Do Not Underestimate the Impact of Quantitative Tightening

It may affect economies more than central banks assume.

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KEY INSIGHTS

- Central banks are introducing quantitative tightening (QT) measures but appear to regard them as secondary measures that contribute little to active policy tightening.
- Our analysis suggests that QT measures may have a much bigger impact on yields, output, and inflation than central banks expect.
- This may result in central banks tightening more than necessary in order to bring inflation down, potentially exacerbating any recessionary dynamics.

Many central banks have begun introducing, or are at least discussing, quantitative tightening (QT) measures.[1] Judging from their public communications, central banks intend these policies to run largely in the background and contribute little to active policy tightening. I believe their impact could be much greater than this, however—potentially sharpening bond market volatility and creating the risk that central banks tighten policy more than necessary.

QT is a more limited policy tool than quantitative easing (QE) in that it impacts economies in fewer ways. QE influences markets through six main channels: market stabilization, the reduction of uncertainty, policy signaling, exchange rates, portfolio rebalancing, and bank lending.

How QE and QT Impact Economies

In times of market distress, for example, QE can stabilize bond markets, easing financial conditions. When economic uncertainty is high, the pursuit of QE can signal to the general public that the central bank will do "whatever it takes" to save the macroeconomy. If it is commonly accepted that QE will be unwound ahead of a rise in the interest rate, then implementing QE may signal that the long-term interest rate will stay lower for longer, thereby easing financial conditions.

Like any monetary policy, QE may stimulate the economy by weakening the exchange rate. The portfolio rebalance channel of QE leads to lower bond yields and higher prices of other assets, as investors rebalance their portfolio toward other assets. The bank lending channel implies that the QE-induced rise in bank reserves stimulates lending activity.

[1] QT is the act of reducing a central bank's balance sheet by letting bonds mature or selling them, while QE is when a central bank expands its balance sheet by buying bonds in the open market.

QT Likely Impacts Economies in Fewer Ways Than QE

(Fig. 1) It mainly influences exchange rates, asset prices, and bank activity

Channel	Description	Operates in QE	Operates in QT
Market stabilizing	When markets are dysfunctional, QE can improve liquidity and reduce liquidity term premia*	✓	✗
Confidence/ Uncertainty	QE improves economic outlook by reducing the risk of the worst outcome (reducing uncertainty)	✓	✗
Policy signaling	Asset purchases signal policy rate will remain low for longer	✓	✗
Exchange rate	Foreign exchange moves in response to rate differentials	✓	✓
Portfolio rebalance	Pushes up prices of assets bought, and investors buy other assets, pushing up their prices as well	✓	✓
Bank lending	A rise in deposits expands banks' balance sheets	✓	✓

As of September 30, 2022. For illustrative purposes only.
*The additional compensation expected for taking on more interest rate risk associated with longer-maturity bonds.
Source: Analysis by T. Rowe Price.

> "...QT likely only operates via the portfolio rebalance, exchange rate, and bank lending channels.

By contrast, QT likely only operates via the portfolio rebalance, exchange rate, and bank lending channels (Figure 1). This is because central banks said that QT will only be implemented during calm market conditions—and gradually. The market stabilizing and confidence/ uncertainty channels would likely not operate in this environment. The policy signaling channel is unlikely to operate since QT does not provide any signals about the future path of the policy rate. As such, the QT multiplier we use in our analysis contains only the effects of the portfolio balance, exchange rate, and policy signaling channels.

Since QT is only a recent monetary policy, the only way to isolate the effects of the three QT channels is by analyzing differences in pre-pandemic QE multipliers. The effect of the market stabilizing and uncertainty channels can be removed by comparing the European Central Bank's (ECB's) with the UK's QE. In the UK, QE took place mainly during times of high financial market volatility, while the ECB implemented QE during a much calmer period (Figure 2). Consequently, the ECB's QE multiplier likely doesn't contain the market stabilizing and uncertainty effects.

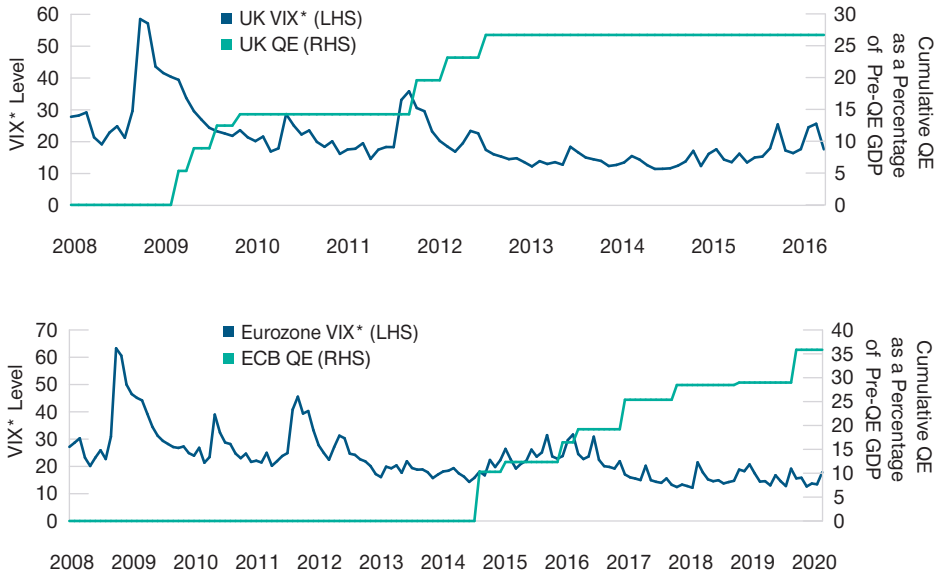
Similarly, while the bond market effects of QE were similar across regions, the ECB's QE program had much less impact on gross domestic product (GDP) and inflation than the Bank of England's QE program (Figure 3). Previous research showed that about 40% of the bond market response can be attributed to the signaling channel. Incorporating this finding generates a QT multiplier that is roughly 70% smaller than that of QE.

The Potential Impact of QT Is Not Well Understood

What does this QT multiplier tell us about the effects of QT on the macroeconomy? We expect the Federal Reserve to shrink its balance sheet by USD 900 billion per year. This amount of QT could result in a decline of around 0.36% in consumer

The UK's QE Program Was Introduced During Heightened Volatility

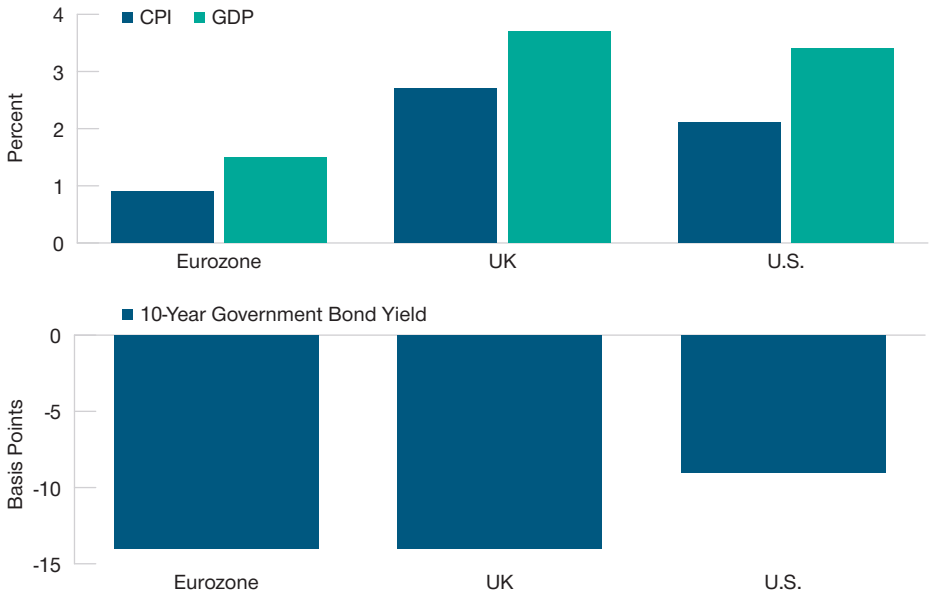
(Fig. 2) The ECB's QE program was launched in a more stable period



Analysis as of September 30, 2022.
*The VIX is a real-time index that reflects investors' views of future stock market volatility.
Sources: Analysis by T. Rowe Price, Weale and Wieladek (2016), Wieladek and Garcia-Pascual (2016).

QE Impacted GDP and Inflation More in the UK Than in the EU

(Fig. 3) The bond market effects were very similar



Analysis as of September 30, 2022. The data was collected over the following time periods: Eurozone: January 2015 to February 2020, UK: March 2009 to March 2016, and U.S.: March 2009 to November 2015. Sources: Bank of England, European Central Bank, and Bloomberg Finance L.P. Average effects reported in response to a 1% rise in asset purchase as a share of GDP.

> ...QT is likely to have a bigger effect than commonly assumed.

price index (CPI), 0.6% in GDP and a potential 30bps[2] rise in the 10-year U.S. Treasury. We estimate that the Bank of England's Monetary Policy Committee specified QT of GBP 80 billion could raise gilt yields by 40bps a year while reducing output and inflation by around 0.55% and 0.4%, respectively. We believe that the ECB's QT, which is still under discussion, will likely amount to EUR 350 billion per year. This could lead to a rise in bund yields of 28bps, an estimated reduction in CPI of 0.17% and GDP of 0.31%. These potential impacts on output and prices would normally correspond to a policy rate rise of 125bps. These calculations therefore suggest that QT is likely to have a bigger effect than commonly assumed.

As with any such illustration, these numbers should be treated with some caution and probably represent the upper bound of QT effects. However, even if we assumed that the effects of QT are 90% smaller than QE (rather than the 70% I assumed), this would still be equal to a policy rate rise of 42bps. The key point, therefore, remains that the bond market and macroeconomic implications of QT are likely to be significantly bigger than assumed by central banks.

This has two important market implications. The first is that as long as central banks continue to shrink their balance sheets, there will be pressure for yield curves to steepen in the medium term, as term premia slowly rebuild. Bond markets are therefore likely to stay volatile for some time to come while they find this new equilibrium. The second implication is that it is plausible that central banks will tighten more than is necessary to bring inflation back to target if they underestimate the consequences of QT for the real economy. This could exacerbate any recessionary dynamics in the affected economies going forward. We believe that central banks should therefore proceed with caution as they will only slowly learn about the effects of QT.

[2] A basis point is 0.01 percentage point.

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