



THE
MASON
COMPANIES

Revisiting Your Investment and Distribution Goals

By Thomas R. Pudner, CPA, CFA, CFP®, MST -- Director of Research

We have recently developed a proprietary model designed to help you better understand the ramifications of your investment and spending decisions. In this paper we review output helpful in answering three of the most important decisions regarding your portfolio:

- 1. Asset Allocation Strategy**
- 2. Risk Profile**
- 3. Withdrawal Policy**

This paper is an overview of the model we have developed which we may use to help you formulate each of these decisions or to determine whether it is time to reevaluate previous decisions. These decisions may have a profound influence on your ability to sustain your desired lifestyle and meet desired legacy goals.

Sustainable Withdrawal Rate:

We believe that the need to evaluate your portfolio allocation and withdrawal rate has never been greater. Our new model is designed to help you to better navigate these decisions.

Sustainable Withdrawal 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.” Important conclusions can 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 may have made unrealistically dire projections after the recent severe bear market.

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 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 rolling one, five, ten, twenty five, thirty five or fifty year periods from January 1926 through December 2011. For example, there are 433 rolling fifty year periods. The last period, ending December 31, 2011 begins January 1, 1962. We then roll the period back one month, to end November 30, 2011 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 4,800 cells of a Microsoft Excel spreadsheet. We then run the same calculation over the next fifty year period and continue these separate calculations until we have covered all 433 rolling fifty year periods. We do the



same for all 613 rolling 35 year periods, 733 rolling 25 year periods, 913 rolling 10 year periods, 973 rolling 5 year periods, and 1,021 rolling 12 month periods.

This means for each set of assumptions we run a total of over 4,600 completely independent calculations taking up over seven million cells of a Microsoft Excel spreadsheet. It may appear to be an extensive amount of work but what it does is allow us to gain wisdom from the past experiences of multiple generations of investors. 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.

We built our model using the returns of indices that represent our asset allocation strategies. 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 test a 100% bond portfolio and an all cash portfolio.

Asset Allocation Strategy:

We subscribe to the notion that the asset allocation decision is the most important investment decision you will ever make. The portfolio should be one designed to optimize the likelihood that the portfolio will provide for desired lifetime spending and any legacy goals. As we discuss later, a **withdrawal policy** must inherently balance the conflicting requirements of providing for current lifestyle with maintaining a desired residual value and for cushion or legacy purposes. On the other hand, a **properly designed asset allocation strategy** can enhance both current spending *and* growth of principal.

Example 1:

We tested three possible portfolios using our Sustainable Withdrawal Model. The first scenario assumed a 100% investment in intermediate government bonds. The second scenario assumed a portfolio made up of a 65% investment in the S&P Composite Index and a 35% investment in intermediate government bonds. The third was our “Risk Level 3” portfolio, one of our five asset allocation strategy models. In each scenario, we made the same basic assumptions:

1. Beginning Value \$1 Million.
2. Annual (initial) Withdrawal Rate 4%, which equates to initial payout of \$40,000 per year.¹
3. After the first month, this spending is adjusted monthly for inflation (or deflation).

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 2 Portfolio is a diversified 51.5/48.5 portfolio and the Risk Level 4 Portfolio is a diversified 77/23 portfolio.

¹ In each scenario here and throughout the remainder of this paper we assume additional spending of 1.2% which includes 0.55% for investment advisory fees and 0.65% for underlying manager fees and transaction costs.



Chart 1 and Table 1 show the average ending value over time for all 25 and 35 year rolling periods from 1926 through December 31, 2011. Notice the all bond portfolio does a very poor job of maintaining principal over time. On average, after 25 years, it ends with \$452,702 while the portfolio would have been fully depleted over most rolling thirty five year periods. The problem is that the value of bonds tends to be eaten up by inflation over time. Clearly the all bond portfolio does not meet our needs.

The 65/35 Simple portfolio fares reasonably well in terms of growing principal. Over the average 25 year period, it ended with \$2,737,558. Over the average 35 year period, it grew to \$2,701,851.

The fully diversified model performed much better growing to \$4,427,565 over the average 25 year period and to \$7,616,450 over the average 35 year period.

These charts provide the average outcome. But how often would each portfolio have met your lifetime spending needs? Chart 2 and Table 2 provide the answer.

Not only was the all bond portfolio able to sustain distribution needs in only 4% of 35 year periods, it sustained the target withdrawals over only 39% of the 25 year periods.

The simple portfolio fared much better funding target spending needs over 94% of rolling 25 year periods and 78% of rolling 35 year periods.

Chart 1

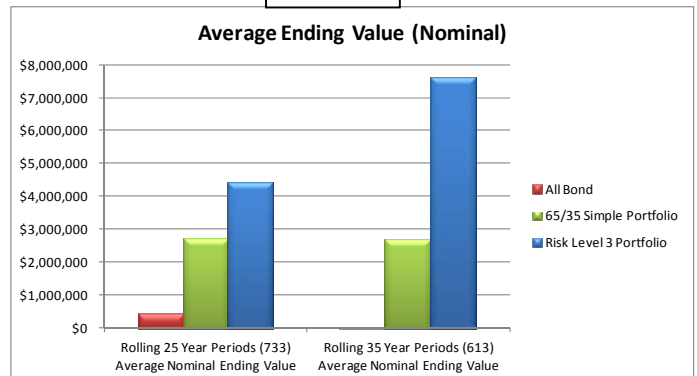


Table 1

| Initial Portfolio Value \$1 Million | Rolling 25 Year Periods (733) Average Nominal Ending Value | Rolling 35 Year Periods (613) Average Nominal Ending Value |
|-------------------------------------|--|--|
| All Bond | \$452,702 | \$5,810 |
| 65/35 Simple Portfolio | \$2,737,558 | \$2,701,851 |
| Risk Level 3 Portfolio | \$4,427,565 | \$7,616,450 |

Chart 2

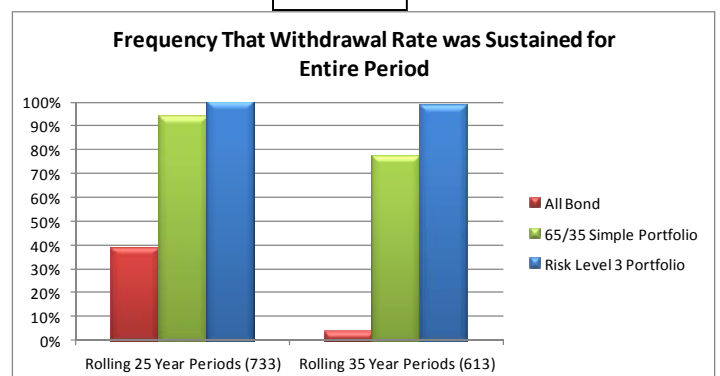


Table 2

| Frequency That Withdrawal Rate was Sustained for Entire Period | Rolling 25 Year Periods (733) | Rolling 35 Year Periods (613) |
|--|-------------------------------|-------------------------------|
| All Bond | 39% | 4% |
| 65/35 Simple Portfolio | 94% | 78% |
| Risk Level 3 Portfolio | 100% | 99% |



The fully diversified portfolio, in addition to allowing for strong growth of the portfolio, was able to sustain the target withdrawal rate over all 25 year periods and over 99% of the rolling 35 year periods.

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, investing in a portfolio which is too conservative will most likely neither allow you to fund your lifestyle nor leave a residual portfolio sufficient to meet your legacy goals. Selecting a thoroughly diversified allocation, instead of a simple blend, allows us to potentially attain a safer source of funds during our lifetime and higher residual for any legacy goals. The more nuanced decision is how best to match our allocation with our time horizon and risk tolerance. This is the topic to which we now turn.

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 how does one determine whether the Risk Level 3 Portfolio with its 35% 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 is determined based on lifestyle needs, time horizon, liquidity needs and your willingness and ability to sustain losses. Investment portfolios with very low volatility usually provide low expected returns. A portfolio that is too conservative increases the risk you will fail to sustain long term withdrawal requirements while a portfolio that is too aggressive can increase the risk of shorter term fluctuations that you may deem unacceptable.

Even if you have a long term horizon, you still need to consider the possibility of substantial losses over the short term. This is particularly important if you 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 going forward. However, we all 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. However, reviewing the range of how portfolios would have performed over the full range of long and short time horizons from 1926 to the present allows us to make more informed decisions. Just as people listen closely when a seasoned veteran chimes in with wisdom that 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:

For the moment, assume our goal is to maintain 4% inflation adjusted annual withdrawals. Table 3 shows how often the portfolio would have sustained this spending goal while maintaining an ending value of at least \$1 million. For example, 97% of all rolling 35 year periods from 1926 to 2011 the Risk Level 3 portfolio would have allowed the investor to withdraw \$40,000 per year, adjusted monthly for inflation and still maintain an ending value of \$1 million or more.



Table 3

| Frequency that 4% Initial Withdrawal Rate was Sustained with Nominal Ending Value of \$1 Million or More | Risk Level 2 Portfolio | Risk Level 3 Portfolio | Risk Level 4 Portfolio |
|--|------------------------|------------------------|------------------------|
| 5 Year (973 Rolling Periods) | 82% | 81% | 81% |
| 10 Years (913 Rolling Periods) | 91% | 91% | 90% |
| 25 Years (733 Rolling Periods) | 98% | 98% | 98% |
| 35 Years (613 Rolling Periods) | 90% | 97% | 97% |

Table 4 shows the average ending value over the same time periods after withdrawing \$40,000 per year adjusted monthly for inflation. As these tables show, taking a long term perspective we would tend to favor the more aggressive Risk Level 3 or Risk Level 4 portfolios as historically they would have outperformed both in terms of success rate and average terminal value. The advantages are most pronounced over the 35 year horizons where the Risk Level 2 portfolio would have succeeded 90% of the time compared to 97% for the Risk Level 3 and Risk Level 4 portfolios. Similarly, the average ending value after 35 years would have been \$4,015,236 for the Risk Level 2 portfolio compared to \$7,616,450 for the Risk Level 3 and \$13,077,517 for the Risk Level 4 portfolio.

Table 4

| Average Nominal Ending Balance After 4% Initial Withdrawals | Risk Level 2 Portfolio | Risk Level 3 Portfolio | Risk Level 4 Portfolio |
|---|------------------------|------------------------|------------------------|
| 5 Year (973 Rolling Periods) | \$1,225,521 | \$1,287,526 | \$1,355,812 |
| 10 Years (913 Rolling Periods) | \$1,545,473 | \$1,713,956 | \$1,911,838 |
| 25 Years (733 Rolling Periods) | \$3,136,247 | \$4,427,565 | \$6,251,672 |
| 35 Years (613 Rolling Periods) | \$4,015,236 | \$7,616,450 | \$13,077,517 |

Table 5 provides the percentile information over all rolling 12 month periods. While most individual investors should maintain a longer term focus when making portfolio decisions, the investor needs a comprehensive understanding of what might be expected along the way. Here the green highlights indicate cases where the portfolio would have ended with at least \$1 million and funded withdrawals of \$40,000 per year, adjusted monthly for inflation. Yellow indicates a reduction of up to 20% of principal and red indicates a reduction of more than 20% of principal. The 1st percentile indicates the value that you would have exceeded in 99% of rolling 12 month periods (out of 1,021 rolling 1 year periods you would have exceeded this value approximately 1,011 of the times). Similarly the 10th percentile indicates the value which would have been exceeded 90% of the time. You would have exceeded the 50th percentile half the time and come up short of that value half the time. Thus the 50th percentile could be viewed as an “average” scenario. Table 6 shows the same data over rolling 35 year periods.



Table 5

| Nominal Ending Values by Decile -- 1021 Rolling 12 Month Periods | Risk Level 2 | Risk Level 3 | Risk Level 4 |
|--|--------------|--------------|--------------|
| 1st | \$683,532 | \$617,723 | \$563,990 |
| 10th | \$909,767 | \$892,481 | \$866,847 |
| 20th | \$953,138 | \$942,281 | \$926,922 |
| 30th | \$989,227 | \$987,132 | \$984,220 |
| 40th | \$1,026,018 | \$1,032,091 | \$1,036,616 |
| 50th | \$1,051,824 | \$1,063,390 | \$1,075,999 |
| 60th | \$1,071,537 | \$1,090,904 | \$1,107,172 |
| 70th | \$1,094,745 | \$1,115,770 | \$1,140,572 |
| 80th | \$1,126,815 | \$1,158,599 | \$1,190,364 |
| 90th | \$1,175,757 | \$1,216,586 | \$1,264,286 |
| 99th | \$1,402,464 | \$1,531,288 | \$1,625,923 |

Table 6

| Nominal Ending Values by Decile -- 613 Rolling 35 Year Periods | Risk Level 2 | Risk Level 3 | Risk Level 4 |
|--|--------------|--------------|--------------|
| 1st | \$0 | \$110,412 | \$283,578 |
| 10th | \$1,033,986 | \$2,471,624 | \$3,757,772 |
| 20th | \$2,018,690 | \$3,932,732 | \$6,888,106 |
| 30th | \$2,509,338 | \$5,018,090 | \$8,613,947 |
| 40th | \$3,088,642 | \$5,803,886 | \$10,036,254 |
| 50th | \$3,615,518 | \$7,090,356 | \$12,228,327 |
| 60th | \$4,121,785 | \$8,336,741 | \$14,468,579 |
| 70th | \$5,025,481 | \$9,894,431 | \$16,569,908 |
| 80th | \$6,070,824 | \$11,286,660 | \$19,024,812 |
| 90th | \$7,131,435 | \$12,943,453 | \$21,782,975 |
| 99th | \$11,184,119 | \$21,113,245 | \$39,719,026 |

There are a couple of important observations.

First, for 60% of the rolling 12 month periods (see 40th through 99th percentile numbers), the more aggressive portfolios performed better on a net of distributions bases; during the worst thirty percent of the cases, the Risk Level 2 portfolios performed best. Note that in the 1st percentile, the Risk Level 2 portfolio ended with \$683,532 compared to \$563,990 for the Risk Level 4 portfolio. Consider whether you would be able to tolerate such periods where the more aggressive portfolio suffers most. Would you be able to stay committed to your investment strategy during more turbulent times?

Second, notice over the 35 year time horizons even under the worst 1st percentile the Risk Level 2 portfolio lagged. Even at the bottom 10th percentile, the Risk Level 3 and Risk Level 4 portfolios would have grown significantly while the Risk Level 2 Portfolio would have grown only to \$1,033,986. This is why time horizon is so important when



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 sustain spending and preserve portfolio value.

If you have a 35 year time horizon the Risk Level 3 or Risk Level 4 portfolio are probably more appropriate for you. The 50th percentile indicates that “on average” these portfolios would have grown to \$7,090,356 and \$12,228,327 respectively while funding desired withdrawals. The 10th percentile indicates that 90% of the times the Risk Level 3 and Risk Level 4 portfolios would have grown to at least \$2,471,624 and \$3,757,772 respectively. Notice that the 1st percentile which represents close to a “worst case” scenario would be a concern even for the Risk Level 3 or Risk Level 4 portfolios. The last example shows solutions you might implement to better protect against such a “worst case” scenario.

Example 3:

Table 7 shows a few potential solutions which can be implemented to increase your odds under these “worst case” scenarios. Notice the second column matches that for the Risk Level 3 Portfolio in Table 6. The last 3 columns of Table 7 show the impact of possible spending modifications.

Table 7

| Nominal Ending Values by Percentile – 613 Rolling 35 Year Periods | Risk Level 3 - 4% Withdrawal Rate | Risk Level 3 2% Distributions for 1st 3 Years | No Spending During First 18 Months | Risk Level 3 3.5% Annual Withdrawal Rate |
|---|-----------------------------------|---|------------------------------------|--|
| 1st | \$110,412 | \$1,658,959 | \$3,093,707 | \$2,405,041 |
| 10th | \$2,471,624 | \$3,474,263 | \$5,380,480 | \$4,307,091 |
| 20th | \$3,932,732 | \$5,276,781 | \$7,246,655 | \$6,228,235 |
| 30th | \$5,018,090 | \$6,473,994 | \$8,666,563 | \$7,415,122 |
| 40th | \$5,803,886 | \$7,167,073 | \$9,473,591 | \$8,189,461 |
| 50th | \$7,090,356 | \$8,494,392 | \$10,335,462 | \$9,134,021 |
| 60th | \$8,336,741 | \$9,623,489 | \$11,452,049 | \$10,189,414 |
| 70th | \$9,894,431 | \$11,230,005 | \$13,019,469 | \$11,745,082 |
| 80th | \$11,286,660 | \$12,615,728 | \$14,638,437 | \$13,263,778 |
| 90th | \$12,943,453 | \$14,348,383 | \$16,102,068 | \$14,729,787 |
| 99th | \$21,113,245 | \$22,341,176 | \$24,008,043 | \$22,893,868 |

Solution 1: Column 3 shows the impact if we take only \$20,000 year (inflation adjusted) for three years and then resume with the full \$40,000 per year (inflation adjusted from day one) for the next 32 years. This might match your needs for example if you are evaluating your ability to retire but believe that you can take a consulting assignment to supplement your income for three years. It would also apply if you are able and willing to be more frugal over the next three years or if you have excess cash reserves which you can tap into over this short term period in order to supplement portfolio distributions.

Solution 2: Column 4 shows the results if you can delay distributions from the portfolio for 18 months. Again, this could be implemented either through extending your working days, or some combination of tapping excess cash reserves and living a more frugal lifestyle over this 18 month period.



THE
MASON
COMPANIES

Solution 3: Column 5 shows the impact of reducing your withdrawal rate to 3.5% (\$35,000, inflation adjusted versus \$40,000 inflation adjusted).

Solution 4: Because History is so uncertain, your plan must remain flexible. There are additional policies which may be appropriate such as temporarily reducing spending if the portfolio falls below a certain predetermined value. Your Mason Investment Advisory Services, Inc. advisor can discuss this and other potential solutions and provide additional analysis customized to your circumstances and goals.

Note that any of these solutions would have allowed for success under the most dire time periods which again include the worst investment environments from 1926 through 2011.

Conclusion:

Hopefully what we have discussed has been helpful as you evaluate important investment decisions. These decisions will most likely have a profound impact on your financial success going forward. By reviewing portfolio performance from a number of angles over the full range of cycles from 1926 to December 31, 2011, we have been able to give you an enhanced perspective regarding three important decisions you have 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 65/35 portfolio has led to superior performance over a 65/35 simple S&P Composite/Government Bond blend or an all bond portfolio. Similar conclusions could be drawn for more conservative or more aggressive portfolios and, if helpful, we can provide analysis more customized to your personal situation. 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 lifestyle and accumulation goals as well as your risk tolerance and ability to stay committed to your investment strategy during inevitable bear markets. A long term horizon tends to favor a more aggressive approach but it is also important to examine the range of likely outcomes and make sure you are able to reach an appropriate comfort level. For some, this may be a 65/35 portfolio; for others a 77/23 portfolio is often more appropriate. We are here to help whenever you deem that you need a reevaluation of your current allocation, and are happy to provide more customized analysis utilizing our proprietary Sustainable Withdrawal Model to assist with this exercise.
3. **Withdrawal Policy:** As is the case with risk profile, the appropriate spending level depends on your current needs and long term objectives. Often a 4% payout policy is appropriate. Again, we are here to provide more tailored analysis and our model is at your disposal. The real power of the model is its ability to be customized to your individual needs and circumstances and your Mason Investment Advisory Services, Inc. advisor can help you through this exercise.

THOMAS R. PUDNER, CPA, CFA, CFP®, MST and Director of Research 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*.



THE
MASON
COMPANIES

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 ten 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 one, five, ten, twenty five, thirty five, and fifty year rolling periods from January 1926 to December 31, 2011. A total of 4,686 separate and comprehensive calculations are made in order to calculate the summary conclusions. For example, there are 973 separate 5 year rolling periods from January 1926 to December 31, 2011. 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 4,686 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. Unless otherwise indicated, it is assumed that withdrawals are taken as a percent of the initial \$1 million, and that these withdrawals are adjusted monthly for inflation (or deflation). Thus, the assumption is that an investor would like to sustain a certain spending lifestyle or policy. It is assumed that fees are taken out at the end of each month based on the prior months ending balance. Unless otherwise indicated, an annual fee of 1.2% (0.1% per month) is assumed.

Unless otherwise indicated, no distributions for taxes are assumed. Thus, taxes would generally need to be paid from the assumed monthly spending amount. Where a tax rate is assumed, we assume that this percent is taken as a percent of monthly portfolio return. Where portfolio return is negative, it is assumed the portfolio receives an inflow based on the stated tax rate.

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

- 1. Deferral Period Number of Months:** 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 after 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. **Month to End Contributions:** Unless otherwise indicated, it is assumed that no future contributions are made to the portfolio. If a number is entered, it is assumed that contributions are made over the time period entered. For example, if 24 is entered it is assumed that contributions are made for the first two years. This input field is used in conjunction with the following input fields:
 - a. **Periodic Contributions During Contribution Period:** If a number of months has been entered in the previous field, then the dollar amount of each contribution added at the end of each month to the portfolio is determined based on this and the following field.
 - b. **Frequency of Saving During Contribution Period:** If contributions are being made to the portfolio, then we select either “Monthly” or “Quarterly” as indicated. For example if we select \$10,000 in the field above and “Monthly” here then \$10,000 will be added to the portfolio at the end of each month during the contribution period. If we select “Quarterly” here then \$10,000 will be assumed to be contributed to the portfolio at the end of each quarter.
 - c. **Adjust Contribution Level with Inflation:** If the contribution function is being utilized and we enter “Yes” here then each contribution will be adjusted up or down for inflation or deflation during the contribution period.
3. **Portfolio Floor at which Spending will be reduced (as percent of beginning value)**
4. **Spending in months when floor is reached (as percent of initial target adjusted for inflation).**

The two above fields work in tandem and allow illustration of the impact of a degree of “belt tightening” when portfolio values have declined. For example, if 80% is entered in this portfolio, a portfolio began with \$1 million and there was a 6% annual spending target, the impact would be as follows: In any month where the portfolio was valued at \$800K or more (80% of beginning value in nominal terms) then monthly spending of \$5K (inflation adjusted) would be assumed. In any month where the prior month’s ending portfolio balance was less than \$800K spending for that month would be reduced to \$4K (still inflation adjusted).

5. **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 1.2% is assumed. 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.

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 913 rolling ten year calculations. A success rate of 90% would indicate that the stated goal would have been reached in about 822 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 913 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 913 scenarios and divide this total by 913.

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 913 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 (913 in all). The first percentile indicates approximately the 9th worst outcome (In 904 of 913 periods, you would have ended with a greater value). The 10th percentile indicates the value which would have been exceeded in 822 of 913 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 of a portfolio one hundred percent invested in bonds:

37/63, 51.5/48.5, 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. Also, where we indicate a portfolio is a "custom portfolio", this portfolio represents a blend, as indicated, between any two of the 13 portfolios or indices. Additionally, in some cases, we may test an all bond, all cash, or all S&P Composite portfolio. The all bond portfolio represents a 100% allocation to the Ibbotson Associates Intermediate Government Bond Index. The all cash portfolio represents a 100% allocation to US 30 day T bills.

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 | 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 |



THE
MASON
COMPANIES

| Asset Class | Category | Index | Index Data Series | From | To |
|-------------------------------|----------|--|-------------------|--------|---------|
| Cash | | U.S. 30 day Tbill TR | | Jan-26 | Present |
| Short Term Bond | | BC 1-5 Govt/Credit | | Jan-76 | Present |
| | | IA Govt Bonds 1-4.99 Year Maturities | | Jan-26 | Jan-75 |
| Interm Term Bond | | BC 5-10 Yr Govt/Credit | | Jan-76 | Present |
| | | IA IT Govt/Corp | | Jan-26 | Dec-75 |
| Long Term Bond | | BC LT Govt/Credit | | Jan-73 | Present |
| | | IA LT Govt/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 approx top 88% US Market) | | Jun-92 | Present |
| Equity- U.S. Large Growth | | Fama-French Large Value | | Jul-27 | May-92 |
| Equity- Non U.S. Large Growth | | MSCI U.S. Prime Market Growth (Growth half of approx top 88% US Market) | | Jun-92 | Present |
| Equity- Non-U.S. Large Value | | Fama-French Large Growth | | Jul-27 | May-92 |
| Equity- REITS | | Citigroup PMI Value World Ex US | | Jul-89 | Present |
| | | MSCI World ex US Value | | Jan-75 | Jun-89 |
| | | Citigroup PMI Growth World Ex US | | Jul-89 | Present |
| | | MSCI World ex US Growth | | Jan-75 | Jun-89 |
| | | 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 approx Next 10% US Market) | | Jun-92 | Present |
| Equity- U.S. Small Growth | | Fama-French Small Value | | Jul-27 | May-92 |
| Equity- Non-U.S. Small Cap | | MSCI U.S. Small Cap Growth (Growth half of approx next 10% US Market) | | Jun-92 | Present |
| Energy/Natural Resources | | Fama-French Small Growth | | Jul-27 | May-92 |
| | | Citigroup EMI World Ex-U.S | | Jul-89 | Present |
| | | IA International Small Cap | | Jan-75 | Jun-89 |
| | | 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 Constituents) | | Oct-90 | Dec-97 |
| Commodities | | Morningstar Specialty - Natural Resources Open End Fund Category Average: | | Feb-69 | Sep-90 |
| | | DJ-JBS Commodity TR/ML US Treasury Inflation-linked | | Mar-97 | Present |
| | | GS 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 |



THE
MASON
COMPANIES

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.