ratio is falling consistently and uninterruptedly, and was before the crisis at the level of 10 percent. In terms of GDP, and prior to the crisis, the level of reserves, mostly gold, were fluctuating around 2 percent.

Since the reserves of the US are mostly gold, we should examine their volume as well. Although the US started auctioning its gold after the collapse of Bretton Woods in an attempt either to convince about her intention to get rid of it or to satisfy the sudden famine for gold that followed the withdrawal of the barriers in gold holding. In the end she sold only a very small part of her gold reserves which have remained almost unchanged since 1979 at the level of 264 million ounces. They now stand at 261.5 million ounces. Almost half of it is stored in Fort Knox, a city of 40,000 people – soldiers, family members and civilian employees – that guard it. Finally, the US keeps her gold at book value of $42.22 per ounce, which was the last officially assigned and guaranteed rate between gold and the Dollar, before the complete deregulation of that rate in February of 1973 (Tew, 1988).

peaks coincide not accidentally with the two oil crises of the 1970s (see Tew, 1988). Remember that the ratio (reserves to imports) is calculated through Dollars, and hence the peaks.

The case of the US is an extreme example, but the trend is the same for all quasi-world money issuers. Of course, the component of foreign exchange is not inexistent, as in the case of the US, but is still small. Overall reserves are falling by all possible measures and the foreign exchange part is falling faster, depending on the strength of the quasi-world money. In other words, the stronger the quasi world money the faster the rate at which the foreign exchange component of reserves (banknotes and deposits plus securities) declines.

The case of Germany is interesting for various reasons. First, it was the country with the highest reserves after the US in the Bretton Woods era. Second, it is a surplus country and one may think that as such she will see her reserves rising, especially in foreign exchange. Far from that, Germany differs from other countries to the extent that she has a slightly larger foreign exchange component, which is shrinking. The accumulation of US Dollars in the 1960s and her role in the Snake[8], contributed also to this difference.

[8] The reaction of the European countries to the establishment of the quasi-world money standard with the US Dollar in its center was a monetary arrangement of fixed exchange rates within a band rate, known as the Snake. The Snake was set in motion in April 1972 and it was a multilateral system, additional and stricter to the Smithsonian Settlement of December 1971; hence it was called the Snake in the tunnel. "The Snake had been established as a symmetric system in reaction to French objections to the dollar's asymmetric role under Bretton Woods. But once the Snake was freed from the Smithsonian tunnel, the DM emerged as the Europe's reference currency […]" (Eichengreen, 1996, p.160). Not being able to issue the Euro from the outset, the European countries tried to establish a fixed exchange rate zone that would allow for a common money to appear; by 1975, the European Unit of Account (EUA) was a reality. Like the US Dollar, the EUA would be established at the end of a process that begins with a very strict golden linkage. Therefore, the EUA had a content of 0.88807 grains of gold (Bordo and Schwartz, 1989). See also Tew (1988).

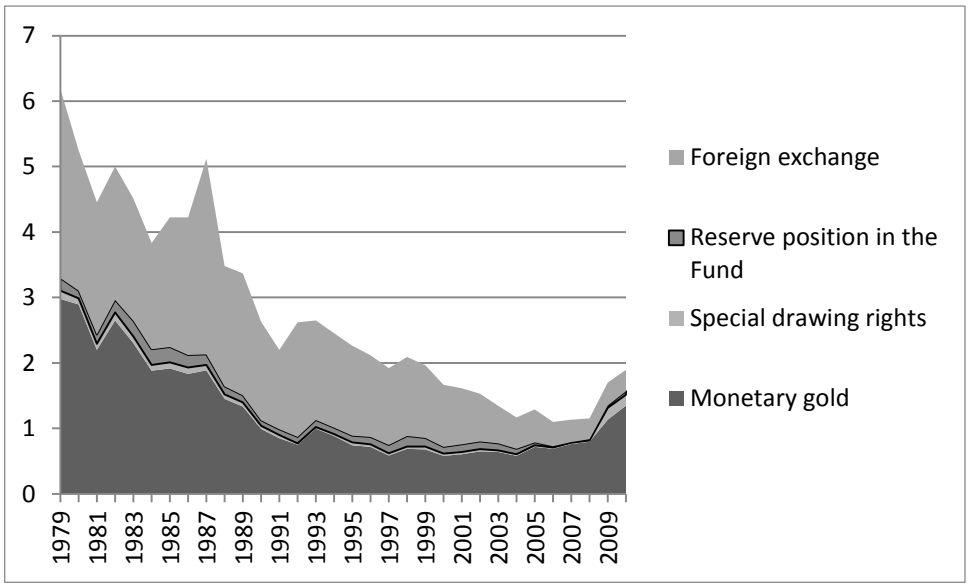

Figure 5 Official reserves of Germany in months of import, by form, 1979-2010. Source: IMF, 2012a; 2012c; own calculations.

Germany had been holding quite high reserves and she went on depleting them, like all Eurozone countries. Both figures 5 and 6 are very typical of all the Eurozone countries in the sample. Moreover, from these figures it is evident that the process of depleting reserves began in the late 1970s for all quasi-world money issuing countries, irrespective of their balance of payments or other differences.

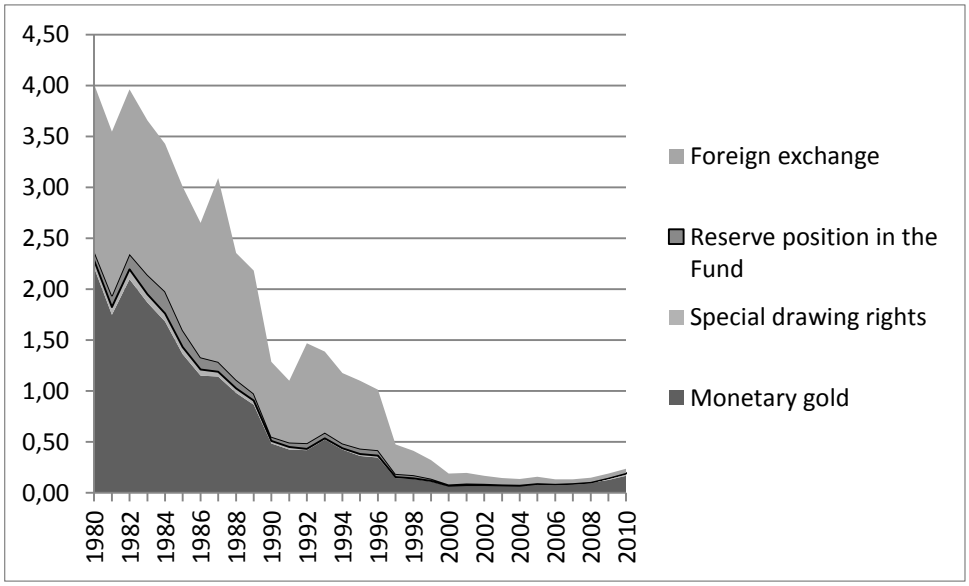

Figure 6 Official reserves of Germany as a share of FDI, by form, 1980-2010. Source: IMF, 2012a; 2012c; own calculations.

Especially in terms of FDI, Germany was holding high reserves even as late as the mid-1990s and she managed to eliminate them only after the introduction of the Euro. This is the case for all Eurozone countries that are examined here, while the non-

Eurozone countries of the sample, namely the UK and Switzerland, still have part of their small reserves in foreign exchange.

Japan seems to be following the same trends and levels as the other leading capitalist countries in the sample until the mid-1980s. Thereafter, its reserves start rising and, especially after 1992, skyrocket to unprecedented levels. This response is indisputably relevant to the structural crisis of the Japanese economy (Lapavitsas, 1997), but it should be related also to the weakness of the Yen as quasi-world money (Tavlas and Ozeki, 1992). Using Currency Composition of Official Foreign Exchange Reserves (COFER; IMF, 2012b) as a proxy, claims in Japanese Yen are falling as a share both of total and of allocated claims, throughout most of the period that there are available data, namely from 1995 (6.8 percent of allocated claims) to 2009 (2.9 percent), while rising modestly in 2010 (3.6 percent) and 2011 (3.7 percent). Thus, Japan is an outlier.

To conclude thus far, the trend of falling reserves is followed by all major capitalist countries with the exception of Japan after 1990, regardless of whether they run persistent surpluses in their current account, like Germany, or persistent deficits, like the US. It is a process that relates to the form of quasi-world money and its functions. The trend beginning in the late 1970s is evident even if more leading capitalist countries are taken into consideration.

This trend unfolds in the interior of the group of advanced economies. Here, the so-called G-10^{+9} was considered only for the foreign exchange component of reserves. In 1980 the reserves of G-10^{+} accounted for the 85 percent of international reserves minus gold of all advanced economies, while in 2008, even with Japan included, the same ratio was only 54 percent.

If Japan is taken out (G-9^{+} over advanced economies minus Japan), the trend is even more significant and it is depicted in figure 7. The figure portrays the result of the ratio of the reserves (foreign exchange only) of the G-9^{+} to the reserves of all OECD advanced countries. Until the early 1980s these 10 countries were holding over 70 percent of all advanced countries excluding Japan. Thereafter, their share fell to a low as 14 percent before the current crisis.

[9] The group of ten comprises the US, the UK, Germany, France, the Netherlands, Japan, Canada, Italy, Belgium, and Sweden – plus Switzerland (Tew, 1988).

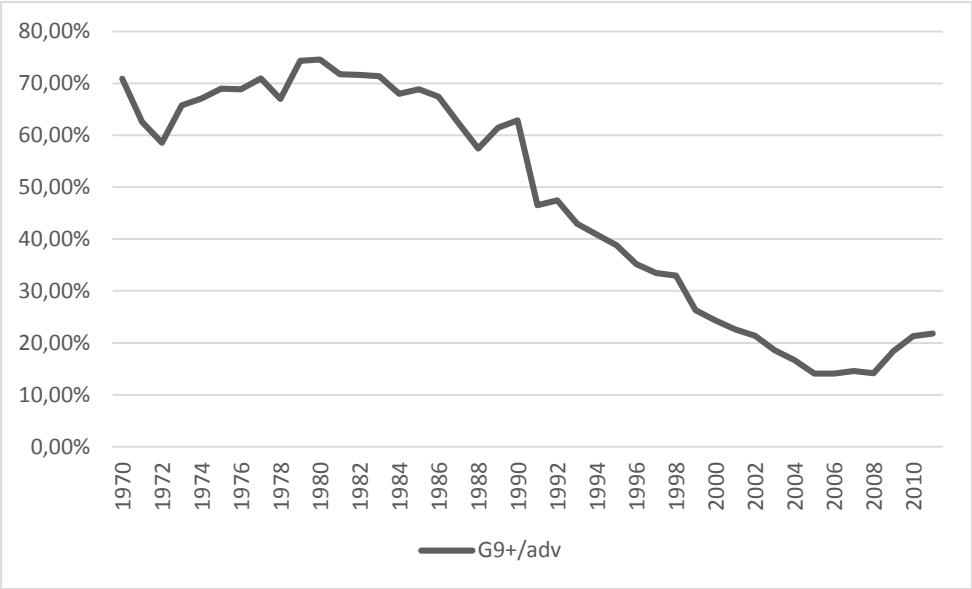

Figure 7 Share of G-10⁺ minus Japan total reserves minus gold, in the total reserves minus gold of all advanced economies. Source: IMF, 2012c; own calculations.

The same holds if one narrows the sample further. For example, the collective reserves of the US, the UK, Germany, France and Germany as a share of G-9⁺ fell from 70 percent in 1980 to 44 percent in 2011. Apparently, foreign exchange changes hands, not only from the vaults of advanced capitalist countries to those of developing countries, but even from a core of the advanced countries to its periphery.

Table 1 below leaves us in no doubt. It shows the absolute level of reserves (minus gold) for the G-10⁺ minus Japan for a selection of years. The total reserves minus gold of the UK, Germany and France stood in 2006 at the level of $40bn each. Those of the US, for the same year, were less than $55bn, while the current account deficit of this country was $800bn and imports of goods were standing at $1.8tr. Some countries have even seen their reserves shrink in absolute terms since 1980. The US, Germany, Italy, Belgium and the Netherlands held fewer reserves in 2006 compared with 16 years before that in absolute terms.

Country / Year	1980	1990	2006
United States	15.60	72.26	54.85
United Kingdom	20.65	35.85	40.70
Switzerland	15.66	29.22	38.09
Germany	48.59	67.90	41.69
France	27.34	36.78	42.65
Italy	23.13	62.93	25.66
Netherlands	11.65	17.48	10.80
Belgium	7.82	12.15	8.78
Sweden	3.42	17.99	24.78
Canada	3.09	17.85	34.99

Table 1 Total reserves minus gold of major capitalist countries, $ bns, Source: IMF, 2012c; own calculations.

Critical discussion of the findings

There have been major changes in relation to reserves and in comparison with the Bretton Woods era. First, when reserves in all forms are considered, the cardinal holders have changed. They used to be the strong leading capitalist states and now, the stronger the money of such a state, the less total reserves it maintains. Consequently, the US holds the least reserves. On the other camp, the biggest reserve holders are not the weakest countries, but countries that are considered as potential candidates for issuing quasi-world money. China is leading the way and Russia is following suit[10]. This should be examined against historical evidence which implies that potential issuers should hold substantive total reserves, with the component of gold being prominent. This is the experience also coming from the Euro project on two occasions, namely in the setting-up of the ECU in 1979 and in the launch of the ECB in 1999.

Reserves appear to take the following five final forms: gold, mostly in the concrete form of bullion and to a lesser extent that of coin; quasi-world money in the concrete forms of banknotes and bank deposits; securities of issuers of quasi-world money; IMF position, namely a claim that accrues from the deposit in a supranational institution; and SDRs, the credit money that is issued by the IMF.

The IMF position is not a special form of money and therefore it will not attract our interest further. It is the equivalent of a deposit to the ECB by a Eurozone member central bank. These deposits were made in gold and national central bank credit moneys with legal tender, some of which were quasi-world moneys. These gold deposits bring the IMF third in the listing of the biggest gold holders. Thus, in a sense, the IMF functions partly as one supranational trustee of gold reserves.

As for the SDRs, these would require special treatment. In principle, this is a form that was designed to become universal quasi-world money, issued by the IMF with the trustworthiness of all its member states. It was established, like the first attempts of the Euro, in close relation to gold, and in particular one SDR was equivalent to 0.888671 grams of gold, as late as 1978. The idea was “to establish a global currency system based on the SDR. While it was very desirable, we have to admit that failed; at least for the moment we have not seen any movement in that direction” (Yoshimura,

[10] Germain and Schwartz comment on the event of China upgrading her money to quasi-world money, from a very close perspective to the one adopted here. They find lacking preconditions for the near future.

2000, p.51). Since the SDR is a very small part of countries' reserves, we may omit it without loss of accuracy.

Therefore, we may assume that reserves tend to take mainly the monetary forms of gold and quasi-world money and the non-monetary form of particular bonds, the most prominent of which are US Treasuries, UK gilts, German Bunds and Japanese Bonds. Under this light, it is easily understood why the quasi-world money issuers hold quasi-world moneys and bonds in negligible quantities that are inversely proportional to the strength[11] of their quasi-world money. The stronger the money, the less the foreign exchange component of the reserves of its issuer. The US again has the smallest foreign exchange component. The reason is straightforward and relates both to the source and scope of hoards. US exporters are not getting paid in anything else but Dollars and there is little scope for the US to intervene and manipulate the exchange rate of the Dollar by using her foreign exchange reserves. If she wishes to do so, she can simply use her monetary policy.

The gold part is very interesting, especially since the countries that issue quasi-world money hold most of their reserves in gold and the golden part of their reserves rises, following the general trend according to which central banks are net buyers for 14th consecutive quarters (WGC, 2014). Not only that, these countries hold the highest reserves in the world with the US being first on the list and the Eurozone countries following suit. On the contrary, the emerging economies that have seen their reserves skyrocket hold mostly foreign exchange and their gold component has shrunk throughout the period and appears negligible today[12].

In reference to the uses of gold, in the WGC (2010) it is shown that "gold was used in the crisis as money" (p.15). In particular, the case of the Swedish Riksbank is mentioned who "relied on its gold reserves for liquidity at the height of the crisis, using gold to finance temporary liquidity assistance" (ibid). Other cases could be mentioned, like these of Mexico and Brazil in 1999-2000 (Kuhn, 2001; IMF, 2012e), and very lately, in 2012, India and China seemed to be considering buying oil from Iran with gold because of the US and EU embargo on Iran (Lakshmanan and Narayanan, 2012).

[11] Measuring the relative strength of various moneys is a complex issue. An index could be COFER (IMF, 2012b). The problem with COFER is that since 2000 the component of unallocated reserves is consistently rising from slightly above 20 percent to almost 50 percent in 2012.

[12] Note that many of the countries of the sample are important gold producers, like China, Russia and South Africa. It is possible thus that their actual gold reserves are higher than the reported ones.

Let us close this part with quite an important detail that is accentuated by Bernholz (2000) who mentions the political risk of holding foreign exchange reserves. He reminds us that "the US blocked all Swiss claims during the WW II. They even blocked Swiss gold reserves" (p.40). Ferhani (2000) considers security as the overriding quality of gold "as long as it is properly stored in central bank's vaults" (p.61)[13]. In other words, the location of gold matters a great deal. The IMF admits that by having clear provisions as for the depositories, favouring mostly the US, but also Japan, Germany, the UK and France.

> "The Fund may hold other assets, including gold, in the depositories designated by the five members having the largest quotas[14] [...]. Initially, at least one-half of the holdings of the Fund shall be held in the depository designated by the member in whose territories the Fund has its principal office[15] and at least forty percent shall be held in the depositories designated by the remaining four members referred to above. [...] In an emergency the Executive Board may transfer all or any part of the Fund's gold holdings to any place where they can be adequately protected" (IMF, 2011, p.38).

Very recently Germany has announced the repatriation of its gold from New York, London and Paris where it was kept for decades (DB, 2013). "The share of foreign holdings is now down to about 70 per cent following a large, yet secret, transfer of gold from its account at the Bank of England to Frankfurt a decade ago" (Steen, 2013). Germany is not the first country that will repatriate its gold from the main gold vaults in New York and London; Venezuela and Iran preceded.

Conclusions

This paper scrutinised the international reserves of thirteen selected countries. It was shown that there is one pattern in the behaviour of the seven developed countries and another in that of the six developing ones. As for the latter, it is well established that they are accumulating huge reserves and the paper doesn't break new ground here. Two remarks are worth stressing. First, the trend of reserve accumulation starts shortly

[13] Ferhani (2000) is so obsessed with the idea that the central bank must have actual control over gold that he is strongly opposed to gold lending. He says that "[g]old lent in the market is different by nature from the gold which is held and stored. In particular, there is the question of how the market could accommodate a significant recall of gold lent. This is specifically the case for gold lent to the jewellery sector and to fabrication as a whole: it has undergone physical transformation and might not be as available as it seems" (p.65). It is reminded that Hervé Ferhani was the head of the foreign exchange division of the Banque de France.

[14] These are, in descending order, the US (17.7 percent), Japan (6.6 percent), Germany (6.1 percent), the UK and France (4.5 percent each).

[15] That long phrase describes Washington, DC.

after the collapse of Bretton Woods and not after the Tiger crisis, although the latter had a massive impact on reserves of the countries of the sample. Second, these countries do not transform their reserves in gold. The last observation comes in sharp contrast to the behaviour of leading capitalist countries.

The common pattern that leading capitalist countries share, irrespective of whether they are persistently on a surplus or on a deficit in their balance of payments, implies that the US does not possess a unique position and that the US Dollar is a quasi-world money *primus inter pares*. The possession of reserves reflects a structured hierarchy in quasi-world moneys. This remark clearly rejects the argument that the US is opposite to the rest of the world; rather, the US Dollar is leading the way in a process that is open to others and competition between moneys may result in the enforcement of the US Dollar or in becoming weaker.

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Appendix: Notes on the data

For approaching the relevant data, the difficulties that had to be dealt with are the following. First, there are many levels that cannot be portrayed altogether. Analytically, the official international reserves must be examined by form, by country and by various measures, in their evolution in time.

The forms are not distinguished properly. The reason for that is not poor workmanship in the relative statistics. It is intentional to blur the composition of the reserves, especially for countries that are not quasi-world money issuers. In the opposite case, they themselves would provide all the necessary elements for arbitrage and the so-called speculative attacks. Moreover, in the case that a country would wish to upgrade the status of her money, like China, she would like to have the element of surprise. Finally, in the case of a crisis, some bonds may lose contact with quasi-world money and the degree that a country is exposed to these bonds is best to be concealed.

The composition of reserves is of utmost importance and that is why the relative data is not transparent.

Turning to the measures, the paper introduces a new one accruing from Dooley, Folkerts-Landau and Garber (2004c), namely against direct investment in the reporting country that relates reserves with this particular international capital flow. There are three main problems about this measure. First, data is limited for some countries, mostly developing ones. For some, secondary sources had to be taken into consideration. Second, FDI is an ad hoc threshold indicating commitment to the investment. Nevertheless, it is apparent that some part of equities investment even below 10 percent should be taken into consideration, especially in countries with less developed financial markets, where in and out is not relatively easy. Third, reserves should be related to FDI with a time lag and causality runs both ways, because money inflow that is temporarily hoarded precedes the investment, and accrues from the latter as well. Due to these problems, two conventional measures are constructed, one against GDP and one in months of imports. At the end of the day, the best measure is in months of import: quality of data is relatively good, data is comparable across countries and trade is one of the sources and the scopes of hoards.

For the purposes of the paper, the following variables were considered necessary:

1. The official reserves of the selected countries, disaggregated by form as detailed as possible and denominated uniformly
2. The world reserves
3. The GDP of the selected countries, measured and denominated uniformly
4. The imports of goods and services, seasonally adjusted, measured and denominated uniformly
5. The foreign direct investment, measured and denominated uniformly

Data was taken from the IMF (2012a; b; c), the ECB's Statistical Data Warehouse (ECB SDW, 2013) and national sources (MOFCOM, 2013). The IMF's database is considered to be the most complete and extended in variables and in time. Nevertheless, various decisions should be made in the selection of the provided variables and occasionally the series should be completed or substituted when the quality of data was not satisfactory. Finally, 45 tables were constructed, from which 44 figures were extracted.

In relation to the official reserves of the selected countries, these were taken from the International Investment Position (IIP) of the Balance of Payments Statistics (IMF, 2012a) provided in the following five forms:

- Monetary gold,
  - in fine troy ounces
  - estimated in USD
- Special drawing rights
- Reserve position in the IMF
- Foreign exchange
- Other claims

The monetary gold form exhibits the most severe difficulty because of its denomination. The unease with which the IMF treats gold is highly indicative of the objective underlying problem. Specifically, the IMF provides data for official gold reserves in various forms, leaving the choice to the user. The confusion gets even deeper because the IFS doesn't provide one variable per country, which is total reserves with gold at market prices, while it does provide the same variable for the whole world (IMF, 2012c).

The natural measure of gold is weight and therefore we have series for all countries in fine troy ounces. Nevertheless, this way gold is not comparable and additive to the other forms. It should be translated to quasi-world money and without breaking ground, the US Dollar was chosen. The difficulty now is the following: central banks use different principles for their gold; most of them apply the historical cost of acquisition which is readjusted whenever there is a transaction in gold; the US uses the last officially assigned and guaranteed ratio of $42.22 per ounce; the Eurozone countries, especially after the introduction of the Euro, apply the mark-to-market principle. In the IIP, gold is registered according to the reporting nation's principle and that is problematic both for reasons of commensurability and because gold would be either undervalued or overvalued, but only by chance in accordance to its market value. Further, the series of IIP were in most cases, even for the major capitalist countries incomplete while there is very good data for the gold holdings from 1948 for most countries.

Therefore, it was considered better to substitute the series of monetary gold of IIP (Code: 8812..[16]) with the product of the series of the gold reserves in millions of ounces (.1AD.ZF) by the London Dollar rate with gold (..C..ZF). Alcidi, de Grauwe, Gros and Oh (2010) argue as well that the best gold price index is the London pm fix. Both series are taken by the International Financial Statistics (IFS) (IMF, 2012c).

A secondary problem developed with the foreign exchange series of the IIP. For some countries, the series of the IIP was much poorer for some reason compared to the available series of the IFS. In these cases, the IFS series was used.

The last issue concerning the reserves is related to other claims that might be against the fund that were set for the ECU, or some other supra-national institution. They are very small though in all cases and they can be easily omitted.

It is self-evident that after these changes, total reserves were re-estimated as the sum of the subseries.

The world reserves series was taken from the "total reserves with gold at market prices" series of the IFS. There is little control of the quality of this series and what is included or excluded but since it is a common denominator the damage that can occur is limited. Moreover, since gold is included in market prices, the change in the series of the IIP makes the ratios more relevant.

For the variable of GDP, I chose the series (99B.CZF) of the IFS, which corresponds to nominal GDP (expenditures approach) in national currency, seasonally adjusted. All variables should be current and nominal anyway, so the only problem that is posed by this variable is to select a proper exchange rate for all countries but the US. For this reason the (..AH.ZF) series was chosen. It is the only period average exchange rate, which was preferred to end of period rates that could be misleading. This series was used for all other series that were in national currency.

For the imports of goods and services, I used the (98C.CZF) IFS series which is taken from the national accounts (expenditures approach) and is seasonally adjusted, nominal and in national currency. The series was divided by 12, so that it provides us with the imports per month.

Finally, most of the problems are related to the FDI index. For all countries, even for the US, the relevant series begins much later than the others and no earlier than the late 1970s. Yet, that could be tolerable if the series was not often broken while for

[16] For IMF codes, see <elibrary-data.imf.org/Contents/FindConceptsforCodes.xlsx>

some countries data is provided for very few years, like the case of Brazil, where FDI is provided for 10 years, from 2001 to 2010. The corresponding series of the IFS, which is the best compared to relevant series of the OECD or the World Bank, is (79LBDZF) and represents end of period stocks of accumulated direct investment in the reporting country, in US Dollars. For this index, additional sources were sought and occasionally used, although only in the case of China this substitution was satisfactory.

The corresponding figures and tables are available upon request.

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