

Stronger synchronisation of equities and government bonds is also likely to shape the coming years

For a long period, government bonds with a long duration offered the almost perfect hedge against price losses in risk assets. They generated positive returns and, as safe havens, regularly compensated for part of the losses during stock market corrections. This correlation property between government bonds and equities was crucial to the success of static multi-asset approaches. Today, investors struggle not only with the low yield but often with negative expected returns from government bonds. Also, the relationship between government bond and equity performance, which was predominantly negative for many years, is currently rather positive. The current pattern is likely to dominate in the coming years as well. This synchronisation reduces diversification in portfolios, causes difficulties for risk-conscious investors and requires multi-asset investors to take a more flexible, opportunistic approach and seek alternative hedges rather than a static mix of equities and bonds.

Mid-cycle phase and upcoming normalisation of monetary policy argue for a continuation of the current high level of synchronisation

From a cyclical perspective, two regimes of cross-asset class correlations alternate (see Figure 1). Regime 1 is characterised by a higher positive correlation between different risk assets (eg equities, high-yield bonds, commodities and REITs) and a stronger negative correlation between these risk assets and government bonds. Regime 2 shows a lower correlation between different risk assets and a less negative (or even positive) correlation between risk assets and government bonds.

The direction of central bank policy is a good indicator of which correlation regime is currently in place. However, it is not necessarily the fundamental cause. In Figure 1, for reasons of simplicity, the direction of central bank policy is represented by the change in the Fed funds (shadow) rate over the last 12 months. This shadow rate incorporates unconventional central bank measures (such as quantitative easing via

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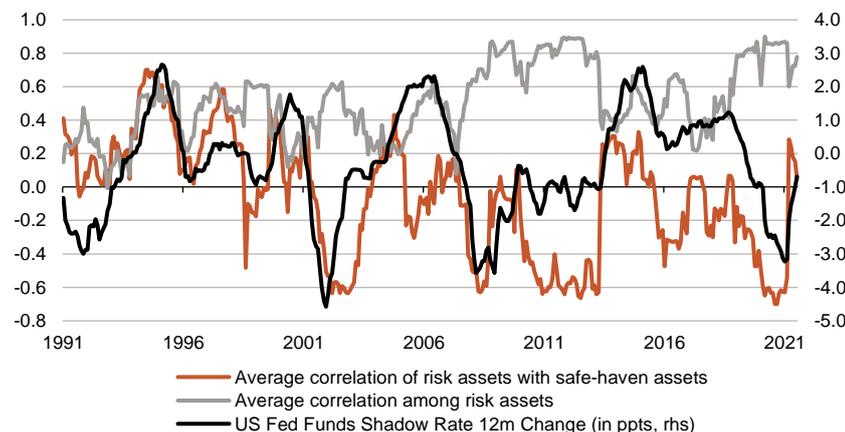
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From a cyclical perspective, two regimes of cross-asset correlations alternate

Central bank policy direction is a good indicator of which correlation regime is currently in place

Figure 1: The correlation between risk assets and government bonds changes significantly over time

Average pairwise 12M correlation between the development of US risk assets* and the development of US government bonds with 7-10 year maturity, average pairwise 12M correlation between the developments of different risk assets* and 12M change in the fed funds shadow rate



* US-Large Caps, US-Small Caps, US-High Yield, Commodities, REITs
Time Period: 01/01/1991-31/07/2021; Source: Bloomberg, own calculations



bond purchases) and their predicted effects into the interest rate calculation. Thus, the shadow rate, as calculated by Morgan Stanley, fell by almost 3.5ppt in 2020. This reflects the Fed's interest rate cut of 1.5ppt and additional easing of monetary policy through renewed strong bond purchases.

Regime 1 applies mainly in phases of weak economic growth or stress in financial markets. In these phases, different risk assets behave similarly, as investors' trading is mainly driven by risk-on/risk-off considerations – the average correlation between different risk assets is high. Investors reallocate heavily between all risk assets and safe assets without differentiating strongly within risk assets. This results in a significant negative correlation between risk assets and safe havens. In such phases, falling (rising) bond yields usually have a negative (positive) effect on risk assets, as they indicate rising (falling) stress and higher (lower) demand for safe havens. In addition, during periods of stress and weak growth, central banks tend to ease monetary policy, reflected by a fall in the Fed funds shadow rate.

Regime 1: Stress in financial markets with strong risk-on/ risk-off behaviour by investors and expansionary monetary policy

Regime 2 is most evident in a normal mid-cycle or end-of-cycle environment. Then, rising bond yields have negative effects on risk assets because corporate financing costs rise, and the relative attractiveness of bonds increases as yields rise. In addition, they may point to an acceleration of inflation, which increases the risk of monetary tightening by central banks. In such periods, the correlation between risk assets and government bonds is higher (it can rise to zero or sometimes even be positive) and that between different risk assets is lower. Investors differentiate more between risk assets.

Regime 2: Normal capital market environment at mid- or end-cycle with normalisation of monetary policy

This cyclical approach explains the recently increasing correlation between risk assets and government bonds. After the phase of strong risk-on/risk-off behaviour by investors and massive easing of monetary policy by central banks since the emergence of the pandemic, the markets have returned to a more normal environment in the wake of the economic recovery. The discussion about the reduction of bond purchases by the Fed, as well as the possibly earlier than initially expected interest rate hikes, reflects this normalisation and is also reflected in the rebound of the Fed Funds Shadow Rate.

Transition to normal environment (regime 2) explains the change in correlation – the current environment is likely to persist

Increased inflation also speaks for continued higher correlation

In addition to the cyclical view of the relationship between equities and government bonds, two correlation regimes dependent on the level of inflation can also be observed historically. The relationship between the development of equities and government bonds in the US has historically been positive almost without exception at a core inflation rate above 3%. In an environment of increased and higher inflation, equities and bonds thus tend to behave in the same direction. When core inflation is below 2%, on the other hand, equities and bonds have largely moved in opposite directions. This is true when looking at daily changes (Figure 2) as well as monthly changes (Figure 3). The current strong synchronisation of equities and government bonds is thus also consistent with the strong increase in the core inflation rate in the US to 4.5% in June and 4.3% in July.

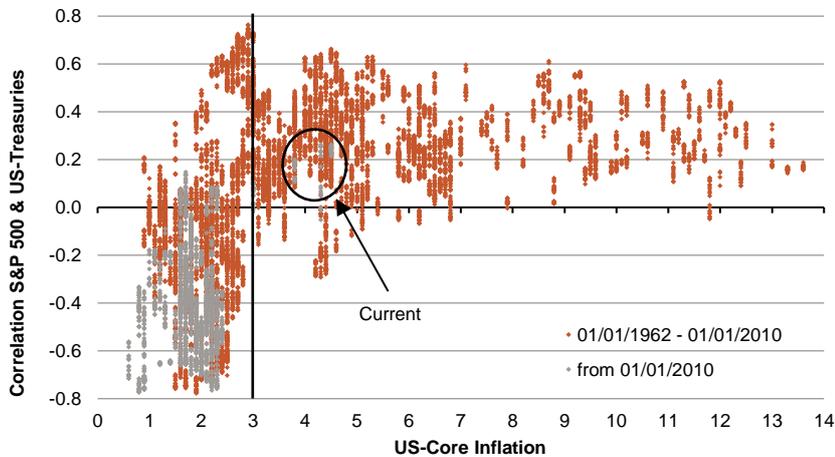
From a structural perspective, two correlation regimes alternate depending on structural inflation

In an environment of increased and higher inflation, equities and bonds tend to move in the same direction



Figure 2: Above 3% core inflation rate, historically almost exclusively positive correlation between equities and government bonds

100-day correlation between US equities and long-dated US Treasury bonds as a function of US core inflation



Time Period: 01/01/1962 - 31/07/2021
Source: Bloomberg, own calculations

The reason for this is to be found in the relationship between inflation or inflation expectations and the valuation on the stock markets.¹ Inflation and its expectations influence real growth and the risk premium demanded by equity market investors.

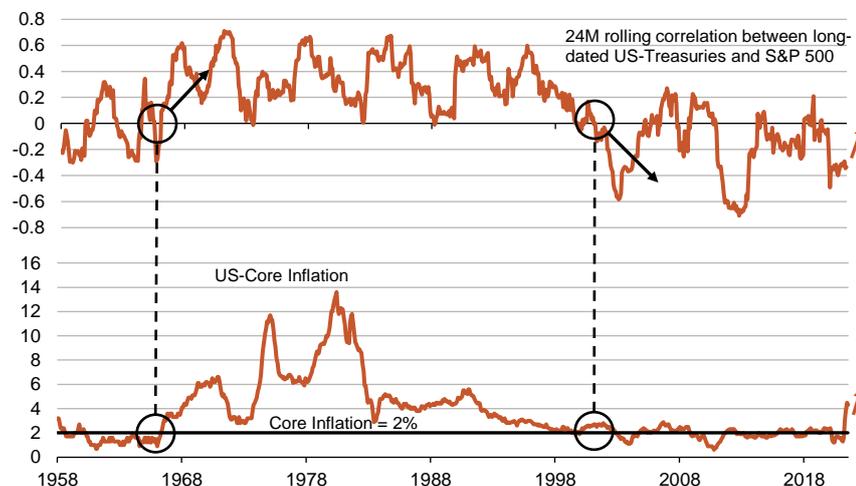
The reason for this lies in the relationship between inflation and equity valuation

Real growth reaches its highest level in a low-inflation environment (Figure 4). Higher inflation (expectations) tends to inhibit growth. In this environment, investors invest in gold or real estate instead of productive assets, and central banks tighten monetary policy so that real growth falls. However, real growth also tends to collapse in a deflationary environment as consumption and investment decisions are postponed. Instead of investing their money in productive assets, people prefer to “put it under the mattress”.

Real growth tends to reach its highest level in a low-inflation environment ...

Figure 3: Higher inflation negatively affects the diversification effect of bonds

Trajectory of the 24M rolling correlation between long-dated US government bonds and the S&P 500 Index and trajectory of the US core consumer price inflation



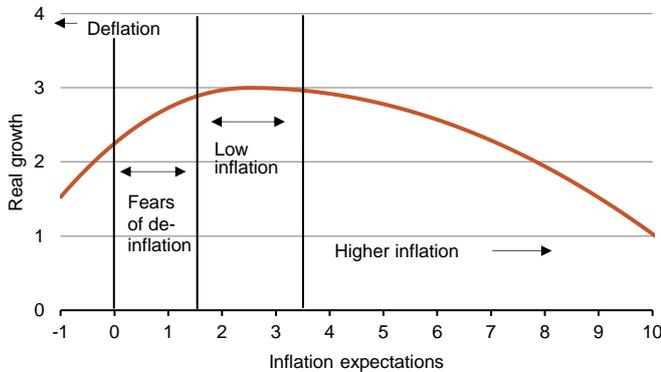
Time Period: 01/01/1958 - 31/07/2021
Source: Bloomberg, own calculations

¹ See Berenberg Markets Focus “Equity valuation between inflation hopes and fear”, 23 April 2018



Figure 4: Real growth is highest in a low-inflation environment

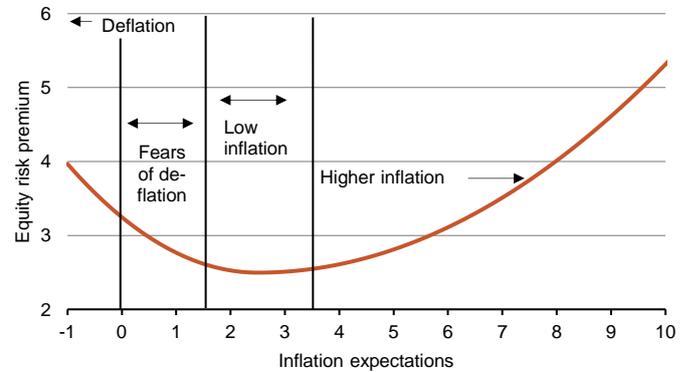
Theoretical relationship between real growth and inflation expectations



Source: Berenberg

Figure 5: The equity risk premium is lowest in a low-inflation environment

Theoretical relationship between equity risk premium and inflation expectations



Source: Berenberg

Risk premiums for equities reach their lowest level in a low-inflation environment (Figure 5). With rising inflation, they tend to rise for two reasons. First, economic cycles are more pronounced and erratic with higher inflation. Since companies cannot adjust their strategies quickly enough, earnings volatility increases. In addition, the interest coverage ratio falls, and highly indebted companies in particular struggle with this. Second, the equity risk premium required depends to some extent on the risk-free nominal bond yield. At a bond yield of 10%, investors are not willing to take the risk of an equity investment for two percentage points more; rather, they demand a risk premium of about five percentage points. On the other hand, at bond yields of 2%, they are more willing to take equity risk for another two percentage points. However, the risk premium is also likely to rise sharply in a deflationary environment, as companies then no longer have any pricing power and are not generating growth, while corporate debt is a burden.

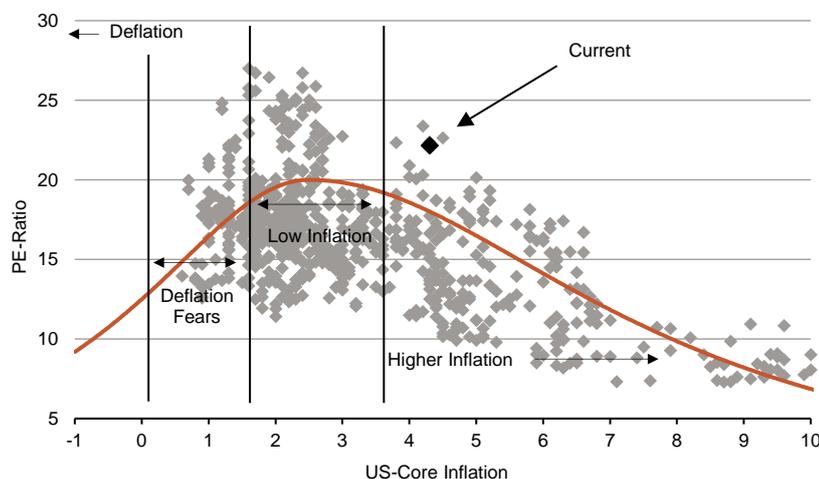
... and when the risk premium for equities is at its lowest level ...

If these two dependencies are integrated into the dividend growth model, it shows that equity valuations are usually highest in a low-inflation environment, but fall

...therefore, equity valuations are usually the highest in a low-inflation environment

Figure 6: Historically highest equity valuations in a low-inflation environment (2-3% core inflation) - more or less inflation weighs on valuations

P/E ratio of US equities versus US core inflation since 1958 on a monthly basis



Time Period: 01/01/1958 - 31/07/2021
Source: Bloomberg, own calculations



with rising inflation as well as with falling inflation (Figure 6). This means that up to an inflation level of 2-3%, rising (falling) inflation and thus rising (falling) bond yields are positive (negative) for equity valuations – bonds and equities move in opposite directions. Above an inflation level of 2-3%, rising (falling) inflation and thus rising (falling) bond yields are negative (positive) for equity valuations – bonds and equities move in the same direction.

Lessons for investors

The bad news for investors is that in the coming years the correlation between government bonds and equities is likely to be in the regime of higher, tending-positive correlation. On the one hand, the markets are likely to remain in the cyclical regime 2 (mid-cycle, normalisation of monetary policy). On the other hand, we expect inflation to fall back somewhat after a significant increase, but believe that disinflationary trends such as globalisation or demographic change have turned around in recent decades and will again cause higher inflation than before the pandemic in the coming years. There will always be temporary phases of negative correlation between equities and government bonds. However, we do not expect a return to an environment of sustained negative correlation between equities and government bonds any time soon. Accordingly, equity valuations are unlikely to rise further, which should limit the upside potential of equities beyond earnings growth. However, the increasing importance of price-inelastic investors (ETFs, systematics, etc) will likely make it more difficult to fall back to historical, lower equity valuations.² Static multi-asset approaches or approaches with target volatility or risk parity are likely to continue to struggle in this environment. In a historical comparison, the former are expected to yield lower returns with higher risk, while the latter, with a fixed risk budget, are expected to yield significantly lower returns. Moreover, in this environment, other investments with hedging character should become or remain expensive by historical standards.

The correlation between government bonds and equities is likely to be in the regime of higher, tending-positive correlation in the coming years

² See “Berenberg Markets Focus – Passive investments change market structure and market behaviour”, 5 May 2021

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Date: 30 August 2021

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