Revisiting Your Investment and Distribution Goals—A New Model

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Executive Summary:

We have recently developed a proprietary model designed to provide a deeper understanding of the potential ramifications of your organization's investment and spending decisions. In this paper, we provide an analysis of the model's output in order to provide Investment Committees with data to help in the formulation of portfolio decisions or to help determine whether it is time to reevaluate previous portfolio decisions. Whether you are attempting to deepen your current level of knowledge or you are considering a more comprehensive reevaluation, we believe the results outlined in this paper are worthy of your time and consideration.

Based on our experiences in working with organizations, we believe that there are four critical decisions your organization must make. By reviewing portfolio performance from a number of angles over the full range of cycles from 1926 to July 31, 2009, this paper provides perspective on:

1. **Asset Allocation Strategy:** We believe that in the vast majority of circumstances a fully diversified asset allocation strategy with specific targets is preferable to a simple portfolio. We compared fully diversified asset allocation strategies versus simple index mixes from 1926 through 2009. We will show how these more diversified portfolios would have performed versus a simple stock/bond blend and versus an all bond portfolio. In general, this paper shows the importance of asset class diversification with data tested over extremely long time periods. We believe that regardless of your goals and objectives, proper portfolio construction and full diversification are essential.
2. **Risk Profile:** Each organization has a unique risk profile which depends upon your payout policy and accumulation goals as well as your risk tolerance and ability to stay committed to your investment policy during inevitable bear markets. The long term nature of endowment and foundation portfolios tends to favor a more aggressive approach while considering the full range of likely outcomes as well as an appropriate comfort level for the organization. For some organizations, this may be an equity biased portfolio; for others a higher or lower allocation to equities may be equally appropriate.
3. **Payout Rate:** As is the case with risk profile, an appropriate payout level depends on your organization's current needs and how you choose to weight long term growth versus current payouts. Often a 4% or 5% payout rate is appropriate. In this paper we analyze the output of our model at different payout levels.
4. **Payout Calculation Method:** Many foundations use of a range of 12 to 20 quarter rolling averages to calculate their payout each year. In some cases, an organization may use a 4 quarter method and as such in this paper we discuss multiple scenarios and how certain calculations tend to provide a smoothing effect on payouts. This smoothing may allow an organization to better meet their critical payout functions and may help to minimize the potential disturbance caused by extreme market fluctuations. Additionally, this paper will address how using 20 quarter rolling periods, for example, may allow a portfolio to grow more over time as payments are not increased quite as quickly as the market rises. This provides the additional

benefit of leaving more for future generations which indirectly benefits today's interested parties as they see the portfolio grow.

Sustainable Payouts:

Benjamin Franklin suggested that nothing is certain in this world except death and taxes. From a portfolio perspective, endowments suspend these certainties. They are generally exempt from taxes and seek to manage a portfolio with a perpetual life.

These unique characteristics provide significant opportunities but also substantial challenges. Endowments are a vital source of funding for much of today's philanthropic and charitable activities. Fiduciaries must balance the goal of maintaining a substantial portfolio to fund the needs of future generations with the needs to fund important activities in the near term.

The need to establish a portfolio allocation and payout policy which properly balances these competing demands has never been greater. Our proprietary model may assist you in better navigating these decisions.

Sustainable Payout Model:

Human nature is such that we tend to extrapolate recent experience into the future. Mark Twain said "History doesn't repeat itself but it does rhyme." We reserve particular respect for insights of our profession's elder spokespeople. They may see something we cannot see because of our limited perspective. Important conclusions may be drawn from past investment performance but just as importantly, serious mistakes can be made by assuming the future will mimic the recent past. In the late 1990s, many concluded the recent bull market was cause for extremely optimistic future returns just as some after the recent severe bear market may have made unrealistically dire projections.

A full discussion of the depth of our model is beyond the scope of this paper but a basic explanation is important so that the reader can fully appreciate the quality of the output which we will discuss throughout this paper. As analysts we know the output is only as good as the assumptions made and depth of model utilized.

We developed a highly sophisticated model which examines how a portfolio would have performed over any five, ten, twenty five or fifty year period from January 1926 through July 2009. For example, there are 404 rolling fifty year periods. The last period, ending July 31, 2009 begins July 31, 1959. We then roll the period back one month, to end June 30, 2009 and so forth until we reach the oldest available period of January 1, 1926 to December 31, 1975. Each time we run this model, for a rolling fifty year example, we run a comprehensive calculation assuming someone invested in a portfolio and proceeded to take monthly distributions for spending requirements and investment management fees on a monthly basis over each of the next fifty years. We then determine what the value would have been at the end of the fifty years. This calculation alone requires more than 6,000 cells of an Excel spreadsheet. We then run the same calculation over the fifty year period from July 1, 1959 to June 30, 2009 as the second fifty year period and continue these separate calculations until we have covered all 404 rolling fifty year periods (the oldest being January 1, 1926 to December 31, 1975). We do the same for all 704 rolling 25 year periods, 884 rolling 10 year periods, and 944 rolling 5 year periods.

This means for each set of assumptions we run a total of over 2,900 completely independent calculations taking up more than six million cells of a Microsoft Excel spreadsheet. Sounds like a great deal of work but what it does is allow us to gain wisdom from the ages. Very poor decisions tend to be made assuming the future will look like the

recent past; very informed decisions can be made factoring in the experience of investors over more than 80 years, a period that includes severe panics and strong bull markets – the good, the bad and the ugly.

Scenarios:

We built our model blending index returns. Our model is designed to test each of five asset allocation strategy models, which we consider to be optimally diversified portfolios, for five different investment objectives. Additionally, we can test five "simple blends" which have approximately the same risk profile but assume a simple allocation which includes only the S&P Composite and an Intermediate Government Bond Portfolio. Additionally our model can be run to test a 100% bond portfolio.

Asset Allocation Strategy:

Prior to the 1970s, institutions typically based payout policy on income (interest and dividend income). The problem with this tactic was that it tended to steer investment committees towards bonds and cash which provided higher yields but did a poor job of keeping pace with inflation.[1] Today, institutions more appropriately consider total return. Typically, a tax exempt institution should be mostly indifferent to whether portfolio return is due to interest, dividends or capital gains.

We subscribe to the notion that the asset allocation decision is the most important decision for an investment committee to make. The portfolio should be one which is designed to optimize the likelihood that the institution's portfolio will allow for short term payout needs while maintaining a growth rate sufficient to keep pace with inflation. As we discuss later, a **payout policy** must inherently balance the conflicting requirements of providing for current benefactors with maintaining value for future benefactors. On the other hand, a **properly designed asset allocation strategy** can often enhance both current spending and growth of principal for future generations.

Example 1:

We tested three possible portfolios using our Sustainable Payout Model. The first scenario assumed a 100% investment in intermediate government bonds. The second scenario was a portfolio made up of a 77% investment in the S&P Composite Index and a 23% investment in intermediate government bonds. The third was our "Risk Level 4" portfolio, one of our five asset allocation strategy models. This asset allocation model includes a well diversified mix of investments with a similar overall allocation (a 77% allocation to more aggressive investments such as equities and commodities and a 23% allocation to bonds and cash). In each scenario, we made the same basic assumptions:

1. Beginning Value $1 Million.
2. Annual Payout Rate 5% which equates to initial payout of $50,000 per year.[2]
3. After the first year, we applied this 5% rate to rolling 20 quarter account balances (more on the application of this method in the Payout section of this paper).

1 See Page 92 *Managing Investment Portfolios, A Dynamic Process* Third Edition, 2007, Maginn, Tuttle, McLeavey, and Pinto.

2 In each scenario here and throughout the remainder of this paper we assume additional spending of 1% for the institution's overhead and administrative costs and 1% for investment consulting and underlying manager fees.

Chart 1 and Table 1 show the average inflation adjusted ending value, over time over all 25 and 50 year rolling periods from 1926 through July 31, 2009. Notice the all bond portfolio does a very poor job of maintaining principal over time. On average, after 25 years, it ends with $276,935 while after fifty years, on average it ends with $57,207. The problem is that the value of bonds tends to be eaten up by inflation over time. Clearly the all bond portfolio does not serve future generations well, as they will be taking distributions from a drastically reduced base.

The 77/23 Simple portfolio fares reasonably well. Over the average 25 year period it ended with $962,980, losing some value but not too much. Over the average 50 year period it was further depleted to an average real value of $688,509.

The fully diversified model performed much better growing to $1,418,952 over the average 25 year period and to $1,601,016 over the average 50 year period.

These charts tell us about what is left for future generations. But how did the earlier beneficiaries fare? Chart 2 and Table 2 provide the answer.

Not only did the all bond portfolio mortgage the future, it also allowed much less for the initial beneficiaries. Over the average 25 year period, only $28,864 per year was available to be spent each year on an inflation adjusted basis.

Chart 1:

Average Inflation Adjusted Ending Value

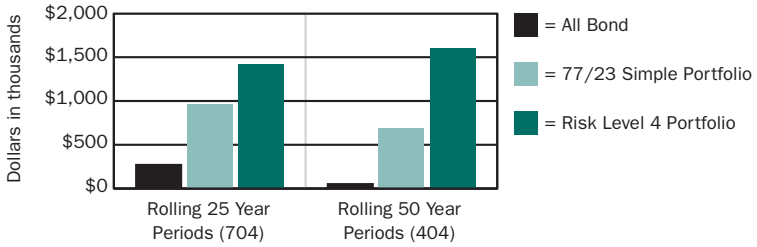

Table 1:

Average Inflation Adjusted Ending Value

Initial Portfolio Value $1 Million

	Rolling 25 Year Periods (704)	Rolling 50 Year Periods (404)
All Bond	$276,935	$57,207
77/23 Simple Portfolio	$962,980	$688,509
Risk Level 4 Portfolio	$1,418,952	$1,601,016

Chart 2:

Average Annual Spending (Inflation Adjusted)

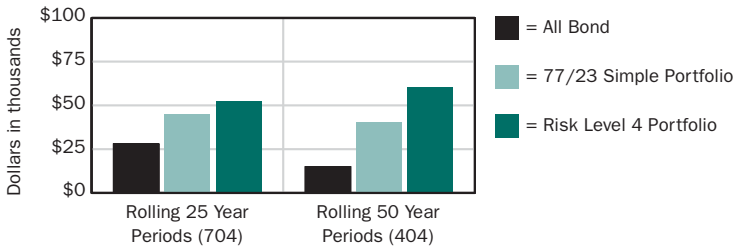

Table 2:

Average Annual Spending (Inflation Adjusted)

	Rolling 25 Year Periods (704)	Rolling 50 Year Periods (404)
All Bond	$28,864	$15,869
77/23 Simple Portfolio	$45,379	$40,718
Risk Level 4 Portfolio	$52,779	$60,766

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Over the average 50 year period, only $15,869 was available to be spent each year – quite a decline from the initial $50,000 spent in year one.

The 77/23 Simple portfolio required some reduction in real spending but allowed for a reasonable amount of payouts. Over the average 25 year period, annual spending of $45,379 in inflation adjusted dollars lead to approximately a 10% reduction in payout. Over the average 50 year period, annual spending ran around $41,000 in inflation adjusted dollars or slightly more than an 18% reduction in terms of real payouts. This does not seem to be a great conclusion but probably would be enough to maintain critical payout requirements.

The fully diversified portfolio, in addition to allowing for growth of the portfolio in real terms, on average also allowed for increased payments throughout the portfolio's horizon. Over the average 25 year period, payouts increased in real terms by about $3,000 per year or 6%. Over each 50 year period it averaged almost $60,766 (more than a 20% increase in real spending).

The charts and tables on the previous page show how important it is to make the right asset allocation decision. If you have a long term horizon, as endowments and foundations typically do, investing in too conservative of a portfolio will most likely "short change" both current and future generations as will a less than optimally diversified portfolio. Selecting a thoroughly diversified allocation allows us to potentially provide greater resources for both current and future generations. The more nuanced decision is how to balance the needs of future beneficiaries and current beneficiaries which we will turn to in the next section.

A Word about Inflation: As we all know, the value of the dollar tends to decline over time. Coca-cola™ used to cost ten cents a bottle but today costs much more. There are policy and economic reasons why we would generally expect continued inflation in the future. For our purposes we are interested in real purchasing power of the payments your organization will be able to make, not just the dollar amount. Thus when we calculate average inflation adjusted spending we adjust those dollars downward for any rise in inflation over the period. For example, during the last twelve months of the fifty year period ending in July 2009 the model calculated an annual distribution of $368,510 (nominal dollars). For purposes of calculating average inflation adjusted payouts we converted this amount to 1959 dollars which came to $50,328. In other words $368,510 today would buy what $50,328 would have purchased fifty years ago. Thus when table two says average spending would have increased to $60,766 the average spending would have actually increased to a much larger annual number (in the hundreds of thousands of dollars). However in terms of purchasing power it would have increased to $60,766.

What Is the Proper Amount of Risk?

The above example shows the importance of not being too conservative and of using a fully diversified portfolio. But who is to say that the Risk Level 4 Portfolio with its 23% allocation to bonds and cash is the appropriate mix? While designing a properly diversified portfolio should always be the goal, once proper diversity has been attained, there are clear tradeoffs between risk and return. Risk tolerance should factor in payout goals, time horizon, liquidity needs and unique circumstances of the organization. Investment portfolios with very low volatility usually provide low expected returns. This increases the risk you will fail to reach the long term goal of significant, stable payouts while growing the portfolio with inflation over time.

While the time horizon and desire for continued growth tend to favor a more aggressive portfolio, institutions must also consider the short term ramifications should payouts need to be cut due to temporary but severe short term market declines. Additionally, your committee must consider any internal political or related ramifications, should substantial losses be maintained over the short term. While the institution may have a perpetual outlook, short term interests must not be overlooked. This is particularly important if key committee members may not have the fortitude or discipline to stay invested during severe market corrections which will inevitably come. Equities have been among the best investments on average, over time, and there are fundamental reasons to expect them to continue to be so over the long term. However, we had our emotional fortitude tested during the 2008-2009 bear market as did our predecessors in the mid 1970s and during earlier severe market panics.

The tradeoffs between risk and return are not new to sophisticated investment committees. However, reviewing the range of how portfolios would have performed over the range of long and short time horizons from 1926 to the present allows us to make more informed decisions. Just as "ears perk up" when a seasoned veteran chimes in with wisdom he or she has gleaned from decades of experience, if we better understand the full range of historical market returns we may be able to glean valuable lessons without having to repeat the mistakes investors have made along the way -- often being too aggressive after good periods and too pessimistic after market corrections. A more aggressive or more conservative portfolio may be appropriate but what we do not want to do is change course in the midst of inevitable bull and bear markets cycles. We would all agree buying high and selling low is not the right strategy.

Example 2:

Note: See the disclosures for a description of each of the "Risk Level" portfolios. In general terms, the Risk Level 3 portfolio is a diversified 65/35 (Equity, Commodities/Bonds, Cash) portfolio, the Risk Level 4 Portfolio is a diversified 77/23 portfolio and the Risk Level 5 Portfolio is a diversified 87/13 portfolio.

For the moment assume our goal is to maintain a 5% annual payout in addition to overhead, administrative and investment management fees. Chart 3 and Table 3 (below) show the ending values over the 704 rolling 25 year periods from 1926 to July 31, 2009. Lining up ending values over all 704 rolling periods from worst to best, the 50th percentile shows what we would have ended up with after the period which ranks exactly in the middle. For example, 50% of the time the Risk Level 4 portfolio would have ended with at least a $1,250,661 inflation adjusted value after 25 years. This would be deemed a resounding success. The portfolio would have grown by 25% plus inflation plus funded desired payouts along the way. The 10th percentile indicates how the ending values would have varied during the worst market environments. For example 90% of the time, we would have ended up with more than $708,500 after 25 years with a Risk Level 4 Portfolio but one in ten times with that amount or less. (Note that this is in inflation adjusted terms. In nominal terms, this 10th percentile Risk Level 4 portfolio would have been $2,065,737 instead of $708,500. In other words, the portfolio would have more than doubled in value in dollar terms but would not have kept pace with inflation).

Chart 3 shows that over this long horizon we would tend to favor the more aggressive portfolios as they would have historically outperformed over both the good and bad rolling periods relative to the more conservative portfolios.

Chart 3

Inflation Adjusted Ending Values by Decile: 704 Rolling 25 Year Periods

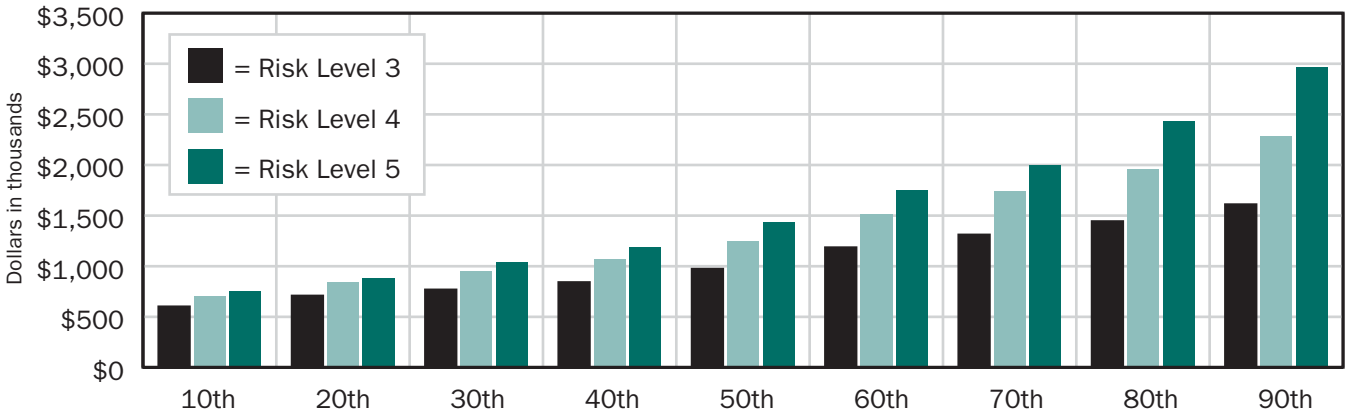


Table 3 shows the same information as above except in number format. Here scenarios where the portfolio would have funded all payout requirements and grown with inflation are coded in green; those where all payouts would have been funded but the portfolio would have lost value on an inflation adjusted basis of up to 20% are coded in yellow. Those scenarios where the portfolio would have lost 20% or more in real dollar terms are coded in red. As this shows, taking a long term perspective, we would tend to favor the more aggressive Risk Level 4 or Risk Level 5 portfolios as they would have historically outperformed over most good and bad scenarios alike, assuming we stayed disciplined and remained invested over the whole horizons.

Table 3:

Inflation Adjusted Ending Values by Decile: 704 Rolling 25 Year Periods

	Risk Level 3 Portfolio	Risk Level 4 Portfolio	Risk Level 5 Portfolio
10th	$606,252	$708,500	$751,049
20th	$713,735	$843,469	$886,158
30th	$773,733	$953,314	$1,045,391
40th	$846,358	$1,073,062	$1,185,324
50th	$978,082	$1,250,661	$1,432,929
60th	$1,190,808	$1,519,844	$1,751,212
70th	$1,316,919	$1,743,432	$2,002,768
80th	$1,448,632	$1,961,442	$2,430,483
90th	$1,615,948	$2,291,963	$2,972,151

Chart 4 and Table 4 (below) provide the same decile information over rolling 5 year periods. While a perpetual organization such as a community foundation should focus primarily on the longer term when setting an investment policy, realities dictate that the committee should at least have a comprehensive understanding of what might be expected along the way.

There are a Couple of Important Observations:

First, while 80% of the time (see 20th through 90th percentile numbers) the more aggressive portfolios performed better on a net of distributions basis, during the worst ten percent of the cases, the Risk Level 3 portfolios performed best. Note that in the bottom decile, the Risk Level 3 portfolio ended with $687,436 compared to $619,299 for the most aggressive portfolio. Consider whether donors and committee members would be able to tolerate such periods where the more aggressive portfolio suffers most. Would your organization be able to stay the course during more turbulent times?

Second, notice there is more yellow and red in the Table 4 (below) than Table 3 (above). Forty percent of the time the most aggressive Risk Level 5 portfolio would have ended a five year period coming up short of the initial investment of $1 million after adjusting for inflation (Table 4) while it would have only come up short 20% of the time over 25 year horizons (Table 3). This is why time horizon is so important to setting investment policy. Over the short term, more equities mean more risk. Over longer terms, equities have actually led to less risk than bonds or cash as measured by ability to keep pace with inflation.

Chart 4

Inflation Adjusted Ending Values by Decile: 944 Rolling 5 Year Periods

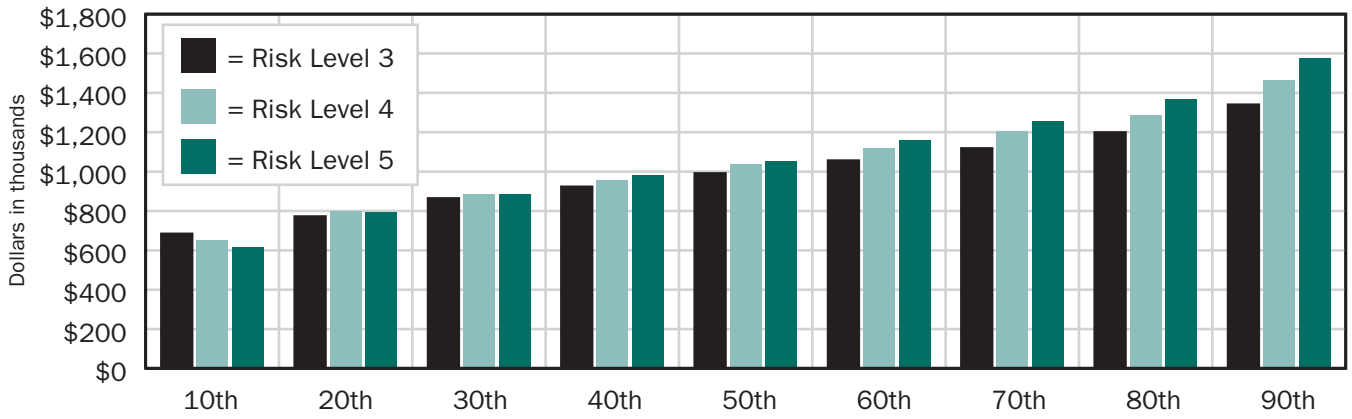


Table 4:

Inflation Adjusted Ending Values by Decile: 704 Rolling 25 Year Periods

	Risk Level 3 Portfolio	Risk Level 4 Portfolio	Risk Level 5 Portfolio
10th	$687,436	$652,350	$619,299
20th	$775,921	$801,038	$793,302
30th	$867,348	$884,694	$887,667
40th	$926,932	$958,252	$982,156
50th	$994,565	$1,039,182	$1,055,635
60th	$1,059,879	$1,122,407	$1,161,200
70th	$1,121,648	$1,206,647	$1,259,687
80th	$1,202,302	$1,289,279	$1,370,513
90th	$1,343,993	$1,467,448	$1,577,640

Payout Rate:

In addition to deciding which risk profile meets our needs, we must also establish the appropriate payout policy. It is not enough to be miserly with our money in order to become highly certain our portfolio will grow with inflation over time. We need to strike a balance between paying too much and mortgaging our future in order to fund all desired payouts or paying out too little which may help to ensure future resources but possibly at the expense of underfunding current needs. There is not a "one size fits all" answer to a proper payout policy. Only by understanding how a policy would have fared historically can we work towards establishing the appropriate future policy.

Example 3:

Chart 5 and Table 5 (below) show average ending values over 704 rolling 25 year periods. In each case, we assume $1 million is invested in a Risk Level 4 portfolio and that payouts are taken as a percent of rolling 20 quarter periods. We vary the payout percent from four to six percent.[3]

As Table 5 shows, the 4% payout rate would have led to very favorable results. The 20th percentile value of $1,099,549 indicates that 80% of the time the portfolio would have funded all distributions and grown by 10% plus inflation. The 10th percentile indicates that 90% of the time we would have ended up with $929,182 or more in inflation adjusted terms after funding all distributions – only a moderate deterioration in real value terms even under more dire circumstances. Half of the time we would have grown the portfolio by more than 59% plus inflation over the 25 years as evidenced by the $1,594,334 ending value on the 50th percentile row. The 5% scenario is less favorable but still half of the time the portfolio would have grown by 25% plus inflation. Eighty percent of the time the portfolio would have fallen by no more than around 15.7% as evidenced by the 20th percentile ending value of $843,469. While many organizations would not be comfortable with a 6% payout, the decision between a 4% and 5% payout is typically a matter of judgment based on each organization's unique goals, objectives and circumstances. A 5% payout policy would have exceeded its goal the majority of the time over many periods by a large margin. A 4% payout policy would have met its goal the vast majority of the time and in many cases exceeded portfolio growth goals by a very wide margin. The decision will depend on how much weight the committee believes should be given to the future versus the importance of payments over the intermediate term. We at Mason Investment Advisory Services are, of course, here to help you through that decision making process whether by discussing the details or running additional analysis customized to your organization.

3 For example under the 4% scenario we assume spending begins at $40,000 (4% of $1 million). In the second year we take four percent of the average of the value during the first three quarters of year one. The third year we take 4% of the average ending values of the first 7 quarters etc. until we have 20 quarters on which to base the calculation. We do not include the most recent quarter ending value as a practical constraint. For example if we are planning to set a distribution value for 2010 we could use the September 30, 2009 value but using the December 31, 2009 value would not allow time for revising budgets etc.

Chart 5

Inflation Adjusted Ending Values by Decile –704 Rolling 25 Year Periods: Risk Level 4 Portfolios, Spending is as a percent of rolling 20 quarter periods

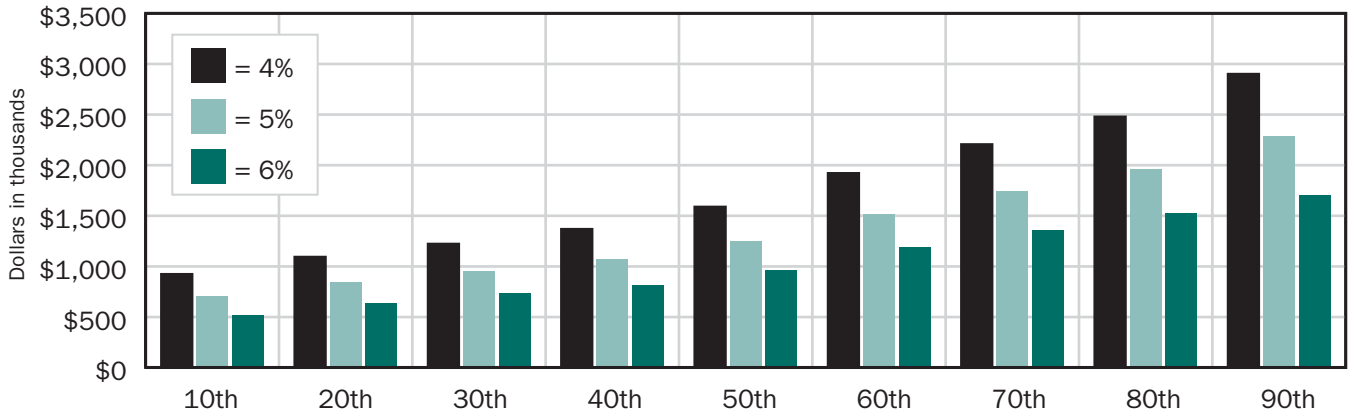


Table 5:

Rolling 25 Year Ending Values by Decile

	4%	5%	6%
10th	$929,182	$708,500	$523,764
20th	$1,099,549	$843,469	$637,294
30th	$1,228,540	$953,314	$734,021
40th	$1,374,444	$1,073,062	$817,211
50th	$1,594,334	$1,250,661	$965,319
60th	$1,926,202	$1,519,844	$1,188,062
70th	$2,211,447	$1,743,432	$1,360,655
80th	$2,484,654	$1,961,442	$1,526,073
90th	$2,906,883	$2,291,963	$1,797,962

Payout Calculation Method:

In each example in this paper we assume determination of spending for the next year is determined based on portfolio values available three months prior to the relevant year. For example, we would calculate spending for calendar year 2009 based on portfolio values available as of September 30, 2008. Rather than basing this calculation on values as of a single point in time, we generally recommend calculating distributions based on values over rolling 20 quarters. By basing distributions on the average value of the portfolio over the last five years instead of on the value at a single point in time, we help to smooth out payments which generally works better from a budgetary standpoint. Additionally, since markets tend to trend up over time this, on average, leads to slightly lower annual payouts than would be the case using only more recent portfolio values.

Example 4:

Table 6 and Chart 6 (below) show how a rolling 20 quarter average would have generally led to a higher portfolio value compared to a calculation based on a rolling 4 quarter average. The last two columns of the chart show the excess ending value in dollar and percent terms which would have resulted from using the rolling 20 quarter

method versus the rolling 4 quarter method. On average over each rolling 25 year period from January 1926 to July 2009, the portfolio would have grown by 8.9% more using the rolling 20 quarter calculation compared to the rolling 4 quarter calculation. Notice that during the worst periods the difference is less pronounced and during the best periods it is more pronounced. The reason is that when markets have trended sharply upward, the rolling 20 quarter calculation has reduced payments. Conversely, over weaker markets, the 4 quarter calculation has led to a more drastic reduction in payments over the short term.

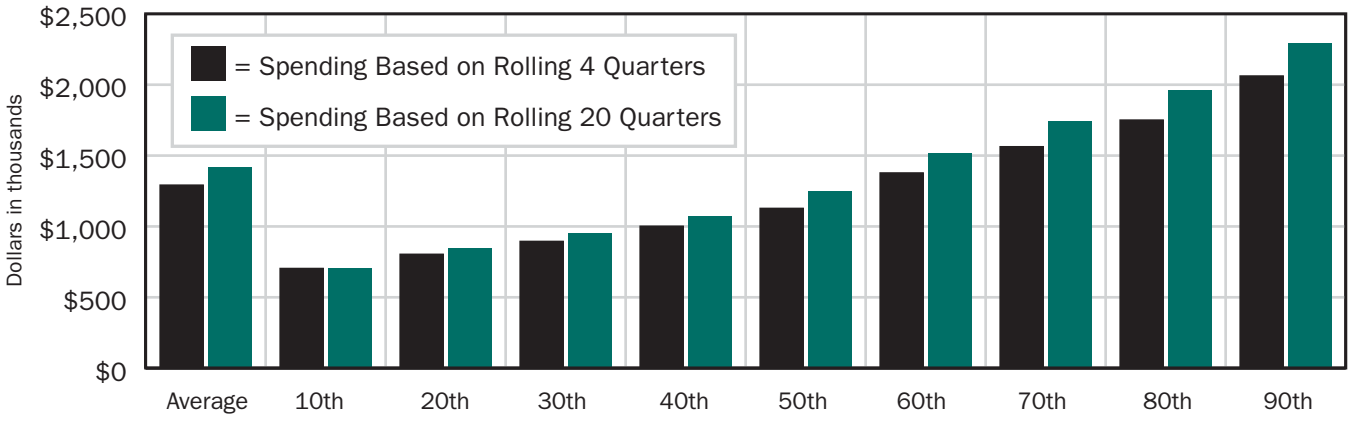
Table 6:

Rolling 25 Year Ending Values by Decile

	Spending Based on Rolling 4 Quarters	Spending Based on Rolling 20 Quarters	Dollar Difference	Percent Difference
Average	$1,292,673	$1,418,952	$126,279	8.90%
10th	$704,043	$708,500	$4,457	0.63%
20th	$804,891	$843,469	$38,579	4.57%
30th	$895,910	$953,314	$57,404	6.02%
40th	$1,002,934	$1,073,062	$70,127	6.54%
50th	$1,128,094	$1,250,661	$122,567	9.80%
60th	$1,378,926	$1,519,844	$140,918	9.27%
70th	$1,563,187	$1,743,432	$180,245	10.34%
80th	$1,751,133	$1,961,442	$210,309	10.72%
90th	$2,062,061	$2,291,963	$229,902	10.03%

Chart 6

Inflation Adjusted Ending Values by Decile–704
Rolling 25 Year Periods Risk Level 4 Variable is Spending Calculation Method



Conclusion:

Hopefully what we have discussed has been helpful as you oversee your organization's portfolio. By reviewing portfolio performance from a number of angles over the full range of cycles from 1926 to July 31, 2009, we have been able to give you an enhanced perspective on four important decisions your organization has made and should continue to think about:

1. **Asset Allocation Strategy:** We believe that in the vast majority of circumstances a fully diversified portfolio is preferable to a simple portfolio. We have shown how a fully diversified 77/23 portfolio has led to superior performance over a 77/23 simple S&P Composite/Government Bond blend or an all bond portfolio. Similar conclusions would be drawn for more conservative or more aggressive portfolios and, if helpful, we could provide analysis more customized to your organization. We believe that regardless of your goals and objectives, proper portfolio construction and full diversification are essential.
2. **Risk Profile:** The appropriate risk profile depends on your payout policy and accumulation goals as well as your risk tolerance and ability to stay committed to your investment policy during inevitable bear markets. The long term nature of foundation portfolios tends to favor a more aggressive approach but it is also important to examine the range of likely outcomes and make sure your organization is able to reach an appropriate comfort level. For some, this may be a 65/35 portfolio; for others a 77/23 portfolio is often appropriate. We are here to help whenever you deem a reevaluation of your current allocation appropriate and are happy to provide more customized analysis utilizing our proprietary Sustainable Payout Model to assist with this exercise.
3. **Payout Rate:** As is the case with risk profile, the appropriate payout level depends on your organization's current needs and how you choose to weight long term growth versus current payouts. Often a 4% or 5% payout policy is appropriate. Again, we are here to provide more tailored analysis and our model is at your disposal.
4. **Payout Calculation Method:** For most foundations, we recommend the use of a 20 quarter rolling average. Compared to a rolling 4 quarter method this tends to even out payments, which often allows organizations to better meet their critical payout functions and helps to minimize the disturbance which can be caused by extreme fluctuations. Additionally, since markets tend to trend up over time, using 20 quarter rolling periods tends to allow the portfolio to grow more over time as payments are not increased quite as quickly as the market rises. This provides the additional benefit of leaving more for future generations which indirectly benefits today's interested parties as they see the portfolio grow.

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Mason Investment Advisory Services, Inc. | 11130 Sunrise Valley Drive, Suite 200, Reston, VA 20191-4329 | **www.masoncompanies.com**

Biography: Thomas R. Pudner, CPA, CFA, CFP®, MST and Director of Research

Mr. Pudner joined The Mason Companies in February, 2006. Prior to joining the Mason Companies, Mr. Pudner served as a Senior Financial Advisor with Freed Myers and as a Private Wealth Advisor with Merrill Lynch's Private Banking and Investment Group. Mr. Pudner has also served as a Personal Financial Planning Manager and Registered Investment Advisor with KPMG, LLP. Mr. Pudner received his Certified Financial Planner designation in 2001. He received his CFA Charter in 2006, received his Masters in Taxation from Virginia Commonwealth University in 1994 and his Bachelor of Business Administration from The College of William and Mary in 1991. He has been quoted in several publications including *The Wall Street Journal* and *Money Magazine* and has appeared on National Public Radio's *Morning Edition*.

Mason Investment Advisory Services

Mason Investment Advisory Services is a Registered Investment Advisor. Founded in 1982, Mason is privately held. Based in Reston, VA, Mason's business is focused on helping institutions (for profit and nonprofit entities) and individuals manage their investments. Mason also provides fee only financial planning services to individuals. Mason does not have any proprietary products and thus recommends the use of third party investment managers. Mason's Investment Stewardship service leads their nonprofit clients from investment policy creation through to monitoring and management of their portfolios.

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Important Disclosures:

Mason Investment Advisory Services, Inc. Sustainable Withdrawal Model:
The attached analysis provides results computed from a proprietary model designed by employees of Mason Investment Advisory Services, Inc. The model assumes historical investments in one or more of the eleven hypothetical portfolios discussed below. The returns of these portfolios are computed based on actual historic index returns as outlined below. These returns come from data sources we believe to be reliable but we have not verified the accuracy of these historic returns.

The model computes outcomes based on an analysis of five, ten, twenty five, and fifty year rolling periods from January 1926 to July 31, 2009. A total of 2,936 separate and comprehensive calculations are made in order to calculate the summary conclusions. For example, there are 944 separate 5 year rolling periods from January 1926 to July 2009. The model is designed to assist investors with determining how a portfolio would have performed in various environments to assist with making informed decisions regarding investment allocation and withdrawal rates.

For each of the 2,936 rolling periods, the analysis assumes an initial investment of $1 million unless otherwise indicated. It is assumed that this amount is invested in the indicated portfolio and that it earns returns of the indicated set of indexes assuming monthly rebalancing. It is assumed that withdrawals are taken as a stated percent of the portfolio under one of two calculation methods which incorporate a calculation based on rolling quarterly ending values and/or by inflation adjusting an initial distribution rate as indicated. It is assumed spending is computed on an annual basis based on one of the following two methods and that distributions are taken out based on this computed rate on a monthly basis:

Rolling Quarters:
In all cases during the initial year distributions are taken as a percent of the beginning value. During subsequent years distributions are calculated based on quarterly ending values as of the end of the third quarter of the preceding year (through September 30 of the preceding year in the case of calendar years). For example, the 1927 distributions are based on the average quarter ending balances from March, June and September of 1926. These would be the same regardless of the 1, 3, or 5 year period selected. In 1928, distributions are based on the average ending values for the seven quarters ending 9-30-1927. This calculation would be the same whether the 3 or 5 year rolling average payout was selected. However, if the one year rolling average had been selected this calculation would have been based on the 4 quarters ending 9-30-1927. In 1930, the distribution is based on the 15 quarters ending 9-30-1929. Again had the three year rolling periods option been selected this calculation would have been based on the 12 rolling quarters ending 9-30-1929. Once 20 quarters of data are available all future year distributions are calculated at the beginning of each year based on the previous 4,12 or 20 quarter ending balances depending on the method selected.

Banded Approach:
Here the program runs three distinct calculations during for each yearly spending calculation. First it adjusts the initial distribution amount each year based on cumulative inflation through the third quarter of the previous year (September 30 in the case of a calendar year). For example, the 1927 distribution is based on the initial distribution reduced by 2.2% due to deflation over the January 1, 1926 to September 30, 1926 period. The 1928 distribution is calculated based on deflation of 3.4% from January 1, 1926 to September 30, 1927. The 1975 distribution of $11,778 is based on the initial distribution adjusted by cumulative inflation of 182.7% from January 1, 1926 to September 30, 1974. This column essentially computes a constant payout in real dollar terms. The other two calculations establish maximum and minimum distribution amounts based on the portfolio's value.

Maximum and minimum monthly distributions are calculated based on previous rolling quarter ending balances through September 30 of the previous year. Where this method is used these maximum and minimum constraints are identified as the "Lower Band" and "Upper Band". The methodology is similar to that discussed above except the distribution amount depends on the min and max constraints and the computations are based on quarter ending balances which incorporate actual distributions taken each month (which may be the inflation adjusted amounts discussed in the previous paragraph).

The program computes the amount to be distributed if the banded approach is being utilized based on the following rules. It will be the inflation adjusted amount discussed in the first paragraph if that amount is higher than the minimum established and lower than the maximum established in the second paragraph. If it is less than the minimum, the minimum will be used as the distribution for that year. If it is greater than the maximum, the maximum will be used for that year.

The banded approach essentially blends two methods of calculating distributions (inflation adjusted and rolling quarters). It seeks to maintain a constant distribution in terms of real dollars but has built in brakes during bad times for the portfolio and allows for additional spending, to a point during good times. This method would be appropriate where a goal is to maintain an initial budget (in real dollars) where possible but to adjust this amount so that future generations are not harmed because of lean times (potentially depleting the portfolio) or given excess benefit (at the expense of current beneficiaries during good times.

There are two additional variables which may be incorporated into the analysis.

1. Deferral Period: Unless otherwise indicated it is assumed that distributions are withdrawn during each month beginning with the first month. If a number appears in this field then it is assumed that fees are taken out in each month but that no "spending" distributions are taken out until the stated month. For example, if 60 is entered in this field then it is assumed that spending does not commence until the 61st month (and that there is no spending for the first five years).

2. Acceptable Termination Value (as percent of beginning value). Unless otherwise indicated it is assumed the ending target value is equal to the beginning portfolio value. If a percent is entered here, that target is adjusted based on the percent entered. For example if 70% was entered here it would be assumed that an ending value of $700K would be deemed a success for purposes of reaching the ending portfolio target goal. Where the ending portfolio target goal is an inflation adjusted target then success in this case would be defined as a portfolio with an ending target value of $700K adjusted for inflation (or deflation).

The model was designed to produce a variety of output based on various "what if" scenarios. In all cases, historical returns are assumed as indicated above.

Below we describe the output provided. Unless otherwise indicated, an annual fee of 2.0% (0.16667% per month) is assumed. This is meant to incorporate total consulting and investment manager fees of 1% per year plus administrative fees of the foundation or other entity totaling 1% per year. Your handout may not include all output indicated below. Please ask your Mason advisor if you would like to see additional scenarios not provided with this handout. It is assumed that these withdrawals are taken out monthly.

At the end of each rolling period three primary observations are made:

1. Whether the portfolio was able to fully fund the inflation adjusted monthly distribution, without fully depleting the portfolio. This is considered a success in that the investor would have been able to fund all distributions over the stated time horizon.

2. Ending Value in nominal dollar terms. Here it is generally considered a success if the portfolio funds all distributions on an inflation adjusted basis and the portfolio ends up with at least $1 million (or the stated beginning portfolio value).

3. Growth or decline of portfolio in real terms. To determine this amount we adjust the ending portfolio value for inflation (or deflation). Here it is generally considered a success if the portfolio funds all distributions on an inflation adjusted basis and the portfolio ends up with at least $1 million in today's dollars (or the stated beginning portfolio value in today's dollars).

Your output may provide the percent of times that these goals would have been met. For example there are 884 rolling ten year calculations. A success rate of 90% would indicate that the stated goal would have been reach about 795 of these historic periods.

The average ending balance is calculated by taking the ending portfolio value at the end of each rolling period and dividing it by the total number of rolling periods. For example, there are 884 rolling ten year calculations. To calculate the average ending balance for the ten year time horizon, we add the ending balance from each of the 884 scenarios and divide this total by 884. This may be shown as a nominal or inflation adjusted dollar amount as indicated.

Percentiles:
A percentile is the value of a variable below which a certain percent of observations fall. So the 20th percentile is the value below which 20% of the observations may be found. Put differently, the 20th percentile indicates the value at which the portfolio would have ended with that value or higher 80% of the time. For example, there are 884 rolling ten year periods. In order to calculate the percentiles for the ten year scenario we rank the returns at the end of each separate 10 year period (884 in all). The first portfolio indicates approximately the 9th worst outcome (In 875 of 884 periods you would have ended with a greater value). The 10th percentile indicates the value which would have been exceeded in 795 of 884 rolling ten year periods. Percentile analysis is very important in understanding the range of historical outcomes to allow for a more informed decision regarding the appropriate portfolio allocation and distribution policy.

Historical Back test of current Five Risk Profile Portfolios:

In order to provide a long term perspective of how these allocations might have performed over various historical environments we've created model portfolios of the indices discussed below going back to January 1926. One or more of these five model portfolios are included in some of the charts contained in this document. Where index data is not available for earlier periods we allocated those categories to similar categories for which index data is available. The following pages show the assumptions we've made for each of the five portfolios. For example, since a hedged foreign bond index was not available prior to 1985, we assumed the entire foreign bond allocation was invested in unhedged foreign bonds from 1978 to 1984.

Additionally, in some places we may show returns of a hypothetical investment in the following simple Equity/Bond blends or an "All Bond" portfolio:

37/63, 48.5/51.5, 65/35, 77/23, 87/13

In each case these blends represent a hypothetical investment in a blend of the S&P Composite Index and the Ibbotson Associates US IT Government Bond Index. Monthly rebalancing is assumed in all hypothetical portfolio backtests.

S&P Composite Index: The S&P Composite Index is a readily available, carefully constructed, market-value-weighted index of large company stock performance.

Ibbotson Associates Intermediate Government Bond Index: This is an index designed to be representative of returns on intermediate (5 year) US Government bonds from 1926 to present.

Inflation: The rate of change in consumer prices. The Consumer Price Index for All Urban Consumers (CPI-U), not seasonally adjusted, is used to measure inflation. Prior to January 1978, the CPI (as compared to the CPI-U) was used.

Risk Level 1								
Series Name	***March 1997 to Present***	***Jan 1985 to Feb 1997***	***Feb 1978 to Dec 1984***	***Jan 1975 to Jan 1978***	***Jan 1972 to Dec 1974***	***Jan 1970 to Dec 1971***	***July 1927 to Dec 1969***	***January 1926 to June 1927***
U.S. 30 Day TBill TR	13	13	13	13	13	13	13	0
Short Term Bond Proxy	22	24	24	26	26	26	26	0
Intermediate Term Bond Proxy	9	10	10	12	12	12	12	0
Long Term Bond Proxy	9	10	10	12	12	12	12	0
Inflation Protected Bonds	5	0	0	0	0	0	0	0
Citigroup US $ Hdgd Non US	2.5	3	0	0	0	0	0	0
Citi WGBI NonUSD USD TR	2.5	3	6	0	0	0	0	0
Ibbotson Associates US IT Gov't TR	0	0	0	0	0	0	0	63
US Large Value Proxy	9	9	9	9	14.3	14.8	18	0
US Large Growth Proxy	5	5	5	5	7.7	8.2	10	0
Foreign Large Value Proxy	5	5	5	5	0	0	0	0
Foreign Large Growth Proxy	3	3	3	3	0	0	0	0
Real Estate Proxy	2	2	2	2	2	0	0	0
US Small Value Proxy	5	5	5	5	5	5.5	5.5	0
US Small Growth Proxy	3	3	3	3	3	3.5	3.5	0
Foreign Small Cap Proxy	0	0	0	0	0	0	0	0
Energy & Natural Resources Proxy	2.5	2.5	2.5	2.5	2.5	2.5	0	0
Commodity Plus Proxy	2.5	2.5	2.5	2.5	2.5	2.5	0	0
S&P Composite Index	0	0	0	0	0	0	0	37
	100	100	100	100	100	100	100	100

Risk Level 2

Series Name	***March 1997 to Present***	***Jan 1985 to Feb 1997***	***Feb 1978 to Dec 1984***	***Jan 1975 to Jan 1978***	***Jan 1972 to Dec 1974***	***Jan 1970 to Dec 1971***	***July 1927 to Dec 1969***	***January 1926 to June 1927***
U.S. 30 Day TBill TR	2	2	2	2	2	2	2	0
Short Term Bond Proxy	14	14	14	15.8	15.8	15.8	15.8	0
Intermediate Term Bond Proxy	10	13.5	13.5	15.3	15.3	15.3	15.3	0
Long Term Bond Proxy	10	13.5	13.5	15.4	15.4	15.4	15.4	0
Inflation Protected Bonds	7	0	0	0	0	0	0	0
Citigroup US $ Hdgd Non US	2.75	2.75	0	0	0	0	0	0
Citi WGBI NonUSD USD TR	2.75	2.75	5.5	0	0	0	0	0
Ibbotson Associates US IT Gov't TR	0	0	0	0	0	0	0	48.5
US Large Value Proxy	14	14	14	14	19	21.9	24.3	0
US Large Growth Proxy	7	7	7	7	12	14.6	16.2	0
Foreign Large Value Proxy	6	6	6	6	0	0	0	0
Foreign Large Growth Proxy	4	4	4	4	0	0	0	0
Real Estate Proxy	6.5	6.5	6.5	6.5	6.5	0	0	0
US Small Value Proxy	5	5	5	5	5	5.5	6.5	0
US Small Growth Proxy	3	3	3	3	3	3.5	4.5	0
Foreign Small Cap Proxy	0	0	0	0	0	0	0	0
Energy & Natural Resources Proxy	3	3	3	3	3	3	0	0
Commodity Plus Proxy	3	3	3	3	3	3	0	0
S&P Composite Index	0	0	0	0	0	0	0	51.5
	100	100	100	100	100	100	100	100

Risk Level 3

Series Name	***March 1997 to Present***	***Jan 1985 to Feb 1997***	***Feb 1978 to Dec 1984***	***Jan 1975 to Jan 1978***	***Jan 1972 to Dec 1974***	***Jan 1970 to Dec 1971***	***July 1927 to Dec 1969***	***January 1926 to June 1927***
U.S. 30 Day TBill TR	2	2	2	2	2	2	2	0
Short Term Bond Proxy	7.25	8.7	8.7	10.3	10.3	10.3	10.3	0
Intermediate Term Bond Proxy	7.5	9.6	9.6	11.3	11.3	11.3	11.3	0
Long Term Bond Proxy	7.5	9.7	9.7	11.4	11.4	11.4	11.4	0
Inflation Protected Bonds	5.75	0	0	0	0	0	0	0
Citigroup US $ Hdgd Non US	2.5	2.5	0	0	0	0	0	0
Citi WGBI NonUSD USD TR	2.5	2.5	5	0	0	0	0	0
Ibbotson Associates US IT Gov't TR	0	0	0	0	0	0		35
US Large Value Proxy	13.5	13.5	13.5	13.5	22.6	27.2	32	0
US Large Growth Proxy	8	8	8	8	13.4	16.5	19	0
Foreign Large Value Proxy	8	8	8	8	0	0	0	0
Foreign Large Growth Proxy	5.5	5.5	5.5	5.5	0	0	0	0
Real Estate Proxy	11	11	11	11	11	0	0	0
US Small Value Proxy	5	5	5	5	6	8	8.75	0
US Small Growth Proxy	3	3	3	3	3.5	4.8	5.25	0
Foreign Small Cap Proxy	2.5	2.5	2.5	2.5	0	0	0	0
Energy & Natural Resources Proxy	4.25	4.25	4.25	4.25	4.25	4.25	0	0
Commodity Plus Proxy	4.25	4.25	4.25	4.25	4.25	4.25	0	0
S&P Composite Index	0	0	0	0	0	0	0	65
	100	100	100	100	100	100	100	100

Risk Level 4

Series Name	***March 1997 to Present***	***Jan 1985 to Feb 1997***	***Feb 1978 to Dec 1984***	***Jan 1975 to Jan 1978***	***Jan 1972 to Dec 1974***	***Jan 1970 to Dec 1971***	***July 1927 to Dec 1969***	***January 1926 to June 1927***
U.S. 30 Day TBill TR	1	1	1	1	1	1	1	0
Short Term Bond Proxy	4	5.25	5.25	7.05	7.05	7.05	7.05	0
Intermediate Term Bond Proxy	4.25	5.5	5.5	7.3	7.3	7.3	7.3	0
Long Term Bond Proxy	4.25	5.75	5.75	7.65	7.65	7.65	7.65	0
Inflation Protected Bonds	4	0	0	0	0	0	0	0
Citigroup US $ Hdgd Non US	2.75	2.75	0	0	0	0	0	0
Citi WGBI NonUSD USD TR	2.75	2.75	5.5	0	0	0	0	0
Ibbotson Associates US IT Gov't TR	0	0	0	0	0	0	0	23
US Large Value Proxy	17	17	17	17	25.8	28.8	32.4	0
US Large Growth Proxy	11	11	11	11	17.2	19.2	21.6	0
Foreign Large Value Proxy	9	9	9	9	0	0	0	0
Foreign Large Growth Proxy	6	6	6	6	0	0	0	0
Real Estate Proxy	7	7	7	7	7	0	0	0
US Small Value Proxy	11	11	11	11	13	14.5	16	0
US Small Growth Proxy	5	5	5	5	6	6.5	7	0
Foreign Small Cap Proxy	3	3	3	3	0	0	0	0
Energy & Natural Resources Proxy	4	4	4	4	4	4	0	0
Commodity Plus Proxy	4	4	4	4	4	4	0	0
S&P Composite Index	0	0	0	0	0	0	0	77
	100	100	100	100	100	100	100	100

Risk Level 5

Series Name	***March 1997 to Present***	***Jan 1985 to Present***	***Feb 1978 to Dec 1984***	***Jan 1975 to Jan 1978***	***Jan 1972 to Dec 1974***	***Jan 1970 to Dec 1971***	***July 1927 to Dec 1969***	***January 1926 to June 1927***
U.S. 30 Day TBill TR	1	1	1	1	1	1	1	0
Short Term Bond Proxy	0	0	0	0	0	0	0	0
Intermediate Term Bond Proxy	0	0	0	0	0	0	0	0
Long Term Bond Proxy	3	6	6	12	12	12	12	0
Inflation Protected Bonds	3			0	0	0	0	0
Citigroup US $ Hdgd Non US	3	3	0	0	0	0	0	0
Citi WGBI NonUSD USD TR	3	3	6	0	0	0	0	0
Ibbotson Associates US IT Gov't TR	0	0	0	0	0	0	0	13
US Large Value Proxy	17.5	17.5	17.5	17.5	29.7	31.2	33.7	0
US Large Growth Proxy	12	12	12	12	19.8	21.3	23.8	0
Foreign Large Value Proxy	12	12	12	12	0	0	0	0
Foreign Large Growth Proxy	8	8	8	8	0	0	0	0
Real Estate Proxy	5	5	5	5	5	0	0	0
US Small Value Proxy	11.5	11.5	11.5	11.5	14.7	15.7	17.2	0
US Small Growth Proxy	8	8	8	8	9.8	10.8	12.3	0
Foreign Small Cap Proxy	5	5	5	5	0	0	0	0
Energy & Natural Resources Proxy	4	4	4	4	4	4	0	0
Commodity Plus Proxy	4	4	4	4	4	4	0	0
S&P Composite Index	0	0	0	0	0	0	0	87
	100	100	100	100	100	100	100	100

Asset Class	Category	Index Data Series Index	From	To	
	Cash	U.S. 30 day Tbill TR	Jan-26	Present	
	Short Term Bond	BC 1-5 Gov't/Credit	Jan-76	Present	**1-5 years**
		IA Govt Bonds 1-4.99 Year Maturities	Jan-26	Jan-75	
	Interm Term Bond	BC 5-10 Yr Gov't/Credit	Jan-76	Present	***5-10 years***
		IA IT Govt/Corp	Jan-26	Dec-75	
	Long Term Bond	BC LT Gov't/Credit	Jan-73	Present	***10+ Years (Maturity Range)***
		IA LT Gvt/LT Corporate	Jan-26	Dec-72	
	Inflation Protected Bonds	Merrill Lynch U.S. Inflation-linked Sec TR	Mar-97	Present	
	International Bond Hedged	Citigroup US $ Hedged Non-US$ Gvt TR	Jan-85	Present	
	International Bond Non Hedged	Citi WGBI NonUSD USD	Feb-78	Present	
	Equity- U.S. Large Value	MSCI U.S. Prime Market Value (Value half of apprx top 88% US Market)	Jun-92	Present	
		Fama-French Large Value	Jul-27	May-92	
	Equity- U.S. Large Growth	MSCI U.S. Prime Market Growth (Growth half of apprx top 88% US Market)	Jun-92	Present	
		Fama-French Large Growth	Jul-27	May-92	
	Equity - Non U.S. Large Growth	Citigroup PMI Value World Ex US	Jul-89	Present	
		MSCI World ex US Value	Jan-75	Jun-89	
	Equity- Non-U.S. Large Value	Citigroup PMI Growth World Ex US	Jul-89	Present	
		MSCI World ex US Growth	Jan-75	Jun-89	
	Equity- REITS	50% Citigroup BMI World Property/50% NAREIT (Equity)	Jan-03	Present	
		NAREIT (Equity)	Jan-72	Dec-02	
	Equity- U.S. Small Value	MSCI U.S. Small Cap Value (Value half of apprx Next 10% US Market)	Jun-92	Present	
		Fama-French Small Value	Jul-27	May-92	
	Equity- U.S. Small Growth	MSCI U.S. Small Cap Growth (Growth half of apprx next 10% US Market)	Jun-92	Present	
		Fama-French Small Growth	Jul-27	May-92	
	Equity- Non-U.S. Small Cap	Citigroup EMI World Ex-U.S	Jul-89	Present	
		IIA International Small Cap	Jan-75	Jun-89	
	Energy/Natural Resources	20.25% S&P 400 Energy, 20.25% S&P 600 Energy, 40.5% S&P Global 1200 Energy Sector, 3% S&P 400 Materials Sector, 3% S&P 600 Materials Sector, and 13% S&P Global 1200 Materials Sector.	Jan-98	Present	
	Energy/Natural Resources	Lipper Energy & Natural Resources - (Historical Monthly Constituants)	Oct-90	Dec-97	
	Energy/Natural Resources	Morningstar Specialty - Natural Resources Open End Fund Category Average:	Feb-69	Sep-90	
	Commodities	DJ-UBS Commodity TR/ML US Treasury Inflation-linked	Mar-97	Present	
		DJ-UBS Commodity TR/ML Treasury TR	Jan-91	Feb-97	
		GS Commodity TR/ML Treasury TR	Jan-78	Dec-90	
		GS Commodity TR	Jan-70	Dec-77	

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Index Data Series Descriptions

U.S. 30 day Tbill TR (Ibbotson Associates)
For this index, each month a one-bill portfolio containing the shortest-term bill having not less than one month to maturity is constructed. To measure holding period returns for this portfolio, the bill is priced as of the last trading day of the previous month-end and as of the last trading day of the current month.

Barclays Capital Government/Credit
This index is composed of the BC Government Bond Index and the BC Credit Index. This index is split into three composites: Aggregate, Intermediate and Long-Term. For our analysis we use the 1-5, 5-10, and long term (over 10 years) components.

Ibbotson Associates Government Bonds 1-4.99 Years
This index consists of negotiable direct obligations of the United States Treasury with maturities ranging from 1 to 4.99 years.

Ibbotson Associates Government/Corporate (Intermediate and Long Term)
An index made up of the Barclays Aggregate Government and Corporate Bond indexes, including U.S. government Treasury and agency securities, as well as corporate and Yankee bonds.

Merrill Lynch U.S. Inflation-linked Sec TR
A rules-based index consisting of securities that meet the following criteria: Equal to or greater than one year remaining term to final maturity; at least $1 billion face value outstanding; inflation-linked bonds issued by the U.S. Treasury.

Citigroup US $ Hedged Non-US$ Gvt TR
A hedged, market-capitalization weighted benchmark that tracks the performance of fixed-rate sovereign debt issued in the domestic market in the local currency with at least one year maturity.

Citigroup World Government Bond Index
A market-capitalization weighted benchmark that tracks the performance of fixed-rate sovereign debt issued in the domestic market in the local currency with at least one year maturity.

MSCI® U.S. Investable Universe
This universe includes the largest 2,500 US companies, which covers more than 98% of the market cap of all publicly traded US companies.

Fama-French Domestic Indices (1927 through May 1992):
These indices, which include both small and large-capitalization stocks going back to July 1927, are useful for analysis of growth and value investing.

Foreign Equities
The Citigroup Global Equity Indices (SSBGEI) measure the performance of the entire universe of investable securities. It is a comprehensive, top-down, float capitalization-weighted index that includes shares of nearly 8,700 companies in 49 countries.

In our study we use the Citigroup PMI Value World Ex US, Citigroup PMI Growth World Ex US, and Citigroup EMI World Ex US as proxies for our three foreign categories for periods July 1989 to present.

MSCI® All Country World Free ex U.S.
This index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed and emerging markets outside the United States. As of June 2009 this index consisted of 44 country indices comprising 22 developed and 22 emerging markets indices.

MSCI® International Small Cap 1999-Present
MSCI® defines the Small Cap universe of each country as all listed securities that have a company market capitalization in the range of US$200 – 1,500 million. It is intended to capture 40% of the Small Cap Universe in each country.

IIA Methodology:
IIA starts with the MSCI® indices and breaks down each country or region into eight market cap weighted indices: Growth, Value, Large, Small, Small Growth, Small Value, Large Growth and Large Value. There are three fundamental differences between the IIA

indices and the MSCI® indices: reinvestment of dividends, inclusion criteria, and rebalancing frequency. The reinvestment of dividends differs between the two vendors in that MSCI® reinvests dividends at the overall index level, while IIA reinvests dividends in each country. Secondly, MSCI® aims for roughly 60% of the market capitalization coverage of a particular country, while IIA aims for a higher market capitalization coverage, approximately 80%, by including every security that MSCI® covers. Lastly, MSCI® rebalances quarterly while IIA rebalances twice a year in January and July.

Large vs Small: In each market, stocks are ranked by their market capitalization. The large index encompasses the top 70% of the market capitalization, while the small index encompasses the bottom 30% of the market capitalization.

Real Estate
Through December 2002, the FTSE NAREIT® is used as the proxy for real estate. After that date the proxy includes equal weights to the FTSE NAREIT® and the S&P/Citigroup World (ex-U.S.) Property Broad Market Index.

FTSE NAREIT® Equity REIT Index (U.S.)
An unmanaged, market-capitalization–weighted index of all tax-qualified equity REITs listed on the NYSE, AMEX, and the Nasdaq that have 75% or more of their gross invested book assets invested directly or indirectly in the equity ownership of real estate.

S&P/Citigroup World Property Broad Market Index:
An unmanaged market-weighted total return index that is designed to provide an accurate measure of the broad global property market. It covers companies domiciled in 52 developed and emerging market countries and includes companies with floats larger than $100 million and that derive more than half of their revenue from property-related activities.

Energy & Natural Resources Proxy (1998 to present)
From 1998 to present, the S&P 1500 (multi-cap domestic) and S&P 1200 (Global Large Cap) provide reasonable proxies for the types of securities in which our energy and natural resource funds invest.

The S&P Global 1200 Index
This index is comprised of six distinct, regional, component indices: US-S&P 500, Canada-S&P/TSE 60, S&P Latin America 40, Japan-S&P TOPIX 150, S&P Asia Pacific 100, and the S&P Europe 350. It provides economic representation of the broad market over the 10 GICS (Global Industry Classification Standard) economic sectors.

The S&P Global 1200 Energy Sector and the S&P Global 1200 Materials Sector are included in the weights indicated previously in the Energy & Natural Resources Proxy used in this study for the period January 1998 to present.
Lipper Energy & Natural Resources® (Historical Monthly Constituents): This data series includes historical returns for all funds which Lipper categorizes into the Energy & Natural Resources Category.

Morningstar® Open End Natural Resources Category Average:
This mutual fund universe consists of natural resources portfolios focused on commodity-based industries such as energy, chemicals, minerals, and forest products in the U.S. or outside of the U.S. Some portfolios invest across this spectrum to offer broad natural resources exposure. Others concentrate heavily or even exclusively in specific industries.

PIMCO Commodity Strategy Proxy:
An available fund which seeks to track the Dow AIG Commodity Index while managing a portfolio of bonds, structured notes and other derivatives which are managed with the goal of outperforming a portfolio of Treasury Inflation Protected Securities (TIPS).

Goldman Sachs Commodity Index®:
This composite index of commodity sector returns represents an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities.

Note that it is not possible to invest directly in any of these indices and these returns are not adjusted for fees or transaction costs. Past performance is not indicative of future results.