



Bull or Bear?

The Q-100 Index proves that if you have quality, you'll beat the market

by

Stephen George

THEORY AND COMMON sense tell us shareholder value improves as quality improves. A systematic approach to quality improvement works on two key factors that drive financial performance: It generates greater value for customers, building market share and revenues; and it lowers costs, increasing margins and asset utilization (see Figure 1).

Earning more while spending less seems like a sure-fire formula for boosting the bottom line, but verification of that connection has been elusive. We may know intuitively that quality pays, but intuition is no substitute for reliable data.

Jack Robinson and General Securities

The absence of proof about the value of quality management did not deter Jack Robinson. In 1988 he decided to invest in companies that were using total quality management (TQM). His mutual fund, General Securities Inc. (GSECX), had delivered nearly 150 consecutive quarterly dividends, but Robinson wanted a better way to evaluate a potential investment's management. His exposure to TQM as a board member for an electrical component manufacturer inspired him to learn more about it. Eventually, he used TQM to choose between companies that had relatively equal financial performance. He formally added this quality screen to his process of analyzing investments in 1988.

General Securities, a large cap (market capitalization greater than \$5 billion) portfolio of the stocks of about 30 companies, continued to crank out quarterly dividends. While its performance supported Robinson's belief that companies involved in TQM would outperform companies not using these methods,¹ he had no scientific basis for the results. Robinson managed the fund intuitively, and based on results, he managed it well.

Jack Robinson died in 1998. Responsibility for managing the mutual fund fell to his son, Craig Robinson, president of Robinson Capital Management (RCM), and its chief investment officer, Mark Billeadeau. For three years the two had been developing a more systematic approach to determining the quality of management.

The Baldrige model acts as a guide

Robinson and Billeadeau searched public information to find evidence of quality improvement in the six areas of a company's management system addressed by categories one through six of the Malcolm Baldrige National Quality Award Criteria. For example, they used *Information Week's* annual list of leaders in technology innovation as an indicator of quality in information and analysis, the fourth Baldrige category. They gave credit in all six categories for companies that won the Baldrige Award or a state quality award. For category seven, business results, they used market



capitalization. Adopting a purely financial measure helped balance the concerns of potential investors.

“We didn’t want anyone in the quality community to look at our list and think, ‘These aren’t quality companies,’” said Billeadeau. “And we didn’t want someone on the financial side saying, ‘Nobody’s going to invest in that.’ We tried to make the list acceptable to both the quality and financial sides.”²

Their efforts resulted in the Q-100 index, which they began tracking in 1998.

Using the S&P 500 as a benchmark

The Q-100 consists of approximately 100 of the 500 S&P companies (see Table 1), weighted and diversified to align it with the weighting and sectors in the S&P 500. In the investment community, the S&P 500 is used as a benchmark by 97% of U.S. money managers and pension plan sponsors.³ Mutual fund prospectuses compare their performance to that of the S&P 500, which is also the benchmark for pension fund performance.

John Schweers, an investment consultant for DeMarche Associates Inc., has worked with company pension funds for more than 30 years as a corporate officer or consultant. He describes a process that begins with an asset allocation study in which the client chooses which asset classes to invest in, how much to put into each asset class and what the performance benchmarks should be. Next, clients identify managers who

can execute the strategy. The goal is to find managers who can provide higher returns with minimal risk, or tracking error, compared to the benchmark.

“Tracking error is how much volatility, or tendency of a security to rise or fall sharply within a short period, an investment has experienced compared to the benchmark,” said Schweers. “We use several different ratios to determine tracking error, which is basically excess return divided by excess volatility. An investment has to provide a higher return than the benchmark on a risk adjusted basis.”

To compare a fund’s performance to the S&P 500, a firm cannot simply claim to beat it. According to Standard & Poor’s, “the firm must use a benchmark that parallels the risk or investment style the client’s portfolio is expected to track.”⁴ In creating the Q-100, RCM applied S&P’s criteria to the index, selecting approximately 100 of the S&P 500 based on their quality scores and on similar sector representation.

For example, if companies in the financial sector account for 17.8% of the S&P 500, financial companies will represent approximately the same percentage of the Q-100. While this may exclude some S&P 500 companies with higher quality scores, it makes it possible to reliably compare the performance of the Q-100 with that of the S&P 500.

The Q-100 is an enhanced index fund which, according to Schweers, means people “have taken an index

TABLE 1 Q-100 Companies as of Jan. 1, 2002

A	Agilent Technologies	EMC	EMC Corp.	MMM	Minnesota Mining & Manufacturing
AA	Alcoa	EMN	Eastman Chemical Co.	MOT	Motorola
ADBE	Adobe Systems	EMR	Emerson Electric Co.	MRK	Merck & Co.
AET	Aetna	F	Ford Motor Co.	MSFT	Microsoft Corp.
AL	Alcan	FDX	FedEx Corp.	MWD	Morgan Stanley Dean Witter & Co.
AMAT	Applied Materials	FLR	Fluor Corp.	NKE	Nike
AMGN	Amgen	FPL	FPL Group	NTRS	Northern Trust Co.
APA	Apache Corp.	G	Gillette Co.	ONE	Bank One Corp.
ASH	Ashland	GCI	Gannett Co.	PG	Procter & Gamble Co.
AV	Avaya	GE	General Electric Co.	PGN	Progress Energy
AWE	AT&T Wireless Services	GLW	Corning	PH	Parker Hannifin Corp.
AXP	American Express Co.	GM	General Motors Corp.	ROK	Rockwell International Corp.
BAX	Baxter International	HAL	Halliburton Co.	S	Sears, Roebuck and Co.
BCC	Boise Cascade Corp.	HD	Home Depot	SLR	Soletron Corp.
BDK	Black & Decker Corp.	HON	Honeywell International	SNA	Snap-on
BMS	Bemis Co.	HSY	Hershey Foods Corp.	SO	Southern Co.
BMJ	Bristol-Myers Squibb Co.	HWP	Hewlett-Packard Co.	SPC	St. Paul Cos.
BUD	Anheuser-Busch Cos.	IBM	International Business Machines	SPLS	Staples
C	Citigroup	INTC	Intel Corp.	SVU	SuperValu
CAT	Caterpillar	IP	International Paper Co.	T	AT&T Corp.
CEG	Constellation Energy Group	IR	Ingersoll-Rand Co. Ltd.	TXN	Texas Instruments
CPB	Campbell Soup Co.	JCP	J.C. Penney Co.	UIS	Unisys Corp.
CSCO	Cisco Systems	JNJ	Johnson & Johnson	UNM	UNUMProvident
CUM	Cummins	JPM	J.P. Morgan Chase & Co.	UNP	Union Pacific Corp.
CVX	Chevron Texaco Corp.	JWN	Nordstrom	VC	Visteon Corp.
D	Dominion Resources	KRB	MBNA Corp.	VZ	Verizon Communications
DD	E.I. DuPont de Nemours & Co.	LMT	Lockheed Martin Corp.	WFC	Wells Fargo & Co.
DELL	Dell Computer Corp.	LTR	Loews Corp.	WHR	Whirlpool Corp.
DIS	Walt Disney Co.	LU	Lucent Technologies	WMT	Wal-Mart Stores
DUK	Duke Energy Corp.	MAR	Marriott International	WY	Weyerhaeuser Co.
ED	Consolidated Edison Inc.	MDT	Medtronic	XOM	Exxon Mobil Corp.
EK	Eastman Kodak Co.	MER	Merrill Lynch & Co.		

and found a subset where they think they can add value, but put risk controls in place to monitor tracking error." A low tracking error combined with better than benchmark performance attracts the interest of serious financial experts who manage pension funds.

Q-100 consistently outperforms S&P 500

The Q-100 delivers on both fronts. RCM has studiously adhered to the sectors and weighting of the S&P 500 to minimize tracking error. The Q-100's better than benchmark performance is shown in Figure 2, which compares the growth of dollars invested in the Q-100 and the S&P 500 on Sept. 30, 1998. From Sept. 30, 1998, to Dec. 31, 2001, the Q-100 returned 26.97% compared with the S&P 500's return of 17.59%. A \$10,000 investment in both indices on Sept. 30, 1998, would have grown to \$12,697 for the Q-100 on the last day of 2001, compared with \$11,759 for the S&P 500.

A quarterly comparison of the indices shows performance during both the ups and downs of our most recent market cycle (see Figure 3). In the seven positive quarters, the Q-100 outperformed the S&P 500 six

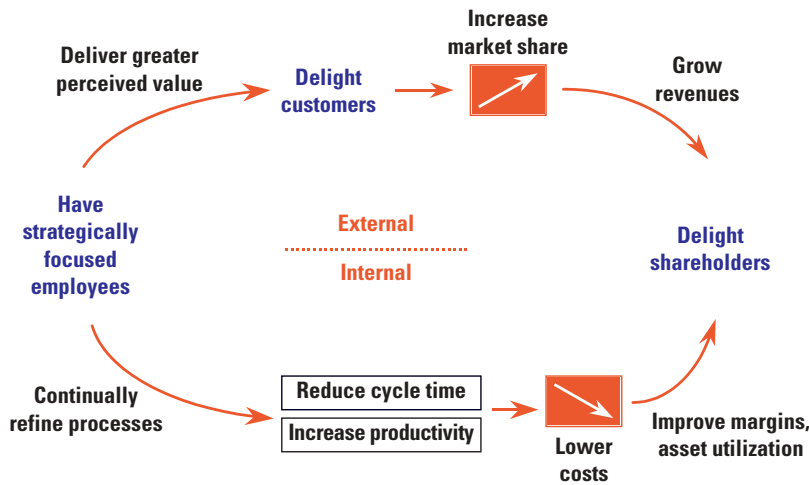
times. On the downside it did better half the time. Although it is too early to draw definitive conclusions, the data suggest investing in quality companies is more of an offensive than a defensive strategy.

"Most of the time the stock market is in an upswing," said Robinson. "When it is, the Q-100 outperforms the S&P, indicating quality is the place to be." When market growth exceeded 6%, as it did in 17 of the last 30 years and during four quarters since the inception of the Q-100, the Q-100 significantly outperformed the S&P.

"In a rational marketplace quality is going to win," said Jim Buckman, co-director of the Juran Center at the University of Minnesota's Carlson School of Management. "A customer perceived quality advantage is worth a premium in the market, while reliable processes produce a cost advantage."

These advantages exist even when the market is irrational, as it was in the late 1990s. As Buckman points out, "Dot.coms like Amazon and Ebay knew what kind of value they were offering their customers and how to sustain a reputation for reliability, and they're the ones

FIGURE 1 The Impact of Systematic Improvement



that have survived." When quality helps a company deliver value to its customers and thus earn more, and at the same time manage its processes to control costs, the company has a competitive advantage (see Figure 1).

Strong evidence supports rationale behind Q-100

A 1998 study by professors Kevin Hendricks and Vinod Singhal supports this powerful equation and the rationale behind the Q-100. The study compared the performance of more than 600 companies that had won quality awards with the performance of similar companies that had not. For the implementation period, which started six years before a company won its first quality award and ended one year before it won, "the researchers found no significant differences in performance between the award winners and the control group."

However, for the post-implementation period,

ing profit, earnings per share, sales per employee and controlled working capital.⁶

The common characteristic of the HQV, the Hendricks and Singhal study, and the Q-100 is the use of quality awards and the Baldrige model to evaluate the quality of management. "The Baldrige criteria provide the most comprehensive and valid definition of performance excellence out there today," said Brian Lassiter, president of the Minnesota Council for Quality and a Baldrige senior examiner. "The model is neither academic nor theoretical. It reflects the core values and demonstrated results of a growing and diverse group of world-class companies."

Evidence of quality management

The Baldrige model has achieved widespread acceptance as the foundation for quality award programs in more than 40 states and dozens of foreign

FIGURE 2 Q-100 and S&P 500 Compounded Performance

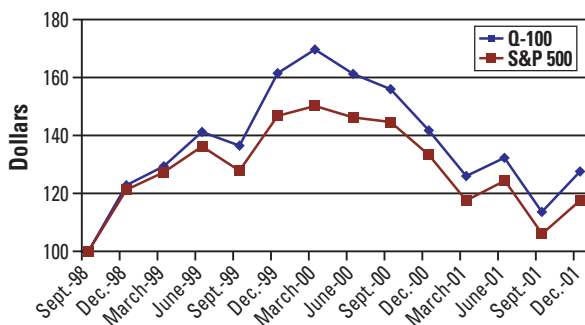
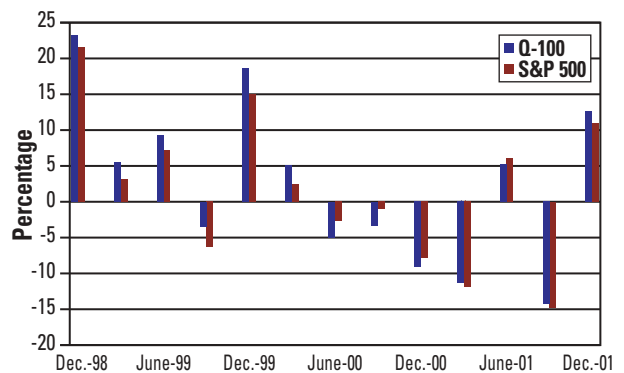


FIGURE 3 Q-100 and S&P 500 Quarterly Performance



Baldrige Study Says Quality More Than Pays for Itself

by **Susan E. Daniels**

A 207 to 1 benefit to cost ratio for the Baldrige National Quality Program was estimated in a recent study conducted for the National Institute of Standards and Technology (NIST), manager of the program.

Professors Albert N. Link of the University of North Carolina and

Link and Scott offer a premise and evidence that the Baldrige criteria, unlike earlier views of total quality management, have a systems perspective that focuses mainly on results rather than processes. "The holistic view of quality and quality management as an all-encompassing total company effort to improve performance is a new view ... for which a consensus is still emerging," they add.

Evaluation methods

Through their ongoing evaluations of federal research programs as mandated by the Government Performance and Results Act of 1993, Link and Scott had previously developed two approaches to the economic evaluation of this research: a counterfactual

method and a spillover method:

1. The counterfactual evaluation method asks what the private sector would have had to invest to achieve the same benefits in the absence of public sector investments.
2. The spillover evaluation method asks whether the public sector should underwrite a portion of private firm research and what proportion of the total profit stream generated by a private firm's R&D and innovation is captured by other firms.

Broadly, the benefit study says the Baldrige program is similar to a NIST laboratory that performs infrastructure technology R&D investments, sets performance standards (the Baldrige criteria) and then continually calibrates benchmark standards used in private sector laboratories to achieve a predeter-

mined level of performance (the Baldrige Award process).

"Thus, the counterfactual evaluation method is directly applicable to the evaluation of the Baldrige program," says the report. Benefits to the economy from the program are systematically quantified in terms of the cost savings realized by organizations' having the Baldrige criteria to follow rather than having to develop and test comparable criteria.

Costs vs. value

Social costs to date of the Baldrige program, about \$119 million in 2000 dollars, include an annual allocation from the NIST budget, an endowment from private industry and the value of the time spent by volunteer examiners.


Social value of net private benefits received by the ASQ organizational members surveyed is \$2.17 billion.

If the entire economy benefits to the same extent as the ASQ members, the present value of the social benefits of the Baldrige program is \$24.65 billion, the report concludes.

The authors believe their generalization about the net social benefits associated with the program from ASQ organizational members to the economy as a whole may understate the true benefits of the program because more organizations outside than inside ASQ may be using the criteria.

This assumption is based on the number of requests for copies of the Baldrige criteria that come from nonsustaining members of ASQ and the fact that many actual winners of the Baldrige Award have not been ASQ members.

A copy of the NIST report is available at www.nist.gov/director. Go to Program Office then Planning Report #01-3. Or fax a request to NIST at 301-926-1630.



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John T. Scott of Dartmouth College carried out the study, which *Quality Progress* summarized in its February issue ("Study Shows U.S. Benefits \$25 Billion from Baldrige," p. 20).

Link and Scott developed their benefit estimate by surveying sustaining (organizational) members of ASQ, then extrapolating the data and assuming other companies benefit to the same extent as ASQ member companies do.

Their assumption of total social benefit was based on the 41 award recipients, 785 applications and thousands of copies of the criteria mailed since the Baldrige program's inception in 1987.

The study first places the program into a performance management/quality improvement perspective by discussing alternative concepts of quality found in academic and professional literature.

countries. Millions of copies of the criteria have been distributed, downloaded and copied. The value of the model as a tool for evaluating all types of management systems has been affirmed with the addition of the national program's education and healthcare categories and the inclusion of government agencies and nonprofit organizations by many state programs.

However, unlike certification programs such as ISO 9000, the Baldrige program does not make it easy for outside parties to determine how well a company has institutionalized the Baldrige model, except for those relatively few that have won the award. As a result, RCM identifies proxies as evidence of quality management.

"We look to outside experts for indicators of excellence that are annual and repeatable," said Robinson. Each spring Robinson and Billeadeau determine new scores for all companies in the S&P 500. The total score reflects two parts, one covering Baldrige categories one through six and the other addressing category seven. To simplify the process while maintaining the Baldrige scoring system, each of the first six categories is given equal weight, and category seven accounts for half the total score.

Robinson and Billeadeau rely on public information to produce their quality scores. Since they cannot conduct formal Baldrige assessments of the S&P 500, they have identified indicators of quality performance in the first six categories. For example, companies that tout their Six Sigma programs earn points in the process management category. Companies that haven't done anything quality related or haven't publicized it get no points.

Not every S&P 500 company receives a quality score for the first six categories, but all have scores for category seven, business results. Until this year, that score was based solely on market capitalization, but market capitalization only shows how investors value a company's future prospects. When RCM scores companies in the spring of 2002, it will use economic value added (EVA) instead of market capitalization to evaluate financial performance.

EVA, which is net operating profit minus the opportunity cost of invested capital, shows how much wealth a company has created or destroyed by measuring the value a company has added to or taken from a shareholder's investment. RCM determines a company's score based on its EVA and EVA trend for the last three years.

"EVA is more results oriented than market capitalization," said Billeadeau. "The shift from a market based to a performance based measure is going to let companies with results dominate."

The emphasis on EVA reflects a delicate balance


between the Baldrige model and the investment community. The Baldrige scoring system allocates nearly half of its possible points to business results. One of the criteria's core values is to focus on results and creating value. This affirms the validity of a measure such as EVA. At the same time, RCM must exist within an investment community that values financial performance above all else. It is striving to create an "investable alternative for quality oriented investors."

General Securities, the mutual fund managed by RCM, has catered to quality oriented investors since 1988. Despite the fund's consistently strong performance, Robinson and Billeadeau have compared its performance to that of the Q-100 and decided General Securities would do better if it reflected the Q-100. They have begun that transition and will have more than 90% of the fund converted to the Q-100 in May 2002.

"We've answered a critical question about quality, and that is, Does quality affect a company's financial performance? We've had to answer that question in the real world, under the scrutiny of the Securities and Exchange Commission, the investment community and our clients," said Robinson. The performance of the Q-100 in both bull and bear markets suggests quality improvement efforts have a direct and measurable impact on stock performance.

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5. Stephen George, *Invest in the Best*, see reference 1.
6. Ibid.
7. Ibid.

STEPHEN GEORGE is an author and consultant. He has written four books that explore the Baldrige model, worked with four Baldrige Award winners and six state quality award winners, and trained customers of Illinois' Lincoln Award for Excellence and the Minnesota Quality Award. He has helped more than 20 organizations perform assessments using the Baldrige criteria. George is also scheduled to be part of a panel discussion with Craig Robinson at ASQ's Annual Quality Congress in May. 

SHOULD QUALITY PROGRESS and ASQ offer more information on the financial performance of companies known for their quality programs? Tell us what you think: Answer the survey on p. 97, or click on www.asq.org/mr/aprhotopicssurvey.html.