

Optimizing Rebalancing in Retirement Portfolios

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Recently, I had a meeting with a mutual fund wholesaler. He introduced his company's new product which is a fund of funds. Among many of its bells and whistles, one is especially intriguing: An advisor can specify rebalancing the asset mix at different time intervals, annually, quarterly, even every month. It seems very convenient for the advisor to delegate this task to the fund manager.

When it comes to rebalancing, most investment professionals believe often is better. Rebalancing is done supposedly to reduce the portfolio volatility. Does frequent rebalancing really decrease volatility? How does it affect portfolio longevity? Let's try to answer these questions by observing historic data.

Volatility has two components. The first component is the short-term random fluctuations.

Every second, every minute, every day, some event happens somewhere in the world that influences investor psychology. As investors make trading decisions, markets move up or down. This is how random volatility is created.

The second component of the volatility occurs over the longer term. Markets respond to the collective expectation of investors and a trend forms. As this collective expectation becomes more and more popular among investors, security prices move further with the trend. Eventually, market extremes are created which are invariably followed by an opposite trend.

If we agree with the notion that price movements within a one-year time horizon are random, then we cannot expect a reduction in volatility by rebalancing annually (nor by rebalancing quarterly, weekly, or even daily!). Rebalancing can reduce volatility *only* after an observable trend. An observable trend can occur for two reasons:

- After a cyclical trend, which may typically last four years¹, or
- If withdrawals are high, that in itself creates a downtrend in the portfolio value.

When does a portfolio experience an observable trend? There are several known market cycles; the 54-year Kondratieff cycle, 10-year decennial cycle, and the 4-year U.S. Presidential election cycle, to name a few. We will focus on the U.S. Presidential Election cycle as the basis of our rebalancing study. It is the shortest market cycle that is meaningful to retirement planning.

Let's look at an example: Our client, Steve, 55, is retiring this year. He has put aside \$1 million for his retirement. He needs \$50,000 income each year, indexed to inflation. Based on our findings as described in our previous article "Optimizing Asset Allocation" (See February 2004), we decide that a 60/40 asset mix (\$600,000 in fixed income and cash and \$400,000 in equities) will provide the longest portfolio life for Steve.

Figure 1 shows the portfolio value if Steve retired in 1921, the beginning of the first secular bull market of the last century. The green line shows the portfolio value if rebalanced every four years at the end of the U.S. Presidential election year. The red line shows the portfolio value if rebalanced annually. At the end of 30 years, Steve was one million dollars richer if he rebalanced every four years at the end of the U.S. Presidential election year than if he rebalanced annually.



The volatility was about the same for either. Imagine this: your client makes more money, you make more trailer fees, and you work less!

Figure 1: Retiring at the start of the 1921 secular bull market



Figure 2 shows Steve's portfolio value if he retired at the beginning of 1929, the beginning of a secular bear market. At the market bottom of 1932, Steve's portfolio experienced a smaller loss when rebalanced every four years than if he rebalanced every year. The portfolio that was rebalanced every four years provided Steve with 30 years of income. On the other hand, if rebalanced annually, the portfolio would run out of money after 21.5 years. Rebalancing every four years on the Presidential election year increased the portfolio life by a respectable 40%.

Figure 2: Retiring at the start of the 1929 secular bear market

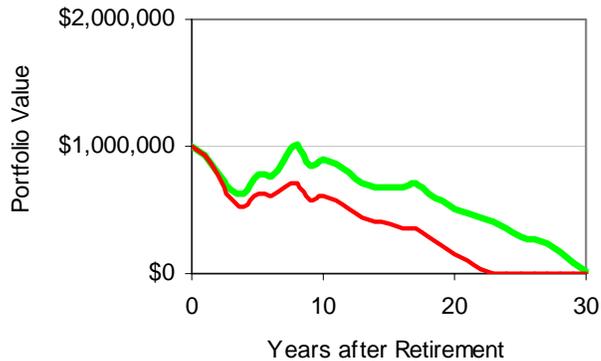
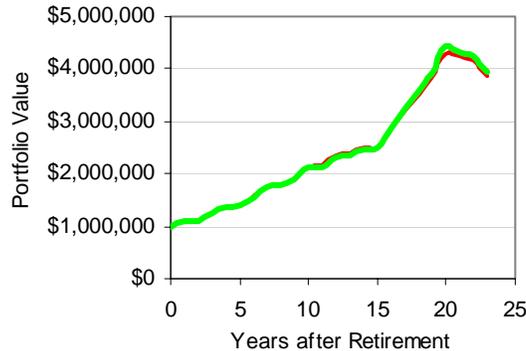


Figure 3 shows Steve's portfolio value if he retired at the beginning of the last secular bull market of the 20th century. It demonstrates that there was a slight increase in the portfolio value when rebalanced every four years on the Presidential election year as opposed to rebalancing annually. The portfolio volatility was essentially identical.

Figure 3: Retiring at the start of a bull market, in 1980



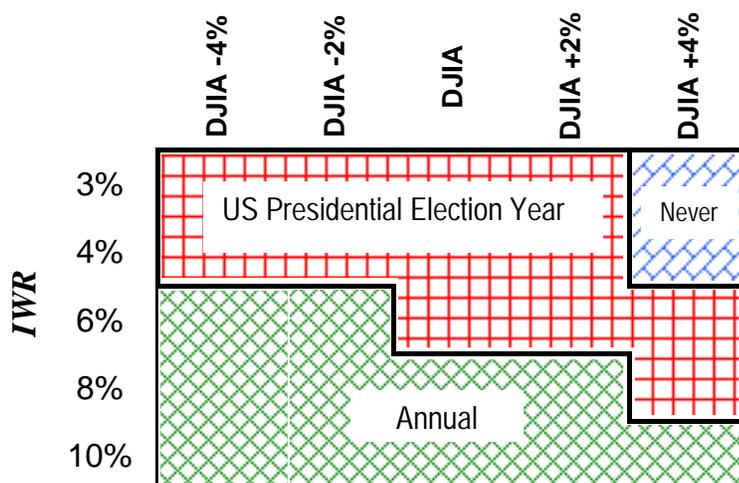
I prepared similar charts for all years between 1900 and 1999. They demonstrated the following conclusions:

- The volatility was about the same whether you rebalanced annually or once every four years on the Presidential election year.
- Rebalancing too often stunted the portfolio growth in secular bull markets². In many cases, the portfolio that was rebalanced based on Presidential cycle had slightly higher value at the market peak than rebalancing annually.
- Rebalancing too often compounded losses in secular bear markets. The real benefit of synchronizing the rebalancing activity with the U.S. Presidential election cycle was a significant improvement in preserving one's capital. This made a considerable difference in portfolio longevity.
- In sideways markets, whether one rebalanced annually or on the election year did not matter: the portfolio lasted randomly either longer, shorter or the same.

Using my historic market model, I calculated the rebalancing frequency that gives the longest portfolio life for various withdrawal rates and relative performances. Figure 4 depicts the results of my analysis. The horizontal scale shows the relative performance of equities in the portfolio. The vertical scale shows the Initial Withdrawal Rate (IWR). Going back to our example, equities in Steve's portfolio perform the same as the index and his IWR is 5%. Therefore, optimum rebalancing for Steve's portfolio is every four years at the end of the U.S. Presidential election year.

This guide, together with the optimum asset allocation guide in my previous article, should give your retired clients maximum portfolio longevity. Next time, we will look at real return bonds in retirement portfolios.

Figure 4: Optimum Rebalancing Guide for Strategic Asset Allocation



Bio:

Jim C. Otar, CFP, CMT, B.A.Sc., M. Eng., is a certified financial planner, financial writer, market technician and a professional engineer. He is the author of “High Expectations & False Dreams – One Hundred Years of Stock Market History Applied to Retirement Planning”. His articles are published in various magazines in Canada, U.S. and Australia. He won the prestigious CFP-Board Award for 2001 and in 2002 for his articles, the first Canadian to win such a prestigious award.

¹ National Bureau of Economic Research, “U.S. Business Cycle Expansions and Contractions”, www.nber.org/cycles.html

² See my previous article “Will That Be Inflation or Deflation”, January 2004 for the definition of secular markets.