

Global Strategy: Quadrant

Global Strategy: Quadrant| August 19, 2016

Correcting Charts: Converging on Zero

Note: The Quadrant report we released on August 19 included incorrect chart material in figures 15 and 16 (please see page 12).

- Slow, but persistent economic growth and “risk free” rates just above or below zero have sustained the bull market, now beyond seven years. Looking across global markets, most asset prices look to be “converging” with this ostensible new norm. The risk is that something actually changes on the growth, rates or credit front.
- Nonetheless, wide interest rate and valuation differentials may sustain current market trends longer than many impatient observers expect. A market “stalemate” of low absolute returns and only temporary corrections is, after all, one possibility.
- Aside from political risks, there are incipient signs of very specific credit stress. These are not decisive in isolation, but worth monitoring with an eye toward future vulnerabilities. They include the spike in LIBOR driven by US money market reforms and some weakening in lower-tier commercial real estate credit.
- With this in mind, we maintain “fully invested” allocations to global equities with a slight positive bias for emerging markets over developed. Looking forward, we expect to maintain our gradual derisking of portfolio allocations overall.
- While yield divergences and credit spreads have been closing, we maintain highly differentiated fixed income allocations. As long-term investment grade sovereign yields range from a low of -0.6% to a high of 4.3%, we left our fixed income allocation at -1.0% with large underweights in Japan and European sovereigns.
- This month, the Citi Global Investment Committee added a small 0.5% tactical overweight to gold by reducing our overweight in cash. We maintain a constructive view of petroleum and closely-correlated markets, but would prefer structures rather than passive index ETFs for direct investments in energy commodities (futures).
- Aside from any true trend changes in economic growth, interest rates or credit market conditions, rising correlations should be a concern for investors. The recent rise in correlation is across equities, credit, rates and regions. Gold, however, has maintained a negative correlation with risk assets.

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GIC August 18—Summary

The Citi Private Bank Global Investment Committee reduced its overweight allocation to cash by 0.5%, adding a small tactical overweight to gold in the same amount. The GIC left its global equities allocation neutral and maintained a 1.0% underweight to fixed income. Beneath the overall fixed income allocation, we have highly distinct overweights and underweights given wide divergences in bond yields across the world.

Ample global savings and \$175 billion in monthly government bond purchases by three key central banks - financed with reserve creation - have pushed many sovereign bond yields close to zero or below. The plunge in world bond yields, coupled with slow but persistent economic growth and only isolated credit problems, has boosted risk assets.

Absent new shocks, this broad market “convergence” with near zero for developed market base rates might continue longer than many expect. With the rally, future returns are being reduced, while strengthening asset prices immediately.

The GIC believes the lengthy, if slow, global economic recovery is set to persist into 2017. With this as a backdrop, we maintain neutral or “full” allocations to global equities, while underweight negative yield sovereign bonds. Growing equity dividends provide a relatively attractive income source.

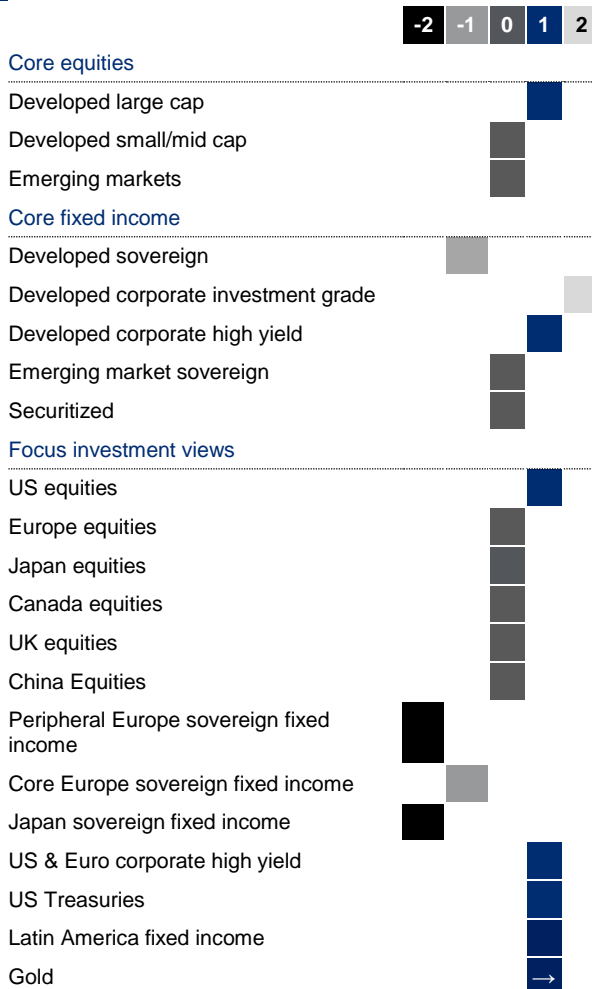
We also maintain significant overweights in US high grade credit, US and European high yield debt, though the sharp price rally in 2016 to-date might mean intermittent price corrections. Similarly, we maintain overweights in emerging markets credit and equities, seeing the best relative value in Latin America.

There are some early warning signs which counsel risk mitigation steps while maintaining broad investment exposures. US regulatory changes have caused a spike in LIBOR which represents a tightening in financial conditions for global borrowers. Banking surveys and bond market data suggest emerging stress in certain commercial real estate assets, away from the lingering effect of oil’s plunge.

With equities, fixed income, and regional market returns seeing an increase in correlation, the value of diversification is weakening somewhat. In contrast, gold and risk assets have maintained a significant negative correlation.

While higher real interest rates and greater confidence would represent a downside risk to the gold price and other such risk hedges, the much larger part of our portfolio allocations would benefit from such a welcome trend, if it were to emerge.

Asset Classes



Allocations as of August 18, 2016.
-2 = very underweight; -1 = underweight; 0 = neutral
1 = overweight; 2 = very overweight

Arrows indicate changes from previous GIC meeting.

Converging on Zero

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Memories of economic calamity, irrational market pricing, and yes, *unusually high* return opportunities in 2008-2009, have almost left a sense of *disgust* with a global bull market which has now surpassed a seventh year. It has left few investment bargains in its wake. As with other long-lasting cyclical bull periods, figuring out how far it can extend may be even more difficult than calling a bottom during a bear market mauling.

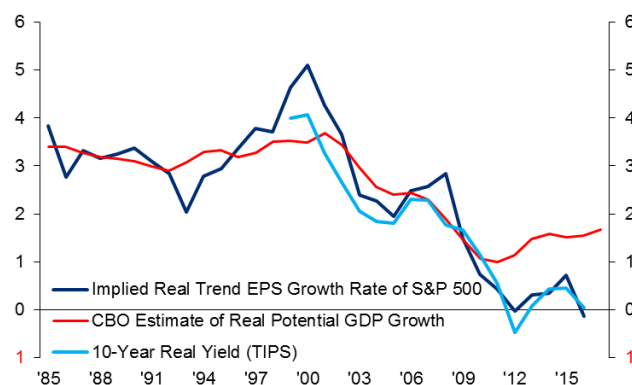
Investors in the past two decades have experienced some of the most extreme bouts of sustained market optimism and pessimism in recorded financial market history. At the height of the equity bubble period in 2000, our estimates show that US real economic growth would have needed to exceed an unprecedented 5% in perpetuity (yes, *forever*) for US shares to sustain a valuation roughly triple their long-term average (see Figure 1). Amid quite strong opportunities in bond markets - including an 8.5% yield on long-term high grade corporate bonds at the time - the equity bubble period saw broad US shares trade as high as 45X cyclically-adjusted EPS (see Figure 2). Large cap technology shares traded at roughly *triple* that valuation.

Today, at 27X on the same measure, we reckon that US equities depend much more on sustaining low bond yields and *mere economic stability* rather than any significant optimism over future growth. Poor bond yields flatter the growth and yield opportunity of the world's largest stock market.

Forward-looking assumptions are always questionable. We are particularly wary of trend growth assumptions in a world of shifting demographics. However, since 2012, our algebraic estimate (which includes both corporate bond and stock valuations) now suggests equity markets price *unusually slow* real US economic growth over time. Treasury Inflation Protected Securities are not included in the calculation. Yet they confirm the same message with their near zero real yields.

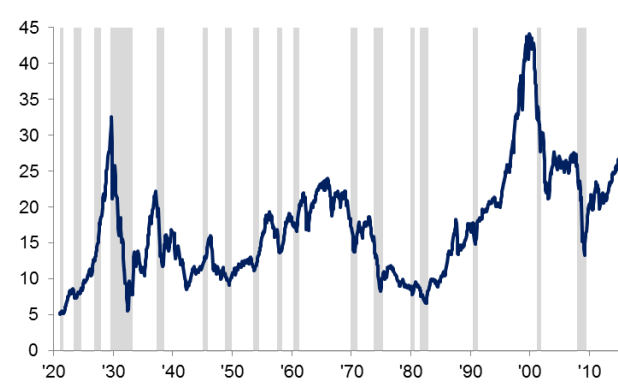
Figure 1: **How Fast is the US Expected to Grow?**

Estimated Real EPS Growth Rate of S&P 500, US Potential GDP Growth Rate and TIPS Yield (%)



Sources: Citi Private Bank, Congressional Budget Office and Haver Analytics as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Figure 2: Cyclically Adjusted Price to Earnings Ratio for the S&P 500 (Price/10-Year Avg GAAP EPS)



Source: Haver Analytics as of August 17, 2016.

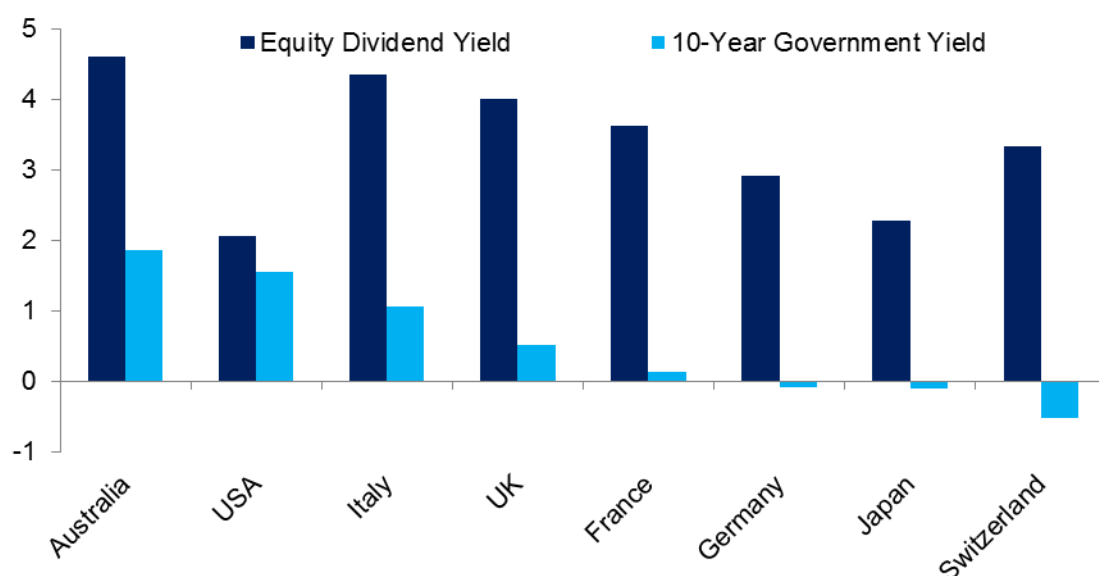
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The 1990s equity bubble period was built on rapid growth assumptions. Today's equity market rests on low interest rates.

We bring this up as so many tell us that equity markets *must* see an acceleration in the ongoing, slow pace of economic growth for returns to remain positive. Yet if this occurs, the doomsayers argue that higher interest rates would then surely cause the equity market collapse they predict.

There are of course adverse circumstances as well as positive circumstances that could drive rising yields. However, as Figure 2 showed, the present valuation situation for equities isn't quite the Mount Everest that was the peak of 2000. That is particularly the case outside the US, where valuations are generally more favorable (see Figure 3).

Figure 3. Dividend Yields and Government Bond Yields (%) for Selected Countries



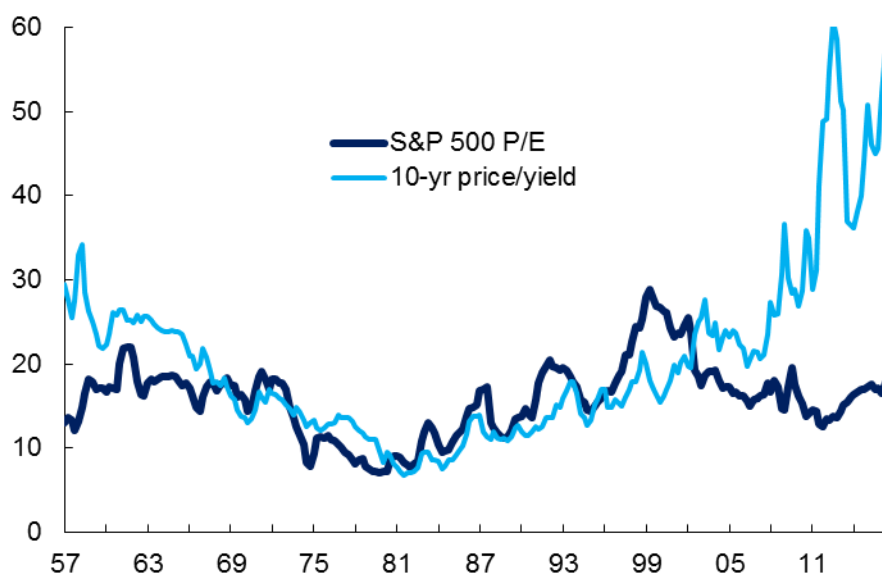
Source: FactSet as of August 16, 2016. Note: Equity indexes are all national MSCI figures. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Why would market valuations demand an acceleration in economic growth when none is expected?

Other notable bouts of extreme asset pricing in the past two decades include US investment grade corporate debt at a nominal 9.5% yield, twice the current level (late 2008), oil at \$145 per barrel, or 3x the current level (early 2008) and the 2.7-fold rise in the Chinese A-share market in 2007 and subsequent 2/3 decline in 2008.

Now - perhaps most profoundly of all – the world can witness negative bond yields. Figure 4 shows a measure of capital invested relative to annualized cash yield for US bonds. Bear in mind, *these are bonds which still have a positive yield*. As investors ponder equity dividend yields sustainably above government bond yields for the first time in six decades, *it is bond yields* that have moved further away from historical norms, not equity valuations.

Figure 4. S&P 500 Price/Earnings Ratio vs US Long-Term Treasury Market Equivalent



Source: FactSet as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Convergence on Low Returns, High Prices

Rather than growth or recovery, the opportunities of the moment are driven by the unusual wide dispersion of yields and diverging valuations of other asset prices.

As a myriad of economic inadequacies have surfaced, central bankers – arguably the only policymakers willing or able to act - have ostensibly aimed for "easier financial conditions" as an all-purpose fix. With quantitative easing (or merely "accommodative" monetary policy) and a glut of global savings to put to work, most asset prices have seemed to converge ever closer to pricing levels consistent with a zero interest rate "norm."

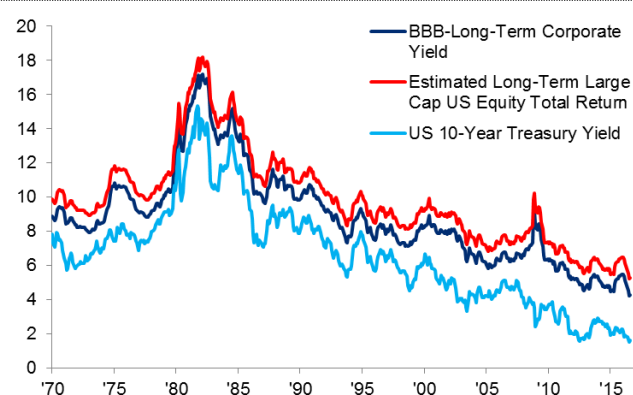
Notably, we don't argue that all asset markets now have zero future returns. Given some level of risk premia still evident (global market valuation metrics diverge widely) we are instead arguing that asset prices have been moving towards levels *consistent* with zero nominal yields on key "risk free" bonds. It's a small but surreal step beyond that compels buyers of Japanese, Swiss or German government debt to pay more than the return of their principal for the storage of savings.

As our discussion above and long-standing views should suggest (please see [Outlook 2016](#)), we see the days of low absolute asset prices and deeply depressed fundamentals as long passed. In the very near-term, investors face the routine turbulence of the summer quarter, which is the only quarter of the year that averages a negative return for global equities (see Figure 3 in our [November 30, 2015 Global Strategy: Bulletin](#).)

But as we said at the open, we must note the bearish bias of investors who have fallen into the deep valleys of depressed asset prices twice in the past two decades, only to feel remorse of having not invested when return opportunities were high. The risk

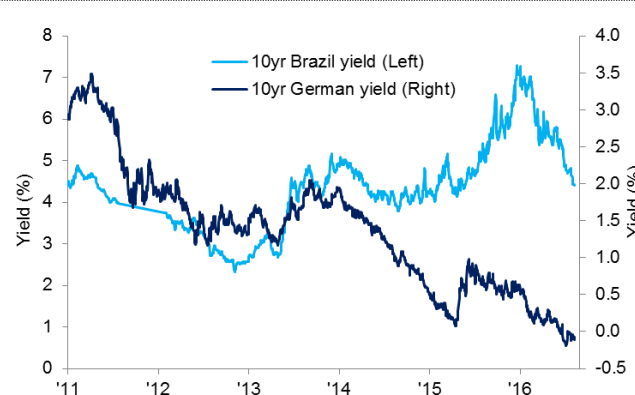
premia evident in Latin American debt, US corporate bonds and many higher yielding global equities suggest convergence with “permanent” zero risk-free yields has yet to be *fully priced* (see Figure 5 and Figure 6).

Figure 5: Long Term Total Returns and Yields for Various Asset Classes



Source: Haver Analytics and Citi Private Bank as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Figure 6: Brazilian and German 10-Year Bond Yields



Sources: Bloomberg as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

We don't believe a status quo of persistent, slow growth and zero policy rates has, or should, be fully and permanently priced into all asset markets. As such, we need to consider the circumstances that would change the status quo driving “convergence.”

Change is a Constant, But Not in Economic Forecasts

Three factors maintain the status quo 1) slow but persistent growth 2) ready lenders 3) low risk-free rates.

Any of the three following would represent a change in the status quo: 1) an economic peak, 2) significant credit events that cause lenders to retrench, or 3) a sharp change in risk-free rates¹. Each of these - individually or collectively - would put an end to the current market dynamic of risk assets “converging with zero.”

We would judge that substantial yield increases for safe haven government bonds as the least likely of the above. Such a rise would take an equally unlikely acceleration in world economic growth and credit demand. If *real* economic growth were to convincingly accelerate, it would also support risk assets, keeping “convergence” alive, though not at zero.

The monthly pace of key central bank purchases of government bonds - near \$175 billion through the foreseeable future - hasn't cured the world's growth deficiency². Instead, in the present setting they are likely to keep government bond yields muted. However, with bond *valuation* risks considerable, the mere suggestion of a new policy approach in Japan has set back the government bond market by the most in a year (see Figure 7). This may foreshadow turmoil in other government bond markets if the Federal

¹ The risk-free rate is the theoretical rate that an asset free of risk of financial loss would yield.

² This is the monthly pace of bond purchases though mid 2017 at a minimum for the European Central Bank, the Bank of Japan and Bank of England for government bonds only, measured in US dollars in the current exchange rate. These are financed with reserve creation rather than the sale of other assets.

Reserve ever suggests it expects a faster pace of tightening than is now priced; less than 50 basis points over the next full two years.

Figure 7. Japanese 10-Year Government Bond Yield (%)



Source: Haver Analytics as of August 16, 2016.

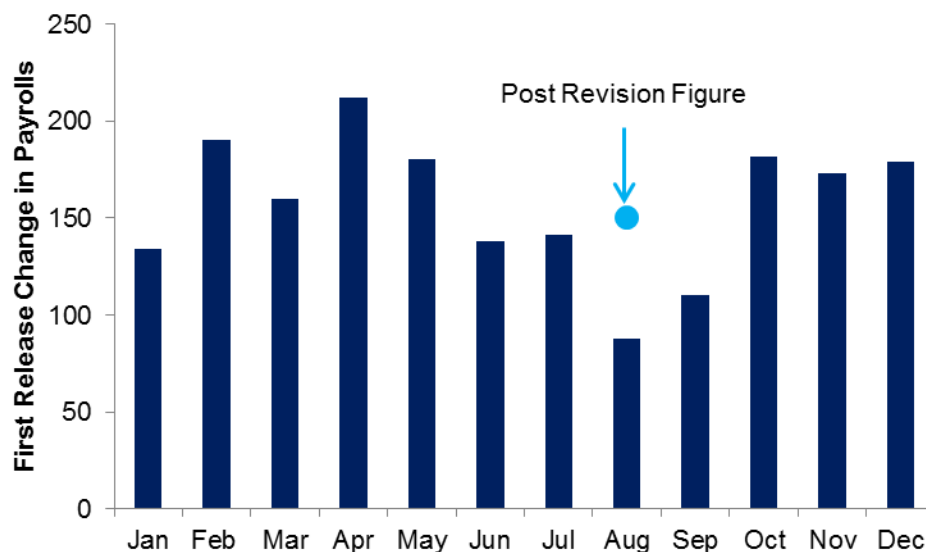
The Fed continues to doubt a return to 2% trend inflation and sees the US recovery as still immature.

Moreover, if US trend economic growth is truly as miserable as the measures in Figure 1 suggest, the Federal Reserve's own lowered estimate of a "neutral" real interest rate would still put nominal cash yields in a range of 1.5%-2.0%, not the present 0.375%³.

The Federal Reserve's unwillingness to tighten monetary policy in all but "perfect" conditions reflects many things. It wants a neutral funds rate at "mid cycle," but continues to see the present expansion as immature. If excuses are needed to avoid a policy tightening in the coming month, it should take very little to delay. The routine historic anomaly of a weak preliminary reading for August job gains in the US could alone provide it (see Figure 8).

³ San Francisco Fed President John Williams discusses this issue in his August 15, 2016 Economic Letter; "[Monetary Policy in a Low R-star World](#)".

Figure 8. Average Gain in US Employment (thousands) by Month Since 2010



Source: Haver Analytics as of August 16, 2016.

The risk of the US economy peaking in the near future appears to be going down.

Peak of US Business Cycle Still Seems to Be Fading Risk

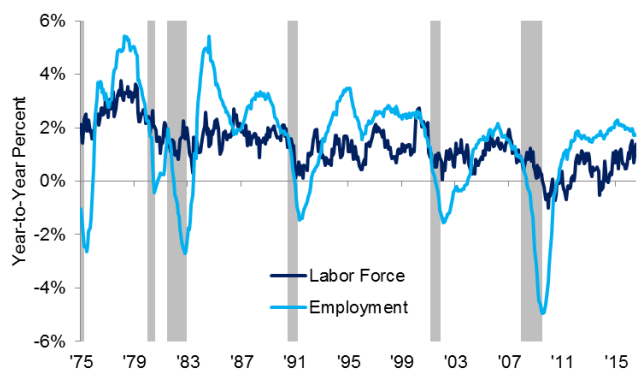
The potential for a true economic peak in the US economy has been apparently *fading* somewhat as a risk in 2017, even as we note the unusual historic frequency of recessions to overlap the first year of a new US president's first term (please see our [July Quadrant](#) for details).

This goes beyond Donald Trump's latest poll results. As Figure 9 shows, the US is seeing a revival in the growth rate of the labor force which is making the labor demand pace more sustainable, at least for a while.

As a reminder, we focus so much on the US in a business cycle context globally, because the US generally drives cyclical variation in the world economy. China's long rise and more recent trend slowing are of vast importance, but simply is not cyclical in the same way⁴ (see Figure 10).

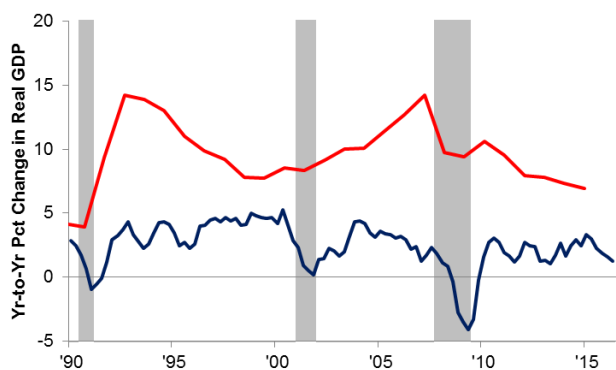
⁴ We see US business cycles as routine bouts of widespread, excessive economic strength and weakness. While long-term trend growth rates change gradually, history shows the US economy is constantly transitioning between the cyclical extremes.

Figure 9: US Labor Force and Employment Y/Y%



Source: Haver Analytics as of August 16, 2016.

Figure 10: US and China Real GDP Y/Y%



Haver Analytics as of August 16, 2016.

Credit Markets Strains Isolated, But Building

The availability of credit depends on the risk tolerance of lenders. The ability to refinance debt is critical to economic stability over at least the short/medium run.

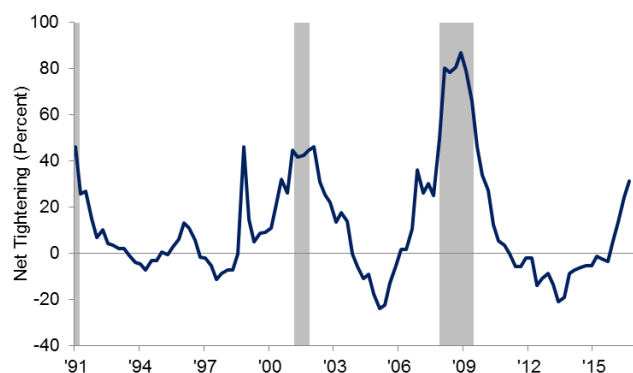
To some extent, credit strains play a role in every cyclical episode. They were at the heart of the last economic collapse. Credit distress played a less significant, but still present role in the previous one (2000-2002).

Broad credit markets have eased this year after a petroleum-driven credit boom and bust. Yet away from this idiosyncratic energy issue, there are some very early warning signs. The highest quality traded bonds remain strong, but US banks are tightening standards for commercial real estate loans, signalling some potential future aversion to refinancing (see Figure 11 and Figure 12).

Future refinancing risks should be considered very fundamental to the outlook for credit markets and the economy. Standards are also tightening for commercial and industrial loans. These are to some extent still impacted by the oil bust – which we believe is a lagging indicator of the commodity price collapse.

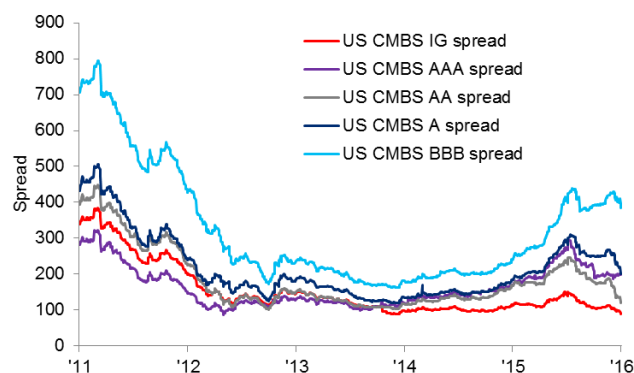
While data are scarce, we believe refinancing risks to select high end property development loans is increasing. For retailing real estate assets, e-commerce presents a profound technology-driven threat to credit quality in our view (see Figure 13).

Figure 11: Net % of US Banks Tightening Lending Standards on Commercial Real Estate Loans



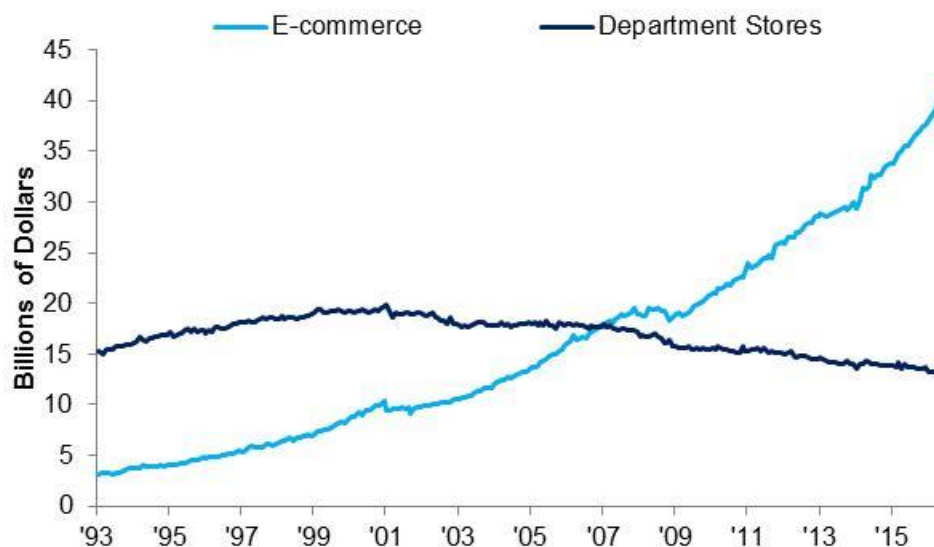
Source: Haver Analytics as of August 16, 2016.

Figure 12: Commercial Mortgage Backed Securities Spread to US Treasury (basis points) by Rating



Source: Haver Analytics and Citi Private Bank as of August 16, 2016. Note: CMBS are commercial mortgage backed securities.

Figure 13. Retails Sales by E-commerce Firms and Department Stores



Source: Haver Analytics as of August 16, 2016.

Of late, LIBOR has risen above US Treasury-linked borrowing costs, or what can be expected to be driven by the Federal Reserve (see Figure 14). This has been driven by new regulations in money markets that in their end effect push money funds to hold lower risk and shorter-duration paper. This comes amid strong demand by international banks to raise funds from the same lending source (and *extend* maturities because of other regulations).⁵

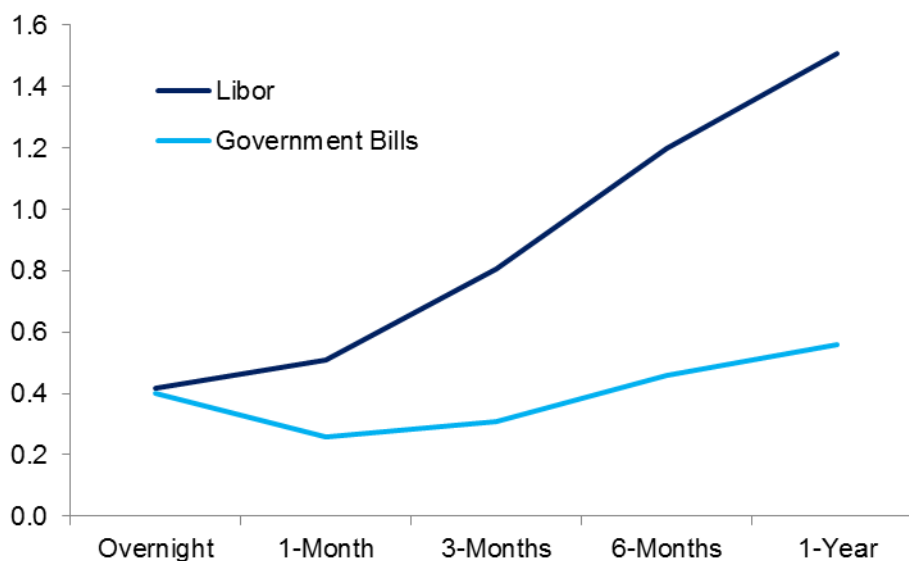
⁵ Please see Kris Xippolitos' August 17, 2016 [Global Strategy: Bulletin "What's up with LIBOR?"](#).

Non-financial corporate borrowers have reduced refinancing risks by extending maturities beyond 2017. Nonetheless, the LIBOR rise increases a range of financial risks.

The reasons for the LIBOR/risk-free rate increase are simply not as alarming as the reasons behind the LIBOR spike during the banking bust of 2008/2009 or the European banking strains of 2011-2013. Bank equity capital concerns are not the meaningful driver. Meanwhile, for non-financial corporate bond issuers, extended maturities on long-term debt represent reduced refinancing risks compared to years past.

However, the LIBOR spike does represent some tightening of financial conditions (through higher interest payment resets) in a world that has been otherwise easing. It likely represents another unintended reduction in liquidity in the name of safety. It might feedback negatively on economic growth fundamentals if the LIBOR rise is both sustained and coupled with other shocks.

Figure 14. LIBOR vs US Treasury Bill Yields



Source: Haver Analytics as of August 16, 2016.

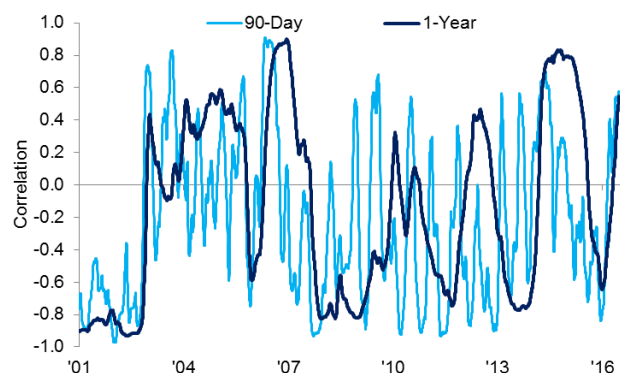
Limits of Asset Allocation

Since our Mid-Year Outlook, we have noted stronger prospects for sustained, even if disappointing, growth. While we intend to elaborate much further on the subject, the US election appears to bear the strong chance of maintaining the status quo with no macro-level shocks. Against this backdrop, we may have even taken a slightly too cautious approach to asset allocation with our continued moves to reduce risk. (As discussed last month, we moved to a full neutral global equities allocation and a significant (+1%) overweight to cash relative to benchmark. Two years ago, our global equities and fixed income weightings approached +/-7% respectively).

Nonetheless, with bonds and stocks and some commodities generally *rallying together* this year, we have to acknowledge the *reduced power of diversification* (see Figure 15 and Figure 16). Given the very nature of the “convergence” rally, setbacks in any asset class may do some harm to all.

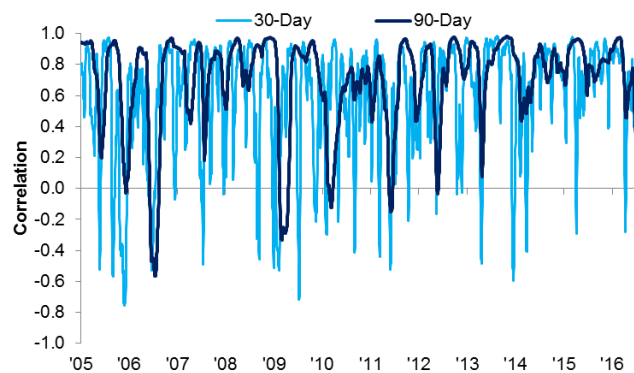
Troubling rise in cross market correlations. Yet key hedging costs are near lows of historic ranges.

Figure 15: S&P 500 and 10-Year U.S. Treasury Total Return Index Correlation



Source: Haver Analytics as of August 24, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Figure 16: Euro Stoxx and European High Yield Total Return Index Correlation



Source: FactSet as of August 24, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Gold has rallied and is vulnerable to any (welcome) rise in real returns elsewhere. However, it has maintained its negative correlation with risk assets.

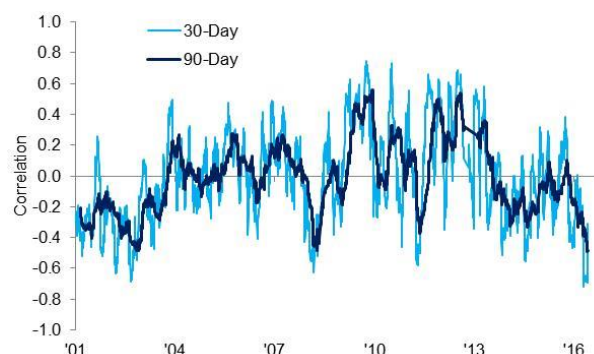
Implied volatility for US shares hasn't rallied at all.

Correction: Please note, in the report of August 19, the figure incorrectly labelled the 10-year Treasury Total return and European High Yield index. The data showed correlations between shares and deviations in yields.

One exception to the increasing positive correlation in asset prices is gold (see Figure 17). While a move to expect higher real interest rates in the US or even abroad could pressure the metal, its correlation to risk assets has continued to remain a solid negative over monthly and quarterly periods.

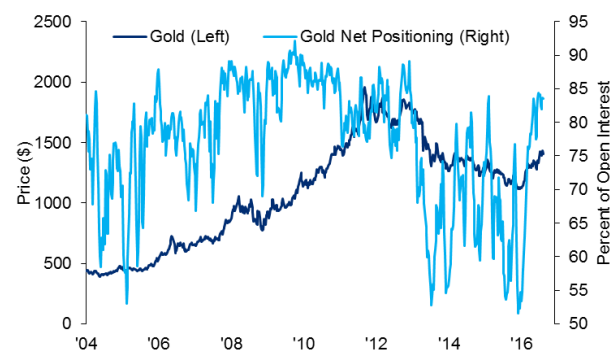
With fixed income and equities moving together, a correction that induces even further accommodation by central banks would support gold at such a time. To be fair, others have rushed to the bullish gold view already, which could mean setbacks on any rate pressures (see Figure 18). However, we would expect to add scale to our small position in gold if macro risks build and central banks accommodate even larger declines in real interest rates over the next few years.

Figure 17: S&P 500 and Gold Price Change Correlations



Source: Haver Analytics as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Figure 18: Gold Price and Non Commercial Net Long Gold Futures as a Share of Open Interest

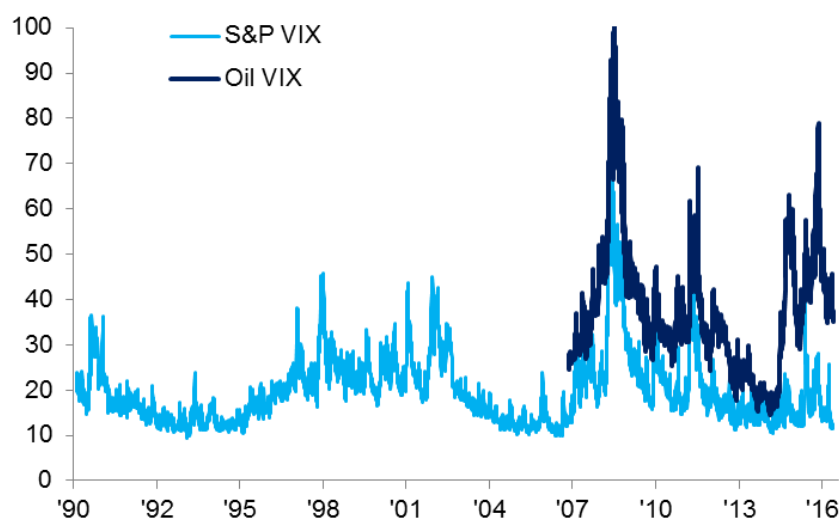


Source: Haver Analytics as of August 16, 2016

As various markets have rallied together, it raises the risk of a coordinated selloff where defensive assets fail to offset losses. Rising correlations and falling yields have reduced the value of diversification as a most basic hedge.

In contrast, implied volatility for equities is near its historic low value. This means capital markets tools have become *relatively more effective* at hedging portfolio risks (see figure 19). This is especially the case as volatility – like global bond yields – is priced at highly divergent levels *across* various assets. With it, this creates the opportunity to offset hedging costs even more.

Figure 19. S&P 500 and Oil Price Volatility (VIX)



Source: Haver Analytics as of August 16, 2016. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

Portfolio allocations

This section shows the strategic and tactical allocations for risk levels 1 to 5 set by Citi Private Bank's Global Investment Committee on August 18, 2016. Recommend allocations reflect annual rebalancing and model revisions.

Risk Level 1

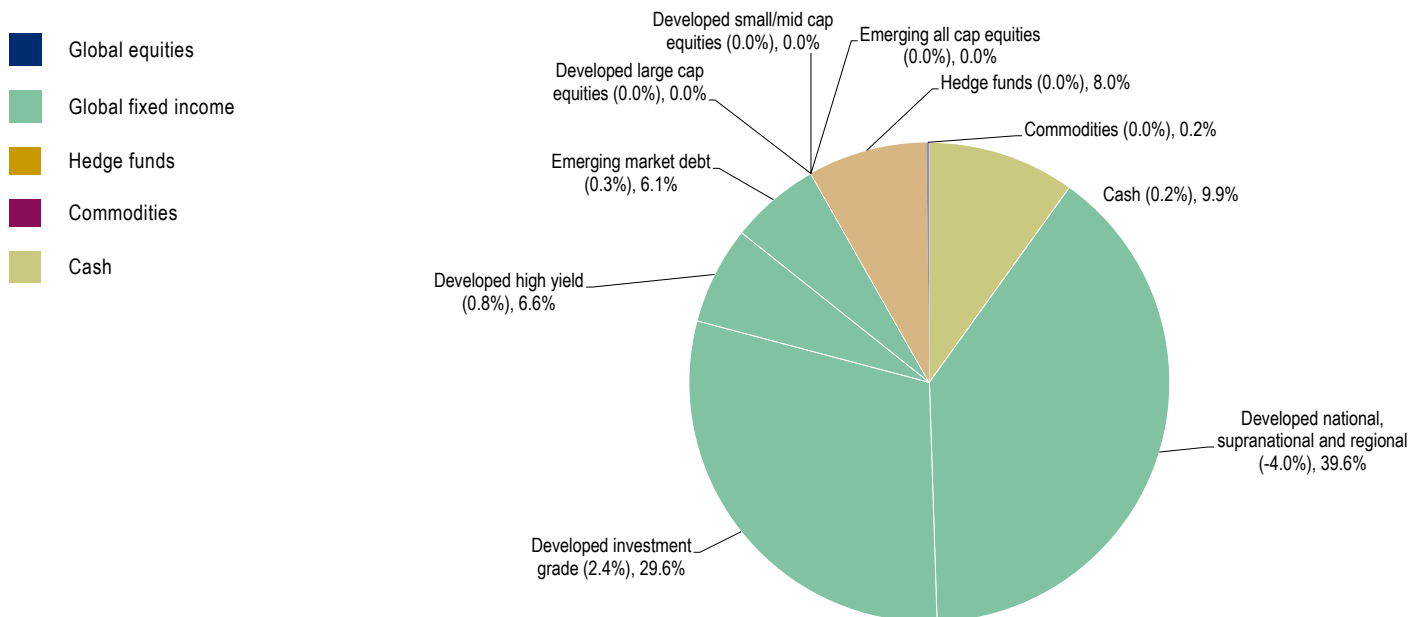
Risk Level 1 is designed for investors who have a preference for capital preservation and relative safety over the potential for a return on investment. These investors prefer to hold cash, time deposits and/or lower risk fixed income instruments.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	9.7	9.9	0.2
Fixed income	82.3	81.9	-0.4
Developed Investment Grade	70.8	69.2	-1.6
Developed national, supranational and regional	43.6	39.6	-4.0
Americas	15.0	15.9	1.0
EMEA	18.0	16.0	-2.0
UK	3.7	3.6	-0.0
Core Europe	8.0	7.1	-0.9
Peripheral Europe	5.8	4.8	-0.9
Others	0.6	0.4	-0.1
Asia	9.8	6.9	-2.9
Asia (ex Japan)	0.3	0.4	0.1
Japan	9.5	6.5	-3.1
Supranational	0.8	0.8	0.0
Developed corporate investment grade	27.2	29.6	2.4
Americas	19.4	21.7	2.3
US	18.7	20.9	2.3
Canada	0.7	0.8	0.0
EMEA	7.7	7.8	0.2
Europe (ex UK)	5.9	6.0	0.1
UK	1.8	1.8	0.0
Asia	0.1	0.1	0.0
Asia (ex Japan)	0.1	0.1	0.0
Japan	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Developed high yield	5.8	6.6	0.8
Americas	4.4	4.9	0.4
EMEA	1.3	1.7	0.4
Emerging market debt	5.8	6.1	0.3
Americas	0.7	0.9	0.3
EMEA	0.7	0.6	-0.0
Asia	4.4	4.5	0.1
Equities	0.0	0.0	0.0
Developed Equities	0.0	0.0	0.0
Emerging Equities	0.0	0.0	0.0
Hybrid investments	8.0	8.0	0.0
Hedge funds	8.0	8.0	0.0
Real Assets	0.0	0.2	0.2
Commodities	0.0	0.2	0.2
Total	100.0	100.0	0.0

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. MBS = mortgage-backed securities; ABS = asset-backed securities. All allocations are subject to change at discretion of the GIC of the Citi Private Bank. *The tactical allocation corresponds to a maturity of 7 to 10 years. Minor differences may result due to rounding.

Risk Level 1: tactical allocations



Figures in brackets are the difference versus the strategic benchmark

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core positions

- Global equities remain at neutral position and global fixed income stays at an underweight position of -0.4%. Cash is now at a decreased overweight position with gold raised to a small overweight position of 0.2%.
- Within fixed income, developed sovereign continues to be the largest underweight at -4.0%. Developed corporate investment grade fixed income remains the largest overweight at +2.4% followed by high-yield at 0.8% overweight position.
- Emerging market fixed income remains at a small overweight position of 0.3% with both Latin America and Asia debt in overweight positions.
- Within equities, both developed and emerging equities remain at neutral allocation.

Risk Level 2

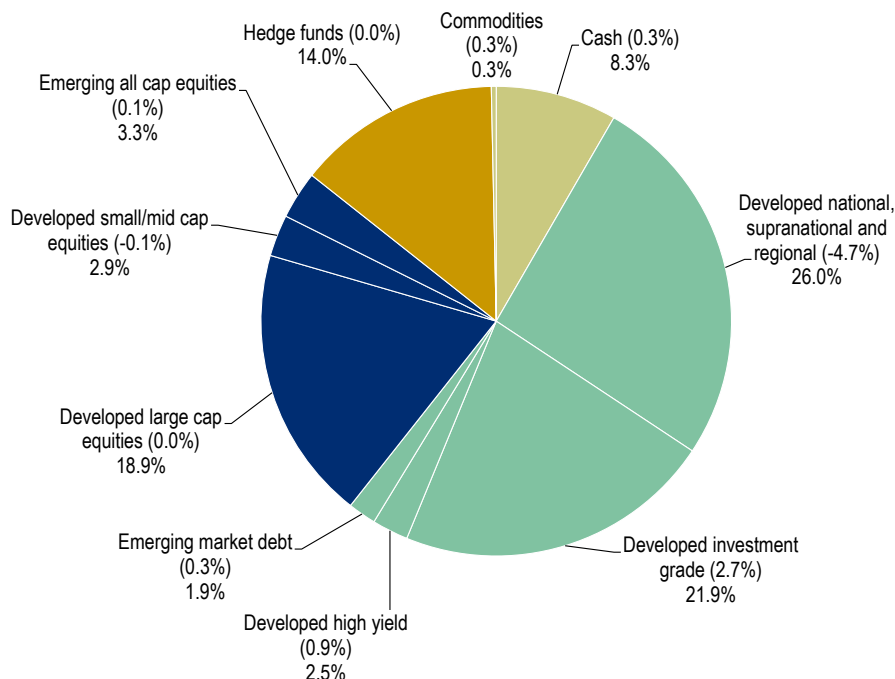
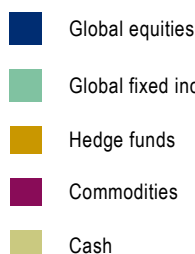
Risk Level 2 is designed for investors who emphasize capital preservation over return on investment, but who are willing to subject some portion of their principal to increased risk in order to generate a potentially greater rate of return on investment.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	8.0	8.3	0.3
Fixed income	53.0	52.3	-0.7
Developed Investment Grade	49.8	47.9	-1.9
Developed national, supranational and regional	30.6	26.0	-4.7
Americas	10.5	11.5	1.0
EMEA	12.7	10.3	-2.4
UK	2.6	2.5	-0.1
Core Europe	5.6	4.6	-1.1
Peripheral Europe	4.0	3.0	-1.1
Others	0.4	0.3	-0.2
Asia	6.9	3.6	-3.3
Asia (ex Japan)	0.2	0.3	0.1
Japan	6.7	3.3	-3.4
Supranational	0.6	0.6	0.0
Developed corporate investment grade	19.1	21.9	2.7
Americas	13.6	16.3	2.6
US	13.1	15.7	2.6
Canada	0.5	0.5	0.0
EMEA	5.4	5.5	0.1
Europe (ex UK)	4.1	4.2	0.1
UK	1.3	1.3	0.0
Asia	0.1	0.1	0.0
Developed high yield	1.6	2.5	0.9
Americas	1.2	1.8	0.5
EMEA	0.4	0.7	0.4
Emerging market debt	1.6	1.9	0.3
Americas	0.2	0.4	0.2
EMEA	0.2	0.2	0.0
Asia	1.2	1.4	0.2
Hybrid investments	14.0	14.0	0.0
Hedge funds	14.0	14.0	0.0
Real assets	0.0	0.3	0.3
Commodities	0.0	0.3	0.3

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	25.0	25.0	0.0
Developed Equities	21.8	21.7	-0.1
Developed large cap equities	18.9	18.9	0.0
Americas	11.9	12.0	0.0
US all	11.3	11.3	0.0
Canada	0.7	0.7	0.0
EMEA	4.4	4.4	0.0
UK	1.4	1.4	0.0
Germany	0.6	0.6	0.0
France	0.6	0.6	0.0
Switzerland	0.7	0.7	0.0
Benelux	0.3	0.3	0.0
Scandi	0.4	0.4	0.0
Spain	0.2	0.2	0.0
Italy	0.1	0.1	0.0
Others	0.1	0.1	0.0
Asia	2.5	2.5	0.0
Australasia	0.5	0.5	0.0
Far East ex Japan	0.3	0.3	0.0
Japan	1.7	1.7	0.0
Developed small/ mid cap equities	2.9	2.9	-0.1
Americas	1.7	1.7	0.0
EMEA	0.8	0.8	-0.1
Europe (ex UK)	0.6	0.6	0.0
UK	0.2	0.2	-0.1
Asia	0.4	0.4	0.0
Asia (ex Japan)	0.1	0.1	0.0
Japan	0.3	0.3	0.0
Emerging all cap equities	3.2	3.3	0.1
Americas	0.4	0.5	0.1
Brazil	0.2	0.2	0.0
Mexico	0.2	0.2	0.0
Other	0.1	0.1	0.1
EMEA	0.5	0.5	0.0
Turkey	0.1	0.1	0.0
Russia and Eastern Europe	0.2	0.2	0.0
South Africa	0.2	0.2	0.0
Other	0.0	0.0	0.0
Asia	2.3	2.3	0.0
China	0.7	0.7	0.0
India	0.4	0.4	0.0
South Korea	0.5	0.5	0.0
Taiwan	0.4	0.4	0.0
Other Emerging Asia	0.3	0.3	0.0
Total	100.0	100.0	0.0

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. MBS = mortgage-backed securities; ABS = asset-backed securities. All allocations are subject to change at discretion of the GIC of the Citi Private Bank. *The tactical allocation corresponds to a maturity of 7 to 10 years. Minor differences may result due to rounding.

Risk Level 2: tactical allocations



Figures in brackets are the difference versus the strategic benchmark

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core positions

- Global equities remain at neutral position with global fixed income underweight maintained at -0.7%. Cash overweight is slightly decreased to +0.3%.
- Gold is now at a small overweight position of 0.3%.
- Within fixed income, developed sovereign remains the largest underweight at -4.7% and developed corporate investment grade the largest overweight at +2.7% followed by high-yield at +0.9%.
- Emerging market fixed income remains at an overweight position of 0.3% with both Latin America and Asia at overweight positions and EMEA at neutral allocation.
- Within equities, developed equities remain at small underweight position driven by underweight in UK small and mid-cap equities.
- Emerging market equities remain at small overweight position.

Risk Level 3

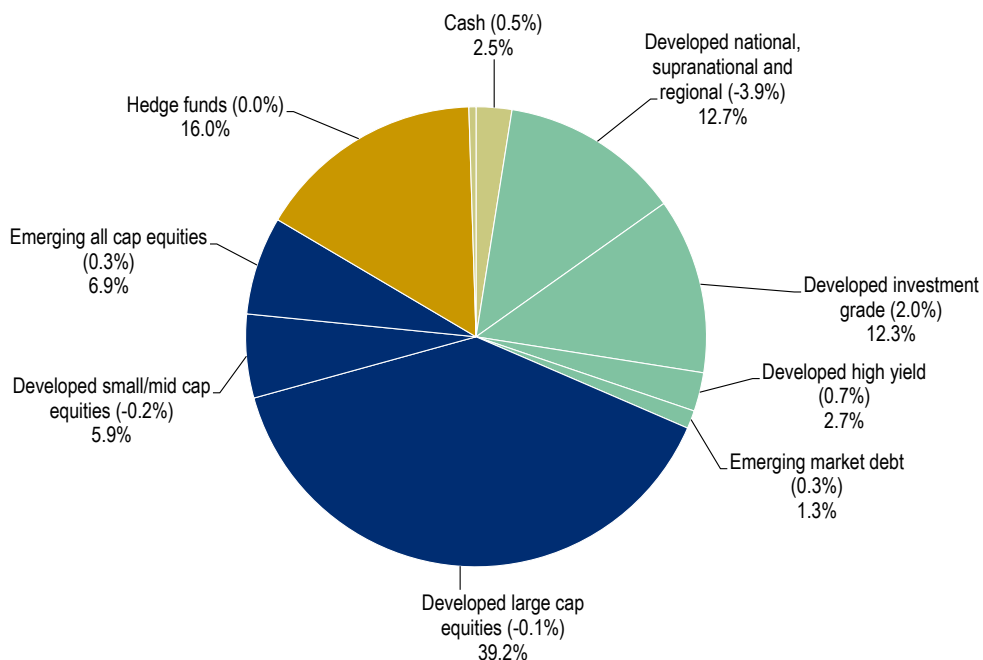
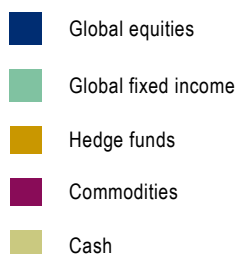
Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk level 3 may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	2.0	2.5	0.5
Fixed income	30.0	29.0	-1.0
Developed Investment Grade	27.0	25.0	-2.0
Developed national, supranational and regional	16.6	12.7	-3.9
Americas	5.7	6.2	0.5
EMEA	6.9	4.9	-1.9
UK	1.4	1.3	-0.1
Core Europe	3.0	2.2	-0.9
Peripheral Europe	2.2	1.4	-0.8
Others	0.2	0.1	-0.1
Asia	3.7	1.2	-2.5
Asia (ex Japan)	0.1	0.2	0.1
Japan	3.6	1.0	-2.6
Supranational	0.3	0.3	0.0
Developed corporate investment grade	10.4	12.3	2.0
Americas	7.4	9.4	2.0
US	7.1	9.1	2.0
Canada	0.3	0.3	0.0
EMEA	2.9	2.9	0.0
Europe (ex UK)	2.2	2.2	0.0
UK	0.7	0.7	0.0
Asia	0.0	0.0	0.0
Developed high yield	2.0	2.7	0.7
Americas	1.6	1.9	0.3
EMEA	0.5	0.9	0.4
Emerging market debt	1.0	1.3	0.3
Americas	0.1	0.3	0.2
EMEA	0.1	0.1	0.0
Asia	0.8	0.9	0.1
Hybrid investments	16.0	16.0	0.0
Hedge funds	16.0	16.0	0.0
Real assets	0.0	0.5	0.5
Commodities	0.0	0.5	0.5

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	52.0	52.0	0.0
Developed Equities	45.3	45.1	-0.3
Developed large cap equities	39.3	39.2	-0.1
Americas	24.8	24.8	0.0
US all	23.5	23.5	0.0
Canada	1.4	1.4	0.0
EMEA	9.1	9.1	0.0
UK	3.0	3.0	0.0
Germany	1.2	1.2	0.0
France	1.3	1.3	0.0
Switzerland	1.4	1.4	0.0
Benelux	0.6	0.6	0.0
Scandi	0.8	0.8	0.0
Spain	0.4	0.4	0.0
Italy	0.3	0.3	0.0
Others	0.1	0.1	0.0
Asia	5.3	5.2	-0.1
Australasia	1.0	1.0	0.0
Far East ex Japan	0.7	0.7	0.0
Japan	3.6	3.6	0.0
Developed small/ mid cap equities	6.1	5.9	-0.2
Americas	3.5	3.5	0.0
EMEA	1.7	1.5	-0.2
Europe (ex UK)	1.3	1.3	0.0
UK	0.4	0.2	-0.2
Asia	0.9	0.9	0.0
Asia (ex Japan)	0.2	0.2	0.0
Japan	0.7	0.7	0.0
Emerging all cap equities	6.7	6.9	0.3
Americas	0.8	1.1	0.3
Brazil	0.4	0.4	0.0
Mexico	0.3	0.3	0.0
Other	0.1	0.4	0.3
EMEA	1.0	1.0	0.0
Turkey	0.1	0.1	0.0
Russia and	0.4	0.4	0.0
South Africa	0.4	0.4	0.0
Other	0.1	0.1	0.0
Asia	4.8	4.8	0.0
China	1.5	1.5	0.0
India	0.7	0.7	0.0
South Korea	1.0	1.0	0.0
Taiwan	0.8	0.8	0.0
Other Emerging Asia	0.7	0.7	0.0
Total	100.0	100.0	0.0

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. MBS = mortgage-backed securities; ABS = asset-backed securities. All allocations are subject to change at discretion of the GIC of the Citi Private Bank. *The tactical allocation corresponds to a maturity of 7 to 10 years. Minor differences may result due to rounding.

Risk Level 3: tactical allocations



Figures in brackets are the difference versus the strategic benchmark

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core positions

- Global equities remain at neutral position with global fixed income underweight maintained at -1.0%. Cash is now at a decreased overweight position with gold raised to a small overweight of 0.5%.
- Within fixed income, developed sovereign remains the largest underweight at -3.9%, with US government debt at an overweight position. Developed corporate investment grade remains the largest overweight at +2.0% followed by high-yield at +0.7%.
- Emerging market fixed income remains at a small overweight position of +0.3% with both Latin America and Asia at overweight positions and EMEA at neutral allocation.
- Within equities, developed market equities remain at small underweight position driven by underweight position in UK small and mid-cap equities.
- Emerging equities remain at small overweight due to overweight position in Latin American equities.

Risk Level 4

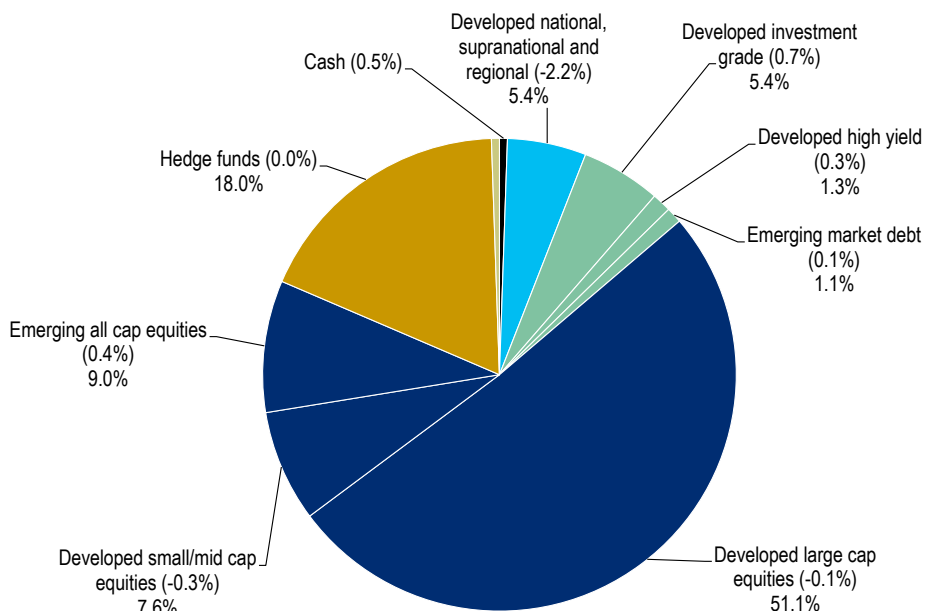
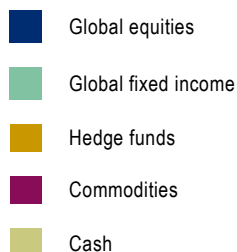
Risk Level 4 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. They are willing to subject a large portion of their portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investment. Investors may have a preference for investments or trading strategies that may assume higher-than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	0.0	0.5	0.5
Fixed income	14.3	13.2	-1.1
Developed Investment Grade	12.3	10.8	-1.5
Developed national, supranational and regional	7.6	5.4	-2.2
Americas	2.6	2.7	0.1
EMEA	3.1	2.1	-1.0
UK	0.6	0.6	-0.1
Core Europe	1.4	0.9	-0.5
Peripheral	1.0	0.6	-0.4
Others	0.1	0.0	-0.1
Asia	1.7	0.5	-1.2
Asia (ex Japan)	0.1	0.1	0.0
Japan	1.7	0.4	-1.3
Supranational	0.1	0.1	0.0
Developed corporate investment grade	4.7	5.4	0.7
Americas	3.4	4.2	0.8
US	3.2	4.0	0.8
Canada	0.1	0.1	0.0
EMEA	1.3	1.3	-0.1
Europe (ex UK)	1.0	1.0	0.0
UK	0.3	0.3	0.0
Asia	0.0	0.0	0.0
Developed high yield	1.0	1.3	0.3
Americas	0.8	0.9	0.1
EMEA	0.2	0.4	0.2
Emerging market debt	1.0	1.1	0.1
Americas	0.1	0.2	0.1
EMEA	0.1	0.1	0.0
Asia	0.8	0.7	0.0
Hybrid investments	18.0	18.0	0.0
Hedge funds	18.0	18.0	0.0
Real assets	0.0	0.5	0.5
Commodities	0.0	0.5	0.5

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	67.7	67.7	0.0
Developed Equities	59.0	58.7	-0.4
Developed large cap equities	51.1	51.1	-0.1
Americas	32.3	32.3	0.0
US all	30.6	30.6	0.0
Canada	1.8	1.8	0.0
EMEA	11.9	11.9	0.0
UK	3.9	3.9	0.0
Germany	1.5	1.5	0.0
France	1.7	1.7	0.0
Switzerland	1.8	1.8	0.0
Benelux	0.8	0.8	0.0
Scandi	1.0	1.0	0.0
Spain	0.6	0.6	0.0
Italy	0.4	0.4	0.0
Others	0.2	0.2	0.0
Asia	6.9	6.8	-0.1
Australasia	1.3	1.3	-0.1
Far East ex Japan	0.9	0.8	0.0
Japan	4.7	4.7	0.0
Developed small/mid cap equities	7.9	7.6	-0.3
Americas	4.5	4.5	0.0
EMEA	2.3	2.0	-0.3
Europe (ex UK)	1.7	1.7	0.0
UK	0.6	0.3	-0.3
Asia	1.1	1.1	0.0
Asia (ex Japan)	0.3	0.3	0.0
Japan	0.9	0.9	0.0
Emerging all cap equities	8.7	9.0	0.4
Americas	1.1	1.4	0.4
Brazil	0.5	0.5	0.0
Mexico	0.4	0.4	0.0
Other	0.2	0.5	0.4
EMEA	1.4	1.4	0.0
Turkey	0.1	0.1	0.0
Russia and Eastern Europe	0.6	0.6	0.0
South Africa	0.6	0.6	0.0
Other	0.1	0.1	0.0
Asia	6.2	6.2	0.0
China	1.9	1.9	0.0
India	1.0	1.0	0.0
South Korea	1.4	1.4	0.0
Taiwan	1.1	1.1	0.0
Other Emerging Asia	0.9	0.9	0.0
Total	100.0	100.0	0.0

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. MBS = mortgage-backed securities; ABS = asset-backed securities. All allocations are subject to change at discretion of the GIC of the Citi Private Bank. *The tactical allocation corresponds to a maturity of 7 to 10 years. Minor differences may result due to rounding.

Risk Level 4: tactical allocations



Figures in brackets are the difference versus the strategic benchmark

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core positions

- Global equities remain at neutral position with global fixed income underweight maintained at -1.1%. Cash is decreased to a +0.5% position with gold raised to a small overweight position.
- Within fixed income, developed sovereign remains the largest underweight at -2.2% and developed corporate investment grade largest overweight at +0.7%.
- Both emerging debt and high yield fixed income remain at small overweight positions.
- Within equities, developed equities stay underweight by 0.4% driven by underweight position in UK small and mid-cap equities.
- Emerging equities remain at small overweight due to overweight position in Latin American equities.

Risk Level 5

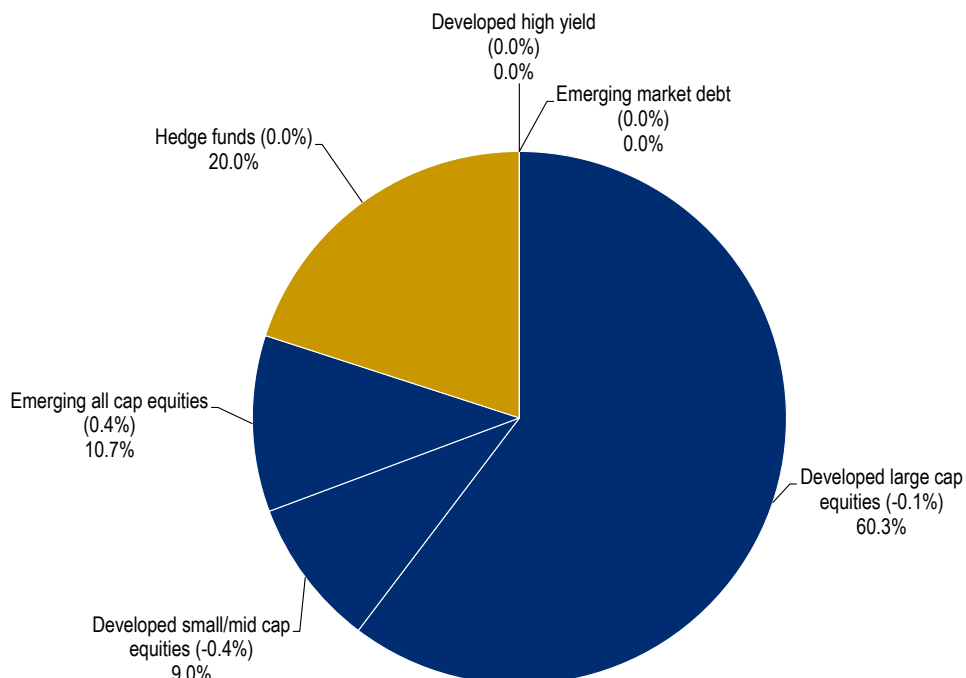
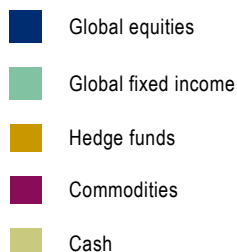
Risk Level 5 is designed for investors who emphasize return on investment. They are willing to subject their entire portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investments. Investors may have a preference for investments or trading strategies that may assume higher-than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains. Clients may engage in tactical or opportunistic trading, which may involve higher volatility and variability of returns.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	0.0	0.0	0.0
Fixed income	0.0	0.0	0.0
Developed Investment Grade	0.0	0.0	0.0
Developed national, supranational and regional	0.0	0.0	0.0
Developed Corporate Investment Grade	0.0	0.0	0.0
Americas	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
Europe (ex UK)	0.0	0.0	0.0
UK	0.0	0.0	0.0
Asia	0.0	0.0	0.0
Asia (ex Japan)	0.0	0.0	0.0
Japan	0.0	0.0	0.0
Developed high yield	0.0	0.0	0.0
Americas	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
Asia	0.0	0.0	0.0
Emerging market debt	0.0	0.0	0.0
Americas	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
Asia	0.0	0.0	0.0
Equities	80.0	80.0	0.0
Global Developed Equities	69.8	69.3	-0.4
Developed large cap equities	60.4	60.3	-0.1
Americas	38.2	38.2	0.0
US all	36.1	36.1	0.0
Canada	2.1	2.1	0.0
EMEA	14.1	14.1	0.0
UK	4.6	4.6	0.0
Germany	1.8	1.8	0.0
France	2.0	2.0	0.0
Switzerland	2.2	2.2	0.0
Benelux	0.9	0.9	0.0
Scandi	1.2	1.2	0.0
Spain	0.7	0.7	0.0
Italy	0.5	0.5	0.0
Others	0.2	0.2	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Asia	8.1	8.1	-0.1
Australasia	1.6	1.5	-0.1
Far East ex Japan	1.0	1.0	0.0
Japan	5.6	5.6	0.0
Developed small/mid cap equities	9.4	9.0	-0.4
Americas	5.3	5.3	0.0
EMEA	2.7	2.3	-0.4
Europe (ex UK)	2.0	2.0	0.0
UK	0.7	0.3	-0.4
Asia	1.4	1.4	0.0
Asia (ex Japan)	0.3	0.3	0.0
Japan	1.0	1.0	0.0
Emerging all cap equities	10.2	10.7	0.4
Americas	1.3	1.7	0.5
Brazil	0.6	0.6	0.0
Mexico	0.5	0.5	0.0
Other	0.2	0.7	0.5
EMEA	1.6	1.6	0.0
Turkey	0.2	0.2	0.0
Russia and Eastern Europe	0.7	0.7	0.0
South Africa	0.7	0.7	0.0
Other	0.1	0.1	0.0
Asia	7.4	7.4	0.0
China	2.3	2.3	0.0
India	1.1	1.1	0.0
South Korea	1.6	1.6	0.0
Taiwan	1.3	1.3	0.0
Other Emerging Asia	1.0	1.0	0.0
Hybrid investments	20.0	20.0	0.0
Hedge funds	20.0	20.0	0.0
Real assets	0.0	0.0	0.0
Commodities	0.0	0.0	0.0
Gold	0.0	0.0	0.0
Total	100.0	100.0	0.0

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. MBS = mortgage-backed securities; ABS = asset-backed securities. All allocations are subject to change at discretion of the GIC of the Citi Private Bank. Minor differences may result due to rounding.

Risk level 5: tactical allocations



Figures in brackets are the difference versus the strategic benchmark

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core positions

- Developed equities remain at small underweight position and emerging equities at small overweight position of +0.4%.
- Within developed equities, both US and Japan remain at neutral position with UK small and mid-cap equities at small underweight position.
- Within emerging equities, Latin American equities remain at small overweight position with both Asia and EMEA at neutral allocation.

Asset allocation definitions

Asset classes	Benchmarked against
Global equities	MSCI All Country World Index, which represents 48 developed and emerging equity markets. Index components are weighted by market capitalization.
Global bonds	Barclays Capital Multiverse (Hedged) Index, which contains the government -related portion of the Multiverse Index, and accounts for approximately 14% of the larger index.
Hedge funds	HFRX Global Hedge Fund Index, which is designed to be representative of the overall composition of the hedge fund universe. It comprises all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage and relative value arbitrage. The strategies are asset-weighted based on the distribution of assets in the hedge fund industry.
Commodities	Dow Jones-UBS Commodity Index, which is composed of futures contracts on physical commodities traded on US exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange (LME). The major commodity sectors are represented including energy, petroleum, precious metals, industrial metals, grains, livestock, softs, agriculture and ex-energy. The Thomson Reuters / Core Commodity Index is designed to provide timely and accurate representation of a long-only, broadly diversified investment in commodities through a transparent and disciplined calculation methodology.
Cash	Three-month LIBOR, which is the interest rates that banks charge each other in the international inter-bank market for three-month loans (usually denominated in Eurodollars).
Equities	
Developed market large cap	MSCI World Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the equity market performance of the large cap stocks in 23 developed markets. Large cap is defined as stocks representing roughly 70% of each market's capitalization.
US	Standard & Poor's 500 Index, which is a capitalization-weighted index that includes a representative sample of 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large cap segment of the market, with over 80% coverage of US equities, it is also an ideal proxy for the total market.
Europe ex UK	MSCI Europe ex UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in each of Europe's developed markets, except for the UK.
UK	MSCI UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in the UK.
Japan	MSCI Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in Japan.
Asia Pacific ex Japan	MSCI Asia Pacific ex Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the performance of large cap stocks in Australia, Hong Kong, New Zealand and Singapore.
Developed market small and mid-cap (SMID)	MSCI World Small Cap Index, which is a capitalization-weighted index that measures small cap stock performance in 23 developed equity markets.
Emerging market	MSCI Emerging Markets Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure equity market performance of 22 emerging markets.
Bonds	
Developed sovereign	Citi World Government Bond Index (WGBI), which consists of the major global investment grade government bond markets and is composed of sovereign debt, denominated in the domestic currency. To join the WGBI, the market must satisfy size, credit and barriers-to-entry requirements. In order to ensure that the WGBI remains an investment grade benchmark, a minimum credit quality of BBB-/Baa3 by either S&P or Moody's is imposed. The index is rebalanced monthly.
Emerging sovereign	Citi Emerging Market Sovereign Bond Index (ESBI), which includes Brady bonds and US dollar -denominated emerging market sovereign debt issued in the global, Yankee and Eurodollar markets, excluding loans. It is composed of debt in Africa, Asia, Europe and Latin America. We classify an emerging market as a sovereign with a maximum foreign debt rating of BBB+/Baa1 by S&P or Moody's. Defaulted issues are excluded.
Supranationals	Citi World Broad Investment Grade Index (WBIG)—Government Related, which is a subsector of the WBIG. The index includes fixed rate investment grade agency, supranational and regional government debt, denominated in the domestic currency. The index is rebalanced monthly.
Corporate investment grade	Citi World Broad Investment Grade Index (WBIG)—Corporate, which is a subsector of the WBIG. The index includes fixed rate global investment grade corporate debt within the finance, industrial and utility sectors, denominated in the domestic currency. The index is rebalanced monthly.
Corporate high yield	Barclays Global High Yield Corporate Index. Provides a broad-based measure of the global high yield fixed income markets. It is also a component of the Multiverse Index and the Global Aggregate Index.
Securitized	Citi World Broad Investment Grade Index (WBIG)—Securitized, which is a subsector of the WBIG. The index includes global investment grade collateralized debt denominated in the domestic currency, including mortgage -backed securities, covered bonds (Pfandbriefe) and asset-backed securities. The index is rebalanced monthly.

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