Economics
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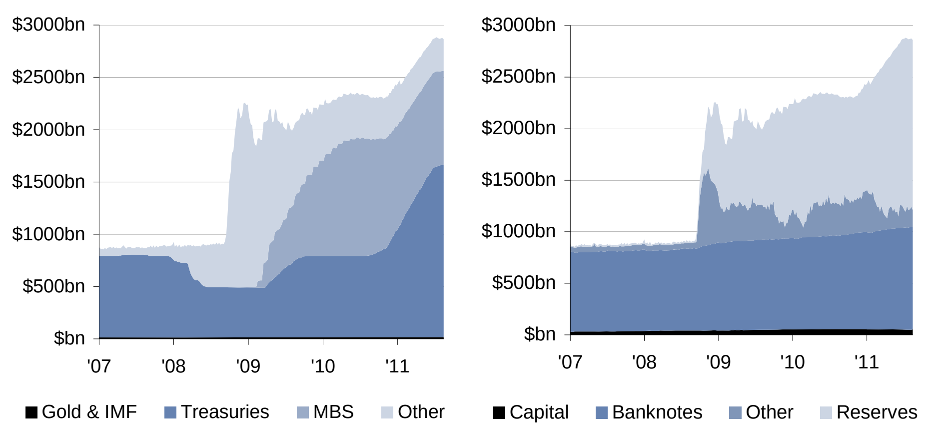
Financial Markets Outlook

Central bankruptcy: is it possible?

With speculation about QE3 increasing, and the ECB intervening in European bond markets, worries about the losses that central banks could incur on their holdings have resurfaced. But can losses grow sufficiently large for the central bank to go broke? As it turns out, central banks do not bankrupt easily, although big losses can be problematic nonetheless.

With governments increasingly unable or unwilling to further stimulate the economy, eyes are turning to the central banks once again. In the US, there is increasing speculation about a new round of asset purchases by the central bank, quantitative easing or QE3. When Fed chairman Ben Bernanke speaks in Jackson Hole tomorrow, his words will be scrutinised in search of hints pointing towards QE3 later this year. It was at the Kansas City Fed's annual conference in Jackson Hole last year that Bernanke first hinted at the previous round of asset purchases, QE2, which eventually commenced in November 2010 and concluded in June 2011. We doubt whether Bernanke is set to announce a further bout of QE. We are far from deflation territory, which was the main motivation for QE2 last year. Moreover, the hawks on the FOMC are probably not yet convinced of the need to inflate the Fed's balance sheet even further right now. One argument against further QE is that any losses on its asset holdings could pose a problem for the Fed. The Fed's capital is only $51.8bn, a mere 1.8% of its assets (Figure 1). Any commercial bank with such a tiny capital cushion would immediately be declared insolvent and shut down. But with central banks, it is different. Could the Fed go broke, and if so, then what?

Fig 1 Federal Reserve assets... ...and liabilities



IMF: claims on the IMF, MBS: mortgage-backed securities, Capital: paid in capital and surplus, Reserves: deposits held at the Fed by banks.

Source: Ecowin

The issue is also highly relevant in Europe. The European Central Bank has reluctantly resumed its bond-buying programme to calm markets. The Eurosystem is now holding €110.5bn of Greek, Irish, Portuguese, Spanish and Italian government bonds. With a write-down on Greek bonds a distinct possibility, the Eurosystem could face losses.[1] At first glance, the capital cushion of the Eurosystem, comprising paid-in capital and

[1] Note that the relevant entity here is not the ECB, but a combination of the ECB and the national central banks in the euro area. These banks together, commonly called the Eurosystem, conduct monetary policy and are therefore, to all intents and purposes, the central bank of the euro area.

Rate forecasts & market views

	3Q11	4Q11	1Q12	2Q12
ING forecasts				
US	0.00	0.00	0.00	0.00
EU13	1.50	1.50	1.75	2.00
JPN	0.05	0.05	0.05	0.05
Implied market rates (3mth strip)				
US	0.375	0.575	0.560	0.530
EU13	1.505	1.320	1.175	1.135
JPN	0.310	0.285	0.285	0.285

As at 1430 BST at 24 Aug 2011

Source: Bloomberg, ING estimates

ING FX forecasts

	3Q11	4Q11	1Q12	2Q12
EUR/USD	1.43	1.45	1.45	1.43
USD/JPY	77	75	78	80
GBP/USD	1.63	1.65	1.65	1.68

Source: ING

Upcoming key events

26 Aug	US 2Q11 GDP SAAR-QoQ US Ben Bernanke speaks at Jackson Hole, Wyoming UK 2Q11 GDP Mexico Overnight Rate
29 Aug	US Jul PCE Core/ Deflator US Jul Pending Home Sales Germany Aug P CPI
30 Aug	US Aug Conference Board Consumer Confidence US FOMC 9 Aug minutes Eurozone Aug Business Climate Indicator/ Economic Confidence/ South Africa 2Q11 GDP
31 Aug	US Jul ADP Employment US Aug Chicago PMI Eurozone Aug CPI Estimate Eurozone Jul u/eRate Germany Aug Unemployment Canada 2Q11 GDP Brazil SELIC Target Rate
1 Sep	US Aug ISM Manufacturing/ prices paid Germany 2Q11 GDP UK Aug PMI Manufacturing China Aug Manufacturing PMI Official
2 Sep	US Aug Avg Hourly Earning All Employees US Aug Change in Nonfarm Payrolls 000s US Aug Unemployment Rate Brazil 2Q11 GDP

Source: Bloomberg, Reuters

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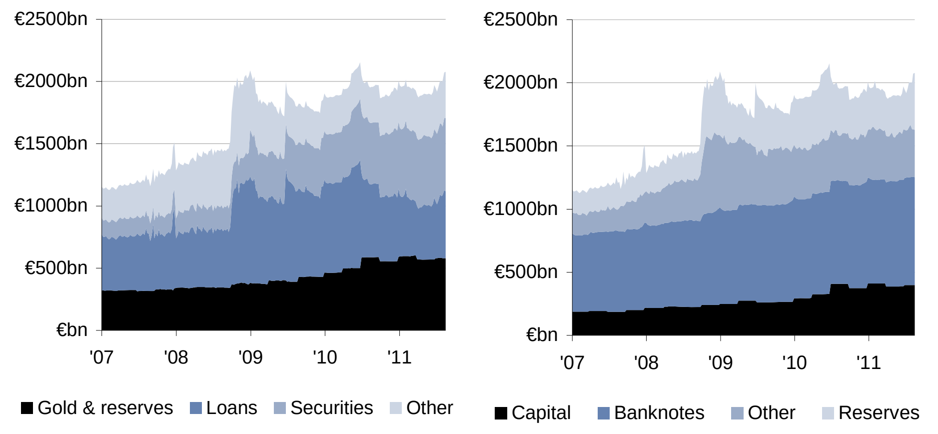
Central banks would fail the Basel III norms applied to banks…

revaluation reserves, looks comfortable at €398bn, or 23.8% of assets. Revaluation reserves are unrealised gains on, for example, foreign currency and gold holdings. Exchange rate and price fluctuations could easily wipe out these paper gains or transform them into losses. They are, therefore, not usually counted as core capital. Looking at paid-in capital only, the Eurosystem's capital is €81bn (4.9% of assets). This is still better than the Fed's, but the Eurosystem would still fail the Basel III norm for banks.

Fig 2 Eurosystem assets… …and liabilities



Reserves: foreign currency reserves, Capital: paid in capital and revaluation accounts, Reserves: deposits held at the Eurosystem by banks.
Source: Ecowin

…but normal solvency rules do not apply to the central bank

But are worries about central bank losses justified? Is a central bank's credibility rightly in doubt when its capital position is eroding? For normal banks, the rationale for a capital cushion is clear. The cushion, of which equity is the most prominent component, is the first absorber of any losses on the bank's assets. When a bank loan goes bad, depositors and other creditors need not worry, as the loss is absorbed by the bank's capital. Should losses mount, then creditors of the bank get nervous about the bank's solvency. They become reluctant to deposit their money at the bank or to lend to it. A bank run could follow. But, in most cases, the supervisor will not let it come to that.

Back in the days of the gold standard, similar logic applied to the central bank. It was obliged to convert banknotes into gold for anyone who had come in and presented a note. As such, the bank had to have sufficient gold reserves. Should doubts arise over the quantity of gold and other reserves underpinning banknotes in circulation (which, put simply, would imply negative equity), a central bank run would follow. If indeed the central bank's gold reserves were depleted before all banknotes had been converted, the bank would have no choice but to default on the remaining banknotes in circulation.

The central bank can print itself out of most trouble…

Yet banknotes are no longer convertible into gold (or other assets). We now have "fiat currencies" and our banknotes are non-recourse. The central bank is no longer obliged to convert any banknote presented to it. This makes life easier for the central bank: it does not have to worry about a central bank run and about creditors refusing to lend. This renders the capital cushion, as traditionally calculated, irrelevant. If the central bank needs money, it just turns on the printing press to buy whatever it needs. When the Fed wanted to buy assets as part of its QE programmes, it did not first have to borrow the funds to do so, as an ordinary individual or company would need to. Instead, it just went out and bought the Treasuries, crediting the selling bank's account at the Fed with dollars created out of thin air (the electronic equivalent of the printing press). The Fed's holdings of securities and its liabilities to banks move together on its balance sheet.

So, technically speaking, in most circumstances the central bank cannot go broke. However, issuing money is not without other consequences: in the long run, it may drive

…but printing money has a price: inflation will rise

up inflation. Our fiat money has no officially determined or guaranteed value, so when there is more of it chasing the same amount of goods, the value of money declines. Losses may force the central bank to print more money than it would like, which – in the case of an inflation-targeting central bank, such as the Fed or the ECB – brings it into direct conflict with its prime policy objectives. This is not a road that inflation hawks, and Germans in particular, would like to go down.

The central bank can also rely on seigniorage income to recapitalise itself, without the threat of high inflation

However, there is one hidden central bank "asset" that we have not yet discussed. It is a huge "asset" that permits the central bank to absorb big losses without compromising its other policy objectives. This "asset" is called seigniorage. Banknotes in circulation bear no interest, but the assets that central banks buy with them do. The central bank's monopoly on issuing currency thus provides the central bank with a steady stream of income, called seigniorage.[2] In times of "normal" interest rates, the €855bn of banknotes in circulation generate a yearly seigniorage income of several tens of billions of euros for the Eurosystem. The Fed earns comparable amounts. This steady stream of future income can be viewed as an asset. If it we include seigniorage when calculating the central bank's capital position, its loss-absorbing capacity would look wholly different.

Fig 3 Net present value of future central bank seigniorage income

	Federal Reserve (US$bn)	Eurosystem (€bn)	Bank of England (£bn)
Interest 4%	4,089	3,521	223
Interest 5%	2,555	2,201	139
Interest 6%	2,044	1,760	111
Capital	52	81	4

Assumptions: real GDP growth 1%, inflation 2%, growth of banknotes in circulation equals nominal GDP growth. Only seigniorage on banknote issuance is included, seigniorage on bank reserves is assumed to be zero.

Source: ING

Seigniorage enables the Fed and the Eurosystem to absorb losses exceeding one trillion dollars/euros

Figure 3 shows the net present value (NPV) of future seigniorage income under modest growth and inflation assumptions. The NPV of seigniorage varies depending on the assumptions, but what is clear is that it is not small change. With these figures, we can construct a broad measure of central bank capital. For that, we augment the balance sheet with the NPV of seigniorage on the asset side. To be fair, we should then also include the NPV of the central bank's operating expenses on the liability side. Figures 4a and 4b show the results for the Fed and the ECB.

Fig 4a Fed balance sheet including seigniorage "assets"

Assets	(US$bn)	Liabilities	(US$bn)
Gold & IMF claims	18	Banknotes	992
Treasuries	1,648	Bank reserves	1,652
MBS	893	Other liabilities	165
Other assets	303	Capital	52
NPV seigniorage	>2,000	NPV operating expenses	<500
		Broad "capital"	>1,500

Fig 4b Eurosystem balance sheet including seigniorage "asset"

Assets	(€bn)	Liabilities	(€bn)
Gold & foreign currency	579	Banknotes	855
Bank lending	539	Bank reserves	447
Securities	588	Other liabilities	377
Other assets	371	Revaluation accounts	317
		Capital	81
NPV seigniorage	>1,700	NPV operating expenses	<500
		Broad "capital"	>1,200

For NPV seigniorage, see Fig 3. Yearly op expenses are assumed to be $/€5bn, rising in step with nominal GDP. To calculate the loss absorbing capacity of seigniorage, we have assumed the central bank does not pay any dividend to the Treasury.

Source: ING

[2] The Eurosystem generally also pays below-market rates on the reserves that banks are obliged to deposit with it. This generates seigniorage, too. For simplicity, we abstract from that part of seigniorage income in our calculations.

Unfortunately, the central bank can only bring temporary relief. Any losses will be eventually borne by taxpayers

Even under quite conservative assumptions, the broad capital cushion of both the Fed and the Eurosystem exceeds a trillion dollars/euros, dwarfing the traditional capital measure. This means that even when the Fed and the ECB suffer losses of over one trillion dollars/euros, they are still able to maintain price stability and recapitalise themselves over time. So, anyone who claims that losses would either force the central bank to print more money and drive up inflation, or necessitate an immediate recapitalisation by the taxpayer, is wrong. The central bank has huge resources to tap into.

This is not to say that losses incurred by the central bank are a “free lunch”. Any losses will eventually borne by taxpayers. Seigniorage income used for recapitalisation is not paid to the Treasury (or, in the case of the Eurosystem, to the euro area treasuries). So, while governments may be able to avoid immediate losses by passing them on to the central bank, the bill over the years will be presented to taxpayers after all, but only in a more opaque way – which may just be what myopic politicians like.

Central bankers’ prime worry is not their solvency, but their credibility as inflation fighters

Central bankers know that moderate losses do not threaten their solvency. Their prime worry is that losses erode their credibility as inflation fighters. When expectations become entrenched that the central bank will print excessive amounts of money in the future, it no longer matters that in reality the central bank is fully solvent and can recapitalise itself at normal inflation rates. Inflation expectations will rise and become a self-fulfilling prophecy. This is why central banks cherish their extreme over-capitalisation, are reluctant to expose themselves to possible losses and may ask for immediate recapitalisation when losses materialise.

To wrap up: from a technical perspective, moderate central bank losses are irrelevant, and do not force the central bank to turn to the printing press and put the bank’s policy objectives into jeopardy. The central bank will not go broke when its capital is negative, even when losses could be hundreds of billions. The central bank can recapitalise itself over time with seigniorage income. The NPV of seigniorage easily surpasses a trillion dollar/euro for the Fed and the Eurosystem. Credibility is the reason why central banks fret about losses, not solvency. Finally, we should not kid ourselves into thinking that siphoning off losses to the central bank makes them disappear. One way or another, losses incurred by the central bank will end up on the taxpayer’s plate.

Fig 5 Financial markets movements

	24/08/11	%WoW	%MoM
US 3-mth LIBOR	0.314	2.1	6.1
US 2-year	0.221	3.6	-18.0
US 10-year	2.168	-5.2	-84.7
US 30-year	3.489	-17.9	-82.4
EU13 3-mth LIBOR	1.480	-0.8	-7.1
2-year bund	0.683	-5.5	-73.8
10-year bund	2.194	-13.0	-68.3
Japan 3-mth LIBOR	0.193	0.1	-0.2
2-year JGB	0.130	-2.0	-3.0
10-year JGB	1.017	-2.6	-8.1

As at 1430 GMT at 24 Aug 2011

Source: Bloomberg, ING

Disclosures Appendix

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