Balance-Sheet Accruals:

A Signal of Future Stock Performance in Overlooked Data

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Co-Chief Investment Officer and Director of Research—US Value Equities

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Publicly disclosed balance-sheet data that provide valuable insight into the reliability and likely persistence of reported earnings are overlooked by many investors. This makes the data powerful signals of future stock performance. Our research suggests that by systematically adding this information to our existing tool set, we can enhance both our research and our portfolio performance.

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Most investors claim that they pay attention to what is sometimes called earnings quality, but recently published academic research suggests otherwise. Investors often ignore valuable publicly disclosed information regarding the reliability of reported earnings and potential improvement or deterioration, creating an opportunity to exploit the likely impact on future stock performance.

Our own research has confirmed the academic findings and enhanced the stock-selection tool the academics suggested by making it more timely and more broadly applicable. Just as important, our research sheds light on the fundamentals that the tool captures, which has made it a very useful addition to our research-review process. The tool appears to be capturing information that is not in our existing tool set, and thus can be additive to the overall returns we produce in our US value portfolios.

Our tool measures the growth in balance-sheet accruals relative to the overall size of the balance sheet to allow comparisons across enterprises of various sizes. It appears to be quite powerful. The 20% of US large-cap stocks with the lowest balance-sheet accrual growth (BSAs) outperformed the 20% with the highest BSAs over the past 26 years by 9.3% a year on average (*Display 1*). While the lowest accrual stocks outperformed by 4.7% a year on average, the highest accrual stocks underperformed by 4.6%. The tool is also remarkably consistent, generating a positive return between the low and high accrual groups in all but three of the 26 years tested.

While some of the underlying drivers of the tool seem to have a value flavor to them, our research shows that it is style-agnostic. We divided the large-cap universe into value stocks and growth stocks on the basis of

DISPLAY 1

BSAs Have Been Powerful Predictor of Returns

Cumulative Return vs. Market
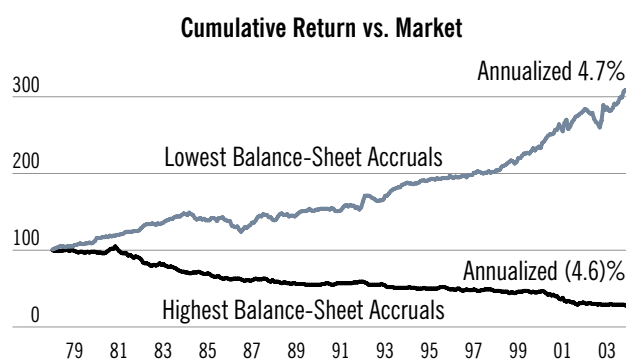
Indexed to 100 on December 31, 1977; return vs. US large-cap universe. Large-cap universe divided into balance-sheet accrual quintiles using Bernstein definition of net operating accruals, based on quarterly data
Source: Compustat and Bernstein

DISPLAY 2

They Have Been Powerful Within Value and Growth Arenas

Annualized Return vs. Market
1978–2003

Quintile	Value	Growth
Low Accruals	4.4%	5.5%
High Accruals	(3.5)	(4.7)
Outperformance Low vs. High	+7.9%	+10.2%

Annualized quarterly return versus equal-weighted style index. Growth index includes the more expensive half of the US large-cap market universe based on price/book; value index includes the less expensive half. BSA quintiles were formed quarterly using Bernstein definition of net operating accruals within each style universe and the performance of the highest and lowest BSA quintiles was compared with the style index.
Source: Compustat and Bernstein

price-to-book, and found that the tool is quite effective within both the value domain and the growth domain (*Display 2*). In fact, it was somewhat more effective for stock selection within growth.

Defining the Tool

If earnings statements simply reflected the cash received by a business for services rendered and the cash dispersed to provide those services, earnings would simply equal the change in cash. This definition of earnings is objective and highly reliable, but almost never meaningful. For example, a firm that spent a lot of cash building inventory this year that isn't sold until next year would report earnings that look misleadingly bad this year and misleadingly good next year.

Accrual accounting attempts to make reported earnings more meaningful by better matching costs with related revenues. In this system, earnings are the sum of the cash flows and the changes in balance-sheet accrual accounts. This makes the data more meaningful but introduces subjective judgments and assumptions. Hence, accrual accounts are prone to error—both unintentional and deliberate. Studying changes in accruals may thus offer significant insight.

Investors typically think of accruals in terms of current operating assets and liabilities, such as inventories and accounts payable. There are also non-current operating accruals, such as physical plant and equipment and deferred taxes. Together, current and non-current operating accruals make up net operating accruals. If you add in financial accruals, you get total accruals, which encompass all balance-sheet accounts other than cash and shareholder equity.

In research published in January 2004, Professors Scott Richardson, Richard Sloan, Mark Soliman and Ayse Tuna[1] tested several definitions of accruals and found net operating accruals to be the most effective in predicting stock returns. In our reconstruction of their results, low accrual stocks beat the market by 2.9% a year on average, and high accrual stocks lagged by 5.3%. That is, low accruals beat high accruals by 8.2% (*Display 3*).

The professors' tool relied on annual balance-sheet data and excluded financial stocks, which they thought might not be comparable, given the different balance-sheet structure of financial companies. As practitioners—not academics—we weren't satisfied with a tool based on annual balance-sheet data when companies update their balance sheets quarterly. We also weren't satisfied with a tool that excluded a market sector in which we frequently invest. So we looked for ways to improve on the academics' tool.

We tested the effectiveness of the tool by sector and found that although its efficacy varied, the tool produced positive results for virtually all sectors, including financials. Incorporating quarterly balance-sheet information was more problematic. Certain data that are separated in annual reports are lumped together in quarterly reports, so to use quarterly data we had to change the definition of net operating accruals slightly. When we applied the Bernstein definition of net operating accruals—which is built on available quarterly rather than annual data—to the full universe of large-cap stocks, however, we found it even more effective than the academic version, as Display 3 also shows. It is this definition of balance-sheet accruals we use in the rest of this article, except when referring to academic studies.

The Information Accruals Capture

The performance potential of our balance-sheet accrual tool—and the remarkable consistency described earlier—certainly got our attention. But as fundamental analysts, we were not willing to use it without understanding what made it effective and whether its power should endure.

DISPLAY 3

More Timely and Inclusive Tool Have Worked Better

Annualized Return vs. Market
1978–2003

Quintile	Annual NOA,* Ex Financials	Quarterly NOA,* with Financials
Low Accruals	2.9%	4.7%
High Accruals	(5.3)	(4.6)
Outperformance Low vs. High	+8.2%	+9.3%

*Net operating accruals
Annualized quarterly return versus equal-weighted US large-cap market universe
Source: Compustat and Bernstein

DISPLAY 4

Extreme BSAs Have Rapidly Reverted to the Mean

1962–1991
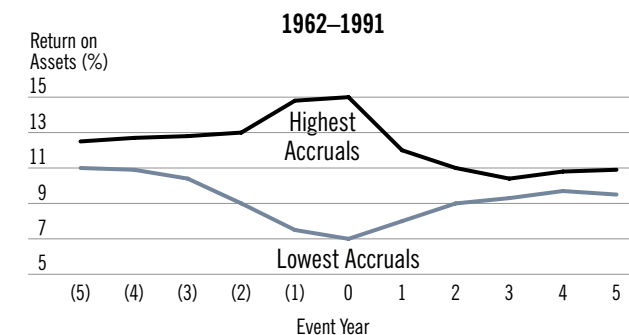
Highest and lowest deciles of accruals each event year. Accruals defined as change in non-cash current assets, less the change in current liabilities, excluding short-term debt and taxes payable, minus depreciation expenses, and divided by average total assets. Universe included about 2,000 US stocks per year on average.
Source: Richard G. Sloan, *The Accounting Review*, July 1996

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[1] *S. A. Richardson, R. G. Sloan, M. T. Soliman and A. I. Tuna, "Accrual Reliability, Earnings Persistence and Stock Prices" (January 2004).*

Essentially, we believe that balance-sheet accruals speak to the persistency of reported earnings. Investors tend to take earnings reports literally and treat all sources of reported earnings as equal, although the accrual component of reported earnings is less reliable than the cash component.

Research by Professor Richard Sloan[2] illustrates this clearly. Sloan separated companies into deciles of high current accruals and low current accruals and observed their balance sheets in the five years before and after the measurement date. On average, the accrual growth for the 10% of companies with the highest accrual growth increased rapidly prior to the measurement date—and sharply reversed thereafter (*Display 4, previous page*). This suggests that the earnings contribution from accrual growth was not sustainable. In effect, it says that when you see rapid accrual growth, watch out! The opposite pattern played out with the lowest accrual stocks.

After testing hundreds of samples, we concluded that our balance-sheet accrual tool is capturing three major themes: earnings management, capital management, and the mean reversion of sales and earnings.

Earnings Management

Reported earnings are frequently too optimistic or pessimistic, based on assumptions embedded in accrual accounts. Even if unintentional, such inaccuracies will eventually have to be revised, which can cause a market reaction. Deliberate earnings management to meet certain thresholds also appears to drive changes in accruals.

While earnings management cannot be directly proven, the clustering of earnings reports around thresholds
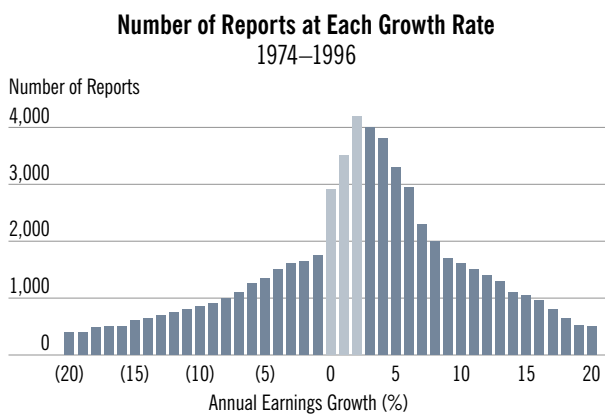
such as breakeven, the earnings level in a prior period or analyst expectations lends indirect evidence that it exists. Another academic study showed this phenomenon for beating the previous year's earnings (*Display 5*). The number of reports for each level of year-on-year earnings growth jumps sharply at the level of no growth. There are abnormally few reports of a small decline and a disproportionately large number of reports at—or just above—the previous year's earnings.
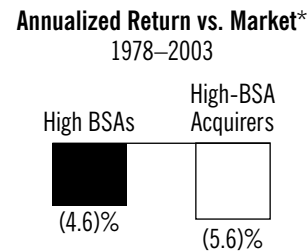
Earnings management may play a large role in the accrual-reversal pattern shown above. To the extent a company borrows from the future to meet today's threshold, it will have a harder time meeting a future threshold—with adverse implications for the stock price. Changes in accruals are a signal to look for evidence that a company is borrowing from future earnings, saving earnings for a rainy day—or raiding its rainy-day fund.
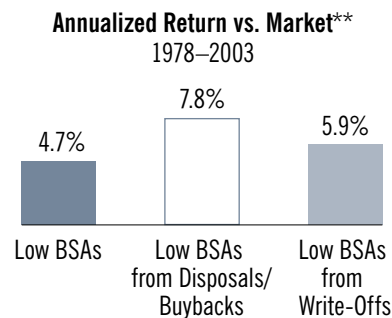
Capital Management

Balance-sheet accrual accounts may also signal whether the company is deploying its capital wisely (or not). About 16% of the high-accrual-growth companies had

DISPLAY 6

M&A Is Another Cause of High BSAs…

Annualized Return vs. Market*
1978–2003

High BSAs   High-BSA Acquirers

(4.6)%   (5.6)%

…While Disposals/Buybacks and Write-Offs Cause Low BSAs

Annualized Return vs. Market**
1978–2003

4.7%   7.8%   5.9%

Low BSAs   Low BSAs from Disposals/ Buybacks   Low BSAs from Write-Offs

*Large merger or acquisition or share issue inferred by an increase in market capitalization over the previous year of 10% more than the stock-price appreciation would explain. Annualized quarterly returns versus the equal-weighted US large-cap universe; Bernstein BSA quintiles reformed quarterly

**Large disposals or share buybacks inferred by a decrease in market capitalization over the previous year of 10% more than stock-price depreciation would explain. Large write-offs defined as net income at least 20% lower than income before extraordinary items, with a difference of at least $5 million. Group with disposals/buybacks and group with write-offs may overlap. Annualized quarterly returns versus the equal-weighted US large-cap universe; Bernstein BSA quintiles reformed quarterly

Source: Center for Research in Security Prices (CRSP), Compustat and Bernstein

DISPLAY 5

One Cause of High BSAs Is Earnings Management

Number of Reports at Each Growth Rate
1974–1996

Number of Reports

4,000

3,000

2,000

1,000

0

(20)   (15)   (10)   (5)   0   5   10   15   20

Annual Earnings Growth (%)

Percentage change in reported earnings from four quarters earlier, based on quarterly data on 5,387 firms
Source: Degeorge, Patel and Zeckhauser, *Journal of Business*, January 1999

[2] *R. Sloan,* "Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?" *The Accounting Review (July 1996).*

completed a merger or acquisition in the recent past. Such companies, on average, performed worse than the broader universe of companies with high BSAs (*Display 6, top*). While this may only be another confirmation of the widespread belief that mergers are bad for stock prices, it is significant that the negative impact on stock performance lasts so long. Our BSA tool only captures mergers after they are completed and the balance sheet is reported on a combined basis, which is typically several quarters after the deal is announced. The market has already has a long time to judge the merits of the deal, yet the effects remain measurable.

On the other hand, a large share of low-BSA companies had shrunk their balance sheets through large divestitures or share repurchases, or through large write-offs. Both groups of companies on average performed better than the low-BSA average (*Display 6, bottom*). In the case of divestitures or share repurchases, the balance-sheet accrual tool may be signaling that management is ridding itself of a distraction or that giving money back to shareholders often turns out to be a good thing. In the case of write-offs, it may signal the beginning of the end of a large retrenchment. Often, stabilization and improvement in the underlying business is close at hand.

The write-off subset is tricky, however. Although this subset of low accrual stocks outperforms on average, it includes both spectacular turnarounds and huge bankruptcies. Sometimes, the turnaround at a downsizing company doesn't succeed. At other times, it does succeed—but takes a while. Fundamental research is crucial to making successful and well-timed investments in these stocks.

Mean Reversion

Our BSA tool may also capture the tendency of earnings and sales growth to revert to the mean. Companies with high BSAs tend to have much higher sales growth than companies with low BSAs (*Display 7*). They also tend
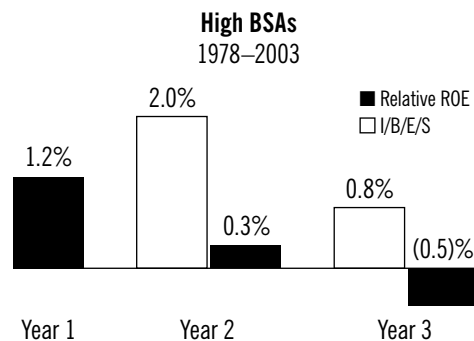
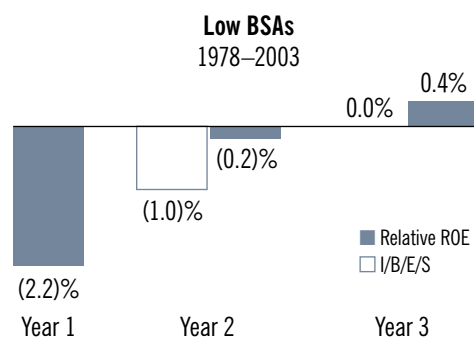DISPLAY 7

Rapid Sales Growth Also Causes High BSAs

Sales Growth
1978–2003
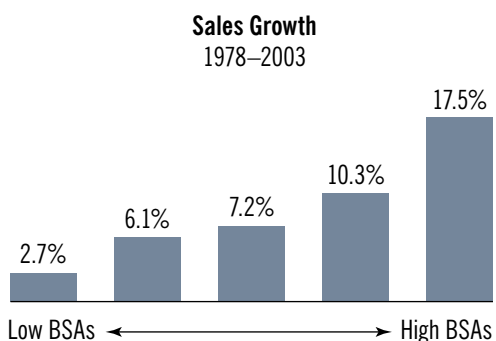
Average trailing one-year sales growth; Bernstein BSA quintiles reformed quarterly
Source: Compustat and Bernstein

BSAs Capture Market Expectations that High Profitability Will Persist…

High BSAs
1978–2003

…and Subpar Profitability Will Persist

Low BSAs
1978–2003

I/B/E/S one-year forecast ROE; ROE relative to the US large-cap universe
Bernstein BSA quintiles reformed quarterly
Source: Compustat, I/B/E/S and Bernstein

to have higher return on equity. But maintaining high sales growth or high ROE is difficult. Companies with high ROE, on average, revert to the mean, disappointing analysts, who generally extrapolate from recent success (*Display 8, top*).

Our experience suggests that this pattern plays out because when a company grows rapidly, its management typically expands the asset base. Management—like analysts and investors—expects strong growth to be sustained. Often, however, growth decelerates and expectations are not met. Sometimes there is a demand shock, with disastrous results. As we saw in 2000 and 2001 in a variety of sectors, companies can be left with billions of dollars of worthless inventory, receivables and excess plant. To restore the business to profitability, they may be forced to lay off a significant portion of their workforce and shut down operations.

Similarly, a low-BSA company tends to have below-average returns on equity, and analysts expect its performance to continue lagging (*Display 8, bottom*). But management works hard to meet the challenges and on average succeeds in delivering a better ROE than expected: The company nearly matches the market after just one year and delivers above-average profitability in two years.

This, of course, is the basis for our value investing style. But before we lump BSAs into the category of just another value tool, remember where we started: Our BSA tool appears highly relevant to investing in both value and growth stocks.

Using BSAs in Our Portfolios

The evidence we have gathered suggests that our BSA tool can improve both our research and our portfolio-construction process.

Our research process has always focused on cash flows and has always involved intensive analysis of the balance sheet. Nonetheless, we are finding that systematically looking at balance-sheet accruals is improving our research. The tool has already become part of our research-review process, highlighting areas of potential concerns and helping us to set priorities within research.

We have also begun to study how the tool intersects with our existing tool set, in order to determine whether we want to add it as a quantitative input to our risk-adjusted expected-return model. Our research shows that the cheapest quintile of stocks based on our dividend discount model (DDM) has outperformed the market by 4.4 percentage points on average since 1980. Within that group, however, the stocks with low balance-sheet accruals did much better: They outperformed the market by more than 10% (*Display 9, top*). We view this as an encouraging indication that we may be able to increase the premiums we deliver by incorporating the tool into our investment process.

We also found that low-BSA stocks with very positive earnings revisions did very well, outperforming by 1.8% a month, more than three times the average outperformance of the low accrual group as a whole (*Display 9, middle*). This makes sense: The low-BSA category has a relatively large share of companies that are growing slowly or restructuring; positive revisions, from analysts presumably not focused on accruals, provides an independent confirmation that things are getting better. On the other hand, negative revisions for low-BSA stocks may signal that there is more trouble ahead. This subset underperformed the low accrual group as a whole.
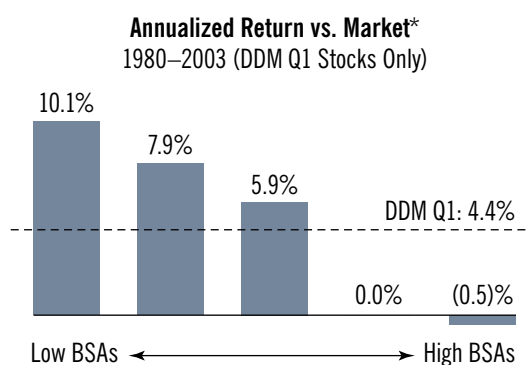
Stocks with high balance-sheet accruals and negative revisions, however, underperformed the market by 0.9% per month, worse than the high accrual group overall (*Display 9, bottom*). Again, this makes sense. The high accruals tell us that the company has just expanded rapidly, while the negative earnings revisions tell us that analysts are seeing something that suggests that its growth is disappointing—a very bad combination. If, on the other hand, the expansion is met with continued earnings-estimate increases, the odds are that the balance-

sheet expansion was warranted. However, these stocks still don't significantly outperform the market, implying that the good news was largely discounted in the stock price.
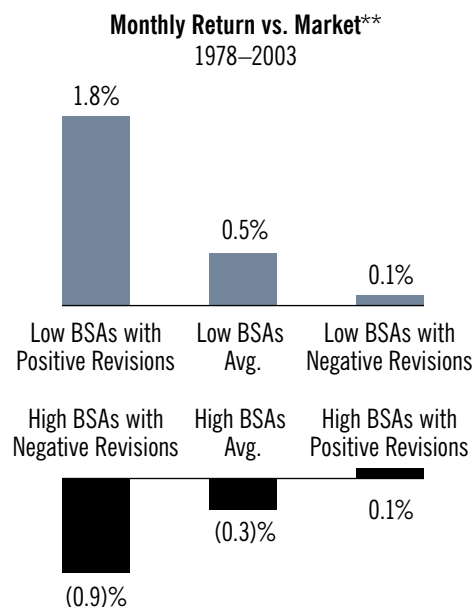
We are carefully studying whether we should incorporate balance-sheet accruals into our risk-adjusted expected-return model. Although we are encouraged by the interaction of the balance-sheet accrual tool and our existing investment process, it's too soon to say what we will do. Whether we take that next step or simply continue to use BSAs as another reference point, as we have so far, we believe that this tool can add to the returns of our portfolios. ∎

DISPLAY 9

BSAs Complement Our DDM…

Annualized Return vs. Market*
1980–2003 (DDM Q1 Stocks Only)

10.1%
7.9%
5.9%
DDM Q1: 4.4%
0.0% (0.5)%

Low BSAs ⟵⟶ High BSAs

…and Our Earnings Revision Tool

Monthly Return vs. Market**
1978–2003

1.8%
0.5%
0.1%

Low BSAs with Positive Revisions | Low BSAs Avg. | Low BSAs with Negative Revisions

High BSAs with Negative Revisions | High BSAs Avg. | High BSAs with Positive Revisions

(0.3)%
0.1%
(0.9)%

*Annualized forward-quarter return relative to equal-weighted US large-cap universe for intersection of cheapest quintile of Bernstein dividend discount model with each Bernstein BSA quintile

**Large positive or negative revisions are stocks with I/B/E/S one-month revision index above or below market by 0.40%. Monthly performance versus equal-weighted US large-cap universe; Bernstein BSA quintiles reformed quarterly
Source: Compustat, I/B/E/S and Bernstein