Daiwa's View

Issues related to Fed insolvency

- No operational problems
- But, insolvency associated with worsening US finances could cause problems

FICC Research Dept

Kengo Shiroyama
81-3-5555-8755
kengo.shiroyama@daiwa.co.jp

Kenji Yamamoto
81-3-5555-8784
kenji.yamamoto@daiwa.co.jp

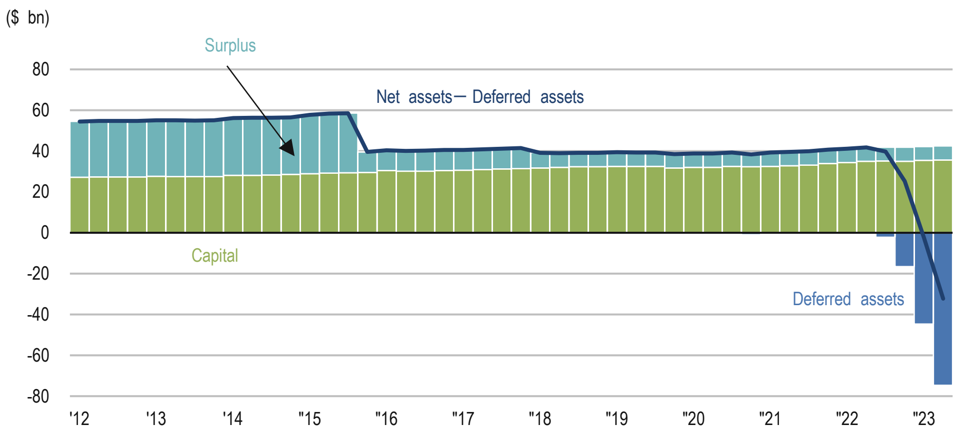
Daiwa Securities Co. Ltd

Global central banks, starting with the Fed, have sharply tightened monetary policy in response to inflation by raising interest rates and shrinking their balance sheets. While there are signs of slowing inflation in many countries, central bank balance sheets continue deteriorating as interest rates rise due to tightening.

The Fed's balance sheet has also deteriorated. Indeed, it is believed that the Fed became essentially insolvent as of its March 2023 financial results. As the Fed's approach is to book items that are essentially liabilities as deferred assets, its net assets do not fall into negative territory (in terms of accounting). However, its deferred assets exceed its net assets when viewed as liabilities (Chart 1). This report summarizes the process by which monetary tightening deteriorates central bank finances, with a focus on the Fed, as well as the issues surrounding that approach.

The Fed's earnings are primarily determined by the difference between interest income and interest expense derived from bonds held in its System Open Market Account (SOMA) as a result of past asset purchases. Interest income is mainly from US yields and interest on mortgage-backed securities (MBS). Interest expense is mainly costs derived by the bank's reserve deposits and overnight reverse repurchase (ON RRP) agreements. Since both interest income and interest expense are impacted by interest rate levels, the Fed's earnings will increase or decrease in step with the monetary policy cycle.

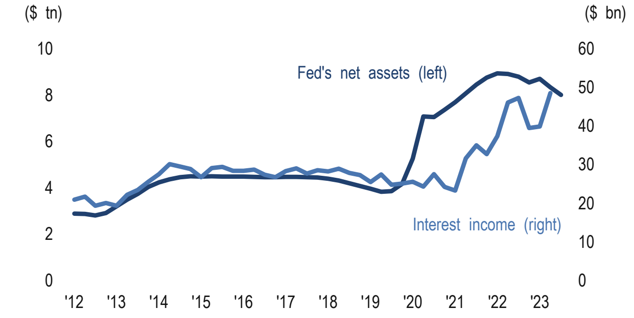
Chart 1: Fed's Net Assets, Deferred Assets



Source: Fed; compiled by Daiwa.

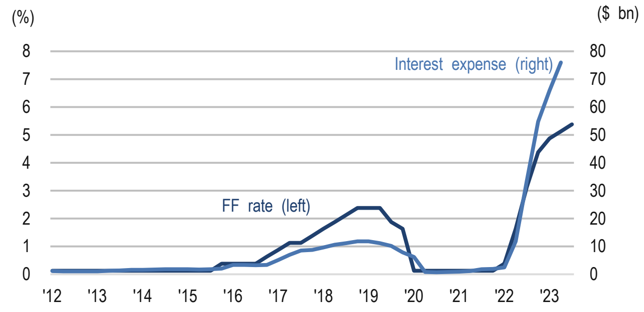
As monetary easing was used to lift inflation until the Fed started raising interest rates in 2022, the short-term interest rate (policy rate) was maintained at low levels, and the Fed's balance sheet tended to expand due to asset purchases. Interest income increased along with balance sheet expansion, while interest expense linked to short-term interest rates remained low and Fed earnings remained positive (charts 2 and 3). All net income after deducting operating expenses and dividend payments from the obtained earnings is sent to the US Treasury.

Chart 2: Interest Income, Fed's Net Assets



Source: Fed; compiled by Daiwa.

Chart 3: Interest Expense, FF Rate



Source: Fed; compiled by Daiwa.

However, the Fed's move to tighten monetary policy has put increased pressure on its earnings. Since reserve deposit interest and ON RRP interest are linked to the policy rate, interest expense immediately increases when interest rates rise. Meanwhile, the bulk of interest income is coupon income from US Treasuries and MBS purchased in the past, so it does not increase immediately when market interest rates rise.

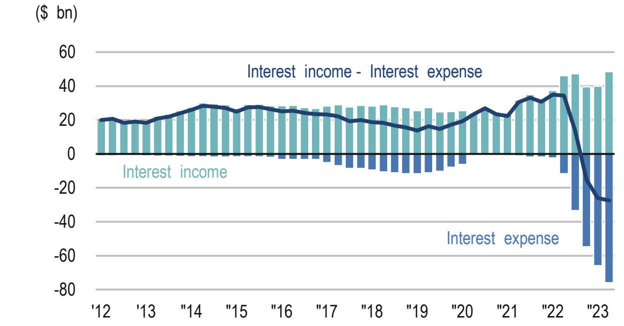
Earnest balance sheet shrinking started from September 2022, with the Fed reinvesting its redemptions exceeding $60bn and $35bn for US Treasuries and MBS, respectively. Coupon income from US Treasuries and MBS acquired through reinvestment reflects higher market interest rates, so interest income from those bonds and MBS is impacted by higher market interest rates. However, the onset of monetary tightening has caused short-term US rates to rise significantly more than long-term rates. As such, the increase in interest income from reinvesting does not outpace the increase in interest expense, which still puts downward pressure on the Fed's earnings.

As such, the Fed's earnings began to decline as its stance shifted from easing to tightening monetary policy, with negative revenue beginning in late 2022 (Chart 4). The Fed continued to send funds to the US Treasury until mid-2022, but these remittances were suspended in Jul-Sep 2022 as earnings turned negative and deferred assets started to accumulate. Deferred assets can be viewed as the accumulated value of past losses. In the future, once the Fed's period profit again turns positive, those earnings will first be used to reverse the deferred assets. The sending of funds to the US Treasury will resume after the deferred assets have all been eliminated.

Total deferred assets stood at $16.6bn as of end-2022, but have swelled to $74.7bn as of end-June 2023. With the increase in deferred assets, the difference between net assets and deferred assets turned negative as of end-March 2023. This means the Fed is now essentially insolvent.

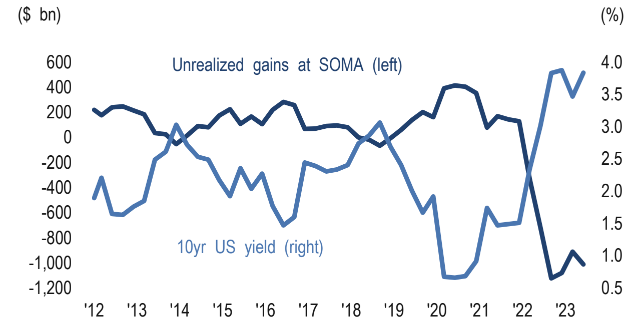
That said, the market value of the Fed's holdings of US Treasuries and MBS declines as yields rise (Chart 5), but these securities are valued using the amortized depreciation method. Therefore, changes in the market value of securities do not impact the value of the Fed's assets. At this time, the Fed does not intend to sell its securities holdings and changes in market value will not impact period profit. A decline in the market value of bond holdings is not a cause of insolvency.

Chart 4: Diference Between Interest Income and Interest Expense



Source: Fed; compiled by Daiwa.

Chart 5: SOMA Unrealized Gains/losses, 10yr US Yield



Source: Fed, Bloomberg; compiled by Daiwa.

Even though the Fed has become essentially insolvent, it has expressed the view that its ability to manage monetary policy has not been adversely impacted by period losses or insolvency. Also, the Fed continued to send funds to the US Treasury until mid-2022, bringing cumulative remittances over the past ten years to about $1.0tn. Furthermore, if interest rates are lowered in the future, period profit would again turn positive. Indeed, former St. Louis Fed President James Bullard said that earnings should be averaged out from the past, rather than just focusing on temporary insolvency. During a speech on 30 September 2023, BOJ Governor Kazuo Ueda expressed his view that, "Decreases in a central bank's profits and capital do not immediately impair its ability to conduct policy in an operational sense. This describes the major difference between a central bank and private financial institutions or business corporations."

In addition to the Fed, the Reserve Bank of Australia (RBA) also became insolvent as of its June 2022 settlement of accounts. The Bank of England (BOE) has also been purchasing assets through its subsidiary, the Asset Purchase Facility (APF), but currently the cashflow is negative. APF borrows money from the BOE for asset purchases at the bank rate, which is the policy rate, while earning interest income from its securities holdings. Previously, interest income exceeded interest expense and the resulting difference (earnings) was sent to His Majesty's Treasury. However, since October 2022, interest expense exceeded interest income and the Treasury has had to offset the shortfalls. In particular, APF not only makes mark-to-market valuations of its securities holdings, but it also sells government bonds outright to shrink its balance sheets, which is likely to put downward pressure on earnings as unrealized losses on bonds are realized due to rising yields.

However, In Australia and the UK, at least at this point in time, monetary tightening to curb inflation has not been adversely impacted by negative central bank period profit or equity capital. The BOE has been conducting asset purchases in order to achieve its inflation target over the medium term and the Bank has stated that cash flow with the Treasury should not be used as a measure of whether asset purchases have been successful.

Of course, as Ueda indicated, if a central bank's insolvency triggers increased speculation about political intervention in monetary policy or if central bank policy management prioritizing financial improvement, this could lead to a decline in confidence in the central bank and a significant increase in inflation expectations.

In a speech delivered in 2003, when he was just a Monetary Policy Board member, Ueda provided several examples of central banks that became insolvent in the past, both when they had high inflation rates and no inflation. Based on these examples, Ueda's assessment is that a sound central bank balance sheet is not always a necessary condition for price stability, but there were some situations where it was close to being a necessary condition.

As a theoretical background, he concluded that a phase in which the government is shortsightedly trying to achieve a high inflation rate is likely to lead to intervention in the central bank's price stabilization efforts, triggered by capital injections into the central bank. While central bank insolvency by itself is not a problem, a deteriorating relationship between the government and the central bank could lead to inflation if the government's policy toward price stability is not properly implemented or if doubts about policy arise.

◆ **The Role of Capital for Central Banks (15 Oct 2003)**

- First of all, even if the government's recapitalization of a central bank would contribute to the central bank's conduct of monetary policy to maintain price stability, an important question is whether the government would have the incentive to do so. If that were not a significant problem, central bank independence from the government would not be an issue in the first place. <u>The issue of central bank independence has become a subject of discussion in light of the risk that the government, if in charge of monetary policy, is prone to choose a socially undesirable rate of inflation.</u>
- To summarize, <u>the government and the central bank might disagree on the target inflation rate.</u> In addition, the government has a great interest in the market operations of the central bank, as they affect the expenditures and revenues of the fiscal authorities. This applies regardless of the operations' effect on the net revenue, which is revenue minus expenditures. As a result, <u>the tension between the government or the fiscal authorities and the central bank is likely to heighten when the balance sheet of the central bank deteriorates substantially.</u>

In light of these considerations, the Fed's insolvency could become problematic if there is US government intervention and if its commitment to price stability is called into question. At this point, the market is not questioning this commitment to price stability, as evidenced by the fact that long-term break-even inflation (BEI) has remained stable. However, if the Fed's insolvency becomes associated with a deterioration in US government's finances and if the market grows concerned that a high rate of inflation is needed to compensate for that deterioration, problems could arise. We probably need to consider Fed insolvency also associated with deteriorating US finances under full employment.

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