*by Daniel O'Neill, President and Chief Investment Officer*

# Understanding the Impact of Changing Market Exposure on Leveraged Index Funds

## Know When to Hold 'Em; Know When to Fold 'Em

The aggregate return of an investment over a particular period depends in part on whether an investor decides to expose investment gains from early in the period to investment performance later in the period. Consider Mary and Tom, who each put $100 in a mutual fund which proceeds to gain 25% per year for each of the following five straight years. Mary does not touch her investment, while Tom decides to remove his gains from the fund at the end of each year. As a consequence, Tom starts each year with $100 in the investment.

| | | Mary | Tom | |
|---|---|---|---|---|
| | | Principal & Gains | Principal | Gains |
| | **Return** | $100 | $100 | |
| Year 1 | 25% | $125 | $100 | $25 |
| Year 2 | 25% | $156 | $100 | $25 |
| Year 3 | 25% | $195 | $100 | $25 |
| Year 4 | 25% | $244 | $100 | $25 |
| Year 5 | 25% | $305 | $100 | $25 |
| **Total** | | **$305** | **$100** | **$125** |

Because Mary left her gains in the fund, and because the fund continued to gain, she benefited from gains on her gains (commonly referred to as compounding) and ends up with more money, $305.18, than Tom ,$225.00. Although Mary's decision proved wise because of the path of the security, if the market had declined in the later years, Tom would likely have had better returns than Mary because her gains were exposed to market risk.

In essence, Mary's passivity allowed her market risk to increase while Tom's activity reduced his risk. Decisions on how to modify a portfolio in response to gains (or losses) have enormous implications for investment performance. Unfortunately, the ultimate wisdom of such decisions can be evaluated only in hindsight.

## Leveraged Index Funds

Leveraged index funds seek to provide daily returns which are a multiple of the return of the relevant benchmark. In practice, this means that leveraged index funds react to gains by increasing market exposure and react to losses by decreasing market exposure. Why? Unlike Tom and Mary, who likely make decisions based on some combination of rational thinking and emotions, a leveraged index fund's exposure is a product of its target magnification and its net assets. Gains in the benchmark push net assets higher, which translate into an increase in exposure by a multiple of the gain in net assets. Conversely, a decline in the benchmark leads to a decline in net assets, which results in a reduction of exposure in an amount which is a multiple of the decline in the net assets.

In essence, leveraged index funds respond to gains by becoming more aggressive while they respond to losses by becoming more defensive. In markets which are directional this can be an advantage; in markets which lack direction, this can be a disadvantage. The following examples illustrate how a 2x leveraged index fund performs in various market scenarios.

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## Scenario 1: Market rises steadily

The fund's net assets rise in response to gains in the value of the index. In turn, the market exposure rises at the fund's leverage point, which amplifies the later index gains.

| Index Value | Index Daily Return | Index Total Return | Index Total Return X 2.0 | 2.0 Beta Fund Daily Return | Fund NAV | Total Fund Return |
|---|---|---|---|---|---|---|
| 100 | | | | | $20.00 | |
| 105 | 5.00% | 5.00% | 10.00% | 10.00% | $22.00 | 10.00% |
| 110 | 4.76% | 10.00% | 20.00% | 9.52% | $24.10 | 20.48% |
| 115 | 4.55% | 15.00% | 30.00% | 9.09% | $26.29 | 31.43% |
| 120 | 4.35% | 20.00% | 40.00% | 8.70% | $28.57 | 42.86% |
| 125 | 4.17% | 25.00% | **50.00%** | 8.33% | $30.95 | **54.76%** |

**Return Difference: 4.76%**

The fund's gain for the period is greater than the expected return (*see article: Understanding Expected Returns of Leveraged Index Funds*) given the gain in the index and the fund's target multiple.

## Scenario 2: Market declines steadily

The fund's net assets fall in response to a decline in the index. As a result, the market exposure is decreased at the fund's leverage point, therefore reducing the impact of later index losses.

| Index Value | Index Daily Return | Index Total Return | Index Total Return X 2.0 | 2.0 Beta Fund Daily Return | Fund NAV | Total Fund Return |
|---|---|---|---|---|---|---|
| 100 | | | | | $20.00 | |
| 95 | -5.00% | -5.00% | -10.00% | -10.00% | $18.00 | -10.00% |
| 90 | -5.26% | -10.00% | - 20.00% | -10.53% | $16.11 | -19.47% |
| 85 | -5.56% | -15.00% | -30.00% | -11.11% | $14.32 | -28.42% |
| 80 | -5.88% | -20.00% | -40.00% | -11.76% | $12.63 | -36.84% |
| 75 | -6.25% | -25.00% | **-50.00%** | -12.50% | $11.05 | **-44.74%** |

**Return Difference: 5.26%**

The fund's loss for the period is less than the product of the index loss for the period and the fund's target multiple.

## Scenario 3: Market is flat, yet volatile

In the final scenario, a gain leads to increased exposure in advance of a loss, which then leads to decreased exposure in advance of a gain, and so on. Seeking leveraged daily returns in such a market may negatively impact performance. At the end of the period, the Fund has a loss when it might be expected to have provided no return whatsoever. The loss is a consequence of the application of the daily beta leveraged model to a period of significant volatility.

| Index Value | Index Daily Return | Index Total Return | Index Total Return X 2.0 | 2.0 Beta Fund Daily Return | Fund NAV | Total Fund Return |
|---|---|---|---|---|---|---|
| 100 | | | | | $20.00 | |
| 95 | -5.00% | -5.00% | -10.00% | -10.00% | $18.00 | -10.00% |
| 100 | 5.26% | 0.00% | 0.00% | 10.53% | $19.89 | -0.53% |
| 105 | 5.00% | 5.00% | 10.00% | 10.00% | $21.88 | 9.42% |
| 100 | -4.76% | 0.00% | 0.00% | -9.52% | $19.80 | -1.00% |
| 95 | -5.00% | -5.00% | -10.00% | -10.00% | $17.82 | -10.90% |
| 100 | 5.26% | 0.00% | **0.00** | 10.53% | $19.70 | **-1.52%** |

**Return Difference: -1.52%**

As noted above, decisions on how to modify a portfolio in response to gains or losses in leveraged funds are of significant importance. It is recommended that investors in leveraged index funds regularly monitor their positions to determine if market activity has caused them to become over or under exposed to the given index in which they are invested. In order to remain aligned with their desired exposure, investors that are over exposed may want to consider taking some money off the table, and those that are underexposed, may want to make additional investments.

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**For additional information about these concepts and how to implement portfolio strategies utilizing leveraged index funds, please contact us at 877-437-9363 or info@direxionfunds.com.**

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*Investing in index funds may be more volatile than investing in broadly diversified funds. The use of leverage by a mutual fund increases the risk to the fund. The more a fund invests in leveraged instruments the more the leverage will magnify gains or losses on those investments.*

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