# ADDING VALUE

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**SUMMARY:**

This edition of ADDING VALUE continues our discussion of retirement. Portfolio withdrawals in retirement are an extremely sensitive topic. Withdrawal rates are impacted by many variables which have unknowable forecasts. Outcomes are affected by the economic condition in the year of retirement, the volatility of market returns, the sequence of returns, the extent of the portfolio diversification and the amount of the withdrawal. At this point in the economic cycle, new retirees should not withdraw more than 3 to 4% from their portfolios.

*ADDING VALUE is mailed quarterly to our clients and friends. The intent of this publication is to share some of our more interesting views and research with our clients.*

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## Year-End Investment Review and Outlook: Portfolio Withdrawals in Retirement

In our last issue of ADDING VALUE, we examined some of the issues facing retirees such as the coming baby boomer demographic crisis and mortality risk. We defined mortality risk not as the risk you will die but rather the risk that you will outlive your retirement assets. We found that a safe initial withdrawal rate for retirement assets to be about 3 to 4 % for those with a 30-year time horizon. The comments we received from readers indicate that many people were surprised at the low withdrawal rate. In this issue, we will discuss in more detail how withdrawal rates are determined.

### *Market risk and the sequence of returns*

The three major financial risks that retirees face are:

- market risk
- inflation risk
- mortality risk

Dealing with risk almost always involves tradeoffs. Fixed income securities have less volatility (market risk) but more inflation risk. Equities have the reverse characteristics. In order to improve our odds that we don't run out of money and that we are able to at least maintain the purchasing power of our retirement assets, we need to take on a reasonable amount of market risk. This means that retirement portfolios should have some combination of equities and fixed income securities. Each portfolio will have some market risk, or fluctuating portfolio values due to market volatility. Market volatility can be beneficial to a portfolio while individuals are saving for retirement. Most of us understand the concept of dollar-cost-averaging which combines price volatility and cash inflows to reduce the average cost of securities purchased. However, during retirement, market volatility and cash outflows can have extreme consequences.

This is illustrated in Tables 1 and 2.

**TABLE 1**
**Wealth Forecasting Without Cashflows**

| | Scenario 1 | | Scenario 2 | |
|---|---|---|---|---|
| Year | Return | Wealth | Return | Wealth |
| 0 | - | $1,000,000 | - | $1,000,000 |
| 1 | 25% | $1,250,000 | (20%) | $ 800,000 |
| 2 | (20%) | $1,000,000 | 25% | $1,000,000 |

Table 1 has no outflows and two return scenarios which result in the same outcome. The first scenario begins with $1 million and experiences a +25% return in the first year followed by a (20%) in year 2. The second scenario is the same situation, only with the return sequence reversed. Both portfolios at the end of the second year are at the same $1 million value.

**TABLE 2**
**Wealth Forecasting With Cashflows**

| | Scenario 1 | | Scenario 2 | |
|---|---|---|---|---|
| Year | Return | Wealth | Return | Wealth |
| 0 | - | $1,000,000 | - | $1,000,000 |
| 1 | 25% | $1,250,000 | (20%) | $ 800,000 |
| cashflow | | ($500,000) | | ($500,000) |
| 2 | (20%) | $ 600,000 | 25% | $ 375,000 |

Table 2 is the same as Table 1 except that a cash outflow of $500,000 occurs at the end of year 1. Note the differences in ending portfolio values. In the second example, both portfolios had the same total investment return of zero, but Scenario 2 above which had the big negative return before the outflow was worth 38% less. This is a dramatic illustration of how the sequence of returns combined with the timing of the outflow in a volatile environment can affect a portfolio.

## *An historical guide – 1973 to 2002*

One of the most instructive periods in current economic history is the time period 1973 to 2002. In this section, we'll examine this period from several perspectives. Suppose you retired on 1/1/73 at age 60 with a portfolio with an initial value of $1 million. The portfolio had an allocation of 75% S&P 500 and 25% investment grade bonds. The starting withdrawal rate was 4% which equaled $3,333 per month and grew with actual inflation over the next 30 years. As shown in Table 3, after 30 years, the portfolio value was just under $1.3 million and about $3.7 million had been distributed over the 30-year period. The retiree would be 90 years old.

**TABLE 3**
**As It Actually Happened**
**1973 – 2002**

| 75/25 Traditional Mix | |
|---|---|
| Beginning Portfolio Value | $1,000,000 |
| Total Withdrawal (4%/yr) | $3,682,000 |
| Ending Value 30 Years | $1,281,000 |

It is interesting to note that if we had set the initial withdrawal rate at 5% under the same assumptions instead of 4%, the portfolio would have run out of money in 20 years in 1992. This retiree would be 80 years old. Another example of withdrawal rates during this same period would be to assume again that you retire at 60 on January 1, 1973, with the same retirement fund of $1 million. This time you plan to take $117,460 each year, an amount equal to a long-term equity rate of return, but you make no adjustment for inflation. The pattern of actual annual returns and remaining funds is shown in Table 4. This retiree runs out of money by the time he would be 69 years old!

**TABLE 4**
**Actual Values for Retiree Starting in 1973**

| Year | Rate of Return | Amount in Fund | Return on Investment | Amount Before Withdrawal | Amount Withdrawn |
|---|---|---|---|---|---|
| 1973 | (4.75%) | $1,000,000 | ($147,500) | $852,500 | $117,460 |
| 1974 | (26.40%) | $ 735,040 | ($194,051) | $540,990 | $117,460 |
| 1975 | 37.26% | $ 423,530 | $157,807 | $581,337 | $117,460 |
| 1976 | 23.98% | $ 463,878 | $111,238 | $575,126 | $117,460 |
| 1977 | (7.26%) | $ 457,656 | ($33,226) | $424,430 | $117,460 |
| 1978 | 6.50% | $ 306,971 | $19,953 | $326,924 | $117,460 |
| 1979 | 18.77% | $ 209,464 | $39,316 | $248,780 | $117,460 |
| 1980 | 32.48% | $ 131,321 | $42,653 | $173,974 | $117,460 |
| 1981 | (4.98%) | $ 56,514 | ($2,814) | $53,700 | $117,460 |
| 1982 | 22.09% | ($63,760) | ($14,085) | ($77,844) | $117,460 |

The illustrations in Tables 1 to 4 should not be taken lightly. Everyone contemplating retirement must forecast variables that are unknowable in advance: age of the last-to-die spouse, inflation rate, inflation rate of products most used by seniors including health care, the economic climate and the investment return of their portfolio. The only input into the equation of which we have any control is the withdrawal rate. It makes sense to understand its sensitivity in the equation and to wisely ration its use. Our research indicates that an initial withdrawal rate of 3 to 4% is the only amount that provides 100% probability that you will not exhaust your savings before you die.

### *Macroeconomics and Retirement*

The 30-year period from 1973 to 2002 has two distinct components. In the first 10 years from 1973 through 1982, markets were very volatile, inflation and interest rates reached their highest historical levels, and equity returns were anemic. These economic factors would be considered a "worst case" period to retire. The next 20 years from 1983 to 2002 was the opposite of the first 10 years. During this period, inflation declined, interest rates declined, and equities returns went steadily upward. By luck, these retirees had a good starting point to retire. We wondered what would happen to our retiree if the last 20 years (1983 to 2002) of the period and the first 10 years (1973 to 1982) of the period were reversed for both returns and inflation. We continued to assume a 4% withdrawal rate and a traditional portfolio of 75% S&P and 25% investment grade fixed income. The result shown in Table 5 was incredible! At the end of year 30, our adjusted portfolio was worth $10.5 million compared with a $1.3 million value for the actual. Keep in mind that both portfolios have the same total investment return and the same volatility for the 30-year period, but the one with the better starting period had over 8x the value after 30 years.

**TABLE 5**
**Exchange Best Years With The Worst**
**1983 – 2002,1973 – 1982**

| 75/25 Traditional Mix | |
|---|---|
| Beginning Portfolio Value | $ 1,000,000 |
| Total Withdrawal | $ 2,792,000 |
| Ending Value 30 Years | $10,509,000 |

A retiree has very little control over the economic environment in the year in which they retire. However, the significance of the time period has a substantial impact on retirement goals. In 1983, we had very high stock and bond yields. The Federal Reserve had fought for a number of years to slow money supply growth to curb spiraling inflation which eventually proved successful. The stage was set for a 20-year bull market in stocks and bonds, coupled with falling inflation. This retiree had no problem meeting retirement goals. 1973 was the opposite. Characterized by political uncertainty and social unrest, the early 70's also saw market valuation at lofty levels compared to the early 80's. This retiree had a tough time.

People retiring at the turn of the 21st century face a scenario very similar to that of 1973. Today, we have very high stock market valuations, low dividend and bond yields, and an unhealthy current account deficit. If interest rates rise which appears to be highly probable, the market price of the bonds will decline. Although inflation is low, terrorist activity has entered into our reality. Plain ordinary arithmetic concludes investment returns will be lower for the foreseeable future and the 4% initial withdrawal rate for new retires should still be the target.

### *Trying to make it last longer*

All of the historic results mentioned above use only large company domestic stocks and investment grade domestic bonds. What happens if we diversify into other asset

classes such as small company domestic stocks, international stocks and real estate? The answer is: something good happens. Keeping the overall 75% stock and 25% bond ratio and a 4% withdrawal rate, a diversified portfolio had an ending value of $5.2 million vs. $1.3 million for the standard portfolio.

| TABLE 6<br>Diversify<br>1973 – 2002 | |
|---|---|
| 75/25 Diversified Mix | |
| Beginning Portfolio Value | $1,000,000 |
| Total Withdrawal | $3,682,000 |
| Ending Value 30 Years | $5,244,000 |

In the adjusted sequence portfolio where we switched the beginning years to 1983 to 2002 and the last 10 years to 1973 to 1982, the diversified portfolio had an ending value of $11.8 million vs. $10.5 million for the standard portfolio.

| TABLE 7<br>Diversify – Hope for the best<br>1983 – 2002, 1973 – 1982 | |
|---|---|
| 75/25 Diversified Mix | |
| Beginning Portfolio Value | $ 1,000,000 |
| Total Withdrawal | $ 2,792,000 |
| Ending Value 30 Years | $11,820,000 |

Two elements are causing the diversified portfolio to be worth more at the end of 30 years. The compound annual return increased from 10.5% to 10.9% while the volatility was reduced from 12.5% to 11.4%. Higher returns help any portfolio. However, the reduction in total volatility improves the odds that the downside volatility is less devastating to the portfolio.

## *Conclusion*

The bottom line to a worry-free retirement is that you need capital equal to 20-25 times your withdrawal rate. If that amount of money is not available, you should postpone retirement, find supplemental income for the early years of retirement, or expect to go back to work at some time in the future. These conclusions are from rigorous research over multiple economic scenarios. The caution for all people in the near future is to expect the worst-case scenario of the 1970's. Although we hope that inflation will be controlled – returns will be lower!

No one knows the future with any certainty, but the probable outcome with today's economic starting point is anemic returns from financial assets. BE CONSERVATIVE IN YOUR SPENDING.

Sincerely,

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