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Something Has Got to Give:
Examining the Recent Decoupling of US Stock Prices and Bond Yields

Overview

- The S&P 500 stock index has staged a remarkable recovery in recent weeks and is now a bit higher on the year, while 10-year Treasury yields continue to languish at low levels.
- Equity prices are being supported in part by expectations that the Federal Reserve will deliver very little policy tightening in order to keep growth close to trend. This boosts the present value of expected stock dividends and supports equities, even if the growth outlook remains unchanged or has improved only marginally.
- However, most of the decline in bond prices appears due to a decline in the term premium, not the expected rate path. Expectations for global quantitative easing and a reduction in economic and policy uncertainty are the main factors that have driven the term premium lower.
- While the divergence between equity prices and bond yields may persist, term-premium induced declines in rates can be unstable and prone to reversal. Central bank communications errors or reduced expectations for global quantitative easing could lead to a "snapback" in the term premium.

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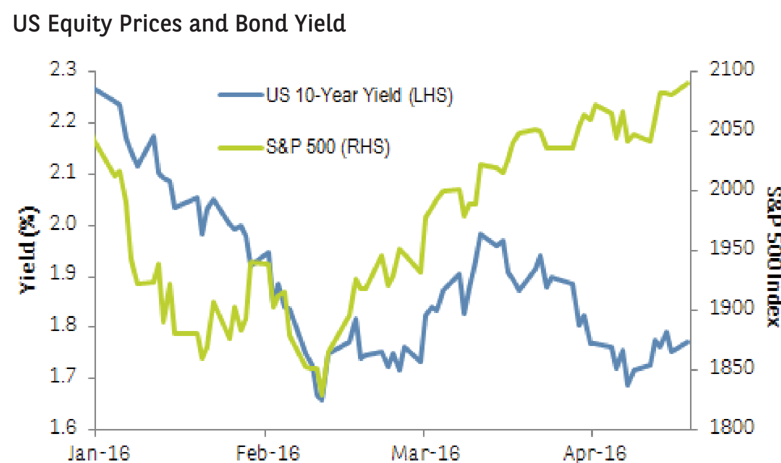
THE PUZZLE

One of the more striking developments of recent weeks has been the divergence between US stock prices and long-term Treasury yields. After moving in the same direction earlier in the year, equity prices and bond yields have since parted company. Looking through the ups and downs in performance, the S&P 500 index is slightly higher on the year while bond yields are back down close to their 2016 lows, with 5- and 10-year yields both over 40 basis points lower than where they started the year.

US Equity Prices and Bond Yield



Source: Bloomberg

What macro outlook do investors have in mind that leads to notably lower bond yields but higher equity prices? Addressing this question is not merely an academic exercise. Two occasions in early 2015 also saw significant declines in bond yields but resilient equities, and in both cases stocks held gains but yields eventually snapped higher. Current relative pricing of bonds and stocks may eventually resolve in a similar matter. Or perhaps bond markets are signaling a less favorable outlook, and equities will sooner or later reflect the same, especially if the narrative of ineffective policy returns to the fore. Of course, the factors underlying low bond yields and resilient equities could persist, perhaps even leading to further equity gains while yields stay at very low levels. Our goal in this brief note is not so much to call the outlook for bonds and equities, but to provide a framework for thinking through the issue from an economic perspective.

Discounting the Future

Long-term government bond yields and stock prices are closely linked. The yield on long-term government bonds provides a sensible discount rate for equity investors looking to place a value today on the stream of future dividends. Holding all else fixed, equities should rally when long-term bond yields decline as the future dividend stream is discounted at a lower rate. However, bond yields fall for a reason and the change in world view that leads to a reassessment of the fair value of risk-free rates will often have implications for the capacity of the corporate sector to generate dividends. If the outlook for the global economy deteriorates then investors will be revising down their forecasts for future dividends as well as the future path of policy, and stocks will probably sell off despite the lower discount rate. Solving our puzzle therefore boils down to understanding the reasons why investors have re-priced US Treasuries and whether that revised world view has implications for equity valuations.

A Yield Decomposition Framework – the expected path of rates and the term premium

To shed light on the reasons for the rally in the bond market we decompose long-term Treasury yields into the risk-neutral yield (the expected path of short-term rates) and the term premium (the extra compensation that investors demand for holding a longer-term fixed-income asset). We take this approach because if we can identify which component has moved lower and why, it could provide insights into investor sentiment towards equities.

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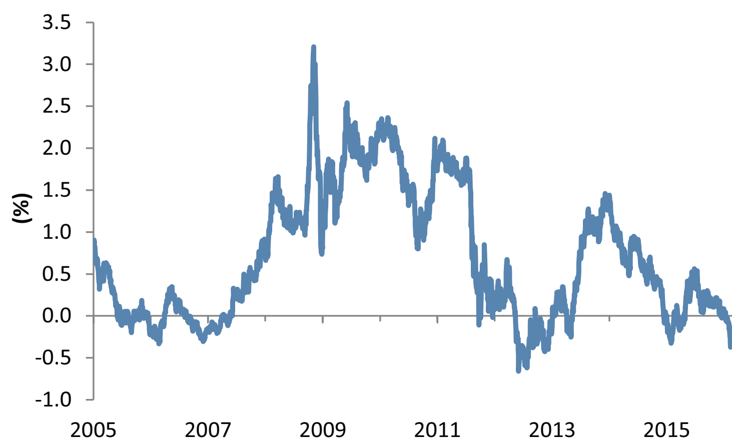
We draw two tentative conclusions when applying our framework to bond yields. First, some portion of recent bond and equity developments reflects investors pricing in a view that a lower path of short-term policy rates will be required (and delivered) to sustain growth. In addition, investors may have now a somewhat more optimistic assessment of the growth outlook relative to the one they held at the beginning of the year. Thus equities have been supported not only by a lower discount rate but possibly also by an improved medium-term outlook.

Second, a substantial portion of the decline in long-term yields is due to a decline in the term premium. This could be due to global quantitative easing (QE), reduced economic uncertainty, a decline in the inflation risk premium and risk aversion. None of these explanations are entirely convincing on their own, and while all may be playing a role, arguably global QE and reduced economic and policy uncertainty provide the most compelling explanations for the fall in the term premium (as well as the improvement in risk asset performance).

10-Year Treasury Term Premium Estimate



Source: Federal Reserve Bank of New York

A key implication of our findings is that there is an appreciable risk that rates snap higher in the near term, not because investors will discount a notably steeper expected rate path, but because the term premium may rise. The term premium is now back down near a post-crisis low, and recent history tells us that when the term premium falls to significant negative levels, it is rarely stable and is prone to large corrections. This is particularly the case when the decline in the term premium is driven by QE expectations and announcements. Should a term premium-induced snapback in yields occur and be sustained, equities could fall from current levels since discount rates would rise, even if the expected path of short-term rates does not change. And in addition, term premium snapbacks often coincide with the pricing in of a higher expected rate path, which could further weigh on equity market performance.

It is also possible that outright yields could fall further, thanks to a decline in one or both of the expected rate path and the term premium. What happens to equities in this scenario should depend on the source of the shock. For example, one obvious driver of a further rally in fixed income is a re-intensification of concerns about a US recession which investors then expect to be met with additional QE, forward guidance or new unconventional policy responses. It seems unlikely that US equities would remain resilient to that shift in sentiment despite the increased support from monetary policy.

The Contribution of Shifting Policy Expectations to Lower Yields and Resilient Equities

Decomposing 5- and 10-year Treasury yields, we find that since the beginning of the year a bit more than half of the yield decline at both maturities is due to a decline in the term premium. Still, at both maturities the risk-neutral yield declined by roughly 25 basis points. In short, a good portion of the move reflects expectations for a lower path of interest rates over the medium and long term. The significant flattening of the forward OIS curve out to 10 years also supports this interpretation. Thus investors appear to have marked down not only the path of rates expected to prevail over the business cycle, but also the equilibrium policy rate that the central bank will have to deliver over the long run, once the cumulative output gap has disappeared and inflation is back at target.

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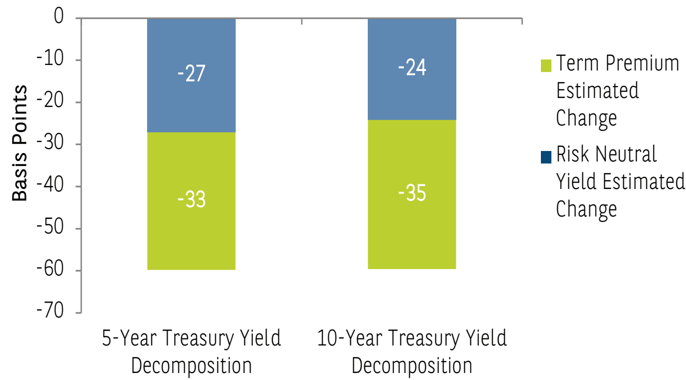
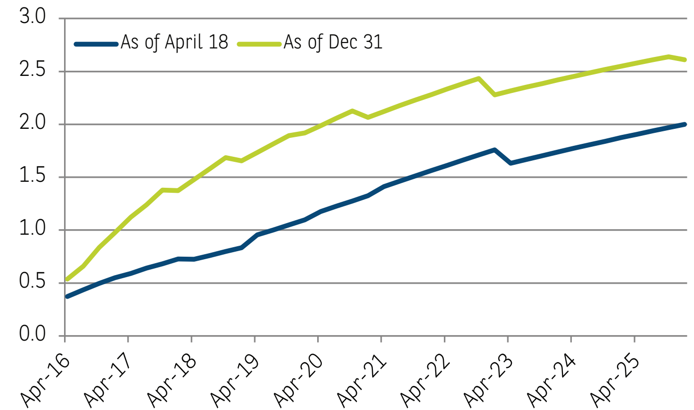
Decomposition of Change in 5- and 10-Year Yields Since Jan 1st



Source: Bloomberg

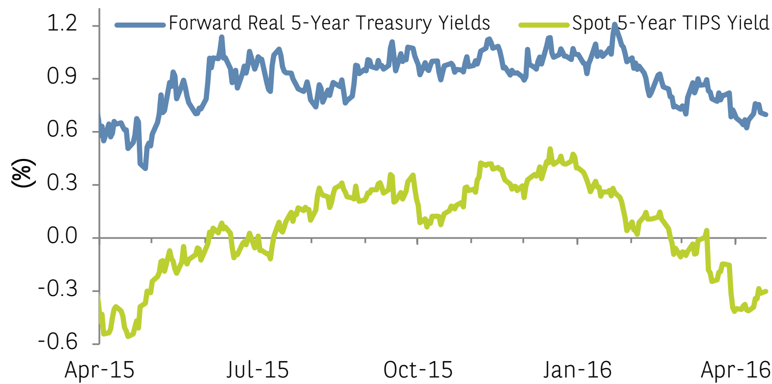
US OIS Curve, 3-month rates



Source: Federal Reserve Bank of New York

Turning to real yields, we can see that the spot 5-year yield has fallen by about 75 basis points since the start of the year, with around half the fall coming since the March Federal Open Market Committee (FOMC) meeting. The change in tone from the Federal Reserve – with the FOMC seemingly more tolerant of inflation overshoots and stressing that the two percent inflation objective is not a ceiling – could have had an impact on inflation expectations and therefore the compensation for inflation priced into conventional bond yields and the level of real yields. However, it is interesting to note that 5-year breakeven inflation is little changed since the March FOMC meeting.

Spot & Forward 5-Year Real Treasury Yields



Source: Bloomberg

The real yield that is expected to prevail five to 10 years from now has also fallen since the beginning of the year. One could argue that falling real yields at this far horizon reflects investors marking down their forecasts of the medium-term growth outlook. However, it is unclear what news in recent months would have prompted investors to shave 40 basis points off their estimate of US trend growth, but we do note that the Federal Reserve Bank of New York's policy survey results suggest that economists at the primary dealers marked down their estimates of trend growth in March compared to the December survey. The change in tone from the FOMC might have also played a role here via long-term inflation expectations but 5y5y forward breakeven inflation compensation is little changed since the March FOMC meeting, and consumer surveys suggest stable or declining inflation expectations. In our view, the influence of global QE is a more plausible driver of the shift in spot and forward US real yields.

The Growth Outlook and the Stock-bond Puzzle

The previous section highlighted that investors marked down their expected path of policy rates since the beginning of the year. All else equal, this can boost equity returns via the discount rate channel. But to understand what has driven the resilience of equities, we must also account for any shifts in expectations for the growth outlook. Private and official sector forecasters have clearly marked down their near-term growth projections, but they have largely been playing catch-up to market expectations – investors had come into the year with a rather pessimistic view on the global outlook.

Relative to the gloomy market view earlier in the year, it is possible that investors have more recently revised upward their expectations for the global economy. The high frequency data suggest that the situation may already be improving. The business surveys point to a recent improvement in activity in the manufacturing sector in a number of countries and in China, which was the center of market concerns about global activity not so long ago, there are clear signs that stimulus is already bearing fruit. There also appears to be a greater sense of urgency among the Chinese authorities to stabilize demand, and investors are less concerned about a potentially destabilizing RMB devauation. The European Central Bank (ECB) is doing more and fiscal policy is turning supportive thanks to a combination of the migrant crisis and austerity fatigue. The Federal Reserve looks less keen to pull away the punch bowl and expectations are starting to build of a coordinated ease in monetary and fiscal policy in Japan.

Problems clearly remain in the Emerging Markets (EM). The imbalances that accumulated while interest rates were low and commodity prices surged have to be worked off. However, it is hard to make the case that these concerns have intensified in recent months. On the contrary, the risk of a complete collapse in commodity prices triggering a wave of defaults and a meltdown in activity looks less likely with oil above $40 a barrel than when oil looked like it was going to fall below $20 a barrel. Even in Brazil, changes in the political landscape and the moderation in inflation may be paving the way for eventual recovery. And a more cautious and patient Federal Reserve opens the door for additional policy easing in EM, where central banks can now be less concerned about capital outflows.

What is Driving the Treasury Term Premium Lower?

As noted above, a bit more than half of the decline in 5- and 10-year Treasury yields is due to a sharp decline in estimates of the term premium. Potential drivers of the term premium may shift quickly or may endure for quite some time, thus it is important to identify what likely accounts for the decline in the term premium back down to potentially stretched levels. We explore four possible drivers: net supply expectations (i.e. QE), economic and policy uncertainty, the inflation risk premium, and flight to quality flows/risk aversion.

Shifting expectations for the supply of bonds available to the private sector likely accounts for a substantial portion of the term premium decline. In particular, the ECB's March policy announcement could lower the term premium in European bond markets, and impact global bonds due to return-seeking behavior. But one has to wonder what exactly the policy innovation is that led to a decline in net bond supply expectations in the eurozone. The upsizing of the QE program was in line with market expectations and should have already been discounted by markets. The extension of purchases to corporates was more of a surprise, but the program is likely to be modest in scale and every euro invested in that market is a euro not invested in the sovereign bond market. The policy innovation, if there was one, was the new Target Long Term Refinancing Operation (TLTROs) and the potential for the ECB to lend to banks at fixed negative interest rates. This new policy relieves some of the pressure on European banks and might open the door for "passive" QE, i.e., banks using attractive funding from the central bank to buy government bonds. Finally, it might be that investors have concluded that further stimulus from the ECB is likely to come in the form of further extensions to the asset purchase program and are therefore already starting to price in purchases beyond the horizon of the current program, putting further downward pressure on the term premium.

One shortcoming of the QE explanation for a lower premium is that stocks in Europe have continued to underperform US equities since the ECB meeting. In addition, Japanese stocks continue to underperform despite building expectations for QE there (perhaps taking the form of "helicopter drops"). It is possible, that investors remain very doubtful of the effects of the ECB's latest policy announcements on growth, and also remain pessimistic on the outlook for Japan. It is also possible that the link between policy-induced declines in the term premium and stocks is stronger in the US than in Europe and Japan, but it is not clear why this would be the case.

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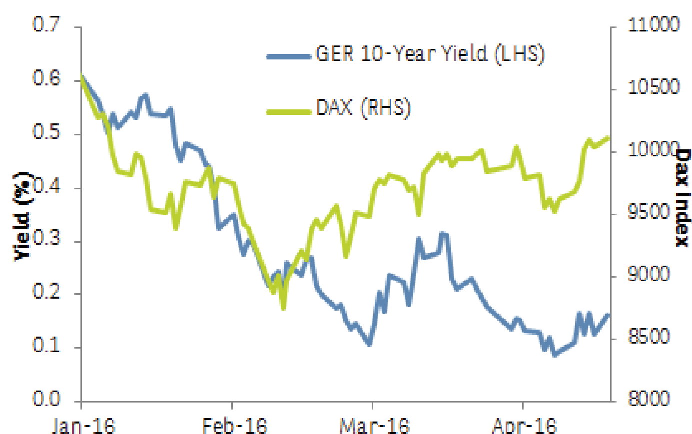
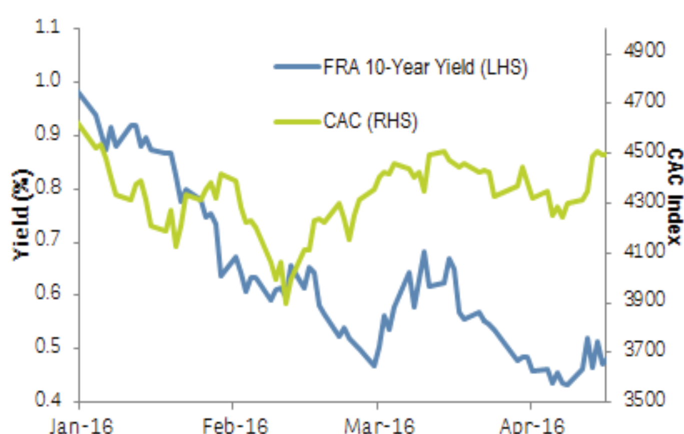
German Equity Prices and Bond Yield



Source: Bloomberg

French Equity Prices and Bond Yield



Source: Bloomberg

Another possibility is that investors are building in expectations for eventual QE by the Federal Reserve, particularly in light of dovish signals from the Chair and comments from President Dudley that risks are now skewed to the downside. Even if expectations for monetary easing have not increased, QE expectations may be higher since the Committee appears to have ruled out taking rates into negative territory, and Yellen has signaled that the Committee would rely on forward guidance and balance sheet policy if the outlook were to worsen. However, it is doubtful that investors ever expected the FOMC to seriously consider negative rates as a first-order policy option, as the Committee's communications on negative rates have been fairly consistent over time. More broadly, expectations for Federal Reserve QE still seem marginal at most, as investor concerns about recession risks have likely moderated since February.

Second, **reduced economic and policy uncertainty** may be contributing to a lower term premium. If policy makers increasingly "get it", i.e., that additional stimulus (or less tightening) is required to achieve even modest levels of growth, the reduced uncertainty about the economic outlook would lower the term premium. So, the market's expected (i.e., mean) economic outlook may not have changed (or has improved a bit) as growth will be supported by more stimulus. But the change in the distribution of potential outcomes may have lowered the term premium.

One issue with this explanation for the decline in the term premium is that this factor might be expected to have a larger effect on the equity risk premium. If economic uncertainty is less now than at the beginning of the year, stocks should arguably be higher than they currently are. In addition, if increasingly prudent policy is driving the term premium lower and reducing economic uncertainty, the current easing in financial conditions should be offset by expectations of tighter policy at longer horizons, but such an outcome is not reflected in long-forward OIS rates or the 10-year risk-neutral rate path.

The term premium may also have been driven lower by a **decline in the inflation risk premium**. It is conceivable that since the start of the year investors have narrowed the range of possible inflation outcomes they anticipate over a 5- or 10-year horizon. The inflation risk premium is notoriously difficult to estimate, but it does tend to correlate positively with breakevens, suggesting that the inflation risk premium has likely declined as inflation compensation has fallen since the start of the year.

Finally, **risk aversion** may be suppressing the term premium. Many investors may still be "sitting out" the recent risk rally due to a lack of conviction that global growth will pick up, and many continue to hold Treasuries as a hedge against a downturn in growth. Still, it is unclear what risk investors are worried about. Some of the major risk scenarios that investors worried about at the beginning of the year appear to have faded recently, particularly the risk of a sharp devaluation by the People's Bank of China (PBOC), and risks that oil prices would continue to decline. Of course, it is possible that these tail risks may have been replaced by others, such as numerous political risks in Europe, the US election cycle and a possible impeachment of President Rousseff in Brazil.

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Summary

The constellation of lower yields and somewhat higher equities since the beginning of the year can be explained to some degree by an unchanged to somewhat better economic outlook supported by increasingly easy monetary policy. Still, more than half of the decline in long-term yields is due to a decline in the term premium to near-record lows. If as we suspect most of the term premium decline is due to QE-related effects and a decline in economic and policy uncertainty, there are appreciable risks that rates could snap higher in the near term. Since the crisis, QE-induced declines in the term premium are often short-lived, as was the case in the fall of 2010 and early last year. Even when term premium declines are sustained, they can still be vulnerable to large corrections. The taper tantrum, for example, led to a 150 basis point rise in the term premium over a 9-month period as investors reduced expectations for the amount of QE and discounted a higher level of policy uncertainty. We should also be mindful of the fact that prior term premium snapbacks have occurred alongside a steepening of the expected path of short-term rates, which can further amplify volatility and a shift to higher rates.

Even if current low levels of long-term nominal yields are sustainable it is hard to think that the configuration of real yields and inflation compensation implicit in those nominal yields can persist indefinitely. Long forward inflation rates remain at levels that are inconsistent with the Federal Reserve achieving its inflation mandate. That is not sustainable: the central bank will not repeatedly make policy errors and investors will not repeatedly make forecast errors in the same direction (at least not in our rational expectations world). Of course, it is possible that this puzzle is resolved by real yields falling further to the point where it is plausible to expect price stability in the long run – but there is no guarantee of that.

If inflation rises back towards levels consistent with the Federal Reserve achieving its mandate, does that imply stock prices fall as investors apply a higher discount rate to future dividends? Not necessarily, because the expected future path of nominal dividends should be revised up alongside the higher path for consumer prices implicit in higher breakevens. Put another way there is no news here on the path of real dividends. However, if the recovery in inflation expectations feeds back into monetary strategy – with the FOMC more comfortable with a higher policy rate path when the TIPS market is no longer questioning the Federal Reserve's credibility – then that would imply a higher discount rate, a lower path for economic activity and dividends and hence lower stock prices.

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BIOGRAPHIES

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Senior Economist

Richard is a Senior Economist at BNP Paribas Investment Partners. In this role, he has responsibility for promoting collaboration between investment teams and formulating alpha-generating investment views across all asset classes. Richard's thought-provoking insights combine academic rigor, strong analytical skills and deep knowledge with an innovative approach to macroeconomic issues. He joined the firm in August 2015 and is based in London.

Prior to joining us, Richard was a Senior European Economist at the Royal Bank of Scotland, Markets & International Banking, focusing on the Eurozone and European Central Bank policy. Prior to that, Richard was a Senior UK Economist at the Royal Bank of Scotland, Global Banking & Markets, and a Senior Economist at the Bank of England, where his work covered UK forecasting, inflation reporting and labour markets within the Monetary Analysis team and risk assessment within the Financial Stability team.

Richard has 14 years of investment experience. He holds a BSc in Economics and Econometrics from the University of Nottingham, and an MSc in Mathematical Economics and Econometrics and PhD in Labour Economics, both from the London School of Economics and Political Science.

Steven Friedman
Senior Investment Strategist

Steven is a Senior Investment Strategist at BNP Paribas Investment Partners. In this role, he is responsible for developing thematic views on the market, economic and policy outlook in the US and other major economies. Steven joined our company in 2013 and is based in New York.

Prior to his current role, Steven was a Director for the Central Banks and Official Institutions team at FFTW, a subsidiary of BNP Paribas Investment Partners. Steven also held various positions at the Federal Reserve Bank of New York, most recently as Director of Market Analysis, where he worked on both market and policy analysis. Prior to that, Steven worked in other roles within the Markets Group, including, Director of Foreign Exchange and Investments, where he had oversight for the Fed's and Treasury's foreign exchange portfolios. During the financial crisis, he worked on the design and implementation of a number of liquidity facilities, such as swap lines with other central banks. Steven also spent two years at the Bank for International Settlements as a member of the Basel Committee Secretariat.

Steven has over 17 years of investment experience. He holds a BA in Government and Russian studies from Wesleyan University, an MA in International Relations from The Paul H. Nitze School of Advanced International Studies at The Johns Hopkins University, and an MBA (executive program) from Columbia Business School.

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