“Quality” is among the most overused terms in investment vernacular. Few, if any, investment managers explicitly state that they implement a strategy that focuses on low-quality companies. Moreover, the term is inarguably subjective and often can serve as a blanket explanation for both good and bad investment performance. Fortunately, there are some helpful and widely accepted, albeit general, definitions of quality. And, in turn, there is significant historical data that defines time periods of high- and low-quality stock outperformance. A simple correlation of individual portfolio returns to these periods provides a basic manner for analyzing an individual portfolio’s quality behavior.

High-quality portfolios generally are expected to be more sustainable in difficult markets and serve as bedrock allocations in a portfolio construction. However, individual portfolio performance in the 2008 market downturn proved, quite painfully, that all stated high-quality investments did not deliver as expected. A good portion of the explanation is that the interpretation of quality is very subjective.

In this paper, we detail what we believe to be the key determinants of quality and offer evidence to support why these factors are critical in portfolio construction and led to better performance than the broad market index with less volatility. Additionally, we examine several of the potential benefits of high-quality investing and why we believe it to be essential to consider when making long-term investment decisions. Finally, we believe that the importance of focusing on quality is even more pronounced in the current fragile, deleveraging economy.
COMPounding—SIMply ESSENTIAL
Investing strategies are often complex, particularly those used by institutional investors. But whether a strategy uses intricate quantitative models or in-depth qualitative analysis, its success comes down to answering a simple mathematical question: How effectively does that investment compound its returns? The power of compounding is among the first concepts that any budding investment professional learns. Yet, as aspiring professionals become actual professionals, basic compounding mysteriously takes on an unsophisticated tone—and is replaced by far more arcane and complicated portfolio statistics. While many of these measures are very valuable, they don’t replace compounding as the most critical necessity for long-term investment performance and avoidance of the often unnecessary frustrations associated with recovering from steep losses.

Legend has it that Albert Einstein once called compound interest the most powerful force in the universe. To that end, compound investment returns can be just as powerful, with one additional important requisite: consistency. For an investment

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**Methodology**
Detailed below is the methodology used to create the high-quality, low-quality and market universes used throughout the paper.

**Time Period:** Twenty years from April 1, 1991, through March 31, 2011.

**Data Source:** FactSet.

**Universe:** At the end of each month, a universe was created using the 1,000 largest U.S. stocks, based on market capitalization, herein referred to as “the market”. The term market does not and should not imply the returns of any particular index or benchmark.

**Quality Scores:** At the end of each quarter the universe of 1,000 stocks (“the market”) was ranked using an average quality score based on six equally weighted quality factors (shown in table below) and placed into five portfolios of approximately 200 stocks. The fundamental ranks were lagged one quarter. For example, first quarter financials published in the second quarter were used to rank stocks in the third quarter.

**Quintile Definitions:** The top quintile portfolio (quintile 5) is defined as high-quality stocks, while the bottom quintile portfolio (quintile 1) is defined as low-quality stocks. Quintiles 2 through 4 were not used for the purposes of this paper.

**Returns:** Performance was calculated monthly based on market cap weighted portfolios for each of the five quintiles, comprising approximately 200 stocks each, and the larger universe, “the market.” Fees and expenses were not included and dividends were reinvested.

<table>
<thead>
<tr>
<th>Quality Factors</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Rank of Leverage (Debt/Equity)</td>
<td>Balance Sheet Strength</td>
</tr>
<tr>
<td>Industry Rank of Interest Coverage (EBITDA/Interest Expense)</td>
<td>Balance Sheet Strength</td>
</tr>
<tr>
<td>Predictability of EBITDA Over Trailing 12 Quarters</td>
<td>Earnings Stability</td>
</tr>
<tr>
<td>Percent of Quarters EBITDA Increased Over Trailing 12 Quarters</td>
<td>Earnings Stability</td>
</tr>
<tr>
<td>ROA (Net Income/Assets) Industry Rank</td>
<td>Operating Efficiency</td>
</tr>
<tr>
<td>Percent of Quarters ROA (Net Income/Assets) in Top Third of Industry Group Over Trailing 12 Quarters</td>
<td>Operating Efficiency</td>
</tr>
</tbody>
</table>

1 Earnings Before Interest, Taxes, Depreciation, and Amortization.
to fully capitalize on its compounding potential, it must preserve capital during down periods, thus allowing future portfolio returns to build upon previous results. An inconsistent investment (that is, one with a pattern of sharp gains and steep losses) is always battling to get back to "even" and is challenged to produce a long-term positive return. Moreover, inconsistency and volatility can shake investor confidence in weak market environments and increase the tendency to reduce investment exposure at the most inopportune moments.

Since the development of our investment philosophy in the late 1960s and through the founding of our firm in 1980 to the present, Perkins has always believed that quality companies offer the best opportunities for consistent returns. In other words, our approach sharply focuses on preservation of capital in down and difficult markets and adequate absolute returns in rising markets. And while quality companies may not provide the highest upside potential in rising markets, owning them over the long term may help protect a portfolio on the downside and afford it a better chance to take advantage of future positive returns by simply digging out of a much smaller hole.

In the following sections, we review the mathematical case for consistent compounding and outline the characteristics that we believe differentiate high-quality companies. We also present long-term statistical evidence (based on historical performance) that shows how a portfolio of high-quality companies outperformed over time by providing better downside protection, offering lower volatility and taking full advantage of more efficient compounding.

**THE IMPACT OF VOLATILITY ON PERFORMANCE**

Distinguishing between geometric and arithmetic returns is key to understanding compounding. Arithmetic returns are more intuitive and are what most investors could easily calculate. Let’s consider an investment of $1,000 over the course of 10 years. In its three best years, Portfolio A delivered returns of 15%, 12% and 10%. In its three worst years, it delivered returns of 0%, -5% and -10%. Now let’s consider Portfolio B, which returned 10% more in the best years and 10% less in the worst years, with top returns of 25%, 22% and 20% and losses of 10%, 15% and 20%. In the remaining four years of the decade, both portfolios returned 5% per year. Which portfolio delivers better results (see Exhibit 1)?

Both portfolios had the same arithmetic average return of 4.2% at the end of 10 years. By better preserving capital in the down years, Portfolio A compounded more effectively and delivered the higher annualized return over the full period (3.9% versus 3.1%). The cumulative return for the 10-year period would have been 47% for Portfolio A and 36% for Portfolio B.

This example may seem overly simplistic, but sometimes the most fundamental principles are taken for granted no matter how critical they are. In fact, basic mathematics shows that volatility drags down actual portfolio performance at the rate of 50% of a portfolio’s realized variance. For example, in Exhibit 2, Portfolio A has a 10% arithmetic average return with a 2% standard deviation. This portfolio mathematically will have a 9.98% geometric return (that is, 10% - ½ * 2%^2). If we
increase the volatility in that same portfolio to 20% (Portfolio B), then it can mathematically yield only an 8% geometric return (that is, 10% - ½ * 20%^2).

Finally, companies with lower debt have lower interest payments and are more able to pay out dividends, which historically have accounted for 40% of equity returns.2

To further evaluate the role of balance sheet strength in a quality context, we ranked companies on two dimensions: their interest rate coverage and their leverage rank within their respective industry. We found that companies with lower leverage and better interest rate coverage had more stable stock prices than those with lower quality balance sheets.

QUALITY DEFINED
Because we recognize the role of compounding in achieving long-term outperformance, Perkins places great importance on downside protection, which is how well equity portfolios, on average, perform compared to an equity benchmark in down markets. We believe we can provide greater downside protection by focusing on stocks that have a certain set of characteristics, which would characterize the stocks as high quality.

While quality, like beauty, can be in the eye of the beholder, we believe the critical indicators of quality include:

• Balance sheet strength
• Earnings stability
• Operating efficiency

See Methodology on page 2 for definitions.

Balance Sheet Strength
In the 1950s, Franco Modigliani and Merton Miller theorized that a company’s equity becomes riskier as the company increases the leverage on its balance sheet. There are several notable points to justify this conclusion:

• On the negative side, more debt increases a firm’s sensitivity to the business cycle, especially if the debt has a short duration. Unfortunately, firms that are continually revolving their debt may find credit markets tight or closed when they are most in need of financing.
• On the positive side, companies with manageable debt (or no debt) and the earnings to easily cover interest expenses have greater financial flexibility. They are less vulnerable to unexpected global, economic or market events, and are better-equipped to capitalize on opportunities and enhance their competitive positions.

Earnings Stability
We consider earnings stability a primary characteristic of quality companies. A company in a predictable industry allows management to effectively forecast its business, which generally translates into more efficient production and more precise inventory and capacity management. More efficient processes typically generate more predictable cash flow, which, in turn, can help shareholders value the company more accurately. When investors have an accurate picture of a company’s true worth, the likelihood of wide stock price swings can be dramatically reduced.

As Exhibit 4 illustrates, we found that companies with stable, growing earnings had lower risk and higher returns than stocks with less stable or falling earnings. In fact, over the past 20 years, stocks with highly stable earnings outperformed stocks with more variable earnings—and with less risk.

**EXHIBIT 4: EARNINGS STABILITY RETURN/RISK**

(April 1991 - March 2011)

<table>
<thead>
<tr>
<th>Annualized Return</th>
<th>Risk (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.9% Low Stability/Low Growth</td>
<td>9.5% High Stability/High Growth</td>
</tr>
<tr>
<td>16.3% Low Stability/High Growth</td>
<td>15.2% High Stability/Low Growth</td>
</tr>
</tbody>
</table>

Source: FactSet

For every quarter from April 1991 through March 2011, we ranked each stock in the universe of the largest 1,000 U.S. stocks by Predictability of EBITDA Over Trailing 12 Quarters and Percent of Quarters EBITDA Increased Over 12 Trailing Quarters. Based on the Predictability of EBITDA quality factor, we placed the stocks that ranked in the top half into a sub-group of 500 “high-earnings stability” stocks and those 500 stocks in the bottom half into a sub-group of “low-earnings stability” stocks. We followed the same process for Percent of Quarters EBITDA Increased which created sub-groups, “high-earnings growth” and “low-earnings growth.” Based on the sub-groups, we constructed two portfolios: 1) one with stocks that were in both the low-earnings stability and low-earnings growth sub-groups; and 2) one with stocks that were in both the high-earnings stability and high-earnings growth sub-groups. We then compared the annualized returns and standard deviations of each portfolio. Dividends were reinvested; taxes and account fees were excluded from this hypothetical example.

**Operating Efficiency**

To create shareholder value, a firm’s return on capital must exceed its cost of capital. Accordingly, a company with higher margins and greater returns on assets (ROAs) generates greater cash flow and is a more efficient organization, which helps to keep the organization’s cash flow positive during economic downturns. Also, firms with higher ROAs are often in industries that are not in decline, which helps avoid investing in value traps.

When analyzing operating efficiency, it’s important to examine both the level and consistency of a firm’s profitability. Accordingly, we examine how a company’s ROA compares to peers in its industry. Additionally, we evaluated how consistently profitable the firm is. When grouping stocks by both ROA industry rank and persistence (persistence being the frequency of quarters that a stock was in the top one-third of its industry group), we found the firms with the lowest volatility had both higher ROAs and more consistent profitability than their peers.

**EXHIBIT 5: OPERATING EFFICIENCY RETURN/RISK**

(April 1991 - March 2011)

<table>
<thead>
<tr>
<th>Annualized Return</th>
<th>Risk (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.9% Low-ROA Rank/Low ROA Persistence</td>
<td>10.2% High-ROA Rank/High ROA Persistence</td>
</tr>
<tr>
<td>16.5% Low-ROA Rank/High ROA Persistence</td>
<td>14.3% High-ROA Rank/Low ROA Persistence</td>
</tr>
</tbody>
</table>

Source: FactSet

For every quarter from April 1991 through March 2011, we ranked each stock in the universe of the largest 1,000 U.S. stocks by ROA (Return on Assets) Industry Rank and Percent of Quarters ROA in Top Third of Industry Group Over 12 Trailing Quarters. Based on the ROA Industry Rank quality factor, we placed the stocks that ranked in the top half into a sub-group of 500 “high-ROA rank” stocks and those 500 stocks in the bottom half into a sub-group of “low-ROA rank” stocks. We followed the same process for Percent of Quarters ROA in Top Third of Industry Group, which created sub-groups, “low persistence” and “high persistence.” Based on the sub-groups, we constructed two portfolios: 1) one with stocks that were in both the low-ROA rank and low persistence sub-groups; and 2) one with stocks that were in both the high-ROA rank and high-persistence sub-groups. We then compared the annualized returns and standard deviations of each portfolio. Dividends were reinvested; taxes and account fees were excluded from this hypothetical example.

**QUANTITATIVE QUALITY ANALYSIS**

**Overall Results**

Our analysis shows that over the past 20 years, high-quality stocks have outperformed low-quality stocks by 3.2% annually with 24% less risk, as defined by standard deviation. These stocks have higher quality financial characteristics, which translated into less risk.

<table>
<thead>
<tr>
<th></th>
<th>Market</th>
<th>Low-Quality Stocks</th>
<th>High-Quality Stocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Stock Price Return of Universe</td>
<td>9.5%</td>
<td>7.3%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Risk (Standard Deviation) of Universe</td>
<td>14.9%</td>
<td>18.9%</td>
<td>14.4%</td>
</tr>
</tbody>
</table>

High-quality stocks generated more consistent returns with less extreme peaks and troughs, which resulted in the strategy tending to lag in sharp market rallies, but not giving up as much ground when the market retreated, as shown in Exhibits 8 and 9. Over the past 20 years, an investor who invested $1,000 in high-quality stocks would have $7,393 today, versus $4,099 for the lowest quality stocks and $6,121 for the market portfolio, excluding taxes and fees (see Exhibit 6).
Up/Down Capture
To better understand how high-quality stocks perform versus low-quality stocks, we calculated the average monthly return of the respective universes when the market was falling and when the market was rising. As expected, the down-capture ratio of high-quality stocks was 87%, while low-quality stocks had a down-capture ratio of 119%. In up months, high-quality stocks had a 93% up-capture ratio versus 110% for low-quality stocks.

To further analyze the performance of high- and low-quality stocks, we looked at performance of the same universe of stocks over three recent market cycles.

Tech Wreck (September 1998-February 2003)
Following the Asian financial crises, stocks rebounded and continued to climb through early 2000. Driven by the technology bubble, low-quality stocks cumulatively at their peak gained 79%, which outpaced the 62% rise of the market portfolio and the 69% return of high-quality stocks. Once the tech bubble burst, low-quality stocks plummeted 54%, while high-quality stocks and the market both fell 39%. Over the entire cycle, high-quality stocks finished the period up 3% while low-quality stocks declined 17% and the market portfolio finished at -1%.

Financial Crisis (March 2003-February 2009)
Following the tech bubble burst, the Federal Reserve lowered interest rates to nearly zero, which spawned asset bubbles as investors used cheap credit to bid up asset prices. Through May 2007, low-quality stocks and the market portfolio soared 146% and 107%, respectively, while high-quality stocks lagged, gaining just 91%. Eventually, as the financial crisis unfolded, liquidity dried up, the housing market crashed and investors fled stocks in search of perceived safer vehicles. Ultimately, as governments and central banks provided liquidity and fiscal stimuli, global financial markets stabilized. Higher quality companies were generally better able to weather the...
storm because they had more robust balance sheets and business models, which provided the financial flexibility to ride out periods of financial upheaval. During the crisis, high-quality stocks fell 33%, while low-quality stocks and the market fell 69% and 47%, respectively. Cumulatively, high-quality stocks finished the market cycle up 29%, while low-quality stocks lost 23% of their values and the market gained 9%.

Recovery (March 2009-March 2011)
From March 2009 through March 2011, stocks rallied in anticipation of the global economy’s recovering from the credit-driven recession. Generally leading the charge were the most financially weak firms since they had been sold down due to fears that shareholder equity would be wiped out in bankruptcy. Against this backdrop, high-quality firms rose 70%, while low-quality firms soared 121% and the market gained 88%.

Conclusions

Over the past two and a half market cycles, we observed that low-quality stocks generated the strongest performance during market rallies, while higher quality issues generally lagged. Outperformance flipped in down markets as high-quality stocks provided greater downside protection than low-quality stocks, which fell significantly as markets retreated. Our analysis demonstrates that overall, when the up and down phases of the market cycle were combined, higher quality stocks finished ahead of lower quality stocks. This is due in large part to more efficient compounding generated from having more consistent and less negative returns.

**CONCLUSION**

In this paper, we demonstrated the importance of investing in quality companies to achieve superior long-term performance. Through this past decade investors learned—in bold and painful ways—how increased volatility resulted in diminished performance.

In our analysis, we identified a universe of quality stocks with stable earnings, strong balance sheets and efficient operations. These high-quality companies, with predictable fundamentals, have outperformed low-quality stocks by 3.2% per year with 24% less risk!

More practically, an investment approach focused on high-quality stocks, consistency of returns and a track record of mitigating the worst major market downturns should give investors the confidence to stay the course. When investors reduce the emotional tendency to react to fear and instead maintain their investment positions at market bottoms, it is generally presumed that they stand to better benefit from a market rebound. Unfortunately, both sophisticated institutions and novice investors all too often react out of fear, sell their investments and suffer the consequences.

Finally, consistency of returns can also allow investors to take a longer term perspective by reducing the concern about the risks of near-term downside volatility. And, of course, keeping a long-term perspective is most helpful in trying to achieve long-term outperformance.
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Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA), is a measurement used to analyze and compare profitability between companies and industries.

Leverage is the use of various financial instruments or borrowed capital, such as margin, to increase the potential return of an investment.

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets.

Standard Deviation is a statistical measure of the extent to which returns of an asset vary from its average.

Up/down capture shows what percentage of the market’s performance (as evidenced by an appropriate market index) the manager “captured.” Up market capture is the extent to which the strategy gained value relative to the index over months when the index achieved gains. Down market capture is the extent to which the strategy lost value over months when the index declined. A measure of 100% means the strategy results went up (or down) exactly the same amount as the broader market index.

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