



Build Knowledge/Investment Theory & Strategy

# A Simple Guide to Better Returns With Tactical Asset Allocation

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**A good tactical asset allocation approach has few moving parts, is based on historical data, and will benefit clients by either extending their retirement portfolio or improving its value. In this particular model, all you have to do is decide—based on last year's market performance—whether to switch to a more aggressive or defensive stance. Here's how it works.**

Tactical asset allocation (TAA) is based on the premise that the growth rate of equities eventually reverts to its historic mean. It assumes that markets move at random, drawn to the average historical growth rate like a magnet. If equities grew by higher than the average historical growth rate, chances are they will [revert to the mean](#) and do poorly the following year. Therefore, we may be better off taking some money off equities and positioning the portfolio in a more defensive stance.

On the other hand, if equity markets did poorly, the probability of a good market in the following year is high. Therefore, we increase the equity percentage and position the portfolio in a more aggressive stance.

This brings up several questions:

- What is meant by the historic growth rate? Is it the entire market history? Is it one typical secular trend length, about 20 years? Is it one cyclical trend length, about four years?
- What is the defensive stance? Is a 20% allocation to equities better than 45%? What is the right number?
- What is the aggressive stance? Is a 70% allocation to equities better than 100%? What is the right number?

## Pinpointing secular trends

Since 1900, the average index growth rate is about 7.7% for the DJIA. If equities were to grow on a straight line with some volatility sprinkled around it—as Monte Carlo simulators do—then you might go aggressive if the equity market made less than 7.7% in the preceding year. On the other hand, if the market made over 7.7%, you might become more defensive in your equity holdings.

However, doing so would ignore the existence of [secular trends](#). Equity markets do not grow

on a straight line with some volatility sprinkled around it. Based on historical data, here are some long-term secular trends to consider:

- **Secular sideways trends.** This trend typically lasts between 16 and 20 years. The index growth rate is 0%. Markets spend about 50% of their time in secular sideways trends.
- **Secular bullish trends.** This trend lasts anywhere from eight years to 20 years. Here, the average growth rate is about 15%. Equity markets have spent about 46% of their time in secular bullish trends during the last century.

Here is the flaw with using an average growth rate of 7.7% with the TAA. In a secular bullish trend, where the average is about 15%, you may be sitting in a defensive position for many years and miss all that growth. That is definitely not good.

So we need to use a shorter and adaptable market history. It should be just long enough to cover at least one market cycle. By trial and error, I observed that a six-year history (about one and a half market cycles) gives me enough history to recognize a secular-trend change in a timely enough manner for the TAA still to be effective.

## **Tactical allocation methodology**

In this approach, you decide once a year if the portfolio should be switched to a more defensive or to a more aggressive stance for the coming year. Here is the procedure to follow:

- List the annual percent growth of the equity index for the previous six years.
- Take the average of the last six years. This is called a moving average.
- Look at the most recent growth of the equity index. If it is higher than the average, it means markets did better last year than its recent history. Sell some equity and become defensive in your portfolio. On the other hand, if it is lower than the average, markets did worse than its recent history. This may be an opportunity to become aggressive. Of course, there is no guarantee that markets will move higher next year, but the odds are more in your favor.

Example 1 walks you through this process of charting the trends. Then, in Example 2, we walk through how to use this approach for retirement portfolios. In Example 3, we use it with accumulation portfolios.

### **Example 1: Charting the underlying trends**

The intent of the TAA strategy is buy low, sell high. With this system, you make a decision only once a year; it takes about 10 minutes of your time. It is not a lot of work, but it can reward you handsomely.

**Step 1:** List the entire historical annual growth rate of the index. I chose to list the figures for the DJIA between 1897 and 1910 to keep Table 1 simple.

**Table 1: Annual Growth of Index**

End of Year	Annual Growth of the DJIA
1897	22.2%
1898	22.5%
1899	9.2%
1900	7.0%
1901	-8.7%
1902	-0.4%
1903	-23.6%
1904	41.7%
1905	38.2%
1906	-1.9%
1907	-37.7%
1908	46.6%
1909	15.0%
1910	-17.9%

Source: Jim Otar

**Step 2:** Calculate the moving average of the growth of the index for the preceding six years. The six-year moving average for the year 1902 is calculated by adding all annual growth rates between 1897 and 1902 (inclusive) and dividing by 6:  
 $(22.2\%+22.5\%+9.2\%+7.0\%-8.7\%-0.4\%)/6 = 8.6\%$ .

**Table 2: 6-Year Moving Average**

Year	Annual growth of the DJIA	6-year moving average of the annual growth
1897	22.2%	
1898	22.5%	
1899	9.2%	
1900	7.0%	
1901	-8.7%	
1902	-0.4%	8.6%
1903	-23.6%	1.0%
1904	41.7%	4.2%
1905	38.2%	9.0%
1906	-1.9%	7.5%
1907	-37.7%	2.7%
1908	46.6%	10.6%
1909	15.0%	17.0%
1910	-17.9%	7.0%

Source: Jim Otar

**Step 3:** Decide whether the most recent growth of the index is higher or lower than the moving average:

**Table 3: Index vs. Moving Average**

Year	Annual growth of the DHIA	6-year moving average of the annual growth	Is the recent annual growth of the index higher or lower than its moving average?
1897	22.2%		
1898	22.5%		
1899	9.2%		
1900	7.0%		
1901	-8.7%		
1902	-0.4%	8.6%	Lower
1903	-23.6%	1.0%	Lower
1904	41.7%	4.2%	Higher
1905	38.2%	9.0%	Higher
1906	-1.9%	7.5%	Lower
1907	-37.7%	2.7%	Lower
1908	46.6%	10.6%	Higher
1909	15.0%	17.0%	Lower
1910	-17.9%	7.0%	Lower

Source: Jim Otar

**Step 4:** Decide whether the asset mix should be aggressive or defensive in the coming year:

**Table 4: Asset Mix in Current Year**

Year	Annual growth of the DJIA	6-year moving average of the annual growth	Is the recent annual growth of the index higher or lower than its moving average?	Asset mix in the current year
1897	22.2%			
1898	22.5%			
1899	9.2%			
1900	7.0%			
1901	-8.7%			
1902	-0.4%	8.6%	Lower	
1903	-23.6%	1.0%	Lower	Aggressive
1904	41.7%	4.2%	Higher	Aggressive
1905	38.2%	9.0%	Higher	Defensive
1906	-1.9%	7.5%	Lower	Defensive
1907	-37.7%	2.7%	Lower	Aggressive
1908	46.6%	10.6%	Higher	Aggressive
1909	15.0%	17.0%	Lower	Defensive
1910	-17.9%	7.0%	Lower	Aggressive
1911	?	?	?	Aggressive

Source: Jim Otar

Now, we know for each year (historically) whether the portfolio should be aggressive or defensive. Each year, we add another line and determine the asset mix for that year.

If you were doing this exercise at the beginning of 1911, because the growth rate (-17.9%) in 1910 was lower than the six-year moving average (7.0%), the portfolio is set to aggressive during the first few days of 1911 and it remains as such until the next review at the beginning of 1912.

Table 5 indicates the aggressive and defensive asset mixes for the DJIA history. The check

mark means that the asset mix was aggressive during that year. If there is no check mark, the asset mix was defensive.

**Table 5: Aggressive/Defensive Asset Mix**

Year	DJIA	Year	DJIA	Year	DJIA
1900		1941	✓	1982	✓
1901		1942	✓	1983	
1902		1943		1984	
1903	✓	1944		1985	✓
1904	✓	1945		1986	
1905		1946		1987	
1906		1947	✓	1988	✓
1907	✓	1948	✓	1989	✓
1908	✓	1949	✓	1990	
1909		1950		1991	✓
1910	✓	1951		1992	
1911	✓	1952		1993	✓
1912	✓	1953	✓	1994	
1913		1954	✓	1995	✓
1914	✓	1955		1996	
1915	✓	1956		1997	
1916		1957	✓	1998	
1917	✓	1958	✓	1999	✓
1918	✓	1959		2000	
1919		1960	✓	2001	✓
1920		1961	✓	2002	✓
1921	✓	1962		2003	✓
1922		1963	✓	2004	
1923		1964		2005	✓
1924	✓	1965		2006	✓
1925		1966		2007	
1926		1967	✓	2008	
1927	✓	1968		2009	✓
1928		1969	✓		
1929		1970	✓		
1930	✓	1971			
1931	✓	1972			
1932	✓	1973			
1933	✓	1974	✓		
1934		1975	✓		
1935		1976			
1936		1977			
1937		1978	✓		
1938	✓	1979	✓		
1939		1980			
1940	✓	1981			

Source: Jim Otar

## Degree of aggressiveness/defensiveness

Now that we know how to decide on an aggressive or defensive asset mix, the next question is defining how aggressive and how defensive. Is allocating 90% to equities aggressive? Is

10% equity allocation too conservative?

I calculated all permutations of aggressive and defensive asset mixes using my retirement calculator in 10% increments. This gives me a matrix showing the worst-case portfolio life based on historical performance.

For depleting portfolios, I look for the longest portfolio life. This gives me my optimum aggressive/defensive equity allocation.

For non-depleting portfolios, I calculate a matrix depicting the median portfolio value. I strive to maximize the median portfolio value. This gives me my optimum aggressive/defensive equity allocation.

## Example 2: TAA in a retirement portfolio

Bob, 65, is just retiring. He has \$1 million in retirement savings. He needs \$44,000 annually in current dollars.

His equities grow at about the same rate as the S&P 500 index, plus 2% for dividends, less 0.8% for management fees. The net yield of the fixed-income portion of his portfolio is the same as a six-month CD plus 1%.

Bob wants to follow a TAA strategy. What is his optimum aggressive and defensive asset mix?

The calculated aggressive/defensive asset mix matrix is given below. It is based on market history since 1900. The maximum age at which the portfolio expires in the worst case is age 86, as highlighted in bold.

**Figure 1: Portfolio Expiration Matrix**

		Worst Case Portfolio Life, years											
		100	84	84	84	83	83	83	82	80	79	78	78
Aggressive Equity %	90		<b>86</b>	<b>86</b>	85	85	85	84	83	82	81	80	
	80		<b>86</b>	<b>86</b>	<b>86</b>	85	85	84	84	83	82		
	70		<b>86</b>	<b>86</b>	<b>86</b>	85	85	84	84	83			
	60		<b>86</b>	<b>86</b>	85	85	85	84	84				
	50		85	<b>86</b>	85	85	85	84					
	40		85	85	85	85	84						
	30		85	85	85	84							
	20		84	85	84								
	10		83	84									
	0		82										
			0	10	20	30	40	50	60	70	80	90	100
		Defensive Equity %											

Source: Jim Otar

In his aggressive posture, Bob can allocate between 70% and 80% to equities. In his defensive posture, he can allocate between 0% and 20% to equities for best results. How does this compare with a strategic asset allocation?

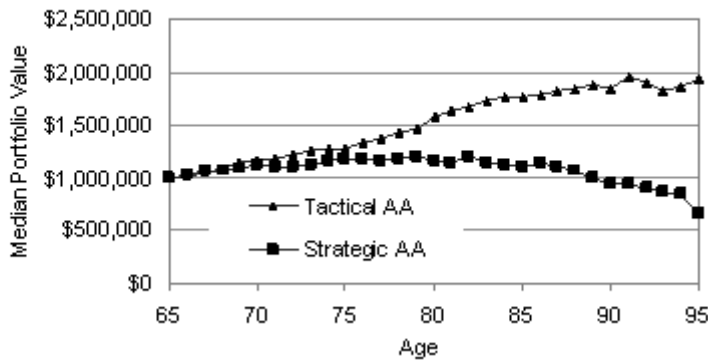
Look at the lowest set of diagonal cells filled with numbers on this matrix in Figure 1. Here, the equity mix is the same for the aggressive and defensive portfolios. In other words, this is the outcome for a strategic asset allocation where the asset mix does not vary from year to year because of market conditions.

Along this line, the worst-case portfolio lasted until age 84 for all equity percentages between 10% and 60%. By using a TAA and spending 10 minutes a year to decide whether he should have an aggressive or defensive stance in his portfolio, Bob was able to add two years to his worst-case portfolio life.

The following charts compare the "buy-and-hold" philosophy of strategic asset allocation (50/50 asset mix) with the "buy low, sell high" philosophy of TAA. In the TAA model, 20% is allocated to equities when defensive and 70% when aggressive. In these charts, the median portfolio refers to the point where half of the portfolios did better and half did worse—i.e., the 50% line. The unlucky portfolio refers to the bottom decile (bottom 10%) of all historic outcomes. The lucky portfolio refers to the top decile (top 10%) of all historic outcomes.

**Figure 2: Buy & Hold vs. TAA—Median Value**

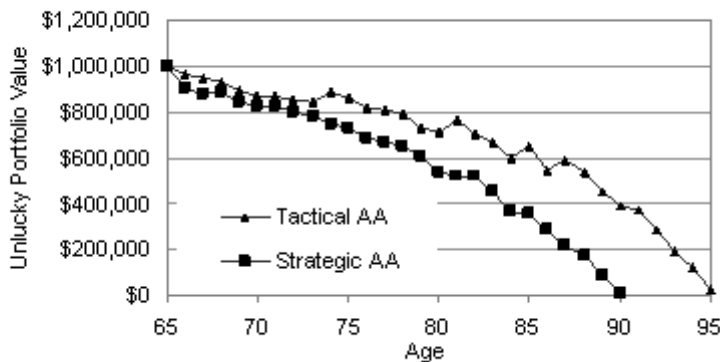
The median portfolio value:



Source: Jim Otar

**Figure 3: Buy & Hold vs. TAA—Unlucky Portfolio**

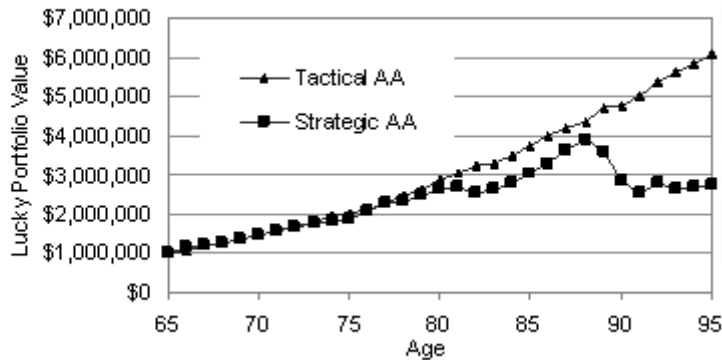
The unlucky portfolio value:



Source: Jim Otar

## Figure 4: Buy & Hold vs. TAA—Lucky Portfolio

The lucky portfolio value:



Source: Jim Otar

In all of the three outcomes (median, unlucky, and lucky), the TAA resulted in a higher portfolio value. In the lucky outcomes, the capital was preserved much better than the buy-and-hold of strategic asset allocation. At age 95, Bob more than doubled his estate value as opposed to what he would have had following a buy-and-hold strategy. All for 10 minutes of work per year!

If Bob is holding a fund of funds (or a portfolio fund), all he has to do is write one trade ticket. If he sees a signal, then he just switches from an aggressive growth to a conservative income portfolio or vice versa once a year.

Let's work through an accumulation example.

### Example 3: TAA in an accumulation portfolio

Steve, 35, has \$100,000 in retirement savings. He saves \$15,000 annually.

His equities grow at the same rate as the S&P 500 index, plus 2% for dividends, less 0.8% for management fees. The net yield of the fixed-income portion of his portfolio is same as a six-month CD plus 1%. Steve wants to follow a TAA strategy for the next 20 years. What is his optimum aggressive and defensive asset mix? By the way, he prefers to allocate not more than 70% and not less than 30% to equities.

The aggressive/defensive asset mix matrix is given below. The number in each box is the median portfolio value after 20 years of accumulation for all combinations of asset mixes based on market history since 1900. The highest possible amount of money is made when Steve allocates 100% to equities when aggressive and 0% when defensive. This would have generated \$1.43 million after 20 years in the median portfolio.

However, Steve does not like such broad swings in his asset mix. He wants to keep his equity percentage between 30% when defensive and 70% when aggressive. That box reads \$1.13 million, indicated in bold.



**Figure 5: Portfolio Accumulation Matrix**

		Median Portfolio Value x\$1million											
		100	90	80	70	60	50	40	30	20	10	0	
Aggressive Equity %	100	1.43	1.37	1.33	1.28	1.23	1.24	1.23	1.13	1.06	1.04	1.00	
	90	1.36	1.31	1.28	1.23	1.21	1.16	1.16	1.08	1.02	0.99		
	80	1.28	1.24	1.22	1.17	1.17	1.10	1.10	1.03	0.98			
	70	1.19	1.17	1.18	<b>1.13</b>	1.11	1.04	1.02	0.99				
	60	1.13	1.10	1.11	1.08	1.05	1.00	0.96					
	50	1.06	1.05	1.03	1.01	0.99	0.95						
	40	1.00	0.99	0.97	0.95	0.93							
	30	0.96	0.93	0.90	0.88								
	20	0.92	0.88	0.84									
	10	0.88	0.84										
	0	0.84											
			0	10	20	30	40	50	60	70	80	90	100
			Defensive Equity %										

Source: Jim Otar

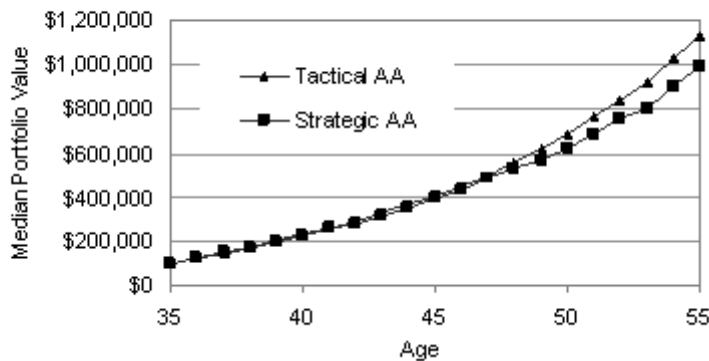
How does this compare with buy and hold?

Look at the bottom diagonal line on the matrix, the outcome for the strategic asset allocation. The median portfolio made the most money when 70% was allocated to equities, \$990,000. This is the outcome for the buy-and-hold philosophy of the strategic asset allocation approach. On the other hand, with TAA, Steve was able to accumulate \$140,000 more in his portfolio.

The following charts compare a 70/30 strategic asset allocation model and our TAA approach. With the TAA, 30% is allocated to equities when defensive and 70% when aggressive.

**Figure 6: Buy & Hold vs. TAA—Median Value**

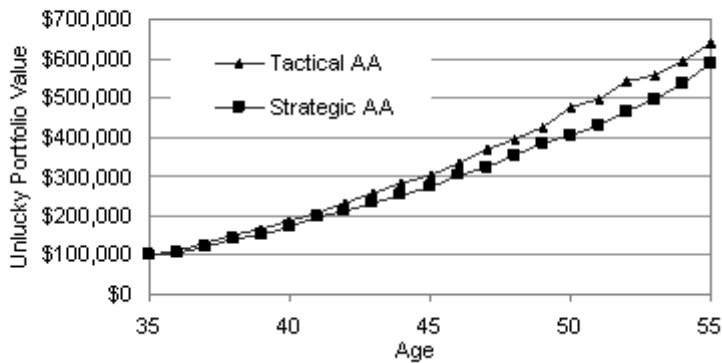
The median portfolio value:



Source: Jim Otar

**Figure 7: Buy & Hold vs. TAA—Unlucky Portfolio**

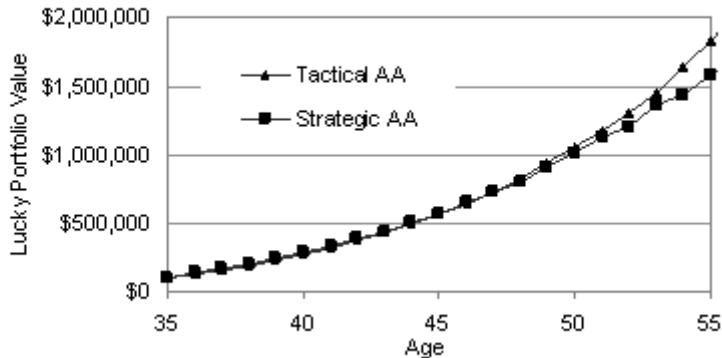
The unlucky portfolio value:



Source: Jim Otar

### Figure 8: Buy & Hold vs. TAA—Lucky Portfolio

The lucky portfolio value:



Source: Jim Otar

In this example, the TAA strategy outperformed the strategic asset allocation approach.

## Capitalizing on trends

The buy low, sell high approach of the TAA strategy worked well in broad-based U.S. markets over the last century. Spending 10 minutes each year can add a significant value to portfolio longevity and estate value.

In markets where cyclical trends are more pronounced than secular trends, such as Canada and Australia, the TAA based on the year-end observations did not work as well. There, you need to observe the market trends more often than once a year. That is too much work for most of us. In those markets, you might want to follow the buy-and-hold philosophy of the strategic asset allocation, or more sophisticated trend-following techniques.

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