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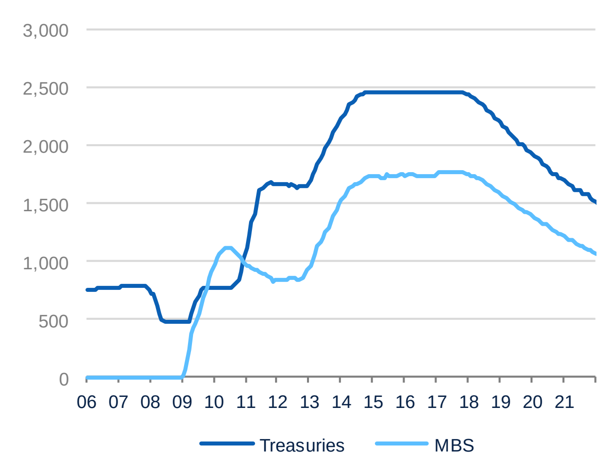
7. Effects of Fed's balance sheet normalization on deposits

At the June 2017 meeting, the Federal Open Market Committee (FOMC) released the Addendum to the Policy Normalization Principles and Plans, which seeks to reduce the Fed's Treasury securities and MBS holdings by decreasing the reinvestment of principal payments. We expect this process to start in 4Q17. The simulated effect on the level of securities held by the Fed is presented in Figure 7.1. The commitment is a sign that the Fed is confident that the economy will be able to absorb the unwinding of the balance sheet without major financial markets disruption. However, the adjustment will impact financial participants in different ways. In this article we analyze the potential effects on commercial banks' balance sheets, which on the one hand hold $2.2tn in reserves with the Fed, and on the other hand have experienced a $5.1tn increase in deposits between 2007 and 2016.

Quantitative easing and bank deposits

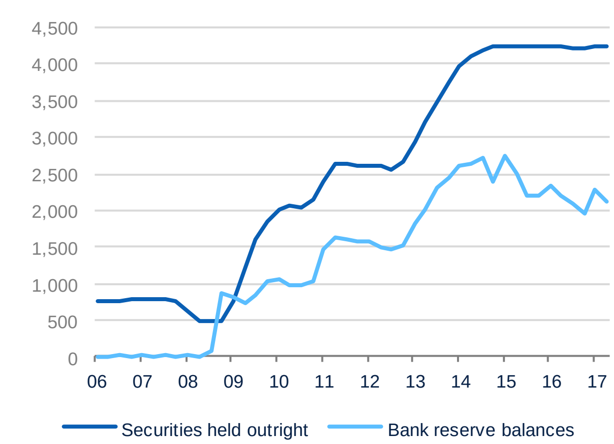
The increase in securities holdings by the Federal Reserve on the asset side of its balance sheet was funded by an increase in commercial banks' reserve balances on the liabilities side (Figure 7.2). That is, the Fed paid for the security purchases by crediting banks' accounts at the Fed with reserves. An exercise in the accounting changes in the balance sheets of the main participants in the QE process suggests that the level of deposits remains unchanged when banks are the sellers of the securities (Figure 7.3), as all that happens is a substitution of securities with reserves at the Fed on the assets side.

Figure 7.1 Securities held outright by the Federal Reserve ($bn)



Source: BBVA Research, Haver, FRB

Figure 7.2 Securitites held outright and bank reserve balances ($bn)



Source: BBVA Research, Haver, FRB

However, banks were not major sellers. In fact, their role was mostly as intermediaries between the Fed and the sellers comprised of non-banks. These were primarily households, hedge funds, broker-dealers, and insurance companies, in the case of Treasuries, and households, hedge funds, investment companies, and pension funds, in the case of MBS.[4] Since a share of the proceeds of the sale was being deposited at the commercial banks (Figure 7.4), the Fed's unwinding of its balance sheet could result in a decline in bank deposits.

Figure 7.3 Fed purchases from banks. Balance sheet effects. Example

FEDERAL RESERVE		TREASURY	
Assets	Liabilities	Assets	Liabilities
Treasury securities +$1	Reserves held by banks +$1 Cash held by the Treasury	Cash held at the Fed	Treasury securities

BANKING SECTOR		PUBLIC	
Assets	Liabilities	Assets	Liabilities
Treasury securities −$1 Reserves at the Fed +$1	Deposits	Deposits Treasury securities	Wealth

Note: Linked effects are assigned the same color.

Source: Leonard, D., Martin, A,, Potter S. (2017) How the Fed Changes the Size of Its Balance Sheet. https://goo.gl/ap6xMw

Figure 7.4 Fed purchases from the public. Balance sheet effects. Example

FEDERAL RESERVE		TREASURY	
Assets	Liabilities	Assets	Liabilities
Treasury securities +$1	Reserves held by banks +$1 Cash held by the Treasury	Cash held at the Fed	Treasury securities

BANKING SECTOR		PUBLIC	
Assets	Liabilities	Assets	Liabilities
Treasury securities Reserves at the Fed +$1	Deposits +$1	Deposits +$1 Treasury securities −$1	Wealth

Note: Linked effects are assigned the same color.

Source: Leonard, D., Martin, A,, Potter S. (2017) How the Fed Changes the Size of Its Balance Sheet. https://goo.gl/ap6xMw

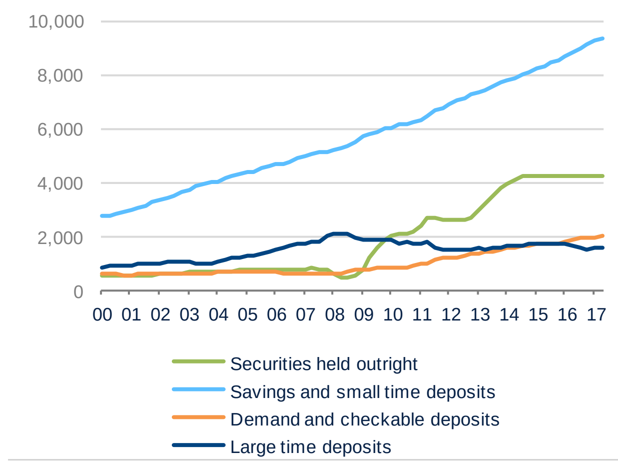
A close look at the data confirms that the effect of the three rounds of QE on demand and checkable deposits was strong and positive. The impact on time deposits was also strong but negative. Meanwhile, the effects on savings and small time deposits seem negligible. After aggregating all the deposits, the effects of QE on deposits lose their significance (Figure 7.5). This suggests that the impact of QE may have boosted some deposits but at the same time depressed other, with a net impact close to zero.

A review of the cross-corellograms of the QoQ percent changes in the levels of securities held by the Fed and bank deposits confirms that there is significant correlation only in the cases of demand/checkable deposits and large time deposits (Figure 7.6). These categories represent around 1/3 of total deposits, and with their disparate response to the changes in the Fed balance sheet have a small aggregate impact. Interestingly, the change in deposits leads the change in Fed securities holdings. This could reflect the other developments that occurred over the last decade in addition to QE, such as the Fed lowering interest rates close to 0%, inflation and inflation expectations reaching historically low levels, a very slow economic recovery, and increased appetite for safe assets both in the U.S. and abroad. In this sense, these other factors may have had a greater influence on bank deposits than the level of the Fed's securities portfolio.

4: Carpenter, S., Demiralp, S., Ihrig, J., Klee E. (2015). Analyzing Federal Reserve asset purchases: From whom does the Fed buy? Journal of Banking & Finance, Volume 52, March 2015, Pages 230-244

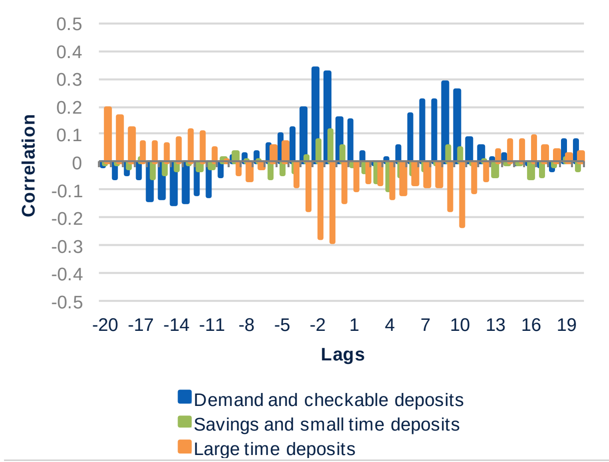
Going forward, banks could become major buyers of Treasuries. The reason for this are the new regulations related to the liquidity coverage ratio and the amount of high-quality liquid assets. If the amount of reserves that banks hold edge down and these institutions want to maintain the same amount of safe assets, they will need to purchase Treasuries.

Figure 7.5 Securities held by the Fed and deposits ($bn)



Source: BBVA Research and Federal Reserve

Figure 7.6 Cross-corellograms between QoQ changes in the levels of Fed security holdings and deposits



Source: BBVA Research

Effects from Fed's balance sheet normalization on bank deposits

To further investigate the statistical importance and the strength of the relationship between the changes in the Fed's securities portfolio and bank deposits, we developed VAR models and performed linear regressions for demand and checkable, savings and small time, large time, as well as total deposits. The independent variables include Fed's security holdings, GDP, risk premiums and interest rates. Based on the VAR models, we also conducted Granger causality tests.

Our results suggest that first, the relationship between the changes in the Fed's security holdings and deposit growth rates are in most cases not significant when other macroeconomic variables are taken into consideration. Second, the changes in total deposits are mainly driven by macroeconomic factors such as economic growth and inflation. On the basis of these findings, we can conclude that the balance sheet normalization itself should not have significant, if any, direct effect on overall deposit growth, as long as the economy continues expanding and inflation remains positive. However, by type of deposits, we should expect banks' balance sheets to experience some substitution between demand/checkable and large time deposits.

Conditional on our baseline macroeconomic scenario and expectations for the Fed's balance sheet normalization, we expect commercial bank deposits to grow slightly below 5% in 2017 and between 5% and 6% per year in the 2018-2020 period.

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