

Central Banks in Balance Sheet Recessions: A Search for Correct Response

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These are extraordinary times for central banks. Near zero interest rates and massive liquidity injections are still failing to bring life back to so many economies in the developed world. If we set the pre-Lehman Shock level as 100, the Federal Reserve has increased monetary base to 347 today, while the Bank of England increased its monetary base to 433 during the same period, all under the lowest interest rates in their modern histories. Yet, the US is still suffering from an unemployment rate of 7.7 percent after four years of zero interest rates, and the UK is in the midst of a double-dip recession. The Bank of Japan has increased its monetary base from 100 in 1990 to 363 today, but instead of facing a triple digit inflation rate, it is facing a deflation. The European Central Bank has brought interest rates down to the lowest level in modern European history, but the unemployment rate at 11.9 percent is at the highest since the introduction of Euro. The increases in monetary base are shown in Exhibit 1.

Private sector is minimizing debt instead of maximizing profits

These unusual phenomena are all caused by the fact that private sectors in all of these countries are massively increasing savings or paying down debt despite record low interest rates. According to the flow of funds data, the US private sector (household, corporate and financial sectors combined) today is saving whopping 6.9 percent of GDP (four-quarter moving average

ending in Q4, 2012) at zero interest rates. The comparable figure for the UK is 3.8 percent, for Ireland 8.6 percent, for Spain 8.1 percent and for Portugal 7.0 percent of GDP (Exhibit 2) all with record low interest rates. In Japan, where the bubble burst two decades earlier, the private sector is still saving 8.8 percent of GDP at zero interest rates (Exhibit 3).

Moreover, in all of the above countries, not only household sector but also the corporate sector is increasing savings or paying down debt at these record low interest rates. This behavior of the corporate sector runs totally counter to the conventional framework of neoclassical economics where profit maximizing firms are expected to be increasing borrowings at these record low interest rates.

Private sectors in all of these countries are increasing savings or paying down debt because their balance sheets were damaged badly when asset price bubbles burst in those countries. In the case of Japan, where the bubble burst in 1990, commercial real estate prices fell 87 percent nationwide (Exhibit 4), destroying balance sheets of businesses and financial institutions all over the country. The collapse of housing bubbles on both sides of the Atlantic after 2007 (Exhibit 5) also devastated millions of household and financial institution balance sheets. The resulting loss of wealth reached well into tens of trillions of dollars and Euros while the liabilities incurred during the bubble days remained on the books at their original values.

With a huge debt overhang and no assets to show for, the affected businesses and households realized that they have no choice but to put their financial houses in order. This means increasing savings or paying down debt until they are safely away from the negative equity territory. A failure to do so would mean a loss of access to the credit if not to the society altogether. This means they are forced to shift their priorities away from the usual profit maximization to debt minimization.

The shift here has been nothing short of spectacular. The US household sector, which had been the key provider of final demand for the global economy, stopped borrowing money altogether after 2008 (Exhibit 6). The US private sector as a whole went from a net borrower of funds to the tune of 4.8 percent of GDP in Q4 2008 to a net saver of funds to the tune of 8.7 percent of Q1 GDP in 2010, all with the lowest interest rates in the US history. This means the US economy lost private sector demand equivalent to 13.5 percent of GDP in just five quarters, pushing the economy into a serious recession. The UK lost private sector demand equivalent to 9.7 percent of GDP from Q2 2006 to Q2 2010. Spain lost 20.0 percent of GDP from private sector shift between Q3 2007 to Q3 2012, also with record low interest rates.

In a national economy if someone is saving money, there better be someone else borrowing and investing those savings in order to keep the economy running. In the usual world, the task of ensuring that the saved funds are borrowed and spent falls on the financial sector which takes in the saved funds and lent them to those who can make the best use of the funds. And the mechanism which equates savings and investments is the interest rate. If there are too many borrowers, interest rates are raised which prompts some potential borrowers to drop out, and if there are too few borrowers, interest rates are lowered which prompts some potential borrowers to step forward to take the funds.

Today, however, the private sector as a whole is saving money at near-zero interest rates. This means those savings generated by the private sector will find no borrowers because interest rates cannot go any lower. The saved funds therefore are stuck in the financial sector unable to re-enter the economy. This means those unborrowed savings become a leakage to the income stream and a deflationary gap of the economy.

If these unborrowed funds are left unattended, the economy enters a deflationary spiral as it continuously loses aggregate demand equivalent to the saved but unborrowed amounts. This process, now known as balance sheet recession, will continue until the private sector either repairs its balance sheet or becomes too poor to save (i.e., the economy enters a depression). Although that may sound outlandish at first, it was precisely this deflationary spiral from private sector deleveraging that resulted in a loss of 46 percent of GDP in the US from 1929 to 1933 during the Great Depression.

Debt minimization nullifies effectiveness of monetary policy

Those businesses and households with balance sheets underwater are not interested in increasing their borrowings at any interest rates. There will not be many lenders either, especially when the lenders themselves have balance sheet problems. The lenders will also run afoul of government bank regulators if they knowingly lend to those with balance sheets underwater.

This private sector shift to debt minimization is the reason why near zero interest rates by the Federal Reserve and European Central Bank since 2008 and by the Bank of Japan since 1995 failed to produce expected recoveries for those economies.

In acts of desperation, central banks in the developed world have flooded the financial system with liquidity in a policy known as quantitative easing or QE. In spite of massive injection of liquidity, however, credit growths in all of these countries, the key indicator of the amount of funds that was able to leave the financial system and enter the real economy, have been absolutely dismal.

If we set the pre-Lehman Shock level as 100, the US figure is 98

and the UK figure is 85 today. In the Eurozone, the credit stands at 101. These are shown in Exhibit 1. In other words, private sector credit in the West is either stagnant or shrinking after four years of astronomical monetary easing. In Japan, the private sector credit stands at 104 (1990=100) which is the same level as 20 years ago (Exhibit 7).

Stagnant or negative credit growth means the liquidity injected by the central banks could not enter the real economy to support private sector activities. It is no wonder that these economies are doing so poorly. None of these countries has experienced pickup in inflation rate either, with Japan still suffering occasionally from deflation.

Some central bankers in the West are congratulating themselves that, with their bold actions, they have at least avoided deflation, which they claim, prolonged the Japanese recession. However, this comparison is meaningless because it is comparing Japan many years after the bursting of its bubble with the US and UK just after the bursting of their bubbles. That comparison is ignoring the fact that Japan did not experience deflation until it fell off its fiscal cliff in 1997 which is fully six years after the bursting of its real estate bubble in 1991.

From 1992 to 1996, the base pay in Japan grew by 2.0 percent per year while overall compensation including bonuses grew by 1.6 percent per year. These numbers were surely smaller than during the bubble days from 1987 to 1991 when the former increased by 3.3 percent and the latter by 3.7 percent. But they are comparable to the US hourly wages which increased 3.4 percent during the bubble days and 1.9 percent afterwards.

Ten years ago, it was also popular among Western economists to bash the Bank of Japan for not bringing real interest rates down with inflation or price targets. Today, both the UK and the US have negative real interest rates and positive inflation rates.

But they still failed to keep the US and UK private sectors from deleveraging or keep the UK economy from falling into a serious double-dip recession. The unemployment rate of 4.2 percent in “deflationary” Japan is also significantly better than 7.7 percent in the US and 7.8 percent in the UK.

The reason for this result is simple: private sectors in all of these countries are responding to the fall in *asset* prices, not consumer prices: as long as their balance sheets are underwater, they have no choice but to minimize debt. As long as the private sector is minimizing debt, therefore, there is no reason for the economy to respond to monetary easing, conventional or otherwise.

QE and exchange rates: more hype than substance

There is an argument, however, that even if the QE had little impact domestically, it could still help the economy by depressing the exchange rate. In fact some central bankers were quite open about the beneficial effect of QE on weakening the exchange rate, even though such actions violate the pledges they made in G7 and G20 not to engage in currency wars or competitive devaluations.

A careful look at the QE suggests that there are more hype than substance to this claim even though the market has often (but not always) responded as though the QEs are effective in pushing exchange rates down.

In particular, central banks can only increase monetary base via QE. It cannot directly increase money supply which is the actual amount of money the private sector has to spend (or play in the foreign exchange market). For the money supply to increase, someone has to borrow and spend the liquidity provided by the central bank in the process known as money multiplier. But if the private sector as a group is saving money or paying down debt, money multiplier is negative at the margin, and a growth in monetary base will not necessarily translate into a growth in

money supply.

For example, the US monetary base grew from 100 at the time of Lehman Shock to 347 today as mentioned earlier, but the money supply grew only from 100 to 135 during the same period. In the UK where the monetary base now stands at 433, the money supply is stuck at a pitiful 110. In the Eurozone, the monetary base is at 157 while the money supply is at 107. In Japan, the monetary base is at 150 while the money supply is at 113. If the relative supply or scarcity of currencies is supposed to determine the exchange rate, the above numbers suggest that the Euro should be the strongest, followed by the pound, the yen and the dollar.

Instead, foreign exchange dealers and traders, who probably do not have time to think about the complicated link between monetary base and money supply during balance sheet recessions, simply assumed the textbook case where monetary base and money supply are expected to move in tandem (which was indeed true before the bursting of the bubble). Thus they assumed implicitly that the market is flooded with British pound and pushed it down to its lowest real effective rate in history by 2009.

The dollar, which recorded the largest increase in money supply during the period, remained stronger than the pound and the Euro. The Japanese yen, which had the second largest increase in money supply, became the strongest currencies of all, even though it had the lowest interest rates both at the long and the short end. The Euro which had the smallest money supply growth, replaced the pound to become the weakest of the four after 2012 (Exhibit 8).

An example of QE having the opposite of expected effect was provided by the Japanese case in 2003-04. At that time, Japan was the only country implementing quantitative easing as it increased monetary base from 100 in 2001 to 170 by 2004, all with

zero interest rates. During the same period, the monetary base in the US increased to 130 and in the Eurozone to 120, and both had significantly higher interest rates than in Japan. Although the yen fell at first, the Japanese currency moved strongly higher in 2003, forcing the Japanese government to engage in the largest foreign exchange intervention in history amounting to 30 trillion yen to keep the yen from appreciating. This experience indicated that there is no guarantee that the exchange rate will weaken with a QE.

As more and more people began to realize that increases in monetary base via QE during balance sheet recessions do not mean equivalent increases in money supply, the hype over QEs in the FX market is likely to calm down. At the moment, however, that is not yet the case, as the sharp fall of the yen following the announcement of Abenomics with its commitment to monetary easing amply demonstrates.

Two kinds of money supply?

The fact that Japanese wages were rising without astronomical quantitative easing from 1992 to 1996 suggests that the US and UK quantitative easing did not really have as large an impact as some of its proponents suggest.

This lack of impact can be explained by the fact that those at the receiving end of quantitative easing are by their very nature, disposed to save money instead of spend money. Money is said to serve three roles: as a medium of exchange, as a store of value, and as a unit of account. The third is true of all money, but the first two roles sometimes need to be considered separately.

When a central bank buys government bonds on the open market, the proceeds go to the individuals and companies that sold the bonds to the central bank. The fact that they held the bonds to begin with means they had invested savings—whether their own

or someone else's—in the bonds. The proceeds of the sale to the central bank will naturally be invested again in some other asset.

The resulting increase in the private-sector money supply is therefore in (2) money held as a store of value. This money is likely to be held directly as a store of value or will be used again to acquire other asset. Because such transaction is simply a transfer of ownership that does not result in the creation of a new good or service, it is not counted as part of GDP. In other words, this money will stay in the financial world and will not support expenditures in the real economy.

In contrast, if businesses react to a central bank rate cut by borrowing and investing in new capacity, nearly the entire amount becomes an expenditure that counts as GDP, which means the impact is much greater.

The same is true if the government itself borrows and spends the money on public works. These projects represent a transfer of money supply from the “store of value” world to the world of settlement transactions via government borrowing and spending. If the workers employed by public works projects consume the majority of their wages, the money will stay in the world of settlement transaction that much longer.

The point here is that a substantial portion of the money supply growth created via quantitative easing remains in the “store of value” mode—typically in the financial and other asset markets. The only way quantitative easing can have a positive impact on economic activity is if the authorities' purchase of assets from the private sector boosts asset prices, making people feel wealthier and thereby encouraging them to consume more.

This is the wealth effect, often referred to by the Fed chairman Bernanke as the portfolio rebalancing effect, but even he has acknowledged that it has a very limited impact. Nor does GDP

increase to the extent that would be suggested by the growth in the money supply.

The fact that private sectors in so many Western countries are saving so much means that each year that much money supply is being transferred from the world of settlement transactions to the “store of value” world, reducing the flow of money in the real economy even if quantitative easing prevents any decline in the stock of money supply.

In a sense, quantitative easing is meant to benefit the wealthy. After all, it can contribute to GDP only by making those with assets feel wealthier and encouraging them to consume more. In contrast, public works projects benefit the ordinary people because they involve payments to laborers and the suppliers of construction materials.

Central bank purchases of assets can directly increase only the supply of money held as a store of value. Even if some of that money is channeled into the world of settlement transactions via higher asset prices and portfolio rebalancing effect, a great deal of time will be needed before the volume is sufficient to boost economic activity and inflation.

Fiscal stimulus is the only effective remedy

With monetary policy largely ineffective, the only policy left to keep the economy away from a deflationary spiral in this type of recession is for the government to borrow and spend the unborrowed savings in the private sector. In other words, if the private sector firms and households cannot help themselves because they have no choice but to repair their balance sheets, the government, the only entity outside the fallacy of composition, must come to their rescue.

It is indeed with fiscal stimulus that Japan managed to maintain

its GDP at or above the bubble peak for the entire post-1990 period in spite of massive corporate deleveraging and commercial real estate prices falling 87 percent nation-wide. This was shown in Exhibit 4. It was also with concerted fiscal stimulus implemented in 2009 that G20 countries managed to arrest the collapse of the world economy triggered by the Lehman Shock.

From the perspective of central banks, the importance of deficit spending by the government is multiplied by the fact that it is also indispensable in maintaining money supply from shrinking when the private sector is minimizing debt. This comes from the fact that money supply, which is a liability of the banking system, starts shrinking when the private sector as a whole starts paying down debt. This is because banks are unable to lend out the money paid back to them by the deleveraging borrowers when the entire private sector is deleveraging at the same time. During the Great Depression, the US money supply shrunk by over 30 percent from 1929 to 1933 mostly for this reason (85 percent due to deleveraging, 15 percent due to bank failures and withdraws related to failures.)

The post-1990 Japan managed to maintain its money supply (Exhibit 7) and GDP (Exhibit 4) from shrinking because the government was borrowing the deleveraged and newly saved funds from the private sector (Exhibit 9)

Unfortunately there was a period in economics profession, from late 1980s to early 2000s, where many noted academics tried to re-write the history by arguing that it was monetary and not fiscal policy that allowed the US economy to recover from the Great Depression. They made this argument based on the fact that the US money supply increased significantly from 1933 to 1936. However, none of these academics bothered to look at what was on the asset side of banks' balance sheets.

The asset side of banks' balance sheet clearly indicates that it was

lending to the government that grew during this period (Exhibit 10). The lending to the private sector did not grow at all during this period because the sector was still repairing its balance sheets. And the government was borrowing because the Roosevelt Administration needed to finance its New Deal fiscal stimulus. In other words, it was Roosevelt's fiscal stimulus that increased both the GDP and money supply after 1933.

All of the above suggest that deficit spending is not only absolutely essential in fighting balance sheet recessions, but also essential in maintaining the effectiveness of monetary policy when the private sector is minimizing debt. It is therefore essential that the government bolster the economy while the private sector is repairing its balance sheets, while in the longer term it should provide tax incentives and undertake deregulation to create an environment in which businesses *want* to borrow.

It was the private sector rush to repair its balance sheets that caused the economic implosion. And the private sector had to repair its balance sheets because it realized that it was chasing wrong asset prices and that bubble-level prices will not come back anytime soon. The fact that the private sector was chasing wrong asset prices also means that the sector was grossly misallocating resources during the bubble. The traditional assumption that private sector can allocate resources better than public sector was violated long before the bubble burst.

Far from being a necessary evil, therefore, government borrowing and spending becomes absolutely indispensable in saving the economy and helping the private sector recover from its own madness that created the bubble. By keeping the GDP from shrinking, the government ensures that the private sector has the income to repair its balance sheets. Since asset prices never turn negative, as long as private sector has the income to repair its balance sheets, at some point, its balance sheets will be repaired. Once that point is reached and the private sector is

ready to borrow money again, the government should embark on its balance sheet repair.

Although deficit spending is frequently associated with crowding out and misallocation of resources, during balance sheet recessions, the opposite is true. When the private sector is minimizing debt by deleveraging, government borrowing and spending causes no crowding out because the government is simply taking up the unborrowed savings in the private sector. The issue of misallocation of resources does not arise either because those resources not put to use by the government will go unemployed in this type of recessions which is the worst form of resource allocation.

Should central banks monetize debt?

In order to reduce the financing burden of fiscal stimulus, there is an argument in favor of central banks monetizing the government debt. Although the large size of public debt in all of these countries encourages people to find ways to limit their growth, there is no need for central banks to monetize debt in any of these countries except perhaps in a very special case of the Eurozone. This is because in a balance sheet recession, the amount of money the government must borrow and spend to stabilize the GDP is exactly equal to the unborrowed private sector savings that are languishing somewhere in the domestic financial system. This means savings are available to finance government borrowings.

Ridiculously low government bond yields in those countries outside the Eurozone such as the US, UK and Japan attest to the fact that there are no financing difficulties for governments in these countries. Although yields in the US and UK got the help from central bank purchases, yields in all three countries came down because fund managers of institutional investors such as pension and life insurance companies are typically operating under certain regulations and restrictions as to where their

money can be placed. In most countries, they are not supposed to take too much foreign exchange risk, and they are also not supposed to take too much principle risk, meaning that not all funds can be invested in equities, that a large portion must be invested in fixed income assets, i.e., bonds.

When investors with these restrictions are faced with a private sector that is not borrowing money at all, the only asset these investors can invest in would be their own government bonds. This is because the government is the only borrower left in the country. As a result, a large portion of the saved and deleveraged funds end up in government bond market, resulting in ridiculously low bond yield during this type of recessions.

Low bond yield, in turn, is a natural corrective mechanism that helps governments put in necessary fiscal stimulus to support their economies during balance sheet recessions. It is a signal from the bond market that this is no time to reduce the deficit.

Moreover, when the bottleneck of the economy is the lack of private sector borrowers, adding central bank as an additional lender will not solve any problem. On the contrary, adding central bank as an additional lender makes the life of private sector lenders that much more difficult in already overcrowded market. The resulting fall in lending rates will weaken private sector lenders just when they are already badly battered by the collapse in asset prices.

Last but not least, the idea of monetizing the debt carries the notion that the central bank is expected to hold on to government bonds for the long-term, if not until maturity. But with the liquidity in the system is already five to fifteen times the required reserves, the central banks must have the power to withdraw liquidity quickly when the private sector regains its appetite for borrowings. Otherwise the economy will be facing sky-rocketing increases in money supply and inflation rates.

Indeed the only reason the bond market has tolerated QE of this magnitude up to now is the belief that when the private sector willingness to borrow returns, central banks will quickly remove those excess liquidity in the system. If central banks are unable to take such actions because they are expected to hold on to their government bonds, the whole government bond market will collapse out of the fear that inflation will go through the roof. In this sense, QE, where the central bank can reverse course at its own discretion, is tolerable, but not debt monetization where the central bank is not expected to reverse course.

Different risk weights needed in the Eurozone

The corrective mechanism represented by low government bond yield, however does not work in the Eurozone because fund managers in the zone can always invest in government bonds of other member countries without incurring foreign exchange risk. As a result, there has been a huge capital flight out of peripheral countries to Germany, resulting in a ridiculously low Bund yield of 1.5 percent or less at ten years for a country with the lowest unemployment rate in 20 years and the largest-ever industrial production.

At the same time, those suffering from capital outflows are forced into fiscal austerity because of higher domestic bond yields. That, in turn, weakens those economies further and encourages even more capital flight in a vicious cycle. This is now known as the Eurozone debt crisis even though private sectors of many affected peripheral countries are generating significant savings as noted earlier.

This capital flight problem between government bond markets is a structural deficiency that is unique to the Eurozone. In order to correct this problem, it may be necessary to introduce lower risk weights for the holdings of domestic as opposed to foreign

government bonds, and a mechanism to recycle the savings back to the countries that generated them and are suffering from balance sheet recessions. If the different risk weights manage to keep sufficient domestic savings at home, bond yields will come down. The lower bond yield, in turn, will allow governments to run fiscal deficits to fight balance sheet recessions.

The OMT by the ECB announced last year may be viewed as an effort to return the savings back to the countries that generated them. However, the conditions attached to the OMT, that receiving countries engage in fiscal consolidation, are totally counter-productive when the countries are facing balance sheet recessions.

Responsibility of central banks during balance sheet recessions

When the effectiveness of monetary policy depends on the size of fiscal stimulus, it should be the responsibility of the central bank to inform the public and policy makers that the government should not move toward fiscal consolidation when the private sector is repairing balance sheets. Such persuasion is essential because the average public is still unaware of the disease called balance sheet recession. They are unaware because the schools have never taught them about the possibility of such recessions.

It is extremely encouraging in this regard that Chairman Bernanke of the Federal Reserve, who once championed the supremacy of monetary policy, is now spearheading the effort to keep the US from falling off the fiscal cliff. His answers to a question in April 25, 2012 press conference where he said “the size of the fiscal cliff is such that there is absolutely no chance that the Federal Reserve could or would have any ability whatsoever to offset that effect on the economy” attest to the fact that he knows the importance of fiscal stimulus when the private sector is not borrowing money. In particular, his comments

indicate that monetary policy cannot substitute for fiscal policy during this type of recessions.

Unfortunately, he is so far the only central banker who is openly warning about the risk of fiscal cliff. President Draghi of ECB and Governor King of Bank of England are still insisting on fiscal consolidation even though their economies are suffering from serious balance sheet recessions.

Interestingly, Mr. Draghi, as well as his predecessor Mr. Trichet, has been saying since the fall of 2009 that the weakness of European economies is due to “necessary adjustment in the private sector balance sheets”. In other words, they are apparently aware that Europe is in a balance sheet recession. And yet Mr. Draghi is still insisting that these countries continue with their fiscal austerity which not only does not follow from his own diagnosis that these economies are in balance sheet recessions, but is also making recessions in these countries much worse.

In Japan, the new governor of Bank of Japan Mr. Kuroda, who has no prior experience with monetary policy, is still clinging to the obsolete idea that additional bond purchases will somehow get the economic activity and inflation rates to pick up.

It was not always this way. For example, a former governor Mr. Fukui was quoted as saying “fiscal consolidation is not a problem as long as it is consistent with the recovery in private sector demand for funds”. This quote clearly indicates that he knew how important fiscal stimulus is in an economy that is suffering from a lack of private sector demand for funds.

A unique and difficult challenge facing the ECB

Of the four central banks, the ECB faces a particularly difficult challenge because the Maastricht Treaty, which forbade member

countries from running deficits greater than 3 percent of GDP, never considered the possibility of balance sheet recessions. But as indicated earlier, private sectors in many member countries are saving as much as 8 percent of GDP at record low interest rates. If their governments were prevented from borrowing more than 3 percent of GDP, the remaining unborrowed savings will push these economies into Great Depression-like deflationary spirals.

This problem actually hit the Eurozone as soon as the Euro was launched in 2000 when the dotcom bubble went bust. German households and businesses were very heavily involved in the bubble and when the bubble burst, both sectors increased savings dramatically, as shown in Exhibit 11. The household sector in particular stopped borrowing money altogether after 2000, the trend that continues to this day (Exhibit 12.)

With the private sector deleveraging massively as a group, Germany was in a clear case of balance sheet recession which required fiscal help. But at that time, no-one in Germany has heard of the disease called balance sheet recession, and in any case the government was prevented from running deficit greater than 3 percent of GDP.

The serious weakness of the German economy then prompted the ECB to bring interest rates down to 2 percent by 2003, a record low for post-War Europe. But with nobody borrowing money, German economy failed to respond which by then was called the “sick man of Europe.” House prices kept on falling in spite of record low interest rates (Exhibit 5), and money supply grew significantly slower than the rest of Europe. That in turn kept German prices and wages from rising.

The periphery of Europe, on the other hand, who were not involved in the dotcom bubble, had clean balance sheets and responded well to the exceptionally low interest rates in a

textbook fashion by borrowing and investing in houses and other assets. With strong demand for funds, money supply grew and so did wages and prices. That produced the now infamous competitiveness gap with Germany. The booming economies of the periphery also allowed the Germans to export their way out of balance sheet recessions by 2007-8. This can be seen from the fact that the massive increase in German trade surplus during this period was mostly to other Eurozone countries, not to the US or to Asia (Exhibit 13).

Now the situation is reversed after the bursting of the bubbles in peripheral countries. ECB's record low 0.75 percent interest rates are not producing results because private sectors in depressed economies are not borrowing money at all while the needed fiscal stimulus are not forth coming. Spain is already in a deflationary spiral and others are not too far behind.

This crazy cycle of bubbles and balance sheet recessions in the Eurozone could have been avoided if the German government implemented necessary fiscal stimulus starting in 2000. That would have allowed the ECB to keep rates higher and prevented bubbles in peripheral countries from growing out of control. With the government borrowing money, the German money supply and prices would have moved closer to the European norm, thus preventing the competitiveness gap from growing to such large levels. A larger supply of Bunds would have also kept more German savings at home, instead of letting these funds pour more fuel on fire at the housing bubbles in the periphery and the subprime market in the US s.

The 3 percent deficit rule is appropriate when the economy is not in balance sheet recession, but is highly disruptive if the economy is suffering from this disease. In order to avoid overburdening and distorting ECB's monetary policy when some member countries are suffering from balance sheet recessions, the EU and ECB should spearhead the efforts amend the Maastricht Treaty

so that member countries in balance sheet recessions are allowed if not required to put in necessary fiscal stimulus. The ECB, together with the EU and IMF should also provide support to those countries by offering a seal of approval if not actual financial assistance to convince the world that they stand behind these countries.

The actual ECB and EU today are of course moving in the opposite direction, but if this policy of requiring countries that are certified to be in balance sheet recession to put in necessary fiscal stimulus is combined with the differing risk weights for holding of domestic versus foreign government bonds, the Eurozone crisis as we know now will never be repeated again.

Little traction when implemented, big damage when withdrawn

For the future, those central banks that have injected a huge amount of liquidity through quantitative easing face a big challenge. At present, there are enough reserves in the banking system to support money supply 15 times larger than the current level in the US, 5 times in both Japan and in the Eurozone (Exhibit 14). Such level of reserves does very little harm (or good) when the private sector as a group is deleveraging and the money multiplier is negative at the margin.

But once the private sector finishes repairing balance sheets and regains its appetite for borrowings, the central bank will be forced to remove the massive reserves in the banking system before both money supply and inflation go through the roof. In other words, just as businesses regain their willingness to borrow, central banks will be pouring cold water on them by withdrawing liquidity and raising interest rates.

The benefit of implementation QE and the cost of its removal are not symmetrical because the two take place at different phases of

the economy. A QE is introduced when the central bank reaches a zero lower bound without producing an economic recovery. The monetary easing failed to produce the recovery because the private sector was minimizing debt and the money multiplier was next to zero if not negative at the margin. At this juncture, a QE of \$200 billion or \$2 trillion really does not make much difference because the money multiplier is dead in the water.

A QE is removed when the private sector is back borrowing money (i.e., maximizing profits) and the central bank is worried that it has to remove excess reserves in the system in order to avoid a runaway inflation. At this juncture, money multiplier is significantly in a positive range. This means it does matter whether the needed removal is \$200 billion or \$2 trillion, with a larger number having a much bigger impact on interest rates, especially bond yields. Put differently, those central banks who implemented limited or no QE would be much more relaxed than those who implemented massive or “unlimited” QE when the private sector is ready to borrow money again.

So far the only successful removal of QE was the one engineered by the Bank of Japan in 2006, when its first-ever quantitative easing in history was ended after five years. This removal went without a hitch because the QE was all at the short end of the market. The removal of reserves at the short end under zero interest rates had very little impact on the rest of the yield curve. For example, the yield on 10-year JGBs jumped by about 40 basis points right after the announcement of the end of quantitative easing, but the yield returned to the original level after a few months.

This time, however, the US and UK central banks are in the long end of the market. This means the removal of QE will have much larger effect at the long end of the yield curve, with equally larger impact on the economy just when the economy is regaining its health and willingness to borrow.

Except for the Japanese experience at the short end noted above, there is no example of a successful return from QE operating at the long end of the market since nothing of the kind was ever tried in the past. With minimal impact on money supply and even those money supply so created staying mostly in the “store of value” mode, the benefit of quantitative easing should be carefully evaluated against the potential harm it could do when it has to be removed. Bigger is not always better when the cost of retracting it is uncertain.

Distinguishing lender-side problems from borrower-side problems

Balance sheet recession driven by deleveraging borrowers happens only after the bursting of a nation-wide asset price bubble financed with debt. But when the bubble bursts, lenders are also hurt when a large number of their borrowers and their collaterals go underwater. When the damage to the lenders is large enough, problem-laden financial institutions find themselves unable to obtain funding from the interbank market or even trust each other. They will not be able to lend either. Such predicament is known as financial crisis.

Balance sheet recession is a borrower’s phenomenon, while financial crisis is a lender’s phenomenon. The distinction is important because the two require different policy responses. While monetary policy is largely impotent in a balance sheet recession, it can and must be fully mobilized to address financial crises. This is because banks are entrusted with payment settlement systems in modern societies. When they become dysfunctional, the entire settlement system is put at risk. Available tools to address financial crisis include liquidity infusions, capital injections, explicit and implicit guarantees, lower interest rates and asset purchases.

The US authorities' TARP and QE1, especially the Fed purchases of MBS, and the directive issued in the fall of 2009 known as "pretend and extend" for the treatment of commercial real estate loans were all indispensable in preserving the US banking system. The directive also helped stabilize the US commercial real estate market in no small way.

The ECB's LTRO I and II, carried out in December 2011 and February 2012, as well as its OMT offered in mid-2012 gave a huge boost to European banks. Because most European banks faced the same problem at the same time, there was a great deal of mutual distrust, just as there had been in the U.S. following the Lehman collapse. The ECB's provision of liquidity via the LTROs was absolutely essential to keep the European banking system from imploding.

The BOJ's massive injection of liquidity in October 1997 when Sanyo Securities collapsed and defaulted in the non-collateral call market saved the entire Japanese financial system from collapsing as well.

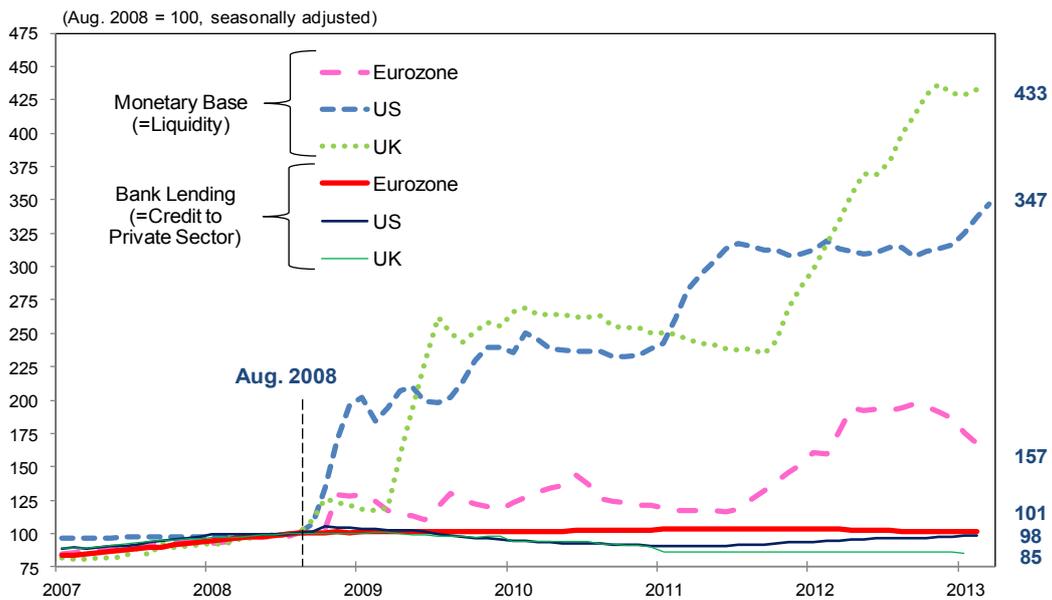
The financial crisis has now subsided, but all the balance sheet problems that existed before Lehman Brothers failed are still in place. If anything, the fall in house prices since then in some countries have exacerbated balance sheet problems.

Recovering from the financial crisis was the easy part; the hard work of repairing millions of impaired private-sector balance sheets is far from over. All the monetary actions mentioned above as the lender of last resort failed to turn economies around because those countries were also suffering from the borrower's problem. And the borrower's problem can be addressed only by the government performing the role as the *borrower of last resort*.

Central banks should not be shy in admitting both their limitations as well as the need for fiscal stimulus in helping their

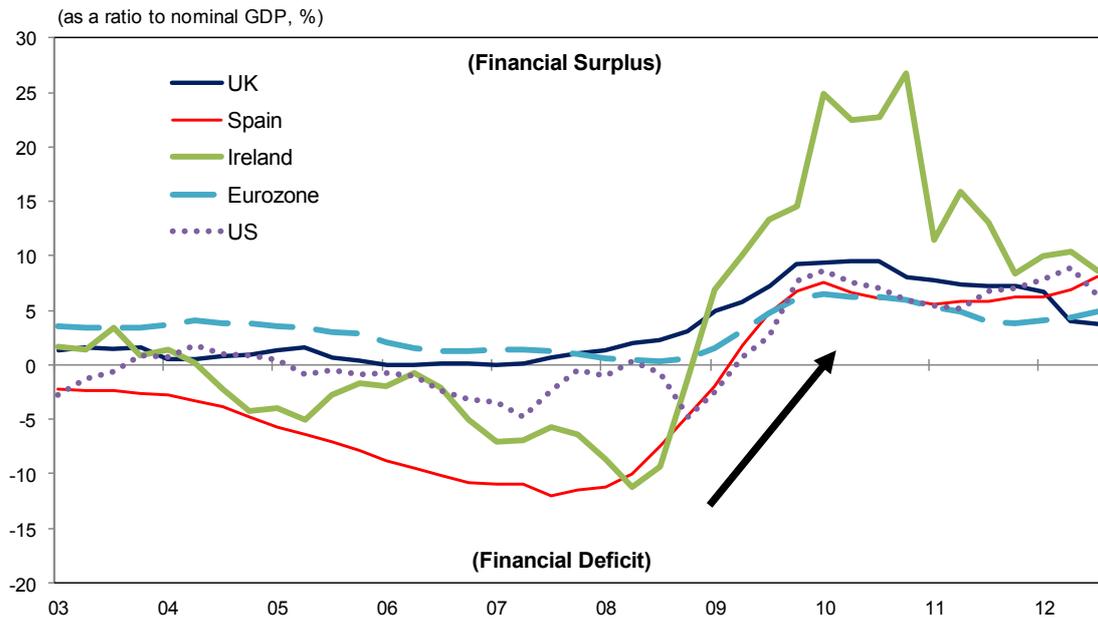
economies recover from balance sheet recessions. Their silence on this matter will only distort the policy debate, betray the trust of those who relied on them, and prolong the recession and suffering of the people unnecessarily.

Exhibit 1. Massive Quantitative Easing Failed to Increase Credit to Private Sector



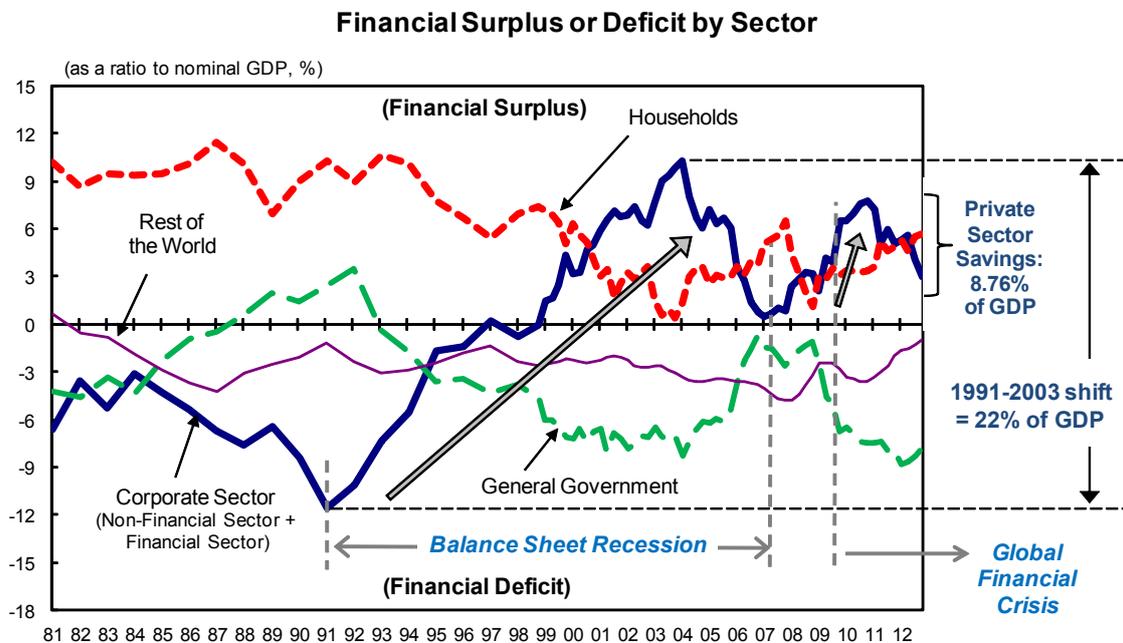
Notes: 1. UK's reserve balances data are seasonally unadjusted.
 2. UK's bank lending data exclude intermediate financial institutions.
 3. Base money's figures of Eurozone are seasonally adjusted by Nomura Research Institute.
 Source: Nomura Research Institute, based on FRB, ECB and Bank of England data.

Exhibit 2. Western Economies in Balance Sheet Recession: Private Sectors Increasing Savings despite record-low Interest Rates



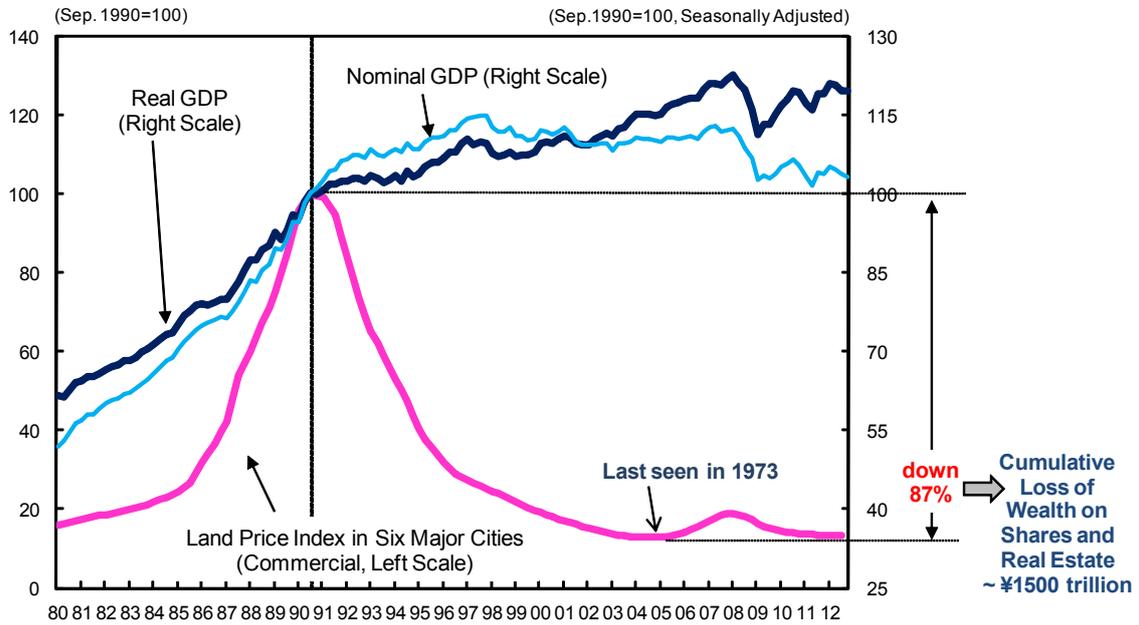
* Private Sector = Household Sector + Non-Financial Corporate Sector + Financial Sector
 Note: All entries are four-quarter moving averages. For the latest figures, four-quarter averages ending with 3Q/12 are used.
 Sources: Flow of funds data from Office for National Statistics, UK, Banco de España, National Statistics Institute, Spain, The Central Bank of Ireland, Central Statistics Office Ireland, ECB Eurostat, FRB and US Department of Commerce

Exhibit 3. Japanese Businesses Refused to Borrow after 1990 Bubble



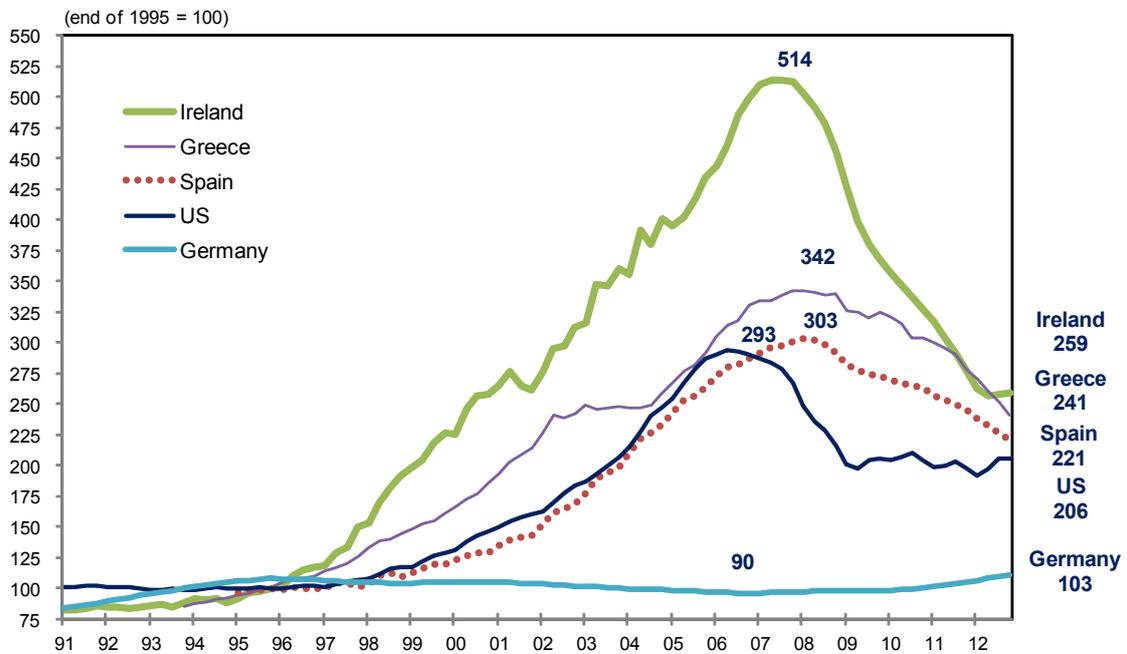
Note: All entries are four-quarter moving averages. For the latest figures, four-quarter averages ending with 4Q/12 are used.
 Sources: Bank of Japan, *Flow of Funds Accounts*, and Government of Japan, Cabinet Office, *National Accounts*

Exhibit 4. Japan's GDP Grew despite major Loss of Wealth and Private Sector De-leveraging



Sources: Cabinet Office, Japan Real Estate Institute

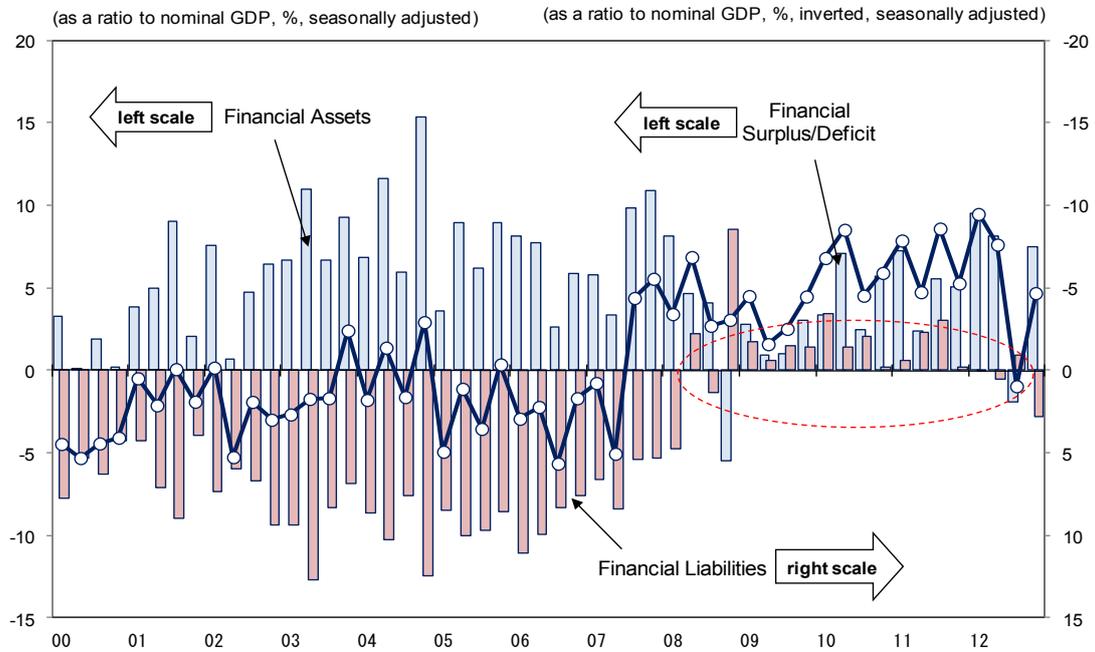
Exhibit 5. House Prices in the West* Experienced Bubble



Notes: *Except Germany, Ireland's figures before 2005 are existing house prices only. Greece's figures are flats' prices in Athens and Thessaloniki.

Source: Nomura Research Institute, calculated from BIS and S&P data.

Exhibit 6. US Households Are Paying down Debt at Zero-Interest Rates



Notes: Latest figures are for 2012 Q4.
 Sources: Nomura Research Institute, based on flow of funds data from FRB and US Department of Commerce

Exhibit 7. Drastic Liquidity Injections in Japan Resulted in minimal Increases in Money Supply and Credit

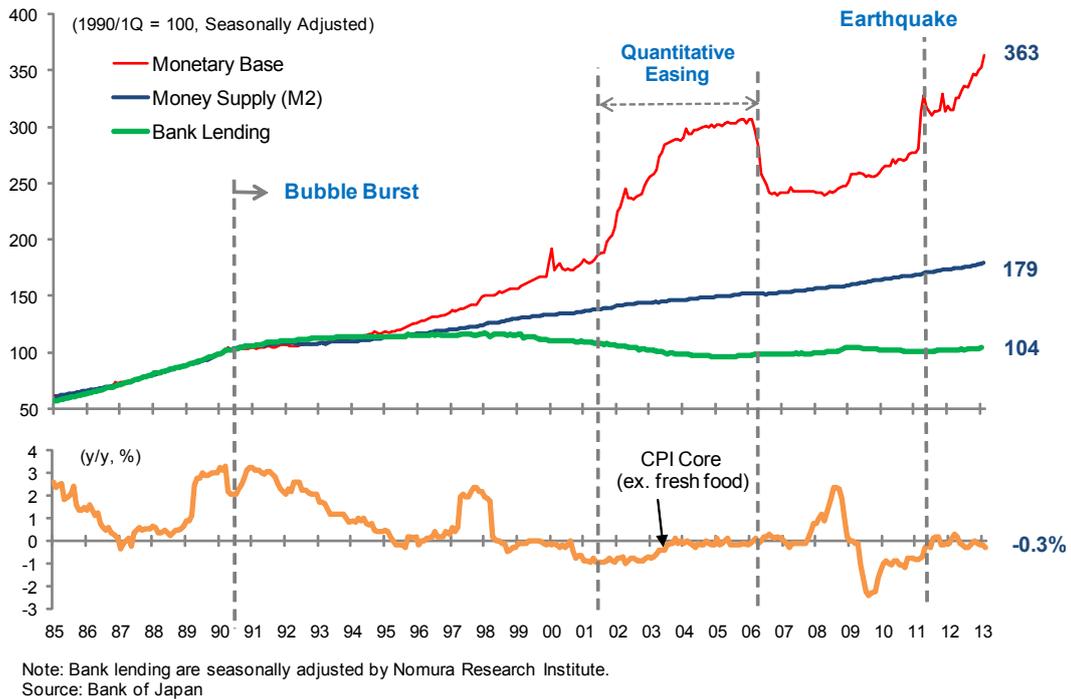
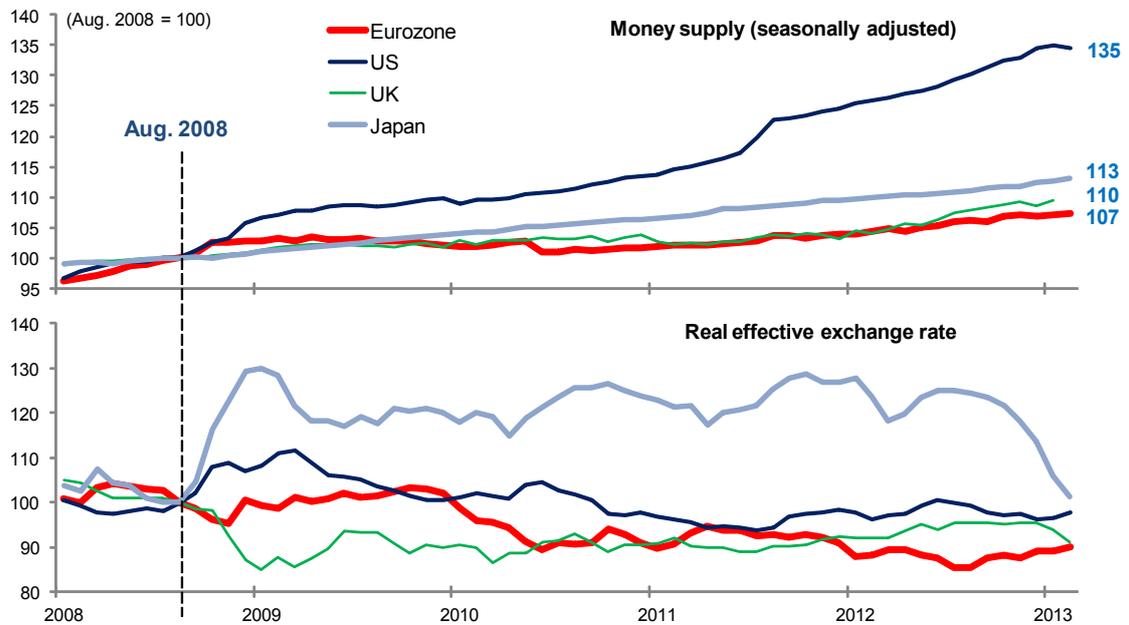


Exhibit 8. Little Connection between relative Money Supply Growth and Exchange Rates

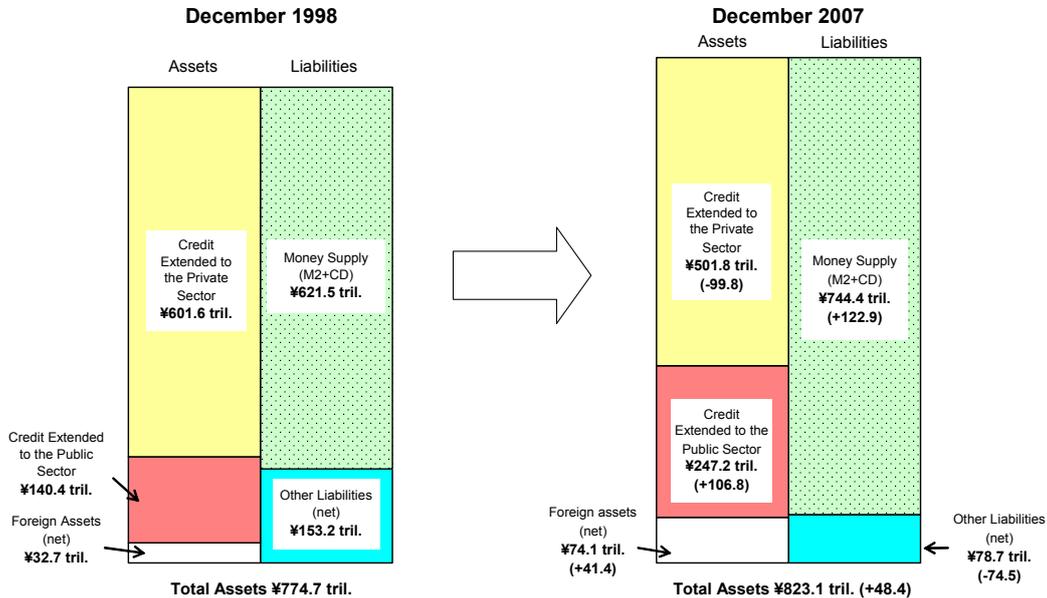


Note: UK money supply data exclude intermediate financial institutions.
Source: Nomura Research Institute, based on ECB, FRB, Bank of England, Bank of Japan and BIS

Exhibit 9. Japan's Money Supply Has Been Kept Up by

Government Borrowings

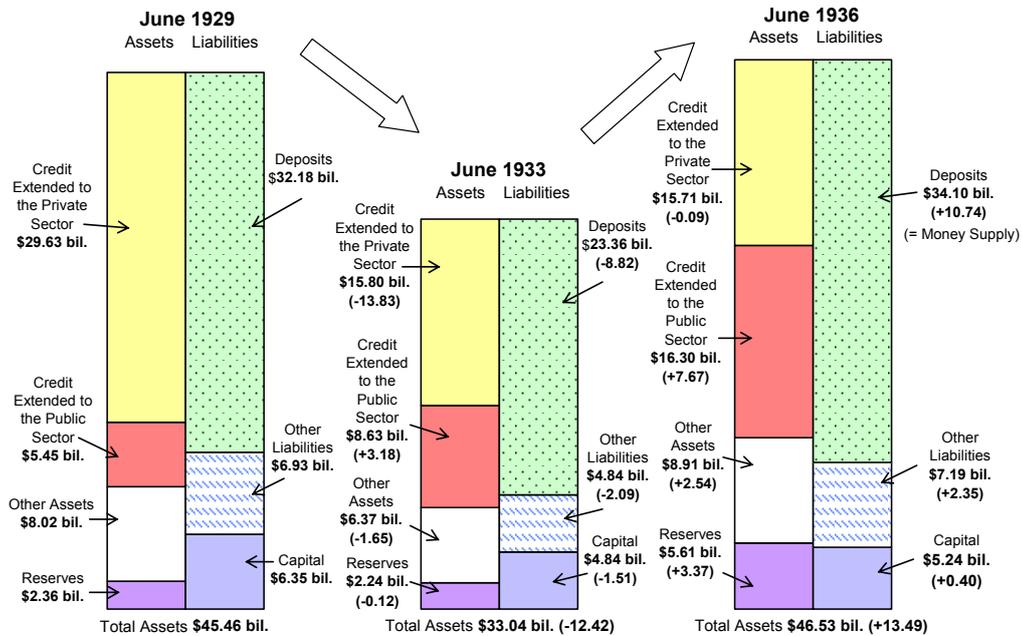
Balance Sheets of Banks in Japan



Source: Bank of Japan "Monetary Survey"

Exhibit 10. Post-1933 US Money Supply Growth Made Possible by Roosevelt's *NEW DEAL* Borrowings

Balance Sheets of All Member Banks

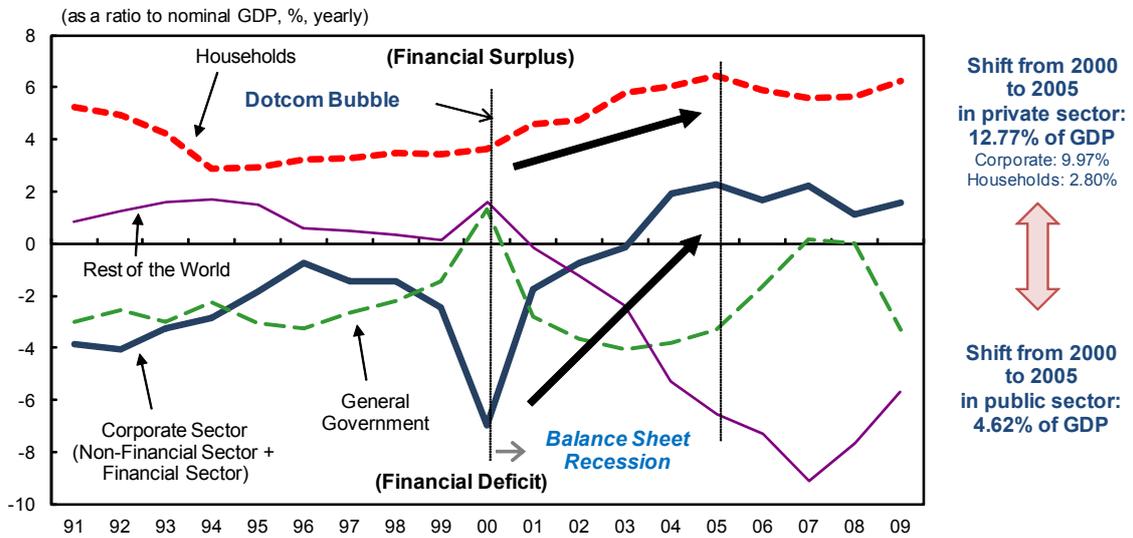


Source: Board of Governors of the Federal Reserve System (1976) *Banking and Monetary Statistics 1914-1941* pp.72-79

Exhibit 11. German Private Sector Refused to Borrow Money

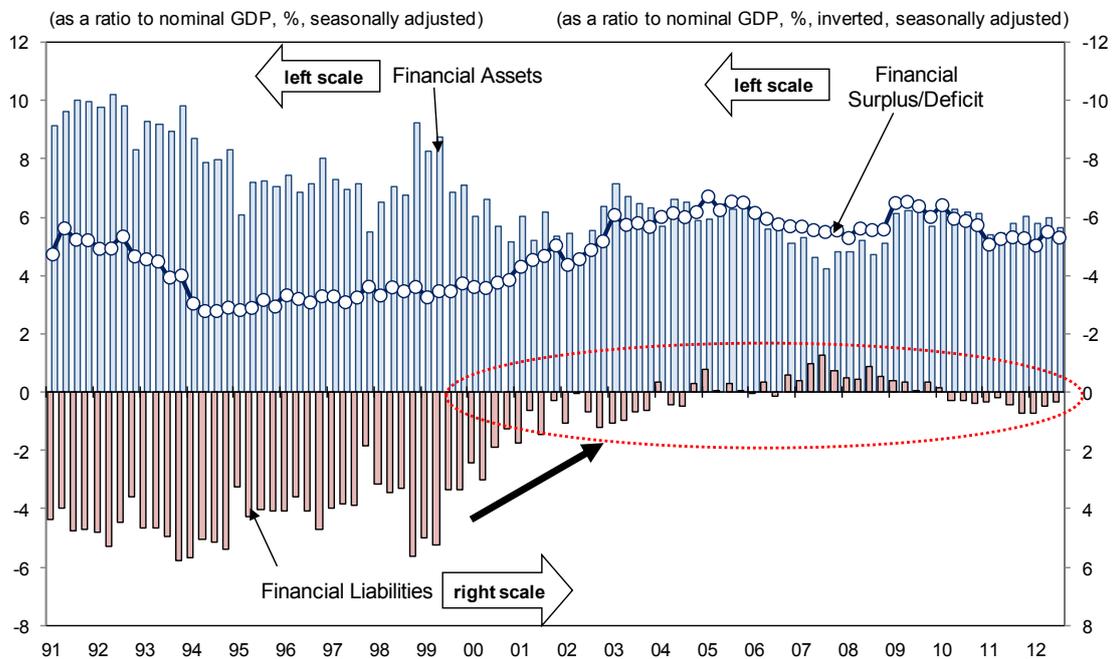
after the Dotcom Bubble

Financial Surplus or Deficit by Sector



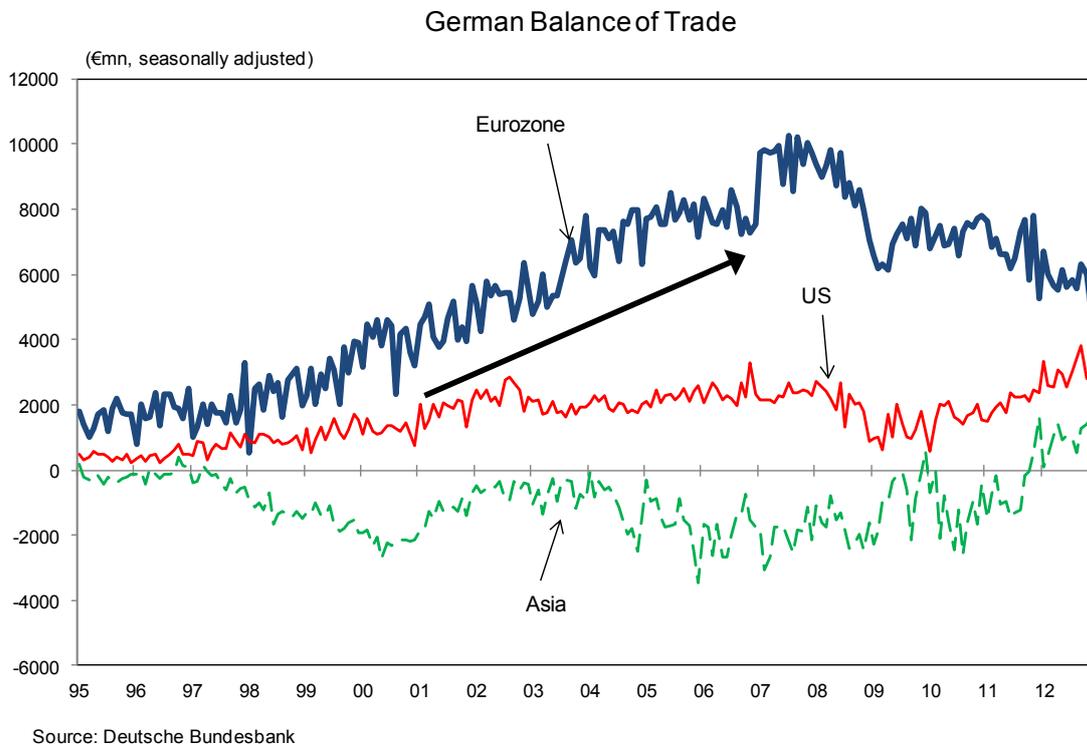
Sources: Deutsche Bundesbank, Federal Statistical Office Germany
 Note: The assumption of Treuhand agency's debt by the Redemption Fund for Inherited Liabilities in 1995 is adjusted.

Exhibit 12. German Households Stopped Borrowing after the Dotcom Bubble

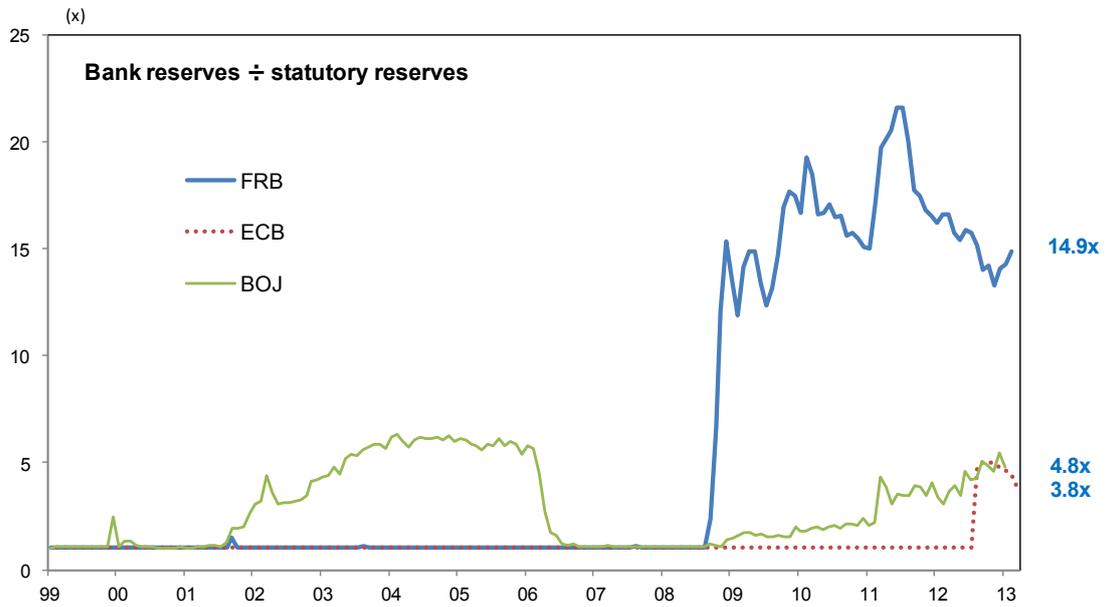


Note: Seasonal adjustments by Nomura Research Institute. Latest figures are for 2012 Q3.
 Sources: Nomura Research Institute, based on flow of funds data from Bundesbank and Eurostat

**Exhibit 13. Germany Recovered from Balance Sheet Recession
by Exporting to other Eurozone Countries**



**Exhibit 14. Money Supply Would Explode if Private Fund Demand
Returns**



Note: Japan Post Bank became a reserve deposit bank in October 2007, prompting statutory reserves to jump from ¥4,727.9bn in September 2007 to ¥7,016.5bn the following month, an increase of more than ¥2trn. As of October 2012 bank reserves amounted to ¥37,603.0bn, substantially greater than the highest value (¥28,124.2bn in November 2004) recorded during the previous quantitative easing era from 2001 to 2006. Measured as a multiple of statutory reserves, however, bank reserves were higher in the period through 2006.

Source: Nomura Research Institute, based on BOJ, FRB, and ECB data