

The Future of the Global Reserve System

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Summary

1. The *de facto* reserve system from 2000-09

Emerging countries with a high savings propensity exported huge amounts of savings through the accumulation of reserves.

The reserve currency country has been the main importer of those savings and hence the main supplier of the accumulated reserves.

The transatlantic financial system provided a complex web of risk-taking chains which assumed most of the risks arising from the fact that while ultimate borrowers (US households) supplied risky assets, savers required safe assets.

The excess risk-taking that took place in the Western financial system is thus closely related to the accumulation of reserves observed during this period.

2. Prospects for the next decade

Will reserves continue to grow and will the mismatch between assets supplied and demanded be overcome by the huge expansion of public debt?

What are the obstacles to currency diversification by reserve accumulators?

Reserve-accumulating countries can help the reserve system to work better by providing more information about the nature of the assets they accumulate and by diversifying into risky assets.

Reform of the reserve system should aim at making better use of the excess savings in emerging market economies.

Introduction

The nature of the global reserve system has been changing continuously in recent decades. Interestingly since the collapse of the Bretton Woods system in 1971, hardly any international effort has been made to design a new arrangement. The *de facto* system at work has been shaped by forces emanating from both the demand and supply sides and driven by national policies as well as market innovations.

The demand for reserves has responded to various logics. Traditionally, transaction balances were related to trade flows. Precautionary balances – to prevent or to be able to deal with currency or liquidity crises as well as ‘sudden stops’... – then rose with financial integration,¹ as did sometimes the accumulation of reserves induced by central bank interventions in response to ‘hot money inflows’. However, over the last decade the key driver for the hoarding of reserves appeared as a side product of export-driven strategies and more generally of rapid wealth accumulation by financially ‘repressed’ high-savings-propensity countries. During the last pre-crisis years, the latter seems to have been the dominant explanation for the increase in demand for reserves, notably by the People’s Republic of China (PRC) as well as by commodity-producing countries.

The sources of the supply of reserve assets have also changed considerably over time. Reserve assets are most commonly thought of as being supplied by a current account deficit of the reserve currency country. But this is not necessarily the case. A deficit of its balance of private capital flows (as was the case during most of the 1960s) could be sufficient. The 1970s have shown that third-countries’ deficits financed by borrowing denominated in the reserve currency (or third-countries’ net private capital outflows financed the same way) could also do the trick.² However, over the last decade the pace of reserve accumulation was particularly rapid and reserve assets were indeed provided principally by a current account deficit of the reserve currency country, namely the United States.

Against this background, another essential dimension of the functioning of the *de facto* reserve system received little attention. Decade after decade, the combination of factors at play on the demand as well as on the supply side also determined the amount and nature of the various risks that had to be carried by public or private agents to allow new reserves to be accumulated. Reserves being supplied through borrowing, the risks (credit, liquidity and interest-rate risks) of the loans made had to be carried by someone... It is worth noting that phases of rapid reserves accumulation (at the end of the 1960s and the end of the 1970s) have often led to monetary or financial debacles. In this respect, the fate of the reserve system at work since the Asian crisis is no exception. Understanding the risk-taking structure underlying this system is essential for improving the design of the global reserve system for the next decade.

¹ This part can be accounted for, and potentially forecasted, in standard international economic models.

² Financial liberalisation has made the Triffin dilemma obsolete: if country A borrows in dollars to finance its current account deficit, country B will be able to accumulate reserves in dollars without the US having to run a deficit. A new version of this dilemma is put forward in a Box of a recent IMF staff paper (Mateos y Lago et al., 2009). The authors however identify the demand for reserve assets with a demand for government bonds, despite the fact that a significant part of reserves is held in the form of bank deposits and government-guaranteed securities.

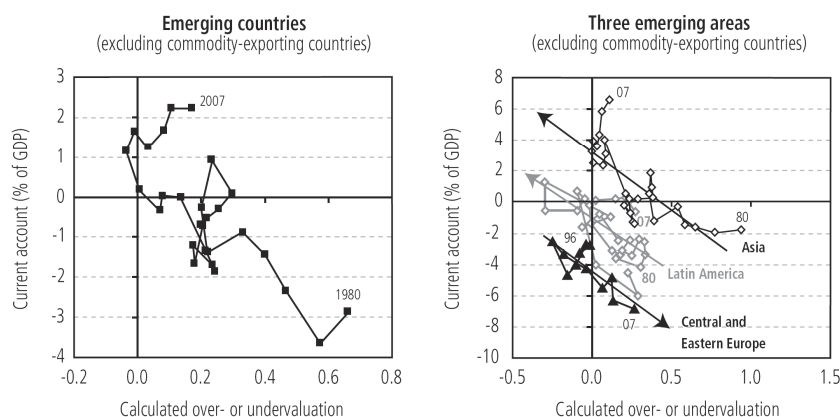
1. The *de facto* reserve system of the first decade of the 2000

The *de facto* reserve system of this century's first decade is the result of the interplay of both macro and micro forces.

Emerging countries with a high savings propensity exported huge amounts of savings through reserve accumulation.

With one exception (Central and Eastern Europe), all major emerging regions became net exporters of savings during the first decade of the 2000s. Drawing the lessons from past crises, many countries switched to an export-based development model to safeguard their financial autonomy and ended up with excess savings. Specific monetary and financial policies enabled them to export those excess savings and to experience rapid income growth despite structurally weaker progress of their domestic demand. As shown in Brender & Pisani (2010), exchange-rate policies played an essential role, especially for manufactures-exporting emerging countries: those that succeeded in avoiding a relative overvaluation of their currencies' exchange rates generated current-account surpluses; conversely, those whose exchange rates appreciated too rapidly saw their deficits widen (Graph 1).

Graph 1. Exchange policies and current accounts, 1980-2007



Notes: Over- or undervaluation is calculated by comparing the current exchange rate to the PPP exchange rate and correcting for the level of development. The weighting used to calculate the aggregates is that of the share of the zone's GDP is measured in current dollars. The Central and Eastern European countries are shown only for the period 1996-2007.

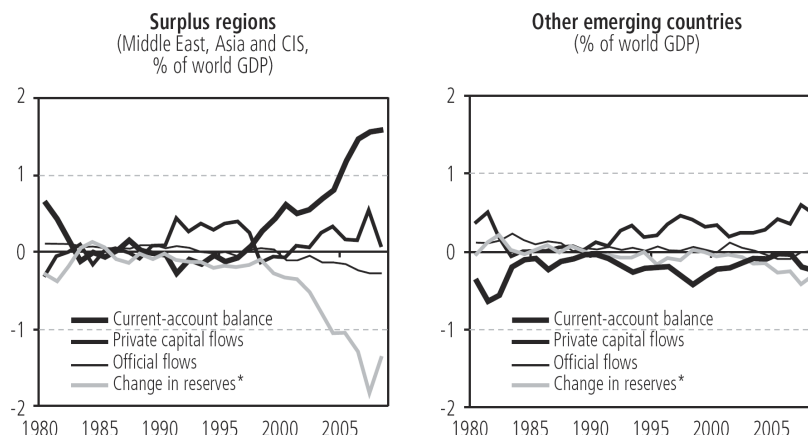
Source: Brender & Pisani (2010).

The size of the current-account surpluses of the emerging regions relative to their economies being extremely high and the liberalization of their capital account not being always complete, most of the recycling took place through an increase in their foreign exchange reserves.³ Graph 2 shows that, during the first decade of the 2000s, almost all the savings exported by surplus emerging countries found their counterpart in an accumulation of reserves. Albeit sparse, available data indicate that those reserves were largely invested in liquid and safe assets.⁴

³ The German current account (unlike those of the some Asian emerging market countries) was intermediated by the German banking system and it turned out that a large part of the investments in US financial assets were not safe.

⁴ Note that – as shown on Graph 2 (right-hand side) – during the 2000s, only a very small portion of the savings of surplus emerging countries was used to finance other emerging regions.

Graph 2. Current accounts of emerging regions, 1980-2007



* A negative figure indicates a positive accumulation of exchange reserves.

Source: Brender & Pisani (2010).

The reserve currency country has been the main importer of those savings and hence the main supplier of the accumulated reserves.

For emerging countries to be able, as a group, to generate excess savings, developed countries had to accept growing current-account deficits. Those deficits, however, have not been evenly distributed among the developed countries. Because of differences in policies and also in the nature of national financial systems, the 'global savings glut' was channelled to a small number of developed countries, in fact mainly to the United States. Faced with deflationary pressures, US authorities tried to keep their economy close to full employment by stimulating private borrowing, in particular in the form of (long-term) mortgage loans. The intensity of international transfers of savings – the so-called 'global imbalances' – could thus steadily grow during the first decade of the 2000s.

Macro forces however have not been the only ones at play: since the emerging regions' surplus consisted, for the most part, of reserves invested risk-free while their counterpart was provided by risky loans made mainly to households, it was also necessary for the global financial system to take on the risks not assumed by the emerging regions. Financial globalisation made this possible.

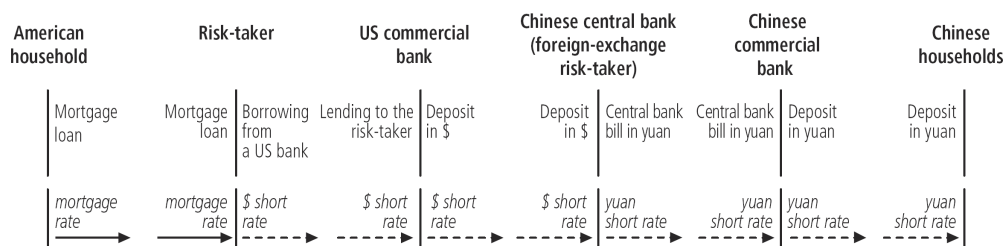
The transatlantic financial system provided a complex web of risk-taking chains which assumed most of the risks arising from the fact that while ultimate borrowers (US households) supplied risky assets, savers required safe assets.

The infrastructure of globalised finance has allowed, for example, savings by a Chinese household or enterprise, typically invested in a yuan-denominated short-term deposit in a local Chinese bank, to finance a US dollar-denominated long-term fixed-rate mortgage loan. This has taken place through the workings of entire risk-taking chains (see Brender & Pisani, 2010). The various links of such chains took care of the risks generated by such transfers of savings. Four risks in particular had to be carried: an exchange-rate risk, an interest-rate risk, a credit risk and a liquidity risk. Deposit institutions of course played a role here, but so did other agents like hedge funds, investment banks, off-balance-sheet vehicles... The activity of all those non-bank agents has become an essential part of the globalised system and new

terms – ‘alternative’ or ‘shadow’ banking system – have been coined to designate it (see for instance Tobias & Shin, 2009).

The diagram below gives an example of one possible risk-taking chain. In this diagram, the Chinese central bank is in the position of a currency risk-taker (borrowing in yuan, by issuing for instance sterilisation bills, and lending in dollars by making a short-term deposit in a US commercial bank.⁵ The other risks involved are borne here by a ‘risk-taker’ who borrows short term to buy the securitised mortgage. The latter bears the interest-rate, credit and liquidity risks.

Diagram 1. A ‘global’ chain of risk-takers



Source: Brender & Pisani (2010).

While a wide variety of such chains have been at work, the picture always boiled down to the currency risk being largely taken on by the savings-exporting countries and credit and liquidity risks largely carried within the Western financial system.

By relieving the emerging regions of a significant part of the risks associated with the investment of their savings surpluses, the Western financial system performed an essential function... at the cost, however, of an accumulation of risks, mainly in its less-supervised part, namely the shadow banking system. Neither the quantity of risks being absorbed by the financial system during this process nor the quality of the loans generating those risks was closely monitored. When these risks materialised in 2007-08, the financial crisis broke.

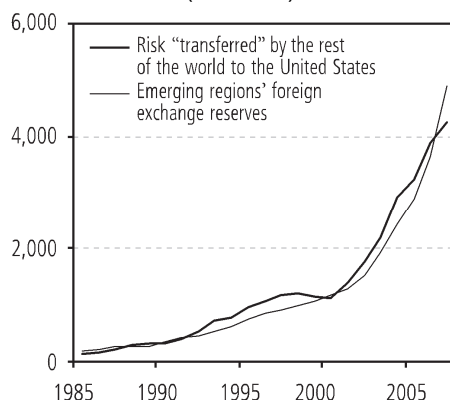
The excess risk-taking that took place in the Western financial system is thus closely related to the accumulation of reserves observed during the first decade of the 2000s

Was the amount of risk ‘absorbed’ by the Western financial system significant? A crude calculation for the credit risk, using the US net international investment position data, shows that the amount of risk ‘transferred’ by the rest of the world to the United States equalled \$4,200 billion at the end of 2007 (see Box 1). Graph 3 shows that this amount increased appreciably since the end of the 1990s and that this process

⁵ What matters here is the foreign demand for non-risky assets, whatever its form. If instead of deposits, reserves are accumulated in Treasury securities, the domestic financial system will be deprived of a non-risky asset. Confronted with the same domestic demand of non-risky assets, it will have to take on more risks.

coincides roughly with the accelerated accumulation of exchange reserves by the emerging regions.⁶

Graph 3. Risk 'transferred' and emerging regions' foreign exchange reserves (\$ billion)

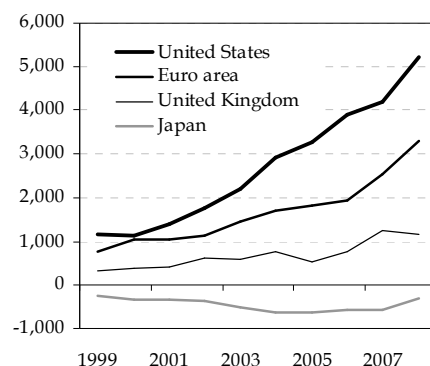


Source: Brender & Pisani (2010).

The United States was, however, not the only economy to absorb risks. Globalization indeed allowed financial risk generated by international transfers of savings to be accumulated even in regions that had no current account imbalances. European banks in particular intervened heavily in dollar-denominated risk-taking chains: taking on credit risk while hedging currency risk, they exposed themselves to a liquidity risk, which materialised in the form of acute funding problems during the crisis (see Box 2) (McGuire & von Peter, 2009).

If, as for the United States, we now try to measure the transfer of credit risk from the rest of the world to the euro area, it appears that at the end of 2007 it exceeded \$3,000 billion, a significant amount even compared to the mass of risk absorbed by the US financial system (Graph 4).

Graph 4. Risk to be 'absorbed' by the Western financial system, 1999-2008 (\$ billion)



Sources: National central banks, US Treasury International Capital System and authors' own calculations.

⁶ Caballero & Krishnamurthy (2009) propose a theoretical approach to this risk absorption by the US financial system.

Japan, on the other hand, far from having absorbed credit risk for the rest of the world, added to the amount of credit risk the Western financial system had to absorb.

Box 1. A measure of the risk absorbed by the various parts of the globalised financial system

As national accounts data have not been designed to capture the accumulation of risk, measuring risk absorption by a financial system is far from easy. It has nevertheless been attempted here, with the focus on the amount of *credit risk* absorbed by the financial systems of four advanced economies – the United States, the euro area, the United Kingdom and Japan – from the rest of the world. Liquidity and currency risks were omitted from our scope. Moreover, since the estimates are derived from national flow-of-funds (FoF) and international investment positions (IIP) data, as well as the US Treasury International Capital System (TICS) data, the risks transferred using derivatives are ignored by our evaluation.

IIP data are our starting point. They provide a summary ‘balance sheet’ of an economy vis-à-vis the rest of the world. We then distinguish, on both sides of this balance sheet, risky positions from non-risky ones, focusing on the credit-risk dimension: bank deposits (as well as currency), money markets instruments and government securities (including the US GSE securities) are considered as ‘risk-free’, all the other items being labelled risky. By then netting non-risky items both on the asset and the liability side, we arrive at a measure of the net risk absorbed from the rest of the world (ROW) (when the economy has issued more non-risky assets than it is holding) or transferred into the ROW (when the opposite is true). (Details on the calculation of the amount of risks absorbed by the US for the rest of the world during the past decades are given in Brender & Pisani, 2010.)

For the euro area, currency and deposits are taken from the FoF, while money market instruments and government bonds were taken from the IIP. Official reserves are assumed to be invested only in risk-free assets. Given the lack of data on the type of bonds held by euro area residents, we use the US TICS data to proxy the amount of risk-free foreign assets held by euro area residents.* This measure may underestimate the real size of the risk-free portfolio (i.e. overestimate the risk absorbed by the euro area from the rest of the world); yet even doubling that amount would not radically change the picture, the euro area would still be a ‘risk-absorber’. A more fundamental problem lies in the discrepancy between the investment position data of the euro area with respect to the US as resulting from the IIP (and its geographical breakdown) and the TICS figures.

A similar approach is applied to the United Kingdom as well to Japan. For the United Kingdom relying only, as we have done, on the TICS to proxy the total amount of its foreign risk-less assets may imply a much larger measurement error as UK residents, pension funds and insurance companies hold significant amounts of European government bonds. Accounting for this fact may result in a different profile for the UK, which could turn out to be one of the countries transferring risk to the rest of the world rather than absorbing it.

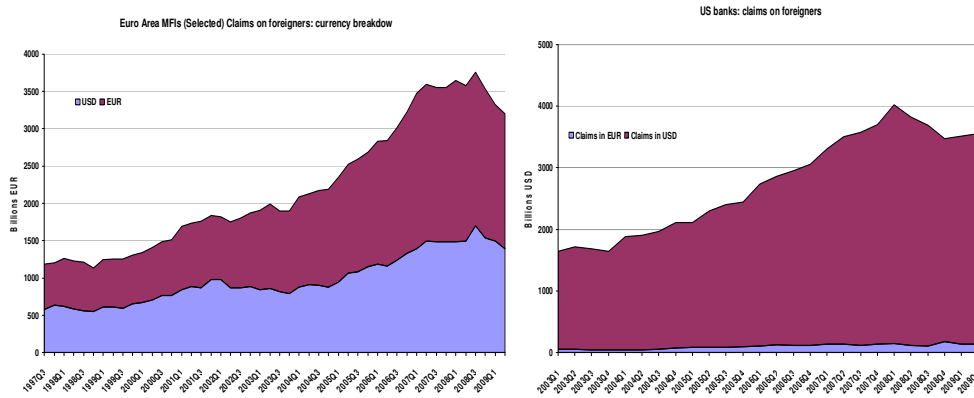
The same approach is also applied to Japan and similarly to the other countries this calculation may underestimate the amount of risk-free assets bought by Japanese residents. Yet in this case, assuming a higher share of risk-free bonds among its foreign assets would only increase the amount of credit risk shed by Japan onto the rest of the world.

* To avoid double counting, however, we subtracted from official reserves 90% of the reserves held in the form of securities (assuming securities bought by the official sector are almost exclusively invested in US government securities). The TICS data could have been used to determine the share, rather than the amount, of risk-free assets in the total, yet also this method is subject to limitations and would not have changed the fundamental message. Only the profile over time would have looked different with the curve starting at a lower level and flatter over the first part of the period and then becoming very steep after 2006.

Box 2. European banks' funding problem

The recent crisis highlights the importance of liquidity for a well-functioning global financial system. It also highlights a huge asymmetry. Over the last years of the credit bubble some European banks invested massively in supposedly safe US asset-backed securities. Since these securities were denominated in USD, the banks financed these investments by short-term borrowing in USD. However, US banks did not invest in euro-denominated products. European (especially euro area) banks thus needed liquidity denominated in dollars far more than US banks needed euros. Graph 5 provides an idea of the asymmetry between the US and European banking system in terms of currency denomination of their assets. More than one-third of euro area banks' claims on foreigners were (and still are) denominated in dollars, while the share of euro-denominated claims on foreigners of US banks was always negligible.

Graph 5. Banks' claims on foreigners (\$ billion)



Source: TICS and ECB.

The short-term borrowing used to finance the acquisition of the US RMBS and similar assets exposed part of the European banking system to a roll-over or liquidity risk, which materialised when the crisis broke. This explains the urgent need for large swap lines: the ECB (and other central banks) had to provide their banks with USD liquidity during the time the normal inter-bank channel had broken down. This explains the paradoxical situation during the financial crisis in which the debtor (the US) had to provide other creditors (e.g. the euro area) with emergency liquidity funding.

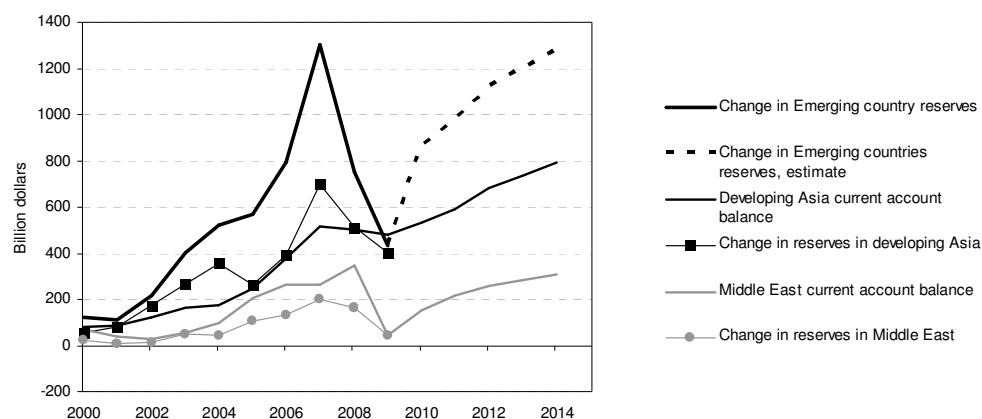
2. Perspectives for the next decade

Will reserves continue to grow and will the mismatch between assets supplied and demanded be overcome by the huge expansion of public debt?

Looking forward, the first question is of course the pace at which reserves will continue to grow. The factors at work here are numerous, but if the experience of the past decade is of any guide, the evolution of savings and investment propensities in the emerging world will play a central role: demographics, expected changes in welfare and income policies, development of the local financial systems, public infrastructure policies as well as the price of key commodities, oil in particular, will all matter to determine their current account surpluses.

The latest *World Economic Outlook* from the IMF does not forecast any radical change on this front. On the contrary, as shown in Graph 6, the current account of the 'developing Asia' group is projected to increase by more than \$300 billion over the next five years to close to \$800 billion in 2014, while the current account of the Middle East group should rebound to reach more than \$300 billion in 2014. These trends give a first idea of the magnitude of the coming demand for reserves.

Graph 6. Current account balances and emerging countries demand for reserves



Notes: Developing Asia here includes newly industrialised Asian economies. Reserve changes for emerging countries were estimated on the basis of developing Asia and Middle East current accounts increased by \$180 billion each year (see footnote 7).

Source: WEO, October 2009.

The recent financial crisis may now add a new source of reserve demand in the emerging world. Countries that until recently had large current account deficits (principally European emerging markets) have just suffered balance-of-payments problems and had to go to the IMF to seek assistance. These countries might react as the Asian countries did after the crisis of the late 1990s. If their reaction is 'never again', they might now start accumulating substantial reserves, and the amounts involved might not be negligible. If one adds to the Middle East and Asia current account surpluses, this additional demand for 'precautionary' reserves estimated at

close to \$200 billion, one arrives at a potential pace of reserves accumulation in excess of \$1,200 billion in 2014 (Graph 6).⁷

Of course, the amount of savings exported by emerging countries does not necessarily have to coincide with the amount of reserves these countries will accumulate. The attitude towards risk-taking of both the public and private agents of those economies as well as the management of capital controls (in the PRC and some other countries) will also determine the speed of reserves accumulation. As those countries' domestic financial systems become more developed and liberalised, reserves accumulation might be more loosely linked to the current account, with nevertheless ambiguous implications:

- Increasing accumulation of foreign assets by private residents or 'sovereign wealth funds' would tend to diminish the demand for reserves.
- Increasing inflows of short-term private foreign capital in anticipation of the eventual revaluation of currencies – as seen during the last years of the Bretton Woods system – would tend to increase the accumulation of reserves.

Since it is not possible to predict which factor will be stronger, it seems safe to expect not only an increase in reserves accumulation, but also an increase in its variability.

What are the obstacles to currency diversification by reserve accumulators?

A reserve system is traditionally defined by the currency around which it is centred. This currency plays two different roles: it provides a peg for the non-free-floating currencies while at the same time it is the currency in which official reserves are accumulated. Hence a second major issue: can the dollar be replaced (or supplemented) in this latter role by another currency, the euro being presently the most plausible candidate?⁸

There seems to exist practical obstacles to large-scale currency diversification which are not always appreciated.⁹ Reserves being held in rather risk-free assets, the availability of deep and liquid markets for such assets denominated in the potential reserve currencies is a precondition for diversification. If we assume that bank deposits fit into this category, there does not seem to be any constraint on their availability: big international banks will be equally happy to accept deposits in dollars or euros. But, in normal times at least, the remuneration on those assets, will be lower than on marketable securities. Moreover, this crisis has shown that bank deposits may not always be considered as being without risk.

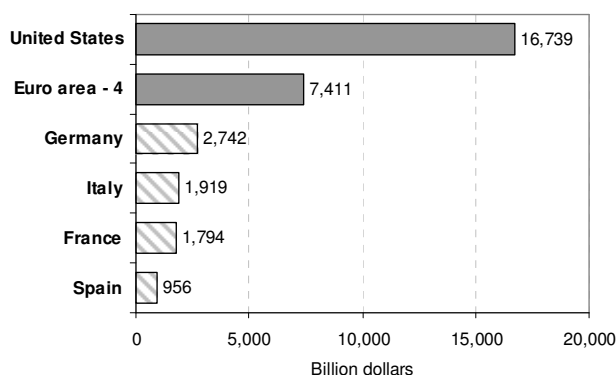
⁷ The IMF estimates that, as consequence of the crisis and reserves draining, the long-term need for reserves of emerging developing countries (excluding the People's Republic of China and fuel exporters) will reach \$900 billion over the next 5 years and \$1.3-2 trillion for the next 10 years (IMF, 2009). This would translate in an annual rate of accumulation of reserves of about \$180 billion for the next five years.

⁸ The time horizon at which the SDR (special drawing rights), viewed as a super-euro, could play such a role seems more distant. See Sabucchi & Driffill (2010)

⁹ The past accumulation of reserves raises another 'practical' question. Given the accumulated amount, would a significant move out of the dollar into other currencies (the euro in particular) have disruptive consequences? The size of the international portfolios in place makes this much less likely than just a few decades ago: during the last few years, cross-border capital flows intensified and the size of the balance sheets of the different economies increased significantly. Shifting part of the huge amount of reserves accumulated, say from the dollar to the euro, would of course put a downward pressure on the dollar. But, provided such a move does not provoke a brutal change in exchange rate expectations – that is, provided it takes place in an orderly fashion – this pressure doesn't have to lead to a deep fall of the dollar against the euro. With unchanged expected returns, the private portfolio rebalancing effects triggered by a moderate fall of the dollar should be powerful enough to help absorb the pressure generated by a reasonable diversification of official reserves.

If one looks at the size of the market for the kind of short-term, safe and liquid securities required by authorities for their currency reserves, the advantages of the United States become quickly apparent. Of course, by its sheer size, the euro market of government debt securities looks comparable to the US one.¹⁰ And the custody services provided by the ECB to the reserve holders look quite similar to those offered by the Federal Reserve. But the US market of quasi-risk-free securities (government debt securities, GSE debt and agency-backed mortgage pools), which are also of interest to reserve holders, is much larger than any quasi-risk-free euro market.¹¹ Graph 7 shows that on this account the US market is more than double the size of that of the euro area.

Graph 7. Quasi-risk-free securities at end of 2008



Sources: National Agencies and Treasuries. Data on covered bonds are from the European Covered Bonds Council (provisional statistics for issuance and outstanding covered bonds, August 2009). US quasi-risk-free securities include federal, state and local government securities, GSE and agency -and GSE-baked mortgage pools and are taken from the Fed Z1.

Exchange rate to convert euro into USD as of end of 2008 (ECB): 1.4 USD per EUR.

Furthermore, the European market for public debt is fragmented, and so are the markets for European covered-bonds. The risk premia that have arisen in early 2010 on the markets for the public debt of several countries, notably in Greece, provide evidence of the large differences in the quality of government securities across euro area members. In reality the size of the biggest AAA-rated euro government security market, the German one, is less than one-fifth that of the US. Even adding the only other large AAA country (France) yields a total asset supply of less than one-third that of the US.¹² This suggests that, up to now at least, the euro area has not been

¹⁰ According to the BIS data as of December 2008, the outstanding amount of domestic government securities issued by euro area countries represented 22% of the world public debt market, while Japan represented 30.6% and the US 26.5%. Despite its huge size, the Japanese government debt market offers a limited potential for international investors for two main reasons: i) Japan's prolonged current account surpluses have made it possible for Government debt to be held domestically and ii) public debt is largely held by domestic (private and public) financial institutions.

¹¹ In Europe, GSE securities do not exist, but *Pfandbriefe*-style instruments can be considered as a close substitute. Hence the quasi-risk-free securities market in Europe includes government securities and covered bonds, which is a larger set than *Pfandbriefe*-style securities, strictly speaking, but with similar characteristics.

¹² As can be inferred from Graph 7, even lumping together the two significant AAA-rated governments in Europe (Germany and France) and adding covered bonds issued in those two countries, one arrives at a 'market' of only about one-quarter that of the US market for quasi-risk-free assets.

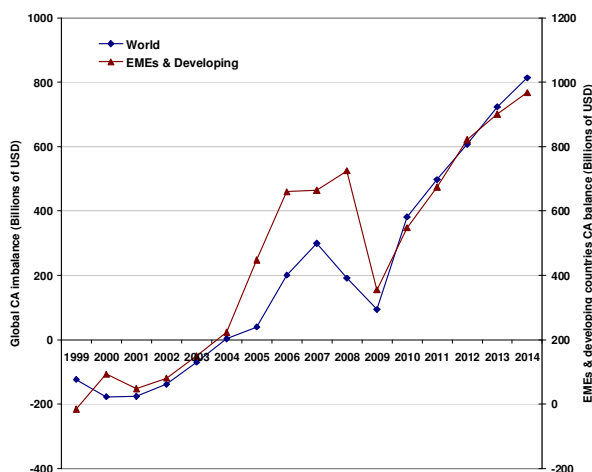
playing in the same league as the United States in terms of providing the liquid and safe assets demanded by the reserves-accumulating authorities.

One of the issues for the coming years is to find out if this situation could change and the euro-denominated securities provide a valid alternative to the dollar-denominated markets. This would require fundamental changes in the constitution of the euro zone. A key conceptual difference between the euro zone and that of the US (or other nation states) is that in the latter case the government can issue assets that have zero nominal risk because of “fiscal dominance”: the government could always order the central bank to ‘print’ the money needed to service the public debt. This is not the case in the euro area where the ECB has been, by law, explicitly prohibited from financing (national or EU) public debt. Moreover, the experience of Greece shows that any individual national government could never hope to monetise its debt via the ECB; and it would in practice also be close to impossible for a coalition of many member states to force the ECB to do this for them as a group. The textbook notion of ‘riskless’ asset thus cannot be applied directly to the case of the euro area. This is the underlying factor limiting the extent to which the euro can become a global reserve currency.

Yet for the time being, an important issue is whether the US can continue to provide the bulk of the assets necessary to meet the coming demand of reserves. In particular if the US deficit is from now on contained while surplus emerging countries keep piling up reserves at a pace close to their (growing) current account surpluses, where will the missing deficits be found and what kind of assets – safe or risky?– will be issued to finance them. Whatever the answer, it is unlikely that the *ex ante* supply and demand of reserve assets will balance: designing a proper global reserve system that can deal with these imbalances is the key task ahead.

Another way of looking at the same problem is the following. The latest projections from the *World Economic Outlook* (2009) by the IMF suggest that the surpluses in Asia will soon be larger than ever as will also be the magnitude of the world current account discrepancy (See Graph 8). The usual assumption in projections of international institutions is that of ‘unchanged policies’ in the aim of illustrating what is likely to happen if policy does not change. These projections cannot materialise since the world cannot run an ever-increasing current account surplus with the “outer space”; however, they contain a simple story: the current constellation of policies around the globe would lead to an ever increasing savings surplus and is therefore unsustainable. Graph 8 also shows that the global current account ‘imbalance’ is tightly correlated with the current account surplus of the emerging and developing world. The question is therefore which regions in the world could run the deficits needed to absorb such surpluses?

Graph 8. Current account imbalances



Source: Belke & Gros (2010)

The identification of the possible counterparts of chronically surplus countries is necessary in order to get an indication of the nature of the debts that will be issued and the associated risks to be borne. Consider, for example, that if surplus countries keep on accumulating reserves in dollars while deficit countries issue debt in another currency, an additional risk is likely to spread into the system: the exchange rate risk.

Reserve-accumulating countries can help the reserve system to work better by providing more information about the nature of the assets they accumulate and by diversifying into risky assets

If, as is likely, reserves keep on being accumulated at a rapid pace during the next decade, reforming the global reserve system means improving the mechanisms that allocate the savings that find their counterpart in reserve accumulation. Building new financing channels in order to get exported savings to flow where they could best be invested or are most needed (and not only where the existing financing channels are) is one of the challenges of the coming decade. This could help prevent a repeat of the situation just witnessed, where the reserve currency country, being endowed with a dense network of high-capacity lending channels, acted as the borrower of last resort... until it became clear that its borrowers had become over-indebted. By building new channels capable of redirecting of savings to finance developing economies (or infrastructure building), the use made of an expanding pool of world reserves could be significantly improved.¹³

To achieve such a better allocation of the savings transferred through reserve accumulation, it will be essential to better control how the credit, liquidity and currency risks that are implied are taken on. If reserves are invested in non-risky assets while the lending to which they are the counterpart is risky, the risk-absorbing structures that make this possible have to be properly designed and monitored.¹⁴ The role of public authorities in the functioning of the global reserve system should not be limited, however, to design and monitoring activities, for they may have to be

¹³ The allocation of SDRs is just one example of how this could be done.

¹⁴ The only 'favourable' consequence of the present crisis in this respect is that the issuance of non-risky assets – government bonds – has tremendously increased. But there is a catch: if this goes on for too long, those assets will stop being viewed as risk-free.

extended to risk-taking itself. If some risks are impossible to assess or to hedge, most private financial lenders will refrain from taking them and lending will just be blocked unless some less cautious or conscious agent takes them.

For instance, the foreign-exchange risk on many smaller emerging countries' currencies could be assumed, within defined limits and against a fee, by a supranational institution – like the IMF. This would help avoid the residents of those countries from taking this risk by borrowing in foreign currencies. For each country, an exchange-rate guarantee could be attached to a given amount of debt securities issued, in their own currency, by a set of approved local residents. In this way the country could import savings without exposing itself to the risk of experiencing downward pressure on its currency leading to a financial crisis. At the same time, this international agency could use the total size of the foreign exchange guarantees it accepts to sell to steer the amount of borrowing done by each emerging country – according to its own situation – as well as by the whole group – according to the world balance between savings and investment. By intervening directly in the very functioning of the lending channels, such an authority could possibly improve the use made of part of the available world savings.

Many such risk-taking chain schemes involving both public and private risk-takers can be devised. Their common goal should be to help direct the lent savings to projects or countries that are likely to use them effectively. Those new lending channels could help diversify the type of borrowers and borrowings that, more or less directly, will provide for the necessary expansion in world reserves by absorbing part of the corresponding savings. At the same time, the presence of public agencies in the operations of the globalised financial system could reduce the chance that the reserves accumulation that will occur during the next years leads again to an unsustainable accumulation of risks.

Reforms of the reserve system should aim at making better use of the excess savings in emerging market economies.

In this last perspective, the contribution the surplus countries can make towards improving the functioning of the global reserve system is significant. By diminishing the amount of risk the global financial system is obliged to take, one can prevent the overload that led to its recent collapse. As mentioned above, allowing more private capital outflows, as well as an increased role of sovereign-wealth funds means that a bigger part of the savings exported by surplus countries will be invested with their residents taking on the risks of those investments. But even for the part accumulated as reserves, the risks to be carried by the rest of the system could be diminished by more transparency on the side of the reserve-accumulating countries. As noted earlier, information on reserve holdings is, to say the least, sparse and this is in itself an obstacle to a precise understanding of their impact on the global financial system. Hundreds of regressions have been run to estimate the consequences of foreign official authorities buying Treasury securities on US long-term interest rates, without a clear split of the maturities of the security bought being available! Any evaluation of sources of macro-financial risk in both the US and the euro area (and those countries running large deficits) will be incomplete as long as the major reserve holders do not publish information about the composition of their holdings by currency and maturity.

But more could be done than merely increasing transparency. The excessive risk-taking that took place in recent years was, at least partially, necessary to absorb liquidity risk generated by reserves accumulation. Yet some of this liquidity risk was unnecessary to the extent it was induced by excess-reserves that had hardly any chance of being needed in the near future. By accepting to invest part of their

reserves in a set of 'risk-free' longer-term assets, issued for example by a supranational institution, the reserve-holding countries would help take some liquidity risk out of the global financial system. The creation last September by the IMF of its Note Purchase Agreements is a step in this direction. By signing such an agreement, the PRC has accepted to lend up to \$ 50 billion for up to 5 years. By doing so, it has 'informed' the global system that this sum will be available to manage global liquidity risk. To ensure that this 'help' does not remain marginal, however, more initiatives like this one are needed.

Whatever efforts are made to improve both the global financial system and the global reserve system, the capacity to safely make new loans will be limited by the existence of reasonable investment opportunities and by the ability to take on the risks involved. When these limits are reached, efforts to push for more lending will start to become dangerous. An adjustment will then be needed on the side of the savings-supplying countries. Accepting these limits is also part of their possible contribution to a better functioning of the global reserve system.

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