What impact will QT have on financial markets?

Global financial markets

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- Over the past ten years, asset returns have displayed a high correlation with central bank purchases. Investors are concerned that QT could significantly impact markets.
- Correlation does not imply causation. The direct effects of the Federal Reserve’s QT on asset prices and the economy are likely to be limited.
- Central bank signaling of its intentions with QT will be important. Overall, investors should consider risks from QT alongside other probabilistic and ‘event’ risks to markets.
- Poor communication can damage investor sentiment in the near term. But with direct effects limited, QT should not persistently impact longer-term returns.

Quantitative easing (QE) was an unconventional response to an exceptional crisis. This process is now going into reverse, which is known as quantitative tightening (QT).

In aggregate, major central bank balance sheets will end 2019 smaller than they started. The US Federal Reserve is allowing its holdings to mature and is not replacing them (known as passive tightening) and may be about halfway through its balance sheet normalization process. The Bank of England and European Central Bank, meanwhile, are allowing their balance sheets to reduce relative to GDP, which is known as organic tightening. Elsewhere, the Bank of Japan looks likely to end the year as the only central bank which is still easing.

Fig. 1: The BoJ’s balance sheet is bigger than Japan’s economy

Major central banks’ balance sheets as a % of GDP

Source: UBS, Bloomberg, as of 12 February 2019

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Investors are concerned that QT could significantly impact markets
Over the past ten years, asset returns have displayed a high correlation with central bank purchases (see Fig. 2 & 3). And recently, the Fed’s balance sheet run-off was cited as a contributory factor in the sharp sell-off in risk assets in December, which left the S&P 500 almost 20% below its peak. Taking those two factors into consideration, it is clear that investors are concerned. After all, if QE had a significant impact on markets, then wouldn’t QT have the reverse effect?

Fig. 2: Central bank asset purchases correlated with global equity performance
Central bank asset purchases, in USD bn, and MSCI World return, in %

Source: UBS, Bloomberg, as of 12 February 2019

Fig. 3: HY and IG bond yield spreads have been correlated with QE
Central bank asset purchases and USD IG, USD HY bond yield spreads, in %

Source: UBS, Bloomberg, as of 12 February 2019
Correlation need not imply causation

Correlation, however, does not necessarily imply causation. In this paper we show that the direct effects of the Fed’s QT on asset prices and the economy are likely to be limited.

However, the Fed’s signaling of its intentions with QT will be important. There is a chance that central banks and markets become misaligned in the short term, as we saw most recently in December 2018. That was largely due to Fed Chair Jay Powell’s comments that balance sheet reduction was on “autopilot.”

Overall, investors should consider risks from QT alongside other probabilistic and “event” risks to markets. But provided that central banks remain flexible and are willing to learn the lessons from such communication errors – as the Fed has shown in subsequent comments that it remains data-dependent – the risk should be temporary rather than structural (see Indirect impacts: Getting the signal right).

Limited direct impact of Federal Reserve QT

We believe that the overall direct impact of the Federal Reserve’s quantitative tightening program is likely to be limited. As such, investors should not view it as a structural drag on asset returns.

We outline four main reasons for our view:

1) QT will be much smaller than QE

The Fed’s balance sheet will not fall back to pre-crisis levels. The balance sheet expanded fivefold from USD 900bn pre-crisis to a peak in 2017 of USD 4.5trn. We believe QT will only reduce the balance sheet to about USD 3.5trn (see Fig. 4 & Table 1). With the reduction so much smaller than the expansion that preceded it, the direct impact of QT is likely to be significantly smaller than the impact of QE.

Fig. 4: The reduction of the Fed’s security holdings to date has been less than half of the increase during QE1-3
Quarterly changes of the Fed portfolio, values in USD bn

Source: Bloomberg, UBS, as of 12 February 2019
The most important variable in determining the end point for the balance sheet is the final level of reserves, i.e., liquid deposits held by banks and financial institutions as a credit balance at the Fed which are not lent out or invested. Prior to the crisis the Fed operated on scarce reserves, but at the January 2019 FOMC meeting the Fed confirmed that once balance sheet reduction ends, it will operate monetary policy in an “ample reserves” framework. Our estimate for the final level of reserves is USD 1trn.

Part of the rationale for continuing to run the system with a higher level of reserves than before the crisis is that the US economy is now larger in nominal terms and is more cash-based. That means the liquidity preference relative to GDP has risen. A recent Fed survey of 51 banks that account for two-thirds of the reserves in the banking system suggests a minimum demand for reserves of USD 600 billion, which is roughly USD 900 billion when grossed up to account for the whole banking system, close to our estimate of USD 1trn (see Fig. 5). We see this as a limit to how far the Fed balance sheet can shrink.

**Fig. 5: UBS estimates the terminal level of reserves the Fed wants to leave in the system at about USD 1trn**

US reserve balances with US central banks

Source: Bloomberg, UBS, as of 6 January 2019
2) QT is unlikely to fully reverse the impact of QE on long-term interest rates

By buying long-term bonds and mortgage-backed securities, the Fed expected quantitative easing to push money into areas such as corporate bonds, thereby lowering corporations’ borrowing costs and hopefully sparking the productive use of capital. The Fed’s own research suggests that at its peak impact, QE lowered yields on 10-year US Treasuries by 100 basis points (bps), although other academic studies have disputed that the impact was this large.

**Fig. 6: The term premium fell during the 4Q18 sell-off**

![Term premium chart](image)

Source: Bloomberg, UBS, as of 6 January 2019

QT can be expected to reverse some of this impact, but we do not expect it to raise long-term rates by 100 bps. As noted above, the size of the balance sheet reduction will be far smaller than the expansion that preceded it. The evidence so far suggests that there has been no persistent trend toward a higher term premium. And, in fact, during 4Q18 when investors appeared most concerned that QT was having an adverse impact on risk assets, the term premium fell (see Fig. 6).
3) QT should not significantly impact liquidity and inflation

QT is also unlikely to have a significant impact on liquidity or inflation. Changes in liquidity or inflation conditions occur when there is a mismatch between supply of and demand for cash.

In the financial crisis, the liquidity preference rose, and so central banks “printed money” in response. With the financial crisis now more than a decade behind us, the liquidity preference has fallen, and so the Fed is responding by reducing the amount of cash reserves in the system. The reaction of central banks to changes in liquidity preference to keep the supply of and demand for cash in balance should therefore not affect liquidity or inflationary conditions. Indeed, ten years’ worth of inflation data show that QE has not proven inflationary (see Fig. 7) and, similarly, QT should not have a depressing effect on inflation. In fact, if the Fed were not reducing liquidity supply now, cash supply would exceed cash demand and inflation could become a serious problem.

**Fig. 7: Historically, the size of the Fed’s balance sheet has not had a visible impact on inflation**

Fed total assets, in USD trillions (lhs), core PCE inflation, in % (rhs)

Source: Bloomberg, UBS, as of 31 January 2019
4) The Fed’s balance sheet will start growing again in 2020

The Fed’s quantitative tightening only started in October 2017, but we may now already be closer to the end of QT than the beginning. Uncertainty remains over both the final size of the Fed’s balance sheet and the precise timetable for balance sheet normalization. But based on our estimate of USD 1trn of excess reserves, our base case is that the balance sheet runoff should end in March 2020 (see Fig. 8).

**Fig. 8: Central banks’ monthly net security purchases will be negative in 2019, but likely positive again in 2020**

Monthly securities purchased by the major central banks, in USD billion

Source: Haver Analytics, UBS, January 2019

If we are right, by mid 2020, the Fed’s balance sheet will start to expand again to prevent reserves from falling below its desired level. At this point the Fed will again begin purchasing Treasury securities – on average about USD 10 billion per month. Alternatively, if the Fed were to err on the side of caution and decide on a level of reserves of USD 1.25trn, the balance sheet unwind could finish as early as September 2019, although we consider this to be unlikely.
Mortgage-backed securities (MBS)

One area where QT could have a more notable direct impact is on the MBS market. The Fed has clearly and consistently stated that it wants to return to an all-Treasury balance sheet. When balance sheet run-off is complete the Fed will reinvest the cash from maturing/prepaid MBS into Treasuries. The pace at which it will do this is hard to predict, but assuming a pre-payment rate of 12% would suggest USD 10-12bn per month. With combined purchases of over USD 20 billion Treasuries per month, and over USD 10bn of MBS per month not being reinvested, clearly there is potential for the basis between Treasuries and MBS to widen.

**Fig. 9: The mix between Treasuries and MBS on the Fed’s balance sheet will shift**

Treasuries, MBS, in USD trn

![Graph showing the mix between Treasuries and MBS on the Fed’s balance sheet](image)

Source: UBS, Federal Reserve Board

However, it is difficult to position for such a potential widening a year in advance. Basis widening could be swamped by other factors. For example, if Fannie Mae and Freddie Mac are combined and privatized, MBS liquidity could improve, but they may also be seen as less creditworthy if they lack a clear government backstop.

ECB/BoJ balance sheet reduction is a greater threat

Although we do not think the Fed’s QT is likely to have a major direct impact on asset prices or the economy, we believe that QT by the ECB or BoJ would have a greater impact on asset prices if and when the ECB and/or the BoJ start to reduce their reinvestment of the proceeds from maturing assets or sell assets. In the Eurozone and Japan the magnitude of QE, relative to their overall economies, has been much larger, in part because both of these economies were more cash-based than the UK and the US. The ECB and the BoJ were also much bolder in the range of instruments they bought, extending into corporate bonds, and, in Japan’s case, equities.

The ECB’s Benoit Coeure has previously argued that the ECB could affect long-term yields materially with modest interventions, because it now owns a very significant proportion of the market. However, Coeure’s conclusion that “this means that, in the future, the Eurosystem can retreat as buyer in the market without risking an unwarranted decompression of the term premium” appears optimistic. If the ECB is correct that its size means its actions have a disproportionate effect, it appears logical that this would hold true as it unwinds its program.

The situation could be further complicated by market liquidity. European corporate bond markets are not as liquid as the US Treasury market. The ECB has also conducted its purchases according to the size of each Eurozone country’s economy...
– a calculation known as the capital key – rather than the size and liquidity of its fixed income markets. Importantly, the less liquid instruments bought by the private sector as liquidity preference declines will not necessarily match the less liquid instruments sold (or rolled off, or not bought) by the ECB as it unwinds QE.

However, whatever the effect of balance sheet reduction may be, the ECB is unlikely to start anytime soon. It has only recently stopped QE, and with Eurozone growth momentum currently waning, no move to start normalizing rates is likely before 2020. The BoJ, meanwhile, is still adding liquidity.

Indirect impacts: Getting the signal right

While the direct impact of QT appears limited, the correlation between central bank purchases and asset price returns over the past decade needs an explanation.

One way that QE worked was through the portfolio balance channel. Money flowed from highly liquid asset markets (Treasuries) into higher-yielding but less liquid assets such as corporate credit and emerging markets. Lower credit spreads supported increased corporate bond issuance, in turn allowing larger share buyback programs and supporting equity prices.

With QT working in the opposite way through the portfolio balance channel, it appears logical that more peripheral, liquidity-sensitive asset markets might be vulnerable. QT has for example been cited as a contributory factor in last year’s turmoil in some emerging market assets. However, it is difficult to disentangle this impact from the fact that US interest rates and the US dollar were also rising, which typically creates cyclical headwinds for EM economies with significant USD-denominated liabilities. QT was therefore not the single big factor that was affecting asset prices.

In our view, one of the most important channels by which QE impacts assets is the signaling effect. This has helped anchor investor expectations and lower risk premiums. Policy announcements were intended to show the Fed would take decisive and prolonged action and to have the maximum effect possible on investor sentiment. The ECB has employed a similar approach, most notably in Mario Draghi’s 2012 “whatever it takes” speech.

Announcements of QT in contrast are designed to have the minimum impact on investor sentiment. Flagged well in advance and very gradual in nature, central bankers hope – as former Fed chair Janet Yellen described it – that unwinding their balance sheets will be as interesting as watching paint dry. Hence the tapering of bond purchases was gradual and balance sheet run-off is also a prolonged process.

There is clearly a risk that a central bank could misread the market and issue the wrong signals. For instance, in December equity markets suffered their worst reaction to a Fed rate hike since 1994 when Chair Jerome Powell said that the Fed’s balance sheet reduction was on “auto-pilot”.

Central bank signaling of course needs to address the overall stance of monetary policy, and this will have ramifications for both rates and the balance sheet. The Fed currently estimates that US monetary policy is neither strongly accommodative, nor restrictive for economic growth. In our base case, to which we assign a 60% probability, the Fed’s assessment should prove largely correct, which suggests the Fed should avoid a further policy mistake. We also see a 15% probability that the Fed resumes policy tightening, but amid an ongoing cyclical upswing with no adverse impact on risk assets.

Other scenarios carry a greater risk that the Fed and the market become misaligned. We see a 15% probability that US growth is weaker than expected and that the Fed is seen as having already raised rates too much. This could potentially lead to an earlier end to balance sheet normalization. We see a 10% chance that labor market tightness forces the Fed to end its pause sooner than anticipated and tighten policy further, with an adverse impact on growth and markets.

However, in this regard QT is analogous to other risk factors that markets face – whether it is a breakdown in trade negotiations, a further US government shutdown or a hard Brexit. Provided therefore that central banks remain flexible and are willing to learn the lessons from communication errors, the risk from QT should be temporary rather than structural. Poorly managed communications can damage investor sentiment in the near term, but with direct impacts limited, both fundamentals and longer-term returns should not be impacted by QT.
Appendix

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