Capital Market Assumptions

As of 30 June 2018

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Table of contents

Enhancing our assumptions for U.S. real estate

We have made some improvements to our U.S. real estate assumption methodology which we believe better captures the return outlook for investors. In aggregate, however, the changes do not look likely to have made a significant directional impact vis-a-vis our prior approach.

Following Aon's acquisition of The Townsend Group (Townsend) late in 2017 we have been undertaking a harmonization of our real estate thought leadership across our capital market assumptions. After the acquisition, utilizing the analytical involvement of new stakeholders in our real estate work, we have captured a new level of granularity in market pricing and return expectations. This is an important refinement of our real estate assumptions. In the rest of this article we will review our current methodology and explain our enhancements.

Our forward looking assumption for real estate starts with the cash flows that a mature core real estate portfolio will provide investors and the price that is paid for those cash flows. The internal rate of return that sets the current value of the portfolio equal to the discounted value of the future cash flows over our investment horizon is the bedrock of our return assumption. This is an example of a discounted cash flow model, a core pillar of many of our assumptions. This fundamental approach is not changing.

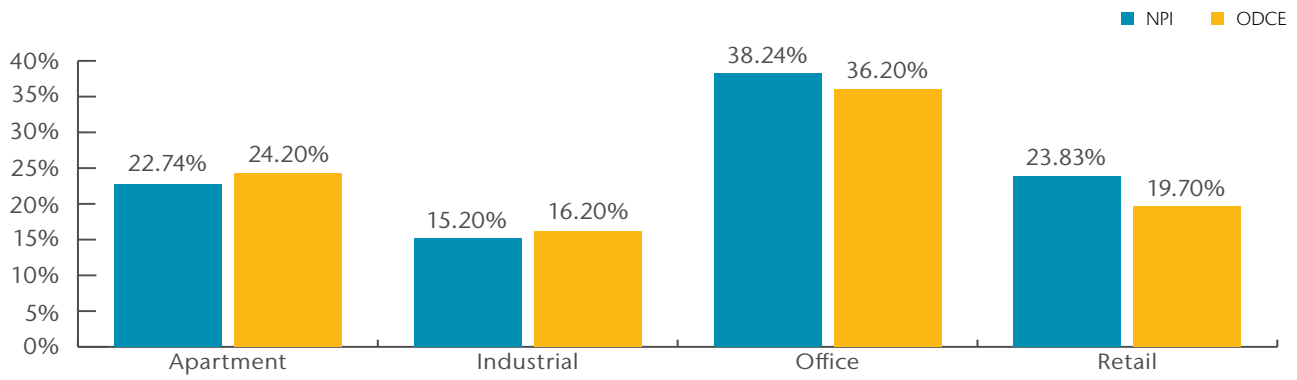
However, we are refining a number of market observations and assumptions derived from the market. These inputs are: an initial income yield, income growth, costs and inflation. By working with our colleagues at Townsend we have been able to enhance our estimates of initial yield of a core U.S. property portfolio – this is the most important input to our assumption.

Our improvements pertain to the reported initial yield available to core U.S. real estate investors, which hitherto has been represented by the NCREIF[1] Property Index (NPI). This is not a true reflection of the initial yield available to investors right now. It is a good starting point but we believe it can be improved. We are doing this in two ways.

Firstly, we are adjusting the reported initial yield of the NPI to better reflect the investment universe available to investors. The NPI tracks core properties that are owned by institutional investors, but in reality this is not the universe of properties open to current investors. The open universe for an investor seeking to build a real estate allocation is better represented by the NCREIF Open End Diversified Core Equity (ODCE) index which tracks a group of open ended core real estate funds – this is the true investable universe at a given point in time.

We do believe that the NPI provides valuable information on the valuation of core real estate sectors and we use this information. But given that the available universe is different to the investable universe (see chart below), we believe that we should re-weight the NPI information on sector valuations to something that resembles the ODCE; previously we used the reported initial yield for the NPI.

NPI vs. ODCE sector weights



Source: NCRIEF as at 31 March 2018

[1] National Council of Real Estate Investment Fiduciaries

Secondly, we make a further adjustment to the reported NPI sector initial yields by employing a concept called the "economic cap (capitalization) rate" and we weight them as described above. The economic cap rate differs from the reported cap rate by making an allowance for the income that must be reinvested into the underlying properties on an ongoing basis.

Through using this better data we are now able to get an estimate of how much income is reinvested and how much is left to the property owners. The effect of capital expenditure can have a material impact on the starting initial yields. The table below shows the headline initial yield for each sector, estimates of capital expenditure and the resulting economic cap rate for each sector.

Estimated economic cap rate by sector

	Apartment	Industrial	Office	Retail
Cap Rate	4.39%	5.03%	4.88%	5.02%
LT Capex Forecast	10%	15%	28%	17%
Economic Cap Rate	3.95%	4.28%	3.51%	4.17%

Source: Aon, Green Street, NCREIF as at 31 March 2018

Both of these enhancements change our estimation of the initial yield available to core property investors in the United States. Pulling both changes together results in a lower initial yield than reported by the headline index. The NPI in March 2018 reported an initial yield of 4.3%. However, using our methodology we believe that a more reflective initial yield for a portfolio of core real estate is 3.9%.

One additional change we are making is also to change the derivation of the income component of our real estate assumption. Our previous methodology used rent as income, which typically implied rent on a currently vacant property. By moving to a net operating income (NOI) basis, the adjustment made is to allow for rents that have been secured over a trailing four quarter period.

A question that is bound to be asked is whether these methodology changes bring some directional impact on our real estate return assumptions compared with our previous approach. The answer is that the changes are working in different directions, and our assessment is that they probably offset each other. The upshot is that there is limited, if any, directional impact from the changes relative to our previous approach. The key take-away is that the methodology now being adopted is an improved reflection of trends that impact the likely path of real estate returns for the institutional investor.

Inflation

	USD	GBP	EUR	CHF	CAD	JPY
CPI Inflation (10-year assumption)	2.3%	2.0%	1.8%	1.2%	2.0%	1.2%
RPI Inflation (10-year assumption)	—	3.1%	—	—	—	—

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

The combination of tight labor markets and the effects of U.S. fiscal impulse continue to support building inflationary pressures in the U.S. Headline consumer price inflation, as measured by the Consumer Price Index (CPI), reached a six-year high of 2.9% for the year to June 2018. Moreover, core inflation, which is more representative of the underlying trend in the inflation, also accelerated over the quarter to 2.3%, and is supportive of inflation at current levels. As such, we have slightly raised our near term inflation estimates for the U.S. The upturn in inflation is not a trend isolated to just the U.S.; our short-term inflation expectations for Europe and Canada have also increased and is reflective of the global upward trend in inflation. Our near term CPI inflation expectations for the UK is unchanged, although there has been a downward revision to our near term Retail Price Index (RPI) inflation estimates due to a slowing UK housing market. With the exception of Japan, all of our long-term inflation expectations are unchanged since last quarter. Longer-term inflation estimates for Japan have been reduced by 0.1% to 1.2%.

Of the countries considered, we believe persistent systemic deflationary pressures in Japan and Switzerland are likely to result in inflation undershooting the respective central bank targets over the 10-year horizon. For the U.S., UK, Canada and Europe, long-term inflation is expected to be at or near the respective central bank inflation targets. Note the European Central Bank adopts an asymmetric inflation target of below (but close to) 2%.

Fixed income government bonds

		10-year annualised nominal return assumptions					
		USD	GBP	EUR	CHF	CAD	JPY
U.S.	5yr	2.8%	2.6%	2.3%	1.7%	2.6%	1.7%
	15yr	3.5%	3.2%	3.0%	2.3%	3.2%	2.3%
UK	5yr	1.5%	1.3%	1.0%	0.4%	1.3%	0.4%
	15yr	1.9%	1.7%	1.4%	0.8%	1.7%	0.8%
Eurozone	5yr	1.0%	0.7%	0.5%	-0.1%	0.7%	-0.1%
	15yr	1.7%	1.5%	1.2%	0.6%	1.5%	0.6%
Switzerland	5yr	1.0%	0.7%	0.5%	-0.1%	0.7%	-0.1%
	15yr	1.6%	1.3%	1.1%	0.5%	1.3%	0.5%
Canada	5yr	2.2%	2.0%	1.7%	1.1%	2.0%	1.1%
	15yr	3.2%	2.9%	2.7%	2.1%	2.9%	2.1%
Japan	5yr	1.0%	0.8%	0.5%	-0.1%	0.8%	-0.1%
	15yr	1.6%	1.3%	1.1%	0.4%	1.3%	0.4%

Source: Aon's Capital Market Assumptions. Please see appendix for more information. In our assumptions we take French bonds to represent Eurozone bonds.

Nominal government bond yields, by and large, increased over the three months to June 2018. For a second successive quarter, the U.S. Federal Reserve increased the Fed Funds rate by a further 25 basis points (bps), which brought the target range to 1.75%–2.00%. In addition, a more hawkish[2] twist in the Fed's monetary policy stance signalled further rate hikes are on the horizon. This, alongside the market's assessment of the path of short-term interest rates, were driving factors for the upward movement in the U.S. fixed interest government bond yield curve, and consequently a 0.1% increase in our U.S. government bond return assumptions for both short- and long-dated government bonds. A widely-expected Bank of England (BoE) rate hike failed to transpire over the quarter with members of the Monetary Policy Committee (MPC) deciding to keep the base rate at 0.5% due to concerns over lackluster economic data. Short-term bond yields, as a result, slipped over the three months which led to a 0.1% lower expected return on UK government bonds. However, the yield curve did steepen as longer-term yields rose and therefore led to an upward revision of our 10-year long-duration bond assumption to 1.7%. The MPC has since increased its base rate to 0.75%–the highest level since the onset of the Financial Crisis.

The nominal European government bond yield curve similarly steepened over, but was driven by lower short-term bond yields with long-term yields unchanged over the quarter. Consequently, our longer-dated bond return assumptions have been kept at 1.2% while the short-dated bond return assumption is down to 0.5%. Our Canadian nominal government bond assumptions are higher at both short and long maturities following increases in Canadian yields across all maturities. The Japanese yield curve was broadly unchanged over the quarter, and explains no upward or downward revisions to our return assumptions from last quarter. The expected return on short-dated Swiss fixed interest government bonds has moved back into negative territory, as lower yields at shorter maturities brought the 10-year return estimate to -0.1% from a previous flat return estimate.

In our assumptions, we take French bonds to represent eurozone bonds as we want to ensure consistency between the nominal and inflation-linked government bond returns and there is a reasonably liquid market in French inflation-linked bonds. Our calculation of a weighted average eurozone government bond yield leads to a figure that is slightly higher than the yield on French government bonds. Our analysis therefore supports the use of French bonds as a proxy for eurozone bond portfolios, where these portfolios do not have a large exposure to the higher-yielding periphery.

[2] Hawkish is a term used to describe a bias towards tighter monetary policy, typically due to concern over rising inflation. Conversely, dovish behavior relates to less aggressive monetary policy.

Inflation-linked government bonds

		10-year annualised nominal return assumptions					
		USD	GBP	EUR	CHF	CAD	JPY
U.S.	5yr	3.1%	2.8%	2.6%	2.0%	2.8%	2.0%
	10yr	3.2%	2.9%	2.7%	2.0%	2.9%	2.0%
UK	5yr	1.5%	1.3%	1.0%	0.4%	1.3%	0.4%
	15yr	1.3%	1.0%	0.8%	0.2%	1.0%	0.2%
Eurozone	5yr	1.5%	1.2%	1.0%	0.4%	1.2%	0.4%
	10 yr	1.4%	1.1%	0.9%	0.3%	1.1%	0.3%
Canada	5yr	—	—	—	—	—	—
	15yr	2.6%	2.3%	2.1%	1.5%	2.3%	1.5%

Source: Aon's Capital Market Assumptions. Please see appendix for more information. In our assumptions we take French bonds to represent Eurozone bonds.

Index-linked government bond yields moved in a manner similar to their nominal counterparts for all regions with little to no changes in long-term inflation expectations. The upward shift in the U.S. index-linked government bond yield curve has consequently meant our short and long-term U.S. index-linked government bond returns have been revised higher to 3.1% and 3.2%, respectively. Similarly, the upward revision to our UK index-linked government bond assumption has been driven by the increase of the long end of the real yield curve. The slight downward movement in short-term UK real yields, however, was not sufficient to lower our assumption which is unchanged at 1.3% p.a. European index-linked government bond returns decreased as the real yield curve moved lower over the quarter.

We have taken French bonds to represent eurozone bonds partly because there is a reasonably liquid market in French inflation-linked bonds. Our analysis of nominal government bonds also suggests that French bonds are a reasonable proxy for eurozone government bonds, so we make the same assumption here for consistency. The bonds represented are linked to eurozone inflation.

We formulate return assumptions for 10-year U.S. and eurozone inflation-linked government bonds rather than 15-year bonds. This is because we think the absence of inflation-linked bonds at the longest durations in these markets can lead to misleading 15-year bond return assumptions. We no longer publish a five-year-duration Canadian inflation-linked government bond assumption due to the lack of short-duration bonds in this market

Investment grade corporate bonds

		10-year annualised nominal return assumptions					
		USD	GBP	EUR	CHF	CAD	JPY
U.S.	5yr	3.6%	3.4%	3.1%	2.5%	3.4%	2.5%
	10yr	4.4%	4.1%	3.9%	3.2%	4.1%	3.2%
UK	5yr	2.3%	2.0%	1.8%	1.1%	2.0%	1.1%
	10yr	2.4%	2.2%	1.9%	1.3%	2.2%	1.3%
Eurozone	5yr	1.4%	1.1%	0.9%	0.3%	1.1%	0.3%
	10yr	1.7%	1.4%	1.2%	0.6%	1.4%	0.6%
Switzerland	5yr	1.4%	1.1%	0.9%	0.3%	1.1%	0.3%
	10yr	1.7%	1.5%	1.2%	0.6%	1.5%	0.6%
Canada	5yr	3.2%	3.0%	2.7%	2.1%	3.0%	2.1%
	10yr	3.9%	3.7%	3.4%	2.8%	3.7%	2.8%
Japan	5yr	1.3%	1.0%	0.8%	0.2%	1.0%	0.2%
	10yr	1.5%	1.2%	1.0%	0.4%	1.2%	0.3%

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

Corporate bond returns depend on both a government yield component and a credit spread component but also account for losses arising from defaults and bonds being downgraded. The lead article in Aon's 31 December 2017 Capital Market Assumptions publication discusses our investment grade corporate bond methodology in more detail, while the 30 June 2015 publication sheds more light on defaults and downgrades as two potential drivers of credit losses.

Higher U.S. government bond return assumptions have supported upward revisions to our U.S. corporate bond return assumptions. Moreover, over the last quarter, U.S. credit spread curves shifted upward and also steepened, which when combined with higher U.S. government bond yields, have resulted in a 0.4% increase in our long-term U.S. corporate bond return estimate to 4.4%. Changes to our long-term expectations for UK corporate bond returns are comparably more muted due to less pronounced increases in UK government bond yields and UK credit spreads. Nonetheless, our expectation for long-term UK corporate bonds has risen by 0.1% to 2.2%. Wider credit spreads in the eurozone mitigated the slight decrease in the government bond return assumptions for the region. As such, our return expectations for European long-duration corporate bonds remain at 1.2%. Japanese corporate bond return estimates over the next 10 years, on the other hand, are unchanged since last quarter.

U.S. high yield debt and emerging market debt

Over the next ten years, we expect U.S. high yield debt to return 4.1% per annum—unchanged from the previous quarter. The increase in the equivalent duration government bond yields was offset by lower high yield credit spreads, resulting in similar yields on high yield debt as last quarter. No material changes have been made to our default and downgrade expectations. It is worth noting that our high yield debt assumption already incorporates an expectation that defaults will be consistently higher in the future than the very low levels seen in recent years. The lead article in Aon's 31 December 2015 Capital Market Assumptions publication discusses the high yield assumption in more detail.

Unlike U.S. high yield debt, the credit spread on USD-denominated emerging market debt widened significantly over the quarter; impacted by escalating trade tensions and fears over a slowing Chinese economy. This upward movement in spreads, alongside higher equivalent duration government bond return assumptions, has led us to increase our return expectations for the asset class to 5.0% p.a. over the next ten years.

Equities

	10-year annualised nominal return assumptions					
	USD	GBP	EUR	CHF	CAD	JPY
U.S.	6.3%	6.0%	5.7%	5.1%	6.0%	5.1%
UK	6.7%	6.4%	6.2%	5.5%	6.4%	5.5%
Europe ex UK	7.2%	6.9%	6.7%	6.0%	6.9%	6.0%
Switzerland	6.6%	6.3%	6.1%	5.5%	6.3%	5.5%
Canada	6.6%	6.4%	6.1%	5.5%	6.4%	5.5%
Japan	6.7%	6.4%	6.1%	5.5%	6.4%	5.5%
Emerging markets	7.9%	7.6%	7.4%	6.7%	7.6%	6.7%

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

Our equity return assumptions are driven by current market valuations, earnings growth expectations, and assumed payouts to investors. The price you pay is one of the biggest drivers of returns, even over the long term. Looking back at recent experience, strong equity market performance has been driven more by increasing valuations than by increasing profits.

Developed equity markets staged a comeback over the second quarter, rebounding from the large falls seen in the previous quarter. Chief among those was the UK market, which surged over 8% higher in the three months to June 2018. This revaluation primarily led to downward pressure on our 10-year expectations for UK equities. Although earnings growth projections for the year to 2018 have risen since the March 2018 publication, we now expect earnings to grow at a slower rate in the following years. As a result, the expected return on UK equities is now 0.3% lower at 6.4% per annum in local currency terms.

Canadian equities are similarly expected to return 0.3% p.a. less, compared to the previous quarter's estimate, as a result of higher valuations and lower projected earnings growth. Despite upward revisions to our earnings growth estimates for Japanese equities, a combination of lower inflation and GDP growth as well as higher valuations have driven our assumptions for the region 0.3% lower to 5.5% in local currency terms. Our assumptions for both European and U.S. equities have been marginally lowered by 0.1%; the former due to lower earnings growth estimates and the latter due to market appreciation which puts downward pressure on returns. Unlike other developed equity markets, the assumed return on Swiss equities is now 0.1% higher over the quarter due to lower market valuation and slightly higher GDP growth expectations.

U.S. equity valuations have re-rated and are now valued at 19.4 times our 2017 earnings assumption as at June 2018—up slightly from last quarter's estimate of 19 times our 2017 earnings assumption. Similarly, the downward revision to our European (ex UK) equity return assumptions came amid higher valuations which was trading at 14.3 times our 2017 earnings assumption at the end of the second quarter of 2018. The bounce-back in UK equities over the quarter has led to re-rating of the UK equity market which now trades at a multiple of around 17.4 times our 2017 earnings assumption.

Trade war escalation and concerns over the Chinese economy adversely impacted emerging market equities which fell 8% in U.S. dollar terms over the quarter. Consequently, our return assumptions for the region were bolstered by 0.2% to 7.9% due to lower valuations. EM equities are now estimated to return approximately 1.2% over that of global developed market equities.

The earnings growth component of our equity return assumptions comprises both near-term and longer-term elements. While our Capital Market Assumptions process typically involves using consensus inputs, for some time we have believed that the consensus of analysts' forecasts has been unrealistically optimistic regarding near-term earnings growth prospects. Unlike analysts, against a backdrop of weak global growth, we do not expect company profit margins to increase from their already elevated levels. For this reason, we have developed our own in-house corporate earnings paths, which has led to lower growth assumptions than forecast by the consensus. Not being influenced by short-term market sentiment, our near-term earnings growth assumptions have been relatively stable overall in contrast to consensus expectations, which have varied far more.

In the long term, we assume that companies' earnings growth is related to GDP growth. Crucially, we do not assume a one-toone relationship between a country's growth rate and the longterm

earnings growth potential of companies listed on the stock market within that country. We apply this strategy because many companies are international in nature and derive earnings from regions outside of where they have a stock market listing. An implication is that European company earnings have only about a 50% direct exposure to developments in the eurozone and, similarly, investors in non-European equity markets should not consider themselves insulated from events there, either. It is also notable that emerging markets are an important driver of profits earned in the developed world.

Private equity

We assume that global private equity will return 8.4% per annum over the next 10 years in U.S. dollar terms—a decrease of 0.2% from the previous quarter. The downward revision was driven by the lower U.S. equity return assumption. The global private equity assumption represents a diversified private equity portfolio with allocations to leveraged buyouts (LBOs) and venture capital, as well as mezzanine and distressed investments. Return expectations for these different strategies depend on different market factors. For example, distressed investments are influenced by the outlook for high yield debt and so receive a boost from higher return expectations in this area. Similarly, LBO returns are influenced by the outlook for equity markets, as well as the cost of the debt used to finance these LBOs. Notwithstanding this, whereas in the past leverage has been a big driver of private equity returns—particularly for LBOs—in the future, managers' ability to add value through operational improvements will become more important.

Real estate

	10yr annualised nominal return assumptions					
	USD	GBP	EUR	CHF	CAD	JPY
U.S.	5.3%	5.0%	4.8%	4.2%	5.0%	4.2%
UK	5.5%	5.2%	5.0%	4.3%	5.2%	4.3%
Europe ex UK	5.6%	5.3%	5.1%	4.4%	5.3%	4.4%
Canada	5.1%	4.8%	4.6%	3.9%	4.8%	3.9%

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

Both the UK and Canadian real estate assumptions are unchanged since last quarter at 5.2% and 4.8%, respectively. There were no changes to either initial yields or rental growth expectations for either market. Our assumptions for the former remain below pre-EU referendum levels, where concerns over the impact of Brexit on capital values and rental growth weighed on return expectations. Capital appreciation over the quarter in U.S. real estate markets has led to lower initial yields and therefore a lower 10-year return estimate of 5.3%. Similarly, lower initial yields for European real estate have seen our expectations fall by 0.3% to 5.1% p.a.

Our assumptions here are based on a large fund that is capable of investing directly in real estate. The assumptions relate to the broad real estate market in each region rather than any particular market segment. Our analysis allows for the fact that real estate is an illiquid asset class and revaluations can be infrequent, leading to lags in valuations compared with trends in underlying market value. These assumptions do not include any allowance for active management alpha but do include an allowance for the unavoidable costs associated with investing in a real estate portfolio. These include real estate management costs, trading costs, and investment management expenses.

Hedge funds

Our fund of hedge funds return assumption return is unchanged since last quarter at 4.1% p.a. in U.S. dollar terms. The upward revisions to our government and corporate bond return assumptions have been offset by the decrease in our equity return expectations. We formulate this by combining the return assumptions for a number of representative hedge fund strategies. This assumption includes allowances for manager skill and related fees (including the extra layer of fees at the fund of funds level), and this is for the average fund of funds in the hedge fund universe rather than for a high-performing manager. Dispersion in returns is high, and we expect top-quartile managers to deliver considerably better performance.

As explained in the lead article in Aon's 30 September 2015 Capital Market Assumptions publication, our analysis allows for the fact that hedge fund managers have been unable to deliver the high levels of "alpha" they did in the more distant past and that alpha generation is likely to remain challenging moving forward.

The individual hedge fund strategies we model as components of our fund of hedge funds' assumption are equity long/short, equity market neutral, fixed income arbitrage, event-driven, distressed debt, global macro, and managed futures. Our modeling of these strategies includes an analysis of their underlying building blocks. For example, we consider the fact that equity long/short funds are sensitive to equity market movements. In practice, the sensitivity of equity long/short funds to equity markets can vary substantially by fund with some behaving almost like substitutes for long-only equity managers, while others retain far lower exposure. Our assumptions are based on our assessment of the average sensitivity across the entire universe of equity long/short managers.

Given the nature of the asset class, our hedge fund return assumptions are more stable than, for example, our U.S. equity return assumption. Nonetheless, the strategies are impacted by changes to the other asset class assumptions. For example, most hedge funds are "cash+" type investments to a greater or lesser extent, so changes in return expectations for cash will contribute to hedge fund assumptions. Similarly, changes to our equity and high yield return assumptions influence expected returns for those strategies that are related to these markets, such as equity long-short and distressed debt strategies.

Volatility

15yr Inflation-Linked Government Bonds	9.0%
15yr Fixed Income Government Bonds	11.0%
10yr Investment Grade Corporate Bonds	9.0%
Property/Real Estate	12.5%
U.S. High Yield	12.0%
Emerging Market Debt (USD denominated)	13.0%
UK Equities	19.0%
U.S. Equities	17.0%
Europe ex UK Equities	19.0%
Japan Equities	20.0%
Canada Equities	19.0%
Switzerland Equities	19.0%
Emerging Market Equities	27.0%
Global Private Equity	25.0%
Global Fund of Hedge Funds	9.0%

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

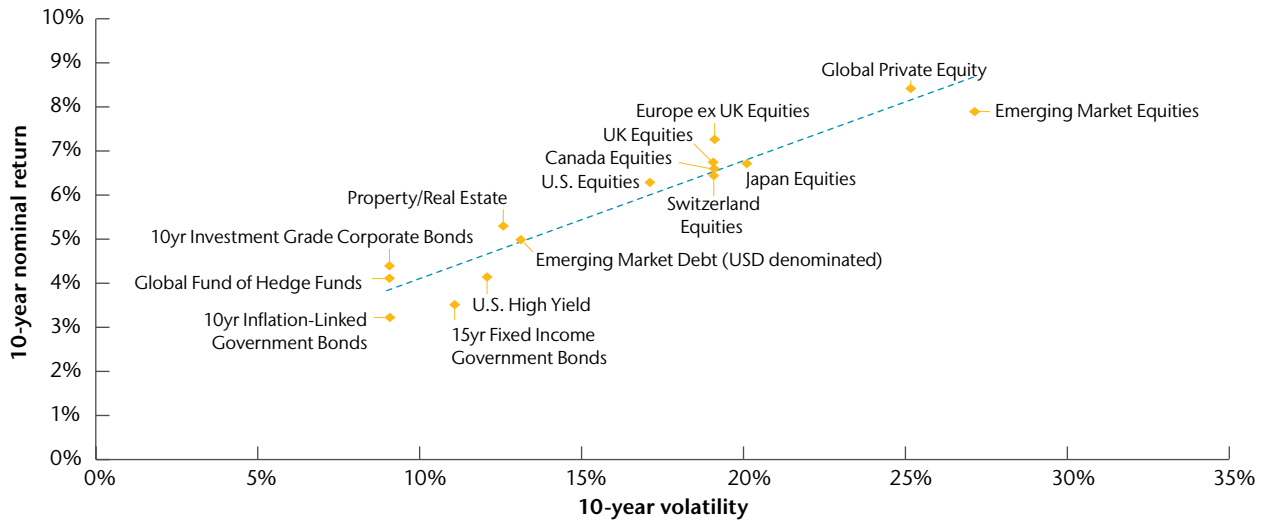
Historically, forward-looking indicators and our view on the economic cycle all play a role in our volatility assumption-setting process, and the volatilities in the table above are representative of each asset class over the next 10 years overall. For illiquid asset classes, such as real estate, de-smoothing techniques are employed. All volatilities shown above are in local currency terms. For emerging market equities, global private equity, and global fund of hedge funds, the local currency is taken to be USD.

Please note that due to the level of yields and shapes of the yield curves in Japan and Switzerland, lower volatility assumptions apply to bond investments in these markets. This is because as yields fall toward 0% (or even below), the potential for further significant declines becomes more limited and this limits volatility—although clearly the risk of upward moves remains high.

Risk and return

The chart below plots our risk and return assumptions for a selection of asset classes that are covered as part of our Capital Market Assumptions. These asset classes are shown from a U.S. perspective and as such, all returns are quoted in U.S. dollar terms.

Risk–return based on Q2 2018 Capital Market Assumptions



Source: Aon's Capital Market Assumptions. Please see appendix for more information.

Correlations

	IL	FI	CB	RE	UK Eq	U.S. Eq	Eur Eq	Jap Eq	Can Eq	CHF Eq	EM Eq	Gbl PE	Gbl FoHF
IL	1	0.5	0.4	0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	0	-0.1
FI		1	0.8	0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	0	-0.2
CB			1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0.1	0.1
RE				1	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3
UK Eq					1	0.85	0.85	0.7	0.85	0.85	0.8	0.6	0.7
U.S. Eq						1	0.85	0.7	0.85	0.85	0.8	0.7	0.8
Eur Eq							1	0.7	0.85	0.85	0.8	0.6	0.7
Jap Eq								1	0.7	0.7	0.6	0.4	0.5
Can Eq									1	0.8	0.8	0.6	0.7
CHF Eq										1	0.8	0.6	0.7
EM Eq											1	0.6	0.7
Gbl PE												1	0.5
Gbl FoHF													1

- Domestic Inflation-Linked Government Bonds
- Domestic Fixed Income Government Bonds
- Domestic Investment Grade Corporate Bonds
- Domestic Real Estate / Property
- UK Equities
- U.S. Equities
- Europe ex UK Equities
- Japan Equities
- Canada Equities
- Switzerland Equities
- Emerging Market Equities
- Global Private Equity
- Global Fund of Hedge Funds

Source: Aon's Capital Market Assumptions. Please see appendix for more information.

The matrix above sets out representative correlations assumed in our modelling work, shown on a rounded basis. All correlations shown above are in local currency terms and can be used by UK, U.S., European, Canadian, and Swiss investors for the asset classes where return and volatility assumptions exist (e.g., Swiss real estate is not modeled). A different set of correlations apply for Japanese investors.

Correlations are highly unstable and vary greatly over time. This feature is captured in our modeling, where we employ a more complex set of correlations involving different scenarios.

Our correlations are forward-looking and not just historical averages. In particular, we think that in many ways the experience of this millennium has been quite different from the previous 20 years, being more cyclical in nature with less strong secular trends. This has many implications. For example, the equity/government bond correlation in the table above is negative, which also incorporates the feature that this correlation is negative in stressed environments. The lead article in Aon's 30 June 2014 Capital Market Assumptions publication included further detail on the drivers of the equity/government bond correlation.

Appendix: Capital Market Assumptions methodology

Overview

Aon Capital Market Assumptions are our asset class return, volatility and correlation assumptions. The return assumptions are 'best estimates' of annualised returns. By this we mean median annualised returns – that is, there is a 50/50 chance that actual returns will be above or below the assumptions. The assumptions are long term assumptions, based on a 10 year projection period and are updated on a quarterly basis.

Material uncertainty

Given that the future is uncertain, there is material uncertainty in all aspects of the Capital Market Assumptions and the use of judgement is required at all stages in both their formulation and application.

Allowance for active management

The asset class assumptions are assumptions for market returns, that is we make no allowance for managers outperforming the market. The exceptions to this are the private equity and hedge fund assumptions where, due to the nature of the asset classes, manager performance needs to be incorporated in our Capital Market Assumptions. In the case of hedge funds we assume average manager performance and for private equity we assume a high performing manager.

Inflation

When formulating assumptions for inflation, we consider consensus forecasts as well as the inflation risk premium implied by market break-even inflation rates.

Fixed income government bonds

The government bond assumptions are for portfolios of bonds which are annually rebalanced (to maintain constant duration). This is formulated by stochastic modelling of future yield curves.

Inflation-linked government bonds

We follow a similar process to that for nominal government bonds, but with projected real (after inflation) yields. We incorporate our inflation profiles to construct nominal returns for inflation-linked government bonds.

Corporate bonds

Corporate bonds are modelled in a similar manner to government bonds but with additional modelling of credit spreads and projected losses from defaults and downgrades.

Other fixed income

Emerging market debt and high yield debt are modelled in a similar fashion to corporate bonds by considering expected returns after allowing for losses from defaults and downgrades.

Equities

Equity return assumptions are built using a discounted cashflow analysis. Forecast real (after inflation) cashflows payable to investors are discounted and their aggregated value is equated to the current level of each equity market to give forecast real (after inflation) returns. These returns are then converted to nominal returns using our 10-year inflation assumptions.

Private equity

We model a diversified private equity portfolio with allocations to leveraged buyouts, venture capital, and mezzanine and distressed investments. Return assumptions are formulated for each strategy based on an analysis of the exposure of each strategy to various market factors with associated risk premia.

Real estate / property

Real estate returns are constructed using a discounted cashflow analysis similar to that used for equities, but allowing for the specific features of these investments such as rental growth.

Hedge funds

We construct assumptions for a range of hedge fund strategies (e.g. equity long/short, equity market neutral, fixed income arbitrage, event driven, distressed debt, global macro, managed futures) based on an analysis of the underlying building blocks of these strategies.

We use these individual strategies to formulate a fund of hedge funds' assumption which is quoted in the Capital Market Assumptions.

Currency movements

Assumptions regarding currency movements are related to inflation differentials.

Volatility

Assumed volatilities are formulated with reference to implied volatilities priced into option contracts of various terms, historical volatility levels and expected volatility trends in future.

Correlations

Our correlation assumptions are forward looking and result from in-house research which looks at historical correlations over different time periods and during differing economic/investment conditions, including periods of market stress. Correlations are highly unstable, varying greatly over time. This feature is captured in our modelling.

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