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Reserve creation and reserve pooling in the international monetary system

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Abstract

The paper reviews the arrangements for meeting additional post-crisis demand for international liquidity. It distinguishes between reserve creation and reserve pooling as a basis for multilateral liquidity facilities; reserve pooling arrangements carry the risk that, in a general crisis, all the members will want to draw at the same time. We analyse the recently-agreed enlargement of the International Monetary Fund from this perspective, and conclude that the IMF will carry much more liquidity risk after its enlargement than it has done in the past.

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1. Introduction.

The financial crisis led to a sudden, unexpected and urgent need for international liquidity. Although there were adequate foreign exchange reserves in total, they were largely in the wrong place and many countries did not have enough. Most were bailed out by the United States. The Federal Reserve acted as an international lender of last resort by providing swap lines which enabled countries to get access to the dollar liquidity that they needed to avoid a banking collapse (see Allen and Moessner 2010).

In the wake of the financial crisis, some countries have demanded greater assurance of access to international liquidity in a future crisis, and some measures have been taken to provide it (see Moessner and Allen (2010), Farhi, Gourinchas and Rey (2011), Truman (2008, 2011), Palais Royal Initiative (2011), Goldstein (2011), Obstfeld (2011)). In this paper we describe and analyse post-crisis developments in the international monetary system concerning arrangements for international liquidity provision, by means of both reserve creation and reserve pooling, and discuss associated risks. We distinguish between reserve creation and reserve pooling as a basis for multilateral liquidity facilities; reserve pooling arrangements carry the risk that, in a general crisis, all the members will want to draw at the same time. We analyse the recently-agreed enlargement of the International Monetary Fund from this perspective, and conclude that the IMF will carry much more liquidity risk after its enlargement than it has done in the past.

2. Options for international liquidity provision

In the aftermath of the crisis, countries which were bailed out by the Fed have been considering how they could get access to international liquidity in case of a sudden need such as the one that arose in 2008. Moessner and Allen (2010) discuss the possibilities. They are of three types:

i. Multilateral arrangements.

Reserve pooling involves countries sharing access to a pool of foreign exchange reserves, to which they all contribute. This device enables each member to have access to a larger amount of reserves than if there were no pool. However, it is of no benefit if all the members want to draw on the pool at the same time, for example in a global liquidity crisis. The Chiang Mai Initiative is a reserve pooling arrangement.

Reserve pooling as just described involves more efficient use of a given total of reserves by a group of countries, none of which is the issuer of a reserve currency. A multilateral arrangement in which one or more reserve-currency countries contribute to the pool in their own currencies involves *reserve creation*, since the amount of foreign exchange reserves is increased by their contributions to the pool. The International Monetary Fund is an arrangement of this latter kind. It involves both reserve-pooling (more efficient use of existing reserves) and reserve creation (through reserve currency countries' contributions). Reserve creation is a sounder basis for a multilateral structure than reserve pooling because reserve-currency countries are unlikely to want to make drawings in a financial crisis, unless the market has lost confidence in the stability of the reserve currency.

ii. Bilateral arrangements.

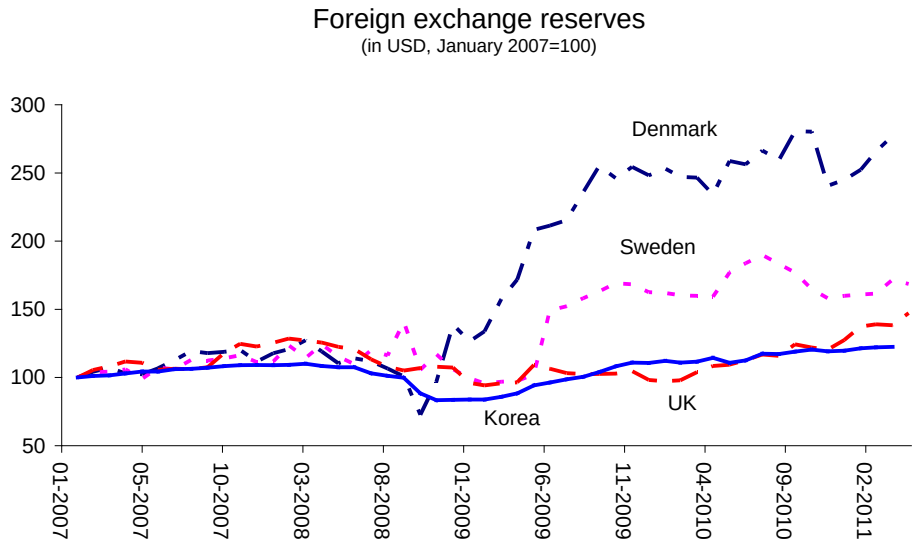
Swap lines involve lending between central banks. Central bank A credits the account of central bank B in its own books with A's currency; in return, central bank B credits the account of central bank A in its books with an equivalent amount of B's currency. Thus A lends its currency to B and B lends its currency to A; each loan is collateral for the other. The foreign exchange reserves of both A and B are increased, so swap lines are reserve-creating. However, they create usable reserves only if either A or B is a reserve-currency country. Although the Fed maintained an extensive network of swap lines from 1962, it was reduced in 1998 to a network including only Canada and Mexico. The swap lines that the Fed set up during the recent crisis were temporary.

Another kind of bilateral arrangement is a loan of a foreign currency from one central bank to another. As an example, the central banks of Denmark, Sweden and Norway lent euros to the central bank of Iceland during 2008.

iii. Unilateral action.

Reserve accumulation is a safe way of ensuring access to international liquidity[2]. Several of the countries which needed Fed support to avoid a banking crisis in 2008 have been increasing their foreign exchange reserves since the crisis – eg Denmark, Korea, Sweden and the United Kingdom (Graph 1).

Graph 1



Reserve accumulation has adverse side-effects on the global economy, particularly in the early stages of an economic recovery. To accumulate reserves, countries may create a trade surplus, which depresses demand in the rest of the world, or attract capital inflows by raising domestic interest rates, which also

[2] Not completely safe. Foreign-owned assets may be frozen in accordance with sanctions, for example.

depresses global demand, or borrow long-term in the international bond market to acquire liquid assets, which crowds out borrowers who might have made productive investments. Therefore it is desirable for the multi- and bi-lateral arrangements to be made attractive to those who are concerned about access to international liquidity, so as to minimise their resort to unilateral action. Nevertheless, providing access to international liquidity involves moral hazard, and the design of the post-crisis arrangements for a 'global safety net' requires a balancing of the competing objectives of deterring reserve accumulation and avoiding moral hazard.

3. Post-crisis developments in the international monetary system.

There has been little action on the bilateral front. The only bilateral action that would have been effective in the near term would have been an institutionalisation of the Fed swap lines, but it is hard to see how a sizeable permanent unconditional commitment to provide dollar liquidity to selected foreign central banks would be consistent with the Fed's mandate, or acceptable to the U.S. Congress, given the risks involved (see Allen and Moessner 2010). The People's Bank of China has created swap lines with a number of foreign central banks, but their primary objective appears to be to facilitate the use of the yuan in international trade, rather than to be a source of emergency international liquidity[3].

There has by contrast been a great deal of action on the multilateral front, mainly involving the IMF. It has been summarised as follows:

'As a key part of efforts to overcome the global financial crisis, on April 2, 2009, the Group of Twenty industrialized and emerging market economies (G-20) agreed to increase the resources available to the IMF by up to $500 billion (which would triple the total pre-crisis lending resources of about $250 billion) to support growth in emerging market and developing countries'[4]

In the following we describe and analyse the recently-agreed enlargement of the IMF and the liquidity risk associated with a change in the balance between reserve creation and reserve pooling. It is useful to begin with a description of the financing of the IMF.

i. The International Monetary Fund.

The international Monetary Fund is financed in several different ways, as follows.

a. **Quotas**.

[3] See Allen and Moessner (2010).

[4] Source: International Monetary Fund (2011a). The statement could be interpreted as meaning that the additional resources available to the IMF would be available for use by emerging market and developing countries only, but we ignore this interpretation, having seen no supporting evidence for it.

'Each member of the IMF is assigned a quota, based broadly on its relative size in the world economy, which determines its maximum contribution to the IMF's financial resources. Upon joining the IMF, a country normally pays up to one-quarter of its quota in the form of widely accepted foreign currencies (such as the U.S. dollar, euro, yen, or pound sterling) or Special Drawing Rights (SDRs). The remaining three-quarters are paid in the country's own currency. '[5]

To what extent are IMF quotas reserve-creating, and to what extent reserve-pooling? Assume that each country pays exactly three quarters of its quota subscription in its own currency, and that reserve creation is effective only if it involves the creation of reserves denominated in US dollars and euros (the IMF defines as 'freely usable currencies' the U.S. dollar, the euro, the yen and the pound sterling, which are also the component currencies of the SDR basket, but it is unlikely that a country borrowing from the IMF would want yen or pounds sterling)[6]. We assume that the United States and the euro area countries would be willing at any time to exchange the foreign currencies that they contributed as one quarter of their quota subscription for their national currencies. Thus the reserve creation component is equal to the total quotas of the reserve-currency countries, ie of the United States and the euro area countries. As at the end of April 2011, that was SDR 97.3 billion.

It is not easy to estimate the reserve pooling capacity of the IMF. Part of the IMF's reserve-pooling capacity is the part (one quarter) of quota subscriptions that member countries other than the USA and the euro area countries contribute in foreign currencies (presumed to be reserve currencies). That amount was SDR 35.0 billion at the end of April 2011. The other part derives from the fact that the IMF can require any member country to provide one of the four 'freely usable currencies' in exchange for the IMF's holdings of the member country's own currency (up to three quarters of its quota subscription). In practice the IMF asks only member countries which it considers to be in a strong financial position to provide freely usable currencies in this way, and it regards its holdings of the domestic currencies of other member countries as unusable (see IMF 2001 pages 78 - 82). We assume the domestic-currency component of the quota subscriptions of member countries other than the reserve currency countries (USA and the euro area countries) to have been 75% of quotas at the end of April 2011, namely SDR 105.0 billion. Not all of these funds will have been 'usable', because some of them will have been denominated in currencies of countries whose financial positions were too weak for the IMF to be able to use them to provide support to countries in need. According to the IMF's financial statements, its holdings of 'other' (ie unusable) currencies were SDR 36.8 billion at the end of April 2011. This was 35.1% of the SDR 105.0 billion. Therefore the remaining 64.9%, or SDR 68.2 billion, was regarded as usable. On that basis, the total reserve-pooling capacity of the IMF as at the end of April 2011 was SDR 103.2 billion (= 35 billion + 68.2 billion).

[5] Source: International Monetary Fund (2011b).

[6] See IMF decision on freely usable currencies pursuant to Article XXX(f) in IMF (2010, page 829).

b. Borrowing facilities

'While quota subscriptions of member countries are the IMF's main source of financing, the Fund can supplement its quota resources through borrowing if it believes that they might fall short of members' needs. Through the New Arrangements to Borrow (NAB), the IMF's main backstop for quota resources, a number of member countries and institutions stand ready to lend additional resources to the IMF.'[7]

The total amounts that the IMF can borrow under the NAB is SDR 367.5 billion, having recently been massively enlarged from SDR 34.0 billion. Contributor countries commit to lend up to individual limits. Contributor countries to the NAB lend in their own currencies, but there is a provision for countries to lend in foreign currencies if they so choose, subject to the agreement of the issuing country[8]. Thus it may be assumed that the United States lends in U.S. dollars, and that the euro area countries lend in euros. The fact that the United Kingdom has recently explained its decision to increase its own reserves by reference to its commitment to provide funds to the IMF under the NAB suggests that the UK would not lend in sterling, however[9]. Assuming, too, that Japan would lend in dollars rather than yen, the enlarged NAB's reserve creating capacity is the sum of the lending limits of the USA and the euro area countries, namely SDR 162.5 billion, and its reserve-pooling capacity is SDR 205.0 billion.

An activation period for the NAB only comes into effect if it is agreed by participants representing 85% of total credit arrangements of participants eligible to vote, and subsequently approved by the IMF´s Executive Board (see IMF 2010 page 532). Borrowing under the General Arrangements to Borrow (GAB) can be proposed only if a proposal for an activation period under the NAB is rejected. The potential amount available to the IMF under the GAB is SDR 17 billion.

In addition, the IMF has bilateral borrowing arrangements:

'Currently, the Fund has seventeen active bilateral loan agreements worth about $210 billion and two active bilateral note purchase agreements for about $60 billion. For NAB participants with bilateral credit lines, these credit lines do not add to the total resources available to the Fund under their NAB credit arrangements.'[10]

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[7] Source: International Monetary Fund (2011a).

[8] See International Monetary Fund (2010, page 530).

[9] See H.M.Treasury, Debt and Reserves Management Report 2011-12. While the explanation makes it clear that the UK would not lend in sterling, the asserted motivation (to provide resources for the IMF) is not convincing, because one of the main purposes of expanding the resources of the IMF is to deter reserve accumulation by member countries. It would obviously not be in the United Kingdom's interest to bear the expense of enlarging its own reserves if the only purpose was to dissuade others from doing the same.

[10] Source: International Monetary Fund (2011a). Bilateral lending facilities are denominated in dollars, except that those provided by euro area member countries, the Czech Republic, Denmark, Sweden and the UK are denominated in euros.

The fact that for 'NAB participants with bilateral credit lines, these credit lines do not add to the total resources available to the IMF under their NAB credit arrangements'[11] means that it is hard to know exactly how much the bilateral borrowing arrangements add to the IMF's borrowing capacity. For the purposes of this paper, we assume that they add nothing, and this assumption is corroborated by the statement that bilateral financing is to be incorporated 'into an expanded and more flexible NAB'.[12]

c. Special Drawing Rights.

Special Drawing Rights are, as their name suggests, rights to draw money. More precisely, they are rights to draw money from other member countries of the IMF. SDRs are allocated to IMF member countries in order to increase international liquidity, but there are no private holders and SDRs cannot be traded in a commercial market. In order to use SDRs, a holder has to exchange them with another holder for a usable currency.

It is clear from the above description that SDRs represent a form of reserve pooling, and not reserve creation.[13]

ii. Recent action to increase international liquidity.

As already noted, since the financial crisis, action has been taken to enlarge the resources available to the IMF, as follows.

a. Prospective doubling of IMF quotas.

'The Fourteenth General Review of Quotas was completed two years ahead of the original schedule in December 2010, with a decision to double the IMF's quota resources to SDR 476.8 billion.'[14]

The doubling of quotas to SDR 477 billion, though agreed in December 2010, did not take immediate effect; the aim is for it to become effective by the time of the IMF annual meeting in 2012. When it becomes effective, the NAB will be scaled back, though it has not yet been decided by how much.[15] The

[11] Source: International Monetary Fund (2011b).

[12] Source: International Monetary Fund (2011a).

[13] If a country issuing a reserve currency, such as the United States, agreed in advance to exchange a certain amount of SDRs for its currency, then that amount would constitute reserve creation rather than pooling. However, we do not have information available on whether or what amounts of SDRs might have been agreed by reserve currency central banks to be exchanged for their own currencies.

[14] Source: International Monetary Fund (2011b).

[15] Source: International Monetary Fund (2011c).

effect of the doubling of quotas on reserve creation and reserve pooling is summarized in table 1. The calculations in table 1 (and in the later tables) assume that the unusable percentage of the domestic-currency component of member countries' (other than the reserve currency countries as defined above as the United States and euro area countries) quota subscriptions will remain at its end-April 2011 level of 35.1%. This assumption is rather optimistic, because if total quotas are doubled, the number of countries that will be in a strong enough position to be able to redeem the IMF's enlarged holdings of their own currencies is likely to diminish.[16]

Table 1
Effect of doubling of IMF quotas on reserve creation and reserve pooling
(SDR billion)

	Quotas as at 30 April 2011	Quotas after fourteenth general review has been implemented	Effect on reserve creation	Effect on reserve pooling
Reserve-currency countries (1)	97.3	182.4	+85.1 (2)	-
Other countries	140.0	294.4	-	+113.8 (3)
Total	237.4	476.8	+85.1	+113.8(3)

Notes: (1) Assumed to be the USA and the euro area countries only (2) equals 100% of increase in quotas. See section 3 i a for explanation; (3) equals 25% plus 64.9% of 75% of increase in quotas. Assumes that 64.9% of member countries' domestic currencies (other than reserve currencies as defined above) provided to the IMF through quota subscriptions are usable. See section 3 i a for explanation.
Sources: IMF financial statements, quarter ended April 30, 2011; IMF press release 10/477, December 16, 2010, authors' calculations.

b. **Expansion of borrowing facilities.**

This resource increase was made in two steps. First, through expanded bilateral financing from IMF member countries. Second, by incorporating this financing into an expanded and more flexible NAB. On September 25, 2009 the G-20 announced it had delivered on its promise to contribute over $500 billion to a renewed and expanded NAB. In addition, as mentioned above, currently the IMF has seventeen active bilateral loan agreements worth about $210 billion and two active bilateral note purchase agreements for about $60 billion, and for NAB participants with bilateral credit lines, these credit lines

[16] Moreover, there is a risk that in a global financial crisis the financial positions of more countries than in normal times could become too weak for the IMF to be able to use these countries to provide support to other countries in need.

do not add to the total resources available to the Fund under their NAB credit arrangements.'[17] We assume that the expanded bilateral borrowing arrangements will lapse as the enlargement of the NAB becomes effective. On that basis, the borrowing capacity of the IMF will increase from SDR 34.0 billion to SDR 367.5 billion.

Assuming that the United States and the euro area countries lend under the NAB in their own currencies, while other countries lend in foreign currencies (dollars or euros), then the reserve-creating capacity of the NAB will increase from SDR 18.5 billion to SDR 162.5 billion, and the reserve-pooling capacity from SDR 15.2 billion to SDR 205.0 billion, as noted above.

c. SDR allocations in 2009.

'General allocations of SDRs have to be based on a long-term global need to supplement existing reserve assets. Decisions on general allocations are made for successive basic periods of up to five years, although general SDR allocations have been made only three times. The first allocation was for a total amount of SDR 9.3 billion, distributed in 1970-72, and the second allocated SDR 12.1 billion, distributed in 1979-81. These two allocations resulted in cumulative SDR allocations of SDR 21.4 billion.

To help mitigate the effects of the financial crisis, the third SDR allocation of SDR 161.2 billion was made on August 28, 2009. The Fourth Amendment to the Articles of Agreement became effective August 10, 2009 and was implemented September 9, 2009. It provided for a special one-time allocation of SDRs and doubled cumulative SDR allocations to SDR 42.8 billion. The 2009 general and special SDR allocations together raised total cumulative SDR allocations to about SDR 204 billion.'[18]

As indicated in section 3 i c, the increase in the outstanding total of SDRs represents an increase in reserve pooling, with no increase in reserve creation.

d. The total size of the expansion of international liquidity.

This section estimates the scale of the total planned increase in international liquidity resulting from the measures recently taken to enlarge the resources available to the IMF. A difficulty in making the estimate is that it is not yet known how far the NAB will be scaled back when the quota increase has become effective. Therefore we present estimates based on the two extreme (and no doubt unrealistic) assumptions that, first, the NAB is abolished entirely, and second, that it is not scaled back at all. The estimates are shown in table 2.

Table 2
Estimated increase in international liquidity resulting from actions to increase the IMF's financial

[17] Source: International Monetary Fund (2011a).

[18] Source: International Monetary Fund (2011d).

resources (SDR billion)			
Measure	Effect on reserve creation	Effect on reserve pooling	Total
Quota increase	+85.1 (1)	+113.8	+198.8
SDR allocation	-	+182.6	+182.6
Expansion of NAB (2)	+144.0 (3)	+189.8 (4)	+333.8
Total assuming NAB is abolished when quota increase has been implemented	+85.1	+296.4	+381.4
Total assuming NAB is unchanged when quota increase has been implemented	+229.1	+486.2	+715.3

Notes: (1) Assumes that the USA and the euro area countries, alone, are reserve currency countries; (2) assumes that bilateral borrowing facilities lapse when the enlarged NAB becomes operational; (3) assumes that the USA and the euro area countries lend in their own currencies; (4) assumes that countries other than USA and euro area countries lend in dollars or euros.
Sources: Table 1; IMF (2011c); authors' calculations.

4. Risks in the new structure.

i. **Scale**.

The adequacy of the emergency international liquidity facilities will depend on developments in the exposure of banking systems to foreign-currency liquidity risk. Measures are being taken to reduce the likelihood of a future international liquidity crisis, including tighter capital and liquidity regulation. But the possibility of another such crisis cannot be excluded, and it is therefore useful to quantify the available crisis-management facilities.

The increase in the volume of resources available to the IMF (loosely interpreted to include the SDR allocation) will be between SDR 381.4 billion and SDR 715.3 billion, ie between $618 billion and $1,159 billion. This is of a similar order of magnitude to the maximum amount that the Fed provided to other countries through swap lines in 2008 ($586 billion), and might therefore be adequate to deal with a future crisis of the same scale as the 2008 one, but not a much larger one.

ii. Liquidity risks to the IMF.

The analysis summarised in table 2 shows that the planned increase in international liquidity is heavily weighted towards reserve pooling rather than reserve creation.

As noted above, reserve pooling achieves its objectives provided the volume of desired drawings is within the capacity of the pool. However all members cannot draw at the same time, so there is a risk in a general crisis, when everyone wants liquidity at the same time, of the pool running dry. In that event, the pool would have done more harm than good, because it would have created a false sense of security among its members.

The fact that an activation period for the NAB comes into effect only if it is agreed by participants representing 85% of total credit arrangements of participants eligible to vote, as noted above, poses a liquidity risk for the IMF since the borrowing may not be approved. Any such activation could be prevented by the United States or Japan, whose shares in the NAB are 18.8% and 17.9%, respectively, or by euro area economies if all member countries vote together, whose combined share is 25.4%. The maximum amount that may be borrowed under the GAB, which can be proposed only if a proposal for an activation period under the NAB is rejected, is much smaller at SDR 17 billion than the maximum borrowing possible under the NAB.

Legally, SDRs are not liabilities of the IMF itself but of its member countries. In a technical sense, therefore, the IMF carries no liquidity risk in respect of SDRs. In our judgment, this is no more than a technicality. If a member country were to find itself unable to exchange SDRs for currencies that it could use to make payments, then the reputation of the IMF would suffer great damage and the ability of the IMF to operate effectively would be seriously impaired. The IMF is protected against SDR liquidity risk in two main ways:

a. Individual member countries agree to accept SDRs in exchange for usable currencies, within pre-set limits.

b. The IMF can designate countries to receive SDRs under its Articles of Agreement[19], but has never had to do so.

Clearly the IMF needs to be conscious of the limits to member countries' willingness to accept SDRs in exchange for usable currencies, and not to issue more SDRs than liquidity-providing member countries will accept. Even so, there is a risk of a decline in member countries' willingness to accept SDRs. In a general liquidity crisis, the IMF has the power to designate reserve-issuing countries to receive SDRs. The IMF is a multilateral co-operative institution. In the atmosphere of generally harmonious international relations which has prevailed among its most influential members since the IMF was founded, member countries have acknowledged that membership involves obligations as well as rights, and in practice there has been no difficulty in redeeming SDRs. However, harmonious international

[19] Article XIX (5) (see International Monetary Fund 2011e).

relations cannot be taken for granted, and it is not clear how the IMF could enforce its right to designate if the designatee was unwilling[20].

Ultimately the liquidity of the international monetary system depends on the issuers of reserve currencies, namely the United States and the euro area countries. Those countries have made commitments to provide funds to the IMF in their capacity as IMF member countries, and as contributors to the NAB, but those commitments are limited. The IMF, in its reserve pooling capacity, is like a bank in that it cannot avoid some degree of liquidity risk.

Table 3
Reserve creation and reserve pooling in the IMF before and after expansion
(SDR billions)

	Pre crisis		Post crisis	
Source	Reserve creation	Reserve pooling	Reserve creation	Reserve pooling
Quotas	97.3	103.2	182.4	217.0
NAB	18.5	15.2	162.5	205.0
SDRs		21.4		204.0
Total excluding NAB	97.3	124.6	182.4	421.0
Total including NAB	115.8	139.8	344.9	626.0

Table 3 shows the size of the IMF before and after the recent expansion. It is noticeable that the ratio of reserve pooling to reserve creation (on our calculation) has increased sharply, from 128% to 231% (excluding the NAB from the calculation), or from 121% to 182% (including it). Reserve pooling is risky because the pool can run dry. We conclude that the IMF will be taking much more liquidity risk after its expansion than it has done in the past, though we are not able to calibrate the absolute degree of risk. Some of the assumptions we have made in calculating the amounts of reserve creation and reserve pooling may be wrong, but that is unlikely to affect our conclusion.

This additional liquidity risk is inevitable. The world economy is growing, and growing faster than the reserve-currency countries. It will continue to do so unless one or more of the following things happens:

- the number of reserve currencies increases;

[20] The inability of the leading financial powers to co-operate effectively to combat the banking crisis of 1931 is a case in point.

- the reserve-currency countries start to grow faster than the world average;
- the home territories of one or both of the present reserve currencies expand sufficiently.

If none of those things happen, then the international monetary system will gradually outgrow its base of reserve currency liquidity.

In view of the widespread anxiety about the sustainability of the US budget deficit and the large external liabilities of the United States, it might seem odd that we are suggesting that the stability of the international monetary system is vulnerable to a shortage of dollars. Nevertheless, there were acute local shortages of dollars in late 2008, and they would have had very severe consequences if they had not been promptly relieved by the Fed, which acted as an *ad hoc* international lender of last resort. The large pools of dollars in the foreign exchange reserves of China and Japan were of no help in dealing with liquidity problems elsewhere, for example in Europe. And it is perhaps revealing that the Fed swap lines, which had lapsed in January 2010 after the banking crisis appeared to be over, were reopened in May that year when the European sovereign debt crisis flared up. European and U.S. policy-makers may have preferred not to rely solely on the enlarged IMF to manage any international liquidity problems that the crisis might cause, but to have the Fed swap lines available as well, or to use the Fed swap lines to bridge the time period until the enlargement of the IMF becomes fully effective, which is planned to be at the time of the IMF's annual meeting in 2012.

We do not intend to suggest that concerns about the sustainability of the United States' public debt are groundless, or that they are not a matter of concern, but rather that the stability of the international monetary system, which is still largely dollar-based, depends on maintaining both stable US public finances and an adequate supply of dollars in the rest of the world, distributed in such a way that they can be deployed quickly to provide emergency liquidity when needed.

Conclusions

The paper reviewed the arrangements for meeting additional post-crisis demand for international liquidity. It distinguished between reserve creation and reserve pooling as a basis for multilateral liquidity facilities; reserve pooling arrangements carry the risk that, in a general crisis, all the members will want to draw at the same time. We analysed the recently-agreed enlargement of the International Monetary Fund from this perspective, and concluded that the IMF will carry much more liquidity risk after its enlargement than it has done in the past.

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