

BSC Adoption Boosts Shareholder Returns: Findings from a Recent Study by DeBusk and Crabtree

By Janice Koch, Editor

It took three years of intensive research and massive data crunching, but they did it: academics Gerald DeBusk and Aaron Crabtree showed, in their 2008 study, the strongest objective evidence yet of the execution premium that BSC users achieve against their peers.

For the countless Balanced Scorecard users throughout the world, the execution premium they've gained—across all scorecard dimensions—is proof positive of the BSC's benefits. Admittedly, though, verified scientific proof of the scorecard's impact on performance is harder to come by. Part of the problem rests in the complexity of such a study; with numerous variables and many external factors (from changes in leadership to variations in implementation and use), gathering compelling evidence of a relationship represents a challenging research design effort. (No study, of course, can demonstrate causality.)

So it's no surprise that, although Robert Kaplan and David Norton publicly introduced the Balanced Scorecard in 1992 with their landmark *Harvard Business Review* article, until as recently as 2008, only one study (by Ittner, Larcker, and Randall, 2003)¹ had been conducted investigating the link between BSC use and shareholder returns. Several surveys examined the connection between BSC

adoption and perceived performance—the subjective assessments of adopters. The Ittner et al. study, which looked at users within one industry (financial services) in the period 1997–1999, showed that the combined use of financial and nonfinancial measures has a positive effect on a company's stock market performance. But it found no conclusive association between the BSC and shareholder returns.

Long Horizon, Broad Industry Pool

In 2003, accounting professors Gerald DeBusk (of the University of Tennessee) and Aaron Crabtree (of the University of Nebraska) set out to ask this question again: Did firms that adopted the BSC outperform those that did not? Unlike the Ittner study, however, theirs looked at the three-year period following BSC adoption. Such a “long horizon” event study methodology allowed time for fully implementing the BSC—typically a major undertaking—and for results to begin accumulating. Indeed, Kaplan and Norton's (and Palladium's) extensive

research confirms that in most cases, regardless of industry, it takes at least 18 months for implementation, and generally between two and three years for the impact of BSC implementation to be felt, in both “hard” and “soft” results.

DeBusk and Crabtree's study differed from the earlier study in two other crucial respects: it did not confine itself to one industry but rather studied a range of industries. (Manufacturing firms constituted the largest segment.) And more than half of the participant firms adopted the BSC after 1999. As the researchers note, the previous study contains many early adopters (1997 or before). Given that organizations learn from the mistakes of early adopters (and that such lessons are generally disseminated in various ways throughout the community of users), it's reasonable to assume that early adopters' results would have been more lukewarm.²

Survey Participants and Methodology

To ensure confidentiality (and boost the response rate), DeBusk and Crabtree conducted a blind emailing of members of the Institute of Management Accountants, targeting professionals at the director/manager level and above as well as those in management positions with relevant job descriptions. (“Educator,” “public accountant,” and “retired,” for example, were excluded.) The pair included a definition of the BSC to screen out potential respondents who were not, in fact, using the BSC system.

Three-year post-adoption performance of matched BSC firms vs. control firms			
Description	BSC firms (mean)	Control firms (mean)	Difference
Market value of equity	50.72%	23.60%	27.12%
Book-to-market ratio	39.14%	8.97%	30.17%
Net total assets	41.05%	13.47%	27.58%

FIGURE 1

At the end of the three-year period, the stock market performance of BSC users beat that of nonusers by an average of 28 percentage points.

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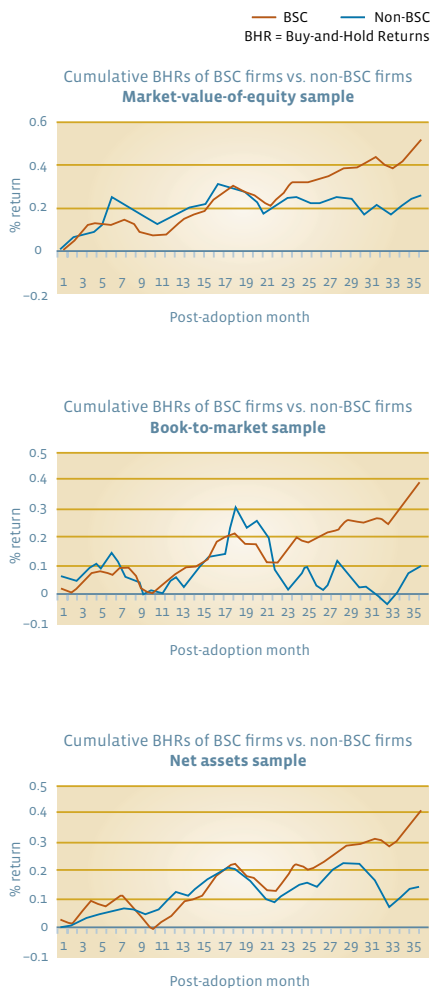
1 C. D. Ittner, D. F. Larcker, and T. Randall, “Performance Implications of Strategic Performance Measurement in Financial Services Firms,” *Accounting, Organizations and Society* 28 (2003): 715–741.

2 Today, the same argument might apply to DeBusk and Crabtree's study. At the time the pair conducted their survey, the Strategy-Focused Organization principles—a key framework for BSC implementation—were not yet put forth, nor was the Office of Strategy Management function yet identified by Kaplan and Norton. Since 2004, more organizations have incorporated these elements as an intrinsic part of their BSC programs. Both elements have contributed significantly to more consistent results and to the evolving and widespread use of the BSC system.

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FIGURE 2: CHANGE IN VALUE OF BSC ADOPTERS VERSUS NONADOPTERS

The returns represent the increase (or decrease) in firm share price plus dividends, scaled by firm share price as of January 1 of the adoption year. (Amounts were scaled, or prorated, to account for the variations in share prices across firms; a \$5 return for a firm with a \$20 share price is different from a \$5 return for a firm whose share price is \$15.)



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Because of the difficulty of establishing an exact “start” date, they allowed respondents to identify the year and counted that year as part of the three-year period.

Of the more than 1,000 public and privately held organizations surveyed, 23% were identified as “regular users” of the BSC in some or most of their operating divisions. Among the regular users, 88% reported improvements in operating performance, and two-thirds of that 88% also indicated that their profits rose, after adopting the BSC.³

Next, DeBusk and Crabtree sought to establish quantitative evidence of a performance difference.⁴ Here, they narrowed the respondent pool from the initial 1,000-plus to a final study pool of publicly traded companies, of which 107 were non-BSC users and 57 were BSC users. The industry breakdown was roughly as follows: 69% manufacturing companies, 15% financial companies, 9% utilities, 4% services companies, and 4% retailers. A significant percentage of the publicly traded BSC adopters (43%) introduced the BSC in 2000 and 2001.

To control for differences among respondents in industry, organization size, risk, and growth potential, the researchers used a matched-pair design. The matched-pair approach involves pairing organizations similar in the above characteristics, where one adopted the BSC and the other did not—effectively yielding a test case and a control. This approach was applied in previous studies of economic value added (EVA), activity-based costing, Total Quality Management, and other management methodologies to determine whether users outperformed nonusers.

To match by industry, the authors used standard industrial classification (SIC) codes. The researchers used three matching criteria to assess the performance differential: market value of equity (to match size, market percep-

tions, productive capacity, and financing ability); book-to-market ratio (an indicator of risk and growth potential); and net total assets (which establishes productive capacity and size, while excluding market perceptions).

Key Findings

By the end of the three-year period following adoption, BSC users outperformed nonusers in stock market performance in all three match criteria, on average, by 28 percentage points. Performance was measured in terms of buy-and-hold returns: the increase in value from the accumulation of dividends and share price increases. Returns were accumulated by summing both of these figures for each month over the three-year period. In the market-value-of-equity grouping, users beat nonusers by 27.12 percentage points; in the book-to-market sample, by 30.17 percentage points; and in the net-total-assets grouping, by 27.58 percentage points. (See Figure 1, previous page.) DeBusk and Crabtree’s findings also demonstrate that firms earn greater excess returns after adopting the BSC than before. Excess returns are defined as the difference, either positive or negative, between the stock market performance of a BSC-adopting firm and a reference portfolio’s performance.

Looking at the changes another way actually underscores the significant execution premium that BSC adopters earned. In the market-value-of-equity grouping, the control firms had a return of 23.6%, versus the BSC adopters’ return of 50.72% over the three-year study period. That is, BSC adopters outperformed the control firms by 27.12 percentage points with rates of return twice as high as the nonusers. In the book-to-market grouping, the control firms had a return of 8.97%, whereas the BSC adopters returned 39.14% over the study period. So, BSC adopters surpassed by 30.17 percentage points

3 These survey results, of public as well as privately held companies, were published in the first of two articles by DeBusk and Crabtree on their study, “Does the Balanced Scorecard Improve Performance?” *Management Accounting Quarterly*, 8, no. 1 (Fall 2006).

4 This more in-depth study of the results of BSC adoption among publicly held companies was written up in DeBusk and Crabtree’s second article, “The Effects of Adopting the Balanced Scorecard on Shareholder Returns,” *Advances in Accounting, incorporating Advances in International Accounting*, 24 (2008) 8–15.

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the performance of the control firms—earning returns of roughly 300% more. And in the net-assets grouping, the control firms generated a 13.47% versus 41.05% return for the BSC adopters. The latter outperformed by roughly 200%.

Figure 2 shows cumulative buy-and-hold returns of the BSC adopters versus non-BSC adopters, again by grouping. In each grouping, the early returns are similar but widen significantly at about the two-year post-adoption mark. That's entirely as you'd expect. BSC firms and their matched nonusing counterparts begin the 36-month period at the zero return point on January 1 in the year that the BSC-using firm adopted the tool. For each firm, the buy-and-hold return is accumulated over three years. At some point in the first 12 months, BSC firms adopt the scorecard. After adoption, you would expect it to take a certain amount of time before the changes brought about by implementation would work their way through the cause-and-effect linkages to bottom-line financial results. Success in financial results will be reflected in stock market performance. Figure 2 dramatically illustrates that, after a while, BSC firms begin to significantly outperform their non-BSC counterparts.

To further validate the results of their primary analysis, DeBusk and Crabtree performed additional robustness data checks. One such check involved studying the returns of matched pairs in the two years before the BSC was adopted to see whether BSC users had enjoyed higher market returns before the year of adoption. The result? None of the sampled pairs showed significantly different returns between BSC users and nonusers prior to users' adoption—providing additional evidence that the execution premium earned by the adopters was associated with the BSC.

DeBusk and Crabtree's study is the first to demonstrate that BSC users, regardless of industry, earn better stock market returns than comparable nonusers—between 27 and 30 percentage

points better over the three-year post-adoption period. As powerful as their evidence is, it's tempting to wonder what this difference might be today. How much, if any, impact would the financial crisis have had on users' versus nonusers' relative performance? And given the much more evolved and rigorous BSC framework that adopters in recent years have embraced, how different might their shareholder returns be relative to DeBusk and Crabtree's survey pool? ■

About the Study Authors



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To learn more

*To obtain a copy of DeBusk and Crabtree's article, "The Effects of Adopting the Balanced Scorecard on Shareholder Returns," published in *Advances in Accounting, incorporating Advances in International Accounting*, Vol. 24 (2008), 8–15, go to Elsevier's website: www.sciencedirect.com.*

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Q&A with the Study's Authors

BSR: Why did you settle on a three-year horizon for the study?

Crabtree: Three years is a reasonable amount of time for any benefits to accrue in a company's financial statements—and for the market to start rewarding the firm for this value. As one of our robustness checks, we did a sampling of four-year returns among the matched pairs. It turns out that the four-year results were basically the same.

DeBusk: We took into account what Kaplan and Norton had said: that it takes a while for the effects of the BSC to show up in a company's financial results. Also, it's hard to pin down the date of adoption: when a company says "2003," do they mean the first month of the year? The last month? We had to assume January first—another reason to choose a three-year period.

Crabtree: With a long-horizon study, and one in which there are so many variables affecting performance, the longer you extend the horizon, the more you risk adding noise.

BSR: What was the most critical factor to match in the matched-pair study?

Crabtree: Typically, matching on size is the biggest issue. Size explains so much in this type of research. For example, it helps control for risk. Growth prospects are another factor affecting returns; hence, our book-to-market match.

BSR: What is the biggest data challenge in such a study?

DeBusk: We used a dichotomous variable in our study, as is common in this type of research. "Dichotomous" means that either the organization was said to have adopted the BSC or not. It is a simple yes or no. But it was common in our study for a BSC adopter not to be using the BSC in many of its operating divisions. Therefore, there's a large bias against finding a correlation between BSC use and performance in this type of study.