

E X C H A N G E

From Good to Great to . . .

by Bruce G. Resnick and Timothy L. Smunt

Executive Overview

With sales of more than 4.5 million copies, *Good to Great* by Jim Collins provides an inspiring message about how a few major companies became great. His simple but powerful framework for creating a strategy any organization can use to go from goodness to greatness is certainly compelling. However, was Collins truly able to identify 11 great companies? Or was the list of great companies he generated merely the result of applying an arbitrary screening filter to the list of Fortune 500 companies? To test the durability of his greatness filter, we conducted a financial analysis on each of the 11 companies over subsequent periods. We found that only one of the 11 companies continues to exhibit superior stock market performance according to Collins' measure, and that none do so when measured according to a metric based on modern portfolio theory. We conclude that Collins did not find 11 great companies as defined by the set of parameters he claimed are associated with greatness, or, at least, that greatness is not sustainable.

In his best-selling book *Good to Great*, Collins (2001) identified 11 corporations that after a transition point metamorphosed from being merely good and went on over the next 15 years to become great. The premise of this book is powerful, i.e., identify those companies that by definition became great over a reasonable time period and then determine what triggered the transformation. Or, in the author's terms (p. 9), "What's Inside the Black Box"? While he (p. 11) does admit to "looping back and forth" while "developing ideas and testing them against the data," he believed that he was able to "extract order from . . . chaos to concept" (p. 11).

The fact that *Good to Great* has recorded sales of over 4.5 million copies suggests that Collins' ideas have had great impact on managerial thinking. Indeed, Walker (2006) noted in his book review that *Good to Great* "is a unique excavation of management practices in the late 20th century. It is great archaeology" (p. 120). Moreover, it is

required reading in some of the top-ranked business schools and has been used as a guide for strategic planning groups. Considering the prevalence of Collins' ideas in both the classroom and boardroom, we believe it is important to scrutinize the methodology he used to identify his list of great companies to determine if weaknesses exist that may have bearing on his findings.

According to Collins, the conceptual cycle used by each of the "great" companies is a six-step process. The first three steps represent the "buildup" period: Obtain Level 5 leadership (these CEOs blend personal humility with intense professional will), get the right people on the bus (and the wrong ones off), and confront the brutal facts. After the first three steps are achieved, a good firm can "break through" to greatness by implementing three additional steps: the Hedgehog Concept, a culture of discipline, and pioneering the application of carefully selected technologies.

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Collins claimed that his study team was able to identify 11 companies, each of which was able to find something that lay at the intersection of what they could “be the best in the world at,” drove their “economic engine,” and were “deeply passionate about” doing (p. 95–96), thus resulting in the superior financial performance they subsequently exhibited. In fact, Collins claimed that “to go from good to great requires a deep understanding of . . . [these intersecting concepts that translate] . . . into a simple, crystalline concept (the Hedgehog Concept)” (p. 118). As an absolute measure of having achieved greatness, Collins required that the cumulative stock market performance of a company had to be at least three times the performance of the general market over the 15-year transformation period. He claimed to have picked three times the market “because it exceeds the performance of most widely acknowledged great companies” (p. 6). A good company merely had a ratio of at least 1.25 times the performance of the market.

Collins writes that “we developed all of the concepts . . . by making empirical deductions directly from the data” (p. 10).¹ He goes on to say that by applying the *Good to Great* concepts to either a start-up or an established organization, a business leader can “create sustained great results” (p. 190). Can his assertion be accepted? Can anything about great management really be gathered from *ex post* financial analysis that identifies a handful of companies that generated superior stock market performance? We recognize that Collins’ methodology can be viewed as an important first step in generating hypotheses about what causes companies to become “great.” However, if exceptional stock market performance is a mark of sustained greatness, it follows that the 11 firms identified by Collins will have gone on to exhibit continued great stock market performance. If they have not, one is left to question whether Collins really identified great firms and/or whether his prescription for greatness is valid. In the next section, we directly test Collins’ hypotheses about

having 1) identified great firms that 2) sustained their greatness through continued great stock market performance.

Methodology and Empirical Results

We first attempted to replicate Collins’ results using the same database he used, the monthly total stock return files prepared by the University of Chicago Center for Research in Security Prices. Each of the 11 great companies identified by Collins exhibited cumulative stock market performance of at least three times the performance of the general market (as measured by the Standard and Poor’s 500 stock market index) over the 15 years following the year T in which the transition occurred. Since there are 16 years in the period T + 15 years and Collins does not identify precisely in which month the transition occurred, the subsequent 15 years could run from January of year T through December of year T + 14 (earliest possible) or January of year T + 1 through December of year T + 15 (latest possible).

The middle column of Table 1 shows the ratio of cumulative stock returns relative to the general stock market for the 15 years following the transition point for each of the 11 *Good to Great* companies as reported by Collins (2001, p. 7). For example, the 3.98 ratio for Abbott indicates that over the 15-year time period encompassed by 1974 to 1989, an investment in Abbott returned \$3.98 for each dollar invested in an index fund designed to replicate the performance of the S&P 500. Table 1 also shows for each of the 11 *Good to Great* companies the corresponding ratio for the earliest possible and latest possible 15-year periods. Examination of Table 1 shows that most of our ratios are similar to those reported by Collins. However, some are quite different. For example, our ratios for Circuit City range from 7.37 to 14.92 times the market, compared to Collins’ ratio of 18.50. Obviously, the value of the ratio is quite sensitive to the specific 15 years (180 months) selected within the T + 15-year time span. Moreover, our analysis shows that Kimberly-Clark does not meet the three times market criterion if either the earliest or latest possible 15-year period is used to calculate the cumulative ratios. Similarly, nei-

¹ We believe Collins means induction rather than deduction because he does not start from a theory of management and then deduce conclusions from it.

Table 1
Results from Transition Period to 15 Years beyond the Transition Point^a

Company	Year T to T + 15	Reported by Collins	Earliest Possible 15-Year Period	Latest Possible 15-Year Period
Abbott	1974–1989	3.98 times market	3.89 times market	3.02 times market
Circuit City	1982–1997	18.50 times market	14.92 times market	7.37 times market
Fannie Mae	1984–1999	7.56 times market	4.23 times market	4.72 times market
Gillette	1980–1995	7.39 times market	5.18 times market	6.18 times market
Kimberly-Clark	1972–1987	3.42 times market	2.56 times market	2.49 times market
Kroger	1973–1988	4.17 times market	2.61 times market	4.70 times market
Nucor	1975–1990	5.16 times market	4.09 times market	4.32 times market
Philip Morris	1964–1979	7.06 times market	7.81 times market	7.86 times market
Pitney Bowes	1973–1988	7.16 times market	3.53 times market	7.45 times market
Walgreens	1975–1990	7.34 times market	6.53 times market	7.79 times market
Wells Fargo	1983–1998	3.99 times market	3.88 times market	2.79 times market

^a This table shows the ratio of cumulative stock returns to the general stock market for the 15 years following the transition point for each of the 11 *Good to Great* companies as reported by Collins (2001, p. 7). Since the T + 15 period encompasses 16 years, and it is not reported by Collins in which month the transition period started, for comparison purposes we also report ratios calculated from January of year T through December of year T + 14 (earliest possible) and those beginning in January of Year T + 1 and ending in December of year T + 15 (latest possible).

ther does Kroger if the earliest possible 15-year period is used, or Wells Fargo if the latest is used. It is startling to us that some of the great companies would not have been classified as such if their performance results were tabulated starting a few months differently from the starting month selected. Our results show a lack of robustness of Collins' methodology and suggest that the list of great companies is a result of data mining—i.e., iterating through the data until a particular starting month was found that resulted in a cumulative stock market performance ratio of at least three times the performance of the general market over the subsequent 15 years. The problem with this is that it opens the door to questions about whether Collins' conclusions can be generalized, because the determination of whether a company was great does not always hold if data from even a slightly different period is used.

As previously noted, if exceptional stock market performance is a mark of sustained greatness, it follows that the 11 firms identified by Collins will have gone on to exhibit continued great stock market performance. If they have not, one is left to question whether Collins really identified great firms and/or whether his prescription for greatness is valid. We now test this proposition using additional data. Table 2 presents analysis of the stock

market performance for each of the 11 *Good to Great* companies subsequent to the respective periods analyzed by Collins. Fortunately, nine continue to exist as independent companies, which allows us to track their performance. In 2003, the name of Philip Morris Companies was changed to Altria Group. In 1998, Wells Fargo and Norwest merged into a single company under the name Wells Fargo. Additionally, in 2005, Gillette and Procter & Gamble merged into a single company under the name of the latter. Our post-study analysis assumes that an original investment in Wells Fargo and Gillette continues as an investment in the respective new company. Our assumptions are that Wells Fargo's management practices were instituted in the combined firm and that Procter & Gamble acquired Gillette partly because its management practices would have a favorable effect on the combined firm.²

The first post-study time period we analyzed is from January of year T + 16 through December of 2006, i.e., the longest period of time from the end of Collins' analysis. For example, for Abbott the starting month is January 1990. The

² Readers uncomfortable with these assumptions may safely ignore the post-study results for these two firms and concentrate on the other nine without any loss to the generality of our conclusions.

Table 2
Post Study Actual Performance Results vs. Benchmark Performance Results^a

Company	Year T + 16 to December 2006	Cumulative Ratio	Post 1995 Fortune 500 Ranking	Cumulative Ratio
Abbott	1990–2006	1.46 vs. 3.47 times market	1996–2006	1.09 vs. 2.24 times market
Circuit City	1998–2006	.97 vs. 1.93 times market	1998–2006	.97 vs. 1.93 times market
Fannie Mae	2000–2006	1.00 vs. 1.67 times market	2000–2006	1.00 vs. 1.67 times market
Gillette/Procter & Gamble	1996–2006	1.01 vs. 2.24 times market	1996–2006	1.01 vs. 2.24 times market
Kimberly-Clark	1988–2006	1.04 vs. 4.02 times market	1996–2006	.76 vs. 2.24 times market
Kroger	1989–2006	1.35 vs. 3.74 times market	1996–2006	.88 vs. 2.24 times market
Nucor	1991–2006	2.83 vs. 3.23 times market	1996–2006	1.62 vs. 2.24 times market
Philip Morris (Altria)	1980–2006	6.37 vs. 7.22 times market	1996–2006	1.75 vs. 2.24 times market
Pitney Bowes	1989–2006	.91 vs. 3.74 times market	1996–2006	.95 vs. 2.24 times market
Walgreens	1991–2006	2.70 vs. 3.23 times market	1996–2006	2.32 vs. 2.24 times market
Wells Fargo	1999–2006	1.65 vs. 1.80 times market	1999–2006	1.65 vs. 1.80 times market

^a This table shows the actual ratio of cumulative stock returns to the general stock market versus the benchmark performance for each of the 11 *Good to Great* companies for two periods subsequent to the 15 years studied by Collins (2001). The first post-study period covers the time from the end of Collins' analysis, year T + 16 through December 2006. The second post-study period covers the time subsequent to the company's listing in the 1995 Fortune 500.

second post-study time period is from January 1996 through December 2006. This time period is relevant because one of Collins' criteria was that each of the 11 great companies had to be included on the 1995 Fortune 500 list. Annually, *Fortune* magazine ranks U.S.-based publicly traded companies by revenue; the largest 500 comprise the Fortune 500. These companies are among the largest, most profitable, and most powerful companies in the United States. The criterion that the great firms had to be listed on the 1995 Fortune 500 list means that an inconsistent methodology was applied to their selection because they were not all analyzed over a common time period. For example, Abbott was analyzed over the 15-year time period of 1974 through December 1989, but the 1995 Fortune 500 listing requirement assured that it was still an ongoing corporation in 1995 (six years later), and likely one of considerable financial strength. On the other hand, Gillette was analyzed over the 15-year time period of 1980 through 1995, without any requirement that it still be an ongoing firm listed on the Fortune 500 list six years later in 2001. While Gillette did not fall off the Fortune 500 list over the next six years, for some reason it conceivably could have, meaning that it would not have met

the same longevity standard as did Abbott. We believe a more legitimate post-study analysis that eliminates differences in selection criteria begins in January 1996, or in January of year T + 16 if that date occurs later, i.e., dates falling after the 1995 Fortune 500 listing requirement.³

Table 2 presents the cumulative stock return ratio relative to the general stock market for each of the 11 companies over each of the two post-study time periods. Because these time periods are not 15 years in length, a multiple of three times the general market is an inappropriate benchmark for determining greatness. Instead we calculate a unique benchmark ratio for each stock using the equivalent annual rate. That is, a ratio of three generated over 15 years implies an annual return in excess of the market return of 7.599% [= $(3^{1/15} - 1) \times 100\%$]. Consequently, while Abbott generated a cumulative stock return ratio of 1.46 times the general stock market over the T + 16 through 2006 study period, it falls short of its relevant benchmark of 3.47 [= $(1.07599)^{17}$] over the 17 years

³ The date corresponding to January of year T + 16 occurs concurrently or after January 1996 for Circuit City, Gillette/Procter & Gamble, Fannie Mae, and Wells Fargo. Consequently, the two post-study test results presented in Table 2 will be the same for these companies.

Table 3
Jensen's Alpha Measure of Performance and Stock Beta^a

Company	Year T to T Year + 15		Year T + 16 to December 2006		Post 1995 Fortune 500 Ranking	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
Abbott	.0078* (2.01)	.93* (11.15)	.0056 (1.40)	.53* (5.46)	.0048 (0.92)	.44* (3.58)
Circuit City	.0155 (1.82)	1.28* (6.31)	.0130 (0.81)	1.96* (5.36)	.0130 (0.81)	1.96* (5.36)
Fannie Mae	.0082 (1.61)	1.32* (11.46)	.0015 (0.18)	.30 (1.49)	.0015 (0.18)	.30 (1.49)
Gillette/Procter & Gamble	.0118* (2.59)	1.06* (9.93)	.0040 (0.66)	.62* (4.54)	.0040 (0.66)	.62* (4.54)
Kimberly-Clark	.0066 (1.51)	.82* (9.39)	.0037 (1.00)	.60* (6.41)	.0020 (0.37)	.44* (3.56)
Kroger	.0118* (1.97)	.80* (6.62)	.0054 (1.02)	.78* (5.90)	.0038 (0.60)	.47* (3.21)
Nucor	.0104 (1.66)	1.55* (11.37)	.0081 (1.27)	1.20* (7.49)	.0065 (0.82)	1.32* (7.17)
Philip Morris (Altria)	.0133* (2.92)	.99* (9.21)	.0095* (2.39)	.73* (8.04)	.0105 (1.38)	.41* (2.32)
Pitney Bowes	.0135* (2.62)	1.09* (10.35)	.0023 (0.58)	.79* (7.90)	.0032 (0.60)	.57* (4.74)
Walgreens	.0131* (2.61)	1.28* (11.80)	.0094 (1.92)	.63* (5.16)	.0108 (1.70)	.55* (3.75)
Wells Fargo	.0065 (1.27)	1.21* (10.45)	.0070 (1.07)	.37* (2.31)	.0070 (1.07)	.37* (2.31)

^a This table shows the Jensen's alpha measure of abnormal performance relative to the general stock market and the beta for each of the 11 *Good to Great* companies for three periods: the (latest possible) 15 years studied by Collins (2001); the time subsequent to the Collins' study, year T + 16 through December 2006; and, the time subsequent to the company's listing in the 1995 Fortune 500.

* Denotes statistical significance at the two-tailed 5% level. Associated *t*-statistics are in parentheses.

encompassing 1990 through 2006. Examination of Table 2 shows that each of the 11 companies falls short of its relevant benchmark over the first post-study period and that only Walgreens beats its benchmark over the second post-study period. Moreover, two companies, Circuit City and Pitney Bowes, have a ratio less than unity over both post-study periods, and two others, Kimberly-Clark and Kroger, have a ratio less than unity over our second post-study period, indicating that these companies did not even match general stock market performance. Overall, Table 2 suggests that only Walgreens has exhibited any manner of sustained great results when measured by cumulative stock market performance relative to the general stock market.

Collins' methodology of measuring relative stock market performance of the 11 great firms versus the general market lacks sophistication, in particular the ability to adjust for performance differences associated with risk. Financial economists are interested in whether exceptional stock market performance is truly higher once one accounts for the costs of risk and then whether the performance differences are statistically significant. Jensen's (1968, 1969) alpha provides a mea-

sure of abnormal risk-adjusted stock performance relative to the general market:

$$\text{Mean Excess Stock Return} = \text{Alpha} + \text{Beta} \\ \times \text{Mean Excess Market Return.}$$

According to theoretical ideas about the efficiency of the stock market like the capital asset pricing model,⁴ Jensen's alpha should be zero. A statistically significant positive (negative) value would indicate superior (inferior) stock return performance. Beta is a measure of the stock's systematic, or market, risk and is theoretically the only risk priced by the market.

We repeat Collins' tests adjusting the returns of the companies for variations in the risk level of their stock. Table 3 presents the Jensen's alpha performance measure and beta for each of the 11 great companies calculated over three time periods: the January T + 1 through December T + 15 (approximate) period studied by Collins, the post-study period of January T + 16 through December 2006, and the post-1995 Fortune 500 listing period through December 2006. Examination of the

⁴ See Sharpe (1964).

table shows that all 11 great companies had a positive alpha over Collins' study period. However, the alphas of five companies, Circuit City, Fannie Mae, Kimberly-Clark, Nucor, and Wells Fargo, were not statistically significant and thus would not be classified as exhibiting superior performance according to modern portfolio theory.⁵ Over our first post-study period, all alphas were positive, but only one company, Philip Morris, yielded a statistically significant alpha. And over the post-1995 Fortune 500 study period, all alphas were positive, but none was statistically significant. In summary, the results show that some of the 11 companies would not have been selected as great if their performance had been measured according to modern portfolio theory and that not a single company has exhibited sustained success when measured by statistically significant abnormal stock market performance.

Summary and Conclusion

Our analysis of Collins' *Good to Great* study methodology suggests that it suffered from three major problems: 1) data mining with respect to the selection of the starting month of the company transformation period, 2) the failure to test for the sustainability of greatness over subsequent time periods, and 3) the failure to use modern portfolio theory that accounts for the costs of risk and then whether the performance differences are statistically significant.

We have shown that data mining was likely used in the selection of the 11 great companies and that some would not have been classified as great if their performance results were tabulated starting a few months differently from the starting month selected. This opens the door to questions about whether Collins' conclusions can be generalized because the determination of whether a company was great does not always hold if data from even a slightly different period is used.

Collins claimed that his study team was able to

identify 11 companies that by virtue of their management practices were able to transform themselves from good companies to great ones, and that from the analysis of their management practices he was able to ascertain the management traits that made them great and resulted in the superior financial performance they subsequently exhibited. To qualify as great, a company had to yield a cumulative stock market performance ratio of at least three times the performance of the general market over its 15-year transformation period. Collins claimed that by applying the *Good to Great* concepts, to either a start-up or an established organization, a business leader can create sustained great results. If exceptional stock market performance is a mark of sustained greatness, it follows that the 11 firms identified by Collins will have gone on to exhibit continued great stock market performance. If they have not, one is left to question whether Collins really identified great firms and/or whether his prescription for greatness is valid. We tested this proposition using new data and found that only one of the 11 companies continues to exhibit superior stock market performance according to Collins' measure. Consequently, doubt is cast on whether Collins has actually ascertained management practices that lead to sustained greatness.

Finally, we repeated Collins' tests adjusting the returns of the companies for variations in the risk level of their stock using the capital asset pricing model. This allowed for determining whether the 11 companies produced statistically significant abnormal performance relative to the general stock market. We found that five of the 11 companies did not produce statistically significant positive abnormal performance and thus would not have been selected as great if the performance metric were based on modern portfolio theory. Moreover, when using the new data, we found that not a single company exhibits sustained success when measured by statistically significant abnormal stock market performance.

Exceptional stock market performance will occur when the market is first unaware, but then learns, of positive things happening within a corporation—whether these things qualify as a move from good to great or merely a move from poor to

⁵ According to the capital asset pricing model, a stock with a beta of 1.5 implies that if the general market increases 1%, the stock's return will increase 1.5%. This explains how a stock such as Fannie Mae, with a beta of 1.32, can produce a cumulative stock return ratio of 7.56 times the general stock market over Collins' study period, yet have a statistically insignificant Jensen's alpha of .0082.

good. Regardless, as the market incorporates the new relevant information into the stock price, the stock will no longer earn statistically significant positive abnormal returns. We cannot definitively say whether greatness was ever created at any of these 11 firms. Collins' tests do not allow for determining whether a great firm has truly been identified. He may have identified great companies and he may not have; we do not know. We do know, however, that he defines a great company as one that yields superior stock market performance and claims that application of his managerial formula will lead to "sustained greatness." In this context, "sustained greatness" can only mean continued superior stock market performance. We have shown that this has not been the case either by his measurement or by Jensen's alpha. According to modern portfolio theory, some of these 11 companies should never have been classified as

great. Moreover, the fact that none of the 11 companies currently has a significantly positive alpha suggests that the market now appears to be fully aware of whatever the managerial abilities are at all of these corporations and has priced their stocks according to their market risk.

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