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International liquidity management since the financial crisis

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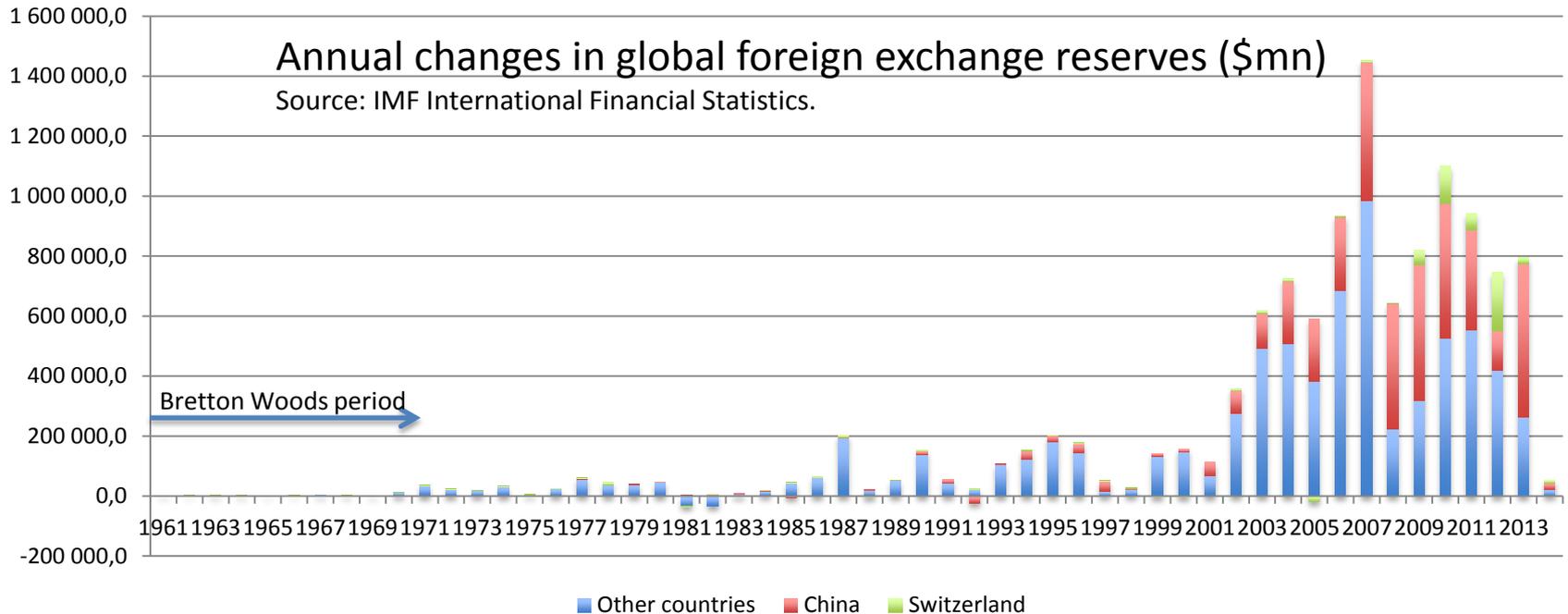
Cass Business School, London

Partly, but only partly, based on a forthcoming paper by Richhild Moessner
(BIS) and me.

Outline of talk

- Historical behaviour of foreign exchange reserves
- The financial crisis
 - How did a U.S. mortgage crisis become an international financial crisis?
 - How did the crisis affect reserve-holding behaviour?
 - Techniques for providing liquidity assurance.
- The global demand for liquidity.
- Post-crisis reserve accumulation.
- The dollar.
- China.
- The euro area.
- The future of government securities.
- What does the international monetary system consist of?

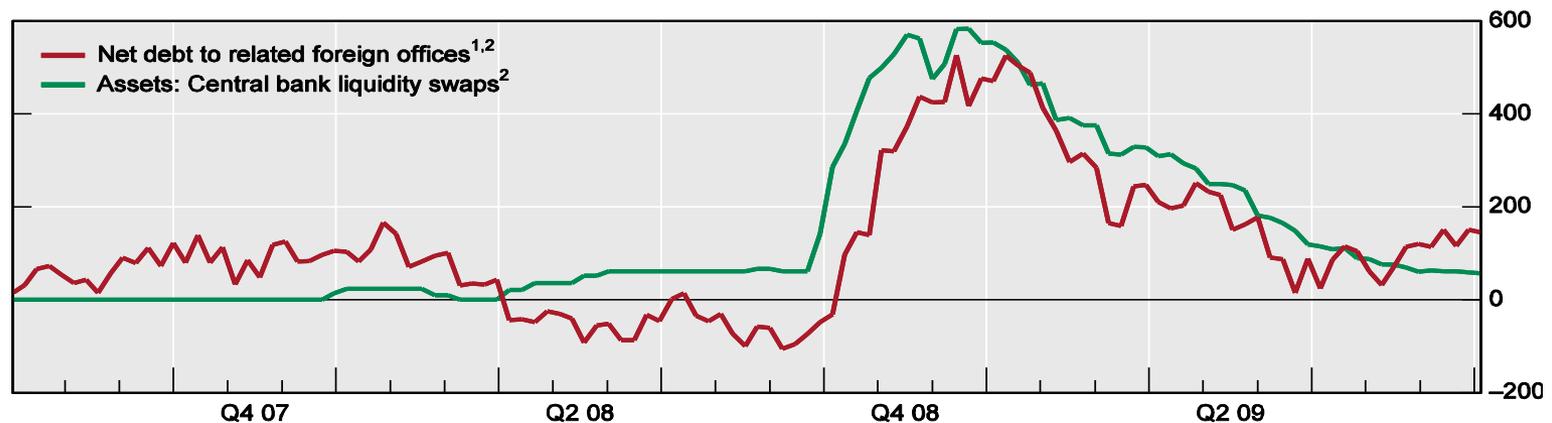
Historical behaviour of foreign exchange reserves



- Reserves grew unexpectedly faster after end of Bretton Woods.
- Big acceleration in noughties.
- Why? Reasons are diverse:
 - Supply from international capital markets.
 - Substitution for natural resources (oil producers etc).
 - By-product of export-led growth - mercantilism? (East Asia).
 - Caution after humiliation of Asian crisis.
 - Demographics (China?). Reserves v SWFs.
 - Switzerland.
 - Reaction to financial crisis (UK, Denmark, Sweden).
 - Political/strategic (Taiwan).

Effects of the crisis on reserve-holding behaviour - 1

- How did a U.S mortgage crisis turn into an international financial crisis?
 - European and other banks held bad U.S. mortgage assets.
 - Interlinkages in U.S.A.
 - Money market mutual funds had lent to investment banks which were exposed to bad mortgages (Lehmans).
 - Therefore there was a run on MMMFs.
 - MMMFs held large deposits in U.S. branches of foreign banks (no deposit insurance premium).
 - MMMFs drew on deposits leaving foreign banks short of dollar liquidity.
 - Problem was resolved by Fed swap lines: commercial banks' borrowing from their foreign offices was financed indirectly by the Fed:



Source: Federal Reserve tables H8 and H4.1.

Effects of the crisis on reserve-holding behaviour - 2

- Crisis experience revealed that countries need access to foreign currency to provide liquidity to domestic banks.
- Many countries had inadequate reserves, but were rescued by swap lines.
- Post-crisis demand for more liquidity assurance.

Country	Forex reserves (Aug 2008, \$ bn)	Swap drawings (\$bn, max)
Australia	28	23
Euro area	212	291
Japan	972	123
Switzerland	45	29
UK	42	148
Denmark	31	20
Norway	47	8
Sweden	28	25
Korea	243	16
Mexico	96	3

Providing liquidity assurance

- Techniques for providing international liquidity assurance must:
 - Provide adequate reassurance to countries that want it.
 - Avoid excessive moral hazard.
 - Avoid unreasonable burden on liquidity providers.
 - Respond quickly in emergencies.
- Lender of last resort problem on international scale.
- Multilateral/bilateral/unilateral.

Multilateral techniques 1 – reserve pooling

- Countries can draw on the pool when they need funds, and replace them when no longer needed.
- PRO – countries have access to larger amounts than otherwise, without wasting resources on reserve holding.
- CON 1 – if all countries want to draw at the same time (global crisis), pooling can make the problem worse not better
- CON 2 – moral hazard.
- Examples
 - IMF
 - Can deal with moral hazard.
 - Not much used in crisis.
 - Flexible Credit Line and Precautionary Credit Line set up in March 2009, 6 months too late.
 - Slowness is inevitable consequence of concern about moral hazard.
 - Chiang Mai
 - Not used at all on account of fears of moral hazard. Any use would be dependent on IMF credit assessment.
 - Ornamental rather than useful.
 - BRICS facility (2014)
 - Same problem as Chiang Mai.

Multilateral techniques 2 – Special Drawing Rights

- SDRs were invented in 1969 as a means of providing more international liquidity at no apparent cost.
- What is an SDR?
 - It's the right to ask another IMF member country to provide a usable currency (\$, euros) in exchange for the SDR.
 - It is NOT an international currency.
 - It is NOT a liability of the IMF. However, the IMF acts as a broker, finding providers of usable currencies for SDR holders.
- Usefulness of SDR depends on willingness of IMF members to co-operate; that surely depends on how many SDRs are in issue.
 - Amount was increased from SDR 21bn to SDR 204bn in 2009.
 - Obviously you can't just go on increasing the amount of SDRs in issue without limit.
 - Willingness to co-operate would diminish in hard times.

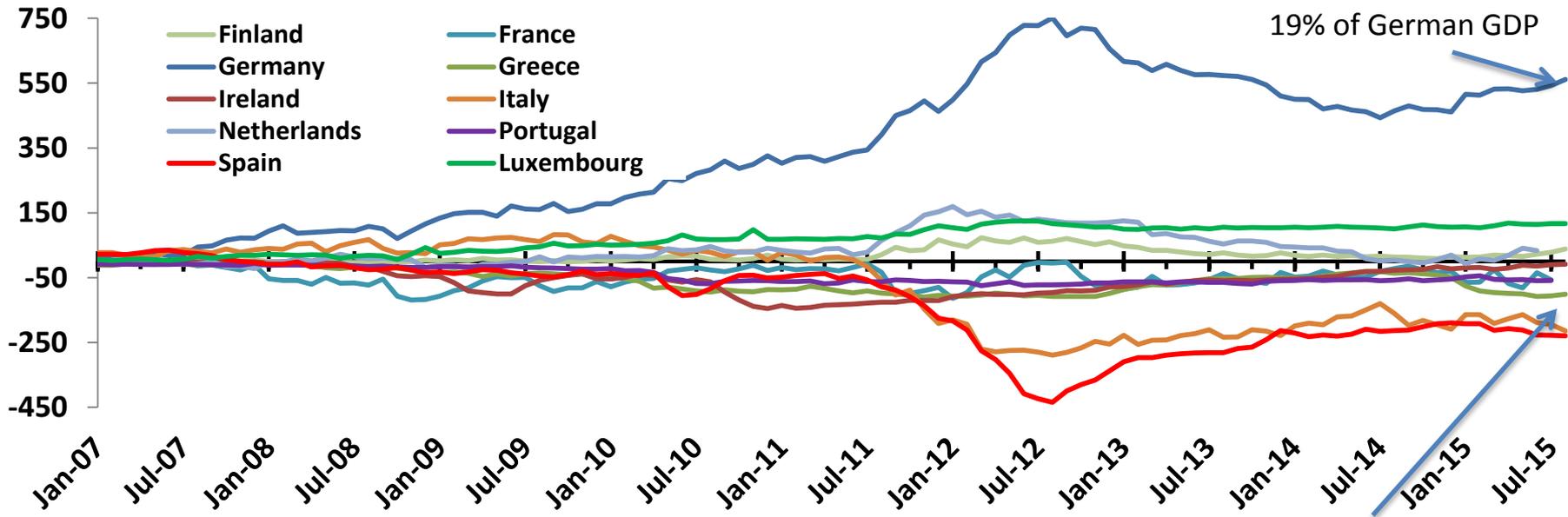
The enlargement of the IMF

- The enlargement of the IMF was decided on in 2009, immediately after the crisis. Its objective was to give the IMF enough money to manage future crises.
- Original plan had 3 parts:
 - Doubling of quotas (= +SDR 200bn)
 - SDR allocation (= +SDR 180bn)
 - Temporary expansion of NAB (= + SDR 336bn)..
- The NAB was to be abolished when quotas were increase.
- Quotas haven't been increased because the U.S. Congress hasn't ratified the increase. So the borrowing facilities remain. The SDR allocation has happened. And borrowing facilities have increased.
- New post-crisis facilities – FCL and PCL – not available until March 2009, and even then not attractive to borrowers.
- The real problem is that the IMF is slow to make decisions because of concerns about credit risk and moral hazard. This is inevitable in an international organisation. A bigger IMF wouldn't necessarily be more effective.

Multilateral techniques 3 – Target 2

- Target 2 is the euro area payments system.
- If commercial in-payments to banks in country X exceed commercial out-payments, central bank X accumulates a Target 2 credit balance with the ECB.
- In normal conditions, Target 2 balances are very small, but conditions haven't been normal since 2007.
- Balances are large and carry big credit risk for ECB and for Germany.

Target2-Balances [bn €]



19% of German GDP

55% of Greek GDP
13% of Italian GDP
21% of Spanish GDP

Bilateral techniques – swap lines

- Method of providing own currency or foreign currency to foreign central banks.
- PRO 1 – can be quick: only one party needs to decide.
- PRO 2 – easy – infrastructure (legal agreements) already exists.
- CON 1 – credit risk (= exchange rate or convertibility risk)
- CON 2 – choice of recipient countries.
- CON 3 – permanent commitment hard to justify. Easier to use in an emergency than as a means of providing liquidity assurance.
- Examples:
 - Fed swaps – quick and flexibly implemented; prevented bank failures and far worse recession. Now permanent, but as part of contingency plan for default by U.S. Treasury in case Congress won't increase Federal debt limit. Not clear if available in other circumstances.
 - ECB swaps – small amounts, provided slowly and to EU members only.
 - SNB swaps – provided against EUR collateral
 - PBOC swaps – objective is greater use of RMB in trade. Growing network. Usage undisclosed.
 - Swaps provided in foreign currency in 2008, e.g. to Iceland, Estonia, Latvia.
- Swaps can be extremely useful (e.g. 2008) but availability is uncertain.

Unilateral techniques

- The main unilateral technique for getting access to international liquidity is to build up reserves
 - Guaranteed facilities from banks unavailable and/or unreliable.
- PRO – access to liquidity can be certain and under the control of the reserve-holder.
- CON 1 – fiscal cost and risk. The reserve holder bears the cost of financing the reserve assets, usually not fully offset by the yield on the reserves.
- CON 2 – social cost. After the financial crisis:
 - Commercial banks demanded more liquid assets (regulation, shareholder pressure).
 - Corporates demanded more liquid assets (bank credit curtailed).

Governments and central banks demanding more liquid assets added to market pressures and prolonged the recession:

 - Upward pressure on bond yields (issuing bonds to finance liquid reserves).
 - Shifting of demand to domestic markets (intervening in foreign exchange markets to accumulate reserves and thereby restraining exchange rate appreciation).

Liquidity and macro-economic policy

- Reserve accumulation probably did great economic damage by pro-cyclically adding further to liquidity demands at a time of acute liquidity shortage, and represented a failure to co-ordinate policies internationally.
- Macro-economic policy needs to take much more account of liquidity and balance sheet issues post- crisis. For example:
 - Liquidity regulation (LCR) has unintentionally subsidised lending to governments at the expense of commercial lending.
 - Generous regulatory treatment of mortgages not necessarily justified by fundamentals and affects real economy.
- Many of the issues are international, not just domestic (e.g. Basel 3, international reserves). National legislatures need to understand need for co-operation and co-ordination.
- This is not happening; there is no international management of international liquidity.
- Worse, the problem hasn't even been recognised.

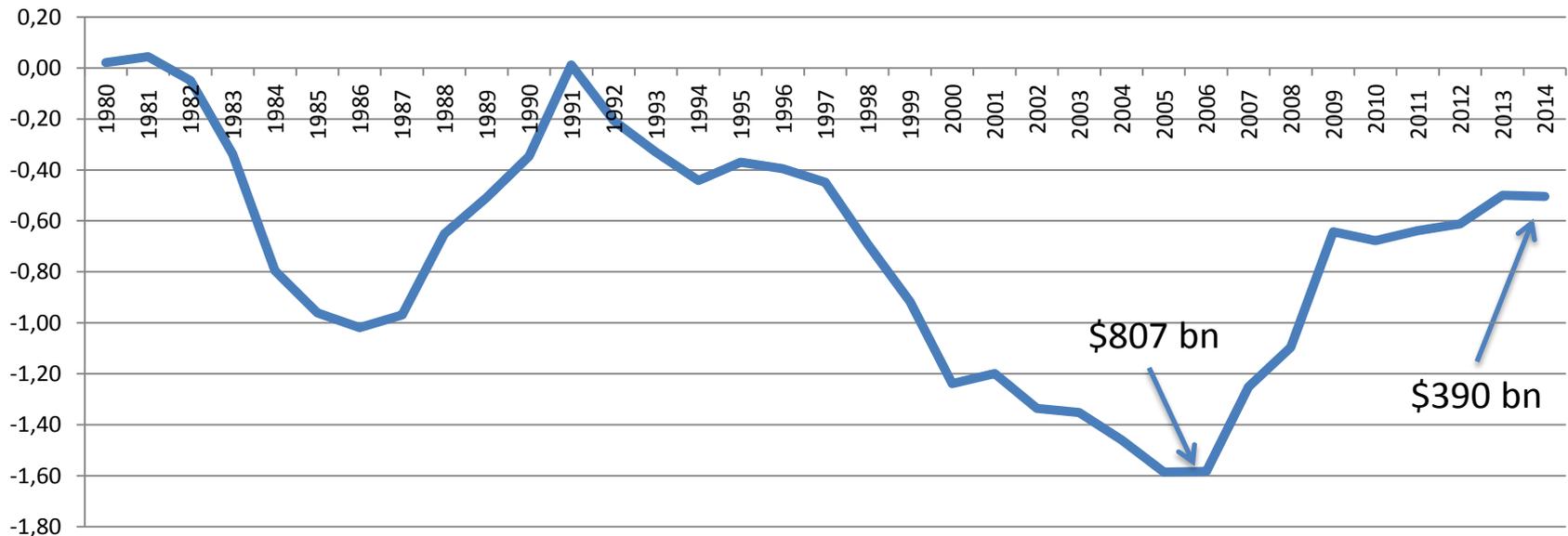
The post-crisis demand for liquidity assurance

- To summarise:
 - The experience of the crisis showed that many countries had access to emergency liquidity only thanks to the Fed (IMF too slow, ECB slow and reluctant).
 - The Fed might not be there on another occasion (Congress?).
- Attempts to provide a ‘global safety net’ – international lender of last resort – have failed.
- Countries have resorted to self-insurance, accepting the fiscal costs and imposing the social costs on others (UK, Denmark, Sweden, Korea).
- The demand for liquidity assurance is however only one reason for reserve growth in 2008 – 13.
 - Protection from euro crisis (Switzerland)
 - High oil revenues.
 - By-product of growth strategy (China)
- Reserve growth has slowed down since 2014:
 - Switzerland became weary of reserve accumulation and its costs and risks.
 - Reserve-increasing self-insurance programmes are being completed – Sweden, Korea, UK.
 - Oil price collapse: Saudi Arabia now drawing on reserves.
 - China – see later slide.

Other influences on the international monetary system: (1) the dollar

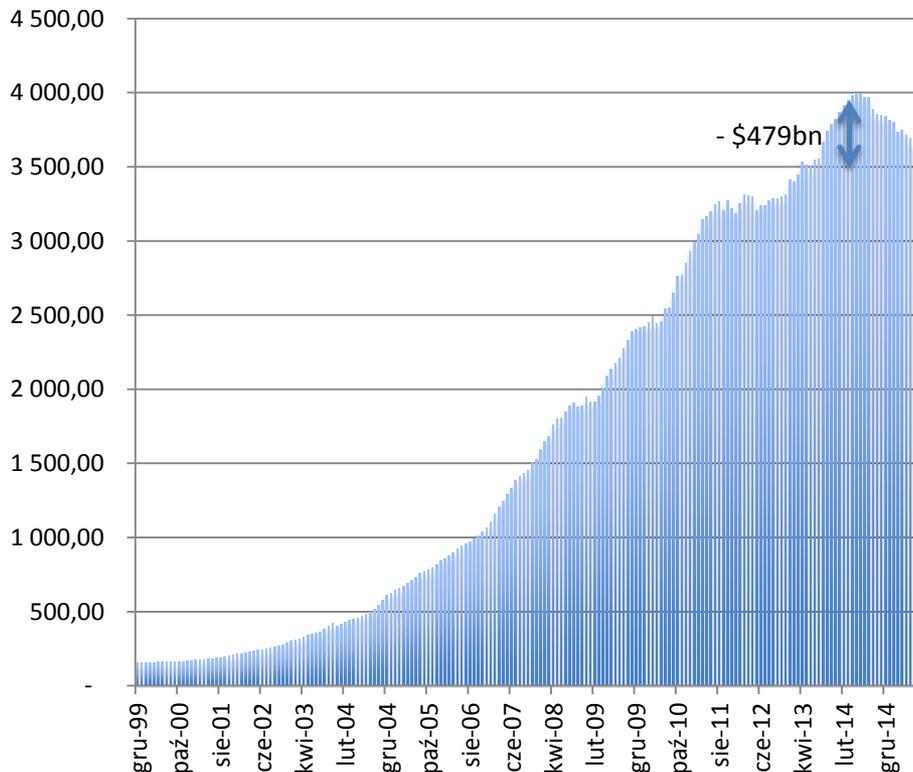
- About 63% of foreign exchange reserves are in dollars (COFER). So the behaviour of the USA is important for the international monetary system.
- QE has reduced yields of safe assets but has only compensated for retrenchment in commercial financial markets.
- U.S current account deficit has narrowed since 2005, helps explain slowdown in reserve growth.
- Expected tightening of U.S. monetary policy threatens bankruptcies in other countries where companies have borrowed dollars unhedged.

U.S. current account balance of payments as % of world gross product



Other influences on the international monetary system: (2) China

**China's foreign exchange reserves
1999 - 2015 (\$bn)**



- Why have China's reserves started to fall?
 - Trade surplus has not fallen; direct Investment has continued..
 - Diversification of savings abroad
 - Stock market
 - Bank solvency
 - Shadow banks
 - Official foreign assets ~ \$3,000 per citizen.
 - Ageing population because of one-child policy; dependency ratio rises from 36% now to 63% in 2050.
 - China will need to use accumulated savings.
 - Liquid assets are a poor long-term investment.
 - Diversification makes sense – but it's disorderly.
- China's loss of reserves will increase the supply of liquid assets to the rest of the world.

Other influences on the international monetary system: (3a) the euro area - external

- The euro crisis and the expansionary monetary policy of the ECB have affected the neighbourhood, especially Switzerland and Denmark:

Country	Foreign exchange intervention	Domestic QE	Negative interest rates	Exchange rate appreciation
Denmark	Yes	Yes (small)	Yes	No
Switzerland	Yes (enormous)	No	Yes	Yes
UK	No	Yes	No	Yes
Norway	No	No	No	Yes (small)
Sweden	No	Yes	Yes	Not much
Hungary	No	No	No	Yes (small)
Poland	No	No	No	Yes (small)

Other influences on the international monetary system:

(3b) the euro area - internal

- Euro crisis has been going on since 2010 (Greece).
- Still not resolved:
 - Doubts about government debt sustainability (especially but not just Greece).
 - Doubts about bank solvency (deadly embrace).
 - Target 2 and solvency of ECB (would it matter if the ECB was insolvent?).
- Liquidity provision by the ECB hasn't solved the problem, which is about solvency.
- A durable solution will require:
 - More write-offs of government debt, possibly in exchange for equity (but what equity can governments offer?), or inflation.
 - Post-write-off recapitalisation of banks, probably by both private investors and by official eurozone entities. This means risk sharing among eurozone countries.
 - Probably reduction in size of banking system, emergence of more non-bank financing.
- Such a solution would further entrench the moral hazard that has already developed and the rules would have to change for governments as well as banks – much more central control of national budgets. Newfoundland solution of 1933?
- If that is unacceptable on account of national sovereignty, the euro area isn't sustainable in its present form.
- Maybe the best strategy would be to find a way of enabling or forcing countries to leave the euro area with minimum damage. 'Minimum damage' would still be quite a lot.

The future of government securities

- Until the early 1960s, gold was the main international reserve asset.
- Since then, securities, especially U.S. government securities, have been the main liquid asset in reserve portfolios. Gold is no longer very liquid.
- How safe are government securities?
- Until 1990s, governments inflated away inconvenient or unmanageable debts – eg post-WW2. Then inflation became unpopular.
- Debt servicing is a form of government spending, subject to parliamentary consent.
 - Russia chose default in preference to more inflation (1998).
 - Greece joined the euro area, could no longer inflate, and got debt relief (2010 onwards).
 - U.S. Congress regularly threatens not to increase Federal debt limit ('starve the beast'). If the government can't borrow, it normally closes down certain functions temporarily, until the limit is finally raised. How long before a default occurs?
- But government securities are the core of national foreign exchange reserves and of commercial bank liquidity.
- How safe are they? Diversity in liquidity sources would provide more security.

What does the international monetary system consist of?

Attribute	Comment
Rules for exchange rate behaviour	No rules, but behaviour has been fairly disciplined (Switzerland? China?). Not much competitive devaluation. Monetary policies generally aimed at domestic objectives.
International management of international liquidity	None.
International lender of last resort	Federal Reserve acted as lender of last resort in 2008. No other central bank was willing and able, IMF was too slow and probably not able.
Incentives for pursuing good domestic policies	Mainly yes: inflation targets + flexible exchange rates make responsibilities clear (IMF dogma). Not in euro area, where lack of effective sanctions has facilitated bad policies.
Facilitation of international trade and investment	Protectionism didn't become a major problem in the post-crisis recession. Shrinkage of international banking post-crisis may have inhibited international trade and investment.
Institutions	<ol style="list-style-type: none"> 1. IMF – now mainly global micro rather than global macro. 2. Basel Committee on Banking Supervision – powerful, conflicts of interest. Answerable to whom? 3. ECB – struggling with doubts about sustainability. 4. Others – e.g. Chiang Mai – ornamental.
Serious threats to stability	<ol style="list-style-type: none"> 1. The euro area. 2. Excessive faith in government securities.

The end

China's trade and direct investment balance

China's trade balance and direct investment (US\$bn, monthly)

