

22.40	11.91	23.74	4.74
20.41	10.84	21.79	4.25
18.41	9.77	19.84	3.74
16.38	8.71	17.88	3.47

# Cedarwinds Quarterly

Performance Updates and Market Commentary for Long-Term Investors

Vol. 3 Q4-07

## Asset Class % Returns\*

	2007	Annualized Returns**	
		3 Years	5 Years
<b>Bonds</b>			
Short-Term	5.19	4.08	2.94
Two-Year	5.27	3.87	2.84
Five-Year	4.95	3.39	3.12
Intermediate	5.22	3.60	3.33
<b>Domestic Stocks</b>			
Large Market	5.44	8.55	12.72
Large Value	-2.76	8.81	15.41
Small Cap	-3.06	6.24	16.45
Small Value	-10.75	5.35	18.51
Micro Cap	-5.22	5.18	17.23
Real Estate	-18.67	7.57	17.39
<b>International Stocks</b>			
Intl Large Value	10.24	19.46	26.91
Intl Small	5.66	17.18	27.32
Intl Small Value	2.95	17.66	29.59
Emg Mkts	36.02	31.64	36.55
Emg Mkts Value	45.64	37.99	45.23
Emg Mkts Small	38.02	33.57	39.63
Continental Small	9.45	23.63	32.15
Japanese Small	-8.53	3.61	17.71
Asia Pacific Small	40.05	28.20	34.06
UK Small	-8.43	14.51	23.84

Description of DFA Index Funds	TICKER	
Short-Term Bonds	1-Year Fixed Fund	DFIHX
Two-Year Bonds	2-Year Global Fixed Fund	DFGFX
Five-Year Bonds	5-Year Government Fund	DFFGX
Intermediate Bonds	5-Year Global Fixed Fund	DFGBX
Large Market	Large Company Fund	DFLCX
Large Value	US Large Value Fund	DFLVX
Small Cap	Small Cap Fund	DFSTX
Small Value	US Small Value Fund	DFSVX
Micro Cap	US Micro Cap Fund	DFSCX
Real Estate	Real Estate Fund	DFREX
Intl Large Value	International Value Fund	DFIVX
Intl Small	International Small Fund	DFISX
Intl Small Value	International Small Value Fund	DISVX
Emg Mkts	Emerging Markets Fund	DFEMX
Emg Mkts Value	Emerging Markets Value Fund	DFEVX
Emg Mkts Small	Emerging Markets Small Fund	DEMEX
Continental Small	Continental Small Company Fund	DFCSX
Japanese Small	Japanese Small Company Fund	DFJSX
Asia Pacific Small	Asia Pacific Small Company Fund	DFRSX
UK Small	United Kingdom Small Company Fund	DFUKX

\*Source: Dimensional Fund Advisors (www.dfa.com)

The information contained herein is obtained from sources we believe are reliable, but we cannot guarantee its accuracy.

\*\* Calculated based on calendar year results.

Past performance does not guarantee future returns.

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## THE RISK - RETURN RELATIONSHIP

### Part 7: Monitoring Portfolio Risk: The Discipline of Rebalancing

*"Investors tend to make money using their brains and lose money listening to their hearts."*



#### Introduction

Previous editions in our series on the risk-return relationship have addressed how we measure and manage portfolio risk. This update will focus on how we monitor and periodically adjust portfolio risk—using a technique known as *dynamic rebalancing*—as part of an ongoing process designed to effectively manage the overall risk-return relationship in our client portfolios.

Building a globally diversified portfolio is an important first step toward controlling volatility and achieving long-term investment objectives. But effective rebalancing is also an integral and ongoing part of any prudent investment strategy. Consistent with our mathematical approach to investment management, our monitoring process involves a constant analysis of underlying asset class relationships and the degree to which client portfolios stray from their original models. As part of our review process, decisions are periodically made concerning the need to rebalance portfolios in order to maintain the integrity of their original risk-return profiles. This topic is particularly relevant due to recent market volatility and the resulting asset class performance rotation.

#### Rebalancing Defined

Rebalancing refers to the adjustment of a portfolio's asset class proportions toward their target proportions. After a portfolio's initial positions are established, asset proportions will diverge from the target proportions as security prices fluctuate over time. Left free to drift, the portfolio can evolve into an asset mix with decidedly different risk and return characteristics than the original target mix. Simply stated, rebalancing a portfolio means taking money from asset classes that have performed well over time and reinvesting in asset classes that haven't. In essence, rebalancing is based on the timeless investment adage, "buy low, sell high" while also creating the opportunity for dollar-cost averaging.

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## Dynamic Equilibrium

There are a variety of theories about how and when rebalancing should be done. The occasions and frequency of profitable rebalancing opportunities cannot be predicted reliably because their occurrence depends on random relative movements of asset class values. When asset class returns diverge quickly and repeatedly, profitable rebalancing opportunities may occur frequently—perhaps several times within a quarter. When asset class returns tend to move together over prolonged periods, profitable rebalancing opportunities may occur infrequently—perhaps once every two or more years. It is clear from the randomness of asset class price movements that the point of equilibrium in portfolio rebalancing is a dynamic, constantly shifting target. Not surprisingly, there are a number of different approaches that can be used in the rebalancing process.

Some popular rebalancing strategies include:

- **Periodic rebalancing** which is done according to a fixed schedule, such as annually, quarterly, or monthly. This has the advantage of simplicity and lends itself to larger, institutional accounts such as 401(k) or 403(b) retirement plans.
- **Threshold or range-based rebalancing** is performed when asset classes deviate from their target allocation plan by more than a certain amount, say 5%. For example, if the target allocation for stocks is 60% and the allocation reaches 67%, enough stock should be sold to bring the allocation back to 60%.
- **Volatility-based rebalancing** occurs when volatility rises above a certain predetermined threshold. Higher-volatility asset classes are sold and lower-volatility asset classes are purchased. For example, if small cap stocks become excessively volatile, they would be sold and reinvested into a lower volatility asset class, such as short-term bonds.
- **Active rebalancing** takes into account expected market conditions when restoring allocations and adjusts them accordingly. It is similar to tactical asset allocation but is more conservative than market timing because changes in the portfolio tend to be relatively modest.

## Our Approach

The strategy we use for account rebalancing is a **threshold or range-based approach**. Our decision-making process is, for the most part, rules-driven with enough subjective “wobble room” built in to provide necessary flexibility. The reason we use this approach follows from doing extensive research on this topic in the academic journals as well as basing our judgments on many years of practical experience.

Our rebalancing approach can be summarized as follows:

1. We review each account on a quarterly basis to assess how changing market conditions and the degree to which underlying fund performance may have caused the client’s model portfolio to drift from its original risk-return profile.
2. For accounts having a fixed income component, when the relationship between fixed income and equities diverges more than 5% from the original model, we begin to look at rebalancing. For example, our Growth model portfolio is allocated at 20% fixed income funds and 80% equity funds. If the fixed income component narrows to 15% due to appreciation in the total equity fund component, we would review the merits of selling certain equity funds to create 5% liquidity that would be reinvested into fixed income funds to restore the original 80/20 mix.
3. For 100% equity portfolios, our rebalancing decision is typically based on how many underlying equity funds comprise the portfolio, along with the relative performance of each fund. For these accounts we usually use a range of 5-10% in underlying asset class divergence. For example, our Hybrid #2 model portfolio consists of 11 underlying equity funds with 43% representing a blend of international and emerging markets funds. If this foreign

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exposure should increase to reflect 48% of the portfolio—a 5% deviation from the model allocation—we would treat this as a signal to examine the merits of selling certain foreign funds and reinvesting the proceeds in US stock funds to get back to the original model weightings.

4. We are extremely cost and tax sensitive! Because transaction costs erode market return, we attempt to minimize these, basing our judgment on the size of the account and the number of funds that may need rebalancing. Where we have both taxable and tax-sheltered accounts as part of a total household relationship, we try to limit rebalancing actions to the tax-sheltered accounts in order to avoid triggering taxable gains. For taxable accounts, we may rebalance less aggressively if taxes exceed a predetermined threshold of “tax pain” for the client.
5. Other factors that may influence our decision to rebalance include: account size, client risk tolerance, asset class price momentum, asset class volatility and any pending new cash deposits or withdrawal requirements.
6. We encourage clients to periodically review their economic or emotional circumstances, notifying us if there is a change in their capacity to assume risk. This allows us to appropriately modify the risk-return profile of their portfolio investment strategy.

### Emotional Considerations

Although the transaction costs of rebalancing are objective and measurable, the benefits are often subjective and difficult to quantify. Some financial advisors say that rebalancing is beneficial because it allows clients to sleep better at night. The simple assertion contains important insight, suggesting that the benefits of rebalancing are primarily derived from controlling risk. But controlling risk is only part of the story. What also needs consideration is a client’s attitude toward the reward side of the risk-reward relationship. This is the part that often creates an emotional dilemma for investors.

Psychologically, rebalancing can be a very difficult strategy to apply in practice. It can be emotionally challenging to sell those asset classes that have performed relatively well in the past and to buy those that have underperformed. Many people—investment managers and clients alike—find this very difficult to do. Psychologists have identified the concept of “prospect theory” which helps explain these types of difficulties.

Prospect theory basically has three key elements. The first is the observation that for many investors, the emotional pain of a loss is about twice as severe as the enjoyment experienced after an equivalent gain. The second is that losses and gains are usually determined relative to some predetermined reference point, realistic or not. And the third is that following losses, many investors become risk seekers, willing to take chances to relieve the pain.

There is no one-size-fits-all way to deal with these emotional elements. The challenge for every investor is to get comfortable with an appropriate trigger point as part of a disciplined portfolio rebalancing process. As investment managers, our bias is to use a process that is more mechanical than emotional, but one which is also sensitive to the human side of the investment equation. We find that this can often be a difficult path to travel, but it is a critical discipline necessary to achieve long term investment success.

### Summary

Diversified portfolios need to be rebalanced periodically to ensure that underlying asset classes do not drift too far away from their intended risk-return profile. We base the timing, magnitude and scope of rebalancing actions on quantitative decision rules as well as subjective judgment depending on market conditions and client specific considerations. Our approach offers clients a disciplined investment strategy because it is conducted within a defined range of mathematical parameters while offering the flexibility to accommodate the unique circumstances of each client’s investment objectives and risk tolerance.