

## **William C Dudley: The economic outlook and the Fed's balance sheet – the issue of "how" versus "when"**

Remarks by Mr William C Dudley, President and Chief Executive Officer of the Federal Reserve Bank of New York, at the Association for a Better New York Breakfast Meeting, New York, 29 July 2009.

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It is a pleasure to have the opportunity to speak here at the Association for a Better New York. This group has obviously been very successful. New York today is a far different and vastly superior place from what I found when I first arrived as a freshman at Columbia University in 1970.

Today, I'd like to accomplish two tasks. First, I'll comment briefly on the economy and the economic outlook – where we have been and where we may be going. I'm going to suggest that the balance of risks is still tilted toward weakness in growth and employment and not toward higher inflation. I will also argue that it is premature to talk about "when" we are going to exit from this period of unusual policy accommodation.

Second, I will talk about the impact of the Federal Reserve's lending facilities and purchase programs on the size of the Fed's balance sheet. I'll explain why an expanded balance sheet does not constrain our ability to exit from the current degree of policy accommodation. In other words, contrary to what is sometimes argued, it is not the case that our expanded balance sheet will inevitably prove inflationary. It is important that this critical issue be well understood. The public must be absolutely confident that the Fed can meet its monetary policy objectives of low and stable inflation and sustainable economic growth. Before I begin to get into these issues in earnest, let me note that, as always, the views I put forward today are my own and do not necessarily reflect the position of the Federal Open Market Committee (FOMC) or the Federal Reserve System.

Turning first to the outlook, the economic contraction appears to be waning and it seems likely that we will see moderate growth in the second half of the year. The economy should be boosted by three factors: 1) a modest recovery in housing activity and motor vehicle sales; 2) the impact of the fiscal stimulus on domestic demand; and 3) a sharp swing in the pace of inventory investment. In fact, if the inventory swing were concentrated in a particular quarter, we could see fairly rapid growth for a brief period.

Regardless of the precise timing, there are a number of factors which suggest that the pace of recovery will be considerably slower than usual. In particular, I expect that consumption – which accounts for about 70 percent of gross domestic product – is likely to grow slowly for three reasons. First, real income growth will probably be weak by historical standards. There were a number of special factors that boosted real income in the first half of the year, helping to offset a sharp drop in hours worked and very sluggish hourly wage gains. These factors included the sharp drop in gasoline and natural gas prices; the large cost-of-living-allowance increase for Social Security recipients reflecting last year's high headline inflation; a sharp drop in final tax settlements; a reduction in withholding tax rates; and a one-time payment to Social Security recipients. These factors provided a transitory boost to real incomes, which will be absent during the second half of the year. As a result, real disposable income is likely to decline modestly over this period.

Second, households are still adjusting to the sharp drop in net worth caused by the persistent decline in home prices and last year's fall in equity prices. This suggests that the desired saving rate will not decline sharply. That means consumer spending is unlikely to rise much faster than income. In other words, weak income growth will be an effective constraint on the pace of consumer spending.

Moreover, some sectors such as business fixed investment in structures are likely to continue to weaken as existing projects are completed. In an environment in which vacancy rates are high and climbing, prices are falling, and credit for new projects is virtually nonexistent, this sector is likely to be a significant drag on the economy over the next year.

Perhaps most important, the normal cyclical dynamic in which housing, consumer durable goods purchases and investment spending rebound in response to monetary easing is unlikely to be as powerful in this episode as during a typical economic recovery. The financial system is still in the middle of a prolonged adjustment process. Banks and other financial institutions are working their way through large credit losses and the securitization markets are recovering only slowly. This means that credit availability will be constrained for some time to come and this will serve to limit the pace of recovery.

If the recovery does, in fact, turn out to be lackluster, the unemployment rate is likely to remain elevated and capacity utilization rates unusually low for some time to come. This suggests that inflation will be quiescent. For all these reasons, concern about “when” the Fed will exit from its current accommodative monetary policy stance is, in my view, very premature.

In contrast, I think it is important to address today the issue of “how” the Fed can exit from the current stance of policy when the time comes, even if its numerous special facilities and purchase programs continue to keep the size of its balance sheet at an expanded level.

Why do I believe it is so important to explain the issue of “how” having just argued that “when” is not yet a pressing issue? The reason is that if people believe – correctly or incorrectly – that the Federal Reserve could have a problem managing a smooth exit from its accommodative policy stance, this belief alone could have the adverse effect of causing inflation expectations to become less well anchored and risk premia on long-dated debt securities and loans to rise. These effects could conceivably make it more difficult to generate a sustainable economic recovery.

This risk seems significant. For example, just last week a major bank published a survey of a broad array of 1800 investors. Of those surveyed, 20 percent thought that inflation might average more than 2.5 percentage points per year above their assessment of the Federal Reserve’s target. This outcome presumably reflects two factors – the balance-sheet expansion of the Fed and the large fiscal deficit.

With this in mind, let me spend the remainder of my time discussing the sources of growth in the Federal Reserve’s balance sheet over the past year and a half or so, and explain why I am confident that the exit from our accommodative policy stance, as well as from our various lending facilities and purchase programs, can be handled smoothly.

As you are aware, the Federal Reserve has been engaged in a wide array of unprecedented activities over the past two years in response to the financial crisis. These include:

- Liquidity facilities designed to improve market function. These include facilities oriented to banks and dealers such as the Term Auction Facility (TAF), Primary Dealer Credit Facility (PDCF) and the foreign exchange swap programs; and facilities designed to improve market function in impaired parts of the money and capital markets such as the Commercial Paper Funding Facility (CPFF) and the Term Asset-Backed Securities Loan Facility (TALF).
- Purchase programs oriented to easing financial conditions. These include the agency debt, agency mortgage-backed securities (MBS) and Treasury purchase programs.
- Several firm-specific interventions in which the Federal Reserve has taken on illiquid asset portfolios from Bear Stearns and AIG, with the goal of managing and liquidating these asset portfolios over time in a manner that is in the best interests of the federal government and the U.S. taxpayer.

These programs have led to significant changes in both the composition and size of the Federal Reserve's balance sheet. For example, in August 2007, prior to the onset of the crisis, the Federal Reserve's balance sheet was about \$870 billion. Currently, the size of the balance sheet is about \$2 trillion. To gain a better understanding of how we got to where we are now, I think it is useful to divide the past two years into three distinct phases.

The first stage I'll define as the period running roughly from the start of the crisis in August 2007 to September 2008. During this stage, the Fed's monetary policy implementation regime worked in such a way that control over the size of its balance sheet, and more specifically over the level of excess reserves, was essential to ensure that the Open Market Desk could control the fed funds rate in a manner consistent with the FOMC's monetary policy objectives. Had the Fed's special liquidity facilities grown sufficiently large during that period, raising the level of the excess reserves in the banking system, the fed funds rate would likely have fallen far below the FOMC's target rate. To keep the fed funds rate around the target, the only sure-fire option was to avoid a significant expansion in the balance sheet by funding the expansion of nontraditional assets, such as TAF loans, FX swaps, and PDCF loans with similarly sized liquidations of the Federal Reserve's portfolio of Treasury securities. Thus, over the period from August 2007 up through the time of the Lehman Brothers failure in September 2008, the total size of the Fed's balance sheet and the level of excess reserves in the banking system changed very little.

The second stage began in October 2008 when the Federal Reserve gained the authority to pay interest on reserves, including excess reserves. The addition of interest on reserves to the Fed's toolkit effectively broke the link between the size of the Fed's balance sheet and the stance of monetary policy. Policymakers now had the capacity to expand the size of the Fed's liquidity facilities and other programs without the threat of compromising the control of monetary policy. This new tool immediately proved enormously helpful. The Fed was able to respond to the deterioration of conditions in the fall of 2008 by sharply increasing the size of its Term Auction Facility program and removing the limits on the size of many of the foreign exchange swap programs. These programs, along with the increased use of the Fed's standing liquidity facilities and the start-up of the Commercial Paper Funding Facility in late October, led to a sharp growth in the Federal Reserve's balance sheet beginning in late September.

The third phase is marked by the launch of the Fed's purchase programs, starting with the agency debt program that began in December 2008 and extends through to the present. During this phase, the Fed's overall balance sheet has actually declined slightly. The demand for the Fed's special liquidity programs has diminished more quickly than the purchase programs have been ramped up. Although this shrinkage was not anticipated or targeted, it is a welcome indication that there has been improvement in the functioning of the short-term funding markets.<sup>1</sup> As market function has improved and credit spreads have narrowed, many of the Fed's liquidity facilities have become less attractive and there has been a corresponding decline in usage. For example, outstanding foreign exchange swaps have declined from a peak of \$586 billion last December to about \$110 billion currently, and outstanding commercial paper held by the CPFF has fallen from a peak of about \$350 billion last fall to around \$110 billion currently.

Despite the recent dip in the size of the balance sheet, the size of the purchase programs underway makes it likely that balance-sheet growth will resume as assets acquired in conjunction with these programs overwhelm any further declines in the funds advanced via the shorter-term liquidity facilities. The size of the Federal Reserve's balance sheet seems likely to grow to roughly \$2.5 trillion, somewhat above the peak reached last December.

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<sup>1</sup> However, it was anticipated that the attractiveness of the Fed's facilities would decline as market conditions improved. In fact, it was a key element of the exit strategy that was deliberately built into the design of most of the facilities.

It is no coincidence that the growth of the Federal Reserve's balance sheet since last fall has been accompanied by a sharp rise in the amount of excess reserves. When the Federal Reserve extends a loan or purchases a security, this automatically adds reserves to the banking system unless the Fed undertakes an offsetting reserve draining operation. Although some of the excess reserves that have been generated by the balance-sheet expansion were initially sopped up by the Treasury's Supplemental Financing Program, total excess reserves have climbed to more than \$700 billion from nearly zero at the beginning of the crisis.

The sharp rise in excess reserves has caused the monetary base, which is simply the sum of currency plus total reserves, to expand significantly. The increases in excess reserves and in the monetary base generated by the Fed's balance-sheet growth have led some observers to worry that this expansion will ultimately prove inflationary. Proponents of this view say that the monetary base, the broad monetary aggregates, total credit outstanding and inflation have historically tended to move together, at least over longer time periods. Thus, if the monetary base is growing rapidly, as it has been over the past year, the view is that this growth will ultimately lead to inflation.

Is this concern well founded? The answer is that in a world where banks could not be paid interest on excess reserves, these persistent high reserve balances would indeed have the potential to prove inflationary.<sup>2</sup> In that world, the excess reserves are likely to lead ultimately to an overly accommodative monetary policy. The story goes like this: If banks are earning no interest on their excess reserve holdings, they will be willing to lend those reserves out to any creditworthy borrowers as long as the interest rate is positive after adjusting for risk. The borrowers would then spend these monies, thereby boosting economic activity. The funds would not disappear, but instead would flow back into the banking system as they were deposited by those who had received the income generated by the increase in spending, thus replenishing the reserves that had been lent out in the first round of lending. This would result in a new stock of excess reserves that would then lead to a second round of credit creation and a further increase in economic activity. This cycling of excess reserves into credit creation, and the corresponding increase in economic activity, would continue until the excess reserves were fully absorbed by an increase in currency outstanding and/or an increase in required reserves associated with the rise in the amount of banking deposits. Inflation would rise as the excessive credit creation generated by the excess reserves led to an overheated economy and a rise in inflation expectations.

But that is not the world in which we now live. Because the Federal Reserve now has the ability to pay interest on excess reserves (IOER), it also now has the ability to prevent excess reserves from leading to excessive credit creation. Because the Federal Reserve is the safest of counterparties, the IOER rate effectively becomes the risk-free rate.<sup>3</sup> By raising that rate, the Federal Reserve raises the cost of credit more generally because banks will not lend at rates below the IOER rate when they can instead hold their excess reserves on deposit with the Fed. Because banks no longer seek to lend out their excess reserves, there is no increase in the amount of credit outstanding, no redeposit of the excess reserves, no increase in economic activity and no risk that excessive credit creation will fuel an inflationary spiral.

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<sup>2</sup> That rate is unlikely to spur too much lending right now given the constraints on credit availability, but at some future date it undoubtedly would be too low once the recovery is sufficiently advanced and credit conditions improved.

<sup>3</sup> For a more detailed discussion of monetary policy implementation under a regime in which the central bank pays interest on reserves, see: Todd Keister, Antoine Martin, and James J. McAndrews (2008), "Divorcing Money from Monetary Policy," Federal Reserve Bank of New York Economic Policy Review, Vol. 14 (2), 41-56; and Todd Keister and James J. McAndrews (2009), "Why Are Banks Holding So Many Excess Reserves?" Federal Reserve Bank of New York Staff Reports, no. 380.

For this dynamic to work correctly, the Federal Reserve needs to set an IOER rate consistent with the amount of required reserves, money supply and credit outstanding consistent with its dual mandate of full employment and price stability. If demand for credit exceeds what is appropriate, the Federal Reserve raises the IOER rate to reduce demand. If the demand for credit is insufficient to push the economy to full employment, then the Federal Reserve reduces the IOER rate, recognizing that the IOER rate cannot fall below zero. This does not differ much from how the Federal Reserve has behaved historically – set the fed funds rate at a level consistent with the desired level of economic activity and inflation over time.

So how does the IOER rate relate to the fed funds rate? The two rates are likely to track each other closely in most circumstances.<sup>4</sup> First, banks generally do not have any incentive to sell fed funds at rates below the IOER rate. Only nondepository institutions – such as the government sponsored enterprises (GSEs) – that can buy and sell fed funds but are not able to hold excess reserves with the Fed, might have an incentive to sell fed funds at rates below the IOER rate. But even in this case, the fed funds rate would not likely fall far below the IOER rate. After all, if the fed funds rate were to fall significantly below the IOER rate, banks could purchase the fed funds and hold them as reserves with the Fed, earning the difference. The ability of banks to engage in arbitrage should limit the size of the deviations between the IOER rate and the fed funds rate. Thus, through the IOER rate, the Federal Reserve can effectively retain control of monetary policy.

In addition to paying interest on excess reserves, the Federal Reserve also has the ability to drain the excess reserves from the banking system. This can be done in a variety of ways: reverse repo transactions with dealers and other counterparties, securities sales from the Fed's portfolio or bill issuance by the Treasury, with the funds deposited at the Federal Reserve. Although our ability to pay interest on excess reserves is sufficient to retain control of monetary policy, it is not bad policy to have both a “belt and suspenders” in place. As a result, we are working out ways to drain reserves to provide reassurance that we will not – under any circumstance – lose control of monetary policy.

A related concern is the question of whether the Federal Reserve will be able to act quickly enough once it determines that it is time to raise rates. This concern reflects the view that the excess reserves sitting on banks' balance sheets are essentially “dry tinder” that could quickly fuel excessive credit creation and put the Fed behind the curve in tightening monetary policy.

In terms of imagery, this concern seems compelling – the banks sitting on piles of money that could be used to extend credit on a moment's notice. However, this reasoning ignores a very important point. Based on how monetary policy has been conducted for several decades, banks have always had the ability to expand credit whenever they like. They don't need a pile of “dry tinder” in the form of excess reserves to do so. That is because the Federal Reserve has committed itself to supply sufficient reserves to keep the fed funds rate at its target. If banks want to expand credit and that drives up the demand for reserves, the Fed automatically meets that demand in its conduct of monetary policy. In terms of the ability to expand credit rapidly, it makes no difference whether the banks have lots of excess reserves or not.

Another source of concern among some market participants has been the Federal Reserve's purchase of Treasury securities. The worry here is that the Federal Reserve's purchases are “monetizing the debt” and that therefore these purchases will ultimately prove inflationary.

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<sup>4</sup> In a world of excess reserves and a positive IOER, either the IOER or the fed funds rate could conceivably be used as the primary instrument of monetary policy. The Federal Reserve would have precise control over the IOER and this would lead to some variability in the actual fed funds rate. This would not be much of a departure from the recent past in which the actual fed funds rate has tended to fluctuate closely around the fed funds target.

Regarding the Fed's Treasury purchase program, I want to make two points. First, with the fed funds rate constrained at zero lower bound, policymakers needed to find other ways to stimulate economic activity. The agency debt and agency MBS purchase programs proved effective in narrowing credit spreads in the debt and MBS market, but the Federal Reserve would have encountered diminishing returns in terms of impaired market function if it had raised the sizes of these two programs further. This suggested that the best course to hold down mortgage rates and other private borrowing rates would be to engage in a Treasury purchase program that would put downward pressure on Treasury rates. In this regard, the Fed's purchases have not been motivated by accommodating an expansive fiscal policy and the large fiscal deficits that are its consequence. I can assure you that the Federal Reserve will never engage in a program to accommodate or facilitate an unsustainable fiscal policy program. Instead, these programs were designed to help ease financial conditions at a time that the Federal Reserve could not push the fed funds rate below zero.

Second, the program is small. So even if one were to take a darker view of what the Federal Reserve has done, it is important to put the purchase program in context. Even after completion of a purchase program of up to \$300 billion of Treasuries, the Federal Reserve's holdings of Treasuries will be smaller than they had been in August 2007 on the eve of the crisis. Moreover, as a share of Treasuries outstanding, the Fed's share will be the lowest since the early 1990s.

Overall, the Federal Reserve's balance-sheet expansion has had notable benefits. The asset purchase programs have helped to keep longer-term private interest rates relatively low, and the expansion of liquidity facilities has helped to restore more normal market function. However, this does not mean that the Federal Reserve balance-sheet expansion and Treasury purchase program are cost free, only that the benefits of these programs, individually and collectively, are seen as exceeding the potential costs.

Nevertheless, there are three issues on the cost side that deserve note. First, policymakers need to take seriously any concerns that the Fed's actions might conceivably lead to an inflation problem. After all, inflation is driven mainly by two variables – inflation expectations and the degree of pressure on resources. It would be potentially very damaging if any of the Fed's programs were to unhinge inflation expectations. One risk with embarking on the Treasury purchase program was that it had the potential to create the misperception that the Fed was providing the fiscal authorities with the means to fund a more stimulative fiscal policy than they would otherwise have been able to finance. This misperception around the intent and purpose of the program could have undermined the Fed's credibility and triggered a damaging rise in inflation expectations. Indeed, one of my primary goals for this speech is to make it clear that we have not compromised our ability or our commitment to keep inflation in check. Keeping inflation and inflation expectations well anchored around a low level is essential.

Second, the Federal Reserve's balance-sheet expansion does have a consequence for the balance sheet of the banking system. The increase in the amount of excess reserves has to be held by banks. Excess reserves are a risk-free asset that they may not wish to hold. More important, to the extent that the banks worry about their overall leverage ratios, it is possible that a large increase in excess reserves could conceivably diminish the willingness of banks to lend. At present, these balance-sheet issues do not appear to be having a meaningful effect on bank behavior. In fact, the excess reserves serve as a liquidity buffer that many banks find attractive in the current environment. But that does not mean we can ignore this issue. We need to keep this issue in mind as we contemplate how much balance-sheet expansion might be appropriate.

Third, the Federal Reserve is taking on some interest-rate risk in terms of its balance sheet. The excess reserves have an overnight maturity. These liabilities are being used to purchase longer-term assets. In principle, if short-term interest rates were to move up very sharply, the

cost of funding could eventually exceed the return on the Fed's assets. The bigger our balance sheet, the greater the amount of interest-rate risk we are assuming.

We have examined this issue in detail. Suffice it to say, it is conceivable that the Federal Reserve's net-interest margin could be pinched in certain environments – say if the economic recovery turned out to be very robust. But our analysis shows that it is extremely unlikely that the Fed's net-interest margin will turn negative. In part, that is due to the fact that the balance-sheet risk associated with the interest-rate mismatch is offset to a large degree by the fact that the cost of much of the Fed's liabilities – the amount of currency outstanding – is zero. So when short-term rates rise, the cost of a significant portion of the Fed's liabilities is unaffected.

Making policy during a crisis involves making tough choices. Perfect solutions are not always achievable or even legally feasible. I can assure you that our decisions have been made carefully, always with an eye toward finding the right balance between the risks and rewards of alternative options. Most critical is our commitment never to take actions that might compromise our ability to retain our control of monetary policy and that might undermine our ability to achieve our dual mandate of full employment and price stability.

Thank you for your kind attention. I would be very happy to take a few questions.