

“What Works”: Key New Findings on Stock Selection

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Article Highlights

Better and more consistent results are achieved when a composite of individual factors is used.

A value composite helps avoid value traps and can show some seemingly pricey stocks to be attractively valued.

Financial strength and earnings quality composites are better used to identify stocks to avoid.

When I began the research for what would eventually become the first edition of “What Works on Wall Street” in 1995, I sought to identify which individual factors delivered the best alpha (risk-adjusted performance) over time and did so with the greatest consistency (base rates).

What I have found is that there is no “best” factor, per se; rather, the strongest individual factors come in and out of favor. The price-to-sales ratio and EBITDA-to-enterprise-value ratio vie for top billing, but it depends on the time period under review. (EBITDA is earnings before interest, taxes, depreciation and amortization. Enterprise value is a combination of a company’s market capitalization, debt, minority interest and preferred stock at market value, less any investments in associated companies at market value and all cash and cash equivalents.)

Figure 1 illustrates the changing nature of individual factors over rolling 10-year periods. Look at how the free-cash-flow-to-enterprise-value ratio briefly added 4% more value than the value composite, but then took a nose dive.

This new research led to what can be considered the key new findings in the fourth edition of “What Works on Wall Street” (McGraw Hill, 2012): You get much better and more consistent results by using several factors together in a composite than you get using a single factor alone. Here I discuss our value composite first, then move on to others that



look for financial strength and earnings quality. What’s more, by combining these three factors you greatly improve your chances of finding high quality, financially strong companies that offer excellent value. Let’s start with a look at O’Shaughnessy Asset Management’s (OSAM) value composite.

Assessing Whether a Stock Is a Value or Expensive

Sometimes a stock with a low price-earnings ratio is not a true value stock. The way to determine that is to rank the stock on other key value variables. As you can see in Figure 1, a composite made up of five individual factors—price to sales, price to earnings, EBITDA to enterprise value, free cash flow to enterprise value and shareholder yield—outperforms its individual components in 85% of all rolling 10-year periods between 1972 and 2012.

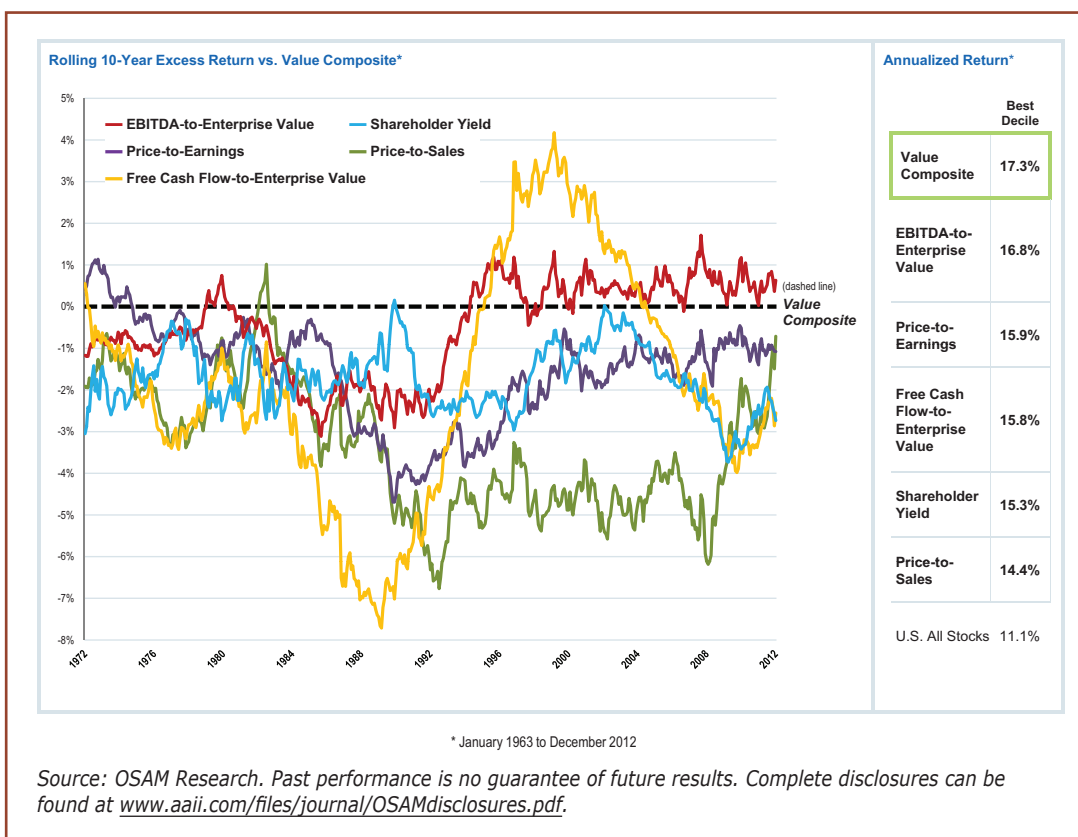
We create the composite in this manner: For each combined group of factors, we assign a percentile ranking (from 1 to 100) for each stock in two universes: All Stocks and Large Stocks. If a stock has a price-earnings ratio that is in the lowest one percent for the universe, it will receive a rank of 1; if a stock has a price-earnings ratio in the highest one percent for the universe it will receive a rank of 100. We follow a similar convention for each of the factors—thus, if a stock is in the lowest one percent of the universe based on its price-to-sales ratio, it gets 1; if the stock is in the highest one percent, it gets a 100. If a value is missing for a factor,

we ignore the factor; however, we require at least three of the factors to have a value to be included in the value composite. For shareholder yield—which is dividend yield plus buyback yield—those stocks in the one percent of the universe with the highest yields will be ranked 1, whereas those within the lowest one percent will be ranked 100. Once we've assigned a rank to all the factors, we add up their rankings and assign the stocks to deciles. Those with the lowest scores are assigned to decile one, while those with the highest scores are assigned to decile 10.

Thus, the stocks in decile one would feature the best combined score and would have the lowest price-earnings ratios, price-to-sales ratios, etc., whereas the stocks in decile 10 would have the highest price-earnings ratios, price-to-sales ratios, etc. Figure 2 shows the results. From January 1, 1963, through December 31, 2012, the stocks in the best decile of the value composite earned an average annual compound return of 17.3%, approximately 6.2% better than the All Stocks universe, which earned 11.1% over the same period.

You can see in Figure 2 that as a stock becomes increasingly expensive, it stops providing excess returns—indeed, the high valuation actually detracts from the return you would earn by simply investing in the All Stocks universe. The worst decile by value subtracts 9.6% annually from the All Stocks return, returning a miserable 1.5% annually over the period. To put into perspective how badly the stocks in the worst decile performed, consider that an investment in U.S. Treasury bills earned 5.18%

Figure 1. Value Composite: Performance by Factor



annually over the same period! What's more, if you look at how consistently the best decile by value beat the All Stocks universe—again featured at the bottom of Figure 2—you will see that it beat the All Stocks universe in 99% of all rolling five-year periods and 100% of all rolling 10-year periods. Conversely, the stocks in the worst decile for value beat the All Stocks universe in just 5% of all rolling five-year periods and never in any rolling 10-year period.

Value Traps and Actual Bargains

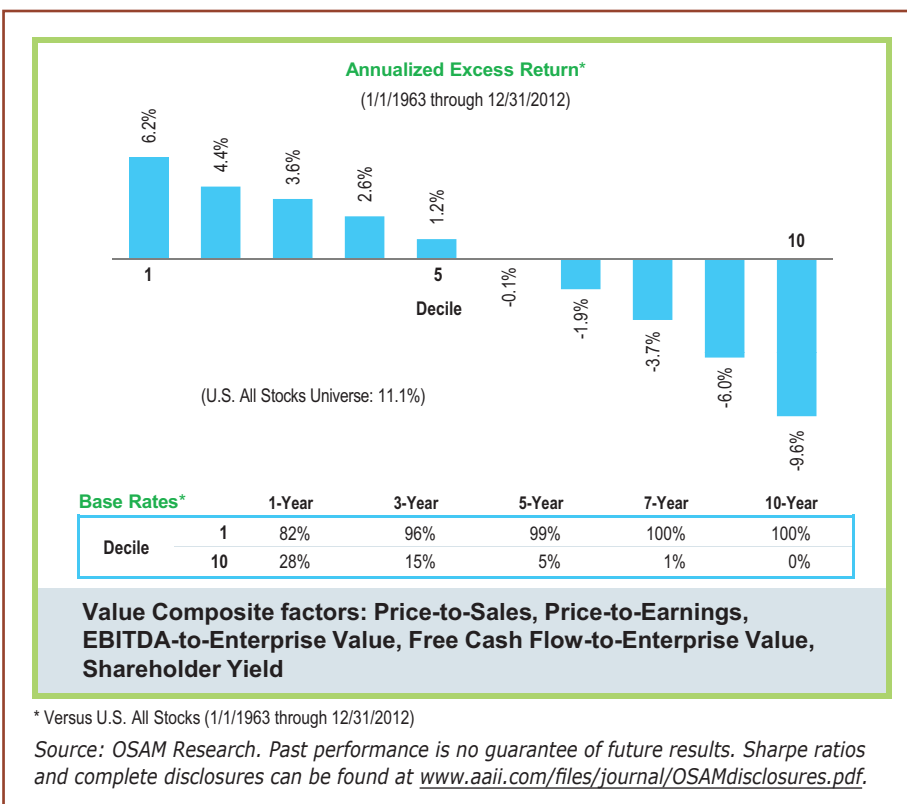
Let's look at two examples where using the value composite helps avoid value traps and two examples where seemingly pricey stocks were actually well valued. We'll use the S&P 500 index as our starting universe.

On January 31, 2010, Merck and Co. (MRK) had a price-earnings ratio of 10.02, making it the 17th cheapest stock in the S&P 500 based upon

price-earnings ratio alone. Its low price-earnings ratio might have made it very appealing to a value investor, yet when looking at Merck through the lens of the value composite, it was actually more expensive than 65% of the stocks in the S&P 500 and should have been avoided. Had you bought the stock on January 31, 2010, you would have lost 35% of your money 12 months later. Over the same time period, the S&P 500 was relatively flat, losing just 42 basis points (0.42%).

Another example is Hartford Financial Services Group (HIG). On May 31, 2011, the stock had a price-earnings ratio of just 6.86, making it the sixth cheapest stock in the S&P 500 based on price-earnings ratio. Yet when measured by the value composite, it was more expensive than 56% of the names in the S&P 500. Again, this is an indication that the stock should have been avoided. Had you invested on May 31, 2011, you would have lost 9.40% of your money 12 months later, while the S&P 500 gained 22.18%.

Figure 2. Value Composite Performance

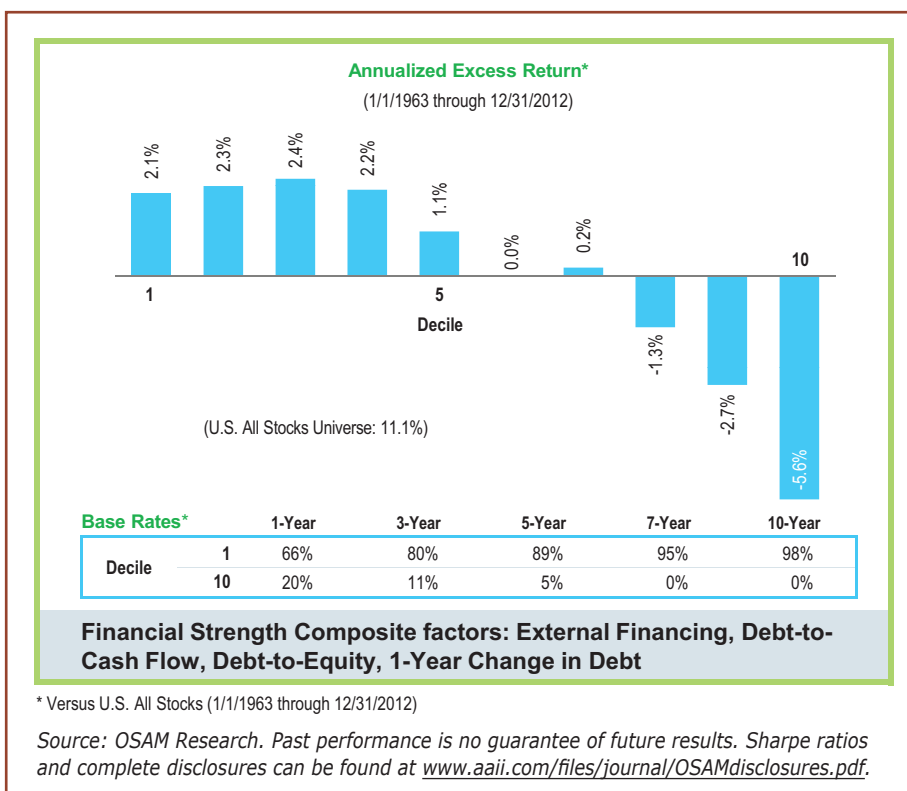


Now, let's look at two stocks that appeared to be grossly overvalued based upon their price-earnings ratio, but were in reality very attractively priced based on their value composite score. On February 28, 2001, Office Depot (ODP) had a price-earnings ratio of 57.44, making it more expensive than all but 94 other stocks in the index. Yet its value composite score revealed it to be cheaper than 74% of the other stocks in the index, making it an attractive stock to a value investor. Had you bought Office Depot then, you would have realized a gain of 106.63% over the next 12 months from owning the stock, versus a loss of 9.52% for the S&P 500.

Another example is Dillard's Inc. (DDS). On April 30, 2004, the stock had a price-earnings ratio of 153, making it more expensive than all but 76 other stocks in the index. Yet Dillard's ranking by the value composite found it to be cheaper than 74% of all the other stocks in the index. Had you bought the stock then, you would have a gain of 39.21% 12 months later, versus a gain of just 6.33% for the S&P 500.

Finally, as I write this on August 27, 2013, two stocks that might appear cheap based upon price-earnings ratio are actually very expensive when ranked by the value composite: M&T Bank Corp. (MTB) has a price-earnings ratio of 13.29, making it cheaper than 418 stocks in the index. Its value composite ranking, however, shows it to be more expensive than 67% of the other stocks in the index. SCANA Corp. (SCG) has a price-earnings ratio of 14.07, which is less expensive by price-earnings ratio than 400 other stocks in the index, whereas the stock's value composite score finds that it is more expensive than 64% of the stocks in the S&P 500. Thus, the value composite on its own proves to be a very valuable tool for investors hunting for bargains in the stock market.

Figure 3. Financial Strength Composite Performance



Financial Strength and Earnings Quality Composites

Our next two composites also add excess return on their own, but are actu-

ally better used to identify which stocks to avoid. We'll start with the financial strength composite.

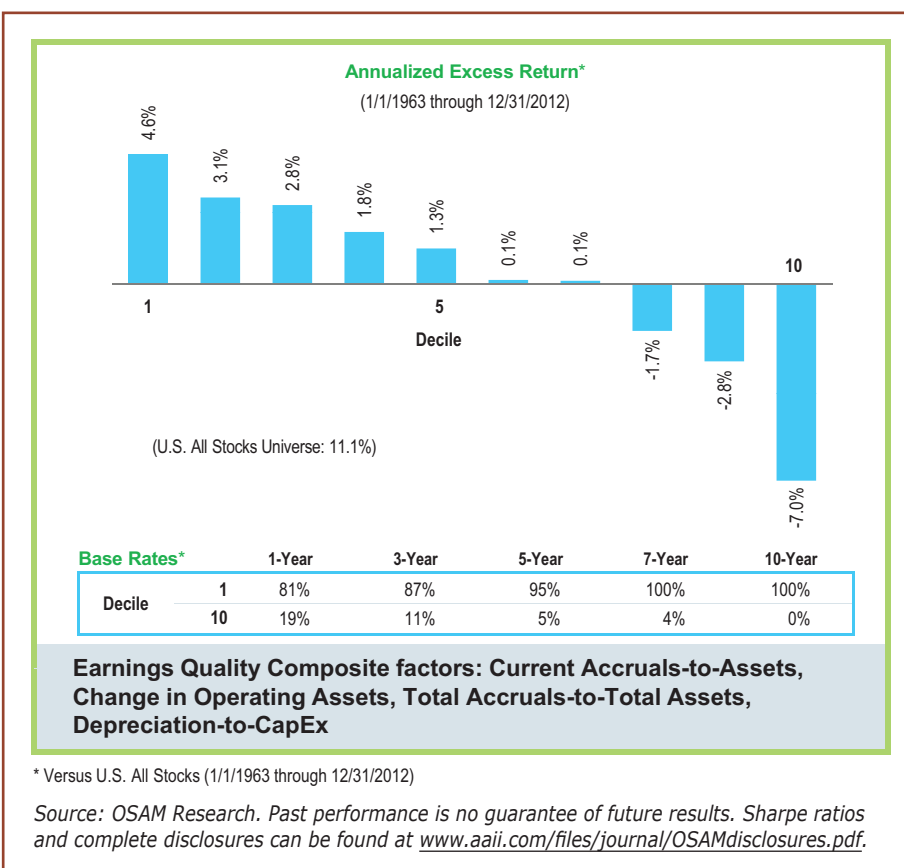
Financial Strength

The financial strength composite ranks stocks on the following four factors: external financing, debt-to-cash flow ratio, debt-to-equity ratio and one-year change in debt. The composite is created exactly like the value composite, with stocks with the best levels for each factor receiving a 1 and stocks with the worst levels for each receiving a 10. In the case of the financial strength composite, stocks missing a value for a factor are ignored; to be included in the composite, a stock must have a value for at least two of the four factors.

Figure 3 shows the results by decile for the period starting January 1, 1963, and ending December 31, 2012. If you simply bought the decile of stocks with the greatest financial strength, you would have earned an average annual compound return of 13.2% versus the annual 11.1% return earned by the All Stocks universe, whereas an investment in the worst decile of financial strength earned 5.5% annually, just slightly ahead of Treasury bills. In terms of consistency, the best decile by financial strength beat All Stocks in 89% of all rolling five-year periods and 98% of all rolling 10-year periods. Conversely, the worst decile by financial strength beat the All Stocks universe in just 5% of all rolling five-year periods and in none of the rolling 10-year periods.

In this case, two examples show how combining the financial strength composite with the value composite helps you weed out stocks that look great in the value composite, but whose score on the financial composite would have removed them from consideration. At the end of February 2005, General Motors Co. (GM) was cheaper than 84% of the stocks in the index based on the value composite and sported a dividend yield of 5.42%. Based just on the value composite and the high yield, this would have been a very attractive purchase for either a deep value or dividend investor. Yet, consulting the financial strength

Figure 4. Earnings Quality Composite Performance



composite, you would have seen that GM was in the worst decile by financial strength, thus eliminating it from consideration. Twelve months later, GM had lost 39.46%, compared to a gain of 8.39% for the S&P 500.

A similar thing occurred at the end of November 2007 when Citigroup (C) was cheaper than 81% of the stocks in the value composite and had a dividend yield of 6.69%, making it very attractive on value and yield. Yet its financial strength rank of 96.20 put it in the worst decile for financial strength and eliminated it from consideration. Over the next 12 months, the stock lost 74% of its value, whereas the S&P 500 sank 39.46%. The power of the combined composites is undeniable.

Two stocks that currently face the same problem are Laboratory Corporation of America Holdings Group (LH) and Jabil Circuit (JBL). Both stocks are cheaper than 85% of the stocks in the value composite, but have financial

strength ratings in the second-worst decile. This characteristic would eliminate them from a prudent value investor's portfolio.

Earnings Quality

Finally, let's look at our earnings quality composite. It is composed of the following four factors: ratio of current accruals to assets, change in operating assets, ratio of total accruals to total assets and ratio of depreciation to capital expenditures. [Current accruals to assets is defined as the difference in accruals earnings over the last 12 months minus the cash earnings over the last 12 months. Total accruals to total assets is calculated as the change in working capital accounts on the balance sheet (change in current assets – change in current liabilities – change in cash). See the online version of this article for more detailed explanations.] Obviously, we would expect companies with high

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lower G-Scores.

Table 1 presents the nine high price-to-book-value companies with a G-Score of seven as well as the 49 high price-to-book stocks with G-Score of 6. The stocks are sorted alphabetically within each score range. The bottom of the table lists the sector medians that were calculated and used for sector comparisons. Valuation, profitability,

growth and investment varies widely by sector, so it makes sense to make sector or industry comparisons when possible.

Beyond finding winning growth stocks, Mohanram's work reveals that growth stocks with low G-Scores should be avoided.

Mohanram's work consists of creating high price-to-book portfolios and further segmenting them in varying

G-Score portfolios. Overall, the higher the G-Score the greater the average portfolio return. Results of individual stocks will vary dramatically. The individual components of the G-Score represent a useful checklist for investors examining growth stocks. However, even with these additional financial tests, it is important to perform a careful analysis of any passing stock. ▲

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Stock Strategies

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earnings quality to perform much better than those with low quality, as low quality infers that the chief operating officer (COO) of the company is pulling every trick out of the bag in order to make earnings appear more solid than they are. That is exactly what we find.

Between January 1, 1963, and December 31, 2012, the best decile by earnings quality earned an average annual compound return of 15.7%, approximately 4.6% better than the All Stocks universe. The worst decile by earnings quality earned just 4.1% per year, making Treasury bills a better investment choice. Figure 4 shows all 10 deciles. In terms of consistency, the best decile of earnings quality beat the All Stocks

universe in 95% of all rolling five-year periods and 100% of all rolling 10-year periods. The worst decile by earnings quality beat the All Stocks universe in just 5% of all rolling five-year periods and in no rolling 10-year period.

As with financial strength, earnings quality is best used to help you avoid stocks that can be disastrous investments. For example, poor earnings quality scores would have kept you out of three world-class frauds: Enron, Tyco International and WorldCom. Each of these companies was in the worst decile for earnings quality, and their losses ranged from 63% and 99%. In each case, their earnings quality scores would have prevented you from buying them. Two current examples of stocks in the worst decile

for earnings quality are CarMax (KMX) and Monster Beverage Corp. (MNST).

Use Composites Instead of Individual Factors

We have seen that using composites rather than individual factors can add real value to an investor's portfolio selection process. Finding companies with excellent value, financial strength and high earnings quality leads to much better performing portfolios than those constructed using single factors or single composite factors alone. When used in combination, they allow for the best of stocks to earn a way into your portfolio and they eliminate stocks that are often positioned to do poorly. ▲

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