



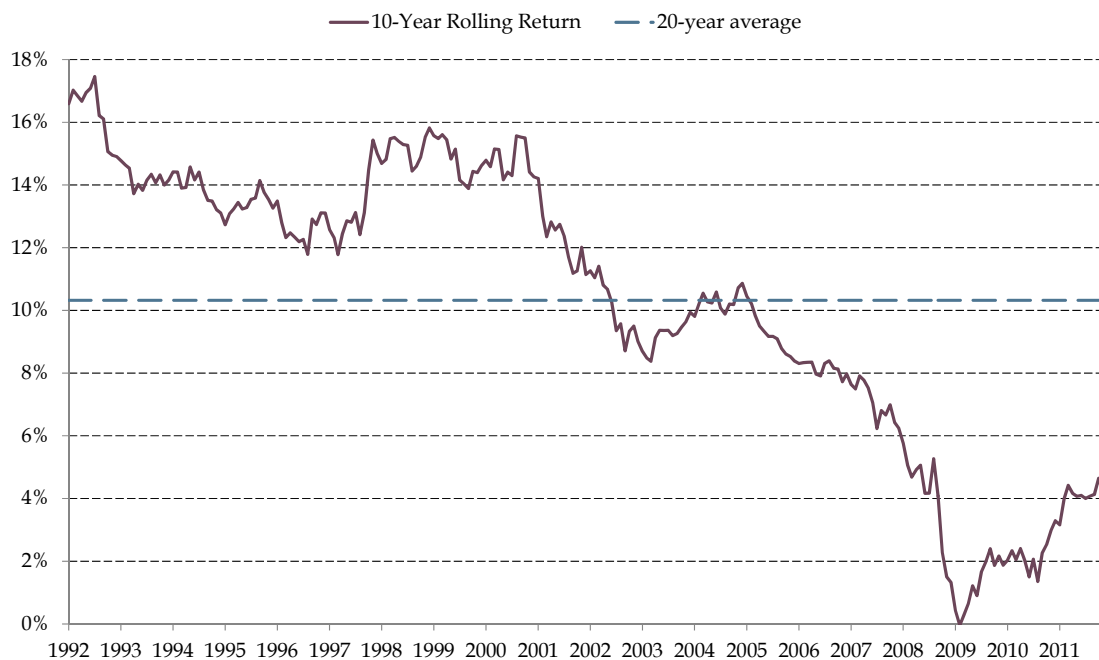
INTRODUCTION

Many institutional investors have target annual returns in the range of 7% to 8% or higher. This could take the form of an actuarial assumed rate of return for a pension fund or a spending rate plus an inflation assumption for a foundation. Achieving this target return, however, is anything but guaranteed. In fact, events have conspired to make the challenge of meeting this goal particularly daunting over the next decade. While this challenge may be formidable, it is not insurmountable. This paper reviews various approaches that investors can take that may improve the likelihood of achieving their objectives.

THE CHALLENGE AHEAD

For several decades, the average institution invested the majority of their assets in stocks (or similar equity-like assets), believing that riskier equities would provide higher returns than relatively less risky bonds. During the 1980s and 1990s, stocks performed in accordance with this belief, exceeding expectations and delivering double-digit average annual returns.

The bursting of two asset price bubbles in close succession, beginning with the Dotcom bust at the turn of the century and then the Global Financial Crisis, resulted in a decade of sub-par returns for most institutions. The following chart¹ provides a clear picture of this decline, even though it “smooths” returns by using a rolling ten-year average return.



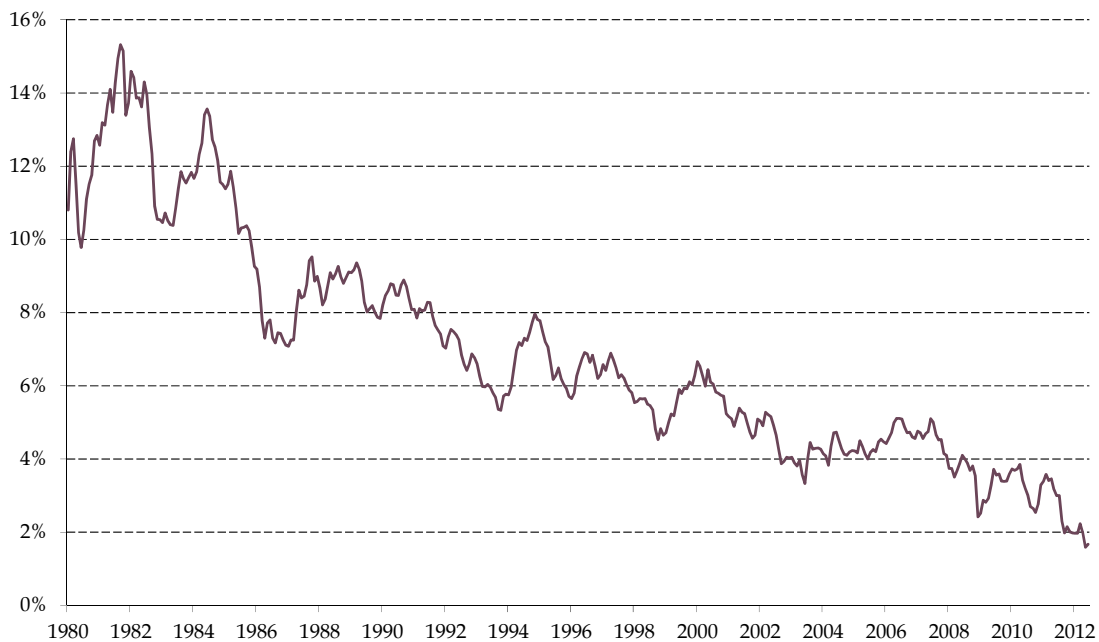
¹ Stocks are proxied by the S&P 500 index and bonds are proxied by the Barclays Aggregate index.

A contrarian might expect that a decade of poor returns would be followed by a period of solid or perhaps even strong gains. Yet this reasoning ignores both the current macroeconomic environment as well as stock and bond fundamentals. Although forecasting global macroeconomic policy and its consequences is outside the scope of this topic, we will examine the capital market environment for the major asset classes. It is the current state of capital markets, namely elevated valuations and low yields, which poses a serious problem for investors.

Bonds: Where are we now?

The past thirty years have seen a steady decline in U.S. interest rates (see the following chart). Treasuries offered double-digit yields in the early 1980's and remained (mostly) above 5% until 2002. These elevated yields, combined with price increases that resulted from their gradual decline, resulted in high total returns from fixed income: the Barclays Aggregate index returned an average of 10.6% per annum between 1982 and 2001. This, combined with favorable stock returns, made short work of most institutional investors' return targets; and with the "safe" part of the portfolio reliably earning 6% or more, an investor did not need to allocate much capital to risky assets.

10-Year Treasury Yield



As of this writing in September 2012, the Barclays Aggregate was yielding just 1.6%, and ten-year TIPS offered a *real* yield of -0.7%. Notwithstanding current low yields, however, high quality bonds should retain a prominent – but minority – position in a long-term investor's portfolio *as insurance against large declines in riskier asset prices*. A broad basket of investment grade bonds (benchmarked to the Barclays Aggregate or similarly constituted index) and TIPS acts as an "anchor to windward" in periods of market turbulence.

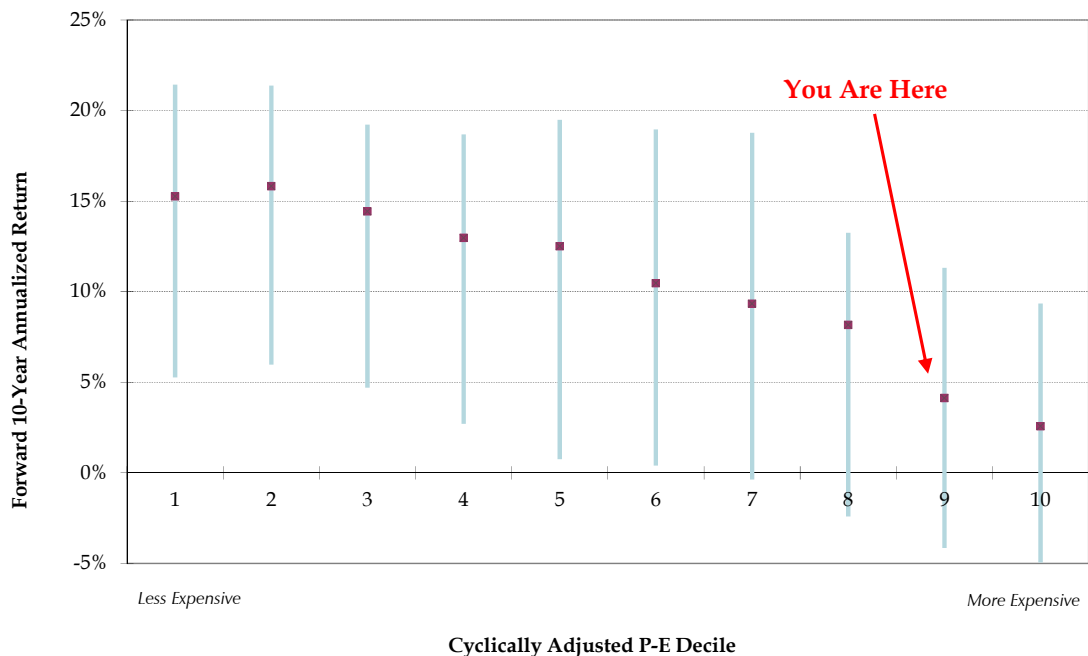
As bond yields are currently at or near historical lows, and because yields are good predictors of future bond returns, investors cannot expect bonds to contribute meaningfully to future returns like they did in the 1980s and 1990s. In fact, investors may be faced with a prolonged period of losses on high quality bond holdings if interest rates rise sharply. Investors must therefore seek returns elsewhere - namely, among riskier asset classes.

Equities: Where are we now?

Predicting returns for equities is not an easy task. There are a number of different theories and models that an investor could use. However, one thing is certain - valuations do matter. Equities are usually priced relative to their earnings (i.e., the price-earnings ratio). Finance theory suggests using expected future cash flows when making this calculation, but future earnings are unknowable. Moreover, most forecasters typically assume that earnings grow steadily - an assumption that is contradicted by more than a century's worth of business cycle data.

To account for the cyclical nature of the economy and thus corporate profits, some investors use inflation-adjusted earnings for the trailing ten years (i.e., the Shiller P-E ratio). The following chart displays the performance for the U.S. stock market divided into ten different valuation buckets.² The trend is obvious: when stocks were expensive at the start of the period, their returns over the next ten years tended to be low, and vice versa.

Impact of Stating Period Prices on S&P 500 Returns
As of September 2012



² Performance is for the S&P 500, from 1926 through 2011. For each decile, the vertical line indicates the range of returns while the point indicates the average return.

Based on the Shiller P-E ratio, U.S. equities are currently well above their historical norms, trading at 21.4x compared with an average of 16.4x since 1881. Simply put, stocks have historically produced sub-par returns with P-Es in their current range. Specifically, the returns have ranged from -4.2% to 11.3%, with the latter occurring for the ten-year period that began in 1995 (and hence benefitting from five consecutive years of 20%+ gains).

Although U.S. equities are trading at a high Shiller P-E, their non-smoothed P-E looks quite normal, or perhaps even low, when using trailing one-year (or forecasted one-year) earnings. This is due to a recent anomaly in corporate profits. Namely, corporate profit margins are more than 30% above their historical average, and profits as a share of GDP are about 60% above their historical average.³ If either or both of these trends revert to their historical average, stocks may look less attractive by a non-smoothed P-E measure. *Regardless, the returns for U.S. stocks over the next decade are more likely to be below their long-run historical return than above it.*

Is There Any Good News?

We have focused on U.S. stocks and bonds because many institutions invest the preponderance of their assets in these two asset classes. This cautious picture is not limited to U.S. stocks and bonds, however; other asset classes may also offer unattractive returns. Cap rates for private real estate and REIT yields are near historical lows; credit spreads are at or below long-term averages, which puts absolute yields at depressed levels; and EBITDA multiples for private equity transactions remain elevated.

To summarize, the menu of prospective investment returns facing investors is not particularly appealing: the expected returns over the next decade for many asset classes are below average, and taken together, are not conducive to achieving the target return of most institutional investors.

The good news is that there are other ways to alter an investment strategy that will allow investors to increase the probability of achieving their target returns.

FACING THE CHALLENGE

Because of the current capital market environment, many investors may fall short of their required return goal over the next decade. Faced with this reality, some investors will modestly lower their target return. However, lowering an assumed rate of return by 25 or 50 basis points might not be enough to restore long-term financial health. Other investors will choose to maintain or increase exposure to riskier asset classes, taking on additional risk in the hope of achieving their target returns.

Meeting the challenge of achieving a 7% to 8% or higher return will require a multi-pronged approach. As such, we have identified ways that an investor can increase the likelihood of attaining their return goal. We review each of these in the following sections. Almost every

³ Sources: GMO, St. Louis Federal Reserve Economic Data (FRED).

topic deserves the attention of its own research paper, but for the sake of brevity, we present a summary case.

Add to Illiquid Investments

Finance theory suggests that long-term investors can earn a premium for accepting illiquidity. Put differently, they can increase investment returns by “selling” unneeded liquidity to capital-needy businesses. The size and persistence of this illiquidity premium is debatable, but the following table suggests its existence, at least in equity markets. As a result, investors usually have higher return expectations for private market assets than for their public market equivalents. Moreover, a long-term time horizon is one of the key advantages that institutional investors possess, and investing in illiquid assets is one of the best ways to benefit from this advantage.

July 1986 - Dec. 2011	Venture Capital	Buyouts	Mezzanine Debt	Russell 3000
Annual Return ⁴	13.5%	12.8%	10.2%	8.9%

However, very few long-term investors can afford to take on an unlimited amount of illiquidity. Most investors still need to provide for regular cash outflows, be it for the spending needs of a university or the benefit expenses of retirees. The specific need for liquidity will vary by investor, but a thorough liquidity analysis can determine whether an investor can afford less liquidity.

If an investor is starting with no allocation or a very low allocation to private markets, it will generally take several years to ramp up their program and meet their desired allocation. Hence, this represents a long-term improvement and commitment rather than a short-term opportunity. There are ways to accelerate this otherwise lengthy startup period, for example, via secondary market purchases of seasoned, existing funds.

Most private market funds charge much higher fees than those charged by public market managers. For example, a 2% management fee and 20% performance fee is common. In addition, smaller investors might find that they need to use a fund of funds to achieve proper diversification. This would add a second layer of fees, which is not reflected in the performance numbers shown above.

Improve your Likelihood of Success with Active Management

The amount of value that an active manager can add relative to a benchmark (or peer universe, if no passive benchmark is available) varies by asset class.

The following table presents the excess return (before fees) at the 25th percentile, median, and the 75th percentile for a variety of public market asset classes for which there is an investable benchmark. It is ranked from lowest to highest excess return for the median manager. If one

⁴ Source: Venture Economics. Annual returns are for the U.S. Venture Capital, U.S. Buyout, and U.S. Mezzanine Debt universes and are net of management and performance fees. The return shown is calculated by summing the cash flows of each fund in the respective universe and computing a mean time-weighted return of these cash flows.

defines the “efficiency” of a market by how much value an active manager has historically added (or detracted), then some markets are clearly more efficient than others.

Excess Returns⁵

Asset Class	25 th Percentile	Median	75 th Percentile
Core Bonds	57	26	-2
Foreign Small Cap	292	62	-107
Emerging Markets	348	143	42
U.S. Large Cap	319	156	-5
Foreign Large Cap	364	167	61
U.S. REITs	254	198	83
Commodities	438	219	-70
Global Large Cap	425	246	134
U.S. Small Cap	468	260	-13

Evidently, superior manager selection can add value, no matter the asset class. If an investor had allocated 10% of their portfolio to each of the ten public asset classes in the table above, and was fortunate enough to select the 25th percentile manager across the board, it would have added 240 basis points to their annual return versus their respective benchmarks, net of fees.⁶ However, it would be unrealistic for investors to presume that all of their managers will achieve top-quartile returns (i.e., the Lake Wobegon effect).

Another way to define the “efficiency” of a market is to examine the potential for a manager to add (or detract) value, as measured by the dispersion of returns among managers. The following table presents the difference in return between the manager at the 25th percentile and the 75th percentile (i.e., the interquartile spread). It is ranked from lowest to highest inter-quartile spread. Because we are not constrained to having an investable benchmark, we can include private markets and other assets in this analysis. Again, some markets are more efficient than others.

⁵ The excess return is the difference between the performance of the manager (before fees) and the benchmark. Survivorship bias is likely a concern with this data. When fees and survivor bias are taken into account, the picture is less favorable in terms of the performance of the median manager (i.e., only half of the asset classes produced positive excess returns). See Appendix A for a full breakdown of the benchmarks, sources of the data, and estimates of survivorship bias.

⁶ This calculation assumes that each manager charged the average management fee on a \$10mm mandate.

Interquartile Spreads⁷

Asset Class	Interquartile Spread (bp)
Core Bonds	59
High Yield	153
Emerging Market Debt	161
U.S. REITs	171
Core Real Estate	230
Global Large Cap	291
Foreign Large Cap	304
Emerging Markets	306
U.S. Large Cap	324
Foreign Small Cap	399
U.S. Small Cap	481
Commodities	508
Hedge Funds	622
Value Added Real Estate	1008
Venture Capital	1189
Opportunistic Real Estate	1862
Buyouts	2028

Unsurprisingly, the interquartile spread increases most dramatically when moving from public markets to private markets. Hence, the reward for picking superior managers is far greater in illiquid assets. The higher rewards that come with the selection of superior managers can offset the higher fees mentioned previously. For example, a top quartile core bond manager may add 30 basis points versus a median manager over a ten-year horizon, whereas a top quartile buyout fund could add 1,000 basis points more than a median manager. Note, however, that a bottom quartile manager can also detract far more value.

This argues for focusing one's manager selection resources on active management in less efficient markets. Adding credence to this approach are numerous studies that indicate a lack of persistent outperformance among public market managers, while showing the opposite for hedge funds and private equity funds.⁸ That is to say, public markets managers who have beaten their benchmarks in the past are no more likely than average to beat it in the future, whereas top-performing private equity funds tend to remain above average from one fund to the next. This is another reason for long-term investors to increase their allocation to private markets, assuming they have a high degree of skill at selecting superior managers.

As for public markets, many studies, including our own, have examined the efficacy of active management. They generally arrive at the same conclusion: on average, professional active

⁷ See Appendix B for the sources of the data and a more complete explanation of how the spread was calculated.

⁸ See Chung (2012), Kaplan and Schoar (2005), Phalippou and Gottschalg (2008), Fung, et al (2008), Boyson (2008), Fung, Hsieh, Naik, and Ramadorai (2008), Jagannathan, Malakhov, and Novikov (2007), Kosowski, Naik, and Teo (2007), Berk and Tonks (2008), and Cahart (1997).

investment managers fail to outperform the market over long periods of time, after all costs are taken into consideration. There are many likely causes for why professional money managers fail to add value. While some of these causes are beyond the control of the investors, such as the long-term efficiency of capital markets, there are some that are within the control the investors. Investors can circumvent these obstacles and increase the likelihood of success by altering the structure of their public markets managers.

At its core, the typical model suffers from a misalignment of interests between the investment manager and institutional investors. This misalignment has driven managers to structure portfolios designed to better achieve their own goals rather than those of the clients for whom they manage assets. First, many professional investment managers handicap themselves by managing so much money that they can no longer effectively execute a strategy to exploit market inefficiencies, even if that inefficiency still exists. As assets grow, the manager must increase the number of securities held, reduce the volume of trading, change the types of securities in which they invest, or some combination of these strategies. Unfortunately, these changes distort the original strategy that once effectively exploited an opportunity.

The next couple of reasons that money managers fail to add value are interrelated. As successful investment managers grow in size, the ultimate goal of maximizing business profits creates a shift in focus from producing the strongest returns for clients to producing returns that are unlikely to cause a client to terminate the manager. This causes a manager to become more “index like.” Managers reduce “tracking error” to achieve consistent, albeit consistently lower, returns. Traditional investment managers are generally paid asset-based fees, which reinforces the shift in focus by encouraging this conservative behavior.

A related factor is the generally over-diversified nature of many investment management strategies. Because most consultants and clients hold investment managers to short-term performance standards that are unrealistic given the random and volatile nature of the capital markets, managers thoroughly diversify portfolios to prevent weak returns over short periods of time – and hopefully stave off termination.

There are several enhancements that can be made to the typical model of using investment managers. These changes fall into four broad categories: utilizing more concentrated portfolios, allowing broader portfolio mandates, evaluating managers over longer periods, and encouraging other incentives to align interests.

By constructing a portfolio of multiple concentrated managers, an investor can attain the exposure and diversification required, while also eliminating the need to pay an active manager to provide diversification. The only function an investment manager should serve in this construct is that of being the strongest “stock picker,” “bond picker,” or, in recent parlance, the strongest provider of “alpha.”

In addition to more concentrated portfolios, some managers are likely to be better able to take advantage of inefficiencies with broader portfolio mandates. Often, in an effort to control the short-term risk in a portfolio, consultants and investors will create very limited

roles for active managers. For some managers with a focused expertise, this is appropriate. But for others, mandates with very limited scopes constrain the value that could be added to a portfolio. In these cases, the best course of action may be to allow the manager to invest in a broader opportunity set (e.g., global equities) and with a more diverse “toolkit” (e.g., allowing short selling), resulting in a true “best ideas” portfolio.

Third, the manager’s performance should have a long measurement period – at least seven years. This period is sufficiently long to begin separating investment skill from luck for most investment strategies. Thus, managers would be evaluated based on their true skill in identifying inefficiencies, rather than on the random noise of the market. However, changes in key personnel, strategy, organization, or other factors besides performance should continue to be monitored regularly as they could necessitate terminating the manager.

Investors should seek other ways to align the interests of managers with their own. For example, they can demand that managers invest a certain portion of their own capital alongside their clients’. This structure has worked well with many private investment vehicles.

Benefit from the Relative Growth and Increasing Stability of Emerging Markets

For many, the rationale behind investing in emerging markets is simple: growth. Proponents of emerging markets contend that the most rapid economic growth in the coming decades will occur in less developed nations. This is a logical assumption for several reasons.

First, many of these economies are starting from a lower base income level and, therefore, even modest improvements result in large percentage increases. Second, the developed world appears willing to supply large amounts of capital to developing markets. Private capital flows to emerging economies were \$1,063 billion in 2011, representing an increase of \$423 billion from 2009.⁹

Third, the average emerging economy carries a lower public debt burden than the average developed economy. While there is little association between a country’s debt and its economic growth at low or moderate levels of debt, there exists a threshold above which debt limits growth. This threshold has been estimated at where total government debt equals 90% of GDP, and the research suggested that median GDP growth for countries above this level is about one percent lower than for countries below this level.¹⁰ Many of the largest developed markets are nearing or already above this level, while none of the largest emerging economies are close (see the following table). Hence, emerging economies are much less likely to suffer from a debt-driven headwind over the coming decades than are the developed markets.

⁹ Source: Institute of International Finance, 2012 October Capital Flows to Emerging Market Economies.

¹⁰ Source: Reinhart and Rogoff, “Growth in a Time of Debt” (2010).

Debt Burden for the Largest Developed and Emerging Economies¹¹

Country	Debt-to-GDP Ratio	Country	Debt-to-GDP Ratio
Brazil	54%	Australia	27%
China	43%	France	85%
India	49%	Germany	82%
Russia	8%	Japan	212%
South Africa	34%	Switzerland	52%
South Korea	34%	United Kingdom	86%
Taiwan	36%	United States	68%
<i>Average:</i>	<i>37%</i>	<i>Average:</i>	<i>87%</i>

Finally, demographics favor emerging economies, as a greater proportion of their populations will be of working age over the next twenty years (see Appendix C for demographic data). Academic studies on the relationship between demographics and productivity generally conclude that a higher percentage of working age population leads to higher productivity growth.¹²

Taken together, these arguments make a strong case for higher economic growth in emerging economies than in developed economies. The tables below provide GDP growth projections for some of the largest emerging and developed markets. These projections, which were developed by the International Monetary Fund, clearly show higher growth expectations for the major emerging economies than for any of the major developed economies. While projections for the absolute level of growth may change based on the economic environment, the relationship between growth in the emerging and developed markets is less likely to change in the near future.

Country	Projected Real GDP Growth ¹³	Country	Projected Real GDP Growth
Brazil	4.1%	Australia	3.5%
China	8.5%	France	2.0%
India	8.1%	Germany	1.3%
Mexico	3.3%	Japan	1.1%
Russia	3.8%	United Kingdom	2.8%
South Africa	3.7%	United States	3.3%
<i>Average:</i>	<i>5.3%</i>	<i>Average:</i>	<i>2.3%</i>

Higher economic growth in emerging markets should lead to relatively higher equity market returns. This is based in part on a fairly straight-forward “building blocks” approach to

¹¹ Source: CIA World Factbook. All data is as of December 2011. If intra-government debt (i.e., Treasury borrowings from other U.S. government entities) were included for the United States, its Debt-to-GDP ratio would be approximately 90%.

¹² Source: Bloom, Canning and Sevilla, “Economic Growth and the Demographic Transition” (2001).

¹³ Source: IMF World Economic Outlook as of April 2012; projections are for 2017.

projecting long-term equity market returns. The model,¹⁴ shown below, is based on the theory that a region's companies will grow at roughly the same rate as its economy, as defined by GDP.

$$E(R) = \text{Dividend Yield} + \text{Real GDP Growth} + \text{Inflation} + \text{Change in P-E} + \text{Currency Impact}$$

What this equation implies is that, *all else equal*, a market with an economy projected to grow faster should produce higher returns than slower-growing markets. So if emerging markets produce economic growth that is, on average, 3% per year faster than that experienced in Europe, Japan, and the U.S. over the next decade, we would expect commensurately higher equity returns.

Higher growth will not necessarily lead to higher relative returns if valuations are elevated (i.e., stock prices are high). Similar or lower valuations for emerging market stocks, as reflected in their price-earnings ratios, would further support the case for investing in emerging markets. As of this writing, valuations for emerging market equities were relatively low compared to those for U.S. equities.

Price-to-Earnings (Trailing Ten Years) as of September 30, 2012

MSCI Emerging Markets	MSCI EAFE	S&P 500
17.5	15.1	24.0

In addition, emerging market debt offers higher yields than are available from most developed market issuers (see the following table). This is true despite the aforementioned lower debt burden and favorable growth characteristics of most emerging market nations.

Yield-to-Worst as of September 30, 2012

Barclays Aggregate	Barclays Global Treasury ex-U.S.	Barclays EM Local Currency Government	Barclays U.S. High Yield
1.6%	1.5%	5.2%	6.5%

Investing more assets in emerging markets means increasing non-U.S. dollar currency exposure. However, this can be partly mitigated by funding the increased allocation from other non-U.S.D exposures (e.g., Europe, Japan). An investor could also choose to hedge this increased currency exposure. Conversely, an investor who believes that, on average, emerging market currencies will appreciate versus the U.S. dollar¹⁵ might maintain this

¹⁴ The equation is an expanded version of the basic dividend discount model. It uses real GDP growth as a proxy for aggregate earnings growth. It allows for changes in the price investors are willing to pay for a dividend (i.e., earnings) stream and also for changes due to currency fluctuations for investments that are not denominated in the investor's own currency.

¹⁵ The theory of interest rate parity would support such an approach, given the lower relative interest rate in the U.S. versus most emerging market countries. In contrast, the theory of purchasing power parity would support the opposite approach, given the lower relative inflation rate in the U.S. versus most emerging market countries.

exposure to emerging market currencies on an unhedged basis, hoping to benefit from an additional tailwind.

Investors should understand that adding exposure to emerging markets will probably increase the overall volatility of their portfolio. However, this is one area where investors will likely be well-rewarded over the next decade for taking on additional risk.

Be Opportunistic

After a decade that saw two extended bear markets, some investors are finding the temptation to be opportunistic (or tactical) increasingly hard to resist. By avoiding large declines in asset prices, investors could reduce short-term volatility and increase long-term returns. In particular, taking advantage of extreme valuations can allow investors to add value by being opportunistic. For example, if an investor had shifted 10% of assets from U.S. equities to high quality bonds in 2008, that would have added 410 basis points of return that year. If an investor had subsequently shifted 10% from high quality bonds to high yield bonds in 2009, that would have added 490 basis points to their return.

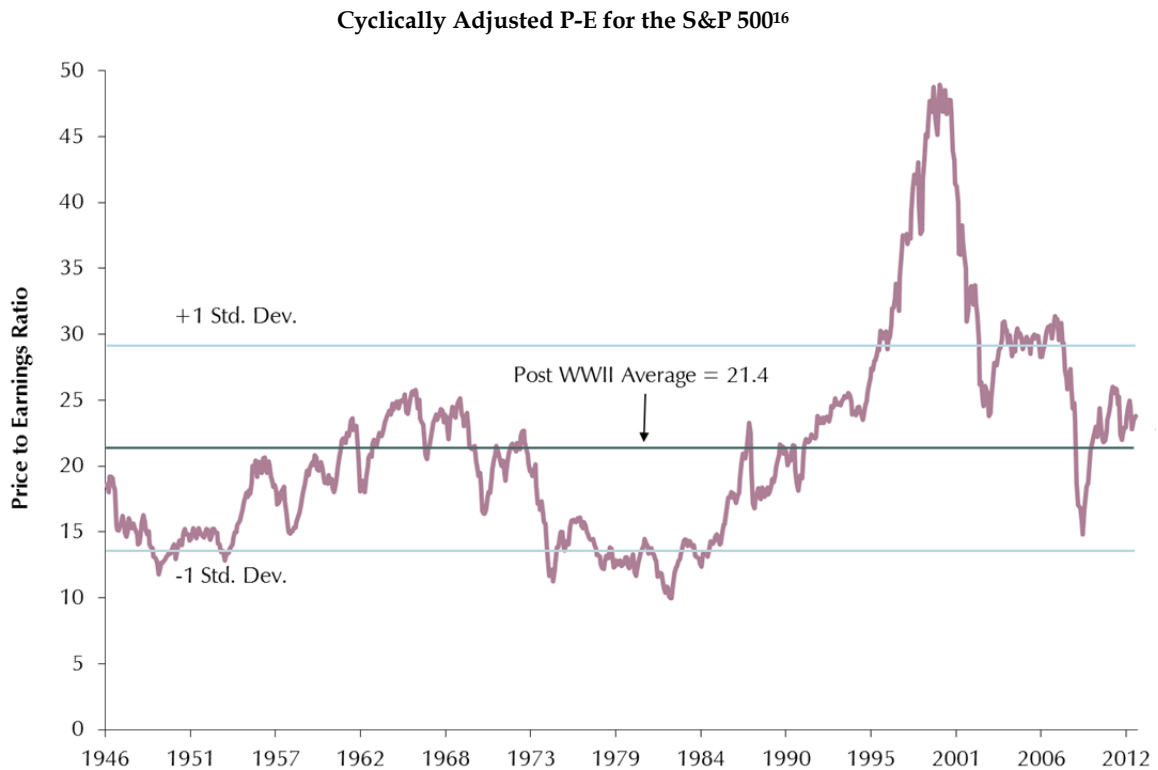
A tactical asset allocation approach is intended to take advantage of opportunities in the capital markets when certain markets appear mispriced. Often, this takes the form of a relative value decision, whereby the investor seeks to buy assets when they are relatively cheap and sell them when they are relatively expensive. Even one of the original gurus of strategic asset allocation, Peter Bernstein, suggested that “the policy portfolio [a rigid allocation like 60% stocks, 40% bonds] has become a way of passing the buck and avoiding decisions.”

However, successfully implementing a tactical approach has proven to be more easily said than done. There are many reasons for this. First, short term market movements are generally random and cannot be predicted in advance. Second, an investor must accurately predict not only when to *exit* the market (e.g., late 2007), but also make the perhaps more difficult decision of when to *re-enter* the market (e.g., early 2009). In addition, even intermediate term market performance may be driven not by economic fundamentals and valuations, but by the unknowable decisions of political leaders and economic policy makers (e.g., central bankers around the globe). Further, the integration of the global economy and consequent increase in correlations among markets has arguably created fewer opportunities to add value by tactically allocating among asset classes.

Moreover, even if an investor identifies an attractive opportunity, the governance structure of most institutional investors can make it difficult to implement. There is often a significant time lag between when an opportunity is observed and when decision-makers can or do decide to act on it. Finally, because most institutional investors lack a systematic approach to tactical asset allocation, they are likely to be subject to behavioral biases – preferring instead to look to their peers’ decisions for comfort and consequently buying (or selling) at the wrong times.

Valuations drive long-term returns, but bubbles can last for many years before prices collapse, and there is both investment risk and career risk in being too early. For example, in

early 1996, U.S. equities looked expensive relative to their historical cyclically-adjusted earnings (see the following chart). Yet stocks produced double digit gains in each of the next four calendar years (1996 through 1999).



There are alternative approaches for investors who feel either that they cannot accurately predict market cycles or that governance or behavioral issues pose a problem. The first is to give more discretion to their staff and/or consultant. An investor can impose constraints on this discretion by allowing tactical shifts within pre-defined target allocation ranges (e.g., moving U.S. equities no more than 5% from their target allocation).

The second approach is to utilize the services of a tactical asset allocation manager. Alas, as with many other public market asset classes, the majority of active managers have not shown the ability to consistently add value. As the following table indicates, the median manager has added only modest value, before fees, to a global 60% stock / 40% bond benchmark over both short- and long-term horizons. When fees are taken into account, this outperformance disappears.

¹⁶ Represents the ratio of prices to trailing ten years of earnings for the S&P 500.

GTAA Peer Universe¹⁷
Performance as of June 30, 2012

	Trailing 3-Year Annualized Return	Trailing 10-Year Annualized Return
GTAA Peer Median	9.8	6.6
Global 60% / 40% Benchmark	9.2	6.4
<i>Value Added</i>	<i>0.6</i>	<i>0.2</i>

Most investors are probably best served by a systematic approach that relies predominantly on strategic asset allocation but allows for opportunistic movements when valuations are at extreme levels and the investor has a high level of confidence in their decision. This requires anchoring their asset allocation to a long-term strategic asset allocation target, while remaining flexible enough to modify allocations within approved policy ranges based on market conditions.

Be Willing to Accept Risk and Be a True Long-Term Investor

While capital markets are full of uncertainty, one fact is certain - to achieve an average annual return of 7% to 8% or higher over the next ten years will involve taking on risks. Investors must ask themselves if they have the ability, willingness, and patience to ride out these risks.

Bear markets are inevitable over an extended period. Investors should plan for these events so that they are appropriately positioned in advance and do not over-react when bear markets occur. The key to this is measuring the risks to which they are exposed so that investors are not surprised when the risks come to fruition and are able to effectively manage the situation. For example, scenario analysis and stress testing will help investors determine how large a decline in assets they can feasibly withstand.

Most importantly, investors should have long-term plans. This paper has emphasized the benefits of a long-term perspective in numerous ways, be it the alignment of interests within the active management structure, allocating to illiquid assets, or the growth of emerging economies. Investors should also suppress the urge to always take action - sometimes the best course of action is to take no action at all. If an investor truly has a long-term horizon, they are best served by acting as a long-term investor.

¹⁷ Source: eVestment Alliance. Manager performance is gross of fees. The benchmark used is 60% MSCI ACWI/40% Barclays Global Aggregate indices. The peer universe is a composite of 87 managers for the three-year period and 18 managers for the ten-year period.

SUMMARY

The current state of the capital markets is not particularly conducive to achieving the 7% to 8% return targets of many institutional investors. A combination of low interest rates and elevated valuations for risky assets presents a headwind for investors.

While achieving this target return will prove challenging, it is not impossible. Through a combination of actions, as illustrated in the following table, investors can improve their probability of achieving their objectives.

Approach	Potential Value Added	Risk
Add to illiquid investments	20 - 80 bp	Medium
Improve odds in active management	30 - 70 bp	Medium
Benefit from the growth of emerging markets	10 - 50 bp	Medium
Be opportunistic	30 - 120 bp	High
<i>Total</i>	<i>80 - 250 bp</i>	

While there are many options available, they do not offer identical risk-return trade-offs and, therefore, vary in attractiveness. Because this paper has provided only a brief overview of each option, investors ought to thoroughly research an approach before making the decision to adopt it. Despite the challenges that investors may face in the current climate, a properly researched combination of these approaches can help investors meet their objectives and achieve their target return.

Appendix A

Excess Return Data for Public Markets Managers

Excess Return as Reported, Gross of Fees, with Source and Benchmark¹⁸

Asset Class	25 th Percentile (bp)	Median (bp)	75 th Percentile (bp)	Source	Benchmark
Core Bonds	57	26	-2	Morningstar	Barclays U.S. Aggregate
High Yield	64	-12	-89	Morningstar	Barclays U.S. Corporate High Yield
Bank Loans	112	47	6	Morningstar	Credit Suisse Leveraged Loan
U.S. Large Cap	319	156	-5	Morningstar	Russell 1000
U.S. Mid Cap	252	98	-151	Morningstar	Russell Mid Cap
U.S. Small Cap	468	260	-13	Morningstar	Russell 2000
U.S. Micro Cap	741	582	238	Morningstar	Russell Microcap
Global Large Cap	425	246	134	Morningstar	MSCI ACWI
Foreign Large Cap	364	167	61	Morningstar	MSCI EAFE
Foreign Small Cap	292	62	-107	Morningstar	MSCI EAFE Small Cap
Emerging Markets	348	143	42	Morningstar	MSCI EM
EM Debt	204	128	43	Morningstar	JPM EMBI Global
U.S. REITs	254	198	83	eVestment	FTSE/NAREIT
Global REITs	236	126	-30	eVestment	FTSE EPRA/NAREIT Developed
Public Infrastructure	1032	668	199	Morningstar	S&P Global Infrastructure
Public Natural Resources	167	-96	-276	Morningstar	S&P Global Natural Resources
Commodities	438	219	-70	Morningstar	DJ UBS Commodity

¹⁸ For this analysis, we analyzed several different time periods to reduce the impact of endpoint bias. Specifically, we averaged the returns for each asset class for the periods ending December of 2009, 2010, and 2011. For most asset classes we used trailing ten-year returns as longer-term time periods are generally preferable for such analysis. (See the next footnote for an important caveat.) In some cases, where the history of the universe was less robust, we used trailing five-year returns. We have a preference for Morningstar's database as it is less prone to several biases that result from allowing managers to self-report performance. Note that we describe the difference between the managers' returns and the benchmarks as *excess return* rather than *alpha*, as a calculation of alpha should adjust for the risk that managers take on relative to the benchmark (e.g., a Jensen's alpha).

Appendix A, continued

Median Excess Return, Adjusted for Estimated Fees and Survivor Bias¹⁹

Asset Class	Average Fee on \$10mm (bp)	Average # of Observations	Estimate of Survivor Bias (bp)	Median, Net of Fees and Survivor Bias (bp)
Core Bonds	36	127	10	-20
High Yield	64	134	62	-138
Bank Loans	50	16	18	-20
U.S. Large Cap	65	912	69	22
U.S. Mid Cap	80	287	99	-81
U.S. Small Cap	100	186	158	2
U.S. Micro Cap	125	26	74	383
Global Large Cap	75	257	58	112
Foreign Large Cap	77	144	89	1
Foreign Small Cap	99	36	122	-159
Emerging Markets	98	85	126	-81
EM Debt	125	52	5	-3
U.S. REITs	75	41	0	123
Global REITs	80	29	0	46
Public Infrastructure	80	9	0	588
Public Natural Resources	80	20	103	-280
Commodities	74	10	15	130

¹⁹ While longer-term time periods are generally preferable when analyzing performance, there is a greater risk of survivorship bias impacting the data. In order to estimate how much bias may be present in the manager universe, we first examine the “drop-out” rate of managers. This rate measures the percentage of managers in existence at the beginning of the measurement period that subsequently dropped out of the universe. Both intuition and past research imply that the majority of managers who dropped out of a universe were underperforming. Hence, their omission upwardly biases the results relative to what an investor in the median fund would truly have received. Further, the greater the interquartile spread (i.e., the difference in return between outperforming and underperforming managers), the greater this survivor bias is likely to be. Therefore, we make a simple calculation that multiplies the drop-out rate by the interquartile spread to arrive at a very rough estimate of survivor bias. Finally, several of the asset classes have a limited number of observations (i.e., very few managers). Statisticians usually dismiss any universe with less than 30 observations as not being statistically significant. Hence, we suggest taking great care in drawing any conclusions for these asset classes.

Appendix B

Interquartile Spread Data

Asset Class	Interquartile Spread (bp) ²⁰	Source
Core Bonds	59	Morningstar
High Yield	153	Morningstar
Bank Loans	107	Morningstar
Emerging Market Debt	161	Morningstar
Core Real Estate	230	NCREIF
U.S. REITs	171	eVestment
Global REITs	267	eVestment
U.S. Large Cap	324	Morningstar
U.S. Mid Cap	403	Morningstar
U.S. Small Cap	481	Morningstar
U.S. Micro Cap	503	Morningstar
Global Large Cap	291	Morningstar
Foreign Large Cap	304	Morningstar
Foreign Small Cap	399	Morningstar
Emerging Markets	306	Morningstar
Long/Short Equity	658	HFRI
Hedge Funds	622	HFRI
Global Macro	631	HFRI
Commodities	508	Morningstar
Public Natural Resources	443	Morningstar
Public Infrastructure	833	Morningstar
Value Added Real Estate	1008	NCREIF/Townsend
Opportunistic Real Estate	1862	NCREIF/Townsend
Mezzanine Debt	974	Venture Economics
Distressed/Turnaround	1699	Venture Economics
Venture Capital	1189	Venture Economics
Buyouts	2028	Venture Economics

²⁰ The interquartile spread was calculated by taking the average of the trailing ten-year interquartile spread for each asset class as of calendar year-end 2011, 2010, and 2009; due to a lack of long-term data, trailing five-year periods were used for bank loans, emerging markets debt, core real estate, global REITs, public natural resources, public infrastructure, commodities, value added real estate, and opportunistic real estate.

Appendix C

Select Demographic and Economic Data²¹

Current Data (as of December 2010)

Country	GDP Per Capita	Population	Labor Force	% Population Labor Force	% Population 40-49	% Population Urban	Rate of Urbanization
Argentina	\$14,700	41,343,201	16,620,000	40%	11.1%	92%	1.1%
Brazil	\$10,800	201,103,330	103,600,000	52%	13.2%	87%	1.1%
China	\$7,600	1,330,141,295	780,000,000	59%	16.7%	47%	2.3%
India	\$3,500	1,173,108,018	478,300,000	41%	11.8%	30%	2.4%
Indonesia	\$4,200	242,968,342	116,500,000	48%	12.7%	44%	1.7%
Israel	\$29,800	7,353,985	3,080,000	42%	11.3%	92%	1.5%
Mexico	\$13,900	112,468,855	46,990,000	42%	12.0%	78%	1.2%
Poland	\$18,800	38,463,689	17,000,000	44%	12.7%	61%	-0.1%
Russia	\$15,900	139,390,205	75,550,000	54%	14.5%	73%	-0.2%
S Africa	\$10,700	49,109,107	17,320,000	35%	9.9%	62%	1.2%
S Korea	\$30,000	48,636,068	24,620,000	51%	17.1%	83%	0.6%
Taiwan	\$35,700	23,024,956	11,070,000	48%	16.2%	N/A	N/A
Thailand	\$8,700	66,336,258	38,700,000	58%	15.0%	34%	1.8%
Australia	\$41,000	21,515,754	11,620,000	54%	14.2%	89%	1.2%
France	\$33,100	64,768,389	28,210,000	44%	13.9%	85%	1.0%
Germany	\$35,700	81,644,454	43,350,000	53%	17.0%	74%	0.0%
Japan	\$34,000	126,804,433	65,700,000	52%	12.9%	67%	0.2%
Switzerland	\$42,600	7,623,438	4,620,000	61%	16.5%	74%	0.5%
UK	\$34,800	62,348,447	31,450,000	50%	15.2%	80%	0.7%
U.S.	\$47,200	310,232,863	154,900,000	50%	14.1%	82%	1.2%

Projected Data

Country	GDP Per Capita	Population	% Population 40-49
Poland	\$25,788	37,349,696	16.9%
Taiwan	\$49,023	23,213,741	16.4%
Russia	\$22,717	128,180,396	15.7%
S Korea	\$40,777	49,372,307	15.1%
Thailand	\$12,681	70,643,689	14.9%
Brazil	\$15,193	231,886,946	14.1%
Indonesia	\$6,556	278,502,882	14.0%
China	\$13,729	1,394,638,699	13.7%
Argentina	\$21,282	47,164,630	13.4%
Australia	\$48,669	25,053,669	13.3%
India	\$5,398	1,396,046,308	13.1%
Mexico	\$18,339	130,198,692	13.1%
Switzerland	\$49,052	7,774,334	12.9%
Japan	\$40,806	117,816,135	12.6%
UK	\$42,058	67,243,723	12.4%
U.S.	\$57,320	357,451,620	12.3%
Israel	\$35,202	8,984,285	12.2%
France	\$40,568	68,481,838	12.2%
Germany	\$44,365	79,226,209	12.1%
S Africa	\$13,607	48,714,478	10.8%

²¹ Sources: IMF World Economic Database April 2011, U.S. Census Bureau - International Database, CIA World Fact Book. Projected GDP per capita is as of 2016; Projected Population and % Population 40-49 are as of mid-2025.

Appendix D

Glossary

Alpha: A measure of a portfolio's actual return relative to its benchmark. Specifically, in the case of investment managers, alpha estimates the value added by a manager due to skill rather than luck (or randomness). A positive alpha indicates that a manager outperformed the benchmark, while a negative alpha indicates underperformance.

Beta: A measure of the systematic, non-diversifiable risk of an investment. Specifically, beta measures the volatility of an investment (e.g., a manager's portfolio) relative to the market, which is defined as the manager's benchmark. A beta above 1.0 is more volatile than the benchmark, while a beta below 1.0 is less volatile.

Capitalization Rate: A percentage that relates the value of an income-producing property to its future income, expressed as net operating income divided by purchase price. It is also referred to as the *cap rate*.

Correlation: A measure of the degree to which two variables move together. A negative correlation indicates an inverse relationship, whereas a positive correlation indicates a direct or positive relationship.

EBITDA multiple: A ratio commonly used by private equity firms to determine the value of a company. EBITDA is the acronym for Earnings Before Interest, Taxes, Depreciation, and Amortization. The multiple looks at a firm as a potential acquirer would and takes debt into account, a factor that other multiples like the P-E ratio do not include.

Inter-quartile spread: The difference in return between the managers whose performance is at the 25th percentile and the 75th percentile.

Leverage: The use of borrowed money to gain additional exposure to an investment without increasing the principal.

Liquidity crunch: A crisis that occurs when the availability of loans (or credit) is significantly reduced. Because so many companies rely on credit to meet their short-term cash flow obligations, this lack of lending has a ripple effect throughout the economy, often causing a severely negative financial situation. A liquidity crunch is often accompanied by a "flight to quality" by lenders and investors, as they seek less risky investments.

Shiller P-E: A valuation ratio that takes into account the cyclicity of the economy by comparing the price of a company (or market) to its cyclically-adjusted historical earnings. Specifically, it uses the inflation-adjusted earnings for the trailing ten years.

Short Selling: The process of selling shares of a security without owning them, hoping to buy them back at a future date for a lower price.

Tracking Error: The amount by which the performance of the manager typically differs from that of the benchmark. Tracking error is calculated as the standard deviation of the difference in returns between the manager and the benchmark.