STRATEGIC INSIGHTS

David Goerz - CEO & Chief Investment Officer
Strategic Frontier Management
March 15, 2017

THE NEW INTEREST RATE PARADIGM

In May 2004, the Federal Reserve began a normalization program to gradually and systematically increase interest rates at every meeting until they reached 5.25%. Such predictability was necessary because the needed increase was great after a delay in hiking rates left the Federal Reserve behind the curve. Several years ago, revisions of Q2/2001 decline rewrote history and suggest the shallowest recession of 2001 may not have been one at all—in the classic sense of sequential quarterly declines in GDP.

December 2015 was the first rate hike for this cycle and bond yields are the highest in three years. The inflection point of *The New Interest Rate Paradigm* suggest several key conclusions, including potentially a more routine course of normalizing rates, which effect bond returns, asset allocation, and risk management:

1. FOMC under new management within a year, so rule-based Hawks likely to trump capricious Doves
2. Rapidly evolving asset class risk measures, particularly volatility and correlation
3. Correcting imbalances and unwinding bloated central bank balance sheets due to QE.
4. Increasing sovereign bond risk of extended global debt and rising interest burdens as yields increase.
5. Higher potential growth and equilibrium inflation as tax and regulatory reform increase competitiveness
6. Consequences of increased duration and bond leverage used by asset owners and hedge funds
7. Financial Reform–Part II and bond market illiquidity

Interest rates have remained too low for too long and now must normalize more quickly given the wide gap to traverse to 3.5%. Normalization requires adopting a systematic program (see 2004), instead of an arbitrary mantra of "data dependency". Pushing on a string with aggressive monetary stimulus hasn't helped jump-start growth. Excuses of weak growth, low inflation, and uncertainty about regional crises to defer normalization have undermined credibility. There must be a price to pay for forward guidance and to "keep interest rates low for an extended period", which induced explicit moral hazard and reduced the inflation risk premium.

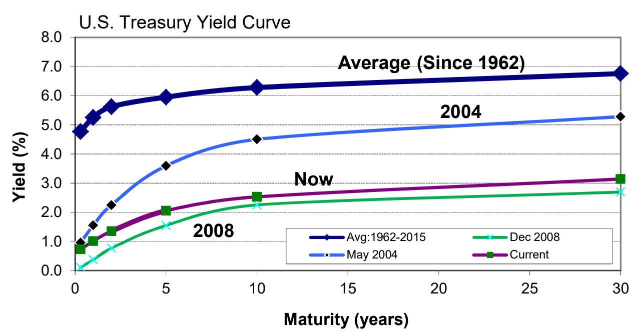
FOMC rate hike expectations have increased, but are still less than our forecast for at least ¼% rate hikes every other meeting until interest rates exceed 3%. With expectations suggesting just 2-3 increases in 2017, investors aren't well positioned for needed hikes. We expect to reach equilibrium sooner at a level more consistent with the long-run average of 4.0%.

Interest Rates	2016	2017	2018	2019	Longer Run
FOMC Avg.	0.63%	1.40%	2.32%	2.89%	2.99%
SFM	0.63%	1.75%	3.25%	3.50%	3.50%
SFM Hikes	0.25%	1.00%	1.50%	0.25%	-

Source: FOMC Economic Projections for March 2017.

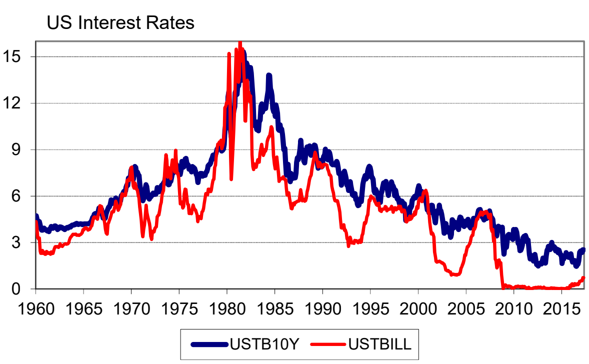
Although tightening monetary policy has lagged our expectations, 10-year Treasury yields rose 1.2% from a record low of 1.38% on July 8, 2016. Treasuries returned -6.8% in the second half of 2016. We forecast a Treasury yield of 3.5% by year-end, and 4.75% in 2018, coinciding with a 3.25% Fed Funds rate. This suggests risk to doubling the Treasury yield is material.

So, why is the yield curve so similar to December 2008? Corrections that seem fundamentally intuitive or logical sometimes just take longer, but the extended period of forward guidance has a lingering effect too. The idea that inflation must be rising out-of-control to justify rate increases is mistaken. Interest rates must normalize in earnest under current conditions. The window of opportunity for a slow methodical program is closing with a wide gap to the Taylor Rule's indicated Fed Funds Rate, already exceeding 2.8%.



Reducing bond-bloated balance sheet holdings also includes refunding $1.4 trillion of maturing Treasuries within the next five years. Investors may be surprised when the Federal Reserve ceases its bond reinvestment program—buying new securities to replace maturing bonds with longer maturity Treasury and agency mortgage bonds to maintain the value of its portfolio. We expect reinvestment to be suspended by year end, and possibly earlier for mortgage-backed agency bonds. Added liabilities of QE holdings as demand diminishes should increase risk premiums and crowding out of new issuance, being heavily indebted.

Record outstanding Treasury liabilities approaching $20 trillion nearly doubled in just eight years. Global debt soared to $230 trillion, with $60 trillion of total U.S. debt including corporate, asset-backed and mortgage sectors. The story is similar for other developed nations—high demand for long bonds facilitated unchecked bond issuance at exceptionally low rates. *The New Interest Rate Paradigm* suggests such imbalances must reverse resulting in persistent negative real bond returns over several years.



A three decade long bond bull market led investors to adopt unrealistic bond market return, risk and correlation assumptions. Rising interest rates will affect equity valuations, but global equity indices are not extended, particularly relative to stretched bond valuations. Growth expectations improved, but inflation increased as well, justifying the remarkable re-rating of stocks and bonds. Investors must extend their time horizon and simplify their asset allocation. Correlations and volatility are evolving more quickly now with increased economic dispersion, an inflection point in interest rates, and *The New Interest Rate Paradigm.*

The current normal CPI inflation risk premium for 10-year Treasuries is 2.5% over inflation or 1.5% over the policy interest rate or Treasury bills (1-3 months). If long-run CPI inflation is 3.0-3.5%, then a normal yield for Treasuries is now 5.5-6.0% versus 2.5% today. An extended period of manipulating interest rates with forward guidance and quantitative easing distorted the price of fixed income market risk. A heightened inflation risk premium may be needed to correct stretched global bond valuations. That would be a costly legacy to an extended period of dysfunctional monetary policy. Thus, investors seem too sanguine about global bond risks, and should be vigilant about the global impact of bond market losses as yields rise.

The extended interest burden of global debt has yet to be tested by rising interest rates, greater bond leverage, extended duration (i.e., LDI, risk parity, chasing yield), or increasing bond market illiquidity. Interest burdens rise with rates, so the potential for fiscal crisis will increase in heavily indebted Japan, Greece, Portugal, and Italy. We remember how a credit squeeze in 2008 widened credit spreads as bid/ask gapped and liquidity evaporated during the 2012 Euro Sovereign Debt Crisis, including short-term issues. Credit rating downgrades when bond risk premiums are narrow could worsen interest burdens and fiscal deficits. These critical lessons were evident in recent years, yet investors seem to be ignoring them.

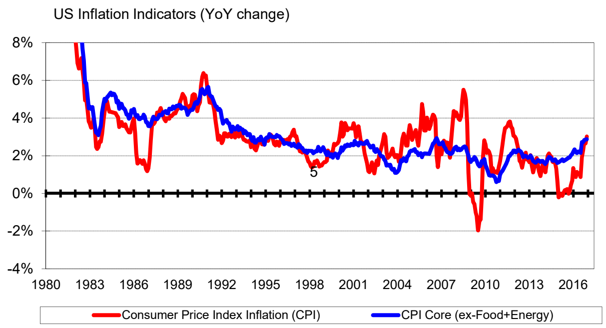
Long duration and leveraged bond exposure among global pension plans and hedge funds exceeds, in assets and leverage, the conditions that tipped Orange County into bankruptcy in 1994. In this regard, rising interest rates at the intersection of extended sovereign debt with asset owners holding excessive duration and leverage are a toxic stew that is ripe for a potential systemic financial crisis. Here is another critical point: Rising bond yields will likely overshoot with persistent negative real bond returns for 3-5 years that could drive an excess inflation risk premium exceeding +0.5% and a steeper yield curve that further increases cost of capital for global debtors.

Investors must appreciate the effect of still high bond convexity, which increases interest rate sensitivity at low interest rates. Bond investors are increasingly uncomfortable. Leverage and extended bond duration will compound losses as yields rise further as never before due to high convexity, with surprising bond losses for just a 1% change in yield. While bond yields rose materially in 1994, yields started from much higher levels than today, so Treasury losses were limited to just 8% by coupon interest. However, a 2.6% current yield isn't much to offset losses in principal.

For decades, investors "surfed" the credit wave, benefiting from taking credit risk and a tailwind of declining rates with an accommodative central bank, but too many advisers are rooted in inflated historic averages—a behavioral bias called anchoring. Interest rate sensitivity also can extend well beyond just bond holdings to private market and even equity holdings. We caution investors about their likely greater exposure to rising interest rates then assumed.

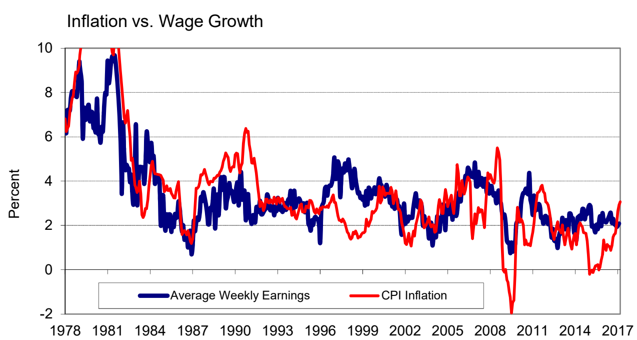
Clear and Present Inflation

While unusual to raise interest rates with such low inflation, risks are increasing. Those arguing for not tightening, fail to appreciate the need for normalization with modes and strengthening economic growth. Near full employment is driving higher wages as the low 4.7% rate of unemployment and claims normalized to workforce is near or at record lows. Emerging *clear and present inflation* is revealed as effects of oil price declines and U.S. dollar strength have sunset, causing convergence in headline and core (ex-food, energy) inflation below. Thus, interest rates need to rise toward equilibrium well ahead of the next inevitable recession, and before needing to hike rates more aggressively.



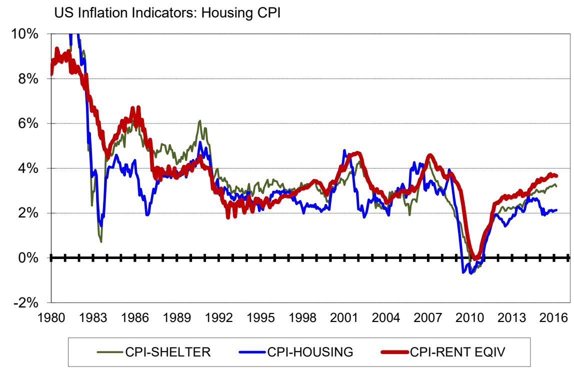
The U.S. economy has become more services oriented as labor intensity in manufacturing and construction declined with an emerging *Industrial Renaissance*. More jobs are being replaced by fewer workers, but resulted in difficult shortages for some skills and a glut for others—digital technology disintermediation had a greater effect than outsourcing on the labor force.

Wage growth is highly correlated with inflation, so 4.0% average wage growth has tracked CPI inflation of 4.2% over the last 50 years. Wages increased 2.3% over the last five years, exceeding CPI inflation of 1.8%. As minimum wage hikes and overtime regulations take effect, rising labor costs can exceed inflation, undermining productivity and profit margins.



Household income is a complex calculation that nets income and transfer payments versus taxes paid and other non-discretionary costs. Shrinking household size, single incomes, reduced benefits, higher taxes, or rising health care costs tend to lower household income, but don't affect wages. Suggesting workers are earning less may be politically convenient, but is misleading as wage growth exceeded inflation, increasing about 2% in the chart above. Slower wage growth is clearly a function of moderating inflation, but labor costs are rising with higher cost of living increases and benefit costs.

As housing demand strengthened and rental vacancies declined, home prices and rent increased. Rent equivalent (housing) inflation is 33% of CPI and 42% of core CPI, so the housing inflation is meaningful.



Rising inflation seems to be gathering strength, so there is nothing comforting for naysayers in these charts. Transitory effects of plunging oil prices and a strong U.S. dollar will reverse as these forces sunset. The equity-oil trading correlation also seems spurious to us, particularly if low natural gas and oil prices closer to equilibrium (WTI oil: $50-60) helps global growth.

Thus, we should ask a marvellously simple question: What is long-term U.S. inflation—putting aside PCE vs. CPI, the FOMC says long-run PCE inflation plunged from 3% to 2%, but we think it will again be closer to 3% (CPI-basis of 3.5%). We suggest tax and regulatory reform restores 2.7% potential growth versus the constrained 1.8% growth observed since 2008. Long-run estimates of the Fed's 1.8% real growth and 2.0% inflation seem misleading, in our opinion. Realizing higher than anticipated growth and inflation could drive a parallel shift or steepening yield curve, meaning that bond yields will rise as much as short-term rates.

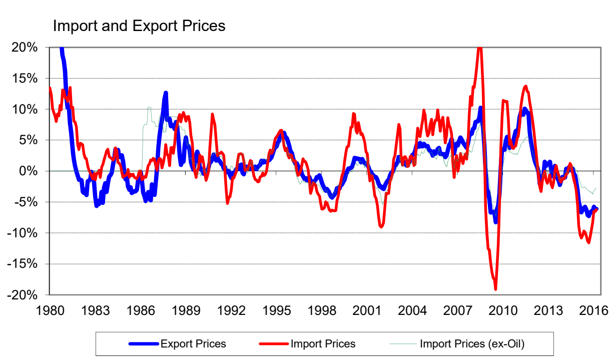
Secular Disinflationary Forces Remain

Observed disinflation is often attributed to globalization, outsourcing, innovation, lower labor intensity, labor disintermediation, global hyper-competition, and Internet price transparency, which have all helped keep inflation contained. These forces of constructive disinflation bolstered higher profit margins for the last decade. Declining energy and basic resource prices masked underlying resurgence of cyclical inflation, but these commodity price effects have recently sunset.

Excellence in software, semiconductors, logistics, simulation, robotics, rapid prototyping, sensors, and virtualization boosted productivity, competitiveness, and profit margins, while containing inflation. New revenue models cause measurement issues that seem to understate economic growth and productivity. Widespread commercialization of disruptive and adaptive technologies had a disinflationary impact on costs and resource utilization. It also accelerated turnover of investment themes and increased the *Ruthlessness of Unruly Forces* (Q4/2016) to retain sustainable competitive advantages.

Deflation risks seem to be a symptom of economic dysfunction, not a cause of weaker potential growth, as some economists suggest. Faltering competitiveness can result from poor policy decisions. Heal the disease, and the symptoms will be addressed—we believe this is the critical consequence of changing U.S. balance of power. Exploiting aggressive monetary policy for an extended period seemed the last best hope of central bankers, but symmetric targeting of inflation has never been tested—and seems baseless to us. Central banks typically intervened when inflation rose too fast or in recession, but intervention to boost inflation has never been attempted, until recently---it appears to be failing. Low and stable inflation is desirable, even when below average or normal. Central bank preoccupation with inflation targeting is misguided and a fool's errand. We think inflation targeting policies may risk stagflation.

Finally, we tackle trade and disinflationary effects of a strong U.S. dollar. We have enjoyed stable consumer prices, particularly for imported goods. A strong U.S. dollar deflated import prices and increased the cost of exported goods and services, further undermining our trade deficit. Global competitiveness and lower inflation are critical if we are to enjoy a stronger U.S. dollar. We haven't seen this published anywhere, despite its significance to inflation and currency changes. The status of the world's reserve currency is unlikely to be threatened in the foreseeable future.



Further Euro and Yen weakness is expected as the BoJ and ECB continue to worry about promoting growth. Political failure to correct structural fiscal deficits and excessive spending has forced central banks to shoulder the burden of bolstering growth. Central banks dominate ownership of Japanese and Eurozone sovereign debt, but capacity for quantitative easing is not unlimited. Interest rates in Japan and Europe fell below 0%, as easy monetary policy has had diminishing economic effect.

U.S. recession risk remains low for the foreseeable future, but normalization from such low levels will take years. Monetary policy will remain stimulative, even as short-term rates rise 1-2%. Even if the yield curve flattens and bond yields climb less, bond investors will still likely lose money with negative returns. Significant Taylor Rule target deviation should only occur during periods of extreme risk, such as the Financial Crisis.

Under New Management

One of our more important themes highlighted is the change in the U.S. balance of power, enabling significant fiscal and regulatory reform, which can bolster U.S. competitiveness. Control of the Executive Branch provides an opportunity to appoint significant decision makers. Three vacancies on the Board of Governors at the Federal Reserve are appointed for up to 14 years, coinciding with expiring terms of the Chair and Vice-Chair in early 2018. The dovish FOMC is likely to be under new management within a year with three-to-five board members replaced over the next year. Another indication of *The New Interest Rate Paradigm* is the migration of *Monetary Doves* off the Board of Governors *for an extended period of time*.

The FOMC not only sets monetary policy, it is also the most important federal banking regulator. Its influence on the economy is therefore significant, including much debate about oversight, policy management, and how the Federal Reserve is governed. We expect that given various individuals being considered for nomination, the FOMC is likely to return to increasing focus on a pragmatic rules based regime. This may well support interest rates hiked more in-line with the Taylor Rule, suggesting faster convergence of interest rates to at least 3%. Reform of Dodd-Frank legislation will result in significant new rulemaking both at the Federal Reserve and SEC, which also has a vacant Chairmanship.

Final Thoughts

Global interest rates are rising, led by U.S. rate hikes. International bond yields may not rise as fast, but they will rise too. We remain concerned about stretched bond valuations and growing financial imbalances that risk higher bond volatility and doubling of bond yields. Investors should be vigilant about interest rate sensitivity. Fundamentals need to drive U.S. policy decisions, not international concerns about potential events (i.e., fiscal crisis, BREXIT, etc.). Recognizing 2016 was an election year, while a strong U.S. dollar and plunging oil prices limited inflation. The Federal Reserve has a chance to restore lost credibility in 2017 with a plan for steady interest rate normalization.

Differences unfolding in fiscal, monetary, interest rate and regulatory policy have resulted in greater cyclical divergence, while lower European and Japanese interest rates with a stronger U.S. dollar have limited upside of U.S. Treasury yields. Global economic divergence and monetary inflection points are a precursor to dispersion in asset class, country, sector, and risk factor returns. This should increase investment opportunities and international diversification, while providing exceptional global tactical opportunities. Currency management and hedging also has become more crucial. Greater uncertainty will not necessarily drive higher equity volatility, although an inflection point in interest rates should drive higher bond and currency volatility. Higher bond volatility could be exacerbated by reduced bond market liquidity and increasing regulatory restraints on market makers.

High global debt levels and record issuance mask a critical risk as interest rates rise. Higher U.S. bond yields must be reflected in global government yields, which increase interest burdens and undermine fiscal deficits for those with diminished potential growth. Japanese and Eurozone liabilities and sustainability of related interest burdens are most at risk.

Historical bond risk and return are skewed by a bull market of over three decades of declining yields. Misleading return and risk assumptions can cause misallocation and disappointing investment results, particularly as asset owners increased reliance on risk estimates by de-risking portfolios and raising interest rate sensitivity with increased exposure to bonds. Assumed bond volatility and correlation are too low, as asset class correlations are evolving more quickly now. Uncertain risk measures may adversely impact optimal portfolio asset allocations, particularly for those that embraced risk-focused allocation schemes, such as risk parity and de-risking portfolios. Private market risk parameters are acutely prone to mismeasurement given practical difficulties of less than annual valuation.

Milliman's 4Q/2016 indicated public pension funded ratio of just 70% is an increasing financial risk, as well, given a 7.5% average discount rate with an estimated $1.4 trillion liability shortfall. Negative real bond returns suggest little hope of getting even 5% return on their current asset allocation, averaging 49% equity exposure as of June 2016. Taxpayer-funded "margin calls" and greater employee contributions are simply a matter of time. Sponsors must also adopt more realistic return expectations between 5-6% vs. an unrealistic 7.5% average. Newly released mortality tables are expected to increase liabilities as much as 5% in aggregate, which can fall directly to the funded ratio. *The New Interest Paradigm* increases the challenges for plan stakeholders already in play, but investor expectations shifted and provide an opportunity to tighten policy without incurring exceptional volatility.

Finally, increased fixed income illiquidity risk seems underappreciated, while difficult to measure and challenging to hedge. It can exacerbate volatility, particularly for countries with high debt levels, as higher U.S. yields lift global yields and adversely impact other rate sensitive investments. Safe haven and income darlings may become toxic with higher rates, including low volatility, high dividend yield, long bonds, gold, risk parity, and certain alternatives. The cost to taxpayers of paying interest on excess reserves while subject to losses on extended bond holdings of the Fed could become significant as interest rates rise.

Potential causes of a financial crisis should be quite different than in the past, and likely rooted in unsustainable global debt, unfunded liabilities, and fiscal deficits, in our opinion. Easy money and negative interest rates elsewhere have dug the deep hole, but rising interest rates will increase the difficulty of the climb out. We have argued that policy normalization is needed, and should progress steadily as long as growth is modest and the likelihood of recession remains low. Rising bond yields and market illiquidity will expose financial imbalances and overexposure to interest rate sensitivity, crippled by extensive global debt that risks crowding out normal credit creation.