WEEKLY INSIGHT

Strategic Asset Allocation and Rebalancing

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In my last article (September 2001), we looked at the effects of strategic asset allocation, rebalancing, dividends and management expense ratios (MERs) on income portfolios. In this article, we will elaborate on these points in more detail. We have to remember that this analysis is based on one hundred years of actual data covering the years from 1900 to 1999. This time period covers all conceivable events that affected the capital markets. Although we don't know what the future will bring, one hundred years of history is the best we can work with.

Each year many advisors and investors busily rebalance their portfolios. This accomplishes two things:

- It reduces portfolio volatility.
- It gives the appearance that "something" is being done.

Last time, I gave an example of rebalancing a portfolio each year versus every four years for someone who retired in 1929 (the worst year to retire) and in 1933 (the best year to retire). We saw that rebalancing every four years instead of every year increased the portfolio life for these two years.

I experimented with rebalancing portfolios at various time intervals: each year, every second, third, fourth and fifth year. I did that for all asset mixes. Some years showed improvement, but when all one hundred years were combined, there was no solid pattern. Then I decided to study it on the basis of market cycles.

What are cycles? Cycles are patterns that repeat themselves over time on a regular basis. Some examples are bird migrations, the tides, planetary movements etc. When applied to markets, some of the better-known cycles are the 54-year Kondratieff cycle, the 18-year cycle, the 10-year (decennial) cycle, and the 4-year U.S. presidential cycle.

Since the presidential cycle is well within the time frame of any retirement projection, I tried that as my guide to rebalance my model portfolios. According to the presidential cycle, the stock prices decline following an election. At mid-term the stock prices start rising again until the election year. I noticed that if I rebalanced income portfolios at the end of each U.S. election year, most portfolios lasted longer and the probability of depletion was reduced appreciably. Only at high withdrawal rates and in portfolios with a high equity percentage was annual rebalancing more effective than rebalancing on the election year only.

In my models, the periodic income is first withdrawn from the cash or fixed-income portion of the portfolio. Only if there is insufficient cash was the income generated by selling equities. We do that because we have already seen the devastating effects of dollar-cost averaging in part 3 of this series. This being the case, could there be situations where it may be better not to rebalance at all?

The answer is "yes". There were situations where it was better not to rebalance at all. This happened at low withdrawal rates and in portfolios with a low percentage of equities. It also worked well if the

portfolio was outperforming the index. This gives equities time to grow more than they would if you were to rebalance periodically.

Here is an example for a portfolio with 80% fixed income and 20% blue chip equities paying a 4% dividend. The initial withdrawal rate is 5%.

--	Minimum Portfolio Life	Probability of Depletion after		
		20 yrs	25 yrs	30 yrs
Rebalance each year	17.4 years	8%	20%	30%
Rebalance only on the U.S. election year	18.2 years	6%	11%	26%
Never rebalance	24.3 years	0%	1%	33%

Before we finish with strategic asset allocation, I would like to mention a different method of rebalancing. So far, we only looked at rebalancing at regular time intervals. We paid no attention to whether the equities were up or down in value. This new technique is based on how much your equities grow each year.

The historical average growth of the Dow Jones Industrial Average (DJIA) was about 8% per year. Instead of rebalancing the portfolio at a fixed-time interval, doesn't it make sense that we redeem a portion of profits and invest in the fixed-income portion of the portfolio *only* if the DJIA grew more than its historical average during the year?

The answer is again, "yes". Let's call this strategy "growth rebalancing". Here is how it works. We start initially with our optimum asset allocation. At the end of each year, we look at how much the index grew. If it grew more than a specific "threshold" value then we sell a portion of equities and put this money into fixed income. We are "ringing the cash register" each time the index grows over a threshold value.

As it turns out, the optimum threshold value depends on whether the equity portion of our portfolio outperforms or underperforms its underlying index. If the return is the same as the index, then this threshold value is 12%. If the equity portion of your portfolio underperforms the index (bad funds, high MERs), then use 10% as the threshold value. If the return of the equity portion of your portfolio outperforms the index (good funds, DRIPs), then use 15% as the threshold growth value. These numbers gave the longest portfolio life at the lowest risk of depletion for the one hundred years studied.

This makes sense because, if our equities are underperforming the index, we want to cash them out sooner to provide us with income. If our equities are outperforming the index, we want to hold on to them longer, hence the higher threshold.

How much of the growth should be taken out for optimum portfolio life? Well, again it depends on the withdrawal rate and whether your equities are outperforming or underperforming the index. A DRIP portfolio or a portfolio of mutual funds that you are actively tracking will likely give you a higher return than the index. Average funds, segregated funds and funds with high MERs will probably underperform the index over the long term. If your equities outperform the index, then you need to redeem a smaller portion of the growth. As it worked out, this number, which I call the "redemption multiplier", varied between one-half and two times the growth amount.

In most cases, the growth rebalancing technique was superior to periodic rebalancing. Here is an example for a portfolio, initially holding 20% in fixed income and 80% in an average equity mutual fund that is expected to underperform the index by 2%. The initial withdrawal rate is 4%.

--	Average Portfolio Life in Years	Probability of Depletion after		
		20 yrs	25 yrs	30 yrs
Rebalance each year	25.5	34%	56%	66%
Growth rebalancing	35.2	13%	24%	37%

In this particular case, the risk of portfolio depletion was cut by about half with growth rebalancing compared to annual rebalancing. The average portfolio life increased from 25.5 years to 35.2 years – a significant improvement.

I think we squeezed enough juice out ofstrategic asset allocation. In summary, we have to first determine the optimum asset allocation. Second, we have to decide which rebalancing technique is most appropriate for our portfolio.

1. Establish the optimum asset allocation mix for a given withdrawal rate. First, decide on the most likely equity return based on your investments. For index funds, use the asset allocation for the DJIA. For actively tracked mutual funds, use DJIA +2%. For high dividend-paying stock portfolios, use DJIA +4%. For average mutual funds, use DJIA -2%. For segregated funds, use DJIA –4%.

Next, figure out your initial withdrawal rate (IWR). This is expressed in the percentage of your first withdrawal compared to the initial portfolio value in the first year. After that, the withdrawals are adjusted for inflation each year. If you are already retired, then use the current withdrawal rate as your initial withdrawal rate.

Once you know your probable equity performance relative to the index and your initial withdrawal rate, read your optimum initial asset mix from Table 1.

Table 1 - Optimum Asset Mix

Equity Performance	Initial Withdrawal Rate (IWR)	Optimum Asset Mix: Fixed Income/Equity
DJIA +4%	4% or less - over 4% to 10%	40/60 - 60/40
DJIA +2%	10% or less	60/40
DJIA	9% or less - over 9% to 10%	60/40 - 80/20
DJIA –2%	4% or less - over 4% to 10%	60/40 - 80/20
DJIA –4%	10% or less	80/20

2. Rebalance the portfolio using the most optimum rebalancing technique. This will depend on your initial withdrawal rate and initial asset allocation. Use Table 2 to determine the optimum method of rebalancing.

"A" means rebalance annually,"U" means rebalance on each U.S. presidential election year, "N" means don’t rebalance, and "G" means growth rebalance.

For growth rebalancing, use the threshold value of 12% for the index return, 15% for an equity portfolio outperforming the index, and 10% for an equity portfolio underperforming the index. The numbers given next to each letter "G" is the redemption multiplier. If, at the end of the year, the growth rate of the index is larger than the threshold number, take the dollar amount of the growth of your equities and multiply it with this number. This is how many dollars you need to redeem from your equities and invest in fixed income.

Example: The equity portion of your portfolio has a return similar to the DJIA. Your initial asset allocation was 60% fixed income and 40% equity. The threshold value is 12%. Let’s say the index went up 13%, which is over this threshold. Looking at Table 2A, at a 5% initial withdrawal rate, we see that the best method of rebalancing is growth rebalancing and the redemption multiplier is "2". If your equities had $100,000 at the beginning of the year and now are worth $114,000, then growth is $14,000. You need to cash in $28,000 (calculated as 2 x $14,000) and put that money in fixed income. Don’t worry, you have to do this calculation only once a year, and only if the index growth is larger than the threshold number. Otherwise, do nothing.

Table 2 - Optimum Rebalancing Method forstrategic Asset Allocation
Table 2A - Equity return: DJIA

IWR	Asset Mix: Fixed Income/Equity			
	20/80	40/60	60/40	80/20
10	A	G 2	G 2	U
8	G 2	G 2	G 2	U
6	G 2	G 2	G 2	G 2
5	G 2	G 2	G 2	G 2
4	G 1.5	G 1.5	U	N
3	G 1.5	U	U	N

Table 2B - Equity Return: DJIA –2%

IWR	Asset Mix: Fixed Income/Equity			
	20/80	40/60	60/40	80/20
10	A	G 2	G 2	G 2
8	G 2	G 2	G 2	G 2
6	G 2	G 2	G 2	G 2
5	G 2	G 2	G 2	G 2
4	G 2	G 2	U	N

3	G 1.5	G 1.5	U	N

Table 2C - Equity Return: DJIA +2%

IWR	Asset Mix: Fixed Income/Equity			
	20/80	40/60	60/40	80/20
10	A	A	G1	G1
8	A	G1	G1	U
6	G1.25	G1.25	G1.25	U
5	G1.25	G1.25	G1.25	U
4	G1.25	U	N	N
3	U	U	N	N

For other tables for equity returns DJIA+4% and DJIA–4%, please send me an e-mail with your request.

What is the portfolio life when using the optimum asset mix and the optimum rebalancing technique? Table 3 shows the minimum and the average portfolio life (in years) using strategic asset allocation between 1900 and 1999.

Table 3 - Minimum/Average Portfolio Life in Years:

IWR	DJIA " -4%	DJIA -2%	DJIA	DJIA 2%	DJIA 4%
10	12-Aug	12-Aug	13-Aug	13-Sep	14-Sep

8	15-Oct	16-Oct	16-Oct	17-Nov	19-Dec
6	13/21	13/22	14/22	15/24	17/29
5	15/27	16/28	16/29	19/32	23/30+
4	19/30+	20/30+	22/30+	30+/30+	30+/30+
3	26/30+	29/30+	30+/30+	30+/30+	30+/30+

If you follow the optimum asset allocation and rebalancing techniques as outlined above, your portfolio life will increase by several years and the probability of depletion will decrease at the same time. Occasionally, you may need to review and reoptimize your asset allocation and rebalancing method.

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