

Capital Market Assumptions Methodology

Introduction

Capital Market Assumptions (CMAs) are estimates for expected risk and return for a given set of investment opportunities (asset classes). CMAs also consist of expectations of the relationship between these asset classes (correlations). CMAs are a key input for asset allocation, investment strategy, financial planning and wealth planning activities.

Determining the Capital Market Assumptions

There is no more fundamental assumption in financial theory than the tradeoff between risk and return. While periodic market events can challenge the assumption that higher risk is rewarded with higher returns, over longer periods of time, the assumption provides a logical and practical basis for asset allocation, investment strategy, financial planning and wealth planning.

The CMAs are based on the assumption that risk and return are proportional—that a unit of additional expected risk results in an additional unit of expected return. More specifically we assume that “excess return” is proportional to risk. Excess return is return in excess of a risk free return such as a return on cash. The measure of risk is the annual standard deviation of returns. So if an investment with an expected 5% annual standard



deviation would be expected to return, for instance, 2% greater than cash, an investment with an expected 10% annual standard deviation would be expected to return 4% greater than cash.¹

A common misconception with regard to CMAs is that **total** return is proportional to risk—that an investment with an expected 10% annual standard deviation should have twice the *total* expected return of an investment with an expected 5% annual standard deviation. The difference can be substantial. If one assumes a cash return of 4% (more on this shortly...) in the example above, the investment with a 5% annual standard deviation would have an expected return of 6% and the investment with a 10% annual standard deviation would have an expected return of 8%, *not* 12%.

Correlation matters

In addition to risk, an important element in determining expected return is the relationship between asset classes, measured by correlation. Correlation, ranging on a scale from -1 to 1, measures the degree to which the return pattern of one asset class tracks another. If the returns of two asset classes always move together, in the same proportion, then their correlation is 1. If they always move in the opposite direction, but in the same proportion, then their correlation is -1. Low or negative correlations are of value in asset allocation and investment strategy because they generate one of finance's most prized objectives: diversification. An investment portfolio with multiple asset classes that have low or negative correlations can deliver a portfolio

with more attractive risk reward characteristics than any one of the asset classes alone. Paradoxically, when an asset class is a good diversifier—i.e. it has low correlations with other asset classes—its expected return may be lower. Its value in creating attractive portfolios with other asset classes implies that investors would be willing to accept a lower return than simply one proportionate with its risk.

Determining the CMAs for a broad group of asset classes thus requires analyzing the interaction of risk, return and correlation. In order to capture these interactions, we use what financial economists call an "equilibrium model." Equilibrium describes a situation in which all asset expected returns are a fair reflection of their risk and correlations, and does not refer to any specific time horizon. Practically, what it means is that for asset classes that are reasonably correlated with one another, expected returns in excess of cash are approximately proportional to risk, but for asset classes that exhibit low correlations, expected returns can be a bit lower than that which would be implied by a proportional application of risk alone.²

Moving from relative to absolute expectations

So far, we've described a framework for estimating relative return expectations – excess returns proportional to risk, filtered by correlation. A complete expression of CMAs is however a set of estimates for expected return for a range of asset classes. An expected return on cash must be added to each asset class's expected excess return (sometimes referred to as a *risk premium*) to determine expected return.

¹ Ignoring correlation which is covered in the subsequent section.

² Black, Fischer; Litterman, Robert, "Global Portfolio Optimization," *Financial Analysts Journal*; Sep./Oct. 1992; 48,5 ABI/INFORM global page 28. The equilibrium model that we used is known as the Black-Litterman Model. In addition to risk, return, and correlation, Black-Litterman takes into account the size of an asset class (its total market capitalization) in determining expected return – with larger asset classes implying higher expected returns to induce more investors. In practice, risk and correlation are the primary drivers of expected return, with the relative market capitalization size having a considerably smaller impact.

1. Defining expected return

Expected return = expected return on cash + expected excess return

Expected return on cash

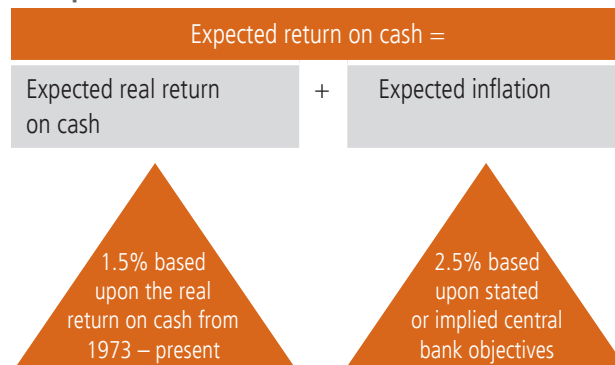
Determining an expected return on cash requires determining an expected real return on cash and an expected level of inflation.

2. Defining expected return on cash

Expected return on cash = expected real return on cash + expected inflation rate

The real return on cash has varied substantially. Since 1926, there have been protracted periods where the real return on cash has been well over three percent, but also protracted periods where the real return on cash has been zero or even slightly negative. We currently assume an expected real return on cash of 1.5%, which has been the real return on cash since 1973. Expected inflation is largely based on the expected behavior of central banks as inflation is significantly driven by monetary policy. Some central banks have an explicit inflation target, such as the European Central Bank, whose target is 2%. The U.S. Federal Reserve Bank does not have an explicit target, but various studies indicate an implied target, based on the Fed's actions of 2%–3%. Taking these inputs, among others, we assume an expected inflation rate of 2.5%. Added together, the expected return on cash deployed in our CMA calculations is 4%.

3. Expected return on cash = 4%



Scaling excess return—the equity risk premium

The expected return on cash provides one key ingredient for translating relative return expectations into absolute return expectations. It would seem straightforward to simply add expected excess return for each asset class to the expected return on cash. In our earlier illustration, we compared an investment with a 5% annual standard deviation that would be expected to return 2% greater than cash, and an investment with an expected 10% annual standard deviation that would be expected to return 4% greater than cash. While this illustrates how excess return is proportional to risk, there is no mention of *why* an investment with a 5% standard deviation would be expected to return 2% greater than cash. Completing the CMA exercise requires the translation of *proportional* expectations of excess return into absolute expectations of excess return for each asset class. Expectations for relative excess return must be scaled based on an expectation for the absolute amount of excess return attributable to a unit of risk. While there are a myriad of ways to estimate the absolute amount of excess return attributable to risk in the investment universe, the equity risk premium provides a highly researched and intuitive anchor. The equity risk premium is the absolute amount of

expected excess return for the equity market (most commonly large cap U.S. or large cap developed market equities). The proportional relationship between the expected equity risk premium and the expected standard deviation of equities provides the scaling mechanism to convert the proportional excess return estimates for all other asset classes into absolute levels of expected excess return. Equity risk premium estimates range from as low as 2%–3% to as high as 7%–8%. We assume an equity risk premium of 5% for large cap U.S. equities. **Adding in the expected return on cash of 4%, the expected return for U.S. large cap equities is 9%.** Perhaps more importantly, using the expected standard deviation³ of large cap U.S. equities of 17%⁴ defines a return-per-unit-of-risk for large cap U.S. equities as follows:

4. Return-per-unit-of-risk for U.S. large cap equities

$$\frac{\text{Equity risk premium (expected excess return on equities)}}{\text{Expected standard deviation of equities}} = \frac{5\%}{17\%} = 0.3$$

This return-per-unit-of-risk measure is commonly referred to as the Sharpe ratio. As previously noted, for asset classes that are reasonably correlated with one another, expected returns in excess of cash are approximately proportional to risk – and will have a similar Sharpe ratio. For asset classes that exhibit low correlations, expected returns in excess of cash can be a bit lower than that which would be implied by a proportional application of risk alone.⁵ A quick look at the following subset of asset classes highlights this relationship between expected risk, expected return and correlation.

5. Asset class subset illustration⁶

	Expected risk	Expected return	Sharpe ratio	Median correlation
U.S. taxable fixed income	3.7%	4.4%	0.11	0.04
Commodities	17.1%	7.6%	0.21	0.30
U.S. large cap equity	16.7%	9.0%	0.30	0.48
Emerging market equity	26.6%	12.6%	0.32	0.58

Since our assumed equity risk premium defined the Sharpe ratio for U.S. large caps, its Sharpe ratio of 0.3 serves as a baseline. Emerging market equity, which has higher correlations with other asset classes has a higher Sharpe ratio. Commodities, whose lower correlation with other asset classes matches common intuition, has a lower Sharpe ratio. U.S. taxable fixed income exhibits one of the lowest Sharpe ratios, commensurate with its very low correlations with other asset classes. The full set of expected risk and return for all asset classes, as well as a correlation matrix subset indicating the correlation of key asset classes, is included at the end of this paper.

Alternative investments

There are distinct challenges in determining the expected risk and return for alternative investments. One set of challenges revolves around the historical performance data for alternative investments. Alternative investment indices are subject to distortions such as survivorship bias – funds that go out of business disappear from index calculations presumably taking their poor performance with them. Many alternative investment strategies

³ Specifically, we used the standard deviation of excess returns, which is generally close to the standard deviation of total return.

⁴ Expected standard deviations are based upon historical return patterns with the exception of alternative investments where material adjustments to historical patterns are required.

⁵ The lower return for asset classes that exhibit low correlation flows directly from the Capital Asset Pricing Model (CAPM) and the construct known as Beta. CAPM posits that investors are compensated for correlated volatility (Beta) instead of simple volatility. The Black-Litterman model is a CAPM model at its core.

⁶ Expected correlations are based upon historical return patterns with the exception of alternative investments, where material adjustments to historical patterns are required.

invest in opportunities where daily market prices are unavailable, and thus their performance is in part based on infrequent observations and/or periodic appraisals. These strategies and the indices that represent them can appear less volatile than they may actually be if their daily price fluctuations could be observed.

Addressing this first set of challenges requires the application of several statistical adjustments to historical alternative investment performance. These adjustments allow the alternative investment strategies to be evaluated in the CMA model alongside the traditional asset classes – with expected excess returns proportional to risk – modified by correlation – as previously described.

There is, however, another set of challenges with regard to determining the expected excess return of alternative investments. This set of challenges revolves around the observation that alternative investment strategies don't behave like investments in traditional asset classes. The performance of traditional asset classes is reasonably well-described by a normal distribution – the familiar “bell curve”. Alternative investment strategies often result in performance distributions that have more frequent occurrences of extreme outcomes – sometimes called “fat tails.”⁷ Alternative investment strategies may also result in performance that is not equally distributed around the average outcome – outcomes greater or less than the average outcome could be more frequent.⁸ Since these attributes create more uncertainty for investors, these risks require additional compensation – in the form of additional expected excess return – than is expressed by the CMA model itself. In order to account for this, we have added the following additional non-normality risk premia to certain alternative investment strategies.

6. Non-normality risk premia for alternative investments

Strategy	Non-normality premium
Statistical arbitrage	2.6%
Distressed securities	4.9%
Event driven	4.7%

Finally, many alternative investment strategies are not as liquid as traditional asset classes. The underlying investments may be privately held or thinly traded, and/or the investment managers may impose liquidity constraints in the form of lock ups or redemption fees, among other liquidity constraints. Investors require additional compensation for this loss of flexibility – in the form of additional expected excess return – than is expressed by the CMA model itself. In order to account for this, we have added the following additional illiquidity risk premia to certain alternative investment strategies.

7. Illiquidity risk premia for alternative investments

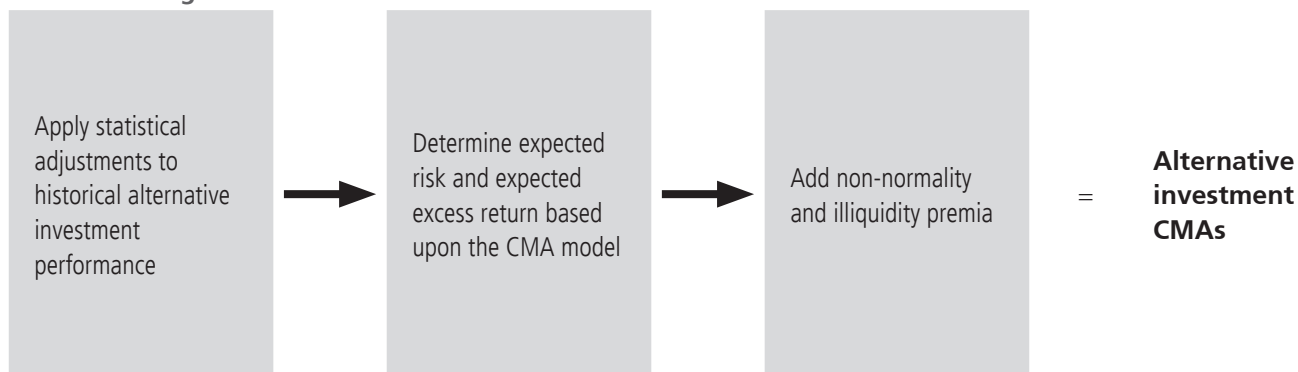
Strategy	Illiquidity premium
Global macro	0.5%
Managed futures	0.5%
Statistical arbitrage	1.0%
Distressed securities	1.0%
Event driven	0.5%
Long/short equity	0.5%
Private equity	1.5%
U.S. real estate	1.5%

⁷ Defined statistically as kurtosis.

⁸ Defined statistically as skewness.

The following flowchart summarizes the process of determining the CMAs for alternative investments.

8. Determining CMAs for alternative investments⁹



Final note: CMAs and asset allocation

By providing expected risk, return, and correlations for a given set of asset classes, CMAs facilitate the calculation of expected risk and return for investment portfolios containing multiple asset classes. The CMAs determined in the Fall 2009 Update therefore determine a set of risk and return expectations for the UBS Strategic Asset Allocations. The CMAs do not however determine the composition of the

Strategic Asset Allocations. The composition of the Strategic Asset Allocations—the asset classes included and their proportions—are determined by a range of factors including the relative market capitalization size of various asset classes, and academic and practitioner research, among other factors. CMAs can be one element of this process. The Strategic Asset Allocations were reviewed in light of the CMA Fall 2009 Update and no changes to the Strategic Asset Allocation were recommended at that time.

⁹ Since mean-variance optimization techniques typically assume normal distributions, optimization exercises using these CMAs for alternative investments which include non-normality premiums should be done with caution and/or constraints.

The asset class risk and return results shown are based on estimated forward looking return and risk assumptions, as measured by standard deviation, (“capital market assumptions”), which are based on UBS proprietary research. The development process includes a review of a variety of factors, including the return, risk, correlations and historical performance of various asset classes, inflation and risk premium. These capital market assumptions do not assume any particular investment time horizon. The process assumes a situation where the supply and demand for investments is in balance and in which expected returns of all asset classes are a reflection of their expected risk and correlations regardless of timeframe. Please note that these assumptions are not guarantees and are subject to change. UBS has changed its risk and return assumptions in the past and may do so in the future. Neither UBS nor your Financial Advisor is required to provide you with an updated analysis based upon changes to these or other underlying assumptions.

9. Capital Market Assumptions—Fall 2009 update

Asset class	Risk assumption	Return assumption
Large-cap value	16.4%	8.7%
Large-cap growth	19.0%	9.3%
Large-cap core	16.7%	9.0%
Mid-cap value	17.4%	9.4%
Mid-cap growth	24.4%	11.3%
Mid-cap core	18.4%	10.4%
Small-cap value	18.5%	9.5%
Small-cap growth	25.9%	11.7%
Small-cap core	21.4%	10.6%
All-cap value	16.2%	8.9%
All-cap growth	19.8%	10.0%
All-cap core	16.8%	9.4%
Smid-cap value	17.3%	9.4%
Smid-cap growth	24.5%	11.4%
Smid-cap core	18.9%	10.4%
REITs	23.0%	9.6%
Developed markets	17.7%	10.4%
Emerging markets	26.6%	12.6%
Non-U.S. REITs	21.7%	11.1%
Non-U.S. equity	18.4%	10.9%
Global REITs	19.9%	10.6%
Global equity	16.9%	10.3%
Short governments	2.1%	4.2%
Short corporates	2.1%	4.2%
Short-term fixed income	2.1%	4.2%
Short mortgages	2.1%	4.2%
Intermediate governments	4.8%	4.6%
Intermediate corporates	4.8%	4.6%
Intermediate mortgages	4.8%	4.6%
Intermediate fixed income	4.8%	4.6%
Short/intermediate fixed income	2.9%	4.3%
Short/intermediate fixed governments	2.9%	4.3%
Short/intermediate fixed corporates	2.9%	4.3%
Short/intermediate fixed mortgages	2.9%	4.3%
Long-term fixed income	8.8%	5.0%
Long-term core	8.8%	5.0%

Capital Market Assumptions—Fall 2009 update (continued)

Asset class	Risk assumption	Return assumption
Long governments	8.8%	5.0%
Long corporates	8.8%	5.0%
Long mortgages	8.8%	5.0%
High yield	10.0%	6.6%
Short municipals	2.1%	3.6%
Intermediate municipals	4.5%	3.8%
Short/intermediate municipals	3.5%	3.7%
Long-term municipals	6.2%	4.0%
Municipals	5.4%	3.9%
Taxable fixed income	3.7%	4.4%
Non-U.S. fixed income	8.8%	6.1%
Global fixed income	5.8%	5.3%
Bonds emerging markets	14.5%	8.0%
Market neutral	9.6%	10.5%
Fixed income arbitrage	9.6%	10.5%
Convertible arbitrage	9.6%	10.5%
Statistical arbitrage	9.6%	10.5%
Distressed securities	8.8%	11.9%
Global macro	9.6%	6.6%
Long/short equity	10.5%	8.1%
Private equity	17.7%	11.4%
Merger arbitrage	8.3%	11.8%
Event driven	8.3%	11.8%
Managed futures	7.4%	5.0%
Diversified fund of funds	8.5%	8.7%
Commodities	17.1%	7.6%
Commodities precious metals	18.3%	6.7%
Commodities energy	35.6%	8.4%
Cash	0.5%	4.0%
Non-U.S. cash	7.9%	4.0%
U.S. real estate	11.4%	8.7%

10. Correlation matrix subset—Fall 2009 update

	Large-cap core	Mid-cap core	Small-cap core	REITs	Developed markets	Emerging markets	Non-U.S. REITs	High yield	Municipals	Taxable fixed income	Non-U.S. fixed income	Statistical arbitrage	Distressed securities	Global macro	Long/short equity	Private equity	Event driven	Managed futures	Diversified fund of funds	Commodities	Cash	U.S. real estate
Large-cap core	1.00																					
Mid-cap core	0.89	1.00																				
Small-cap core	0.75	0.92	1.00																			
REITs	0.50	0.65	0.63	1.00																		
Developed markets	0.82	0.85	0.77	0.55	1.00																	
Emerging markets	0.73	0.79	0.74	0.48	0.84	1.00																
Non-U.S. REITs	0.64	0.74	0.66	0.60	0.80	0.78	1.00															
High yield	0.56	0.67	0.62	0.59	0.63	0.62	0.58	1.00														
Municipals	0.00	0.09	0.03	0.16	0.06	-0.01	0.21	0.32	1.00													
Taxable fixed income	-0.01	0.01	-0.03	0.13	0.03	-0.03	0.15	0.21	0.68	1.00												
Non-U.S. fixed income	0.07	0.13	0.12	0.25	0.32	0.17	0.40	0.17	0.30	0.51	1.00											
Statistical arbitrage	0.34	0.45	0.37	0.39	0.47	0.45	0.43	0.65	0.19	0.01	0.03	1.00										
Distressed securities	0.34	0.41	0.39	0.32	0.38	0.39	0.35	0.45	0.03	-0.12	-0.01	0.62	1.00									
Global macro	0.10	0.20	0.22	0.02	0.26	0.29	0.17	0.08	0.06	0.12	0.18	0.11	0.06	1.00								
Long/short equity	0.58	0.68	0.63	0.38	0.65	0.65	0.57	0.52	0.07	-0.05	0.06	0.67	0.54	0.38	1.00							
Private equity	0.68	0.85	0.84	0.68	0.75	0.72	0.68	0.92	0.21	0.07	0.14	0.66	0.53	0.13	0.66	1.00						
Event driven	0.47	0.60	0.51	0.48	0.64	0.59	0.58	0.67	0.19	0.05	0.16	0.80	0.50	0.19	0.74	0.71	1.00					
Managed futures	-0.27	-0.16	-0.13	-0.08	-0.11	-0.08	-0.02	-0.14	0.22	0.24	0.31	-0.12	-0.18	0.49	-0.06	-0.15	-0.06	1.00				
Diversified fund of funds	0.41	0.55	0.54	0.25	0.58	0.63	0.46	0.47	0.08	-0.09	0.03	0.67	0.57	0.40	0.84	0.58	0.63	-0.04	1.00			
Commodities	0.21	0.34	0.27	0.23	0.40	0.43	0.40	0.31	0.02	0.11	0.31	0.38	0.26	0.37	0.37	0.35	0.47	0.29	0.37	1.00		
Cash	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
U.S. real estate	0.41	0.41	0.36	0.66	0.46	0.24	0.45	0.27	-0.08	-0.11	0.11	0.41	0.50	0.03	0.31	0.40	0.43	-0.06	0.30	0.36	0.00	1.00

The CMAs reflect the Fall 2009 update. Periodically these charts and tables reflecting historical returns and risks for the broad asset classes will be updated for this paper.

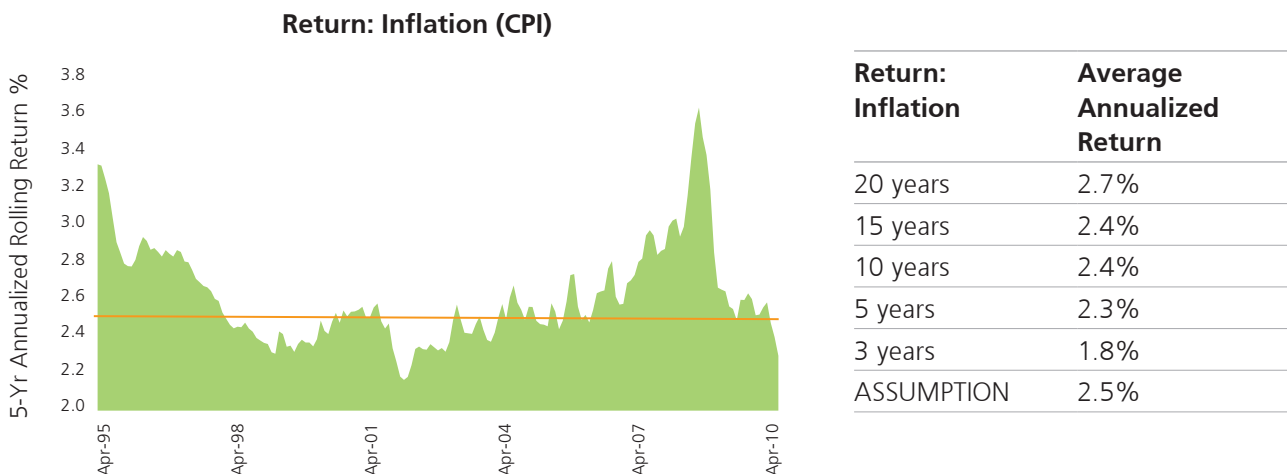
11. Current Capital Market Assumptions and Historical Perspective

The following charts depict the historical range of return and risk to help provide context to our current CMAs. The orange line reflects the current assumptions for each asset class. Historical data can be useful in demonstrating the wide range of results over time.

Broad Asset Classes - Capital Market Assumptions (Return and Risk)

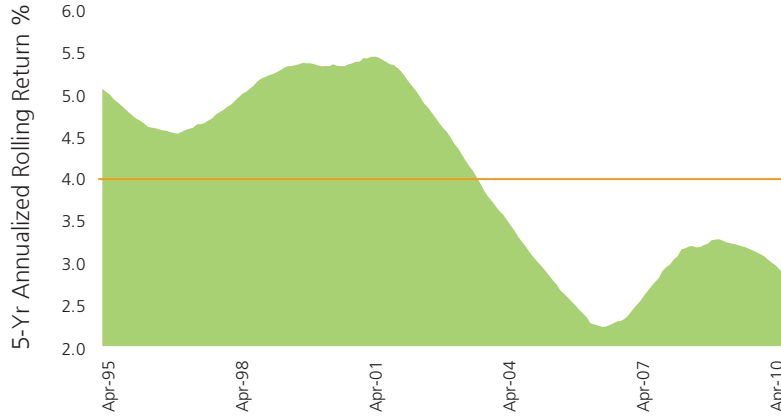
As of 11/2009. Subject to change.

	Return	Risk
U.S. Equity	9.4%	16.8%
Non-U.S. Equity	10.9%	18.4%
U.S. Fixed Income	4.4%	3.7%
Non-U.S. Fixed Income	6.1%	8.8%
Cash	4.0%	0.5%
Inflation	2.5%	NA



Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Consumer Price Index

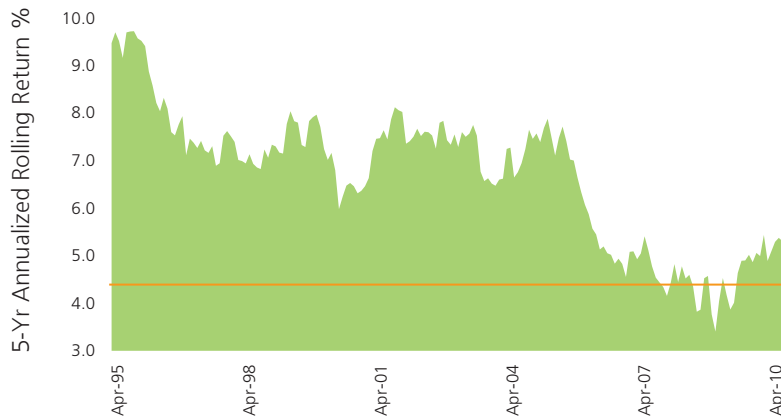
Return: Cash



Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Bank of America Merrill Lynch 3 Month Treasury Bill Index

Return: Cash	Average Annualized Return
20 years	4.0%
15 years	3.6%
10 years	2.8%
5 years	2.9%
3 years	1.8%
ASSUMPTION	4.0%

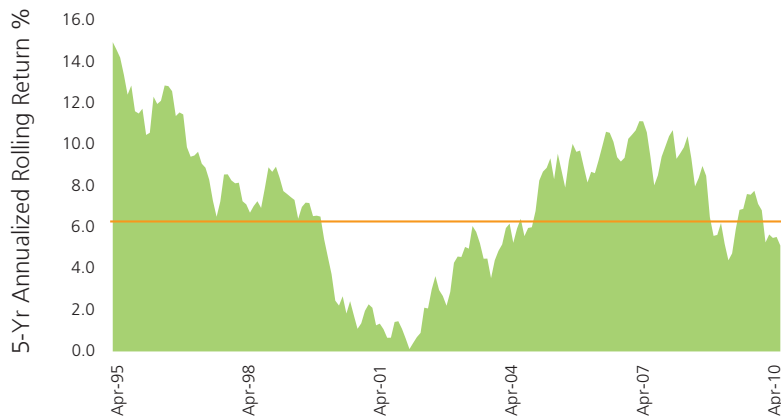
Return: U.S. Fixed Income



Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Bank of America Merrill Lynch US Broad Market Index

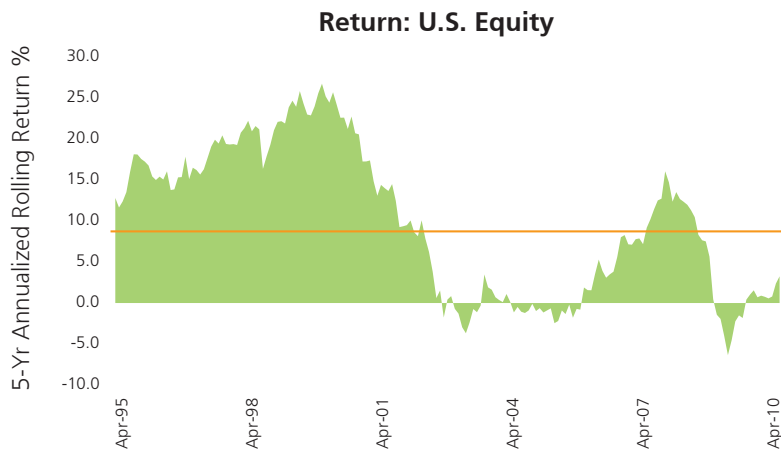
Return: U.S. Fixed Income	Average Annualized Return
20 years	7.3%
15 years	6.5%
10 years	6.4%
5 years	5.3%
3 years	6.2%
ASSUMPTION	4.4%

Return: Non-U.S. Fixed Income



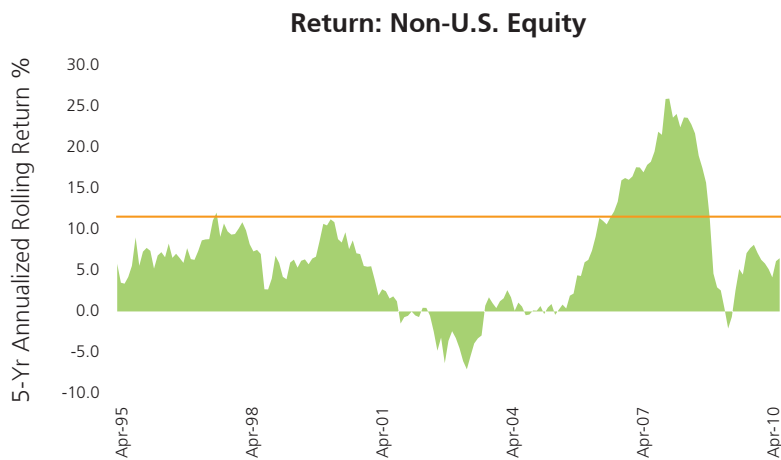
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence
Data: Barclays Capital Global Aggregate x USD Index (May 1990 – December 1996) Bank of America Merrill Lynch Global Broad Market xUSD Index (Jan 1997 – Apr 2010)

Return: Non-U.S. Fixed Income	Average Annualized Return
20 years	7.9%
15 years	5.7%
10 years	7.3%
5 years	5.1%
3 years	5.9%
ASSUMPTION	6.1%



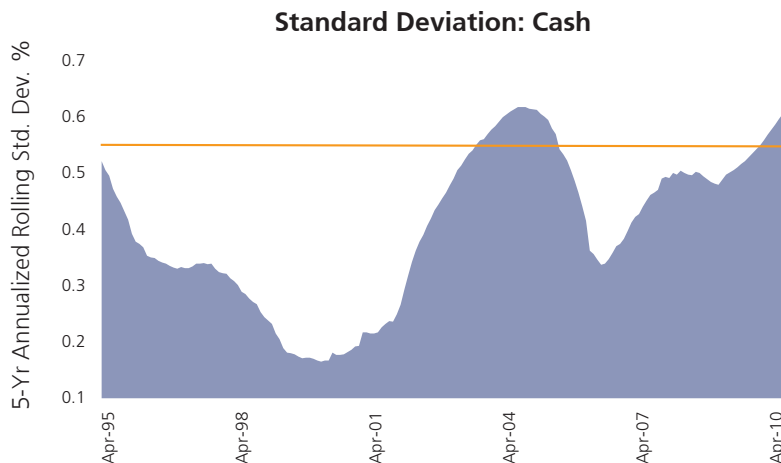
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Russell 3000® Index

Return: U.S. Equity	Average Annualized Return
20 years	9.1%
15 years	7.9%
10 years	0.5%
5 years	3.3%
3 years	-4.6%
ASSUMPTION	9.4%



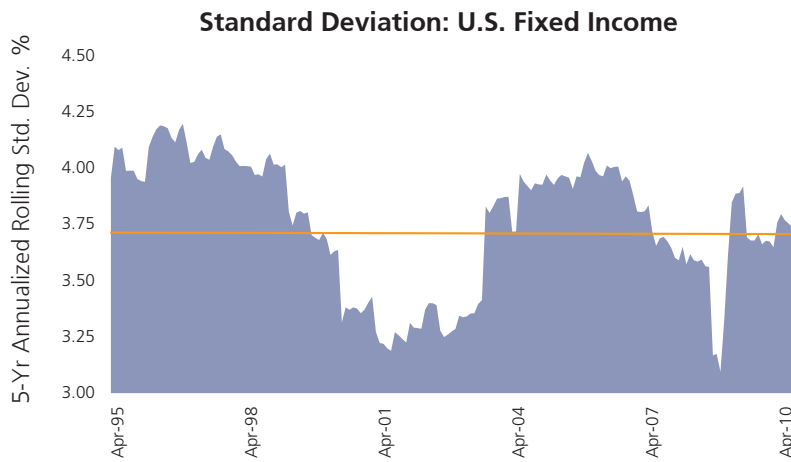
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence
 Data: MSCI ACWI x-US (Morgan Stanley Capital International All Country World Index x-US) Price Index May 1990 – Dec 1998, MSCI ACWI x-US Total Return Net Index January 1999 – April 2010

Return: Non-U.S. Equity	Average Annualized Return
20 years	5.3%
15 years	5.1%
10 years	3.3%
5 years	6.5%
3 years	-5.9%
ASSUMPTION	10.9%



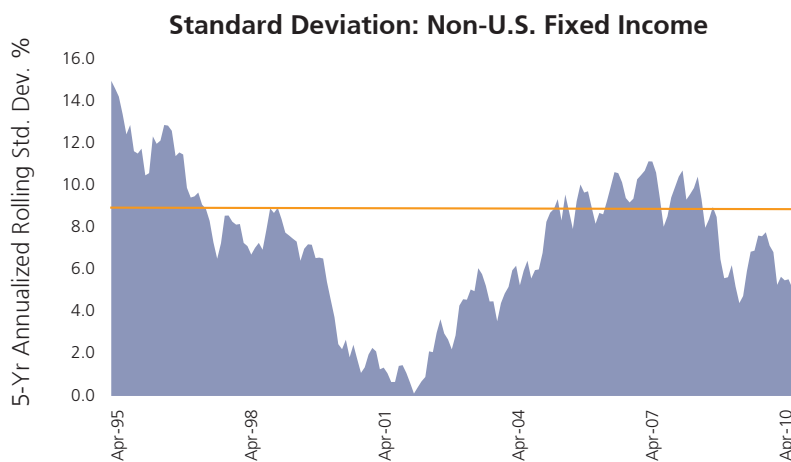
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Bank of America Merrill Lynch 3 Month Treasury Bill Index

Standard Deviation: Cash	Average Annualized Standard Deviation
20 years	0.6%
15 years	0.6%
10 years	0.6%
5 years	0.6%
3 years	0.6%
ASSUMPTION	0.5%



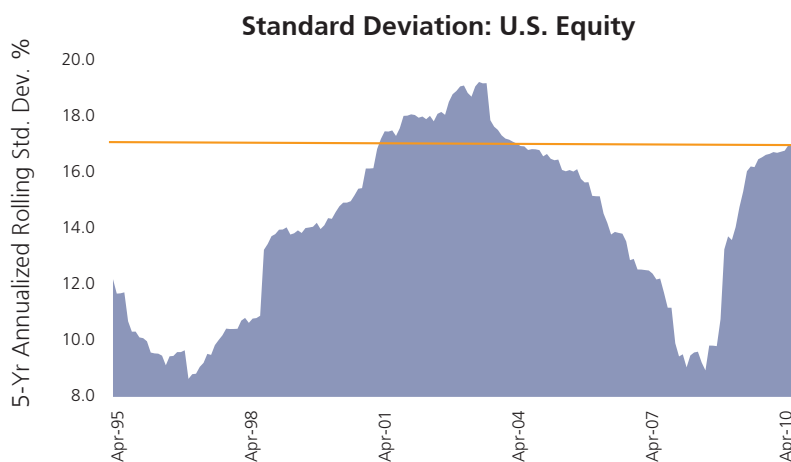
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Bank of America Merrill Lynch US Broad Market Index

Standard Deviation: U.S. Fixed Income	Average Annualized Standard Deviation
20 years	3.8%
15 years	3.8%
10 years	3.9%
5 years	3.7%
3 years	4.3%
ASSUMPTION	3.7%



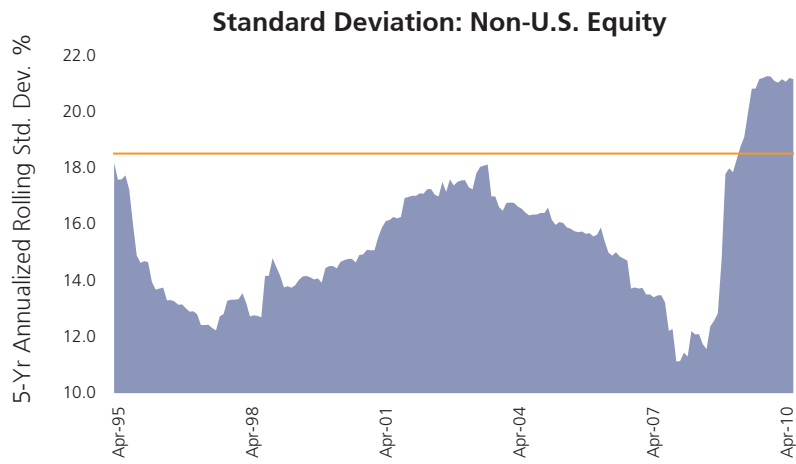
Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence
Data: Barclays Capital Global Aggregate x USD Index (May 1990 – December 1996) Bank of America Merrill Lynch US Broad Market Index (Jan 1997 - Apr 2010)

Standard Deviation: Non-U.S. Fixed Income	Average Annualized Standard Deviation
20 years	8.7%
15 years	8.5%
10 years	8.8%
5 years	8.9%
3 years	10.3%
ASSUMPTION	8.8%



Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence, Data: Russell 3000® Index

Standard Deviation: U.S. Equity	Average Annualized Standard Deviation
20 years	15.2%
15 years	16.1%
10 years	16.4%
5 years	16.9%
3 years	21.0%
ASSUMPTION	16.8%



Standard Deviation: Non-U.S. Equity	Average Annualized Standard Deviation
20 years	17.6%
15 years	17.4%
10 years	18.7%
5 years	21.2%
3 years	25.9%
ASSUMPTION	18.4%

Source: UBS Wealth Management Solutions - Investment Strategy and Due Diligence
 Data: MSCI ACWI x-US (Morgan Stanley Capital International All Country World Index x-US) Price Index May 1990 - Dec 1998, MSCI ACWI x-US Total Return Net Index January 1999 - April 2010

Index Definitions

Individuals cannot invest directly in any index.

Consumer Price Index (CPI)/Inflation is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.

Bank of America Merrill Lynch 3 Month Treasury Bill Index: Consists of U.S. Treasury Bills maturing in 90 days.

Bank of America Merrill Lynch US Broad Market Index tracks the performance of US dollar-denominated investment-grade Government and Corporate public debt issued in the US Domestic bond market, including collateralised products such as Mortgage Pass-Through and Asset Backed securities.

Bank of America Merrill Lynch Global Broad Market x USD Index tracks the performance of investment grade debt publicly issued in markets outside the United States, including sovereign, quasi-government, corporate, securitized and collateralized securities. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch). For Canadian dollar credits only, Fitch is replaced by DBRS in the rating calculation. In addition, qualifying securities must have an investment grade rated country of risk (based on an average of Moody's, S&P and Fitch foreign currency long term sovereign debt ratings), at least one year remaining term to final maturity and a fixed coupon schedule.

Barclays capital Global Aggregate x USD Index

is designed to be a broad based measure of the global investment-grade, fixed rate, fixed income corporate markets outside the United States. The major components of the Aggregate Index are the Pan-European Aggregate and the Asian Pacific Aggregate Indices. The Aggregate Index also includes Euro-Dollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities.

MSCI ACWI x-US (Morgan Stanley Capital International All Country World Index x-US) – is a free float adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets, excluding U.S. issues.

- **The Price Indices** measure only the price performance of markets. Dividends are not considered in price indices.
- **The Net Indices** approximate the minimum possible dividend reinvestment. The dividend is reinvested after deduction of with holding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties.

Russell 3000® Index – Composed of 3,000 large U.S. companies as determined by total market capitalization. The index represents approximately 98% of the investable U.S. equity market. The largest company has a market capitalization \$336.1 billion; the smallest is approximately \$2.0 million as of December 31, 2003. Individuals cannot invest directly in any index.

General Risks:

Alternative strategies are usually highly speculative and entail substantial risks. Alternative strategies can provide professional money managers with greater flexibility to manage portfolios through a variety of market conditions. However, this flexibility adds additional elements of risk and complexity. For example, alternative strategies may use volatile strategies and investments such as derivatives, leverage, frequent trading, shorting, options and futures, and a variety of other strategies and instruments. Furthermore, alternative investments can have complicated partnership documents, have limited or no operating history, fee structures and significant restrictions upon liquidity and transferability. It is possible that investors in these strategies may lose some or all of their investment. Therefore, investors considering investment in alternative strategies should carefully review the prospectus/offering documents and (if applicable) partnership agreement before investing. Investors in such partnership-structured investments should be comfortable with limited liquidity, particularly with respect to the ability to withdraw funds invested in such vehicles. You should carefully consider such factors as your personal net worth, income, age, risk tolerance and liquidity needs. These vehicles are long-term investments and are appropriate only for those investors who can bear the risks associated with the investments, including limited liquidity.

An Investor Certificate must be completed to verify eligibility to invest in partnership-structured alternative investments.

Commodities or commodity-related equities – The value of the investment may be affected by supply and demand characteristics of commodity markets. Prices for individual commodities can fluctuate based on production and demand forecasts, weather, political events, seasonality, tariffs, and many other reasons. Individual commodity prices can fluctuate widely over short time periods and can deviate from equity and fixed income price movements.

Equity Risk – The value of investments in equity securities will fluctuate in response to general economic conditions and to changes in the prospects of particular companies and/or sectors in the economy.

Fixed income – The value of the portfolio will fluctuate based on the value of the underlying securities. Two main risks related to fixed income investing are interest rate risk and credit risk. Typically, when interest rates rise, there is a corresponding decline in the market value of bonds. Credit risk refers to the possibility that the issuer of the bond will not be able to make principal and interest payments.

Foreign investing – The value of the portfolio will fluctuate based on the value of the underlying securities. Foreign investing involves risks, including risks related to foreign currency, limited liquidity, less government regulation and the possibility of substantial volatility due to adverse political, economic or other developments.

High Yield Risk – Through its investments in high yield securities and unrated securities of similar credit quality (commonly known as “junk bonds”), this portfolio may be subject to greater levels of interest rate, credit and liquidity risk than portfolios that do not invest in such securities. High yield securities are considered predominately speculative with respect to the issuer’s continuing ability to make principal and interest payments.

Municipal fixed income – The value of the portfolio will fluctuate based on the value of the underlying securities. This strategy invests in municipal securities. Municipal securities are subject to the risk that legislative changes and local and business developments may adversely affect the yield or value of the strategy’s investments in such securities. Furthermore, an investment in any municipal portfolio should be made with an understanding of the risks involved in investing in municipal bonds; such as interest rate risk, credit risk and market risk, including the possible loss of principal. The value of the portfolio will fluctuate based on the value of the underlying securities. Clients should contact their tax advisor regarding the suitability of tax-exempt investments in their portfolio. If sold prior to maturity, municipal securities are subject to gain/losses based on the level of interest rates, market conditions and the credit quality of the issuer. Income may be subject to the alternative minimum tax (AMT) and/or state and local taxes, based on state of residence.

Mortgage-backed securities are subject to prepayment risk and may be sensitive to changes in prevailing interest rates. When interest rates rise, the value of fixed income securities generally declines.

Real estate – The value of the portfolio will fluctuate based on the value of the underlying securities. There are special risks associated with an investment in real estate, including liquidity risk, credit risk, interest rate fluctuations and the impact of varied economic conditions.

Small cap stocks – The value of the portfolio will fluctuate based on the value of the underlying securities. Small-cap stocks may be subject to a higher degree of risk than more established companies’ securities, including higher volatility.



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