BOND VOLATILITY: ALL ABOARD THE BIG DIPPER?

Since the financial crisis, bond volatility has fallen to historic lows. But changes to the structure of the fixed-income markets suggest volatility could be set for a comeback, creating risks and opportunities for investors.

The Global Financial Crisis of 2008–09 sent volatility in bond and equity markets soaring to unprecedented levels. But as central banks responded by slashing interest rates and implementing large-scale bond-buying programs, these market gyrations were quickly brought back under control.

As the markets calmed in the wake of the crisis, bond investors spotted an opportunity to gain extra returns by betting low volatility would persist. “Selling vol” — essentially the practice of selling insurance against extreme market outcomes — became common. Other investors loaded up on long-duration bonds, typically more volatile than bonds with shorter maturities, in the expectation markets would remain quiet.

But there is evidence that structural changes in global fixed-income markets, along with potential macroeconomic catalysts, could be about to send volatility higher, creating risks and opportunities for investors in both government and corporate bonds, and derivatives linked to those markets.

“The underlying structure of the fixed-income markets is changing and some of the factors that have kept a lid on volatility in recent years have been removed,” says James McAlevey, Senior Portfolio Manager, Fixed Income, at Aviva Investors in London. “We have a deep belief bond volatility is going to return.”
While some of the variables that have constrained volatility since the financial crisis remain in play, the structure of the fixed-income market is beginning to change

Keeping a lid on it

Simply put, bond volatility refers to the degree to which bond prices fluctuate in the secondary market. The most common cause is a rise or fall in interest rates. The duration of a bond is another important factor, because the longer the period before a bond is due, the more sensitive it is to a rise or fall in interest rates.

Volatility plays an important role in pricing, as most bondholders require compensation not just for potential defaults but also mark-to-market risk. However, the relationship between volatility and pricing often goes unacknowledged by non-specialists, according to Joubeen Hurren, Credit Portfolio Manager at Aviva Investors.

“Because default rates in investment-grade credit have historically been low, a lot of the premium you get for investing in the asset class derives from mark-to-market risk,” says Hurren. “Take the iTraxx Europe, the main index of credit default swaps. It’s currently trading at a significantly higher level than you would need to compensate investors for the risk of default, based on historical default rates on investment-grade corporate bonds, exerting downward pressure on yields.”

There are several ways to track bond volatility. The Merrill Lynch Option Volatility Estimate index (MOVE) offers a gauge of expected price swings in US debt by measuring “implied volatility” – a forward looking measure – on one-month Treasury options. The 10-year US Treasury VIX index (TYVIX), which tracks the volatility of the eponymous securities over a 30-day period, offers a more direct measure of past price swings.

By both of these metrics, volatility has been extremely low since the financial crisis. The MOVE index hit a high of 264 in October 2008 and has since sunk to 57.5, as of May 31. The TYVIX reached 14% at the height of the financial crisis; almost nine years on it is trading at 4%.1

Various factors have contributed to low market volatility. Most importantly, central banks have held interest rates low, removing a common trigger for market movements. Quantitative easing programs have also ensured strong support for government and investment-grade corporate bonds, exerting downward pressure on yields.

The presence of large numbers of foreign institutional investors in certain sectors of the market was another factor. Taiwanese insurance companies, for example, have in recent years been big buyers of US callable bonds as a means of enhancing returns, dramatically depressing anticipated levels of volatility.

Regulatory changes have also fostered demand for fixed income in the post-crisis period. The Dodd-Frank Wall Street Reform and Consumer Protection Act in the US and Basel III in Europe, along with mandatory central clearing of over-the-counter derivatives, force banks to hold an greater proportion of high-quality liquid securities on their balance sheets and to post the bonds as collateral on derivatives trades.

Market shifts

While some of the variables that have constrained volatility since the financial crisis remain in play, the structure of the fixed-income market is beginning to change. McAlevey points to a confluence of factors that could combine to push volatility higher.

Most important is the fact that the Federal Reserve is active again. The US central bank raised the overnight interest rate by 25 basis points on March 15. The US economy is strengthening, with unemployment falling to 4.4% in April 2017, the lowest level since the financial crisis.2 This provides Federal Reserve Chairwoman Janet Yellen with a rationale to raise rates further and two further rate hikes are expected this year.

The fixed-income landscape is changing in other ways. For example, the large, price-insensitive buyers that dominated the market in the post-crisis era have begun to scale back their activity or depart from the market.

“Over a three to four year period, while the Federal Reserve was doing quantitative easing, there were monumental amounts of price-insensitive buyers in the market place,” says McAlevey. “They came in and

Figure 1: Net foreign purchases of US Treasuries, 2005-2017

Source: Macrobond, March 2017
bought bonds every day and month, they didn’t care what the data was; they had cash and they needed to put it to work. That limited the ability of the market to move: when growth picked up or decelerated, the market had nowhere to go.5

But the Federal Reserve is no longer engaged in large-scale quantitative easing. In addition, foreign buyers have pulled back (see figure 1). The Chinese government sold almost $200 billion of US government bonds between January 2016 and January 2017, partly to support the weakening yuan. Japan’s holdings, which are mostly owned by private institutions such as banks and pension funds, fell by $50 billion over the last six months of 2016.6

While China and Japan remain major owners of Treasuries – they still hold more than $1 trillion apiece – domestic players such as US pension funds now own a larger proportion of the market. Because they are more sensitive to price fluctuations than foreign governments, these institutions are more likely to buy and sell their holdings, which may contribute to an uptick in volatility.

Retail investors now also own more of the market than used to be the case, and tend to behave in a more pro-cyclical fashion than larger institutional investors. When sentiment turns, they often sell en masse, amplifying and exaggerating price movements.

MBS stress

Liquidity may also be an issue. While regulation has boosted demand for triple-A rated government and corporate bonds, it has also led to a decline in liquidity. Banks have reined in their market-making activities and are now less able to act as shock absorbers during periods of stress. At the same time, changes in market dynamics, such as the rise of electronic trading, have increased the risk of sudden “spikes” in illiquidity in US Treasury markets, making them potentially more volatile, according to research from the Federal Reserve Bank of New York.4

And the Federal Reserve may further contribute to volatility as it begins to wind down its purchases of mortgage-backed securities (MBS). The central bank started buying these bonds at the height of the crisis in 2008 and has since amassed an MBS portfolio worth $1.76 trillion as of May 2017.5 Many of these bonds are likely to re-enter the private markets this year.

MBS as an asset class has what is known in investment jargon as “negative convexity”, which means these bonds are particularly sensitive to changes in interest rates (as the life of mortgage debt tends to get longer as interest rates rise). Investors in these bonds often hedge the attendant risk by buying options against such movements, helping to lift the “market price” of volatility.

In 2003, so-called “convexity hedging” was the key driver behind a rise of 1.45 percentage points in benchmark Treasury yields over a two-month period, according to Bloomberg data.6 “I am not expecting movements of that magnitude, but the roll-off of MBS from the Fed’s balance sheet could have significant implications for volatility,” says McAlevey.

Catalysts: lessons from history?

The factors McAlevey cites will not in themselves be enough to lift fixed-income volatility. But they may remove some of the pressures that have kept volatility low since the financial crisis. This means an economic or political catalyst is more likely to send prices higher or lower, whereas previously the market remained unruffled regardless of the external circumstances.

Politics could be one such catalyst. There is, for example, a risk that President Trump will disappoint investors who are expecting massive fiscal stimulus and tax cuts to deliver economic growth, says Hurren.

“You’ve had a pretty strong rally in terms of equities and credit since Trump won the election, which means there is a possibility he may surprise the market to the downside. That could spark volatility across fixed-income markets.”

The Federal Reserve may also surprise markets by hiking rates more quickly than expected. This is what happened in 1994, when then-Chairman Alan Greenspan presided over a swift tightening in monetary policy. Yields spiked and implied volatility on 10-year US Treasuries rose five percentage points. Volatility also spilled over into overseas bond markets, with implied volatility on French and German government bonds rising 14 and nine percentage points respectively.7

Cross-border volatility could also be an issue in 2017 and 2018, as and when the European Central Bank tapers its bond-buying program. A disorderly tapering process could spook global fixed-income markets in the same way as the so-called “taper tantrum” of 2013, when the Federal Reserve blindsided the market by announcing it would reduce quantitative easing. The US TYVIX hit 8.4% on September 30, 2013, the highest level since the crisis, but quickly levelled out as demand stabilized. Time will tell whether Europe’s policymakers have heeded the lesson.

Hurren also points to the Chinese economy as a potential concern. “In 2016, Chinese policymakers focused on moderating the decline in GDP growth, compromising their reform agenda to ensure the country met its target of 6.5-7.0%. If this approach continues, China may see increased debt and capital outflows, increasing the risk of a sharp deceleration in growth,” says Hurren. Global credit spreads widened in January 2016 when Beijing struggled to arrest a slide in its equity markets, demonstrating the influence China can have on markets worldwide.
Strategies

So how might higher fixed-income volatility manifest itself? And what degree of volatility should investors expect? Figure 2 shows volatility on three-month options on US Treasuries since the 1990s, illustrating how volatility declined in the lead-up to the financial crisis, spiked sharply, and then fell once again to abnormal lows.

“As a base case, we expect volatility to normalize at somewhere close to its 1990s range, perhaps between 80 and 120 on the MOVE index, following the extreme highs of the crisis and the extreme lows seen in the run up to the crash and thereafter,” says McAlevey.

How can investors position themselves in an environment of rising volatility? First, they should be mindful of the duration of the government and corporate bonds they own. Because long bonds are more sensitive to rising interest rates, they are more vulnerable than short-maturity bonds when yields rise and volatility picks up.

The behavior of German government bonds – assets usually prized for their stability – demonstrates how the interplay between price and yield can wreak havoc on long-dated bonds. Over two weeks in May 2016, the yield on 30-year bunds increased 53 basis points. While that might seem a modest move, the bunds’ price consequently fell 12%, an amount equivalent to 25 years’ worth of accumulated yields on the same securities. 8

But investors can also look to turn increased volatility to their advantage. The market price of volatility continues to trade at a low level despite the recent changes in market structure, which could present a lucrative opportunity for investors to buy options that pay out when volatility picks up.

“There is no free lunch in bond investing. But since losing money with a traditional long-only bond portfolio in a rising rate environment is a mathematical certainty, investors should start preparing for a return of volatility,” says McAlevey.

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1 Bloomberg
3 US Treasury, April 2017
4 ‘Has liquidity in the Treasury and equity markets increased?’, Federal Reserve Bank of New York, October 2015
5 Federal Reserve Bank of New York, May 2017
6 ‘Bond market calm is threatened by Fed’s $1.75 trillion shift’, Bloomberg, March 2017
8 Bloomberg

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Figure 2: MOVE Index, 1992-2017

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