# EDUCATIONAL READING MATERIALS

## (INFORMATION ONLY)

### May 1, 2013

## General

- 2013 Investment Consulting article – *Dividend-Growth as a Defensive Equity Strategy*
- 2007 Ted Krum Northern Trust article – *Potential Benefits of Investing with Emerging Managers: Can elephants Dance?*

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Investment Consulting

# Dividend-Growth as a Defensive Equity Strategy

By Geoffrey Gerber, PhD

## Abstract

Volatility in asset returns acts as a drag on annualized average performance and ending wealth values. Investment strategies that seek to simultaneously reduce volatility and earn excess returns offer the opportunity to improve the return-risk ratio and the decision framework of institutional investors. Reduced-volatility equity strategies utilizing dividend-growth in the stock selection process are shown to have historically provided a boost to risk-adjusted performance.

## Introduction

Most institutional investment committees meet three to four times per year to review markets and investment performance. These committees typically will review their asset mix and compare current to target allocations. While the investment horizons for these institutional investments are long-term, allocation decisions and potential changes to an investment program are subject to much shorter-term scrutiny.

Market volatility makes life difficult for members of these investment committees in several ways. First, the mathematics of compound investing makes larger investment losses even more costly and harder to recoup. If an investment program loses 10 percent of its total market value, it needs an 11-percent return to get back to even. A 20-percent loss requires a 25-percent increase to get back to square one. During each of the two previous bear markets (the first starting in early 2000 and lasting through the end of 2002, and the second lasting from October 9, 2007, through March 9, 2009), the S&P 500 declined by 55 percent. This required a 122-percent increase following the loss to bring the S&P 500 back to the same level. While the S&P 500 did make it back more than 122 percent following the first bear market, through the end of December 2012 the S&P 500 was still 9 percent off of its recent peak (October 9, 2007).

**Comparing two investments with the same average annual return of 8 percent but with different annual standard deviations (10 percent and 20 percent), one finds dramatic deviations in ending wealth values.**

## Impact of Risk on Returns

Greater volatility (as measured by the standard deviation of returns) reduces the ending wealth value of investments and drives a wedge between the annual average return and the geometric or compounded annual return to an investment. This is evident in the following comparison of three alternative investments (A, B, and C) over a twenty-year period (see table 1).

Investment A produces an 8-percent average (arithmetic) annual return with a 10-percent standard deviation. Investment B also earns an 8-percent average return, but with double the

**TABLE 1: COMPARATIVE EFFECTS OF RISK ON RETURNS**

| | Percent (%) | | |
|---|---|---|---|
| **Year** | **Investment A Annual Return** | **Investment B Annual Return** | **Investment C Annual Return** |
| 1 | –6.0 | –20.0 | –7.0 |
| 2 | 12.0 | 16.0 | 11.0 |
| 3 | 10.0 | 12.0 | 9.0 |
| 4 | –7.0 | –22.0 | –8.0 |
| 5 | 14.0 | 20.0 | 13.0 |
| 6 | 15.0 | 22.0 | 14.0 |
| 7 | 8.0 | 8.0 | 7.0 |
| 8 | 13.0 | 18.0 | 12.0 |
| 9 | 18.0 | 28.0 | 17.0 |
| 10 | 3.0 | –2.0 | 2.0 |
| 11 | 10.0 | 12.0 | 9.0 |
| 12 | 6.0 | 4.0 | 5.0 |
| 13 | –12.0 | –32.0 | –13.0 |
| 14 | 18.0 | 28.0 | 17.0 |
| 15 | –10.0 | –28.0 | –11.0 |
| 16 | 21.0 | 34.0 | 20.0 |
| 17 | 23.0 | 38.0 | 22.0 |
| 18 | 7.0 | 6.0 | 6.0 |
| 19 | 5.0 | 2.0 | 4.0 |
| 20 | 12.0 | 16.0 | 11.0 |
| Average Annual Return | 8.0 | 8.0 | 7.0 |
| Standard Deviation of Annual Return | 10.1 | 20.1 | 10.1 |
| Geometric Annualized Return | 7.5 | 6.0 | 6.5 |
| Value of $1 Million Invested at End of 20 Years | $4,273,985 | $3,212,138 | $3,542,465 |

Source: Twin Capital

volatility (20-percent standard deviation). Investment C has Investment A's lower volatility, and actually gives up some return (1 percent) to achieve that lower volatility. Investment B represents a mean-preserving, variance-changing transformation of Investment A while Investment C represents a mean-changing, variance-preserving transformation of Investment A.[1]

As an approximation, the geometric or compounded annual return can be calculated by subtracting one-half of the variance of returns (the standard deviation of returns raised to the second power) from the annual average return. Comparing two investments with the same average annual return of 8 percent but with different annual standard deviations (10 percent and 20 percent), one finds dramatic deviations in ending wealth values. The compounded annual return is 7.5 percent $[0.08 - 0.5 \times (0.10)^2]$ for Investment A while it is only 6 percent $[0.08 - 0.5 \times (0.20)^2]$ for Investment B, due to B's higher volatility. Over a twenty-year period, a $1-million investment in the more-risky strategy would generate an ending market value of $3.2 million, whereas a $1-million investment in the less-risky strategy would produce an ending twenty-year value of $4.2 million. So over the twenty years, the extra 10-percent volatility for the same average return would cost $1 million, the amount of the original investment.

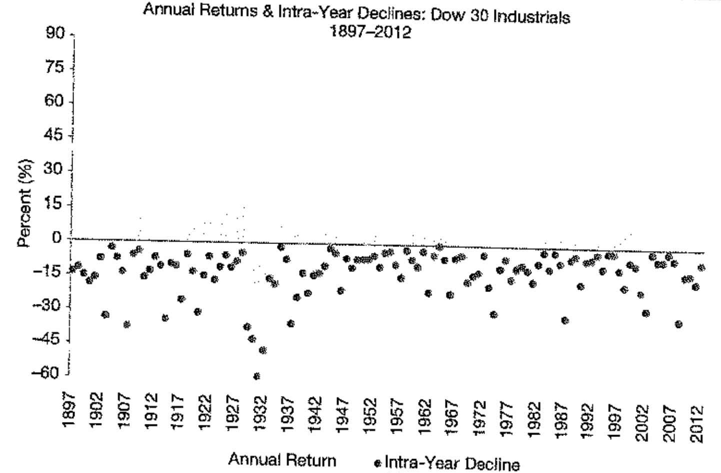
In fact, comparing Investment B to C we see that even if we give up 1 percent of annual average return to reduce the annual standard deviation, we are still better off in terms of terminal wealth value ($3.5 million compared to $3.2 million). Focusing on reducing volatility, even at the cost of lowering average annual return, could improve the final wealth level for investors.[2]

### Stock Return Volatility Evident on a Monthly and Daily Basis

Standard deviation measures the spread around the average return. The average return to the stock market over the long term is positive. From 1897 through 2012, the Dow 30 Industrials Index (price-only) was up in 76 of the 116 years, or 66 percent of the time. For this period, the annualized (price-only) return to the Dow 30 Industrials has been 5.1 percent and its standard deviation of annual returns has been 21.5 percent. What makes it difficult for investment committee members is that they typically meet every three to six months and while the market is up two out of every three years (on average), it experiences significant declines during most years, as shown in figure 1.

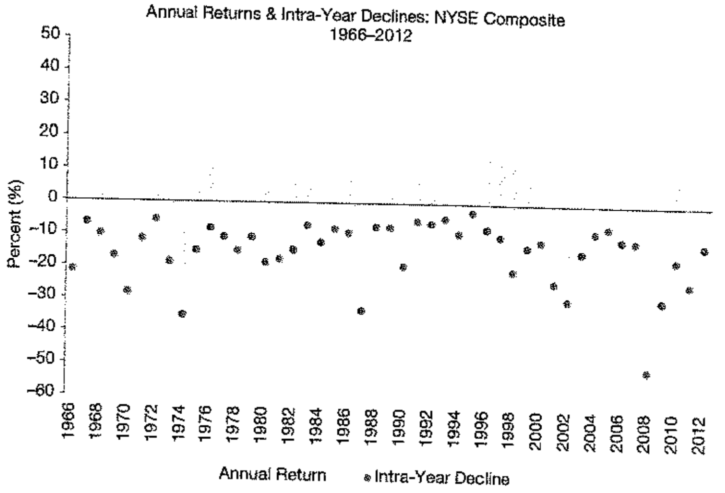
Figure 1 provides the annual price-only return to the Dow 30 Industrials (DJIA) for the past 116 years and the intra-year decline using monthly data. We define the intra-year decline as the maximum decline in the DJIA for up to a six-month period, because this is typically the longest stretch of time between investment committee meetings. While the simple average of annual returns to the DJIA since 1897 has been 7.4 percent, the average intra-year decline (of six months or less) is 12.4 percent. That means that, on average, an investor could expect the DJIA to decline by more than 12 percent during each year even though, on average, it ends positively.

FIGURE 1: DOW 30 INDUSTRIALS LONG-TERM RETURNS



Sources: FactSet and Twin Capital

FIGURE 2: NYSE COMPOSITE RETURNS



Sources: FactSet and Twin Capital

Applying this intra-year decline analysis on a daily basis to a much broader index of stocks (the NYSE) yields similar results. Figure 2 provides the annual (price-only) return to the NYSE using daily returns and the maximum intra-year decline (covering 126 days or less) from January 1966 through December 2012. The NYSE has advanced in thirty-three of the forty-seven calendar years since 1966, or roughly seven out of every ten years. It has produced an average annualized (price-only) return of 6.1 percent with a standard deviation of annual returns equal to 16.6 percent. Most importantly, it has generated an average of the largest intra-year declines of 14.8 percent. So it is reasonable for an investment committee member to see that a portion of the total portfolio (U.S. domestic equities) declines by almost 15 percent at some point during a typical calendar year.

Having bigger intra-year declines makes it difficult for investment committees to compare current to target asset allocations and evaluate the investment program, and it also reduces the ending wealth of the investments by raising overall volatility.

Unfortunately, daily volatility spiked during the financial crisis. Table 2 provides the twenty biggest daily returns and the twenty worst daily returns to the NYSE from January 3, 1966, through December 31, 2012. Of these forty extreme days for the stock market, twenty-nine occurred since the Lehman Brothers bankruptcy in mid-September 2008. Unfortunately, extreme daily returns did not stop in 2008. In fact, four of the twenty-one trading days in August 2011 made the top-twenty/bottom-twenty list.

Extreme daily returns increase volatility of returns and reduce ending wealth values, and they also make it more difficult to implement allocation changes over a short period of time. Moving money from another asset class into or out of U.S. stocks on one of these extreme return days can generate a large gain or loss depending on the direction of the market and cash flow.

So what is an institutional investor supposed to do? It's fairly simple in theory: Reduce volatility of investments without dramatically lowering the average annual return. This will increase the ending wealth value of the investment program. But at the same time, institutional investors still have a required rate of return that requires more-risky (equity) exposures. If you must invest in U.S. equities, the only way to reduce overall volatility is to invest in less-volatile or more-defensive equities compared to the overall stock market.

### The Low-Volatility Returns Effect

In addition to the notion of lowering volatility to increase ending wealth values, recent research has suggested that there is a low-volatility anomaly.

**TABLE 2: EXTREME DAYS ANALYSIS**

**NYSE Composite Index—Daily Performance (Dividends Omitted), January 1966–December 2012**

| Best Days | | | | Worst Days | | | |
|---|---|---|---|---|---|---|---|
| **Rank** | **Date** | **Level** | **Change (%)** | **Rank** | **Date** | **Level** | **Change (%)** |
| 1 | 13-Oct-2008 | 6401.0 | 12.2 | 1 | 19-Oct-1987 | 1360.0 | –19.2 |
| 2 | 28-Oct-2008 | 5733.4 | 10.3 | 2 | 15-Oct-2008 | 5760.0 | –9.7 |
| 3 | 21-Oct-1987 | 1533.4 | 9.0 | 3 | 1-Dec-2008 | 5092.7 | –9.0 |
| 4 | 13-Nov-2008 | 5715.8 | 7.4 | 4 | 29-Sep-2008 | 7204.0 | –8.7 |
| 5 | 23-Mar-2009 | 5185.9 | 7.3 | 5 | 26-Oct-1987 | 1352.2 | –8.1 |
| 6 | 24-Nov-2008 | 5313.8 | 7.1 | 6 | 9-Oct-2008 | 5810.0 | –7.9 |
| 7 | 21-Nov-2008 | 4959.8 | 6.6 | 7 | 20-Nov-2008 | 4651.2 | –7.2 |
| 8 | 10-Mar-2009 | 4499.4 | 6.5 | 8 | 8-Aug-2011 | 6896.0 | –7.1 |
| 9 | 20-Oct-2008 | 6287.6 | 5.7 | 9 | 22-Oct-2008 | 5630.5 | –7.0 |
| 10 | 16-Dec-2008 | 5805.0 | 5.6 | 10 | 19-Nov-2008 | 5012.0 | –6.6 |
| 11 | 24-Jul-2002 | 4791.5 | 5.3 | 11 | 27-Oct-1997 | 4897.9 | –6.6 |
| 12 | 19-Sep-2008 | 8187.1 | 5.3 | 12 | 31-Aug-1998 | 5081.7 | –6.2 |
| 13 | 9-Aug-2011 | 7258.0 | 5.3 | 13 | 20-Jan-2009 | 5058.1 | –6.1 |
| 14 | 27-May-1970 | 419.3 | 5.2 | 14 | 8-Jan-1988 | 1448.9 | –6.1 |
| 15 | 29-Jul-2002 | 5125.2 | 5.2 | 15 | 13-Oct-1989 | 1962.1 | –5.8 |
| 16 | 10-May-2010 | 7257.6 | 4.9 | 16 | 6-Nov-2008 | 5667.4 | –5.7 |
| 17 | 16-Mar-2000 | 6708.4 | 4.9 | 17 | 12-Nov-2008 | 5320.7 | –5.6 |
| 18 | 4-Nov-2008 | 6345.1 | 4.8 | 18 | 2-Mar-2009 | 4361.0 | –5.5 |
| 19 | 30-Nov-2011 | 7484.5 | 4.7 | 19 | 7-Oct-2008 | 6388.4 | –5.4 |
| 20 | 11-Aug-2011 | 7257.6 | 4.6 | 20 | 4-Aug-2011 | 7428.4 | –5.4 |

Red = All occurrences since September 2008. Blue = All occurrences in October 1987.
Sources: Twin Capital and FactSet

Baker et al. (2011) said, "Contrary to basic finance principles, high-beta and high-volatility stocks have long underperformed low-beta and low-volatility stocks." The authors argue that the low-volatility anomaly can be attributed partly to the fact that institutional investors' typical mandate is to outperform a fixed benchmark, which in turn discourages arbitrage activity in both high-alpha, low-beta stocks and low-alpha, high-beta stocks. Baker et al. (2011) claim that irrational investors happily overpay for high risk and shun low risk and that investment managers generally are not incentivized to exploit this mispricing because a low-risk portfolio has tracking error that is too high relative to the benchmark portfolio.

The low-volatility anomaly is not just evident in the U.S. market. In an international study of relative performance, Baker and Haugen (2012) found that low-risk stocks outperformed high-risk stocks across twenty-one countries over the past twenty years. While Baker et al. (2011) attribute the low-volatility anomaly to fixed benchmarks as a limit to arbitrage, many other researchers have attempted to explain the excess returns to lower-volatility stocks on the basis of behavioral elements. One such argument is that mutual fund investors tend to chase returns over time and across funds due to an extrapolation bias. This forces fund managers to care more about outperforming during bull markets than underperforming during bear markets, thereby increasing demand for high-beta stocks and reducing their required returns (Karceski 2002). Whether the reasons for this anomaly are behavioral and/or related to arbitrage, the case for buying less-volatile stocks in the hopes of outperforming the market is evident.

### Defensive Stocks via Dividend Growth

There are a number of ways of focusing on more defensive, less-volatile stocks. An investor could focus on lower-beta stocks that move less than the market or on stocks with lower historical standard deviations. One problem with these approaches is that beta and volatility of stocks change over time. For example, at the end of December 2012, the beta of the S&P 500 Value Index was 1.05. Before the financial crisis in 2008, the beta of the S&P 500 Value Index typically was below 1.0 while the S&P 500 Growth Index exhibited a beta above 1.0. Value stocks used to be considered more defensive due to their lower beta. Now the S&P Growth Index has a beta less than 1.0. Does that mean

**Specifically, our research indicates that companies that have exhibited consistent growth in their cash dividend payments over time are less volatile compared to companies that are less consistent in delivering dividend-growth and significantly less risky compared to companies that do not pay dividends.**

that growth stocks are now less risky than value stocks?

Minimum-variance portfolios represent one approach to generating less-volatile equity returns.[3] While focusing on finding optimal portfolios with the lowest level of volatility of returns, beta is lowered significantly (typically in the 0.6 to 0.7 range for long-only minimum-variance strategies) with no notion of alpha or value-added at the stock level. While these long-only portfolios are optimized to have the lowest standard deviations, the lack of some source of fundamental valuation (or reason for less variability in returns) leaves room for improvement in alpha. If these improvements in alpha more than offset the cost of having slightly higher than minimum variance in returns, it would be a more profitable and still less-volatile approach than investing in a market index fund.

One approach to isolate stocks with less return variability is to focus on those stocks that have consistently grown their dividends. Companies that have consistently grown their cash dividend payments over a long period of time also have demonstrated less earnings variability and more consistent (though not necessarily high) earnings growth. As a result, these stocks tend to have less-volatile price movements.

Before Standard & Poor's and Russell created the first style indexes in the early 1990s, investors tended to distinguish between value and growth stocks by looking at a firm's price/book (P/B) ratio, price/earnings (P/E) ratio, or dividend yield. Growth firms tended to have high P/B and P/E ratios with no dividend payments. Value firms tended to pay dividends and have lower P/B and P/E multiples. Considering how both S&P and Russell have gone from single-rule classifications of value-growth stocks to multiple-factor and multiple-classification schemes, it is no surprise to find that style investing can be misleading. However, investors can distinguish riskiness between dividend-growing stocks and non-dividend payers as well as dividend payers that do not exhibit growth.

Specifically, our research indicates that companies that have exhibited consistent growth in their cash dividend payments over time are less volatile compared to companies that are less consistent in delivering dividend-growth and significantly less risky compared to companies that do not pay dividends.

## Dividend History and Controversy

Of the 500 constituents in the S&P 500 Index, as of December 2012, 404 pay investors a dividend. This number is up from 393 at year-end 2011. From a corporate finance perspective, whether or not a company should issue a dividend always has been somewhat of an academic controversy. A company must look at dividends from the perspective of its potential investors. Capital gains are deferred until a stock is sold, but before the Bush tax cuts of 2001, dividends had been taxed as ordinary income upon distribution. This "tax effect" of dividends is the predominant reason investors shy away from holding equity in dividend-paying companies.

On the other hand, investors often appreciate some form of steady income, leading them to invest in companies with high dividend yields. Ross et al. (2002) noted that when it comes to

**TABLE 3: COMPONENTS OF S&P 500 RETURN**

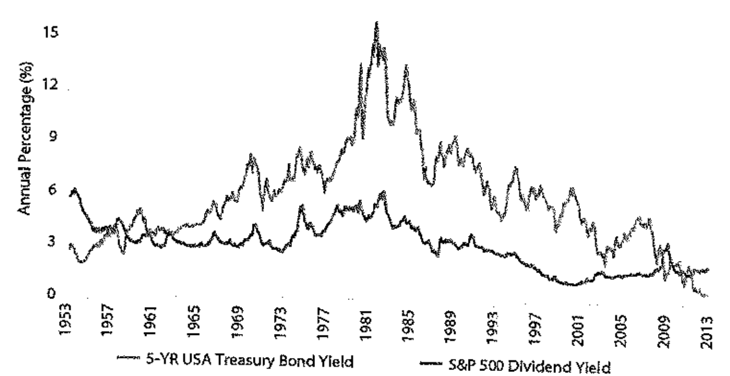
| | Annualized Returns | | | |
|---|---|---|---|---|
| Period | S&P 500 Total Return | S&P 500 Price-Only Return | S&P 500 Income Return | Percent of Income Portion of Total |
| 1926–1929 | 19.2 | 13.9 | 5.3 | 28% |
| 1930–1939 | –0.1 | –5.3 | 5.2 | 100% |
| 1940–1949 | 9.2 | 3.0 | 6.2 | 67% |
| 1950–1959 | 19.4 | 13.6 | 5.8 | 30% |
| 1960–1969 | 7.8 | 4.4 | 3.4 | 44% |
| 1970–1979 | 5.9 | 1.6 | 4.3 | 73% |
| 1980–1989 | 17.6 | 12.6 | 5.0 | 28% |
| 1990–1999 | 18.2 | 15.3 | 2.9 | 16% |
| 2000–2009 | –0.9 | –2.7 | 1.8 | 100% |
| 2010–2011 | 8.2 | 6.0 | 2.2 | 26% |
| 1926–2011 | 9.8 | 5.5 | 4.3 | 44% |

Sources: Ibbotson SBBI (2004) and Twin Capital a company's dividend decision, "unfortunately, no empirical work has determined which of these two factors dominates." They warned of an additional corporate downside to dividends in that cutting an established dividend likely will lead to a drop in a stock's price. But, they also cited additional benefits including the increase in stock price that usually accompanies an announcement of a new or increased dividend and a dividend's ability to affirm positive company results. Because of the countering reasons to pay and to not pay a dividend, Ross et al. (2002) surmised that "much empirical evidence and logic suggests that dividend policy does not matter."

### The Case for Dividends

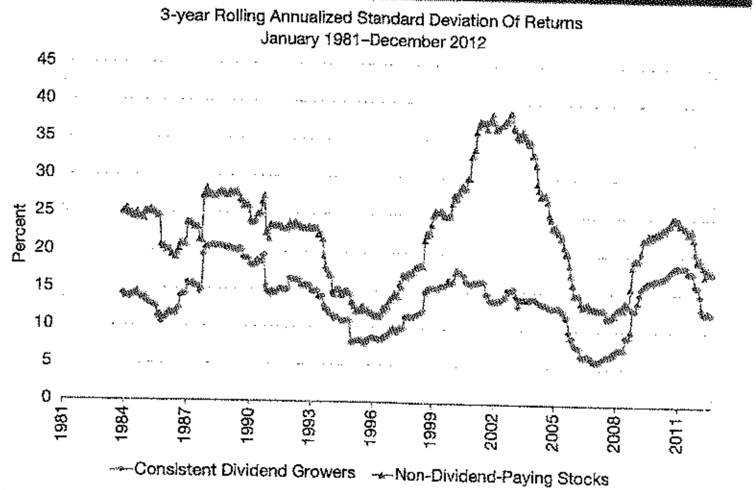
So why do a majority of the S&P 500 companies decide to pay dividends? Back in 1956, Linter wrote a seminal article on dividend policy that included management interviews with twenty-eight companies and found that "firms followed a fairly stable dividend policy that could be characterized by a long-term dividend payout ratio which would be approached through time as managers would look to avoid sudden and large changes in their payout policy." Further, a case study found that Linter's results applied to the broader market (Gerber 1988). Through a comprehensive research review that included a cross-section regression study on the determinants of dividend policy along with interviews with corporate executives of eleven large dividend-paying firms, Gerber (1988) concluded that "many different approaches to the determination of the effect of dividend policy on stock prices and returns jointly seem to indicate that market price reflects an investor's preference for dividends which at least in considerable part offsets the negative personal tax effect of dividend payout."[4] Friend (1986) studied dividends from a corporate and investor standpoint and concluded that his data "support[ed] the notion that there is a market preference for dividend income."

FIGURE 3: COMPARATIVE YIELDS OF U.S. STOCKS AND TREASURY BONDS



Robert Shiller (http://www.econ.yale.edu/~shiller/data/ie_data.xls) and Twin Capital

FIGURE 4: CONSISTENT DIVIDEND GROWERS LESS RISKY



Source: Twin Capital

### Dividends Importance Has Changed Over Time

Over the eighty-six year period from 1926–2011, investors' income from dividends represents more than 40 percent of the S&P 500's annualized total return (see table 3). However, the extent of importance has changed somewhat over time with economic factors and market cycles. Most investors' interest in dividends has varied over time, largely paralleling the fluctuation in dividends' return as a percentage of the S&P 500's total income. In decades where the S&P 500 has achieved a large positive return, the importance of dividends diminished.

For example, during the strong up-market decades of the 1950s, 1980s, and 1990s, the percentage that dividends represented of the S&P 500 total return was at its smallest. But in the two decades in which the S&P 500 price declined (1930s and the first decade of the new millennium), dividend income accounted for 100 percent of the S&P 500 total return.

From an investor's perspective, with yields on Treasury securities (see figure 3) and other fixed-income assets still so low, dividend-paying stocks have become more attractive. Not since the late 1950s have investors generated more income from dividends on the S&P 500 Index compared to the five-year Treasury-bond yield. While some investors were concerned in late 2012 that the preferential tax treatment on dividends would vanish, their preference for dividend income increased at the margin with the fiscal cliff agreement. As a result of the last-minute budget deal at the beginning of 2013, households earning more than $450,000 a year, or $400,000 for a single person, will be taxed on dividends and capital gains at a 23.8-percent rate, up from the previous 15 percent. While these households will pay a higher tax rate on dividends in 2013, it is considered a bonus compared with the new top ordinary income tax rate of 39.6 percent.

Many formidable companies such as Cisco and Wellpoint have initiated dividends recently. It took the passing of Steve Jobs and a tremendously large cash stockpile in 2012 for Apple to announce its first cash dividend since 1995. In fact, the amount of cash that has been stockpiled by nonfinancial companies has drawn a lot of attention recently. Profits have been strong but firms have been reluctant to fund new capital expenditures. According to Capital Economics, *United States Economic Focus* on April 4, 2012, corporate cash reserves rose from $42 billion at the end of the recession in mid-2009 to $672 billion at the end of 2011. As a share of all nonfinancial corporate assets, cash is at a forty-year high of 2.2 percent while liquid assets are at a near fifty-year high of 7.5 percent.

Companies can spend stockpiled liquid assets several ways other than increasing dividend payments. They can undertake new capital expenditures, repurchase shares, or make acquisitions. If firms cannot find these alternatives very productive, they may consider increasing dividends. Given the historically low levels of interest rates and increased cash, many companies increased their regular dividend payments in 2012. In anticipation of the Bush tax cuts expiring at the end of 2012, some corporations even provided shareholders with a special or one-off dividend payment in 2012. But as our research indicates, not all dividend payments are treated the same.

**TABLE 4: ANNUAL EXCESS RETURNS RELATIVE TO S&P 500 STOCKS**

| Year | Consistent Dividend Growers Stocks | Other Dividend-Paying Stocks | Non-Dividend-Paying Stocks |
|---|---|---|---|
| 1981 | –3.29 | 5.53 | –7.33 |
| 1982 | –2.65 | 0.63 | 10.93 |
| 1983 | –0.74 | 1.28 | 7.42 |
| 1984 | 2.26 | –0.67 | –16.98 |
| 1985 | 1.12 | 0.09 | –9.99 |
| 1986 | 3.71 | 1.37 | –18.78 |
| 1987 | –1.99 | 0.98 | 6.97 |
| 1988 | –0.28 | –0.21 | –0.56 |
| 1989 | 5.20 | –2.68 | –7.37 |
| 1990 | 4.12 | –1.41 | –19.21 |
| 1991 | 7.81 | –9.17 | 1.43 |
| 1992 | –4.05 | 4.73 | 9.43 |
| 1993 | –7.22 | 7.56 | 7.08 |
| 1994 | 0.88 | –1.05 | 1.03 |
| 1995 | 3.69 | –3.42 | –5.06 |
| 1996 | –0.61 | 1.67 | –5.87 |
| 1997 | 4.96 | –7.09 | –3.95 |
| 1998 | –3.76 | –5.98 | 30.42 |
| 1999 | –11.42 | –9.87 | 57.09 |
| 2000 | 21.64 | 1.19 | –26.38 |
| 2001 | 4.61 | 1.65 | –12.92 |
| 2002 | 5.38 | 0.76 | –13.77 |
| 2003 | –4.35 | –0.18 | 17.19 |
| 2004 | –2.08 | 2.74 | 0.88 |
| 2005 | –2.03 | 4.72 | –3.85 |
| 2006 | 2.01 | –0.19 | –6.62 |
| 2007 | –2.63 | 1.18 | 3.13 |
| 2008 | 6.62 | –5.75 | –3.90 |
| 2009 | –12.64 | 4.77 | 25.73 |
| 2010 | –0.03 | –0.37 | 2.18 |
| 2011 | 8.85 | –5.66 | –8.82 |
| 2012 | –5.69 | 1.18 | 8.10 |

Red = Best performing group
Source: Twin Capital

## Distinguishing Among Dividend-Paying Stocks

Our research study focused on dividing the historical S&P 500 into the following three distinct groups:

1. Companies that are consistent dividend growers
2. Companies that pay dividends but are not consistent growers
3. Companies that do not pay dividends

To be included in the subset of consistent dividend growers, a stock's dividend history must exhibit consistent growth in dollars of payments over a ten-year horizon with no dividend cuts at the sampled intervals. Furthermore, the company's indicated annual dividend must be less than recent reported trailing twelve-month operating earnings and the twelve-month forward consensus analyst earnings

**TABLE 5: COMPARATIVE PERFORMANCE**

| | Consistent Dividend Growers Stocks | Other Dividend-Paying Stocks | Non-Dividend-Paying Stocks | S&P 500 Stocks |
|---|---|---|---|---|
| **Annualized Return (%)** | | | | |
| Jan-1981–Dec-2012 | 11.39 | 10.23 | 9.12 | 10.63 |
| **Annualized Risk (%)** | | | | |
| Jan-1981–Dec-2012 | 14.13 | 16.24 | 23.38 | 15.26 |
| Return/Risk Ratio | 0.81 | 0.63 | 0.39 | 0.70 |
| **Annualized Returns (%)** | | | | |
| Jan-2012–Dec-2012 (1Y) | 10.49 | 17.36 | 24.29 | 16.18 |
| Jan-2010–Dec-2012 (3Y) | 12.02 | 8.97 | 10.66 | 10.81 |
| Jan-2008–Dec-2012 (5Y) | 2.40 | –0.32 | 4.27 | 1.86 |
| Jan-2003–Dec 2012 (10Y) | 6.60 | 6.84 | 9.17 | 7.18 |
| **Annualized Risks (%)** | | | | |
| Jan-2012–Dec-2012 (1Y) | 7.36 | 12.28 | 15.05 | 10.45 |
| Jan-2010–Dec-2012 (3Y) | 12.09 | 18.20 | 17.48 | 15.28 |
| Jan-2008–Dec-2012 (5Y) | 15.72 | 22.30 | 21.65 | 18.85 |
| Jan-2003–Dec 2012 (10Y) | 12.38 | 17.11 | 17.99 | 14.63 |
| **Return/Risk Ratios** | | | | |
| Jan-2012–Dec-2012 (1Y) | 1.43 | 1.41 | 1.61 | 1.55 |
| Jan-2010–Dec-2012 (3Y) | 0.99 | 0.49 | 0.61 | 0.71 |
| Jan-2008–Dec-2012 (5Y) | 0.15 | –0.01 | 0.20 | 0.10 |
| Jan-2003–Dec 2012 (10Y) | 0.53 | 0.40 | 0.51 | 0.49 |

Source: Twin Capital

estimate (i.e., the company must have the ability to pay the current dividend rate). If a dividend-paying company does not meet all the criteria (i.e., consistent dollar growth and an ability to pay the dividends at the current rate), it is placed in the second category (dividend payers but not consistent growers).[5] The list of consistent dividend growers is a custom collection of companies with a rising dividend stream thought to be less at-risk than the stream from typical dividend-paying stocks.

In our analysis, all S&P 500 stocks are assigned to one of these three groups on a quarterly basis starting at the end of December 1980 (dividend history starting in 1971). Monthly returns for the three portfolio groups are calculated starting in January 1981 and cumulated for an annual calendar return.[6] The excess returns (relative to S&P 500) for these three groups are provided in table 4.

Over the most recent full thirty-two calendar years (1981–2012), the consistent dividend growers have produced the largest return above the S&P 500 fourteen times while non-dividend-paying stocks have generated the largest excess return relative to the market twelve times. Other dividend-paying stocks (but not consistent growers) have produced the highest excess return six times. In 2012, the non-dividend-paying stocks were the leaders following strong performance from the consistent dividend growers in 2011.

While historical returns are no certain indicator of future returns, it is clear that over the complete 384 months of analysis, the portfolio of consistent dividend growers is the only one of the three groups that outperformed the S&P 500, as table 5 indicates. Not only did this group generate the highest compound annual return, it also exhibited the lowest standard deviation of returns over the long term as well as all sub-periods studied. Our results are significant in that focusing on the subset of stocks in the market that have consistently paid and grown their dividends produces positive alpha (relative to the market) and much lower standard deviation over the long-term.

Consistent dividend growers will not necessarily be the least-volatile stocks in the S&P 500, but they are consistently less risky compared to the group of non-dividend-paying stocks. As indicated in figure 4, the three-year rolling annualized standard deviation of (monthly) returns for the consistent dividend growers is always less than the corresponding risk measure for non-dividend-paying stocks.

One reason that the portfolio of consistent dividend growers produces a higher long-term ratio of return per unit of risk relative to the two other portfolio groups and to the market overall is that these companies produce an earnings stream that is less volatile compared to their peers. If these companies did not produce consistent earnings over time, they likely would not meet the criteria to be included in the consistent dividend-growth subset.

An advantage of focusing on dividend growth to build a more defensive portfolio compared to a minimum-variance approach is that the sector composition can be much more dynamic. Figure 5 and figure 6 provide the Standard and Poor's Global Industry Classification Standard (GICS) sector weights of the portfolio of consistent dividend growers and the S&P 500, respectively.

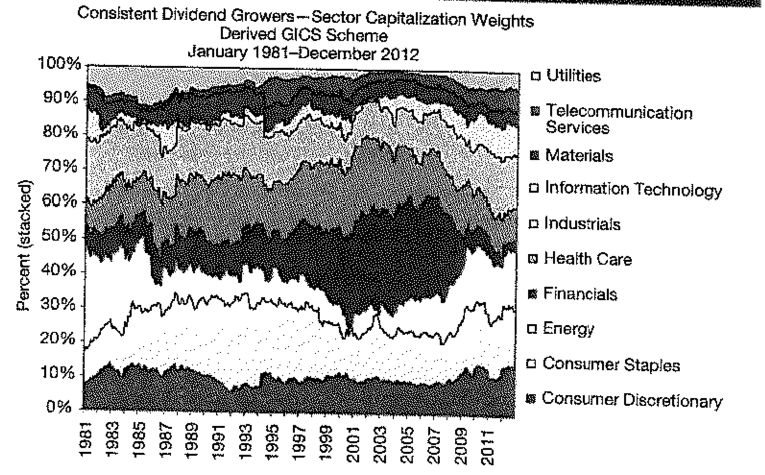
As indicated in figure 5, before the financial crisis in 2008 many financial companies exhibited consistent dividend growth but, as a result of cutting their dividends, financial companies now make up a much-smaller portion of the consistent dividend growers portfolio compared to the overall market. Using a minimum-variance approach, the weight of financial stocks also would decline as those stocks became more risky, but the response would be much slower compared to the changes in the consistent dividend-growth portfolio resulting from an immediate dividend cut.

Another interesting feature of the companies in the collection of consistent dividend growers is that they display characteristics of both value and growth stocks. The P/E ratio of consistent dividend growers tends to be slightly lower than the market's multiple, but its P/B ratio tends to be market-like or higher than the market's ratio. From an earnings perspective, the consistent dividend growers are likely to be cheap, but from a book value perspective they can be viewed as slightly expensive or more growth-oriented.

As demonstrated in figures 5 and 6, the sector composition of the consistent dividend growers can vary significantly over time and differs dramatically from the sector exposures of the S&P 500. As a result, a portfolio of consistent dividend growers has a high tracking error relative to the S&P 500 as it places more weight in less-volatile sectors.

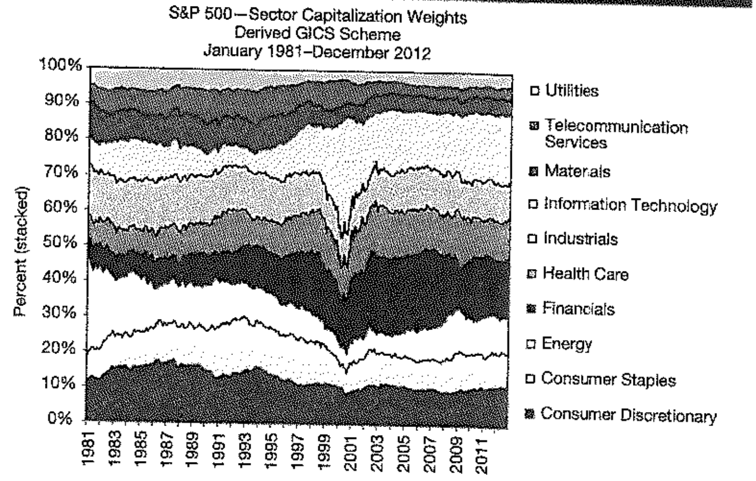
These less-volatile companies do not keep pace with the S&P 500 when the market is rising significantly, but they do provide significant downside-protection (see figure 7). A portfolio of consistent dividend growers historically has captured 89 percent of the market's upside return and 84 percent of the downside return. Over 384 months (January 1981–December 2012) the collection of consistent dividend growers has outpaced the S&P 500 Index by 0.80 percent annually.

FIGURE 5: CONSISTENT DIVIDEND GROWERS: SECTOR COMPOSITION



Sources: Twin Capital and Ford Equity Research

FIGURE 6: S&P 500 CONSTITUENTS: SECTOR COMPOSITION



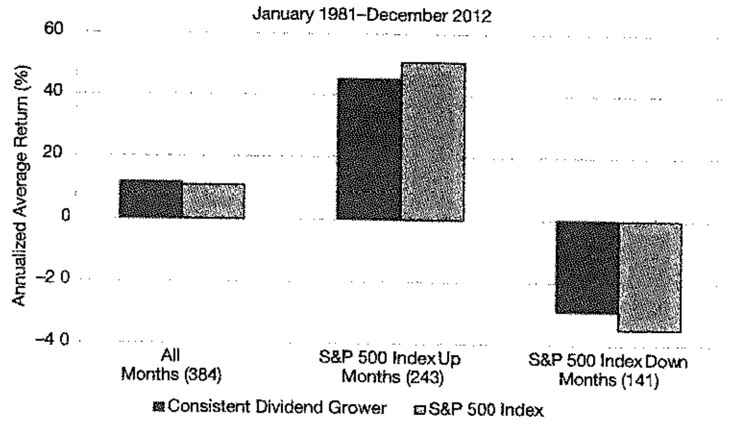
Sources: Twin Capital and Ford Equity Research

## Conclusions

The mathematics of investment compounding makes it difficult to offset significant losses and as a result, risk matters. Lowering a portfolio's standard deviation of returns will move the compounded annual return up, closer to the average annual return. In light of heightened market volatility (that began during the Internet bubble of the late 1990s and increased substantially as a result of the financial crisis in 2008), the need to reduce portfolio risk becomes even more paramount.

Given that most institutional investment programs have some core exposure to large-cap, domestic stocks, it may make sense to move a portion of this core exposure (which may be managed passively rather than actively) into a less-volatile, dividend-growing-based strategy. Our research indicates that companies meeting several screens on dividend growth and ability to pay produce less-volatile portfolio returns compared to the market and also outperform the broader market over the long term. This sort of defensive equity strategy should be of interest to any institutional investment committee, as long as committee members are willing to accept the higher tracking error inherent in an overall lower-risk strategy.

FIGURE 7: RETURNS IN UP AND DOWN MARKETS



Source: Twin Capital

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## Endnotes

1 The first transformation (B) doubles the standard deviation and preserves the 8-percent arithmetic mean and the second transformation (C) subtracts 1 percent from each calendar year's return to reduce the annual average return to 7 percent and preserves the 10-percent standard deviation.

2 If we subtract 1.5 percent from Investment A's annual return and maintain the 10.1-percent standard deviation, Investment A would generate the same ending value ($3.2 million) at the end of twenty years as Investment B.

3 The seminal article on minimum-variance portfolios is Clarke et al. (2006).

4 See Gerber (1988), p. 3, 5, 7–8, 26.

5 Our research included testing different periodicities to measure dividend growth with and without the ability-to-pay criteria. Changing these parameters can dramatically impact the number of stocks and the sector composition between the two dividend-paying subsets and their resulting performance.

6 The S&P 500 Index is a float-capitalization-weighted representative measure of leading large-cap companies created and maintained by Standard & Poor's. The consistent dividend growers, the other dividend-paying, and the non-dividend-paying portfolios are constructed and maintained as hypothetical portfolios and are not publicly available indexes. Stock weights reflect market capitalization. Overly large weights are capped at a threshold for diversification purposes. Please refer to the "Hypothetical returns and performance" section in the disclosures to this article.

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*Past performance is no guarantee of future results. There are risks involved with investing, including possible loss of principal. Risk controls, asset allocation models, and proprietary technology do not promise any level of performance or guarantee against loss of principal. The information included in this paper has been taken from trade-*

*and other sources considered reliable. No representation is made that this information is complete and should not be relied upon as such. Any opinions expressed in this publication reflect the author's judgment at this date and are subject to change without notice.*

***Hypothetical returns and performance.*** *The performance presented for the consistent dividend growers, other dividend-paying and non-dividend-paying groupings of stocks, and other custom benchmarks is calculated by TWIN Capital Management Inc. and is hypothetical. Interested parties are advised to consider a number of important factors when reviewing this type of back-tested information. The reported performance was derived from the retroactive application of sets of rules with the benefit of hindsight. There are inherent limitations with this type of data (e.g., performance results do not represent actual trading) and results are sensitive to the period of analysis chosen. The trading strategies were not offered throughout the entire periods presented and different economic conditions might have impacted the adviser's decision making when using the rules to manage actual client accounts. While the sets of rules have been applied consistently to generate the latest results, these rules and associated trading strategies have evolved over time. The performance presented does not reflect the deduction of advisory fees, brokerage or other commissions, mutual fund exchange fees, and other expenses a client would have paid. Interested parties are reminded of the potential for loss as well as profit.*

# Potential Benefits of Investing with Emerging Managers: *Can Elephants Dance?*

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Can elephants dance? Institutional investors should be asking themselves this question after the grueling market experience of the past five years. In terms of performance (not to mention the mutual fund scandals), the asset management industry's giants have not covered themselves with glory, yet they have continued to grow and gain market share. Moreover, there has been substantial consolidation in the industry during the past market cycle, driven by regulatory changes in the U.S. and the entry of foreign firms via acquisition. Economies of scale in distribution, compliance and technology, meanwhile, have given large firms a substantial cost advantage over small ones, which seems likely to perpetuate these trends.

Have these changes benefited clients? Having studied this question for more than ten years, *we must conclude once again that they* have not. For the five years ending September 2005:

- Roughly 40% of the core U.S. equity managers in the top performance quartile were with firms managing less than $2 billion. This implies that the minimum firm size requirements typical of large plan sponsor searches immediately exclude a large proportion of the highest performing managers.
- These small firms outperformed the elephantine household names at the median as well as at the top and bottom quartile levels. This result is consistent across all major style groups and implies that manager selection skill may be better rewarded when applied to the small firm universe.
- Small firms delivered dramatically better performance in down markets, making suspect the idea that plan sponsors are protecting themselves by not investing with them.

Our quarter-century of experience as a manager of managers suggests that as investment firms grow, they find it more difficult to perform and are less motivated to take significant risk. This observation was first confirmed in our original study (Krum [1995]) and led us to create multi-manager investment pro*grams focused specifically on emerging firms.* This approach helps mitigate the incremental business risks, costs and capacity constraints of working with smaller managers within a style-diversified and risk controlled investment vehicle.

## TEST SAMPLE

Despite these outcomes, clients have continued to award larger and larger shares of their assets to the underperforming industry behemoths. In October 2000, the beginning of our latest study period, our sample drawn from Nelson's Marketplace database encompassed 531 active core U.S. equity products managed by 287 firms.[1] Of their total $7.9 trillion under management (about 60% of U.S. market capitalization), more than 99% was controlled by firms managing greater than $2 billion, compared to about 95% in 1988. Firms with less than $2 billion under management made up 33% of the sample but collectively held just 1% of the assets, down from about 5% in our earlier study. Most minority-owned firms fall into this category and, in fact, many clients who come to us for emerging manager investment programs are interested in exploring the minority-owned universe.

Note the constraints this extreme market concentration places on large investors. Suppose, for example, that a large institutional investor sets its minimum allocation at $200 million per manager in order to limit the size of its roster and its fiduciary expenses. If policy prevents the investor from representing more than 10% of any single firm's business (a common constraint, in our experience), then the smallest firm it can hire will have $2 billion under management. As mentioned above, for a mandate awarded in 2000, this one decision would have eliminated more than one-third of our sample, rejected over 40% of the subsequent top quartile performers, and increased the likelihood of sub-par performance during the subsequent market downturn.

## MANAGER CATEGORIZATION AND GROWTH

In this series of studies, we have divided managers into "size classes" according to their relative market share of total assets under management at the beginning of the evaluation period. In Exhibit 1, for example, size class 1 includes the 84 largest firms, collectively holding 75% of the assets in 2000. When we measured assets in our initial 1988 study, it took roughly the same number of firms (91) to reach the same cumulative share, but the *largest* had $70 billion under management. In 2000, the *smallest* class 1 firm had $79 billion under management, and the largest had roughly ten times as much. The assets under management (AUM) breakpoints for the other size classes, at 90%, 95% and 99% cumulative market share, also increased by an order of magnitude, reflecting both market appreciation of four and one-half times during the 13-year period, as well as the growing institutionalization of all equity investment.

The asset management industry has been turbulent during the past five years, even in a prosaic area like core U.S. equities. Exhibit 2 shows how the firms in our sample moved into higher or lower size classes during the 2000–2005 period despite the lack of any real market advance.

As one would suspect, this exhibit shows that most small firms stayed small during this period, and nearly all of the largest firms stayed on top. However, of the 164 firms[2] in size class 5 (<$1.9 billion AUM) in 2000, 23.9% grew into size class 4 by 2005, and a handful even made an order of magnitude leap into size class 3 (>$9.6 billion AUM). Size class 1, the largest firms, showed the greatest stability, with only 4% (one firm out of 25) losing enough assets to fall into class 2. Size class 3, roughly the $10–20 billion AUM range, was the least stable, with firms having roughly equal chances of holding steady or gaining or losing significant market share.

## EXHIBIT 1

**Breakdown of Firm Size in October 2000**

| SIZE CLASS | CUMULATIVE % OF ALL ASSETS | NUMBER OF MANAGERS | PERCENTAGE OF ALL MANAGERS | SMALLEST FIRM ($M) | LARGEST FIRM ($M) |
|---|---|---|---|---|---|
| 5 (small) | 100 | 175 | 33 | 16 | 1,908 |
| 4 | 99 | 121 | 23 | 1,909 | 9,413 |
| 3 | 95 | 70 | 13 | 9,601 | 19,334 |
| 2 | 90 | 81 | 15 | 20,092 | 77,036 |
| 1 (large) | 75 | 84 | 16 | 79,825 | 724,510 |
| Total | | 531 | 100 | | |

*Source: Nelson's Marketplace*

## EXHIBIT 2

**Firm Size Class Stability (10/1/00–9/30/05)**

| | 5 (SMALL) | 4 | 3 | 2 | 1 (LARGE) |
|---|---|---|---|---|---|
| 5 (small) | 74.6% | 23.9% | 1.5% | 0.0% | 0.0% |
| 4 | 8.6% | 61.4% | 15.7% | 14.3% | 0.0% |
| 3 | 0.0% | 33.3% | 30.0% | 33.3% | 3.3% |
| 2 | 0.0% | 7.1% | 7.1% | 50.0% | 35.7% |
| 1 (large) | 0.0% | 0.0% | 0.0% | 4.0% | 96.0% |

*Source: Nelson's Marketplace*

One explanation of this pattern is that during a period of flat markets and unrelenting cost and pricing pressures, the most obvious ways for large firms to grow have been to create new products or undertake mergers and acquisitions with significant mid-sized firms. Because nearly all large asset managers are now either publicly held or part of quoted financial conglomerates, management tends to feel compelled to pursue such growth strategies. Unfortunately, these initiatives are the very things that often worry us in our manager selection due diligence process, since they are very costly, distract management attention away from client portfolios, and frequently lead to staff turnover or other unwelcome organizational changes.

In all, 702 managers met our general selection criteria for inclusion in this study. 108, of which 44% were in the smallest size class, were excluded because they stopped reporting performance at some point during the 2000–2005 period. Since small managers make up 33% of our final sample, it is fair to say these managers have an above-average mortality rate, whether due to poor performance, acquisition or other restructuring. On the other hand, of the 63 products that were excluded because they were newly created during the period, 27% represented new small firms, indicating that entrepreneurship is alive and well in our industry despite growing structural cost disadvantages.

## PERFORMANCE BY SIZE CLASS

During our five-year study period, constraining manager searches to the multi-billion dollar firms in size classes 1 and 2 would have automatically eliminated more than 70% of the managers in the top performance quartile. Exhibit 3 shows the composition of each of the four performance quartiles and compares it with the composition of the total manager sample. The smallest managers make up 39.1% of the top quartile, even though they make up only 33% of the total sample. No other group is overrepresented in this way. Similarly, the smallest managers make up only 22% of the bottom quartile. Only the next-largest group is also underrepresented in this way, and by a much smaller margin. These results suggest that while selecting a smaller firm cannot guarantee higher performance, clients searching for superior performance potential and defensive characteristics are more likely to find them in this category than any other.

In general, results for smaller firms are more dispersed, showing a broader range of performance on both the upside and the downside. This result fits our intuition that as money management firms grow, they become more interested in growth than in performance, and the distribution of their returns tends to converge toward the median. In most time periods for which we have repeated this analysis, the broader dispersion of small manager

## EXHIBIT 3

**Composition of Performance Quartiles by Size Class**

| | MANAGER SIZE BY CLASS | | | | | |
|---|---|---|---|---|---|---|
| | 5 (SMALL) | 4 | 3 | 2 | 1(LARGE) | |
| Percentage of All Managers | 33.0% | 22.8% | 13.2% | 15.3% | 15.8% | 100.0% |
| Performance Quartile | | | | | | |
| 1 | 39.1% | 21.1% | 10.5% | 14.3% | 15.0% | 100.0% |
| 2 | 33.8% | 23.3% | 10.5% | 19.5% | 12.8% | 100.0% |
| 3 | 36.8% | 24.8% | 10.5% | 10.5% | 17.3% | 100.0% |
| 4 | 22.0% | 22.0% | 21.2% | 16.7% | 18.2% | 100.0% |

*Source: Nelson's Marketplace*

returns has led them to be overrepresented in both the top and bottom quartiles, highlighting the potential risks as well as the rewards of investing with them.

The great difference between the most recent test period and prior versions of this study has been the depth and duration of bear market action. We have always observed that small managers on the whole seem to deliver some of their best results in down market periods, and it so happened that they had a greater opportunity to show their talents recently than in other periods. The other side of the coin, however, is that large- and mid-sized firms have never done so badly. Clients who invested with them simply were the market and could not get out of the way when the bears were charging.

Institutional investors can use this experience to adjust the breadth of their manager searches in the future. Investors (or their consultants) who have demonstrated a record of selecting median performers might be better off looking in the $20–80 billion AUM range, since size class 2 had the highest median as shown in Exhibit 4. On the other hand, investors more skilled at manager selection may see a greater return from the cost of searching if they focus on smaller managers, since size class 5 has done almost as well at the median and much better at the first quartile mark. Similarly, if one is concerned about the market's overall return potential, smaller managers seem the place to be.

## COMPOSITE PERFORMANCE

As mentioned previously, there are clearly additional risks associated with investing with smaller firms. Chief among these are the business risk that the firm will fail to attract additional assets and go out of business and (at least in most periods we have studied) the "torpedo risk" of dramatic underperformance. For these reasons, our investment process stresses qualitative assessment of manager organizations, due diligence in depth, and the construction of diversified multi-manager programs.

To get some idea of how management firms of different sizes work together in multi-manager investment programs, we formed equally weighted composites of quarter-by-quarter performance for each size class. As shown in Exhibit 5, the smallest management firms, collectively including both the best and the worst performers, outperformed all other groups and outperformed the index by more than 5% per year on a gross basis.

This wide margin of victory is the largest in the history of this study and can be attributed to the down-market phenomenon mentioned above. In Exhibit 6, we break down the five-year period into 12 up-market quarters and eight down-market quarters.

In up-market periods, small firms outperformed just as often as other firms, but by a smaller margin. In down-market periods, however, the small manager composite outperformed in every case, and by the widest margin by far of any group. These results are again consistent with our practical experience. Individually small firms tend to have less predictable performance, but when examined in groups, as in a diversified multi-manager program, the risk appears to be reduced.

## OTHER EXPLANATIONS FOR PERFORMANCE

Why do the smallest asset managers frequently have such a strong performance advantage over large ones? In

### EXHIBIT 4

**Annualized Performance by Size Class (10/1/00–9/30/05)**

| | PERFORMANCE (%) BY SIZE CLASS | | | | | |
|---|---|---|---|---|---|---|
| PERCENTILE | 5 (SMALL) | 4 | 3 | 2 | 1 (LARGE) | ALL MANAGERS |
| 5th | 15.37 | 16.72 | 15.18 | 13.36 | 11.38 | 14.96 |
| 25th | 8.51 | 6.81 | 5.85 | 6.84 | 6.99 | 7.01 |
| 50th | 3.69 | 2.69 | 0.33 | 3.79 | 1.54 | 2.69 |
| 75th | –0.36 | –1.78 | –6.48 | –2.61 | –2.88 | –2.24 |
| 95th | –6.50 | –8.00 | –11.61 | –9.80 | –8.30 | –9.15 |
| S&P 500 | –1.49 | | | | | |

*Source: Nelson's Marketplace*

## EXHIBIT 5

**Annualized Performance for Size Class Composites (10/1/00–9/30/05)**

| | SIZE CLASS | | | | |
|---|---|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 |
| Performance (%) | 4.22 | 2.80 | 0.55 | 2.56 | 1.75 |
| S&P 500 | –1.49 | | | | |

*Source: Nelson's Marketplace*

more than 25 years of working with smaller firms, we have arrived at our own largely qualitative answers.

- Greater appetite for risk among entrepreneurial owner-portfolio managers.
- Less bureaucratic working environment, allowing crisp decision making.
- Greater motivation and less complacency.
- Fewer liquidity problems.
- Greater organizational flexibility to deal with changing market environments.

Naturally, however, these are qualitative attributes that we look for, but they are difficult to prove with data.

What we can do, however, is use data to show that common shortcomings of performance studies are not the source of the small firm advantage we observe. For example, we often hear the objection that small firms do better because they invest more in small cap stocks. In our sample, however, small cap bias[3] does not appear to account for the small firm advantage in performance. All products identified as small cap or small-mid cap were deliberately excluded from this study to drive home this very point. Moreover, although mid caps as represented by the Russell Midcap Index outperformed the S&P 500 over the 4Q00–3Q05 period by a wide margin (6.2% vs. –1.5% on an annualized basis), the small firms in our sample were less likely (15% vs. 18%) to report a mid cap focus than were the larger firms.

Further, while the past five years have clearly favored the value style over growth, Exhibit 8 shows that the same pattern of small manager outperformance at all quartile breakpoints held across all major style groups during that same time period.

## EXHIBIT 6

**Relative Composite Performance in Up and Down Markets Vs. S&P 500 By Size Class (10/1/00–9/30/05)**

UP MARKETS

| SIZE CLASS | COMPOSITE AHEAD | | COMPOSITE BEHIND | |
|---|---|---|---|---|
| | NUMBER OF QUARTERS | AVERAGE RELATIVE PERFORMANCE (%) | NUMBER OF QUARTERS | AVERAGE RELATIVE PERFORMANCE (%) |
| 5 (small) | 10 | 1.13 | 2 | –1.04 |
| 4 | 10 | 1.15 | 2 | –1.26 |
| 3 | 10 | 1.37 | 2 | –1.22 |
| 2 | 11 | 1.22 | 1 | –0.55 |
| 1 (large) | 10 | 1.22 | 2 | –0.43 |

DOWN MARKETS

| SIZE CLASS | COMPOSITE AHEAD | | COMPOSITE BEHIND | |
|---|---|---|---|---|
| | NUMBER OF QUARTERS | AVERAGE RELATIVE PERFORMANCE (%) | NUMBER OF QUARTERS | AVERAGE RELATIVE PERFORMANCE (%) |
| 5 (small) | 8 | 2.22 | 0 | NA |
| 4 | 7 | 1.68 | 1 | –0.03 |
| 3 | 5 | 0.49 | 3 | –0.84 |
| 2 | 6 | 1.44 | 2 | –0.55 |
| 1 (large) | 6 | 1.06 | 2 | –0.52 |

*Source: Nelson's Marketplace*

## EXHIBIT 7

### Breakdown of Manager Sample by Cap Size Orientation and Style

| | COMPOSITION OF EACH SIZE CLASS | | | | | |
|---|---|---|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 | ALL MANAGERS |
| Large Cap | 75.4% | 70.2% | 70.0% | 74.1% | 79.8% | 74.0% |
| Mid Cap | 15.4% | 24.0% | 25.7% | 23.5% | 17.9% | 20.3% |
| *Diversified* | *9.1%* | *5.6%* | *4.3%* | *2.5%* | *2.4%* | *5.6%* |
| Value | 34.3% | 42.1% | 35.7% | 48.1% | 39.3% | 39.2% |
| Core | 31.4% | 19.8% | 12.9% | 22.2% | 27.4% | 24.3% |
| Growth | 34.3% | 38.0% | 51.4% | 29.6% | 33.3% | 36.5% |

*Source: Nelson's Marketplace*

In this analysis, we grouped products into value, growth or core categories based on firms' self-reported descriptions or benchmarks. Managers describing themselves as value, high yield, special situations or defensive value were assigned to the value category, while the growth category includes self-reported labels of growth or aggressive growth. The core category includes those describing themselves as core or both growth and value. Index and enhanced index portfolios were excluded from the study, since we wanted to observe the impact of size on purely active investment decision processes.

## EXHIBIT 8

### Annualized Performance by Size Class and Style (10/1/00–9/30/05)

VALUE MANAGERS

| | PERFORMANCE (%) BY SIZE CLASS | | | | | |
|---|---|---|---|---|---|---|
| PERCENTILE | 5 | 4 | 3 | 2 | 1 | ALL MANAGERS |
| 5th | 18.37 | 18.34 | 18.70 | 14.07 | 12.84 | 16.99 |
| *25th* | *13.27* | *9.49* | *13.13* | *11.76* | *9.54* | *11.19* |
| 50th | 8.79 | 6.79 | 6.95 | 6.66 | 6.99 | 7.01 |
| 75th | 5.86 | 3.53 | 4.65 | 5.20 | 4.05 | 4.68 |
| 95th | 2.32 | 1.25 | –2.96 | 2.61 | –1.16 | 1.35 |

GROWTH MANAGERS

| | PERFORMANCE (%) BY SIZE CLASS | | | | | |
|---|---|---|---|---|---|---|
| PERCENTILE | 5 | 4 | 3 | 2 | 1 | ALL MANAGERS |
| 5th | 7.68 | 4.41 | 5.09 | 6.51 | 10.16 | 5.39 |
| 25th | 1.78 | 0.46 | –1.04 | –2.62 | –2.30 | 0.46 |
| *50th* | *–0.68* | *–2.74* | *–5.82* | *–5.59* | *–5.57* | *–3.61* |
| 75th | –4.75 | –6.44 | –9.47 | –8.24 | –7.93 | –7.72 |
| 95th | –10.82 | –8.95 | –12.57 | –18.08 | –11.10 | –11.21 |

CORE MANAGERS

| | PERFORMANCE (%) BY SIZE CLASS | | | | | |
|---|---|---|---|---|---|---|
| PERCENTILE | 5 | 4 | 3 | 2 | 1 | ALL MANAGERS |
| 5th | 11.80 | 12.02 | 10.70 | 7.49 | 9.12 | 11.03 |
| 25th | 6.89 | 5.52 | 9.59 | 5.67 | 2.89 | 5.92 |
| 50th | 3.31 | 2.34 | 0.97 | –0.37 | 0.18 | 1.85 |
| *75th* | *0.29* | *–0.24* | *0.10* | *–1.39* | *–0.63* | *–0.58* |
| 95th | –2.41 | –4.13 | –0.58 | –3.21 | –4.28 | –2.68 |

*Source: Nelson's Marketplace*

The possibility of non-response bias raises additional questions. As mentioned earlier, we were forced to exclude 171 managers from our sample because they failed to report data for some portion of the five-year study period. An investor conducting a manager search in 2000 would have been able to select and hire these managers just as well as any of those included in our sample. As long as a portfolio existed at the end of 2000, he or she would not have known in advance anything that would have disqualified it.

If it turned out that these products as a group were more likely to be managed by small firms, and subsequently dropped out of Nelson's Marketplace database more frequently due to poor performance, their absence from our study sample would bias our results. The remaining small firms would look better on average as a result. In past versions of this study, however, we have used an analysis of partial time periods to estimate the impact of non-response bias at 20–35 bp per annum, i.e., the performance of the smallest firms would look this much worse if all managers had reported results for the full period and had been included in the sample. While significant, this effect does not nearly account for the full magnitude of the small firm performance advantage we have observed.

## CONCLUSION

One of the most frequent criticisms of performance studies is that they show results only for one specific period of time, when markets were dominated by one or another particular trend. This article, however, marks the fourth time in the past 13 years that we have undertaken our analysis, during which time markets have been as varied as one could wish. Looking across these iterations, there are a few recurring conclusions that we feel we can state with great confidence.

- Small firm results are more widely dispersed, while large firms' returns cluster around the median. Consequently, investor skill in manager selection is more likely to be rewarded when applied to the small-firm universe. This often holds true even if selection skill is limited simply to eliminating the worst performing candidates.

- Small firms sometimes outperform large ones at the median, and sometimes underperform them, but they almost always seem to do better at the first quartile.
- Small firms often do much better in down markets.
- Investors who insist on hiring only large firms probably are not protecting themselves and possibly are missing out on most of the best talent in the marketplace.
- These results do not depend on exclusive use of small or mid cap stocks, nor on any particular investment style.

Unfortunately, there is no free lunch in investing. Working successfully with smaller firms frequently entails additional risks, due diligence, and administrative overhead. Investing via a manager of managers with proven skills in research, operations and portfolio management addresses these concerns head-on and has proven highly beneficial for our clients. Using a basket of managers relieves the capacity constraints of dealing with a single small firm, opening the door to investment by major institutional clients. While individual disappointments are probably inevitable over the long term, a multi-manager approach spreads business risk across several small firms. The fund structure itself, when properly designed and rebalanced, provides a style-diversified and risk controlled investment vehicle. If this vehicle allows for pooling, the incremental cost of specialized research, monitoring and administration can be shared with other investors.

## ENDNOTES

The information in this article has been obtained from sources believed to be reliable, but its accuracy and completeness are not guaranteed. Any opinions expressed herein are those of the author and do not necessarily reflect those of the Northern Trust Corporation or its subsidiaries and are subject to change at any time without notice. Each investor should consult his own advisors regarding the legal, tax and financial suitability of the investment products described herein. No person should invest in any of those products who is not, either alone or with his advisors, able to evaluate the merits and risks of the investment. This article is provided for informational purposes only and does not constitute investment advice or an offer or solicitation to purchase or sell any security or commodity.

Past performance does not guarantee future returns. Manager returns are stated gross of fees and net of expenses. Index returns do not reflect the deduction of any fees or expenses. It is not possible to invest directly in an index. Performance greater than one year has been annualized.

[1] The sample excludes hedge, index, and enhanced index funds, REIT and other sector funds, and balanced products, as well as all firms under $10 million AUM. All data is drawn from Nelson's Marketplace, a product of Nelson Information, New York City. No attempt has been made to provide independent validation of this data.

[2] Note that more than one manager/product from the same firm may be included in our sample. Size class 5 includes 175 products managed by 164 different firms, so there are only a few small multiproduct firms. In contrast, most of the largest firms in our study are represented in the sample by several products each.

[3] Asset growth has been shown to degrade performance in small cap mutual funds. See for example Hurley and Kanner [1996].

## REFERENCES

Hurley, M. P., and Y.N. Kanner. "Analysis of the Effect of Size on Small Cap Mutual Fund Performance." www.undiscoveredmanagers.com, 1996.

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