



The right framework to view potential Fed tightening as well as China's FX adjustment is in the context of global liquidity and that relationship with financial assets. Liquidity in the broadest sense tends to support growth momentum, particularly when it is in excess of current nominal growth. Positive changes in liquidity should therefore be equity bullish and bond price negative. Central bank liquidity is a large part of broad liquidity and, subject to bank multipliers, the same holds true. Both Fed tightening and China's FX adjustment imply a tightening of liquidity conditions that, all else equal, implies a loss in output momentum. Typically this should be associated with lower yields. This runs counter to a common perception that forex intervention that leads to Treasury sales pushes up yields. To the extent that it does, we suspect this is a short lived temporary affair and will easily be dominated by the more sinister implications of dwindling global liquidity. We note that the recent weakness in global nominal growth that we highlighted last week is highly consistent with weaker global liquidity and that the weakening in liquidity is not new news but has been ongoing since late last year. Not only has it been driven by falling FX reserves but also by the slowing of the Fed's balance sheet. To the extent that other central banks have tried to expand liquidity, in terms of historic relationships to financial assets, FX reserves and the Fed's balance sheet are more important. We think this reflects the role of the dollar as the reserve currency in the global financial system.

Let's start from some basics. Global liquidity can be thought of as the sum of all central banks' balance sheets (liabilities side) expressed in dollar terms. We then have the case of completely flexible exchange rates versus one of fixed exchange rates. In the event that one central bank, say the Fed, is expanding its balance sheet, they will add to global liquidity directly. If exchange rates are flexible this will also mean the dollar tends to weaken so that the value of other central banks' liabilities in the global system goes up in dollar terms. Dollar weakness thus might contribute to a higher dollar price for dollar denominated global commodities, as an example. If exchange rates are pegged then to achieve that peg other central banks will need to expand their own balance sheets and take on dollar FX reserves on the asset side. Global liquidity is therefore increased initially by the Fed but, secondly, by further liability expansion, by the other central banks. Depending on the sensitivity of exchange rates to relative balance sheet adjustments, it is not an *a priori* case that the same balance sheet expansion by the Fed leads to greater or less global liquidity expansion under either exchange rate regime. Hence the mere existence of a massive build up in FX reserves shouldn't be viewed as a massive expansion of global liquidity per se – although as we shall show later, the empirical observation is that this is a more powerful force for the "impact" of changes in global liquidity on financial assets.

The chart below shows the RMB vs. the ratio of PBOC to Fed balance sheets, using prevailing exchange rates at the time as the conversion factor. The initial post crisis period sees the Fed balance sheet expand relatively while the exchange rate is unchanged. There is then a phase of RMB appreciation and relative stability in the balance sheet ratio and then the PBOC balance sheet expands with continued RMB appreciation.