RISK UPDATE: EQUITIES IN A RISING RATE ENVIRONMENT

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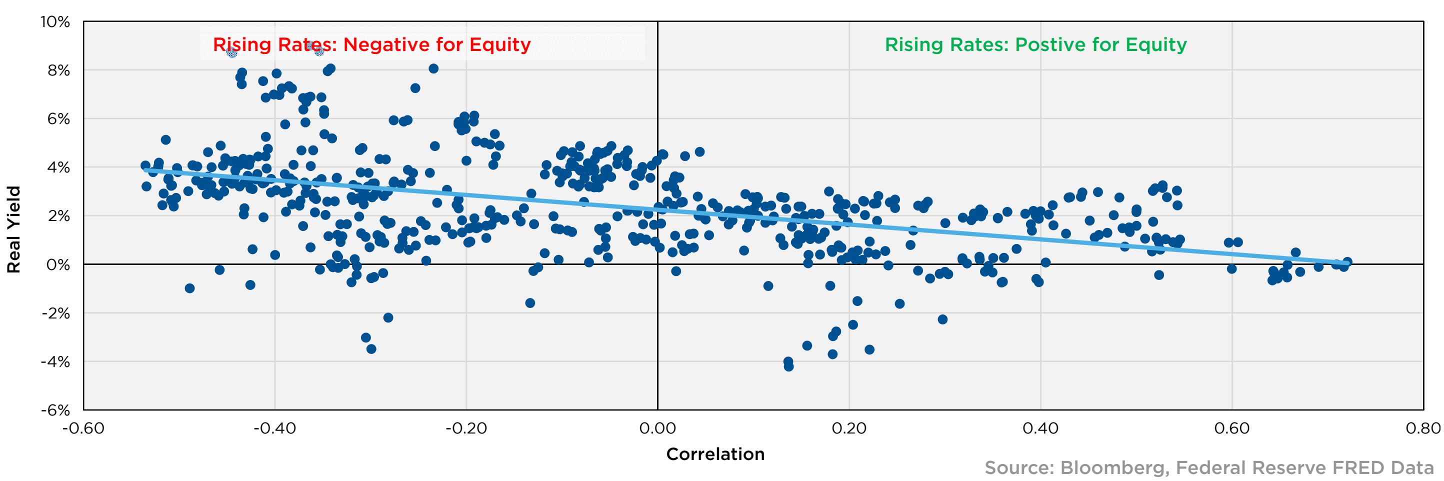
Introduction: As markets prepare for likely Fed rate hikes, concerns have grown regarding the possible implications for equity valuations. While no one can say with certainty what will ultimately transpire, a combination of history and theory does provide some guidance. Specifically, when the Fed is raising rates in response to improving or normalizing growth, rising rates tend to be positive for equities. Alternatively when the Fed is raising rates to lower inflation by slowing growth, rising rates are usually bad for equities. Currently, we are in the former state, and although short-term correlations can be noisy, we anticipate rising yields to reflect improving growth prospects and therefore to be at least modestly constructive for equities.

The Theory: One way to think about the Fed's policy choices is to decompose interest rates into three different regimes; 1) the long run neutral rate, or as it is now commonly referred to as r*; 2) rates below this level; and 3) rates above this level. The neutral rate can be thought of as the "Goldilocks" rate because it is the real rate of interest (nominal rate less inflation) which allows the Fed to achieve simultaneously its policy target of full employment while maintaining inflation close to the 2% target. Any higher level of interest rates should lower economic growth, thereby increasing unemployment. Any rate below the neutral rate should stimulate growth, increasing inflation. In theory, this neutral rate is equal to the potential real growth rate of the economy. In the U.S., potential real growth has been estimated to be between 2% - 3% over the last several decades, suggesting r* has been approximately 2% - 3% and corresponding to nominal rates of around 4% - 5% (real rate plus expected inflation).

The Data: Figure 1 below, aided by the regression line, builds upon the relationship between real rates and growth, highlighting the impact on equity price movements. In the chart, we've plotted the correlations between movements in the implied real yield of 10-year Treasury rates versus price movements in the S&P 500.[1] Note that when real rates are low, reflecting monetary accommodation, correlations tend to be positive, meaning rising yields are associated with positive equity price movements while declining yields are associated with falling equity prices. This is consistent with

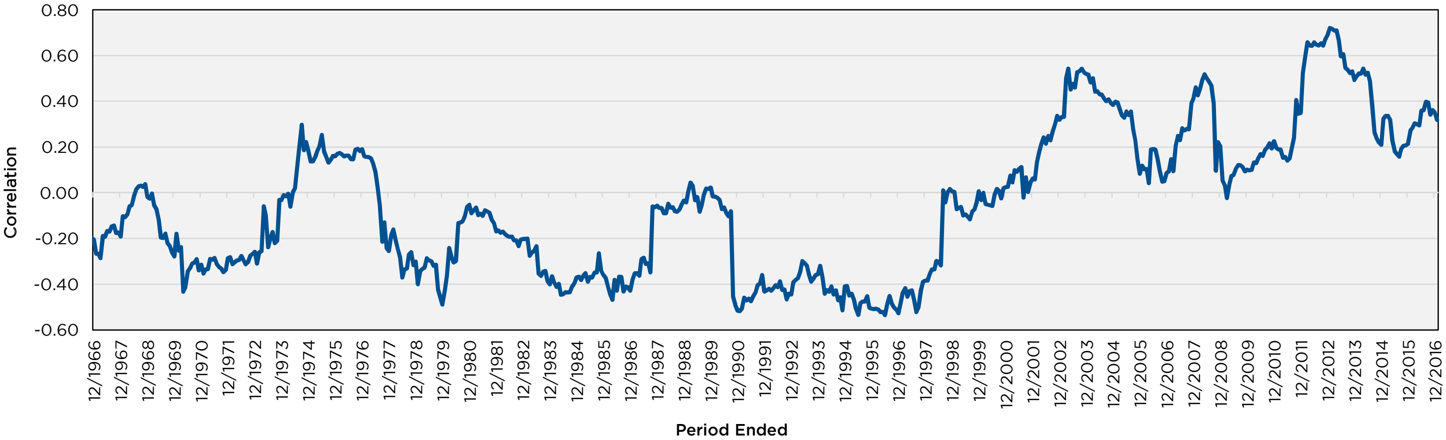
Figure 1: 36-Month Average Real 10-Year Yields Verses Correlations



Source: Bloomberg, Federal Reserve FRED Data

[1] Source: FRED, 10-year real yield estimated by 10-year constant maturity less trailing 12-months core inflation, which has proven to be a close approximation for long-run inflation expectations.

Figure 2: Rolling 36-Month Correlation (S&P Return Versus Real 10-Year Change)



Source: Bloomberg, Federal Reserve FRED Data

the theory described above. When growth slows, the Fed lowers rates and equity prices decline reflecting the slower growth. As growth recovers, the Fed raises rates to prevent an overheating economy and above-target inflation, and equity prices rise reflecting the improving growth. As yields approach the presumed neutral level, correlations decline to near zero. At higher levels of real rates, likely reflecting efforts by the Fed to dampen growth, correlations are more likely to turn negative.

When the Fed needs to attack inflation, policies are designed to raise rates above the long-term neutral rate, slowing growth and dampening equity performance. Once inflation has been restrained sufficiently, rates are lowered and equity markets improve reflecting the more accommodative policy. In Figure 2, we provide a time series of the relationship of these correlations. It's worth pointing out that in the 1970's and 1980's, most policy actions involved combatting inflation. Since the mid 1990's, policy actions have been almost exclusively in response to slowing growth.

Bottom line: There are no guarantees, but if history and theory provide any guidance, the process of rate normalization should be positive to neutral for equity markets. This is not to suggest that correlations will not exhibit some volatility over shorter time periods such as weeks or months, but over longer time periods historical relationships appear likely to be maintained. Additionally, the neutral rate may be lower now than in recent history, suggesting that positive effects from improving growth may be more modest than in the past. The challenge for policy makers will be negotiating a path to normalization that doesn't tip the economy into recession, something we intend to monitor very closely.

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