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A Dynamic Approach to Investing

A Portfolio Asset Allocation Framework for CIOs



THE FAMILY OFFICE ASSOCIATION

A Dynamic Approach to Investing

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INTRODUCTION

A Dynamic Approach to Investing

This is a follow-up to the previous FOA White Paper: Improving the “Endowment Model” Recipe. In that paper we summarized our investment advice as follows:

- Make asset allocation the number one priority – always understand what is in the portfolio and keep it ideally positioned for current market expectations
- Meaningfully reduce the reliance on equity-like market risks, with more true diversification
- Reduce the reliance on illiquid external investments

Most of those who have provided feedback on the first paper share our concerns about the future of the endowment model. However, they generally wanted us to provide more specifics regarding the alternative approaches we would recommend.

The main building blocks of our approach are as follows:

1. **Set an asset allocation framework which is adaptive to market conditions.** It’s possible, even for an investment operation with limited resources, to improve investment results through better approaches to asset allocation. Here we offer a sample approach of using value and momentum in combination
2. **Add diversification** through sources of return with low correlation to public equity. To reduce reliance on equities, we believe that investors should seek more relative value long-short positions.
3. **Separation of alpha and beta.** For large investment organizations, a separation of alpha and beta management can be a source of additional benefit
4. **Modify governance structure** to support the new asset allocation approach. This approach requires an established framework for how the investment staff may respond to market conditions as they change.

Introduction

This is not an academic paper. We are not academics or PhD's, though we have benefited and learned greatly from our friends in academia and at asset management firms. The underlying ideas here are not very original as they've been well known and researched for years. Rather, the goal of this paper is to provide a practical framework based on our own experiences as Chief Investment Officers, a framework that is a consistent, sensible (even common sense), evidence and data driven way to enhance the asset allocation process at a total portfolio level.

Of course, this approach is based on the prerequisite that the CIO has a reasonably transparent view of what's in the portfolio. In the last paper we discussed the difficulty of knowing what you own if there too much allocation to illiquid and opaque external managers, so we don't discuss that here. This approach also requires that those with investment responsibility are permitted to adjust asset allocation on a timely basis as market conditions change. Chief Investment Officers normally operate under guidelines which dictate how much latitude they have to make such adjustments so a governance structure needs to be in place to empower the CIO under this approach.

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Dynamic Asset Allocation Approach

Asset allocation decisions have more impact on future investment results than any other single choice that an investor can make.

Why change asset allocation? Asset allocation decisions have more impact on future investment results than any other single choice that an investor can make. Therefore, asset allocation choices should be top-priority work for any investment team. We are also well aware how difficult it is to make asset allocation choices with much confidence of success.

Many investment organizations take the view that it is virtually impossible to make useful asset allocation decisions. They adhere to a stable long-term allocation plan, with little or no adjustments as markets change. Such organizations will claim that their approach is most beneficial in the long run: “We are not market timers.”

Having a steady allocation plan and sticking to it is certainly better than what most private individuals actually do with their portfolios. Retail investors

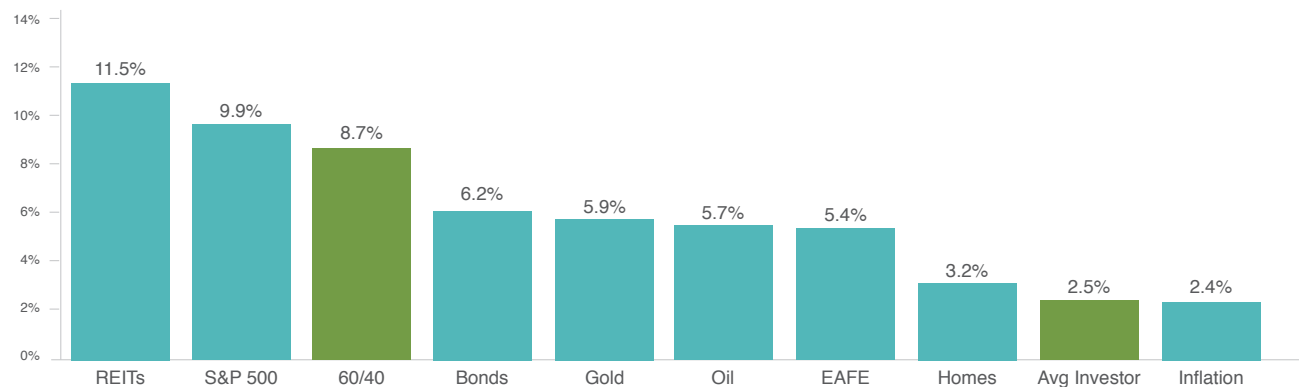
(and even institutional investors) have a tendency to move to expensive asset classes after they’ve already enjoyed years of large gains and retreat from attractively-valued asset classes after years of large losses. The technology stock bubble of the late 1990’s is a classic example of investors surging into overvalued investments. Similarly, after stock prices had already fallen severely in 2008 – 2009, we observed many investors set a lower portfolio allocation to stocks than they had previously maintained when stock prices were at much higher levels.

As this chart of investment outcomes in 1995 – 2014 shows, the consequence of these unfortunate “buy high, sell low” adjustments is clearly worse than maintaining a stable allocation. One could have put 100% in any asset class chosen at random and outperformed the average investor! These results illustrate why “market timing” has such a bad name.

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Chart 1: 20-year Annualized Returns by Asset Class (1995-2014)

(Source: Morning Star, Dalbar Inc, JP Morgan)



Despite this evidence, the “we are not market timers” camp has not convinced us. Running an investment portfolio like that is like living in New York City with a “we are not weather timers” philosophy. A New Yorker could dress for the average day (55 degrees Fahrenheit, no precipitation) every day. But the unfortunate result would be a lack of comfort most days of the year! Similarly, “policy portfolio” allocations are set for long-term average conditions, which are rarely experienced in any given year. Just as our New Yorker would be woefully unprepared for any blizzard, policy portfolio constructions will tend to be quite wrong for current conditions at the worst possible times.

Predicting what comes next for asset prices is much more challenging than predicting the weather. Forecasting the short-term direction of markets is much like predicting whether your spouse will be in a good mood next Thursday. Even with some plausible working theories about Thursdays (just one day from the weekend!) you’re still going to be wrong a lot.

Nonetheless, our experience indicates that investment teams that use approaches based on research evidence and bring appropriate experience, discipline and governance to asset allocation decisions can contribute to investment portfolio outcomes, rather than subtract from them. Market prices, risks and relative valuations change considerably over time. From time to time certain market categories are obviously very expensive or very cheap. What is needed is to gather the data that is relevant to asset class outcomes, and then analyze and act on it in a systematic way.

We are not advocating for our readers to become frequent traders! However, it is important to recognize when market dynamics become extreme. To provide a current example, as of this writing, the yield on ten year Swiss government bonds is negative, at -0.4%. The two year Swiss government bond yield is even lower, at -1.0%. Suppose an institutional investor based in Switzerland has a standard asset allocation policy of 60% in global

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equities and 40% in local fixed income. Should they maintain the 40% fixed income allocation, even with negative interest rates? Staying at 40% would be consistent with “no market timing” principles. But it would also force the investor to allocate assets to positions that (on a hold to maturity basis) are certain to lose money. Wouldn't it be better to be willing to change the allocation?

In today's environment, there is very little “information advantage” available to a select few. Any subscriber to a financial data service such as Bloomberg has access to enough information to make an informed decision. The investment office of a large fund can be even better off – able to receive a plethora of relevant information from skilled external parties across all asset classes.

The key is not access to information – it's in the systematic and effective use of the information at hand.

This allocation work must be an integral part of the investment team's responsibilities in order to provide an anchor for decision making. Any investment team can develop a custom allocation model that best represents the team's information and insights. Here we offer an example of using value and momentum, which are each supported by plentiful academic research.

SAMPLE APPROACH: POWER OF VALUE + MOMENTUM

“Value” is about expected return. What future return might be expected from a certain asset class based on current characteristics? How does this return relate to the risk of investing? How does the expected return/risk relationship compare to the historical norms for that asset class? How does the expected return/risk relationship compare to other asset allocation choices which could be made today? “Value” is the most well understood and widely deployed input to asset allocation decision-making. When allocators are willing to shift their asset allocations somewhat, such decisions are usually based on value.

“Momentum” is about whether the price for the asset class has been generally falling or rising over some prior period. While momentum is not a risk premia, it provides useful information about market sentiment.

As we show below, value and momentum characteristics have some use in predicting future returns on their own, but the predictive power of either is not strong on a standalone basis. We believe that a better way to increase the potential benefit is to use value and momentum in combination (which happens much less often than either are used separately). Let's look at some evidence:

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VALUE IN THE STOCK MARKET?

“Equity value” is easily one of the most researched areas in the academic community. One well-known metric of value in the stock market is the Cyclically-Adjusted Price/Earnings (CAPE) Ratio, as developed and popularized by Nobel laureate Robert Shiller. The CAPE is the current index level divided by the average of the past ten years of earnings, adjusted for inflation.

To analyze the use of CAPE, we took the monthly CAPE reading for the S&P 500, as provided by Dr. Shiller on his website, and calculated the decile of that reading each month, relative to the preceding fifty years. The period evaluated was 1950 to 2006. Over the period measured, if the CAPE reading was in the bottom half, the future one year return averaged 16.3%. A CAPE in the top half (deciles 6 to 10) led to an average next year return of 10.6%.

If we examine the information more deeply we see that the CAPE is quite a blunt tool for asset allocation decision making. The CAPE reading for US stocks has been in the top (expensive) half every month for the past thirty years, other than for a few months between October 2008 and August 2009. There is limited utility to using a metric that changes so infrequently. Any fund which was underweight the S&P 500 for most of the last thirty years on the basis of the relatively high CAPE reading would have missed compounded returns of 10% a year.

We think the CAPE remains worth considering (along with other metrics) as an asset allocation input when it is at extreme levels. Our research indicates that CIO's would have been better off moving from stocks to bonds when the CAPE was in the top decile (but only then). CAPE also can be useful in comparing one stock market or market sector to another. Over the long term, individual country stock markets that have better valuation, as indicated by CAPE, have outperformed the markets with unfavorable valuation levels, although not lately.

Elroy Dimson, Paul Marsh, and Mike Staunton of the London Business School wrote in the Credit Suisse Global Investment Returns Yearbook 2013 about mean reversion in equity market returns. For their analysis, they used a cyclically-adjusted dividend yield, rather than CAPE, indicating that the two metrics are consistent. Across 20 national and 3 regional stock markets, they found that higher cyclically-adjusted dividend yields were associated with higher real returns over the following five years. A 1% higher dividend yield implied a positive difference in future real return averaging about 1%.

However, in their article, they also point out that the statistical significance of their regression derives mainly from a few extreme events over the past 113 years (the Great Depression, the tech boom and bust, the global financial crisis). If those extreme events are removed, the statistical significance is poor. Moreover, the positive relationship depends on in-sample testing. The authors calculated the

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power of the relationship if one was restricted to using only the data that existed prior to making the investment decision. That is, an investor in 1950 would be permitted to use metrics only from the periods prior to 1950. With this real-world restriction, the cyclically-adjusted dividend yield would not have been useful on average, though it still would have been somewhat helpful to investors in US stocks. These equity value metrics on their own are not very powerful!

In our own asset allocation work for equities, we use a set of contemporaneous value metrics (price/earnings, price/cashflow, price/book, etc.) in addition to CAPE. We calculate a composite metric of value attractiveness and compare it to the same metric over the past ten years. We also make a comparison of each equity market to the current measurement of the other countries/sectors. On this basis, we can flag countries and sectors that have particularly strong or weak valuation characteristics.

Unfortunately, over the past decade, use of these metrics alone would have led investors to overweight markets with relatively weak performance. It has been an anti-value decade. Just as value stocks have consistently underperformed in the past ten years, so too have value countries.

To illustrate this observation, we divided the world stock market into 48 markets (36 country markets, and 12 segments of the US market). We then divide the 48 into six groups of eight markets each

based on value, with a monthly calculation and a new sort into the six groups every month. For the period from September 2006 to September 2015, the top sixth of countries by value (often emerging market countries) underperformed the bottom sixth (often US sectors) by nearly 6% per year. Many of our peers will be painfully aware of this, having suffered in recent years from value-based decisions to overweight emerging market equities.

We would still be comfortable acting on value metrics alone on the occasions when market prices are obviously and widely dislocated from normal ranges. However, as this evidence indicates, CIOs who allocate based on value alone can go ten or more years with poor results from doing so. It's clear to us that for consistent asset allocation success, *we need other tools to complement value.*

USE OF MOMENTUM

While value is widely known and used, the use of momentum to predict price behavior is not as widely embraced, despite solid academic evidence. There is an impressive body of empirical data indicating that use of momentum information would have improved investment results across major asset types, geographies and time periods. Given this evidence, it is not clear why so few in our community utilize price action to inform their asset allocation decisions.

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It is straightforward to derive basic momentum signals. Many academic papers test a rule based on whether the asset class has a gain or loss in the past year. Another common approach is to compare the current price to the average price over the past 200 trading days. This evidence indicates it is more favorable to own the asset class when there is a gain over the past year, or if the price is over the 200 day moving average. Our research on equity markets indicates that if the prior 6 – 12 month total return is positive, the following three month return has been 1.5% higher than if the prior 6 – 12 month return is negative. That is a potentially large return difference to exploit in asset allocation decision-making.

Let's use a simple rule to demonstrate the potential use of momentum as a signal as to when to own an asset class. Suppose one applied a rule where the S&P 500 is owned only when the current index price is higher than the average of the past nine months. When the S&P 500 is not owned, the investment is in short-term US Treasury bills. Observations and adjustments are made once per month. Let's compare the results of this very simple rule against the average endowment results as reported by NACUBO:

		Average Endowment	S&P + Momentum
1998-2015 (18 years)	Return	6.5%	9.5%
	Risk	10.0%	10.3%
	Sharpe	0.39	0.69
2006-2015 (10 years)	Return	6.1%	10.9%
	Risk	11.7%	9.1%
	Sharpe	0.42	1.02

As these numbers indicate, a simple S&P 500 momentum rule would have led to meaningfully better results than those of the average endowment investment team. However, it's important to note, much of the benefit in this comparison derives from loss avoidance in just one fiscal year – the 12 month period ended June 2009 which included the maximum impact from the global financial crisis. The average endowment lost 19% in that single fiscal year, while the simple S&P rule would have gained 1.5% (it would have held cash every month except June 2009). We don't have enough information here to claim a high degree of statistical certainty. We most definitely would not run an endowment portfolio this way! Sometimes the results of following this simple rule would be quite terrible – for instance a loss of 10.2% in the 12 months through March 2016, during which the S&P 500 gained 1.8%. But this simple exercise demonstrates two things:

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1. Easily observed momentum indicators are potentially under-utilized by asset owners.

2. Avoiding just one really bad year can have an enormously positive risk/return impact, even in the context of an 18-year track record. It's well worth figuring out how to lose less during big market downturns.

The results from the S&P 500 test are not an isolated example. The same sort of simple rule would have been helpful, on average over the long term, across all the higher risk asset classes: equity indices, commodities, REITs, MLPs, high yield, etc.

Many institutional investors such as public and private pension plans have a much higher capital preservation need than family offices or foundations. The pain of a large drawdown is often asymmetrically higher than the upside potential, as the liability has implications to the parent sponsor. The sponsor can be forced to escalate cash contributions to the pension plan at the time that its resources are most impaired. What's shown here is that one doesn't necessarily have to pay a hefty fee to hedge fund managers or deploy tail-risk hedging strategies to protect against downside losses. The main requirement is a willingness and ability to deviate from "policy portfolios", and own less (or none) of asset categories which are falling in price.

In reality, could college endowment investment

teams have avoided the huge losses they experienced during the global financial crisis? We would not expect a CIO to completely de-risk a large portfolio based on momentum indicators alone. But these momentum indicators are a useful sign of trouble. They should motivate investment teams to ask more questions. According to the U.S. National Bureau of Economic Research, the US was already in a recession in December 2007, although most people (ourselves included) didn't know it at the time. Nonetheless, we all could observe by early 2008 that most of the higher risk equity-oriented investments in institutional portfolios were declining in value.

The investment team of a large institution, be it a college endowment or pension fund, has access to a constellation of skilled external managers, providing unparalleled access to high quality investment insights. What would have been learned if in early 2008 investment teams had asked their managers: "Everything we own is falling in price – what's going on? What's your view of fair value relative to current prices? Are some markets badly mis-priced?"

Suppose you are the CIO of a large team organized by asset class, and each asset class group is conducting an investigation in this way. Not only do we believe that this approach makes the team better at identifying superior managers, the information they collect can also provide important cross-asset information: is the behavior of risky assets and safe haven assets implying the

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same thing about the future of the economy? Does the relationship between pricing of securities in different parts of the corporate capital structures (loans, unsecured debt, preferred stock, common stock) align with the relative risks?

We all know that investment returns are usually negative when the economy is going into a recession. We also know that the economics profession is not very good at forecasting recessions in advance. According to a recent report from Morgan Stanley, there have been seven US recessions in the last fifty years, none of which was forecast by economists. As further evidence, in the past 15 years there were 220 instances of economic growth changing from positive to negative at countries around the world, none of which were forecast. In the US, there have been twelve instances in the last fifty years in which the S&P 500 fell by at least 15 percent during that period. All seven US recessions began within one year of the 15% fall in stocks. The stock market predicted twelve of the past seven US recessions, and economists predicted none of them. Neither track record is ideal, but based on this evidence, it's plausible that market pricing can act as a leading indicator of economic health. This is a rationale to watch price action and, if prices are falling, evaluate whether there could be further danger to portfolio values ahead.

BETTER DOWNSIDE PROTECTION THAN BONDS?

A traditional 60/40 portfolio would allocate 60% to equities and 40% to bonds. The objective of the 40% of allocation to bonds is to provide some yield but mostly to provide downside protection if equities fall. In today's extraordinary low yield environment, many investors have rightly asked: can my bond portfolio provide much downside protection? Is there another way to provide equity downside protection other than bonds given how unattractive the valuation is? Let's test that out also.

Using the same simple momentum rule described above, the S&P strategy is 100% invested in stocks about 70% of the time – it takes more risk than the average 60/40 when stocks are rising. But the other 30% of the time, it is taking virtually no risk. So, which is the superior way to manage downside risk:

- 60/40: Own 40% in low-return fixed income all the time, or
- S&P + Momentum: Own fixed income only when risky assets are not performing?

We looked at the application of the simple 9-month rule to the S&P 500 for the 65 years starting in 1950. The rule is to own the market if the momentum is positive, otherwise own cash. We get an improvement in annual return of 1.3% per

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year, with a risk reduction from 12.1% to 8.8%. The Sharpe ratio improves from 0.56 to 0.92 relative to owning the S&P all the time.

This result is more interesting now than it may have been in the past. As most of our readers are well-aware, we are at or near the end of a 30-year bond “super cycle.” Interest rates have declined so dramatically that owning bonds would have been a very good defensive strategy in any back tests. When “safe” government bonds have gone from “risk-free returns” to “return-free risk”, using some form of momentum strategy can at least be a complementary down-side protection strategy than simply counting on bonds.

Any CIO who wants to apply this reasoning would have to stray from what nearly all large institutional investors do today. Standard practice is to maintain the same portfolio risk profile regardless of market conditions. The reward for taking investment risk varies greatly over time. So wouldn't it be better to take more risk when the expected return for taking risk is high, and less when it is low? And in particular, wouldn't it be worthwhile to take down risk as signs emerge that we are going into another recession?

COUNTERARGUMENTS TO MOMENTUM

We first learned about momentum more than twenty years ago. At the time, business school educations were still fresh and our reaction was

negative. How could momentum strategies be helpful? Doesn't the persistence of gains from momentum strategies violate efficient market theory? Even if momentum strategies were once a source of statistically significant outperformance, wouldn't wide adoption of momentum-based investing cause any future benefit to disappear?

Starting from this point of skepticism, we read widely and took advantage of our access to successful market participants as part of our continuing education. As we met with numerous market participants who had embraced momentum as an input (often the primary input) to market decision-making, our skepticism changed to curiosity. We recently met with one of the billionaires who has built a large and successful investment firm based on momentum investing. **We asked him “Why does momentum-based investing still work?” He replied, “It's because of what we are like as a species. It's due to the natural inclinations of all of us who together make the market.”**

This view resonates with us. We have observed momentum-enhancing behavior by asset allocators and oversight boards throughout our careers. Commitments to limited partnership interests in private equity, venture and real estate are pro-cyclical – they tend to be largest when market prices are unattractive, and smallest when they are attractive. Just compare commitments of 2007 to those of 2009. One can easily predict the hedge fund categories which will get the largest inflows/outflows based on prior performance. We

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observed many large allocators reduce their target allocations to public equity in 2009, when stocks were very attractively priced.

Moreover, in recent years the world's central banks have increasingly contributed momentum to world financial markets. The central bankers are acting with enormous financial resources, and without a profit motive. When a central bank is using their own resources to boost the bond market, boost the stock market or depreciate the currency, one can align with them with increased safety. Up to a point, that is – one must be mindful that this central bank activity ultimately will dislocate prices away from the equilibrium that would otherwise exist.

This is not to say that momentum-based investment choices will always be beneficial. As with value-oriented strategies, momentum-oriented strategies can lead to disappointing results for years at a time. They are especially challenged in choppy “sideways” markets where there is volatility in prices without any long-term trend emerging, such as has been experienced in the year through March 2016. Still, it seems odd that there's such a prejudice against the use of momentum in investment decision making while value gets all the attention.

BETTER TOGETHER

A momentum investor depends for continued success on the existence of non-momentum (value-

oriented) investors. When a market has plummeted in price, and the valuation finally looks interesting, the momentum investor turns to the value investor and says “You go first.” The momentum investor wants the value investors to deploy their capital in the dangerous endeavor of trying to change the overall direction of the market. If value investors are successful in changing market direction, the momentum investor says “Thanks a bunch” and then moves assets in alignment with the changed course of the market. They will not have bought at the bottom, but they will have bought with more safety. As often happens, when the value investors persist in “trying to catch the falling knife” behavior – they keep buying but the market keeps falling – the momentum investor says “Sorry about that, glad I missed that one.”

Similarly, a value investor depends for success on the existence of non-value (momentum-oriented) investors. The value investor happily observes from the sidelines as momentum investors move assets toward the latest hot stock or asset class. When these categories overheat and then collapse in price, the value investor says “Sorry about that, glad I missed that one.”

Value thinking is needed to correct the worst outcomes from momentum-based investing – particularly the creation of “bubbles” by the momentum crowd. Momentum thinking is needed to correct the worst outcomes from value investing – particularly premature guesses from the value crowd that the market is at a “bottom.” As

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mentioned before, we think it's much better to use both concepts in concert

We acknowledge that what we are recommending here cannot be successful if it is adopted by everyone. We expect that, despite all the favorable evidence, most investors will dismiss the use of momentum in their asset allocation decision making. That is OK with us. In fact, we are counting on it! We need continued skepticism toward momentum among the major asset allocators to enable us to use momentum effectively as part of our own approach.

By the same reasoning, we also recognize that value-based investing cannot be successful if everyone is doing it. There has to be a large cohort of participants in financial markets who participate without a value orientation (this group sometimes includes central banks!) for the value investors to benefit.

Our way to combine these two inputs sounds like common sense: use value metrics to decide what is best to own or not own, and then wait for a confirmation from momentum before making a change to portfolio composition.

INCREASING PROBABILITY OF SUCCESS

When evaluating asset classes, we would advocate moving away from a simple "stocks vs. bonds" evaluation and incorporate as many asset

classes as the team can:

Be more granular

Utilize as broad a set of possible positions as you can evaluate. Break up major asset categories such as global equities into more numerous smaller components.

Understand intra asset class relationships

Bank loans, corporate credit and stock markets are just different parts of the capital structure of a company. Are these markets aligned? Do fixed income teams and equity teams have similar outlooks regarding economic growth?

Evaluate more frequently

Rather than making asset allocation assessments annually, as many do, evaluate more often, such as once per month.

Ability to react

A key advantage available to investors today vs. the investment environment of the past is how efficiently and cheaply one can manage beta. Use of futures and swaps is at the disposal of most institutional investors, and even individual investors can pinpoint their beta allocations using ETF's. As mentioned, it's key to have governance/oversight that is supportive of making appropriate changes quickly.

In our asset allocation analysis, we make separate assessments of over one hundred markets. (This may sound like a lot! But it's very do-able with

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today's information and computing technology.) We divide global equities into forty-eight country/sector components. We also evaluate equity styles, such as value and low volatility. We track the major currencies, commodities and sovereign bonds. We evaluate numerous credit markets, as well as real asset categories. This level of granularity puts us in a good position to identify any market dislocations. It also increases the probability that we will find aligned markets: that is, markets where reasonable valuation is aligned with positive price action, or unfavorable valuation is aligned with negative price action. These aligned markets are the main categories that we overweight or underweight in our portfolios.

The key reason to be more granular in asset class analysis is that the tools we are using have weak predictive power. We can increase the probability of success by increasing the breadth of application of the tools – more markets more often. The granular approach also is needed to identify single market investment opportunities (to go long or short) that would otherwise be hidden in the composite. And it enables investment in only the better part of a composite – for instance, the best eight emerging stock markets rather than all of them.

SECTION 2

Relative Value Exposures

As we discussed in our prior paper, the vast majority of the risk taken in a typical endowment portfolio is equity in nature. An implicit bet on global economic growth runs throughout the portfolio. If global economic growth is better than expected, the portfolio will do well. And if global economic growth is worse than expected, the portfolio will suffer losses. We advocate more diversification than this.

Fortunately, the tools we have already described for making advantageous asset allocation choices can also be utilized to be a successful relative value investor. The asset classes which can be held with the most confidence are the ones with attractive valuations and positive price action. And conversely the most dangerous asset classes have unattractive valuations and negative price action. If one divides the global equity market into the forty-eight more granular markets as we do, it is often the case that some markets are in the “safe” quadrant (good value and momentum) while others are in the “dangerous” quadrant (bad value and momentum). One can then select relative value trades – long a “safe” market and short a “dangerous” one. One can do the same thing for the asset classes outside of equities.

The results of a typical institutional portfolio (including endowments, foundations and pensions) will have a 0.9 or higher correlation to the performance of public equity. The investment office is really making just one major bet – “stocks will go up.” This concentrated bet involving nearly the whole portfolio on just one proposition happens to be accepted practice at present. Wouldn’t it be better to mix in other uncorrelated risks? As mentioned, we could go long a set of equity markets in the safe quadrant and short a set in the dangerous one. We could not be certain that that these long/short trades would have gains. However, “markets with good value and momentum will outperform those with poor value and momentum” seems to us to be at least as promising a proposition as “stocks will go up.” Today, global stocks as a group have neither very favorable valuation characteristics nor very positive price action. So it does not make sense to us to rely on long positions in stocks and related markets as the only legitimate way to generate investment returns.

While value and momentum are the two main tools we use as allocators, these are just two metrics among a larger group of market characteristics known as “factors.” Other factors include:

SECTION 2: Relative Value Exposures

Carry

The asset class with the higher yield tends to have a higher return than a similar asset with a lower yield.

Defensive

The lower risk asset class will tend to outperform a similar asset class with higher risk.

Liquidity

Lower liquidity asset classes tend to outperform similar asset classes with higher liquidity.

We believe that we have enough information and understanding of value and momentum for the use of those factors for allocation to be done by in-house investment teams. We utilize external managers for carry, defensive and liquidity strategies. We think these factor strategies are, on average, a useful source of diversifying returns, though, like everything else, one will not have positive results in every period. One needs to stay the course through a market cycle.

Beyond these, there are a multitude of factors and systematic trading strategies available to institutional investors. Most of the major investment banks now offer dozens of systematic trading strategies as potential portfolio diversifiers. Of course, only strategies with positive backtests get launched. The sponsor will have designed the strategy to have done well on historical data. On average for these strategies, the live performance after launch is meaningfully lower than the return indicated in the backtest. A CIO should only consider strategies they understand and which

have a reasonable basis for future performance. Having said all this, on average, these alternative strategies have a relatively low correlation to public equity and positive realized Sharpe ratios, so they could be potential diversifiers for portfolios.

We would recommend hiring a skilled external manager to create a diversified composite of such strategies. The external manager is needed to sort through the design and fee structure of the multitude of available strategies, so that only strategies with reasonable expenses, a sound reason for continued performance and a solid design are included in the portfolio.

SECTION 3

Alpha Beta Separation

The two most important activities of investment teams are:

1. Decide on asset allocation
2. Implement the asset allocation with external managers or internal strategies

Most investment organizations gain little or no value from the first step. Therefore, they rely heavily on the second step – in particular they hope to select external managers with the most skill, who will generate the highest excess return relative to the risks they are taking. Heavy emphasis on the importance of manager selection and alpha generation is characteristic of the endowment investment model.

The prevalent thinking among investment organizations is that the allocation to external managers has to align with the desired asset allocation. However, it's possible, even desirable to break that link. Indeed, one can benefit from both superior asset allocation and manager alpha.

Many corporate pension plans, including Hewlett-Packard, are well-versed in LDI (liability driven investment) strategies. An LDI strategy manages

the duration of a defined benefit plan portfolio via an overlay program run separately from the underlying physical assets. Some plans have taken LDI further to increase/decrease long credit exposure to match the liability stream. For those plans such as HP that have managed asset allocation in a dynamic way, it's well understood that using derivatives to manage and rebalance beta exposure is both effective and cost efficient.

Here, we take overlay management one step further, noting that it's possible for large teams to generate additional benefit by separating alpha and beta, as long as there is transparency in the portfolio. Suppose you are a CIO and your organization has found a fantastic emerging market equity manager, a Brazil specialist. This manager is great at picking the best houses in one neighborhood, Brazil. After making the investment, if in accordance with our monitoring model Brazil overall is a bad neighborhood to be in, should one stay with the allocation to the manager? It's possible, and actually quite preferable, to maintain the physical allocation with this manager while using a derivatives overlay to reduce the overall Brazil market exposure to the desired level. This way, one can maintain the alpha potential from the

SECTION 3: Alpha Beta Separation

Brazilian manager, reduce transaction costs, and allow underlying managers to take less liquid positions.

Using this approach, external managers can be screened and selected primarily on the basis of the expected alpha to be generated instead of conducting manager search by asset class. This is the opposite of the common approach where capital is allocated based on market cap, hence allocating most of the “active” budgets to the largest, most efficient asset classes (such as US large cap equity, EAFE, emerging markets as a bucket). The better strategy is to fully leverage the alpha potential, generating a diverse set of alpha sources across asset classes and relative value strategies, and then use derivatives to adjust the portfolio to the desired allocation.

SECTION 4

Implementation of Ideas

So, how do we put these ideas together?

A well-founded basis for asset allocation is the key. Starting from the traditional “policy portfolio, we would add more long/short factor exposures at external managers to the baseline portfolio (if one doesn’t have them already). From there, enhance the investment process as follows:

1. Break up the universe of investable assets quite granularly – all the countries and sectors for equities, all the sovereign bond markets, commodities, real estate, credit-oriented categories, etc.
2. Derive a value (expected return) assessment of each asset class above. A CIO with asset class teams can assign the work by asset class – requiring each group to become experts on valuation in their category.
3. Observe the price momentum of these markets
4. Shift portfolio assets toward the best available combinations of value and momentum
5. Sometimes (though not often), in the same asset class, there will be big gaps in the value + momentum score (e.g. some equity indices will

score much better than others). At those times, allocate some portfolio risk to positions long the favorable markets and short the unfavorable ones, if the organization is allowed to pursue long/short positions

6. Sometimes there will be few or no choices available that are appealing on a value + momentum basis. At those times, reduce the long-only investment risk in the portfolio, and wait for better times to put capital at risk.

All the steps above set the overall allocation. External managers would be selected based on expected alpha. As we said in the prior paper, it is still possible to identify and allocate to the most skilled managers in alternative asset classes, provided one has the right governance and investment team resources, but it continues to become more difficult, even for the most well-resourced, well-connected investment teams. We would emphasize transparency – the understanding of the underlying beta exposures – and limit the total amount invested in illiquid positions to preserve allocation understanding and flexibility. The amount of latitude to adjust allocation and risk would be a function of the goals and governance of the specific organization.

Conclusion

In the first paper, we argued that the prevailing approach to college endowment portfolio management could be improved, mainly by more attention to asset allocation, more diversification and more liquidity. This paper provides more specifics about how that could be done.

Our suggested approach is just that, suggested, and it's not meant to be the only or final answer by any means. One of the great privileges of our profession (and certainly the most enjoyable for

us) is the exchange and collaboration of ideas from CIOs, investment staffs, asset management practitioners and academics. This community oversees a great amount of capital, which is used for important causes. If we can continue to improve on what we do, the people we serve are better off. We hope that our papers contribute to the ongoing dialogue and debate about best practices. In return, we hope to hear from all of you who have counterarguments and suggestions for improvements.

A Message from FOA

Through our white papers, online forums and multiple national programs, FOA acts as a hub for ongoing dialogue and debate about investment best practices for hundreds of global family offices and investors in general. I encourage you to reach out to us and share your thoughts, opinions and counterarguments. It's through the strong foundation of industry leaders like Ken Frier and Gretchen Tai, combined with your thoughtful input that we further everyone's understanding of these investment issues.

Please visit our website at www.familyofficeassociation.com to share your insights on this paper and to register for updates about new FOA white papers on global investment.

We look forward to hearing from you,



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Gretchen Tai is President and Chief Investment Officer at Shoreline Investment Management Company, a wholly-owned asset management subsidiary of HP Inc. that oversees the investments of retirement plan assets of HP Inc. and other benefit plan assets of affiliated companies such as Hewlett Packard Enterprise and its subsidiaries. As of December, 2014, Shoreline oversees over \$45B of assets.

Gretchen joined HP in 2003. Prior to HP, she worked as an investment banker at Merrill Lynch serving the corporate finance needs of technology companies. Earlier in her career, she worked in the asset backed securities group at Credit Suisse and as a management consultant with McKinsey & Co.

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