

Why We Don't Rebalance

By Jason Hsu

Article Highlights

- Despite research showing a compelling long-term benefit, anecdotal evidence suggests most investors do not rebalance.
- Rational investors are too risk-averse in down markets and too risk-seeking in up markets to adjust their allocations.
- When risky assets are bought during periods of economic distress, a portfolio may suffer a greater interim decline.

For investors, the \$1 million question is, “Why don’t all of us rebalance?”

Research shows compellingly the long-term benefit of rebalancing, yet anecdotal evidence suggests that most investors do not rebalance their portfolios—that is, buy assets that have become cheap and sell assets that have become expensive. In fact, many investors do the exact opposite!

Why is it so hard for investors to rebalance? The answer is less about “behavioral mistakes” than the fact that “rational” individuals care more about other things than simply maximizing investment returns. Perfectly rational individuals exhibit changing risk aversion that makes it hard for them to rebalance into high return assets that have suffered steep recent price declines. The unwillingness to buy low and sell high is not characteristic of just individual investors who are unaware of the finance literature and market history. Very sophisticated institutional investors, advised by investment consultants and academics, are prone to the very same behavior.

This article, which was originally published in the July 2012 Research Affiliates’ Fundamentals newsletter, reviews the empirical evidence for return improvement from rebalancing, as well as the reasons why most sensible investors don’t do it.

Why Rebalance?

A significant body of financial research has shown that asset classes exhibit long-horizon price mean-reversion. When an asset class falls in price, resulting in a more attractive valu-



ation level relative to history, it is more likely to experience high subsequent returns. For example, when the S&P 500 index falls in price, its dividend yield increases; empirically the subsequent five-year return on the S&P 500 tends to be significantly above average. Similarly, when corporate bond prices fall as credit spreads blow out, the forward return on corporate bonds increases. Price mean-reversion in as-

set returns suggests that a disciplined rebalancing approach to asset allocation that responds to changing valuation levels would improve portfolio returns in the long run.

So, if “buy low and sell high” works so well, why don’t investors rebalance? Research suggests that our risk attitude interacts in a predictable way with our wealth level and thereby influences our decision-making with respect to rebalancing. Specifically, investors tend to become more risk-averse and, therefore, unwilling to add risk to their portfolios despite lower prices when their portfolio wealth declines. Investors tend to become more risk-seeking and, therefore, more willing to speculate even at high prices when their portfolio wealth increases.

The following illustration provides an intuitive way to understand this behavior. Consider a household with a certain level of income and wealth. This household anchors its standard of living (expenditure pattern) to its income/wealth profile. When positive fundamental shocks (such as a surprise jump in gross domestic product or corporate earnings growth) hit the market, stock prices go up. A string of positive economic surprises, and the resulting equity bull market, can

lead to a substantial increase in investor wealth. This market environment is also generally characterized by low unemployment, strong wage increases, healthy bonuses and appreciation in real estate value.

The investment gain coupled with stronger income affords the household the “option” to take an extra vacation, upgrade to a larger house and/or retire earlier. The higher household income and the substantial increase in wealth also allow the household to take on more risk without affecting its standard of living and retirement prospects. The investor compartmentalizes the new-found wealth as a “windfall.” Often, the investor speculates with this windfall; this is not dissimilar to the increase in aggressive betting when a casino gambler has just won big and is playing with “the house’s money.” The house money effect can explain why investors do not rebalance away from equities after a major rally, even though higher prices significantly reduce expected forward returns.

On the flip side, when there is a string of negative economic surprises, the resulting bear market can destroy substantial household wealth. Bear markets often coincide with high unemployment, weak wages, no bonuses and stagnant-to-declining home values. The decline in income and loss of wealth pose appreciable threats to the household’s standard of living. Indeed, any further loss in portfolio value could cause a permanent and very unpleasant adjustment to the household’s quality of life and retirement planning. A severe decline might mean the investor is no longer able to afford college tuition for his children or, worse, that he needs to sell his house or delay retirement significantly. These events do not make for comfortable bedside conversations at an already stressful time. “Honey, I lost an additional \$50,000 because I rebalanced and bought more Bank of America (BAC) on its way down. But don’t worry, the price is likely to mean-revert higher soon.” This isn’t a good thing to say when one already has to cancel that romantic European getaway

and has no prospect of a year-end bonus. Unsurprisingly, the investor becomes very risk-averse to further volatility in his wealth and is unwilling to take on investment risk even in very attractively priced assets.

Similar behaviors are found among investment fiduciaries. After large market declines (often followed by lowered interest rates, which boost the market value of pension liabilities), pension funds are more likely to become underfunded. Any further downside volatility to the funding ratio could trigger a mandatory contribution or other adverse regulatory actions. In addition, it is also human tendency to be more blame-oriented during a time of stress, made worse by significant loss in personal wealth. This environment does not tolerate short-term negative outcomes even when they result from a sensible investment with high long-term returns. As a result, fiduciaries also tend to be significantly more risk-averse after a bear market and are generally unwilling to rebalance into risky assets after significant price declines despite the better returns.

Risk Premium or Free Lunch?

There is strong evidence that naïve investors chase trends—for example, they over-extrapolate a recent string of good or bad news and/or follow prices in an uninformed way. This behavior results in irrational buying and selling, which pushes prices away from their rational valuations and creates “alpha” opportunities for others. The truth is, supposedly sophisticated investors do not behave in a meaningfully different way; contrary to the standard claim, they are not better positioned to capture the potential “free lunch.” Time-varying risk aversion is a natural consequence of the business cycle and the associated equity market bull/bear cycle. Rational investors are too risk-averse in down markets to buy stocks at attractive prices and too risk-seeking in up markets to reduce their equity allocation in response to unattractive forward returns. As a result, the pattern of price mean-reversion in

equities (and more broadly in all asset classes) does not become arbitrated away by “rational” investors.

Price mean-reversion in asset class returns generates what is often referred to as rebalancing return. When investors rebalance into fallen assets and away from safe assets, they also rebalance into high forward-return assets and away from low forward-return assets. This practice generates better portfolio performance over time than a buy-and-hold approach. Given herding and over-extrapolation by naïve investors as well as time-varying risk aversion for rational investors, the rebalancing return can be thought of as part “free lunch” and part “risk premium.” The free lunch comes from trading against behavioral mistakes of unsophisticated investors. The “risk premium” comes from bearing the discomfort associated with taking on more risk when one is least able to bear risk.

Should You Rebalance?

If the \$1 million question is, “Why don’t investors rebalance?” then the \$5 million question is, “Should *you* rebalance?” Statistically, you are likely to outperform in the long run if you rebalance in response to major price movements. However, when you buy risky assets during economic distress, there is a significant probability that, in the interim, your portfolio may suffer a greater decline than if you didn’t rebalance. In the short run, your probability of being fired as a fiduciary, of being blamed by clients you advise and, most importantly, of marital strife, becomes moderately higher when you rebalance.

So who should rebalance? If you have over-saved significantly relative to your spending needs, rebalancing and the associated increase in short-term risk would not threaten your standard of living. For aggressive savers, rebalancing is a fantastic strategy. If you work at an organization that is truly concerned only about long-term investment performance and unconcerned by (and holds you above blame for) the short-term

(continued on page 18)

rise in yields would hurt the value of the bonds.) For this situation, it might be wiser for the beneficiary to wait. The cumulative gain on the original principal would be 292% for the 2012 yield curve and 179% for the 1992 yield curve. Values at death occurring in year 29 are included in the online version of this article at AAIL.com.

Breakeven

The right-most column in the tables shows what the yield curve would have to be at the time of death in order for there to be loss of original principal. These values are calculated by solving for y , and then expressing in percent form, as follows:

$$y = 2 \times [(M \div P)^{1/2t} - 1] \times 100$$

For year 5 after death, the yield for breakeven becomes:

$$y = 2 \times [(\$40,000 \div \$19,576)^{1/10} - 1] \times 100$$

$$y = 14.81\%$$

These yields generate a breakeven, vis-à-vis the “long-ago” principal. Any yield that is greater than those in that column will return a loss. The yield ranges for the male from approximately 63% for year one to 8% for year 14 and for the female the yield ranges from 80% to 10%.

Conclusion

The original strategy for the financial plan in retirement was to utilize a given amount of money to generate

35 years of guaranteed annual income with no loss of principal by purchasing U.S. government 30-year STRIPS (zero-coupon bonds). Since this type of bond is appropriate only in a qualified tax-deferred account, a spousal beneficiary could continue to receive the annual maturities, or sell the bonds prior to maturity. A non-spousal beneficiary would be required by law to sell the bonds prior to maturity.

Because the bonds with long-term durations would have been purchased at relatively deep discounts and would be sold at death with shorter durations and relatively shallow discounts, the present values at the time of death far exceed the original principals and, rather than a downside, the strategy always has an upside. Therefore, to the question “Is there downside?” the answer is no. ▲

Robert Muksian is a professor of mathematics at Bryant University in Smithfield, Rhode Island. Find out more at www.aail.com/authors/robert-muksian.

Portfolio Strategies

(continued from page 14)

fluctuations, then rebalancing is a fantastic strategy for you. Other than that, one should best remember Keynes’s greatest insight (modified here for our purpose): The market can stay irrational longer than you or I can remain employed, or for that matter, happily married.

Therefore, it isn’t obvious that one “would” rebalance even if one were convinced of the price mean-reversion tendency in assets. European equities, specifically financials, are heavily discounted—providing unprecedented

yields and high expected returns. Would you rebalance with conviction into European equities? Into financials? The trepidation we experience associated with these investments doesn’t stem from our superior ability to forecast a disorderly breakup of the European Union. After all, prices are largely disciplined by Wall Street proprietary traders and hedge fund managers and reflect all relevant risk scenarios and probabilities.

We don’t rebalance because we are first and foremost human beings with a

multitude of considerations before we are investors and fiduciaries optimizing for long-term expected returns. This is perhaps why it has become fashionable for wise men to recommend “institutionalized rebalancing”—making rebalancing part of pension fund governance instead of leaving the decision to investment officers and fund trustees. Despite all of the intellect and adaptive learning that we bring to bear, sadly, human beings with our changing risk aversion are poorly suited as stewards for managing long-term returns. ▲

Jason Hsu is chief investment officer at Research Affiliates LLC and an adjunct professor of finance at the UCLA Anderson Business School. Find out more at www.aail.com/authors/jason-hsu.