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A Comparative Analysis on the Balance Sheet Adjustment Mechanisms of the Big Four Central Banks

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In recent months, market participants have been fixated on when the Fed is going to raise interest rates. Regardless of when it is going to act, the Fed's next move is likely to tighten, which is in sharp contrast to the easing stance of the European Central Bank (ECB), the Bank of Japan (BoJ), and the People's Bank of China (PBoC). The Fed will likely decide to hike rates before contemplating when and how its huge balance sheet as a result of quantitative easing should be unwound. Meanwhile, the balance sheets of the ECB and the BoJ continue to increase steadily. By contrast, the PBoC's balance sheet has shrunk somewhat since the beginning of the year, diverging from its main counterparts in the US, Eurozone, and Japan. This also appears to contradict with the fact that the PBoC has cut interest rates and reserve requirement ratios (RRR) for six and five times, respectively, since last year.

Divergent monetary policies among the big four central banks

The stances of monetary policy of the big four central banks are divergent in both the conventional dimension of interest rates and the unconventional dimension of balance sheets. In terms of interest rates, the Fed, the ECB, and the BOJ are virtually all at the zero bound. As for the PBoC, one-year benchmark deposit and lending rates now stand at 1.5% and 4.35%, respectively, after six rate cuts since last year. Benchmark interest rates in China still have room to fall further but are unlikely to reach the zero bound. If the Fed decides to raise rates by the end of the year, it will mark the beginning of a rate hike cycle, though probably shorter and more moderate than previous ones. As far as interest rates are concerned, the only central bank that is moving in the other direction is the Fed.

Following the implementation of zero interest rate policy, the central banks of the US, Eurozone and Japan conducted Quantitative Easing (QE) by purchasing bonds and/or other assets, in order to stimulate their economies further. The result of this policy is the expansion of these central banks' balance sheets. Although the Fed terminated QE in October last year, its balance sheet does not shrink considerably as the Fed still reinvests its bond holding upon maturity. The Fed's balance sheet amounted to USD 4.4862 trillion (as of 7 October), only USD 30 billion or 0.7% lower than the record high of USD 4.5161 trillion. The balance sheet contraction was mainly due to the decrease of outstanding AMBS outstanding. This should be only a temporary phenomenon during the reinvestment process, instead of an intentional reduction of the Fed's assets. As a result, although the US's monetary policy is neutral for the time being, the monetary environment remains at the loosest condition in history.

As for the ECB, its balance sheet amounted to EUR 2.6323 trillion (as of 9 October). Although the size was substantially below the record level of EUR 3.1022 trillion in mid-2012, the ECB did not conduct any QE at that time and just injected liquidity to the banking system through LTRO. Following the repayments of the matured LTRO loans, the ECB's balance sheet contracted passively and its size decreased to EUR 1.9882 trillion in September 2014. Since the Eurozone economy was still struggling at that time amid the relapse of the Greek debt crisis, the ECB was determined to launch QE with the aim of expanding its balance sheet size back to the record high. Meanwhile, the BoJ took actions more directly. Its balance sheet size hit a record high of JPY 369 trillion after several rounds of QE.

The PBoC is different from other three major central banks in terms of balance sheet adjustment. Its balance sheet expanded 1.7 times since 2006 and reached RMB 34.5411 trillion in February this year (the size was even larger than the Fed's balance sheet after converted into USD). Its balance sheet size then started to shrink and reached RMB 32.6039 trillion in September, a decrease of RMB 1.9372 trillion or 5.6%. On one hand, the PBoC has already cut interest rates and RRR by six times and five times, respectively. On the other hand, its balance sheet size still contracted. The trend of the PBoC's balance sheet size is different from other three major central banks and even appears to contradict with the central bank's own policy stance.

Different reasons and different impacts

Given that the rationale of the PBoC's balance sheet expansion in the past was not the same as the other three major central banks, its present balance sheet contraction and impacts would also be different from quantitative tightening. Unlike QE, which mainly purchases bonds and was conducted by central banks in the US, Eurozone and Japan, the PBoC still has room for implementing conventional monetary policy such as cutting interest rates and RRR. As a result, it is not necessary for the PBoC to consider unconventional monetary policy. The PBoC's balance sheet expansion did not come from direct assets purchase such as bonds. Instead, the expansion was mainly due to the purchase of foreign currencies amid sizable capital inflow over an extended period of time in the past few years. The proportion of foreign assets once peaked at 83% of the PBoC's balance sheet but has dropped to a still high level of 79%. Moreover, the situation has reversed now, as total assets dropped mainly due to capital outflow. Foreign currency assets decreased by RMB 1.2224 trillion from February to September. Liabilities to other depository institutions and other overseas assets also decreased by RMB 711.8 billion and RMB 549.5 billion, respectively. The decline substantially exceeded the growth of gold assets, liabilities to other financial institutions and other assets, resulting in a drop of 5.6% in total assets.

According to the PBoC's statistics, the foreign exchange position of the PBoC is shown as the foreign exchange assets under the balance sheet of monetary authority. This is also the source of base money expansion over the past few years, particularly during the years of strong capital inflow. The base money expanded over 30% between the end of 2010 and mid-2011. The PBoC then raised the RRR and issued central bank bills to absorb and recycle those high-power money in order to avoid a liquidity flood. For example, the RRR of large commercial banks hit 21.5% in 2011 (17.5% currently) and the balance of central bank bills reached RMB 4.7 trillion in 2010 (RMB 0 currently). Since the beginning of this year, foreign exchange assets declined notably, leading to a deceleration of high-power money growth to 3.2% in the second quarter. This will no doubt have an impact on both broad money supply and economic growth. As a result, the PBoC cut the RRR five times as well as injected base money through PSL, SLO, SLF and MLF. Within the balance sheet of PBoC, all these innovative tools are reflected in the claims on other depository corporations. The outstanding balance of this category declined to a low level of RMB 1.2384 trillion in 2014 and then increased sharply to RMB 3.2422 trillion in February this year. However, the other depository corporations returned some of these funding upon maturity between February and September this year, the outstanding balance then declined to RMB 718.8 billion. This showed that the effectiveness of this innovative way of injecting base money has diminished and is not able to fully offset the decline of foreign exchange assets.

From the perspective of base money, both the decline of foreign exchange assets/position and reduction of rediscount and re-lending by the PBoC had negative implications on the overall monetary environment. The amount of these two items combined declined by RMB 1.9412 trillion between February and September this year. Meanwhile, the decline of other overseas assets amounted to RMB 549.5 billion was probably due to the release of reserve requirement in foreign currencies by the PBoC to commercial banks, the impact of which is likely positive. However, the latest outstanding balance has declined to RMB 176.2 billion, leading to a corresponding contraction of PBoC's balance sheet. With its relatively small size, it is unlikely to have any real impact on the monetary environment in the future.

The response measures

Assuming other conditions remain unchanged, if capital outflow continues, foreign exchange assets of the monetary authority will decline further and the size of the PBoC's balance sheet will contract passively. This will also have the effect of quantitative tightening when such outflow is prolonged and enlarged. As a response, the PBoC could increase the size of lending and discounting to depository financial institutions. This will help increase the base money and partially offset the decline of foreign exchange assets, with the aim of maintaining the balance sheet size or moderating its pace of contraction. Moreover, the PBoC can reduce the RRR in tandem with the decline of foreign exchange assets, with the deposits of other depository corporations on the liability side recording a corresponding decline. This category mainly refers to the required reserves and excess reserves paid by the commercial banks. After the PBoC cut the RRR several times, its outstanding balance remained at RMB 21.1222 trillion in September, and there is ample room for maneuver. The former approach can help maintain the balance sheet size of the PBoC, while the latter does not strive to maintain the balance sheet size and would passively shrink in tandem with the reduction of foreign exchange assets of the monetary authority. In respect of the overall financial system, RRR cuts will release previously locked-up capital and thus ensure more liquidity within the financial system. Indeed, the result of the two approaches would be largely the same.

Since 2008, the PBoC began to implement differential RRR system. After the latest RRR cut, the RRR of large commercial banks is 17.5%, while that of the small and medium sized commercial banks is 15.5%. Given the banking system is the most important financing channel in the Mainland, the proportion of new local and foreign currency loans together with other off-balance sheet loans and financing instruments accounted for 79.1% of the RMB 16.5 trillion total social financing in 2014. The RRR in the Mainland remained low at 6% between 1999 and 2003. It was then gradually increased to control the huge liquidity and money supply generated by strong foreign currency inflow. The RRR for the large commercial banks was increased to 21.5% in 2011. Otherwise, the huge money supply expansion would have led to overheating of the Mainland economy.

After five RRR cuts this year, the current RRR for the large commercial banks is 17.5%, 4.0 percentage points lower than the record high in 2011. However, the RRR cuts do not imply a reduction of the commercial banks' reserve with the PBoC. For example, the commercial banks' reserve with the PBoC (as shown in the deposits of other depository corporations) reached RMB 16.8792 trillion when the RRR hit 21.5% in 2011. However, the reserve increased to RMB 22.6675 trillion in March this year when the RRR for large commercial banks was cut to 19.5%. One of the reasons is that the amount of total deposits in the banking system increased over the past few years and the deposit reserve also increased accordingly. In addition, the abovementioned reserve figures also include excess reserves. From February to September this year, there were two universal RRR cuts and one targeted RRR cut. Thus, the RRR was reduced by 1.5 percentage points, which should release roughly RMB 2 trillion of liquidity theoretically. However, the commercial banks' reserve as shown in the PBoC's balance sheet only recorded a reduction of RMB 453 billion to RMB 21.1222 trillion, leaving it with further room for easing.

Therefore, assuming that the foreign exchange assets will continue to decline, and the PBoC will cut RRR further as a response, the size of PBoC's balance sheet will shrink further. However, its impact on the monetary environment is not as strong as the size of its balance sheet contraction suggests. Given the PBoC still has further room for RRR cuts, there is no imminent pressure for the PBoC to follow the US, Eurozone and Japan to conduct QE through direct asset purchases.

主要經濟指標 (Key Economic Indicators)

一. 本地生產總值 GDP	**2013**	**2014**	**2015/Q1**	**2015/Q2**
總量(億元) GDP($100 Million)	20,961	21,446	5,736	5,662
升幅(%) Change(%)	2.9	2.3	2.4	2.8
二. 對外貿易 External Trade	**2013**	**2014**	**2015/9**	**2015/1-9**
外貿總值(億元) Total trade($100 Million)				
港產品出口 Domestic exports	544	553	36	359
轉口 Re-exports	35,053	36,175	3,132	26,270
總出口 Total exports	35,597	36,728	3,167	26,629
進口 Total imports	40,607	42,190	3,531	29,949
貿易差額 Trade balance	-5,010	-5,463	-364	-3,321
年增長率(%) YOY Growth(%)				
港產品出口 Domestic exports	-7.6	1.7	-13.8	-14.9
轉口 Re-exports	3.8	3.2	-4.5	-1.3
總出口 Total exports	3.6	3.2	-4.6	-1.5
進口 Imports	3.8	3.9	-7.6	-3.0
三. 消費物價 Consumer Price				
綜合消費物價升幅(%) Change in Composite CPI(%)	4.3	4.4	2.0	3.3
四. 樓宇買賣 Sale & Purchase of Building Units				
合約宗數(宗) No. of agreements	70,503	81,489	5,467	61,638
年升幅(%) Change(%)	-29.9	15.6	-31.6	3.6
五. 勞動就業 Employment			**2015/6-2015/8**	**2015/7-2015/9**
失業人數(萬人) Unemployed(ten thousands)	11.84	14.95	13.7	13.6
失業率(%) Unemployment rate(%)	3.4	3.2	3.3	3.3
就業不足率(%) Underemployment rate(%)	1.5	1.5	1.4	1.4
六. 零售市場 Retail Market			**2015/8**	**2015/1-8**
零售額升幅(%) Change in value of total sales(%)	11.0	-0.2	-5.4	-2.2
零售量升幅(%) Change in volume of total sales(%)	10.6	0.6	-0.2	1.5
七. 訪港遊客 Visitors			**2015/8**	**2015/1-8**
總人數(萬人次) arrivals (ten thousands)	5,430	6,077	561	3,987
年升幅(%) Change(%)	11.7	11.9	-6.6	-0.1
八. 金融市場 Financial Market			**2015/7**	**2015/8**
港幣匯價(US$100=HK$) H.K. Dollar Exchange Rate (US$100 = HK$)	775.4	775.6	775.2	775.1
貨幣供應量升幅(%) change in Money Supply(%)				
M1	9.7	13.0	11.2	17.6
M2	12.3	9.5	5.1	6.0
M3	12.4	9.6	5.0	5.9
存款升幅(%) Change in deposits(%)				
總存款 Total deposits	10.6	9.7	7.0	8.2
港元存款 In HK$	5.1	9.3	9.8	10.8
外幣存款 In foreign currency	16.2	10.1	4.3	5.7
放款升幅(%) in loans & advances(%)				
總放款 Total loans & advances	16.0	12.7	6.9	6.4
當地放款 use in HK	13.8	12.1	3.2	4.0
海外放款 use outside HK	21.4	14.2	15.9	12.2
貿易有關放款 Trade financing	43.8	-1.4	-16.6	-16.9
最優惠貸款利率(%) Best lending rate (%)	5.0000	5.0000	5.0000	5.0000
恒生指數 Hang Seng index	23,306	23,605	24,636	21,671