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BROWNE
COMPANY LLC
Investment Advisers
*Established in 1920*

*Managing Directors*
Christopher H. Browne
William H. Browne
John D. Spears
Thomas H. Shrager
Robert Q. Wyckoff, Jr.

# Investing for Higher After-Tax Returns:

## *Lessons for Tax-Paying Investors from Warren Buffett, Index Funds, the Best-Performing Stocks over an 18-year Period, and Our Own Experience*

Past performance is not a guarantee of future investment results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Mutual Fund investors should refer to the accompanying prospectus for description of risk factors associated with investments in securities held by both Funds. Additionally, investing in foreign securities involves economic and political considerations not typically found in U.S. markets, including currency fluctuations, political uncertainty and differences in financial standards.

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# INVESTING FOR HIGHER AFTER-TAX RETURNS:
## Lessons for Tax-paying Investors from Warren Buffett, Index Funds, the Best Performing Stocks over an 18-year Period, and Our Own Experience

## INTRODUCTION

This report will describe what we have learned about investing for higher after-tax returns, and our investment strategy for tax-paying investors. The Managing Directors of Tweedy, Browne Company LLC have become increasingly aware of taxes over the last ten years as their own wealth and clients' wealth has increased. We presently have nearly our entire liquid net worths, approximately $400 million of our own money that has been accumulated over the years, invested in portfolios that are jointly owned with clients, including Tweedy, Browne Global Value Fund and Tweedy, Browne American Value Fund, and in separate portfolios whose equity holdings are similar to the holdings of clients' portfolios.

Nearly all of our own money, and probably more than 50% of the money that we manage for clients, is subject to income taxes and capital gains taxes. Capital gains taxes only occur when a stock is sold at a gain above cost, and, hence, are somewhat unique in that they are elective: You can decide if and when you want to sell a stock at a gain, and thereby incur capital gains taxes. Alternatively, you can decide to not sell a stock at a gain and, therefore, not pay capital gains taxes. It has been said that "the only sure thing is death and taxes", but the second part of this statement does not hold true for capital gains taxes.

Our thinking and exploration of the impact and importance of taxes on investment returns has been aided greatly by Warren Buffett, one of the world's most successful investors, and by John Bogle, former Senior Chairman and Founder of The Vanguard Group of mutual funds. Warren Buffett has at times invested nearly 40% of his net worth in one stock, and owns operating businesses through his holding company, Berkshire Hathaway. Warren Buffett is the epitome of an active investor. John Bogle, on the other hand, advocates passive, do-nothing investing in index funds, which do not have portfolio managers and investment analysts engaged in analyzing individual stocks, and attempting to beat the market. Index funds that mimic the investment performance of the Standard & Poor's 500 Index simply buy each and every one of the 500 stocks that are in the S&P 500, and then continue to hold them. Mr. Buffett and Mr. Bogle seem bi-polar in investment approach, but they are completely joined in understanding and advocating the huge advantage of avoidance and deferral of taxes over very long periods of time. Mr. Bogle calls it, "Buy right and hold tight."

At Tweedy, Browne, we consider index funds to be our biggest, toughest long-term competitor. The S&P 500 outperformed 91% of all surviving equity mutual funds over the

December 31, 1981 - December 31, 1997 16-year period.* Index funds that mimic the S&P 500 probably beat close to 91% of equity mutual funds over this period. Anyone in the investment management business who does not respect the challenge of low-fee index funds that rarely sell stocks and, therefore, rarely realize capital gains, is, as psychologists would say, in denial.

Fortunately, the investment approach that our firm has practiced for more than 25 years has served us and our clients well. We have to admit that we might be a little bit tempted to at least consider investing some of our own money and clients' money in an index fund if the valuation wasn't so high: The S&P 500 is now about 35x *reported earnings*, with no downward adjustment of these reported earnings figures for "one-time, non-recurring writedowns and special charges" that, in fact, seem to be very recurring expenses that would reduce reported earnings if the companies' accounting practices were more conservative. The S&P 500's earnings are also not adjusted downward for the hidden expense of large stock options. In addition, the S&P 500 is priced at over 6x tangible book value. Both the price-to-earnings ratio, 35x, and the price-to-book value ratio, 6x, are all-time high valuations. In 1980, the S&P 500 was selling at 9.2x earnings. It seems very unlikely to us that future gains for the S&P 500 from a starting point of 35x earnings in 1999 will come at all close to generating the 16.94% per year gains that occurred over the 18-year period from December 31, 1980 through December 31, 1998 from a starting point in 1980 of 9.2x earnings.

At Tweedy, Browne, we are well aware that our investment management services are not the only show in town, and that we, the Managing Directors, and clients of the firm always have the alternative of investing in a very low-fee index fund that avoids taxes - because stocks are seldom sold. We do not know for sure if the investment approach that we practice will add value above index returns in the future, as it has in the past, but we are hopeful. We only really have control over investment strategy and its implementation, and the future returns will be substantially determined by what other human beings will pay in the future for stocks that we own. We do know for sure that we can invest our own money and clients' money in stocks that are significantly cheaper in relation to earnings, book value and estimated intrinsic value than the S&P 500. This investment approach, the value approach of getting more for your money, appeals to our common-sense, and has worked well in the past.

At Tweedy, Browne, we continue to seek to earn both pre-tax and after-tax returns in excess of index fund returns for our own money and our clients' money. This study and report are part of that effort, and represent our first extensive examination of investing for higher after-tax returns, a topic that we believe is extremely important for tax-paying investors.

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* This study, which was completed in 2000, used readily available historical data from CDA Investnet's Cadence Performance Software Group, which is now a division of Weisenberger Group, a provider of information concerning mutual funds.

The S&P 500 Stock Index is an unmanaged index which assumes the reinvestment of dividends and which is generally considered representative of U.S. large capitalization stocks.

In the first section of this report entitled, *Pre-Tax and After-Tax Investment Return Arithmetic: How Delaying Taxes As Long As Possible May Dramatically Increase Your Wealth at Any Given Pre-Tax Rate of Return*, we will describe the impact of taxes on investment returns.

Then, in the next two sections of this report, we will look backward in time to study the characteristics of stocks that have provided high investment rates of return over very long holding periods. At Tweedy, Browne, we are able to describe the characteristics of a fairly small sample of stocks within our own portfolios that have provided high rates of pre-tax and after-tax return over long holding periods in the past. This report describes our first systematic examination of successful long-run stocks as a category.

The goal of studying highly successful long-term investments of the past is to develop a framework for trying to identify stocks that, hopefully, will have similar characteristics when we buy them, and after we have bought them. As Warren Buffett has said, "The investor of today does not profit from the growth of the past." As Mr. Buffett has also observed, if this were not the case, the average librarian would be rich from the stock market. We also want to try to avoid stocks that will have the future characteristics of the worst performing stocks of the past. It is always easier to find (or avoid) something if you know what to look for.

First, we will attempt to learn about long-run value stocks from the Master: We will examine five of Warren Buffett's long-term holdings: Three winners: GEICO, The Washington Post Company, and The Coca-Cola Company, and two apparent losers (at least so far), World Book, Inc. and Berkshire Hathaway's Shoe Group. These five case studies will focus on what we believe is a key ingredient in successful long-run investing: the qualitative assessment of a company's future competitive position and economics. Warren Buffett and his partner, Charles Munger, are brilliant analysts of competitive strengths and weaknesses in businesses, and highly discerning in their selection of businesses. We will try to think along with them, and learn. They want huge, sustainable competitive advantages: advantages that will last for decades, if not "forever".

Then, in the next section, *Characteristics of the Best and Worst Performing Stocks in the S&P 500 over an 18 Year Period*, we will examine the best and worst performing stocks in the S&P 500 over an 18-year holding period beginning on December 31, 1980 and ending on December 31, 1998.*

Warren Buffett's method of computing the intrinsic value of a business is described in the section, *The Intrinsic Value of a Growing Business: How Warren Buffett Values Businesses*.

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* This study, which was completed in 1999, used readily available backtesting data from the Zacks and Compustat databases. The availability of historical financial data in a machine readable form determined the length of the study.

We will describe Tweedy, Browne's framework for selling stocks on behalf of our tax- paying clients in *When to Sell: A Framework for Tax-Paying Investors; Thinking and Acting Like an Owner of a Business*.

In the section entitled, *Predicting the Future of Businesses*, this report will also discuss the general difficulty of predicting businesses' future financial results, and how we handle this inherent problem in managing portfolios at Tweedy, Browne. Our empirical research indicates that future corporate financial success cannot be predicted solely by simple extrapolation of past financial trends. An educated best-guess about the future financial statements and value of a business hinges upon a qualitative assessment of the sustainability of a particular company's competitive advantage, standing, or "franchise". In the second section of the report, we will describe how even Warren Buffett has appeared to have misjudged the future prospects of two companies that he has acquired in recent years: World Book, Inc. and Berkshire Hathaway's Shoe Group. As Samuel Goldwyn said, "Forecasts are difficult to make, especially about the future".

The next to last section of this report, *Diversification and the Mathematical Magic of Skewness*, will describe the return-enhancing and risk-reducing advantages of diversification. We will also describe the wonderful mathematics of "skewness" in a diversified portfolio, which effortlessly serves to "cut your losses, and let your profits run".

In the final section of this report, *Our Advice to You*, we will provide some advice, which we plan to follow ourselves in managing money at Tweedy, Browne. We hope this report will be useful to you. There can be a very large payoff from even seemingly small improvements in after-tax returns compounded over a long period of time. If this report serves to provide some understanding and long-run perspective, and aids you in your pursuit of higher after-tax returns, then we, at Tweedy, Browne, will have served you well.*

* During the time periods discussed in the article, Tweedy, Browne American Value Fund and Tweedy, Browne Global Value Fund held the following securities mentioned in the article: American Express, Freddie Mac, Wells Fargo, and Nestle. As of December 31, 1998, these securities represented 11.51% and 7.69% of the net assets of Tweedy, Browne American Value Fund and Tweedy, Browne Global Value Fund, respectively, and may not be representative of the Funds' current or future holdings.

## PRE-TAX AND AFTER-TAX INVESTMENT RETURN ARITHMETIC:

**How delaying taxes as long as possible may dramatically increase your wealth at any given pre-tax rate of return**

**"*Inactivity strikes us as intelligent behavior*" - Warren Buffett**

**In the 1993 Berkshire Hathaway annual report, Warren Buffett, the world's most successful investor, provided this example to illustrate the enormous impact of taxes on investment results:**

> *"Through my favorite comic strip, Li'l Abner, I got the chance during my youth to see the benefits of delayed taxes, though I missed the lesson at the time. Making his readers feel superior, Li'l Abner bungled happily, but moronically, through life in Dogpatch. At one point he became infatuated with a New York temptress, Appassionatta van Climax, but despaired of marrying her because he had only a single silver dollar and she was interested solely in millionaires. Dejected, Abner took his problem to Old Man Mose, the font of all knowledge in Dogpatch. Said the sage: "Double your money 20 times and Appassionatta will be yours (1,2,4,8 ….1,048,576)."*
>
> *My last memory of the strip is Abner entering a roadhouse, dropping his dollar into a slot machine, and hitting a jackpot that spilled money all over the floor. Meticulously following Mose's advice, Abner picked up two dollars and went off to find his next double. Whereupon I dumped Abner and began reading Ben Graham.*
>
> *Mose clearly was overrated as a guru: Besides failing to anticipate Abner's slavish obedience to instructions, he also forgot about taxes. Had Abner been subject, say, to the 35% federal tax rate that Berkshire pays, and had he managed one double annually, he would after 20 years only have accumulated $22,370. Indeed, had he kept on both getting his annual doubles and paying a 35% tax on each, he would have needed 7 1/2 more years to reach the $1 million required to win Appassionatta.*
>
> *But what if Abner had instead put his dollar in a single investment and held it until it doubled the same 27 1/2 times? In that case, he would have realized about $200 million pre-tax or, after paying a $70 million tax in the final year, about $130 million after-tax. For that Appassionatta would have crawled to Dogpatch. Of course, with 27 1/2 years having passed, how Appassionatta would have looked to a fellow sitting on $130 million is another question..*
>
> *What this little tale tells us is that tax-paying investors will realize a far, far greater sum from a single investment that compounds internally at a given rate than from a succession of investments compounding at the same rate."*

We thought that it would be instructive to examine the pre-tax and after-tax investment arithmetic of two investment return assumptions that are more modest and, hopefully, more attainable than Li'l Abner's doubling of money each year: 15% and 20% per year. These returns represent our best-guess expectation, based on past investment results, of a range of future equity investment results for successful investment management. The 15% and 20% annual investment returns are computed over periods ranging from one year to 20 years, with the following six assumptions about "turnover", the percentage of the portfolio that is sold and then re-invested each year:

1. **Zero turnover** No stocks are sold each year. Consequently, no gains are realized. There are no taxes paid, and the pre-tax return, therefore, is the same as the after-tax return. Zero turnover assumes that all of the stocks in a portfolio are held, in effect, "forever". Individuals who have substantially all of their wealth invested in one business have zero turnover if they continue to own their business throughout their lives. Warren Buffett, for example, has substantially all of his net worth invested in the shares of Berkshire Hathaway, whose value has compounded at a 32.8% rate over the last 19 years ended December 31, 1998. Because Warren Buffett has not, to the best of our knowledge, sold a share of Berkshire Hathaway, and therefore has not paid any taxes on realized gains, his after-tax return has been the same as his pre-tax return from owning shares of Berkshire. Many of the wealthiest families in America became wealthy by owning a business that increased in value over the years: The compounded returns from owning the business, and the amount of money that was invested and working on behalf of the owners, were not diminished by tax payments—because no shares were sold and, consequently, no taxable gains were realized.

2. **3% Turnover** For each $1,000,000 of portfolio value, 3%, or $30,000 worth of stocks, are sold each year, taxes are paid on the gain, and the after-tax proceeds are reinvested in the portfolio. A turnover of 3% equates to holding stocks for an average of 33 1/3 years. Very few, if any, portfolios that are managed by professional investment managers have turnover that is this low. In fact, according to ***Morningstar***, professional managers of equity mutual funds, on average, sell $850,000 worth of stocks each year out of each $1,000,000 of portfolio assets, which is an 85% turnover ratio. Index mutual funds that mechanically invest in all 500 stocks that are in the S&P 500, and then continue to hold the stocks in the Index, have turnover from mergers, acquisitions and deletions from the S&P 500 that has averaged only about 3%.

3. **10% Turnover** For each $1,000,000 of portfolio value, 10%, or $100,000 worth of stocks, are sold each year, taxes are paid on the gain, and the after-tax proceeds are reinvested in the portfolio. Annual turnover of 10% equates to holding stocks for an average of 10 years.

4. **30% Turnover** For each $1,000,000 of portfolio value, 30%, or $300,000 worth of stocks, are sold each year, taxes are paid on the gain, and the after-tax proceeds are reinvested in the portfolio. A 30% annual turnover equates to holding stocks for an average of 3 1/3 years.

5. **85% Turnover** For each $1,000,000 of portfolio value, 85%, or $850,000 worth of stocks, are sold each year, taxes are paid on the gain, and the after-tax proceeds are reinvested in the portfolio. An 85% turnover equates to holding stocks for an average of one year and two months. According to ***Morningstar***, the average turnover of professionally managed equity mutual funds is 85%.

6. **100% Turnover** For each $1,000,000 of portfolio value, 100%, or $1,000,000 of stocks are sold each year, taxes are paid on the gain, and the after-tax proceeds are reinvested in the portfolio. Stocks are held, on average, for one year when the turnover is 100%.

In the various 15% and 20% investment return and turnover scenarios, we assume that 100% of the realized gain is taxed at a combined federal and state long-term gains rate of 27%. The combined federal and state long-term capital gains tax rate, of course, varies from individual to individual, and depends both on an individual's tax bracket and state of residence. The highest federal tax bracket for long-term capital gains is 20%.

In Appendix B, we have listed the top bracket income tax rate of each state. In most, but not all, states that have income taxes, realized long-term capital gains are taxed at the income tax rate. New Jersey and New York residents in the top tax bracket pay long-term capital gains taxes at about a 27% rate: a 20% long-term capital gains federal tax rate plus a state tax rate of about 7%. For a New York City resident, the top bracket combined federal, state and city tax rate is 33% on long-term capital gains. California residents in the top tax bracket pay long-term capital gains taxes at about a 29% rate: 20% federal plus 9% state.

In the 100% turnover scenarios, the 27% combined long-term capital gains tax rate assumption that we use is probably too low. To qualify for long-term capital gains, an investment must be held for one year plus one day. Portfolios with, say, 85% to 100% turnover, are likely to have short-term capital gains from investments that have been held for less than one year and a day. The top federal tax rate on short-term capital gains is the top ordinary income tax rate, 39.6%. In addition, short-term capital gains are taxed at the state income tax rate. For California residents, the top tax bracket for short-term capital gains is 39.6% federal plus 9% state, or about a 49% total tax rate. (The 15% return and 20% investment return scenarios do not assume any return from dividends or interest income, which are taxed at ordinary income tax rates.)

The 15% return and 20% return investment scenarios also do not assume that 100% of the portfolio is sold at the end of the 20-year period. Under the current tax rules, if your estate, your spouse, or charity inherit stocks that you own, capital gains taxes are eliminated on the unrealized gains. When we die, our stocks, at least, will be reborn with a new tax cost basis, the market value at date of death.

The detailed year-by-year figures for the various 15% and 20% return/turnover scenarios are shown in Appendix A. Tables 1 and 2 below are summaries of the various scenarios:

Table 1:

**$1,000,000 Initial Investment Compounded at a 15% Pre-Tax Annual Rate of Return over a 20-Year Period, assuming a 27% Tax Rate on all Realized Gains**

| Pre-Tax Rate of Return | Annual Turnover | Value of $1,000,000 Initial Investment at the end of 20 Years | After-Tax Rate of Return |
|---|---|---|---|
| 15% | - 0 - | $16,366,500 | 15.0% |
| 15 | 3% | 14,780,800 | 14.4 |
| 15 | 10 | 12,386,300 | 13.4 |
| 15 | 30 | 9,694,000 | 12.0 |
| 15 | 85 | 8,136,600 | 11.1 |
| 15 | 100 | 7,990,800 | 10.95 |

Table 2:

**$1,000,000 Initial Investment Compounded at a 20% Pre-Tax Annual Rate of Return over a 20-Year Period, assuming a 27% Tax Rate on all Realized Gains**

| Pre-Tax Rate of Return | Annual Turnover | Value of $1,000,000 Initial Investment at the end of 20 Years | After-Tax Rate of Return |
|---|---|---|---|
| 20% | - 0 - | $38,337,600 | 20.0% |
| 20 | 3% | 34,211,200 | 19.3 |
| 20 | 10 | 27,808,500 | 18.1 |
| 20 | 30 | 20,250,200 | 16.2 |
| 20 | 85 | 15,695,500 | 14.8 |
| 20 | 100 | 15,264,800 | 14.6 |

As Tables 1 and 2 indicate, turnover; i.e., the sale of securities, with the consequent realization of taxable long-term capital gains, can have an enormous impact on after-tax wealth for a high tax-bracket individual at 15% and 20% assumed pre-tax rates of return. As turnover increases, realized taxable gains increase, which means that an individual's taxes increase, and therefore the amount of money that is invested and working on behalf of the tax-paying investor in the form of deferred taxes declines. For any given rate of pre-tax return, the end result of a higher turnover ratio is lower after-tax returns, which means less wealth at the end of any given period of time.

Table 1 and Table 2 also illustrate the extent to which high-turnover investments have to outperform low-turnover investments on a pre-tax basis in order to equal the after-tax returns of a

low-turnover investment. For example, to equal the 15% pre-tax and 14.4% after-tax return, and the $14,780,000 ending wealth accumulated by the portfolio with 3% turnover, an investor with 100% annual turnover would have to earn a pre-tax return of close to 20%, which is nearly 33% more pre-tax return than the 15% return of the low turnover portfolio.

Warren Buffett and his partner, Charles Munger, have long understood the arithmetic of turnover and taxes, and the compounding effect of the deferral of taxes on after-tax returns and wealth.

> Charles Munger has said "*Understanding both the power of compound return and the difficulty of getting it is the heart and soul of understanding a lot of things.*" *Mr. Munger also enjoys quoting Benjamin Franklin on the subject of compounding investment returns: "…'tis the stone that will turn all your lead into gold….Remember that money is of a prolific generating nature. Money can beget money, and its offspring can beget more."*

The Managing Directors of Tweedy, Browne have become increasingly aware of the importance of taxes over the years as their own wealth and their clients' wealth has increased. We have observed that very large contributions to our own wealth, and our tax-paying and tax-free clients' wealth, have come from stocks that had two characteristics; i.e., they were ( 1) bought at a significant discount to the underlying value of the company's business, and (2) the underlying value of the particular company's business increased at an above-average rate during an ownership/holding period of many years. These successful stocks combined the investment concepts of "value" and "growth".

An increasing proportion of portfolios managed by Tweedy, Browne has been invested in stocks of this type, which have provided long-running, multi-year, double dips of investment returns generated from both a narrowing of the discount from underlying value as the stock price rose toward underlying value, and an above-average compounded increase in the underlying value of the business itself. The increases in underlying business value were driven by increases in the companies' earnings. The narrowing of the discount from underlying value was driven by an increase in the valuation of earnings, as the price to earnings ratio rose during the multi-year periods that we have owned these stocks.

As larger proportions of portfolios managed by Tweedy, Browne have been invested in "double dip" stocks whose underlying values have grown at above-average rates, our target prices for selling these stocks have increased in tandem, and we have had less occasion to sell investments and realize gains. Consequently, the average turnover ratio of portfolios under our management has declined in recent years, and untaxed, unrealized gains have increased.

For our tax-paying clients who have invested with us through Tweedy, Browne Global Value Fund, Tweedy, Browne American Value Fund, or a separately managed portfolio, the bite from tax payments has been relatively low in comparison to most mutual funds, according to data from ***Morningstar***. Over the five years ended March 31, 1999, the average portfolio turnover ratios for Tweedy, Browne Global Value Fund and Tweedy, Browne American Value Fund were 18.4% and 10.2%, respectively, versus an 85% turnover ratio for the average equity mutual fund.*

The very high average portfolio turnover ratios of professional mutual fund managers lead us to believe that very few professional investment managers carefully consider the effect of taxes on investment returns for tax-paying individuals. How else could equity mutual fund portfolio turnover average 85%, unless portfolio managers were oblivious to tax effects in managing their portfolios? An 85% turnover ratio, which means that the average stock is only owned for a period of one year and two months, suggests that the typical money manager is not oriented toward owning businesses over any multi-year length of time through the stock market. Imagine owning a different business every one year and two months over your adult life. Today's average money manager is trading in and out of stocks, not owning businesses through long-term ownership of stocks.

In addition to tax costs, high turnover also generates costs—both from commissions on purchase and sale transactions and from "market impact", which is the effect that orders to buy or sell shares can have on stock prices. A recent study by Barra Inc., an investment consulting firm, estimated that the average mutual fund with $500 million of assets that specializes in small or mid-capitalization stocks will incur annual costs of three to five percentage points of net asset value when turnover is 80% to 100%.

* ***COMMON SENSE ON MUTUAL FUNDS***, John C. Bogle

## Why do Professional Money Managers and Investment Analysts Engage in So Much Buying and Selling?

Investment managers and analysts tend to be energetic, intelligent, well-educated, highly paid and self-confident individuals. Great traits in most lines of work! However, it appears that it is very difficult for people with these traits to do very little, to not make lots of buy and sell decisions, even though a detached view of the empirical data concerning both pre-tax and after-tax investment performance, and the effect of trading and tax costs, may suggest that the best course, the most rational decision, would be to sit tight and do nothing.

Investment managers (including ourselves) wake up each day believing that their work will add value. However, over the 16-year period between December 31, 1981 and December 31, 1997, 91% of all surviving equity mutual funds had pre-tax investment returns below the pre-tax investment return of the S&P 500. Only 9% of the surviving equity mutual funds were able to add any value above the S&P 500's returns. Given the average equity mutual fund's 85% turnover ratio versus 3% turnover for index funds that simply mimic the S&P 500, an even larger percentage of equity mutual funds lagged the S&P 500 on an after-tax basis over the 16-year, December 31, 1981 to December 31, 1997 period. The high tax and transaction cost of turnover accounted for some of the long-term underperformance.

Warren Buffett's partner, Charles Munger, has described the irrational and often lemming-like human and cultural tendencies of people in business organizations as the "Institutional Imperative". Even though it may not make sense at certain times for bank loan officers to write new loans, or for a chief executive officer to acquire another company, or for investment managers to buy and sell securities with such frequency, the institutional imperative has ingrained in human beings a tendency to be busy and active, to "take charge" and be "in control". You can observe similar behavior on the part of drivers on the turnpike who weave in and out of lanes. In the investment management field, behavioral psychologists have called this ingrained tendency to weave in and out of stocks the "illusion of control". Why would investment management firms want to pay high salaries to people who do not appear to be doing very much, and who do not appear to have much control over what they are doing? Investment management firms, in general, must believe that lots of activity is useful because they are willing to pay for it, and high compensation ensures that lots of activity will be provided. Everyone involved must believe that it all makes sense. The illusion of control is shared. The words of Blaise Pascal come to mind: "All men's miseries come from their inability to sit quiet and alone."

Of course, the only thing that any investor really controls is strategy and its implementation, not what every investor really wants — future investment returns. Your future investment returns are largely determined by what other human beings, who, in most cases, will be unknown to you, are willing to pay in the future for stocks that you own. No investor is in control of future investment

returns. When you own a stock, its price only matters when you plan to sell. Until that time, the stock's price movements are really just entertainment.

Another reason why investment managers have such high turnover is that most investment management clients, both those that pay taxes and those whose portfolios are tax-free, have gauged their investment managers solely on pre-tax, not after-tax, investment returns. What is measured will be managed. We do not recall ever reading an article about an acclaimed hedge fund or mutual fund manager that described the taxable short-term gain and long-term gain portion of the manager's historical investment returns.

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It has been estimated that approximately 30% to 40% of the money invested in publicly traded stocks is tax-free money, and 60% to 70% of the money is owned by tax-paying individuals and corporations. While it is appropriate to ignore taxes in managing tax-free portfolios, the powerful numbers in Tables 1 and 2 tell us that it makes little sense to ignore turnover and taxes in managing portfolios on behalf of taxpayers - especially in managing money on behalf of high tax-bracket individuals who "share" up to 50% of any short-term realized gain, and up to 33% of any long-term realized gain, with various tax authorities. In seeking to build wealth, taxes are of major importance to investors.

## Quantitative and Qualitative Examination of three of Warren Buffett's long-term Winners: GEICO, The Washington Post Company and The Coca Cola Company and two apparent Losers *(at least so far)*: World Book, Inc. and Berkshire Hathaway's Shoe Group

### GEICO

In 1976, Warren Buffett's holding company, Berkshire Hathaway, accumulated 1,294,308 shares of GEICO, an automobile insurance company, at an average price of $3.18 per share. At that time, GEICO was a financially distressed company which had just hired as its new President, John Byrne, an actuary and former executive from Travelers Insurance Company. Warren Buffett believed that GEICO's business of providing automobile insurance sold directly to the customer, without incurring the cost of an insurance agent's or broker's commission, provided GEICO with a relatively unique and sustainable competitive advantage in the form of lower costs per insurance policy. With a lower cost per insurance policy, because there were no sales commissions, GEICO could afford to offer automobile insurance at a lower price than competitors could afford to charge, and still earn a healthy profit.

A competitor, such as Travelers Insurance Company, would be reluctant to adopt GEICO's lower-cost, direct-to-the-customer, no-agent method of operation for fear of having its independent sales

agents switch to selling Aetna's auto policies instead of Travelers'. Why would a Travelers agent want to sell a Travelers auto insurance policy if Travelers was offering the same auto insurance coverage direct to the agent's customers at a lower price, and thereby cutting the agent out of commissions on the business? An understanding of the great reluctance by competitors to compete with, and cannibalize, their own existing business, we believe, was a key qualitative insight about the sustainability of GEICO's earning power, and about the company's potential to increase sales and earnings in the future.

Over time, it appeared likely that GEICO's lower-priced auto policies would attract more and more customers away from the higher-priced policies that higher-cost insurance companies sold through commission-earning agents and brokers. GEICO simply offered its existing and prospective customers a better deal, one that competitors could not afford to offer by matching or dropping below the price that GEICO charged for auto insurance coverage.

In addition, it seemed difficult for a brand new competitor, without an established business to protect, to enter the direct-to-the-customer auto insurance business and compete with GEICO: First, GEICO, as the originator of the direct-to-the-customer method of providing auto insurance, had already attracted the kind of customers who valued a lower price for their auto insurance more than they valued the human touch of dealing with an insurance agent. A new entrant would either have to encourage satisfied customers to switch from GEICO to the new entrant by offering auto insurance at an even lower price than GEICO's, or locate new customers who had not already switched to GEICO from a higher-cost insurance company, such as Travelers. To attract new customers, who had not yet begun doing business with GEICO, a new entrant would probably determine that it would have to offer its auto insurance product at an even lower price than GEICO's. After all, why would a customer endure the hassle of filling out various new policy application forms unless the competing company's auto insurance was less expensive? Would there be enough profit per policy at the lower price to make competing with GEICO in the auto insurance business a worthwhile venture? Would GEICO perhaps respond to the new entrant's lower price by matching those prices, or dropping them below the new entrant's auto insurance prices, in order to keep the new entrant from making any progress? Would GEICO be motivated to send a signal to any prospective new entrant that GEICO would not permit a new entrant to easily enter the business?

Warren Buffett thought that it would be difficult for a new entrant to dent GEICO's long-term, low-cost competitive advantage. In fact, very few insurance companies provide auto insurance direct to the consumer. We believe that this is so, not because GEICO's superior returns on equity and sales and earnings growth have gone unnoticed, but because the competitive economics are so tough that prospective competitors have determined that they would not be able to make any money at it, and have stayed away.

In 1976, when Warren Buffett was accumulating GEICO shares at an average price of $3.18 per share, the company reported a loss of $1.51 per share. In 1975, GEICO had reported a loss of $7.13 per share, and common stockholders' equity per share had declined from $8.13 at December 31, 1974 to $2.08 at December 31, 1975. Insurance companies with sales in excess of three times stockholders' equity are generally considered to be financially "unsafe" and "overextended" by state insurance company regulators. GEICO's insurance sales, $34.00 per share in 1975, were running at 15x - 16x stockholders equity, and GEICO was teetering on bankruptcy. GEICO's investment income from its investments was approximately $.98 per share. In many prior years, GEICO's insurance underwriting had been profitable, and the company had earned more than its investment income. If GEICO could restore its prior insurance underwriting skills and at least break even on underwriting, it would earn close to $.98 per share. If this happened, stock that Warren Buffett had purchased at $3.18 per share would have been acquired at a bargain valuation of only about 3x earnings.

GEICO's capital was shored up in 1976 with $76 million of new money added to the company's stockholders' equity from an issue of convertible preferred stock. Between 1976 and 1995, the last year of GEICO's public-company existence, sales increased from $575 million to $2,787 million, and sales per share increased from $16.84 (adjusted for the dilutive effect of the convertible preferred stock) to $206.44 (before adjusting for the 5 for 1 stock split in 1992). The compounded annual growth rate of sales was 9.2%, and sales per share increased at a 14.1% rate over the December 31, 1976 to December 31, 1995 19-year period. Net income increased from a loss in 1975 to $17.40 per share in 1995 (before adjusting for the 5-for-1 stock split in 1992.).

In early 1996, all of GEICO's publicly traded shares were acquired by Berkshire Hathaway in a cash tender offer at a price of $350 per share (before adjusting for the 5-for-1 stock split in 1992). This price valued shares of GEICO at 20.1x earnings. From 1976, when Warren Buffett made his initial investment in GEICO, at $3.18 per share, to early 1996, when GEICO was acquired at $350 per share, the compounded annual increase in the stock price was approximately 27.2%. GEICO provided a double dip from: (1) rising per share value, as earnings per share increased from a loss of $7.13 per share in 1975 to a profit of $17.40 per share in 1995, while sales per share grew at a 14.1% compounded annual rate; and (2) rising valuation, as the price of GEICO's stock increased from about 3x recovery earnings per share in 1976 to 20.1x earnings per share when GEICO was acquired in 1996.

## THE WASHINGTON POST COMPANY

By June of 1973, Warren Buffett had acquired shares of The Washington Post Company at an average price of $4.00 per share. The Washington Post Company is the publisher of ***The Washington Post*** newspaper, the dominant newspaper in Washington, D.C., and ***Newsweek*** magazine. In addition, The Washington Post Company owned three television studios and one radio station in 1973.

Warren Buffett believed that a newspaper business, located in a geographic area where there is no other competing newspaper, has a sustainable competitive advantage. Consider the competitive economics: Readers of newspapers are largely creatures of habit who tend to become accustomed to a particular newspaper. A newspaper reader does not have to read two newspapers to learn about today's news: one paper is usually enough. Consider the difficulty of starting up a new newspaper to compete with a newspaper in a one-newspaper town. How do you get enough people to switch from a newspaper that people habitually like to read to your brand new newspaper? Can you lure readers away by offering your new newspaper at a price that is 5¢ less than the competition? Is 5¢ enough of a savings to cause a typical reader to switch? You have to find a way to lure away enough readers in order to generate sales and profits from advertisements. Why would anyone pay money to advertise in a newspaper that has no readers? No readers, no advertisements. Without advertising sales, you generally can't make a profit in the newspaper business because the newsstand or subscription price does not cover the cost of reporters, paper, printing, circulation, etc. In addition, what would be the established newspaper's competitive response? Might it lower its cover price or decrease its ad prices to make it difficult for a new competitor to become established?

The competitive economics appear daunting for a new competitor to the established newspaper in a one-newspaper town. Consequently, the newspaper in a one-newspaper town has usually been a very profitable business that has been able to increase ad prices at rates above the inflation rate. For example, if you want to advertise in the classifieds that your old Chevy is for sale, you will have to pay whatever price the newspaper charges in order to reach prospective Chevy buyers in your area, if there is only one newspaper. Will you really care much if the ad costs $25, not $15? If the ad costs 1¢ per reader, would there be any cheaper way to advertise your Chevy to 2,500 readers? If the ad rate increases from $25 to $27, will you not advertise?

In 1973, when Warren Buffett was accumulating shares of The Washington Post Company at an average price of $4 per share, he estimated that the company's businesses would be worth $21 per share in a corporate acquisition transaction, based upon valuations of similar newspaper, magazine, television and radio businesses that had recently occurred in actual acquisition transactions. At a price of $4 per share, The Washington Post Company stock was a clear-cut bargain, with considerable potential for higher valuation. In addition, Mr. Buffett saw the potential for earnings-driven value growth. Between 1972 and 1998, sales and sales per share compounded at 9.1% and 11.8%, and earnings per share increased from $0.52 to $21.90, a 15.5% compounded annual growth rate. The valuation of The Washington Post Company's shares increased from 7.7x 1972 e.p.s. to 26.4x 1998 e.p.s., as the stock increased from $4 per share in 1973 to $578 per share on December 31, 1998. The double dip of rising, earnings-driven value, and rising valuation from a higher price-to-earnings ratio generated the 22% compounded annual increase in the stock price over the last 25 years.

## THE COCA-COLA COMPANY

In April, 1989, it was announced that Berkshire Hathaway had acquired 6.3% of the stock of The Coca-Cola Company. As of December 31, 1989, Berkshire Hathaway owned 23.35 million shares of Coke, which had been acquired in 1988 and 1989 at an average price of $43.85 per share. The total cost of Berkshire's investment in Coke, $1.086 billion, represented 32% of Berkshire Hathaway's December 31, 1988 stockholders equity, and 20% of Berkshire's stock market valuation.

The Coca-Cola Company is the world's largest producer and marketer of soft drinks. Coca-Cola is the best known brand in the world. The company sells almost half of all soft drinks that are consumed in the world, and significantly outsells its competitor, Pepsi-Cola, outside the United States. Coke's products are sold in almost 200 countries.

The 1988 annual report listed the per person consumption of 8-ounce servings of Coke.

| Country | Per Person Consumption of 8-ounce servings in 1988 |
|---|---|
| United States | 277 |
| Mexico | 197 |
| Australia | 155 |
| Norway | 161 |
| Canada | 163 |
| Germany | 143 |
| Argentina | 155 |
| Spain | 103 |
| Columbia | 107 |
| Philippines | 79 |
| Brazil | 90 |
| Italy | 68 |
| Great Britain | 66 |
| Korea | 44 |
| Japan | 47 |
| France | 27 |
| Thailand | 25 |
| Taiwan | 17 |
| Indonesia | 3 |
| China | 0.3 |

The Company had been very successful at increasing sales of Coca-Cola outside the United States, and was excited about the long-term prospect of increasing worldwide per-person consumption. As

Andrew Kilpatrick noted, in his book, ***Of Permanent Value***, "Half of the world's population drinks less than two servings per person per year!" If the worldwide level of consumption could approach the U.S. average of 277 servings per year, enormous growth would occur.

In 1989, Warren Buffett described his investment in The Coca Cola Company: "Let's say you were going away for 10 years and you wanted to make one investment and you know everything you know now, and you couldn't change it while you're gone, what would you think about?

"If I came up with anything in terms of certainty, where I know the market was going to continue to grow, where I knew the leader was going to continue to be the leader - I mean worldwide - and where I knew there would be big unit growth, I just don't know anything like Coke. I'd be relatively sure that when I came back they'd be doing a hell of a lot more business than they are doing now."

In the 1995 Coca-Cola Company's annual report, the company described its growth prospects and goals:

"What is our most underdeveloped market? The human body. People can do without things for an entire day. But every day, every one of the 5.7 billion people on this planet must consume roughly 64 ounces of fluid to live. We currently account for less than two of those ounces".

Consider how difficult it would be to compete with Coca-Cola. The company's 1997 after-tax profits per serving were less than one-half cent, or just three cents profit from a six-pack of Coke. Would you drink Brand X Cola because its price is a few cents less per can or bottle than Coke? Would Brand X Cola be able to make any money by selling its cola at a discounted price when Coca-Cola earns only one-half cent per serving? Could Brand X compete with the hundreds of millions that Coke spends on advertising and marketing? Could Brand X get its cola product distributed in about 200 countries through millions of stores, vending machines and restaurants? We know that Pepsi-Cola, no slouch, has had a tough time competing with Coca-Cola. How would The Coca-Cola Company respond to any new competition?

The 1989 Coca-Cola Company Annual Report stated: "The Coca-Cola Company began to transform itself into a global enterprise in the early 1920s. For more than 60 years, we have been developing business relationships and investing in a system that today carries an estimated replacement cost of more than $100 billion."

Warren Buffett said, "If you gave me $100 billion and said take away the soft drink leadership of Coca-Cola in the world, I'd give it back to you and say it can't be done."

Berkshire Hathaway's acquisition price of $43.85 per share for the Coca-Cola stock that it acquired in 1988 and early 1989 was 15.2x 1988 earnings per share of $2.88. On December 31, 1998,

Coca-Cola's stock price, $536 (before three 2-for-1 stock splits over the 10-year period), was 47.2x 1998 earnings per share of $11.36. The double-dip combination of rising earnings-driven corporate value, as earnings per share increased from $2.88 in 1988 to $11.36 in 1998, and rising valuation, as the price-to-earnings ratio increased from 15.2x in 1988 to 47.2x in 1998, generated about a 28.4% compounded annual return from Coca-Cola stock (excluding the relatively small return from cash dividends) for Berkshire Hathaway over the 1988 - 1998 10-year holding period.

Between 1988 and 1998, Coke's sales increased from $8.337 billion to $18.813 billion, which was an annual growth rate of 8.5%. Sales per share increased at a higher rate, 10%, as a result of the shrinkage of shares outstanding from stock repurchase programs over the 10-year period. Earnings per share increased from $2.88 in 1988 to $11.36 (before three 2-for-1 stock splits), which is compounded earnings per share growth of 14.7%. Net income grew at a 13% annual rate from $1,044 million in 1988 to $3,533 million in 1998.

A cautionary note: Warren Buffett makes long-term investing appear easy. Just pay cheap prices for stocks whose per share earnings will grow at a 15% plus rate over the next 10 to 20 years, sit back, and get rich. In 1998, Warren Buffett owned only seven major holdings that had met his investment criteria. We have listed these holdings below, along with the year in which the shares were first acquired:

| Stock | Year that stock was first acquired | Number of years owned |
|---|---|---|
| American Express | 1991 | 7 |
| Coca-Cola | 1988 | 10 |
| Walt Disney | 1985 | 13 |
| Freddie Mac | 1988 | 10 |
| Gillette | 1989 | 9 |
| Washington Post | 1973 | 25 |
| Wells Fargo | 1989 | 9 |

Note the initial year that each stock was acquired. Over a long period of time, Warren Buffett has been able to invest in very, very few companies that have met his criteria. He has indicated that there are very few businesses whose futures can be predicted with any degree of certainty. The key is certainty: Mr. Buffett wants to invest in businesses that he is certain will have significant competitive advantages 10, 20, 30 years from now. This is a very high threshold , and eliminates most companies from consideration. By knowing what he cannot do, that is, knowing that he cannot predict earning power in 10, 20, 30 years for most businesses, Mr. Buffett wastes no analytical time and effort studying the "unknowables" and focuses on businesses that he considers knowable.

There is an elegant simplicity in this. Many investors, with sufficient time and effort, can probably

know and understand the business and competitive economics of, for example, Nestle's Cocoa, French's mustard, Listerine, or a water utility, and make a pretty good rough guess about the future earning power of those businesses. You can *know* Listerine. By comparison, how certain could any investor be of the future earning power of Laura Ashley dresses, Ralph Lauren's line of fashion items and paint, or Martha Stewart's various products? There are, it seems to us, distinctions in the degree of inherent knowability and certainty among businesses. As Warren Buffett has said, ". . . there's a continuum from the bulletproof franchise to the very weak business. It's not totally an on/off switch. There are very few that I would call bulletproof franchises."

The rub for all investment analysts (including all of us strivers at Tweedy, Browne) is discernment: being able to distinguish between being familiar with a company and truly knowing what is important, and, also, between what can and cannot be known. With GEICO, for example, it was very important to know and understand that competitors such as Travelers, Aetna, State Farm Insurance, etc. would not adopt GEICO's simple no-agent, no-commission business model, and match GEICO's low prices for automobile insurance coverage. These competitors had too much to lose. Many psychological studies have shown that familiarity with information causes human beings to believe, with high degrees of confidence, that they know much more than they actually do know. We, at Tweedy, Browne, could add a few cases from our own experience to the various psychological studies along this vein.

It is interesting to compare Berkshire Hathaway's investment research and portfolio management department to a well-known mutual fund complex (which shall remain nameless) with over one hundred investment analysts and portfolio managers. This mutual fund complex has dozens and dozens of funds, which collectively engage in hundreds and hundreds of investment buy and sell decisions. Scads of activity. Berkshire Hathaway's entire research and portfolio management department consists of two people, Warren Buffett and Charles Munger, who only occasionally do anything — in the way of buying or selling stocks. Mr. Buffett and Mr. Munger have spoken of the investment advantages of sloth.

It is worth noting that even the most successful investor in the world has apparently misjudged the sustainability of competitive advantage in some (albeit very few) of the businesses that he has acquired. Two businesses that were acquired by Berkshire Hathaway in recent years, World Book, Inc., which was acquired in early 1986 as part of the acquisition of The Scott & Fetzer Company, and the companies that comprise The Shoe Group, appear to have experienced competitive-related reversals.

Here is Mr. Buffett's description of World Book in Berkshire Hathaway's 1985 annual report:

> "*World Book, Inc. — accounting for about 40% of Scott Fetzer's sales and a bit more of its income — is by far the company's largest operation. It also is by far the leader in its industry,*

*selling more than twice as many encyclopedia sets annually as its nearest competitor. In fact, it sells more sets in the U.S. than its four biggest competitors combined.*

*Charlie and I have a particular interest in the World Book operation because we regard its encyclopedia as something special. I've been a fan (and user) for 25 years, and now have grandchildren consulting the sets just as my children did. World Book is regularly rated the most useful encyclopedia by teachers, librarians and consumer buying guides. Yet it sells for less than any of its major competitors. Childcraft, another World Book, Inc. product, offers similar value. This combination of exceptional products and modest prices at World Book, Inc. helped to make us willing to pay the price demanded for Scott & Fetzer, despite declining results for many companies in the direct-selling industry."*

In 1986, World Book's sales and pre-tax operating income were $285 million and $21.9 million. In 1996, the last year that World Book's financial results were reported separately in the Berkshire Hathaway annual report, sales and pre-tax operating income were $119 million and $12.6 million, respectively. In the 1986 to 1996 10-year period, sales had declined by 58% and operating income had declined 43%. What happened? New technology and new competitors brought about a dramatic change in pricing and, therefore, in the economics of the encyclopedia business for established players such as World Book and Encyclopedia Britannica, both of which sold their encyclopedias through direct sales forces. The World Book Encyclopedia's price was $650 to $850 for a set of volumes when the dramatic change in competing prices occurred. An excellent book about competition and economics in information businesses, ***Information Rules****, by Carl Shapiro and Hal Varian, described the changes in the encyclopedia business, particularly as they applied to one of World Book's largest competitors, Encyclopedia Britannica:

*The Encyclopedia Britannica has been regarded as a classic reference work for more than two hundred years. And, as a classic, it has commanded a premium price: a few years ago a hardback set of the thirty-two volumes of the Britannica cost $1,600.*

*In 1992 Microsoft decided to get into the encyclopedia business. The company bought rights to Funk & Wagnalls, a second-tier encyclopedia that had been reduced to supermarket sales by the time of the purchase. Microsoft used the Funk & Wagnalls content to create a CD with some multimedia bells and whistles and a user friendly front end and sold it to end users for $49.95. Microsoft sold Encarta to computer original equipment manufacturers (OEMs) on even more attractive terms, and many computer manufacturers offered the CD as a freebie.*

*Britannica started to see its market erode and soon realized that it needed to develop an electronic publishing strategy. The company's first move was to offer on-line access to libraries at a subscription rate of $2,000 per year. Large libraries bought this service–after all*

* ***Harvard Business School Press***, 1999

*it was the Britannica…but smaller school libraries, offices, and homes found CD encyclopedias adequate for their needs and much more affordable. Britannica continued to lose market share and revenue to its electronic competition. By 1996, its estimated sales were around $325 million, about half of 1990 sales.*

*In 1995 Britannica made an attempt to go after the home market. It offered an on-line subscription for $120 per year, but this attracted very few customers. In 1996, the company offered a CD version for $200, still significantly higher than Encarta.*

*Unfortunately for Britannica, consumers were not willing to pay four times as much for its product as for Microsoft's, and Britannica was soon on the ropes. In early 1996, Jacob Safra, a Swiss financier, bought the company, disbanded its sales network of 110 agents and 300 independent contractors, and started aggressive price cutting. He slashed the yearly subscription to $85 and experimented with a direct mail campaign offering CDs at different prices in an attempt to estimate demand. Everyone agrees that the quality of the product is high; PC Magazine gave it the top rating in its comparison of multimedia encyclopedias. But these efforts yielded only 11,000 paid subscribers. The big question Britannica now faces is whether it can sell to a large enough market to recover its costs.*

*Meanwhile, prices for CD versions of encyclopedias continue to erode. Britannica now sells a CD for $89.99 that has the same content as the thirty-two-volume print version that recently sold for $1,600. In a flyer we received recently from a computer store, Microsoft's Encarta matched Britannica's $89.99 price…and threw in a mail-in rebate for an additional $20.00 off.*

*The Britannica example illustrates some of the classic problems of information pricing. One of the most fundamental features of information goods is that their cost of production is dominated by the "first-copy costs." Once the first copy of a book has been printed, the cost of printing another one is only a few dollars. The cost of stamping out an additional CD is less than a dollar.*

## The Shoe Group

The Shoe Group is comprised of three companies that manufacture and distribute footwear: Dexter Shoe Companies, H.H. Brown Shoe Company, and Lowell Shoe, Inc. These companies were acquired by Berkshire Hathaway between 1991 and 1993. Between 1994 and 1998, The Shoe Group's sales declined 18% from $609.4 million to $500 million and pre-tax earnings declined 61% from $85.5 million to $33 million as the companies faced increased competition from imported shoes.

The 1998 Berkshire Hathaway annual report had these comments about The Shoe Group:

> *"Manufacturers such as Brown, Lowell and Dexter are facing reduced demand for their products. Additionally, major retailers are offering promotions to generate sales which is resulting in an ongoing margin squeeze."*

## Connoisseurs of Competitive Advantage; Mimicking the Master: Buffett 101

In the preceding descriptions of GEICO, The Washington Post Company, The Coca- Cola Company, World Book Inc. and Berkshire Hathaway's Shoe Group, we have attempted to mimic the Master, and think like Warren Buffett about the competitive strengths and weaknesses of these businesses. Warren Buffett describes this kind of thinking as analyzing the "economics" of a business. Warren Buffett has said "When investing, we view ourselves as business analysts — not as market analysts, not as macroeconomic analysts, and not even as security analysts". In their discerning selection of businesses, we have seen that Warren Buffett and Charles Munger are connoisseurs of competitive advantage. When they describe the competitive advantages of a "wonderful business", you can almost see their mouths watering.

In essence, studying the "economics" of a business means competitive analysis: analyzing a company's current earnings and prospective future earnings in light of possible threats to current and future earning power from the products and actions of competitors. It is watching and studying the whole playing field, not just one company by itself in its own little bubble, and analyzing a company in the context of what Competitor A, Competitor B, or new Competitor D could do that would adversely affect the future earnings of that company.

Warren Buffett has described the ability of some companies to withstand competition as having a "protective moat around their economic castles". Competitive analysis, analysis of the "economics", tries to assess how a competitor(s) could cross the moat and damage the economic castle. It is a search for what psychologists describe as "disconfirming evidence", which is information that challenges a current view or belief about the competitive position (and earning power) of a business.

With the examples of GEICO, The Washington Post Company and The Coca-Cola Company, we tried to think about how a current competitor or new entrant could compete with these companies. We mentally attempted to find disconfirming evidence that might help us to understand how a competitor could "cross the moat" and damage the "economic castle". At the time that Warren Buffett originally made these investments, it was hard to find disconfirming evidence concerning these businesses. It seemed very tough to cross the moat. (We are currently studying the Internet's effect on the newspaper business, especially on classified advertising revenues from help wanted and real estate ads. There may be some cracks in the economic castle.)

It appears that two big models of economic advantage in businesses, the two "economic castles" are: (1) a long-run cost advantage that is very hard for competitors to duplicate, and (2) a unique, or differentiated product or service that is hard for competitors to duplicate. For example, GEICO is a company with a sustainable cost advantage over its competitors. There is nothing unique about auto insurance. The Washington Post newspaper and Coca-Cola are unique. Sometimes a business will have a competitive moat from both unique products and a tough-to-duplicate cost position.

In many businesses, a differentiation advantage or cost advantage can be very short-lived. For example, the first department store in Miami, Florida to have air conditioning would have had a great differentiated shopping experience advantage until its competitors installed air conditioning in their stores. We know that because air conditioning became available to all of the department store competitors in Miami, instead of becoming a competitive advantage, having air conditioning became a required capital investment and cost that each competitor had to incur in order to just stay even with the other competitors. Similarly, a producer of commodity textiles that buys a more productive piece of manufacturing equipment may enjoy a cost advantage until competitors buy the same equipment to reduce their costs to about the same level.

World Book and Encyclopedia Britannica seem like pretty unique products, but they were not unique enough, at $650 to $1600 a set, to withstand damage to their economic castles from the Encarta encyclopedia CD, which cost less than $1.00 to stamp out and was given away as a freebie by computer manufacturers.

Competitive analysis may often require study, examination and thinking beyond easily available, familiar information. For example, in the banking industry, we are starting to examine the competitive threat from Internet banks such as Telebank, which has no branches, to the earning power of established banks, which operate with a branch system of attracting deposits. Telebank offers their customers interest rates on deposits that are 2x the average for the banking industry. Like GEICO, a highly automated Internet bank—without the required capital investment and related costs of "bricks and mortar" branches—may have a sustainable cost advantage over most "bricks and mortar" banks. This cost advantage could permit more value to be provided to deposit customers through above-average rates paid on customers' deposits, or to loan customers through lower interest rates on the money that they have borrowed.

The durability of, say, Telebank's cost advantage, and resulting economics, would depend on the extent to which existing banks and new "Internet only" banks decided to mimic its business model, duplicate its low cost position, and compete head-on by offering the same high rates on deposits, and charging the same low rates on loans. Competitive analysis gets into the details of all of this and tries to assess where the players will move on the playing field, and the effect on future earning power. We have not seen any banking industry reports that lay all of this out for us. There is a lot of information out there, but the information that we need for meaningful insights is not on a silver

platter. We have to traipse around a bit to get it, and we have to draw our own road map.

To study an existing bricks and mortar bank, according to "Buffett Investment Analysis 101", you study and think about not just the company itself, but all of the competitive threats, such as Internet banks, money market mutual funds, mutual funds that invest in corporate loans, direct borrowing by corporations from investors instead of banks, etc.

Another example of "Buffett 101" type competitive analysis is Tweedy, Browne's investment in American Express Company. When Tweedy, Browne bought shares of American Express Company several years ago (a year or two before Warren Buffett bought shares), it was during a time when we could open ***The New York Times*** or another publication and see a Visa ad with a picture of the owner of a chic restaurant who had just stopped accepting American Express cards. The news about American Express was terrible, and the stock price had dropped to about 9x or 10x near-term earning power, *if earnings did not decline*. In order to make a best-guess estimate of earning power, we needed to assess the competitive position of the American Express card.

American Express has a circular spiral, reinforcing sort of economic system in its credit card business. Upward spiral: If more businesses accept charges on The Card, the convenience and ease of use of The Card increases, and more people will want to use The Card, and will charge more often, and more habitually. Greater card usage, in turn, leads to increased acceptance of The Card by a wider array of businesses who want sales from holders of The Card. Downward spiral: Reduce acceptance of The Card by businesses, and there will be less opportunity for people to use The Card, and fewer businesses will be inclined to accept The Card - because they don't get much business from it.

We wanted to assess whether more and more restaurants and other business establishments would stop accepting charges on The Card, and thus reduce The Card's usefulness to its holders. To do this, we did a little telephone survey of some of the restaurants frequented by one of Tweedy, Browne's Managing Directors. One restaurant in Lambertville, New Jersey that had stopped accepting The Card had noticed a decline in business related dinners.

We knew that a $100 dinner tab may cost a restaurant, say, $10 for the cost of food ingredients, yielding a $90 gross profit before deducting the fairly fixed costs of chefs, waiters, rent, etc. American Express was charging restaurants about 3.2% of the tab, or $3.20, and Visa was only charging 1.75%, or $1.75, to process a charge. By not accepting The Card, this restaurant owner thought that he was losing the $90 gross profit on the $100 business dinner tab to competing restaurants which accepted The Card. He thought that business-dinner customers were avoiding his restaurant in order to avoid the inconvenience and hassle of obtaining expense reimbursements from their companies. It was easier for the business-dinner customer to simply choose a restaurant that accepted The Card.

While many individual American Express card holders also had Visa cards for their personal purchases, very few businesses had Visa corporate cards for their employees' business-related purchases. American Express was dominant in credit cards used to pay business expenses, with a 70% market share. For personal purchases, it was relatively easy for individuals to charge with their Visa card instead of their American Express card if the restaurant, hotel or airline preferred the Visa card. However, for charges of business-related expenses, most people would not be able to use a corporate Visa or MasterCard. The only corporate card in most persons' wallets was the American Express corporate card.

We did not believe that business establishments would create the annoyance and confusion of only accepting the corporate American Express card, while declining a charge on an American Express card held by an individual. American Express also required the business owner to accept charges on all types of cards issued by American Express if the business was to be part of the American Express system.

It also seemed to us that Visa and MasterCard, which are issued by thousands of separate banks who compete with each other, would be somewhat reluctant competitors in the business credit card field because of the economics of Visa and MasterCard. The profits that banks earn on Visa and MasterCard largely come from charging above-average interest rates on loan balances. Customers who pay off their balance each month, and, therefore, do not borrow on their Visa or MasterCard, generate unprofitable to marginally profitable business for the banks. Most businesses, we believed, would be fairly unprofitable Visa or MasterCard customers because most businesses would not allow a high interest rate loan balance to develop. Thus, it seemed to us that American Express's dominant corporate card position was a linchpin, a big moat that ensured acceptance of The Card by business establishments, and thereby protected American Express's economic castle.

The owner of the restaurant in Lambertville, New Jersey, who had stopped accepting The Card, told us that he had changed his mind and was going to accept The Card again so that, hopefully, he could recoup the gross profit on the business-related dinners that had been lost to competitors who accepted The Card.

We heard the same kind of thing in talking to other business owners. In additon, we learned two things about how The Card is perceived by individual card members: (1) it still seemed to have more cache or status in some holders' minds than Visa or MasterCard, and (2) some holders had a funny mental accounting discipline, or system, in their heads: American Express was the "virtuous" card, where the balance had to be paid off each month, and there would be no high interest charges to pay. Visa and MasterCard were what you used if you had to. Even though an individual can pay off his or her Visa or MasterCard balance each month and never incur interest charges, several individuals we spoke with did not think of it this way. Here was more moat. We also believed that American Express would develop a Frequent Flier awards program to be at competitive parity with the programs offered by Visa and MasterCard. In addition, we learned that corporations thought that the statements that American Express issued to corporate accounting departments were very

Here is what happened: On December 31, 1980, the winner stocks were selling at an average price to earnings ratio of 8.5x. Sixty-two percent of the winner stocks were selling at price-to-earnings ratios below the median price/earnings ratio of the S&P 500, which was about 8x on December 31, 1980. The lowest price/earnings ratio of the winner stocks was 4.4x. The highest ratio was 18.2x.

Over the 18-year holding period, the winner stocks had above-average, but not spectacular, earnings-driven value growth. Here are the average compounded annual growth rates for the value fundamentals of the winner stocks over the 18-year period:

| | 18-Year Average Compounded Annual Growth Rate of Winner Stocks |
|---|---|
| Sales per share | 8.0% |
| Earnings per share | 11.1 |
| EBIT/share; i.e. earnings before interest and taxes per share | 11.5 |
| EBITDA/share; i.e., earnings before interest, taxes, depreciation and amortization per share | 11.6 |

At the 8% growth rate, the winners' 1998 sales per share had grown to 4x the level of sales per share in 1980. The 11.1% earnings per share growth rate generated earnings per share in 1998 that were 6.65x earnings per share in 1980. The winners' 8% average sales per share growth was at the 78th percentile rank when all of the companies were ranked on sales per share, with the 100th percentile being the company with the highest growth rate. Therefore, 22% of the 270 companies had sales per share growth that was higher than 8%, and 78% of the companies had lower sales per share growth rates. The winners' average growth rates for earnings per share, EBIT per share and EBITDA per share, placed the winners in the following percentiles for these measures: 86th, 87th, and 86th, respectively.

On December 31, 1998, the winner stocks were priced at 32.5x earnings. The double-dip combination of rising value, as the winners' earnings increased at an 11.1% compounded rate, and rising valuation, as the price-to-earnings ratio increased from 8.5x to 32.5x, produced the 22.75% compounded annual investment return, of which 19.69% was stock price gain and 3.05% was return from dividend income. If the valuation of earnings on December 31, 1998 had remained at 8.5x, the same as the price-to-earnings ratio on December 31, 1980, the compounded annual investment return from the winners' stock price increase would have been the same as the growth rate of earnings, 11.1%.

Over the 18-year period, the winners' return on average equity was 20.5%, which placed the winners at the 86th percentile for this measure among all 270 companies that remained throughout

the 18-year period. In the initial year, 1980, the winners' return on average equity was 17.5%, which placed the winners in the 65th percentile on this measure among all 500 companies in the S&P 500.

Over the same 18-year period, the compounded annual total return of the S&P 500 was 16.94%. The S&P 500's returns were also generated by a double dip of value and valuation increase. The earnings per share of the S&P 500 rose from $14.82 in 1980 to $38.23 in 1998, a 5.4% compounded rate of increase in earnings-driven value, while the price-to-earnings ratio increased from 9.2x on December 31, 1980 to 32.2x on December 31, 1998, providing an enormous increase in valuation.

Each $1,000,000 invested in the S&P 500 at the beginning of the period was worth $16,723,800 on December 31, 1998. The winners' 22.75% average annual return exceeded the S&P 500's 16.94% return by 5.81%. Each $1,000,000 invested in the winners at the beginning of the period grew to $44,135,200 on December 31, 1998.

At the 5.4% compounded rate of earnings growth, each $1.00 of the S&P 500's earnings per share increased to $2.58 in 1998. Over the same 18-year period, the 11.1% rate of earnings growth of the winners, which was 5.7% above the S&P 500's 5.4% earnings growth rate, resulted in each $1.00 of earnings in 1980 growing to $6.65 in 1998.

### The "Losers"

The 54 worst-performing stocks over the 18-year period, the losers, had an average compounded annual investment return of 0.3%. Eighteen of the 54 loser stocks had negative compounded annual investment returns. $100 invested in each of the 54 losers on December 31, 1980, or $5,400 total, grew to $8,969.25, a 2.86% compounded annual return.

In 1980, the 54 loser companies did not appear particularly unattractive: Return on average equity in 1980 was 15.3%, which was the 53rd percentile for this measure. However, on December 31, 1980, the average price-to-earnings ratio was 12.1x, which was the 78th percentile for the price-to-earnings ratio. These stocks were relatively expensive in relation to earnings: Only 22% of the companies in the S&P 500 had higher price-to-earnings ratios. The price-to-book value was 1.74x on December 31, 1980, which was the 75th percentile for this ratio.

The loser companies, as you might expect, experienced very hard times over the 18 years subsequent to December 31, 1980. Sales per share declined by an average of 3.7% per year. Seventy-nine percent of the losers reported either a loss in 1998 or lower earnings per share in 1998 than in 1980. We could not calculate a meaningful average price-to-earnings ratio for the losers as a group in 1998 because so many companies had reported losses, resulting in negative price-to-earnings ratios.

Many of the companies also had extremely high price-to-earnings ratios that resulted from break-even earnings per share, for example, of $.01 per share in 1998. The average price-to-book value ratio on December 31, 1998, 1.84x, was not much higher than the 1.74x ratio of price-to-book value on December 31, 1980.

## Earnings Per Share Growth over the 18-Year, December 31, 1980 - December 31, 1998 Period for Companies that were in the S&P 500 as of December 31, 1980

When we ranked the 270 S&P 500 companies on earnings per share growth over the 18-year, December 31, 1980 - December 31, 1998 period, we were surprised to learn how difficult it was for most companies to obtain significant long-run earnings growth. Of the 270 companies that could be tracked over the 18-year period, a total of 239 had data that enabled a compounded growth rate in earnings per share to be calculated (a compounded e.p.s. growth rate could not be calculated when the starting e.p.s. as of December 31, 1980 was a negative number). Here is what we found: Only 6% of the companies had e.p.s. growth rates over the 18-year period of 15% or greater. Warren Buffett's goal is earnings per share growth of at least 15%. In the following table are some percentiles and compounded annual growth rates over the same 18-year period for the S&P 500 companies that could be tracked over the entire period.

### EPS Growth Rates of S&P 500 Companies for the 18-Year Period ended December 31, 1998

| Percentile | Compounded Annual E.P.S. Growth Rate Over 18-Year 12/31/80 -12/31/98 Period |
|---|---|
| 100th | 35.8% |
| 95th | 15.7 |
| 90th | 12.8 |
| 80th | 10.2 |
| 70th | 8.1 |
| 60th | 5.8 |
| 50th | 3.8 |
| 40th | 2.2 |
| 30th | 0.5 |
| 20th | (2.3) |
| 10th | (6.3) |

Fifty percent of the companies had e.p.s. growth rates of 3.8% or less, and 28% of the companies had lower e.p.s. in 1998 than in 1980.

## Perfect Together: High Returns From Stocks that Combine Value and Growth; Buy Cheap and Keep

Our research has indicated that long-term investment returns are driven by changes in both earnings and in the valuation of earnings. It seems clear from both our study of three of Warren Buffett's long-run winners, and also from our examination of the best performing stocks in the S&P 500 over the 18-year period ended December 31, 1998, that we want to identify stocks that are likely to have above-average future sales and earnings growth, and that are also cheap in relation to a likely future valuation of earnings. We want both earnings and the price-to-earnings multiple to increase over time so that we can generate high, long-run, tax-deferred returns. This is an investment approach that melds the Value idea of buying cheap, with the Growth idea of owning stocks you can keep: Buy Cheap and Keep.

### The Intrinsic Value of a Growing Business: How Warren Buffett Values Businesses

In Berkshire Hathaway's 1992 annual report, Warren Buffett revealed how he values any stock, bond or business:

> *The value of any stock, bond or business today is determined by the cash inflows and outflows - discounted at an appropriate interest rate - that can be expected to occur during the remaining life of the asset.*

In the Berkshire Hathaway Owners Manual, Warren Buffett provides this description of intrinsic value:

> *Let's start with intrinsic value, an all-important concept that offers the only logical approach to evaluating the relative attractiveness of investments and businesses. Intrinsic value can be defined simply: It is the discounted value of the cash that can be taken out of a business during its remaining life.*
>
> *The calculation of intrinsic value, though, is not so simple. As our definition suggests, intrinsic value is an estimate rather than a precise figure, and it is additionally an estimate that must be changed if interest rates move or forecasts of future cash flows are revised. Two people looking at the same set of facts, moreover - and this would apply even to Charlie and me - will almost inevitably come up with at least slightly different intrinsic value figures.*

At the 1993 shareholders meeting for Berkshire Hathaway, Mr. Buffett elaborated on the definition of intrinsic value that he had provided in the 1992 Berkshire Hathaway annual report:

*I have a section in Berkshire's annual report related to the appraisal of common stocks which is almost a tautology. I refer to taking all of a future stream of cash in and out–not just the flow in one direction — and discounting that at the appropriate rate.*

*If you had the foresight and could see the number of cash inflows and outflows between now and judgment day for every company, you could arrive at a value today for every business that was rational in relation to the value of every other business.*

*When you buy stocks or bonds or economic assets, you do so by placing cash in now to receive cash later. And obviously, you're looking for the highest interest rate. That theory was originally propounded in its most elaborate form over 50 years ago in* ***The Theory of Investment Value*** *that I mention in Berkshire's annual report.*

*And once you've estimated future cash inflows and outflows, what interest rate do you use to discount that number back to arrive at a present value? My own feeling is that the long-term government rate is probably the most appropriate figure for most assets.*

*And when Charlie and I felt subjectively that interest rates were on the low side — we'd probably be less inclined to be willing to sign up for that long-term government rate. We might add a point or two just generally. But the logic would drive you to use the long-term government rate.*

*If you do that, there is no difference in economic reality between a stock and a bond. The difference is that the bond may tell you what the cash flows are going to be in the future — whereas with a stock, you have to estimate it. That's a harder job, but it's potentially a much more rewarding job.*

*Logically, if you leave out psychic income, that should be the way you evaluate a farm, an apartment house or whatever. And in a general way, Charlie and I do that.*

In the 1991 Berkshire Hathaway annual report, Mr. Buffett explained that the intrinsic value of a perpetual annuity cash payment of $1.00, discounted at an annual interest rate of 10%, is $10.00. He further explained that the intrinsic value of a perpetual annuity that pays $1.00 in the first year, and then increases by 6% in each subsequent year (i.e., to $1.06 in Year 2, $1.12 in Year 3, $1.19 in Year 4, etc.), discounted at the same 10% annual interest rate, is worth significantly more: $25.00. The big lesson: future growth has a significant impact on intrinsic value as calculated according to the discounted cash flow method of determining intrinsic value that is used by Warren Buffett. In Warren Buffett's example, to earn a 10% return on your money from a perpetual annuity, you could pay 2.5x more for the perpetual annuity whose payment increases 6% per year than for the perpetual annuity whose payment is constant.

The discounted cash flow method of valuation that Mr. Buffett described in the 1991 and 1992 Berkshire Hathaway annual reports is also variously referred to in financial text books as present value, net present value, dividend discount model, the Gordon growth model or the perpetual growth model.

It is interesting to consider the mathematics of Warren Buffett's method of computing intrinsic value: how the numbers work. Let's start with two simple examples: (1) What would you pay today to receive a cash payment of $1.00 in 12 months if you wanted to earn 10% on your investment? Answer: You would pay 90.9¢ today in order to earn a 10% return on your money ($.909 x 10% = $.091; $.909 + $.091 = $1.00); (2)What would you pay today in order to receive a cash payment of $1.00 in two years if you wanted to earn a 10% compounded rate of return on your investment over the two-year period? Answer: You would pay 82.65¢ today to earn a 10% compounded annual return on your money over the two-year period from the $1.00 payment that you would receive two years after today. (Year 1: $.8265 x 10% = $.08265; $.8265 + $.08265 = $.909; Year 2: $.909 x 10% = $.091; $.909 + $.091 = $1.00.)

Extending these two examples, the intrinsic value of an annuity that paid a total of $2.00 in two annual payments, or, in other words, what you would pay today for $1.00 that you would receive one year from today, and $1.00 that you would receive two years from today, is 90.9¢ (for the $1.00 that you would receive one year from today) plus 82.65¢ (for the $1.00 that you would receive two years from today), which is a total intrinsic value of $1.7353 ($.909 + $.8265 = $1.7353). Notice that to earn a 10% return on your money, the longer you have to wait for each future annuity payment, the less you would pay for it today. You would only pay one cent today in order to earn a 10% compounded annual return on your money from $1.00 that you would receive 49 years from today.

Warren Buffett's intrinsic value example in the 1991 Berkshire Hathaway annual report simply adds up all of the separate amounts that you would pay today to earn 10% from each of the future annual payments that you would receive in perpetuity. Common stocks are assumed to have a perpetual life. If you run the numbers, and calculate what you would pay today to earn a 10% compounded annual return from $1.00 received each year for 50 years, and added up the 50 amounts that you had calculated for each of the 50 years of $1.00 receipts, you would get close to the figure that Warren Buffett calculated as "intrinsic value": $10.00. (The $1.00 received 50 years from today only adds 8/100ths of a cent to intrinsic value). Similarly, if you assume that you were to receive $1.00 12 months from today, and then receive annual receipts in each subsequent year for 49 years that grew at a 6% compounded annual rate (i.e., $1.06 two years from today, $1.1236 three years from today, $1.191 four years from today, etc.), and calculated today's value (in order to earn a 10% compounded annual return) of each one of the 50 cash receipts, then added them all up, you would come close to Warren Buffett's calculation of intrinsic value: $25.00. (The $1.00 initial receipt after 12 months would have grown to an $18.42 receipt in the fiftieth year, but you would only pay about 16¢ today for this $18.42 receipt in order to earn a 10% compounded annual

return over the 50-year period from the $18.42 receipt.)

There is a simple mathematical formula for making the discounted cash flow intrinsic value calculation used by Warren Buffett, assuming a constant rate of growth in cash receipts.

That formula is set forth below:

| | | |
|---|---|---|
| **Intrinsic Value** | = | **Initial cash that you would receive 12 months from today, which will grow at some assumed compounded rate of increase to infinity**<br>÷<br>**Assumed rate of return that you are using to value all of the future cash receipts, minus the assumed annual compounded growth rate of the cash receipts** |

**Intrinsic Value Example 1:**

| | | |
|---|---|---|
| Intrinsic value today of an annual amount of cash that you and your estate would receive forever that grows at a 6% compounded rate and that you value to earn a 10% compounded annual return.<br><br>Assume a $1.00 initial cash payment | = | $1.00 (the initial cash receipt)<br>÷<br>0.10 (the discount rate, or return you will earn)<br>minus<br>the growth rate of 0.06 |
| | = | $\frac{\$1.00}{0.10 - 0.06} = \frac{\$1.00}{0.04} = \$25.00$ |
| **Intrinsic Value** | = | **$25.00** |

**Intrinsic Value Example 2:**

***Assume:***

**$1.00 initial cash receipt 12 months from today that does not grow and is received annually forever**

**10% rate of return, or discount rate**

| | | |
|---|---|---|
| **Intrinsic Value** | = | $\frac{\$1.00}{0.10 - 0 \text{ (growth rate)}}$ |
| **Intrinsic Value** | = | $\frac{\$1.00}{0.10} = \$10.00$ |

Let's use Warren Buffett's discounted cash flow method of calculating intrinsic value to value the earnings of a company whose earnings are 100% distributable as cash, and that grow at a 5% rate "forever". We will use Warren Buffett's preferred discount rate to value companies, the U.S. government long-term bond rate, which is now about 6%.

Here is the intrinsic value of each $1.00 of earnings (12 months from today) for this company:

| | | |
|---|---|---|
| **Intrinsic Value** | = | $\frac{\$1.00}{\text{0.06 discount rate minus 0.05 growth rate}}$ |
| | = | $\frac{\$1.00}{0.06 - 0.05} = \frac{\$1.00}{0.01} = \$100$ |

To earn a 6% return "forever", you could pay $100 for each $1.00 of current earnings generated by this company. The intrinsic value price-to-earnings multiple for a company whose cash earnings grow at only 5% per year "forever" is an eye-popping 100x using Warren Buffett's discounted cash flow method of valuation. Clearly, long-run earnings growth has a dramatic impact on valuation. (The annual growth rate of the S&P 500's earnings over the last 70 years has been about 6%, and its price-to-earnings ratio has been 14x, on average.)

If you try to value a company whose cash earnings are expected to grow at a high rate, say 15% per year, over a long period of time, the valuation in relation to current earnings can be extremely high, almost absurdly high. For example, if Coca-Cola's cash earnings were to grow at a 15% annual rate over the next 50 years, each $1.00 of current earnings would grow to $1,083.65 50 years from today. The current intrinsic value, assuming a 6% discount rate for just the cash receipt in only one of the 50 years, say, year 50, is $58.82 (about 59x current earnings), and we haven't yet done the intrinsic value calculation for each of the 49 remaining years up to year 50. In fact, the way the math works, if the rate of earnings growth is higher than the discount rate, and you assume a perpetual life, the intrinsic value of earnings is an infinite price-to-earnings multiple because the discounted value today of each future year's cash receipts increases with time. For example, in the preceding Coca-Cola example, if cash earnings in year 51 increased 15% over cash earnings in year 50, earnings would rise to $1,246.20, and the current discounted value (at 6%) of this future receipt is $63.82, as compared to a discounted value today of $58.82 for the cash receipt in year 50. If Coke's cash earnings grew at 15% "forever", its intrinsic value, assuming a 6% discount rate, is infinite.

Warren Buffett has continued to own Coca-Cola stock at valuations as high as 65x current earnings, which is a very high multiple of earnings in relation to most stocks. If Coca-Cola's future earnings increase long enough at a 15% rate, then an apparently very expensive 65x price-to-current

earnings multiple for Coke may turn out to have been a bargain. That's what the math of the discounted cash flow method of determining intrinsic value tells us. The key, of course, is getting the future right.

At Tweedy, Browne, we consider the discounted cash flow method of computing intrinsic value to be a useful conceptual framework for thinking about the valuation of a growing business. We understand the math. It makes sense to us. However, we do not make precise, to-the-penny estimates of cash earnings going out 50 years. That strikes us as a bit silly. We never want to confuse precision with accuracy. However, the discounted cash flow method of valuation does point you toward companies where qualitative research suggests greater certainty, greater ability to predict: Companies where this valuation method could be *roughly accurate*, such as Coca-Cola or Listerine, not a total wild guess, such as, say, Laura Ashley's dress business. The math also tells you that if you own an interest in a business that you confidently expect will grow in value at an above average rate over a long period of time, you should be willing to ride a little loose in the saddle of valuation, and tolerate an above-average price-to-current earnings ratio. The math tells you that long-run earnings growth is worth a lot. To gain the benefits of tax deferred investment returns, as Warren Buffett and index funds have, a tax-paying investor has to stick with the winners in his or her portfolio. As John Bogle, of the Vanguard Funds, has said, "Buy right and hold tight." The Tweedy, Browne version of the same idea is "Buy cheap and keep."

At Tweedy, Browne, our primary framework and method of valuing most businesses is acquisition comparables - what companies have actually paid to buy similar businesses in relation to sales, earnings, EBIT (i.e., earnings before deducting interest and taxes), EBITDA (i.e., earnings before deducting interest, taxes, depreciation and amortization), etc. We learn how people who are actually buying companies value them, and then we apply those valuation methods in appraising businesses in the same field. An actual acquisition valuation incorporates assessments of future growth prospects of the particular business by both the buyer and the seller of the business. Acquisition valuations also incorporate real-world rate of return or discount rates, which are usually higher than the U.S. government long-term bond rate. That said, the discounted cash flow math tells us that the relatively rare business that can compound in value over a long period of time at above-average rates can be quite cheap in the long-run, even at typical corporate acquisition valuation standards, which today are about 10x - 12x EBIT, or 17x - 20x after-tax earnings, for a debt-free company. To have paid a typical corporate acquisition valuation fifty years ago for a business such as The Coca-Cola Company, obviously, would have been a steal. Average valuation standards that apply to average businesses may be a mistake to apply to businesses with above-average long run prospects. One size does not necessarily fit all.

## When to Sell: A Framework for Tax-Paying Investors; Thinking and Acting Like an Owner of a Business

"*Investigate before your divest*" - John Bogle, Chairman, The Vanguard Group, Inc.

At Tweedy, Browne, we generally sell a stock when its price reaches our estimate of intrinsic value, or sooner if we have a better investment to replace the investment that we have decided to sell. In considering the possible sale of a stock, we calculate the effect of capital gains taxes that would be paid if the stock were sold, and consider the net valuation that would be received for the stock after the payment of capital gains taxes. This net-of-tax valuation for the stock that we are thinking of selling is compared to the valuation of the prospective new investment that may replace it.

The following example shows how we analyze a possible sale of a stock that is already owned, Bank A, and compare it to a possible replacement, Bank B:

| **WE MIGHT SELL BANK A:** | | |
|---|---|---|
| **Bank A's stock price:** | | **$100.00** |
| ***Less* Cost of Bank A Stock** | | **(5.00)** |
| **Equals unrealized capital gains** | | **95.00** |
| ***Less* 27% federal and state capital gains tax if the stock were sold** | | **(25.65)** |
| **Equals realized gains, net of taxes** | | **69.35** |
| **Net of tax proceeds if the stock were sold** | **69.35 + 5.00 cost** | **74.35** |
| **Gain required to get back to having $100 per share working for the investor** | **$100.00 - $74.35 = $25.65**<br>**$ 25.65 ÷ $74.35 = 35%** | **35%** |

**FUNDAMENTALS OF BANK A:**

| | |
|---|---|
| **Best guess future earnings growth rate** | **10%** |
| **Earnings per share** | **$5.00** |
| **Price/Earnings Ratio at the current market price: $100 per share** | **20x** |
| **Net of Taxes Price/Earnings Ratio that would be received if the stock were sold for proceeds of $74.35 per share, net of taxes** | **14.9x** |

***(In addition, the investor would have to give up the use of $25.65 per share of tax money that his or her estate would never have to pay.)***

**We Might Buy Bank B to Replace Bank A :**

**FUNDAMENTALS OF BANK B :**

| | |
|---|---|
| **Best guess future earnings growth rate** | **10%** |
| **Price/earnings ratio** | **15x** |

In the above example, both banks have identical estimated earnings growth rates: 10%.

Even though Bank B is cheaper than Bank A, with a price-to-earnings ratio, 15x, that is 25% less than the price-to-earnings ratio of Bank A, 20x, it is not at all obvious that selling Bank A to buy Bank B is a good decision when the tax effect is considered: A sale of Bank A would produce net-after-tax proceeds equal to 14.9x Bank A's earnings, which is about the same as Bank B's valuation, 15x earnings. In addition, the investor in Bank A would give up the use of $25.65 per share of tax money that is invested on his or her behalf.

Here is the choice:

A. You can continue to hold Bank A at 20x earnings, whose earnings are growing at 10% per year, and you only have to invest $74.35 of your own money. In addition, you get a "free" non-interest bearing loan of $25.65 per share that you never have to repay. That $25.65 loan is completely forgiven upon your death, and, in effect, converts into $25.65 per share of extra money that your estate will receive; or

B. You can buy Bank B. To buy Bank B, you have to sell Bank A for $100, and then pay $25.65 in taxes, leaving you with $74.35 to invest in Bank B. To get back to the previous amount of wealth that was working for you before, $100, your investment in Bank B has to

increase from $74.35 to $100, an increase of 35%. If this were to happen immediately, the price-to-earnings ratio of Bank B would have risen from 15x to 20x. And if you sold Bank B at $100, there would be another tax to pay, $6.93 (assuming it was eligible for long-term capital gains treatment), so you would have $93.07 net of taxes ($100 - $75.35 = $25.65 gain x 27% tax = $6.93; $100 - $6.93 = $93.07).

If another bank, Bank C, was priced at 8x earnings, and our best guess about its future earnings growth rate was 15%, then a switch from Bank A to Bank C would be more compelling.

In considering the sale of a stock, which is, of course, an interest in a business, we try to think the way an owner of a company would think when considering a sale of the entire company: What are the future prospects of the business? Would it be better to hold onto the company, given its future prospects, or sell it today at the current valuation? If it appears that the future value of the company is likely to increase at a high rate, a business owner would probably choose to forgo a sale to an acquirer, and hold onto the company. In effect, an owner who made this choice not to sell would have decided that the "intrinsic value" of the company, as determined by the company's acquisition value, was not high enough in relation to the future potential, and value, of the business. Most fortunes have been made by owning a business that greatly increased in value over time.

In many instances, the decision to sell is a very easy one: There is a cash tender offer for all of the company's shares, and we have no choice but to sell. It is also usually a fairly easy decision to sell a company with average to below average future earnings growth prospects at an appraisal of intrinsic value that has been based on valuations of similar businesses in recent acquisitions. If it looks like we have a winning business, our inclination is to act like an owner and stick with it. Warren would.

## Predicting the Future of Businesses

At Tweedy, Browne, we believe that it is not difficult to determine the cheapness of stocks based on multiples of current earnings, sales, EBIT (i.e., earnings before deducting interest and taxes) and EBITDA (i.e, earnings before deducting interest, taxes, depreciation and amortization). We have computers that do these calculations for us. *If* the current numbers hold up in the future, the stock is cheap. Obviously, a stock selling at a low ratio of price-to-current reported earnings is not necessarily a bargain if future earnings collapse. Our empirical research indicates that the earnings of most businesses are highly volatile from year to year. After all, earnings are what is left over after all costs have been subtracted, and earnings, depending on the particular business, can often amount to just 1%, 2% or 10% of sales. If the earnings margin on sales is 10%, total costs, 90% of

sales, would only have to increase by five percentage points to 95% of sales in order to cause earnings to drop by 50% (from 10% of sales to 5% of sales). This sort of thing happens all the time, including sometimes to us.

Additionally, if the value of the company's business does not increase much with the passage of time, a stock is not likely to be a very good investment over a long holding period, such as 10 years or 18 years. For example, if a stock is purchased at 50% of its underlying value of $100 per share, $50, and sold 10 years later at an unchanged underlying value of $100 per share, the investment would have gained 100%, which is a pre-tax compounded annual increase of 7.17%. By comparison, if a stock is purchased at 50% of underlying value of $100 per share, $50, and that value increases at a 10% rate over 10 years to $259.37, and then the stock is sold at this value, the gain is 419%, a pre-tax compounded annual increase of 17.9%.

The difficult part of our work is predicting the future of specific companies with some degree of rough accuracy. As Warren Buffett has said, "The investor of today does not profit from the growth of the past." Expectations about the future are an inherent part of owning any business through ownership of its stock. The future will happen.

Our confidence in our own forecasting ability is tempered by both our own experiences and by empirical research. In our own experience, we can point to several companies in our portfolios whose sales and earnings growth over the years have far exceeded our expectations. We bought cheap, and were surprised to learn that we owned a growing business. We sometimes refer to this as "random growth". We have also had some duds. Generally, future corporate performance has been at about the level we had roughly expected.

Our empirical research indicates that observation of past sales and earnings trends and patterns, taken alone, without any input from qualitative information, is essentially useless in predicting future sales and earnings. A computer cannot take a company's 10-year historical financial results or other historical financial numbers, and then, with the numbers alone, predict the future financial results of a company over the next 10 years with any degree of accuracy. A computer cannot understand why certain businesses are inherently more stable and predictable than others. It cannot weigh and assess qualitative information and explain why, for example, a newspaper business in a town without a competing newspaper is likely to be a more stable business, with inherently better long-run earnings growth potential, than a copper mining business whose cost of extracting copper from the ground is higher than its competitors. Simple, common sense qualitative insights like this are not rocket science, but they are key to making educated best guesses about the future value of a business.

In one of our empirical studies, we selected the most successful companies over a 10-year period from 1980 to 1990, as measured by average return on equity, and then tracked the financial

performance of these companies over the subsequent 1990 through 1997 seven-year period. These highly successful companies over the 1980 - 1990 period experienced, on average, significant deterioration of financial results over the subsequent seven-year period, in a pattern that could best be described as "reversion to the mean." We urge you to read our report, ***Great 10-Year Record = Great Future, Right? How Well Did Companies with Great 10-Year Records as of 12/31/90 Perform in the Next 7 Years? A Study of the Predictability of Long-Term Earnings and Intrinsic Value Growth***, which describes this study and several other studies of the predictability of future financial results from past financial data and analysts' forecasts. If you would like a copy of this report, kindly call us at 888-893-3395. This report is also available on our website, www.tweedy.com.

In our view, future sales and earnings, the financial numbers that drive intrinsic value in the long run, can only be roughly predicted for certain companies in conjunction with qualitative information gleaned from reading documents such as a company's and its competitors' annual reports, 10-Ks and proxy statements, and by asking questions of management, customers, competitors and other industry experts.

Qualitative information, the written and spoken words, illuminate and give meaning to the current and prospective numbers. We encourage you to read ***17 Standard Earnings Outlook/Value Questions Checklist "PUCCI": "Pricing, Units, Costs, Competition and Insiders***, which lists 17 typical questions concerning the future of a business, and ***Buffett 101: Questions / Checklist Concerning Assessing a Company's Growth Prospects, Competitive Position and Economics***. These checklists are included in Appendix C and Appendix D. Most of our work as investment analysts is gathering, assessing and weighing qualitative information that sheds light on a company's historical and prospective financial numbers. We attempt to gain some understanding of the nature of a company's business and its competitive advantages/disadvantages and prospects. As Benjamin Graham states in ***Security Analysis***, "Quantitative data are useful only to the extent that they are supported by a qualitative survey of the enterprise."

It is a bit of a paradox that so little has been written in various investment texts and periodicals about the qualitative side of investment research and analysis, when so much of most professional investment analysts' time is spent on it. If you read the ***Financial Analysts Journal***, it's mostly numbers, numbers, numbers: Lots of big equations with Greek letters. We have never seen anything there about *knowing* Listerine.

In our view, Warren Buffett and Charles Munger are great teachers of qualitative investment research. Here are some favorite quotes from Warren Buffett, and one favorite quote from Charles Munger, concerning qualitative investment research:

> "*Do a lot of reading.*"

*"I read annual reports of the company I'm looking at and I read the annual reports of the competitors — that is the main source of material."*

*"We don't buy that many securities. But among the securities that we buy, we often have made [our decision] just by reading annual reports — not by visiting management. We usually do that afterwards. And some reports have been terribly helpful to us."*

Here is Warren Buffett's description of his initial examination of GEICO: "I read a lot. I was over at the library … I started with Best's (insurance rating service) looking at a lot of companies, reading some books about it, reading annual reports, talking to (insurance specialists), talking to managements when I could."

Robert Woodward, ***The Washington Post*** reporter, asked Warren Buffett how he analyzed stocks:

*"Investing is reporting. I told him to imagine an in-depth article about his own paper. He'd ask a lot of questions and dig up a lot of facts. He'd know* ***The Washington Post.*** *And that's all there is to it."*

*"You need a moat in business to protect you from the guy who is going to come along and offer it (your product) for a penny cheaper."*

*"If (you go into a store and) they say 'I don't have a Hershey bar, but I have this unmarked chocolate bar that the owner of the place recommends,' if you'll walk across the street to buy a Hershey bar or if you'll pay a nickel more for the (Hershey) bar than the unmarked bar or something like that, that's franchise value."*

*"How much more fruitful it is for us to think about whether the product is likely to sustain itself and its economics than to try to be questioning whether to jump in and out of the stock."*

*"If I'm thinking about investing in a specific company, I try to size up their business and the people running it. And as I read annual reports, I'm trying to understand generally what's going on in all kinds of businesses. If we own stock in one company and there are eight others in the industry, I want to be on the mailing list for the annual reports of the other eight because I can't understand how my company is doing unless I understand what the other eight are doing. I want perspective on market share, margins, the trend in margins – all kinds of things…"*

*"It's amazing how well you can do in investing with what I'd call "outside" information. I'm not sure how useful inside information is. But there's all kinds of "outside" information around as to businesses. And you don't have to understand all of them. You just have to*

*understand the ones you're thinking about investing in. And you can. But no one can do it for you."*

*"In my view, you can't read Wall Street reports and get anything out of them. You've got to get your arms around it yourself. I don't think we've ever gotten an idea from a Wall Street report. However, we've gotten a lot of ideas from annual reports. Charlie?"*

Charles Munger:

*"It takes a long time to read an annual report – even if the business is a comparatively simple one. If you're really trying to understand it, it's not a bit easy."*

* Sources for the preceding quotations: **Warren Buffett Speaks** by Janet Lowe, and **Outstanding Investor Digest**.

## Diversification and the Mathematical Magic of Skewness

"*Diversification is a protection against ignorance*" ….Warren Buffett

At Tweedy, Browne, we have some confidence in our ability to very roughly, very imprecisely, forecast, *on average*, the financial futures of the kinds of companies that we invest in, but not enough confidence to significantly concentrate our own net worth and clients' net worth in only a handful of stocks, as one of our heroes, Warren Buffett, has. It only seems prudent to concentrate heavily in a few stocks if: (1) you are very, very certain about their future growth prospects, (2) you are also very certain that those prospects are far better than those of most companies, and (3) the price is right. If those three conditions are not met, we do not see the advantage of significant concentration, which increases your risk of loss if only a few stocks perform poorly. Warren Buffett concentrates when he is extremely certain. He would invest up to 40% of his investment partnership, Buffett Partnership Ltd. (where most of his personal wealth was invested), in one stock. We are never that certain. Things can sometimes very unexpectedly go wrong for even the best thought out, most carefully analyzed and attractive appearing investments: Consider how poorly Warren Buffett's investment in World Book Inc. appears to have performed. Might it be our luck that if we decided to invest, say, 40% of our net worth in one stock, it would turn out to be a "World Book"?

Some of Benjamin Graham's cautious words in ***Security Analysis*** still resonate :

*"Any estimate of earning power over future years may easily fall wide of the mark, since the major factors of volume, price and cost are all largely unpredictable. Assuming that profits*

*develop as anticipated, there remains similar doubt as to whether the multiple, or capitalization rate, will prove correctly chosen."*

*"….it must be remembered that the normal economic forces militate against the indefinite continuance of a given trend. Competition, regulation, the law of diminishing returns, etc., are powerful foes to unlimited expansion, and in smaller degrees, opposite elements may operate to check a continued decline. Hence, instead of taking the maintenance of a pronounced trend for granted - as the stock market is often inclined to do - the analyst must approach the matter with caution, seeking to determine the causes of the superior showing and to weigh the specific elements of strength in the company's position against the general obstacles in the way of continued growth."*

At Tweedy, Browne, we like diversification. Not only does diversification have the potential to reduce risk, it also increases the probability, through the law of large numbers, that an investment strategy will work. In making educated best guesses about the future prospects of businesses that are owned in portfolios managed by Tweedy, Browne, we believe it is more likely that our rough, approximate, future growth assessments will prove closer to the mark for a diversified portfolio as an aggregate whole than for any one stock that we own. Mistakes in assessing the prospects of any one company, which are often referred to as "negative surprises", are likely to be offset by the "positive surprise" of another company in a diversified portfolio.

Diversification also provides protection against the very human tendency, shared by investment analysts and portfolio managers (perhaps even at Tweedy, Browne), to overestimate one's own abilities and what one knows. Behavioral psychologists call this *overconfidence*. Behavioral psychologists have many examples of overconfidence. In one study, an average of 68% of trial lawyers (both plaintiff's and defendant's lawyers) in surveys before trial, believed that their side would win. Of course, only the plaintiff or the defendant can win; the losing lawyer suffered from overconfidence. The odds are 50-50. In another study, 90% of all drivers believe that their driving ability is above average. Most money managers believe that their portfolios can beat the S&P 500, yet very few have over any extended period of time. We have all heard stories about investors who bet most of their money on a "sure thing" and lost. Diversification is very forgiving.

Kenneth Fisher illustrated the investment return advantages of diversification in an article, ***Why the Rich Get (relatively) Poorer*** that appeared in the October 14, 1996 issue of **Forbes** magazine:

*"Rich Americans have, in general, been terrible investors. Compare the first, fifth and this, the fifteenth, annual editions of The Forbes Four Hundred. Initially it took $100 million to make the bottom of The Forbes Four Hundred. Now it takes $415 million.*

*In theory, it shouldn't have been all that hard to stay on The Four Hundred list. A person on*

*the bottom of the first list could have remained there to this day by simply compounding his wealth at 10%. Seemingly not so difficult. After all, that is less than two-thirds of the S&P 500's 15.6% average annual return during the same period.*

*Yet how many of the original names remain on The Forbes Four Hundred? Precious few, even allowing for deaths. Not one of the original ten richest remains in the top ten now. Folks like the Hunt brothers and sisters, who have seen their assets stall or fall.*

*Of 1986's top ten, only two remain there, John Kluge and Warren Buffett. Even the great Kluge, who has done far better than most of The Forbes Four Hundred, hasn't kept pace with the S&P 500 in the last ten years — 11.2% versus 13.8%.*

*Lester Crown in 1986 was number eight on the list, worth more than $1.3 billion. But he was in real estate and is now worth only $2 billion - a compound ten-year return of only 4.4%. The names go on and on with similar results. The conclusion is inescapable. The super rich have done poorly as investors.*

*You can see this in any time period as long as it is fairly long. Recall that to remain low man on The Forbes Four Hundred totem pole for 15 years meant you didn't keep up with the market- you did less than two-thirds as well as the S&P 500. But the same was true for each of the 5-year periods within those 15 years. In any of them the guy starting last on the list fell off if he did worse than 63% as well as the S&P 500 and rose nicely on the list if he beat the market. Most folks fall.*

*You make big money in a business when it is hot; when it turns cold, you can't just get out and do something else."*

The super rich individuals in the Forbes 400 list tend to have their wealth concentrated in a few large holdings. If those concentrated holdings are not performing well, there are not other holdings with "positive surprises" to offset the poor results of the concentrated holdings that have turned cold.

The S&P 500, which outdistanced the investment results of many of the Forbes 400 members, is a diversified portfolio of 500 stocks. A list of 500 issues is very likely to include some very large winners whose investment results, mathematically, will overwhelm the investment results of stocks that perform poorly. A poorly performing stock can lose, for example 50%, to as much as 100% of its value, while the investment returns from a winner can be unlimited. The tendency of a relatively few winners to dominate the investment results of a portfolio comprised of many issues is referred to by mathematicians as "skewness." According to Kenneth Fisher's study, the lack of diversification, and lack of its companion advantage, skewness, caused the concentrated investors of the Forbes 400 to have relatively poor investment results.

**Here is an example of skewness :**

Assume that

(1) you invest a total of $100 in each of three stocks, or a total of $300,
(2) you hold the three stocks for 20 years,
(3) Stock A, the winner, compounds at 20% per year,
(4) Stock B, an average stock, compounds at 10%, and
(5) Stock C, the loser, loses 100% of its value

Here are the investment results :

| Stock | 20-Year Investment Return | Initial Investment | Value of Investment at the end of 20-Year Period |
|---|---|---|---|
| A | 20% | $100 | $3,833.76 |
| B | 10% | 100 | 672.75 |
| C | 100% decline | 100 | - 0 - |
| Total | | $300 | $4,596.51 |

As you can see from this example, the investment returns of Stock A, the winner, whose 20% annual return resulted in a $100 initial investment becoming worth $3,833.76, propelled the overall investment results of the entire three-stock portfolio. The gain on this winner stock, $3,733.76, far outdistanced the $100 loss of the loser stock.

By owning many stocks, not just a few, a diversified portfolio will tend to own some winners, which, through skewness, can greatly offset the effect of losers, and potentially enhance overall portfolio results. The potentially risk-reducing and return-enhancing advantages of diversification and its sidekick, skewness, are another lesson provided by index funds, such as those based on the S&P 500, which outperformed 91% of all equity mutual funds over the 16-year period ended December 31, 1997.

Our empirical research, described in our report, ***Great 10-Year Record = Great Future, Right? How Well Did Companies with Great 10-Year Records as of 12/31/90 Perform in the Next 7 Years? A Study of the Predictability of Long-Term Earnings and Intrinsic Value Growth***, which we urge you to read, indicates that historical financial information, such as a company's income statement record over the last 10 years, or its average return on equity over the last 10 years, is useless as a predictor of earnings growth over the next seven years. According to our studies, earnings growth is random across all companies in relation to past financial results. Pick 50 companies with great historical track records, and 50 companies with lousy track records, and 50 companies with average records, and the future average earnings growth rates of each group is likely to be similar. That is what the empirical data suggests.

## JUST IN CASE

If, despite all of our own best efforts, through extensive qualitative research, to emphasize and select cheap stocks with above-average earnings growth prospects, we find that earnings growth really has turned out to be random for our own holdings as well (which, thankfully, has not been our experience in the past), then the diversification and skewness of our portfolios provide us with some assurance that, hopefully, we will have at least our share of the future random earnings growth. And our emphasis on stocks with extreme characteristics in terms of cheapness — stocks that are typically cheaper than 80% to 90% of all public companies when ranked on ratios of price-to-earnings, price-to-book value, price-to-sales, or price-to-estimated-acquisition value (and often possessing other cheapness clues, such as insider buying and buybacks of the company's own shares) — would enable us to obtain this random earnings growth at a cheap price.

If earnings growth is, in fact, random across all companies, then a diverse group of cheap stocks possesses, in effect, a free option on its share of random future earnings growth. In contrast, with a diverse group of expensive stocks, excellent future earnings growth (not random future earnings growth) is expected, and reflected in the stocks' prices. The empirical data concerning historical financial information suggests that the excellent future earnings growth that is implied by an excellent corporate track record, and, hence, expected, will actually turn out to be average, not excellent. The shift from excellent to average financial results, which is unexpected, disappoints investors, and has often led to poor investment results for expensive stocks as a group.

Of course, we do not believe at all that future earnings growth is entirely random and unpredictable for every company when the information that is available includes qualitative information, not just numbers. You do not have to be a genius to know that Coca-Cola Company has much better growth prospects than a producer of lead additives for gasoline. We have made many qualitative distinctions between companies in the past that have turned out to be roughly accurate, on average. We hope to be approximately right, not precisely wrong.

In support of diversification, we also note that The Magellan Fund, which was the best performing mutual fund in the United States under Peter Lynch's tenure, owned over 1,000 issues. Mutual Shares, under Michael Price's management, owned over 200 issues. The S&P 500 is comprised of 500 issues, and only 9% of equity mutual funds were able to beat it over the 16-year period ended December 31, 1997. Diversification and excellent investment returns can go hand in hand. It is a myth that diversification necessarily causes a portfolio's investment results to be just average. Portfolios managed by Tweedy, Browne, which have added value above index returns over the last 25 years, have always been diversified. We know concentrators and diversifiers who have had excellent investment results. As Warren Buffett has said "Happily, there's more than one way to get to financial heaven."

At Tweedy, Browne, we generally invest, at cost, no more than 3% to 4% of a portfolio in one stock. Each of the Managing Directors has nearly his entire liquid net worth in portfolios managed by Tweedy, Browne, and we think in terms of investing 3% to 4% of our liquid net worths, or clients' net worths, in one stock. Many of our clients have nearly all of their net worths invested in portfolios that we manage.

With appreciation, certain investments have occasionally represented 6% to 8% of long-standing clients' portfolios. To our surprise, one investment consultant has described Tweedy, Browne as a concentrated investor. According to John Bogle, former Senior Chairman and Founder of Vanguard Funds, the largest ten holdings of most mutual funds do not normally total more than 10% of the market value of the particular fund. By this yardstick, portfolios at Tweedy, Browne do tend to be more concentrated than average.

A middle ground between extreme concentration, which requires extreme certainty about the few investments that are made, and the extreme diversification of an index fund with 500 issues, which, in essence, assumes that a thinking, enterprising investor cannot gain any benefit from insights about a company's valuation and future prospects, seems about right to us.

### An example of skewness and unplanned, accidental concentration

Ironically, truthfulness requires us to admit that the Managing Directors of Tweedy, Browne had, and, following a partial sale of their holdings, continue to have, a significant interest in one business, Tweedy, Browne Company LLC, which, through sustained earnings growth over the years, has become a very large portion of their personal net worths – far larger than any other holding. Their best performing stock, Tweedy, Browne Company LLC, grew somewhat unexpectedly to become a very large holding. It was unplanned, fortuitous, accidental concentration resulting from a large gain, not a well thought out decision to concentrate. It brings to mind the words "I'd rather be lucky than smart."

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For our own money and our clients' money, we like the portfolio concentration that comes from large, long-run, tax-deferred gains. Becoming concentrated (and rich) from long-run winners is the kind of high-class problem that we seek for all portfolios managed by Tweedy, Browne.

## Our Advice to You

We urge you to invest with a value approach, where we think you will have a pretty good chance of beating the Index, both before and after taxes, over a long period. With about $400 million of our own money that we have accumulated, and with our clients' money, we plan to stick with the value

approach that we have practiced for more than 20 years. It makes sense to us and has worked well on average.

This report has attempted to describe what we have learned about investing for higher after-tax returns, and how we plan to seek higher after-tax returns for our own money and clients' money in the future. We are grateful to Warren Buffett and Charles Munger for sharing their knowledge so freely over the years, and for being such good teachers, just as we are incredibly grateful for what we have learned from Benjamin Graham. How many other Forbes 400 members have attempted to share what they have learned about business and investing? Warren Buffett and Charles Munger are truly amazing.

For a more complete understanding of our strategy and practice of value investing, we encourage you to read our two booklets. (1) ***What Has Worked In Investing***, which describes more than 40 independent studies, primarily from academia, of investment characteristics that have been associated with exceptional investment returns in stock markets throughout the world, and (2) ***10 Ways to Beat An Index: How Tweedy, Browne Strives to Provide Value Above the Index Return***. We also encourage you to read the current and back copies of the shareholder reports for our two mutual funds, Tweedy, Browne Global Value Fund and Tweedy, Browne American Value Fund. All of the above material is available on the Tweedy, Browne website, www.tweedy.com, or we would be delighted to send it to you or a friend. Just call 888-893-3395 if you would like to receive any of this information.

If you think our strategy and practice of value investing are right for you, then we invite and welcome your business as a client through our two mutual funds or a similarly managed private account. We hope this report has been useful to you, and wish you many *happy returns*.

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 0% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 1

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 0.00 | 0.00 | 0.00 | 100.00 | 120.00 |
| 2 | 120.00 | 144.00 | 100.00 | 44.00 | 0.00 | 0.00 | 0.00 | 100.00 | 144.00 |
| 3 | 144.00 | 172.80 | 100.00 | 72.80 | 0.00 | 0.00 | 0.00 | 100.00 | 172.80 |
| 4 | 172.80 | 207.36 | 100.00 | 107.36 | 0.00 | 0.00 | 0.00 | 100.00 | 207.36 |
| 5 | 207.36 | 248.83 | 100.00 | 148.83 | 0.00 | 0.00 | 0.00 | 100.00 | 248.83 |
| 6 | 248.83 | 298.60 | 100.00 | 198.60 | 0.00 | 0.00 | 0.00 | 100.00 | 298.60 |
| 7 | 298.60 | 358.32 | 100.00 | 258.32 | 0.00 | 0.00 | 0.00 | 100.00 | 358.32 |
| 8 | 358.32 | 429.98 | 100.00 | 329.98 | 0.00 | 0.00 | 0.00 | 100.00 | 429.98 |
| 9 | 429.98 | 515.98 | 100.00 | 415.98 | 0.00 | 0.00 | 0.00 | 100.00 | 515.98 |
| 10 | 515.98 | 619.17 | 100.00 | 519.17 | 0.00 | 0.00 | 0.00 | 100.00 | 619.17 |
| 11 | 619.17 | 743.01 | 100.00 | 643.01 | 0.00 | 0.00 | 0.00 | 100.00 | 743.01 |
| 12 | 743.01 | 891.61 | 100.00 | 791.61 | 0.00 | 0.00 | 0.00 | 100.00 | 891.61 |
| 13 | 891.61 | 1069.93 | 100.00 | 969.93 | 0.00 | 0.00 | 0.00 | 100.00 | 1069.93 |
| 14 | 1069.93 | 1283.92 | 100.00 | 1183.92 | 0.00 | 0.00 | 0.00 | 100.00 | 1283.92 |
| 15 | 1283.92 | 1540.70 | 100.00 | 1440.70 | 0.00 | 0.00 | 0.00 | 100.00 | 1540.70 |
| 16 | 1540.70 | 1848.84 | 100.00 | 1748.84 | 0.00 | 0.00 | 0.00 | 100.00 | 1848.84 |
| 17 | 1848.84 | 2218.61 | 100.00 | 2118.61 | 0.00 | 0.00 | 0.00 | 100.00 | 2218.61 |
| 18 | 2218.61 | 2662.33 | 100.00 | 2562.33 | 0.00 | 0.00 | 0.00 | 100.00 | 2662.33 |
| 19 | 2662.33 | 3194.80 | 100.00 | 3094.80 | 0.00 | 0.00 | 0.00 | 100.00 | 3194.80 |
| 20 | 3194.80 | 3833.76 | 100.00 | 3733.76 | 0.00 | 0.00 | 0.00 | 100.00 | 3833.76 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 3% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 2

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 0.60 | 0.16 | 0.44 | 100.44 | 119.84 |
| 2 | 119.84 | 143.81 | 100.44 | 43.37 | 1.30 | 0.35 | 0.95 | 101.39 | 143.45 |
| 3 | 143.45 | 172.15 | 101.39 | 70.76 | 2.12 | 0.57 | 1.55 | 102.94 | 171.57 |
| 4 | 171.57 | 205.89 | 102.94 | 102.95 | 3.09 | 0.83 | 2.25 | 105.19 | 205.05 |
| 5 | 205.05 | 246.06 | 105.19 | 140.87 | 4.23 | 1.14 | 3.09 | 108.28 | 244.92 |
| 6 | 244.92 | 293.91 | 108.28 | 185.63 | 5.57 | 1.50 | 4.07 | 112.34 | 292.40 |
| 7 | 292.40 | 350.88 | 112.34 | 238.54 | 7.16 | 1.93 | 5.22 | 117.57 | 348.95 |
| 8 | 348.95 | 418.74 | 117.57 | 301.18 | 9.04 | 2.44 | 6.60 | 124.16 | 416.30 |
| 9 | 416.30 | 499.56 | 124.16 | 375.40 | 11.26 | 3.04 | 8.22 | 132.38 | 496.52 |
| 10 | 496.52 | 595.83 | 132.38 | 463.44 | 13.90 | 3.75 | 10.15 | 142.53 | 592.07 |
| 11 | 592.07 | 710.49 | 142.53 | 567.95 | 17.04 | 4.60 | 12.44 | 154.97 | 705.89 |
| 12 | 705.89 | 847.06 | 154.97 | 692.09 | 20.76 | 5.61 | 15.16 | 170.13 | 841.46 |
| 13 | 841.46 | 1009.75 | 170.13 | 839.62 | 25.19 | 6.80 | 18.39 | 188.52 | 1002.95 |
| 14 | 1002.95 | 1203.54 | 188.52 | 1015.02 | 30.45 | 8.22 | 22.23 | 210.74 | 1195.32 |
| 15 | 1195.32 | 1434.38 | 210.74 | 1223.63 | 36.71 | 9.91 | 26.80 | 237.54 | 1424.47 |
| 16 | 1424.47 | 1709.36 | 237.54 | 1471.82 | 44.15 | 11.92 | 32.23 | 269.77 | 1697.44 |
| 17 | 1697.44 | 2036.93 | 269.77 | 1767.15 | 53.01 | 14.31 | 38.70 | 308.48 | 2022.61 |
| 18 | 2022.61 | 2427.14 | 308.48 | 2118.66 | 63.56 | 17.16 | 46.40 | 354.87 | 2409.97 |
| 19 | 2409.97 | 2891.97 | 354.87 | 2537.10 | 76.11 | 20.55 | 55.56 | 410.44 | 2871.42 |
| 20 | 2871.42 | 3445.70 | 410.44 | 3035.27 | 91.06 | 24.59 | 66.47 | 476.91 | 3421.12 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 10% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 3

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 2.00 | 0.54 | 1.46 | 101.46 | 119.46 |
| 2 | 119.46 | 143.35 | 101.46 | 41.89 | 4.19 | 1.13 | 3.06 | 104.52 | 142.22 |
| 3 | 142.22 | 170.67 | 104.52 | 66.15 | 6.61 | 1.79 | 4.83 | 109.35 | 168.88 |
| 4 | 168.88 | 202.65 | 109.35 | 93.31 | 9.33 | 2.52 | 6.81 | 116.16 | 200.14 |
| 5 | 200.14 | 240.16 | 116.16 | 124.00 | 12.40 | 3.35 | 9.05 | 125.21 | 236.81 |
| 6 | 236.81 | 284.18 | 125.21 | 158.97 | 15.90 | 4.29 | 11.60 | 136.82 | 279.89 |
| 7 | 279.89 | 335.86 | 136.82 | 199.05 | 19.90 | 5.37 | 14.53 | 151.35 | 330.49 |
| 8 | 330.49 | 396.59 | 151.35 | 245.24 | 24.52 | 6.62 | 17.90 | 169.25 | 389.96 |
| 9 | 389.96 | 467.96 | 169.25 | 298.71 | 29.87 | 8.07 | 21.81 | 191.05 | 459.89 |
| 10 | 459.89 | 551.87 | 191.05 | 360.82 | 36.08 | 9.74 | 26.34 | 217.39 | 542.13 |
| 11 | 542.13 | 650.55 | 217.39 | 433.16 | 43.32 | 11.70 | 31.62 | 249.01 | 638.86 |
| 12 | 638.86 | 766.63 | 249.01 | 517.62 | 51.76 | 13.98 | 37.79 | 286.80 | 752.66 |
| 13 | 752.66 | 903.19 | 286.80 | 616.39 | 61.64 | 16.64 | 45.00 | 331.80 | 886.54 |
| 14 | 886.54 | 1063.85 | 331.80 | 732.06 | 73.21 | 19.77 | 53.44 | 385.24 | 1044.09 |
| 15 | 1044.09 | 1252.90 | 385.24 | 867.67 | 86.77 | 23.43 | 63.34 | 448.58 | 1229.48 |
| 16 | 1229.48 | 1475.37 | 448.58 | 1026.80 | 102.68 | 27.72 | 74.96 | 523.53 | 1447.65 |
| 17 | 1447.65 | 1737.18 | 523.53 | 1213.65 | 121.36 | 32.77 | 88.60 | 612.13 | 1704.41 |
| 18 | 1704.41 | 2045.29 | 612.13 | 1433.16 | 143.32 | 38.70 | 104.62 | 716.75 | 2006.60 |
| 19 | 2006.60 | 2407.92 | 716.75 | 1691.17 | 199.45 | 45.66 | 123.46 | 840.20 | 2362.26 |
| 20 | 2362.26 | 2834.71 | 840.20 | 1994.50 | 169.12 | 53.85 | 145.60 | 985.80 | 2780.85 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 30% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 4

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 6.00 | 1.62 | 4.38 | 104.38 | 118.38 |
| 2 | 118.38 | 142.06 | 104.38 | 37.68 | 11.30 | 3.05 | 8.25 | 112.63 | 139.00 |
| 3 | 139.00 | 166.81 | 112.63 | 54.17 | 16.25 | 4.39 | 11.86 | 124.50 | 162.42 |
| 4 | 162.42 | 194.90 | 124.50 | 70.41 | 21.12 | 5.70 | 15.42 | 139.91 | 189.20 |
| 5 | 189.20 | 227.04 | 139.91 | 87.12 | 26.14 | 7.06 | 19.08 | 158.99 | 219.98 |
| 6 | 219.98 | 263.98 | 158.99 | 104.98 | 31.49 | 8.50 | 22.99 | 181.98 | 255.47 |
| 7 | 255.47 | 306.57 | 181.98 | 124.58 | 37.37 | 10.09 | 27.28 | 209.27 | 296.48 |
| 8 | 296.48 | 355.77 | 209.27 | 146.50 | 43.95 | 11.87 | 32.08 | 241.35 | 343.90 |
| 9 | 343.90 | 412.69 | 241.35 | 171.33 | 51.40 | 13.88 | 37.52 | 278.87 | 398.81 |
| 10 | 398.81 | 478.57 | 278.87 | 199.69 | 59.91 | 16.18 | 43.73 | 322.61 | 462.39 |
| 11 | 462.39 | 554.87 | 322.61 | 232.26 | 69.68 | 18.81 | 50.87 | 373.47 | 536.06 |
| 12 | 536.06 | 643.27 | 373.47 | 269.80 | 80.94 | 21.85 | 59.09 | 432.56 | 621.42 |
| 13 | 621.42 | 745.70 | 432.56 | 313.14 | 93.94 | 25.36 | 68.58 | 501.14 | 720.34 |
| 14 | 720.34 | 864.40 | 501.14 | 363.27 | 108.98 | 29.42 | 79.56 | 580.69 | 834.98 |
| 15 | 834.98 | 1001.97 | 580.69 | 421.28 | 126.38 | 34.12 | 92.26 | 672.95 | 967.85 |
| 16 | 967.85 | 1161.42 | 672.95 | 488.47 | 146.54 | 39.57 | 106.97 | 779.93 | 1121.85 |
| 17 | 1121.85 | 1346.23 | 779.93 | 566.30 | 169.89 | 45.87 | 124.02 | 903.95 | 1300.36 |
| 18 | 1300.36 | 1560.43 | 903.95 | 656.48 | 196.94 | 53.17 | 143.77 | 1047.72 | 1507.25 |
| 19 | 1507.25 | 1808.70 | 1047.72 | 760.99 | 228.30 | 61.64 | 166.66 | 1214.37 | 1747.06 |
| 20 | 1747.06 | 2096.47 | 1214.37 | 882.10 | 264.63 | 71.45 | 193.18 | 1407.55 | 2025.02 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 85% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 5

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 17.00 | 4.59 | 12.41 | 112.41 | 115.41 |
| 2 | 115.41 | 138.49 | 112.41 | 26.08 | 22.17 | 5.99 | 16.18 | 128.59 | 132.51 |
| 3 | 132.51 | 159.01 | 128.59 | 30.41 | 25.85 | 6.98 | 18.87 | 147.47 | 152.03 |
| 4 | 152.03 | 182.43 | 147.47 | 34.97 | 29.72 | 8.03 | 21.70 | 169.16 | 174.41 |
| 5 | 174.41 | 209.29 | 169.16 | 40.13 | 34.11 | 9.21 | 24.90 | 194.06 | 200.08 |
| 6 | 200.08 | 240.10 | 194.06 | 46.04 | 39.13 | 10.57 | 28.56 | 222.63 | 229.53 |
| 7 | 229.53 | 275.44 | 222.63 | 52.81 | 44.89 | 12.12 | 32.77 | 255.40 | 263.32 |
| 8 | 263.32 | 315.98 | 255.40 | 60.59 | 51.50 | 13.90 | 37.59 | 292.99 | 302.08 |
| 9 | 302.08 | 362.49 | 292.99 | 69.50 | 59.08 | 15.95 | 43.13 | 336.12 | 346.54 |
| 10 | 346.54 | 415.85 | 336.12 | 79.73 | 67.77 | 18.30 | 49.47 | 385.59 | 397.55 |
| 11 | 397.55 | 477.06 | 385.59 | 91.47 | 77.75 | 20.99 | 56.76 | 442.35 | 456.07 |
| 12 | 456.07 | 547.28 | 442.35 | 104.93 | 89.19 | 24.08 | 65.11 | 507.46 | 523.20 |
| 13 | 523.20 | 627.84 | 507.46 | 120.38 | 102.32 | 27.63 | 74.70 | 582.16 | 600.21 |
| 14 | 600.21 | 720.25 | 582.16 | 138.10 | 117.38 | 31.69 | 85.69 | 667.85 | 688.56 |
| 15 | 688.56 | 826.27 | 667.85 | 158.43 | 134.66 | 36.36 | 98.30 | 766.15 | 789.91 |
| 16 | 789.91 | 947.90 | 766.15 | 181.75 | 154.48 | 41.71 | 112.77 | 878.92 | 906.19 |
| 17 | 906.19 | 1087.42 | 878.92 | 208.50 | 177.22 | 47.85 | 129.37 | 1008.30 | 1039.57 |
| 18 | 1039.57 | 1247.49 | 1008.30 | 239.19 | 203.31 | 54.89 | 148.42 | 1156.71 | 1192.59 |
| 19 | 1192.59 | 1431.11 | 1156.71 | 274.40 | 233.24 | 62.97 | 170.26 | 1326.98 | 1368.14 |
| 20 | 1368.14 | 1641.76 | 1326.98 | 314.79 | 267.57 | 72.24 | 195.33 | 1522.30 | 1569.52 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 20% |
| Turnover Rate: | 100% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 6

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 120.00 | 100.00 | 20.00 | 20.00 | 5.40 | 14.60 | 114.60 | 114.60 |
| 2 | 114.60 | 137.52 | 114.60 | 22.92 | 22.92 | 6.19 | 16.73 | 131.33 | 131.33 |
| 3 | 131.33 | 157.60 | 131.33 | 26.27 | 26.27 | 7.09 | 19.17 | 150.51 | 150.51 |
| 4 | 150.51 | 180.61 | 150.51 | 30.10 | 30.10 | 8.13 | 21.97 | 172.48 | 172.48 |
| 5 | 172.48 | 237.19 | 172.48 | 34.50 | 34.50 | 9.31 | 25.18 | 197.66 | 197.66 |
| 6 | 197.66 | 271.82 | 197.66 | 39.53 | 39.53 | 10.67 | 28.86 | 226.52 | 226.52 |
| 7 | 226.52 | 237.19 | 226.52 | 45.30 | 45.30 | 12.23 | 33.07 | 259.59 | 259.59 |
| 8 | 259.59 | 311.51 | 259.59 | 51.92 | 51.92 | 14.02 | 37.90 | 297.49 | 297.49 |
| 9 | 297.49 | 356.99 | 297.49 | 59.50 | 59.50 | 16.06 | 43.43 | 340.93 | 340.93 |
| 10 | 340.93 | 409.11 | 340.93 | 68.19 | 68.19 | 18.41 | 49.78 | 390.70 | 390.70 |
| 11 | 390.70 | 468.84 | 390.70 | 78.14 | 78.14 | 21.10 | 57.04 | 447.75 | 447.75 |
| 12 | 447.75 | 537.29 | 447.75 | 89.55 | 89.55 | 24.18 | 65.37 | 513.12 | 513.12 |
| 13 | 513.12 | 615.74 | 513.12 | 102.62 | 102.62 | 27.71 | 74.91 | 588.03 | 588.03 |
| 14 | 588.03 | 705.64 | 588.03 | 117.61 | 117.61 | 31.75 | 85.85 | 673.88 | 673.88 |
| 15 | 673.88 | 808.66 | 673.88 | 134.78 | 134.78 | 36.39 | 98.39 | 772.27 | 772.27 |
| 16 | 772.27 | 926.72 | 772.27 | 154.45 | 154.45 | 41.70 | 112.75 | 885.02 | 885.02 |
| 17 | 885.02 | 1062.03 | 885.02 | 177.00 | 177.00 | 47.79 | 129.21 | 1014.23 | 1014.23 |
| 18 | 1014.23 | 1217.08 | 1014.23 | 202.85 | 202.85 | 54.77 | 148.08 | 1162.31 | 1162.31 |
| 19 | 1162.31 | 1394.78 | 1162.31 | 232.46 | 232.46 | 62.76 | 169.70 | 1332.01 | 1332.01 |
| 20 | 1332.01 | 1598.41 | 1332.01 | 266.40 | 266.40 | 71.93 | 194.47 | 1526.48 | 1526.48 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 0% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 7

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 0.00 | 0.00 | 0.00 | 100.00 | 115.00 |
| 2 | 115.00 | 132.25 | 100.00 | 32.25 | 0.00 | 0.00 | 0.00 | 100.00 | 132.25 |
| 3 | 132.25 | 152.09 | 100.00 | 52.09 | 0.00 | 0.00 | 0.00 | 100.00 | 152.09 |
| 4 | 152.09 | 174.90 | 100.00 | 74.90 | 0.00 | 0.00 | 0.00 | 100.00 | 174.90 |
| 5 | 174.90 | 201.14 | 100.00 | 101.14 | 0.00 | 0.00 | 0.00 | 100.00 | 201.14 |
| 6 | 201.14 | 231.31 | 100.00 | 131.31 | 0.00 | 0.00 | 0.00 | 100.00 | 231.31 |
| 7 | 231.31 | 266.00 | 100.00 | 166.00 | 0.00 | 0.00 | 0.00 | 100.00 | 266.00 |
| 8 | 266.00 | 305.90 | 100.00 | 205.90 | 0.00 | 0.00 | 0.00 | 100.00 | 305.90 |
| 9 | 305.90 | 351.79 | 100.00 | 251.79 | 0.00 | 0.00 | 0.00 | 100.00 | 351.79 |
| 10 | 351.79 | 404.56 | 100.00 | 304.56 | 0.00 | 0.00 | 0.00 | 100.00 | 404.56 |
| 11 | 404.56 | 465.24 | 100.00 | 365.24 | 0.00 | 0.00 | 0.00 | 100.00 | 465.24 |
| 12 | 465.24 | 535.03 | 100.00 | 435.03 | 0.00 | 0.00 | 0.00 | 100.00 | 535.03 |
| 13 | 535.03 | 615.28 | 100.00 | 515.28 | 0.00 | 0.00 | 0.00 | 100.00 | 615.28 |
| 14 | 615.28 | 707.57 | 100.00 | 607.57 | 0.00 | 0.00 | 0.00 | 100.00 | 707.57 |
| 15 | 707.57 | 813.71 | 100.00 | 713.71 | 0.00 | 0.00 | 0.00 | 100.00 | 813.71 |
| 16 | 813.71 | 935.76 | 100.00 | 835.76 | 0.00 | 0.00 | 0.00 | 100.00 | 935.76 |
| 17 | 935.76 | 1076.13 | 100.00 | 976.13 | 0.00 | 0.00 | 0.00 | 100.00 | 1076.13 |
| 18 | 1076.13 | 1237.55 | 100.00 | 1137.55 | 0.00 | 0.00 | 0.00 | 100.00 | 1237.55 |
| 19 | 1237.55 | 1423.18 | 100.00 | 1323.18 | 0.00 | 0.00 | 0.00 | 100.00 | 1423.18 |
| 20 | 1423.18 | 1636.65 | 100.00 | 1536.65 | 0.00 | 0.00 | 0.00 | 100.00 | 1636.65 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 3% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 8

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 0.45 | 0.12 | 0.33 | 100.33 | 114.88 |
| 2 | 114.88 | 132.11 | 100.33 | 31.78 | 0.95 | 0.26 | 0.70 | 101.02 | 131.85 |
| 3 | 131.85 | 151.63 | 101.02 | 50.61 | 1.52 | 0.41 | 1.11 | 102.13 | 151.22 |
| 4 | 151.22 | 173.90 | 102.13 | 71.77 | 2.15 | 0.58 | 1.57 | 103.70 | 173.32 |
| 5 | 173.32 | 199.32 | 103.70 | 95.62 | 2.87 | 0.77 | 2.09 | 105.80 | 198.55 |
| 6 | 198.55 | 228.33 | 105.80 | 122.53 | 3.68 | 0.99 | 2.68 | 108.48 | 227.34 |
| 7 | 227.34 | 261.44 | 108.48 | 152.95 | 4.59 | 1.24 | 3.35 | 111.83 | 260.20 |
| 8 | 260.20 | 299.23 | 111.83 | 187.40 | 5.62 | 1.52 | 4.10 | 115.94 | 297.71 |
| 9 | 297.71 | 342.37 | 115.94 | 226.43 | 6.79 | 1.83 | 4.96 | 120.89 | 340.53 |
| 10 | 340.53 | 391.61 | 120.89 | 270.72 | 8.12 | 2.19 | 5.93 | 126.82 | 389.42 |
| 11 | 389.42 | 447.83 | 126.82 | 321.01 | 9.63 | 2.60 | 7.03 | 133.85 | 445.23 |
| 12 | 445.23 | 512.02 | 133.85 | 378.16 | 11.34 | 3.06 | 8.28 | 142.14 | 508.95 |
| 13 | 508.95 | 585.30 | 142.14 | 443.16 | 13.29 | 3.59 | 9.71 | 151.84 | 581.71 |
| 14 | 581.71 | 668.96 | 151.84 | 517.12 | 15.51 | 4.19 | 11.32 | 163.17 | 664.77 |
| 15 | 664.77 | 764.49 | 163.17 | 601.32 | 18.04 | 4.87 | 13.17 | 176.33 | 759.62 |
| 16 | 759.62 | 873.56 | 176.33 | 697.23 | 20.92 | 5.65 | 15.27 | 191.60 | 867.91 |
| 17 | 867.91 | 998.10 | 191.60 | 806.50 | 24.19 | 6.53 | 17.66 | 209.27 | 991.57 |
| 18 | 991.57 | 1140.30 | 209.27 | 931.04 | 27.93 | 7.54 | 20.39 | 229.66 | 1132.76 |
| 19 | 1132.76 | 1302.68 | 229.66 | 1073.02 | 32.19 | 8.69 | 23.50 | 253.15 | 1293.98 |
| 20 | 1293.98 | 1488.08 | 253.15 | 1234.93 | 37.05 | 10.00 | 27.04 | 280.20 | 1478.08 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 10% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 9

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 1.50 | 0.41 | 1.10 | 101.10 | 114.60 |
| 2 | 114.60 | 131.78 | 101.10 | 30.69 | 3.07 | 0.83 | 2.24 | 103.34 | 130.96 |
| 3 | 130.96 | 150.60 | 103.34 | 47.26 | 4.73 | 1.28 | 3.45 | 106.79 | 149.32 |
| 4 | 149.32 | 171.72 | 106.79 | 64.94 | 6.49 | 1.75 | 4.74 | 111.53 | 169.97 |
| 5 | 169.97 | 195.46 | 111.53 | 83.94 | 8.39 | 2.27 | 6.13 | 117.65 | 193.20 |
| 6 | 193.20 | 222.18 | 117.65 | 104.52 | 10.45 | 2.82 | 7.63 | 125.28 | 219.35 |
| 7 | 219.35 | 252.26 | 125.28 | 126.97 | 12.70 | 3.43 | 9.27 | 134.55 | 248.83 |
| 8 | 248.83 | 286.15 | 134.55 | 151.60 | 15.16 | 4.09 | 11.07 | 145.62 | 282.06 |
| 9 | 282.06 | 324.37 | 145.62 | 178.75 | 17.87 | 4.83 | 13.05 | 158.67 | 319.54 |
| 10 | 319.54 | 367.47 | 158.67 | 208.81 | 20.88 | 5.64 | 15.24 | 173.91 | 361.84 |
| 11 | 361.84 | 416.11 | 173.91 | 242.20 | 24.22 | 6.54 | 17.68 | 191.59 | 409.57 |
| 12 | 409.57 | 471.01 | 191.59 | 279.42 | 27.94 | 7.54 | 20.40 | 211.99 | 463.46 |
| 13 | 463.46 | 532.98 | 211.99 | 321.00 | 32.10 | 8.67 | 23.43 | 235.42 | 524.32 |
| 14 | 524.32 | 602.97 | 235.42 | 367.54 | 36.75 | 9.92 | 26.83 | 262.25 | 593.04 |
| 15 | 593.04 | 682.00 | 262.25 | 419.75 | 41.97 | 11.33 | 30.64 | 292.89 | 670.66 |
| 16 | 670.66 | 771.26 | 292.89 | 478.37 | 47.84 | 12.92 | 34.92 | 327.81 | 758.35 |
| 17 | 758.35 | 872.10 | 327.81 | 544.29 | 54.43 | 14.70 | 39.73 | 367.55 | 857.40 |
| 18 | 857.40 | 986.02 | 367.55 | 618.47 | 61.85 | 16.70 | 45.15 | 412.70 | 969.32 |
| 19 | 969.32 | 1114.71 | 412.70 | 702.02 | 70.20 | 18.95 | 51.25 | 463.94 | 1095.76 |
| 20 | 1095.76 | 1260.12 | 463.94 | 796.18 | 79.62 | 21.50 | 58.12 | 522.06 | 1238.63 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 30% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 10

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 4.50 | 1.22 | 3.29 | 103.29 | 113.79 |
| 2 | 113.79 | 130.85 | 103.29 | 27.57 | 8.27 | 2.23 | 6.04 | 109.32 | 128.62 |
| 3 | 128.62 | 147.91 | 109.32 | 38.59 | 11.58 | 3.13 | 8.45 | 117.77 | 144.79 |
| 4 | 144.79 | 166.50 | 117.77 | 48.73 | 14.62 | 3.95 | 10.67 | 128.45 | 162.56 |
| 5 | 162.56 | 186.94 | 128.45 | 58.50 | 17.55 | 4.74 | 12.81 | 141.26 | 182.20 |
| 6 | 182.20 | 209.53 | 141.26 | 68.28 | 20.48 | 5.53 | 14.95 | 156.21 | 204.00 |
| 7 | 204.00 | 234.60 | 156.21 | 78.39 | 23.52 | 6.35 | 17.17 | 173.38 | 228.25 |
| 8 | 228.25 | 262.49 | 173.38 | 89.11 | 26.73 | 7.22 | 19.52 | 192.89 | 255.27 |
| 9 | 255.27 | 293.56 | 192.89 | 100.67 | 30.20 | 8.15 | 22.05 | 214.94 | 285.41 |
| 10 | 285.41 | 328.22 | 214.94 | 113.28 | 33.98 | 9.18 | 24.81 | 239.75 | 319.05 |
| 11 | 319.05 | 366.90 | 239.75 | 127.15 | 38.15 | 10.30 | 27.85 | 267.60 | 356.60 |
| 12 | 356.60 | 410.09 | 267.60 | 142.50 | 42.75 | 11.54 | 31.21 | 298.80 | 398.55 |
| 13 | 398.55 | 458.33 | 298.80 | 159.53 | 47.86 | 12.92 | 34.94 | 333.74 | 445.41 |
| 14 | 445.41 | 512.22 | 333.74 | 178.48 | 53.55 | 14.46 | 39.09 | 372.83 | 497.77 |
| 15 | 497.77 | 572.43 | 372.83 | 199.60 | 59.88 | 16.17 | 43.71 | 416.54 | 556.26 |
| 16 | 556.26 | 639.70 | 416.54 | 223.16 | 66.95 | 18.08 | 48.87 | 465.41 | 621.63 |
| 17 | 621.63 | 714.87 | 465.41 | 249.46 | 74.84 | 20.21 | 54.63 | 520.05 | 694.67 |
| 18 | 694.67 | 798.87 | 520.05 | 278.82 | 83.65 | 22.58 | 61.06 | 581.11 | 776.28 |
| 19 | 776.28 | 892.72 | 581.11 | 311.62 | 93.48 | 25.24 | 68.24 | 649.35 | 867.48 |
| 20 | 867.48 | 997.60 | 649.35 | 348.25 | 104.48 | 28.21 | 76.27 | 725.62 | 969.40 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 85% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 11

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 12.75 | 3.44 | 9.31 | 109.31 | 111.56 |
| 2 | 111.56 | 128.29 | 109.31 | 18.98 | 16.14 | 4.36 | 11.78 | 121.09 | 123.93 |
| 3 | 123.93 | 142.52 | 121.09 | 21.44 | 18.22 | 4.92 | 13.30 | 134.39 | 137.60 |
| 4 | 137.60 | 158.25 | 134.39 | 23.86 | 20.28 | 5.48 | 14.80 | 149.19 | 152.77 |
| 5 | 152.77 | 175.69 | 149.19 | 26.49 | 22.52 | 6.08 | 16.44 | 165.63 | 169.61 |
| 6 | 169.61 | 195.05 | 165.63 | 29.41 | 25.00 | 6.75 | 18.25 | 183.88 | 188.30 |
| 7 | 188.30 | 216.54 | 183.88 | 32.66 | 27.76 | 7.49 | 20.26 | 204.15 | 209.05 |
| 8 | 209.05 | 240.40 | 204.15 | 36.26 | 30.82 | 8.32 | 22.50 | 226.64 | 232.08 |
| 9 | 232.08 | 266.89 | 226.64 | 40.25 | 34.21 | 9.24 | 24.98 | 251.62 | 257.66 |
| 10 | 257.66 | 296.30 | 251.62 | 44.69 | 37.98 | 10.26 | 27.73 | 279.35 | 286.05 |
| 11 | 286.05 | 328.96 | 279.35 | 49.61 | 42.17 | 11.39 | 30.78 | 310.13 | 317.57 |
| 12 | 317.57 | 365.21 | 310.13 | 55.08 | 46.82 | 12.64 | 34.18 | 344.30 | 352.57 |
| 13 | 352.57 | 405.45 | 344.30 | 61.15 | 51.97 | 14.03 | 37.94 | 382.25 | 391.42 |
| 14 | 391.42 | 450.13 | 382.25 | 67.88 | 57.70 | 15.58 | 42.12 | 424.37 | 434.55 |
| 15 | 434.55 | 499.73 | 424.37 | 75.37 | 64.06 | 17.30 | 46.76 | 471.13 | 482.44 |
| 16 | 482.44 | 554.80 | 471.13 | 83.67 | 71.12 | 19.20 | 51.92 | 523.05 | 535.60 |
| 17 | 535.60 | 615.94 | 523.05 | 92.89 | 78.96 | 21.32 | 57.64 | 580.69 | 594.62 |
| 18 | 594.62 | 683.82 | 580.69 | 103.13 | 87.66 | 23.67 | 63.99 | 644.68 | 660.15 |
| 19 | 660.15 | 759.17 | 644.68 | 114.49 | 97.32 | 26.28 | 71.04 | 715.72 | 732.89 |
| 20 | 732.89 | 842.83 | 715.72 | 127.11 | 108.04 | 29.17 | 78.87 | 794.59 | 813.66 |

| ASSUMPTIONS | |
|---|---|
| Yearly Return: | 15% |
| Turnover Rate: | 100% |
| Federal and State Income Taxes: | 27% |
| Years: | 20 |

## CASE 12

**AFTER-TAX RETURN ON STOCKS**

| Year | Beg. Market Value | Ending Market Value *(pre-tax)* | Beg. Tax Cost | Pre-Tax Gain | Pre-tax Realized Capital Gains | Capital Gains Tax | NAT Gain | Ending Tax Cost | Ending Market Value |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100.00 | 115.00 | 100.00 | 15.00 | 15.00 | 4.05 | 10.95 | 110.95 | 110.95 |
| 2 | 110.95 | 127.59 | 110.95 | 16.64 | 16.64 | 4.49 | 12.15 | 123.10 | 123.10 |
| 3 | 123.10 | 141.56 | 123.10 | 18.46 | 18.46 | 4.99 | 13.48 | 136.58 | 136.58 |
| 4 | 136.58 | 157.07 | 136.58 | 20.49 | 20.49 | 5.53 | 14.96 | 151.53 | 151.53 |
| 5 | 151.53 | 174.26 | 151.53 | 22.73 | 22.73 | 6.14 | 16.59 | 168.13 | 168.13 |
| 6 | 168.13 | 193.35 | 168.13 | 25.22 | 25.22 | 6.81 | 18.41 | 186.54 | 186.54 |
| 7 | 186.54 | 214.52 | 186.54 | 27.98 | 27.98 | 7.55 | 20.43 | 206.96 | 206.96 |
| 8 | 206.96 | 238.01 | 206.96 | 31.04 | 31.04 | 8.38 | 22.66 | 229.62 | 229.62 |
| 9 | 229.62 | 264.07 | 229.62 | 34.44 | 34.44 | 9.30 | 25.14 | 254.77 | 254.77 |
| 10 | 254.77 | 292.98 | 254.77 | 38.22 | 38.22 | 10.32 | 27.90 | 282.67 | 282.67 |
| 11 | 282.67 | 325.07 | 282.67 | 42.40 | 42.40 | 11.45 | 30.95 | 313.62 | 313.62 |
| 12 | 313.62 | 360.66 | 313.62 | 47.04 | 47.04 | 12.70 | 34.34 | 347.96 | 347.96 |
| 13 | 347.96 | 400.15 | 347.96 | 52.19 | 52.19 | 14.09 | 38.10 | 386.06 | 386.06 |
| 14 | 386.06 | 443.97 | 386.06 | 57.91 | 57.91 | 15.64 | 42.27 | 428.33 | 428.33 |
| 15 | 428.33 | 492.58 | 428.33 | 64.25 | 64.25 | 17.35 | 46.90 | 475.24 | 475.24 |
| 16 | 475.24 | 546.52 | 475.24 | 71.29 | 71.29 | 19.25 | 52.04 | 527.27 | 527.27 |
| 17 | 527.27 | 606.37 | 527.27 | 79.09 | 79.09 | 21.35 | 57.74 | 585.01 | 585.01 |
| 18 | 585.01 | 672.76 | 585.01 | 87.75 | 87.75 | 23.69 | 64.06 | 649.07 | 649.07 |
| 19 | 649.07 | 746.43 | 649.07 | 97.36 | 97.36 | 26.29 | 71.07 | 720.14 | 720.14 |
| 20 | 720.14 | 828.16 | 720.14 | 108.02 | 108.02 | 29.17 | 78.86 | 799.00 | 799.00 |

## State Income Tax Rates as of 12/31/98

| State | Top Income Tax Rate (%) |
|---|---|
| Alabama | 5.00% |
| Alaska | -0- |
| Arizona | 5.10 |
| Arkansas | 7.00 |
| California | 9.30 |
| Colorado | 5.00 |
| Connecticut | 4.50 |
| Delaware | 6.90 |
| District of Columbia | 9.50 |
| Florida | -0- |
| Georgia | 6.00 |
| Hawaii | 10.00 |
| Idaho | 8.20 |
| Illinois | 8.98 |
| Kansas | 6.45 |
| Kentucky | 6.00 |
| Louisiana | 6.00 |
| Maine | 4.50 |
| Maryland | 4.878 |
| Massachusetts | 5.95 |
| Michigan | 4.40 |
| Minnesota | 8.50 |
| Mississippi | 5.00 |
| Montana | 11.00 |
| Nebraska | 6.99 |
| Nevada | -0- |
| New Hampshire | 10.00 |
| New Jersey | 6.37 |
| New Mexico | 8.20 |
| New York | 6.85 |
| North Carolina | 7.75 |
| North Dakota | 12.00 |
| Ohio | 7.50 |
| Oklahoma | 7.00 |
| Oregon | 9.00 |
| Pennsylvania | 2.80 |
| Rhode Island | Tax liability is equal to 27% of federal tax liability |
| South Carolina | 7.00 |
| South Dakota | -0- |
| Tennessee | -0- |
| Texas | -0- |
| Utah | 7.00 |
| Vermont | Tax liability is equal to 25% of federal tax liability |
| Virginia | 6.50 |
| Wisconsin | 6.77 |
| Wyoming | -0- |

***Source*: 1996 - 1999 Tax Management Inc.**

## APPENDIX C

### 17 Standard Earnings Outlook/Value Questions Checklist

**"PUCCI": P*ricing*, U*nits*, C*osts*, C*ompetition* and I*nsiders***

1. Outlook for pricing? (Each dollar of price increase will increase pre-tax income by $1.00 if other costs do not increase.)

2. Outlook for units? (A 10% increase in units will increase gross profits by 10% if the gross profit margin does not change. Pre-tax income will increase by this amount if other costs do not increase.)

3. Outlook for the gross profit margin as a percentage of sales? How much is the gross profit margin expected to increase/decrease as a result of changes in price, mix of business, and (or) specific costs that make up cost of goods sold?

4. Outlook for selling, general and administrative costs/margin as a percentage of sales? Description of any significant selling, general and administrative cost changes.

5. Operating leverage: If sales increase by, say, $10 million, how much will drop to pre-tax income?

6. Outlook for the pre tax profit margin? Can the pre tax margin get back to the prior peak margin of_____% attained in_____year? Can the pre tax margin get to_____% that your competitor,_____ , earns?

7. Amount of non recurring, or investment/expansion type expenses included in costs? Net assets tied up in these non-core activities? Core recurring profits?

8. Segment or product line losses included in the consolidated income statement? Net assets tied up in the loss-producing or break-even activities? Core recurring profits? (For example, if the business is a retail chain with 100 stores, what are the total losses of all the stores that lose money and the total profits of all the stores that make money and the net assets tied up in the losers?)

9. After-tax goodwill amortization? (i.e., what is the amount of the tax deductible goodwill amortization and the amount of non-tax deductible goodwill amortization?)

10. Are you comfortable with the consensus e.p.s. estimates for the current year of and next year of_____ ?

**11.** Outlook for growth in e.p.s. over the next five years? How will you get the growth/what specifically will you do to get the growth? Return on equity/return on capital goal/outlook over the next five years? How will you get there?

**12** Over the next five years, what do you plan to do with the cash that will be generated from earnings and not paid out as a dividend? What investments do you plan to make; such as, new factories, additional stores, acquisitions, share buybacks? What return do you expect to earn on planned investments? (Think of a business like a savings account that reinvests the cash earnings that are kept in the business and not paid out as a dividend. The new cash that is invested can earn a new return that can add to the overall earnings of the business.)

**13** Competitive conditions? Expected changes/actions taken by competitors (such as price changes, new products, new capacity, new marketing programs, etc.) and the expected impact on the subject company's pricing, units, margins?

**14.** Amount of costs/expenses that would disappear if the company was consolidated with a competitor (such as corporate expense, overlapping duplicate sales outlets or salespersons, manufacturing costs that would disappear if the company's sales volume was folded into a competitor's factory)? If the separate businesses owned by the subject company were sold, how much of the subject company's corporate expense would disappear? (In other words, would the acquirer's income go up by the amount of segment EBIT that was acquired, or would it have to keep the functions provided by the subject company's "corporate" activity and the related expense?)

**15.** Rules of thumb/valuation standards such as Price/EBIT *(Earnings Before Interest and Taxes)*, Price/EBITDA *(Earnings Before Interest, Taxes, Depreciation and Amortization)*, Price/Sales, Price/Acre, Price/Board Foot of Timber, Price/Ton of Capacity, Price/Salesperson, Price/Dollar of Deposits, etc. for similar businesses? What does the company itself think it is worth?

**16.** Company plans to buy back stock?

**17.** Have insiders bought or sold stock recently? Describe. Why did he or she buy? Why did he or she sell (if the sale was significant)?

## APPENDIX D

### Buffett 101: Questions / Checklist Concerning Assessing a Company's Growth Prospects, Competitive Position and Economics

*"The key to investing is not assessing how much an industry is going to affect society, or how much it will grow, but rather determining the competitive advantage of any given company and, above all, the durability of that advantage. The products or services that have wide, sustainable moats around them are the ones that deliver rewards to investors."*
- Warren Buffett

1.* What does your global competition look like over the next several years?

2.* What have your competitors done in the last three years to upset these global dynamics?

3.* What have you done to them in the last three years to affect those dynamics?

4.* How might your competitor attack you in the future?

5.* What are your plans to leapfrog the competition?

6. Expected rates of overall same-store internal revenue growth for the industry/product area that the company operates in over the next 5 to 10 years? Expected rate of overall unit growth and price increases/decreases over the next 5 to 10 years for the company's product area?

7. Study the company's competitors: Compare their balance sheets and income statements: Gross margins, SG&A and profit percentages, return on equity, return on capital, ratio of sales to various asset categories and capital, etc. Compare growth rates of sales over the last five years and recently. Describe market share percentages. Compare growth in assets, such as property, plant and equipment.

8. Who is growing fastest and gaining market share? Why?

9. Who is the toughest competitor? Why?

10. What has occurred and what is expected to occur in the overall industry with respect to additions to capacity, additions to inventory? Has the overall industry been adding to assets or is it expected to add to assets such as property, plant and equipment, or inventory at a faster rate than expected growth of overall industry unit demand? (For example, over expansion of the

inventory of manufactured homes in relation to unit demand led to very crummy unit pricing for manufactured homes as dealers cleared out bloated inventories.)

11. Describe pricing behavior in the company's industry: Which competitor, if any, typically increases prices first? What has happened next? Who cuts prices? What happens next? Has pricing behavior been rational/"statesmanlike" in the company's field of business? Describe pricing "signaling" behavior in the company's field of business. Describe recent pricing moves.

12. Who is the lowest cost competitor? Why? How sustainable is the competitor's cost advantage? How easy would it be for another company, perhaps doing business in a way that is different from the way that most competitors do business now, to operate with much lower costs than most of the competitors. (For example, Charles Schwab, a stock brokerage firm that does not pay sales commissions to brokers, can transact share trades at a lower cost per share than Merrill Lynch, which pays brokers commissions on the stock transactions of its customers.)

13. Could new technology have a dramatic impact on the company's business model, earning power and growth prospects? (For example, when CD rom technology enabled Microsoft to put an encyclopedia on a CD rom that cost less than $1.00 to stamp out, this encyclopedia was sold for $49.00, as compared to prices of $650 - $850 for a printed World Book set and $1600 for an Encyclopedia Britannica set. In some instances, Microsoft's Encarta encyclopedia was given away as a freebie to purchasers of personal computers. Microsoft's Encarta took significant unit sales away from World Book and Encyclopedia Britannica and ruined the pricing structures and earning power of these two previously dominant encyclopedia publishers.) How is the Internet affecting, or could it affect, the company and competitors in its field of business? Describe how, if applicable, the Internet has enabled new entrants to compete in the company's field of business. Describe the new Internet competitors, and the advantage/disadvantages of their business models.

14. Describe the expansion plans and strategies of competitors, including new entrants. Read the annual reports and analysts' reports concerning competitors to gain a better understanding of their plans.

15. Consider whether the company's products' prices are so high that they encourage lower priced product offerings from competitors. In other words, is product pricing so high that competition from lower priced products cause doubt about the sustainability of future earning power and cause doubt about growth prospects over the next 5 to 10 years. (For example, Eastman Kodak had wonderful earnings growth from its U.S. photographic film business until Fuji Photo was able to offer similar quality film at retail prices that were one third less than Kodak's prices. Kodak's retail film prices were high enough to permit Fuji to enter the film business in the U.S., and this competition has negatively impacted Kodak's profitability and earnings growth.

Similarly, Kellogg Company had an excellent record of earnings growth that was driven by price increases on its cereal products. High retail prices for Kellogg's Corn Flakes and Rice Krispies has permitted new copy-cat store brand competitors to enter the business with "Brand X" retail corn flakes priced at a discount to Kellogg's cereals. These new lower priced generic, copycat cereals have been taking sales away from Kellogg, and Kellogg's earnings growth has halted.)

16. Would it make sense for some existing competitor or new competitor to offer a product similar to the company's product as a "freebie" giveaway? If so, how might this development affect the company's competitiveness, earning power and growth prospects? (For example, several companies offer Internet access as a freebie in competition with Internet access provider businesses that charge their customers $20.00 per month for this service. Similarly, American Express recently offered stock brokerage transaction services as a freebie if you open an account with them of a certain asset size.)

17. Talk to customers about the competitive landscape. (For example, when we were studying Dow Jones Company's Telerate financial information business, we talked to a customer who subscribed to Telerate's service and learned that most customers subscribed to Telerate in order to obtain certain information about treasury bond prices that would soon become freely available. Once that happened, this customer planned to cancel its many subscriptions to Telerate's service throughout its offices. This information pointed out a significant risk to Telerate's earning power and growth prospects.)

18. Talk to competitors about the particular company that is being examined. How do they view its strengths/weaknesses and earnings growth prospects? What do they think of the company's management?

19. Talk to sales people about the company and the competitive landscape.

20. Talk to the company's trade association about the particular company and the competitive landscape and dynamics.

21. How do you see competition playing out over the next 5 - 10 years? How do you read the strategies of your competitors? How easy is it to enter the business? What prevents new competitors from entering? Are entry barriers sustainable?

22. How does the marketing/sales process work at the customer transaction level in the company's field of business? Fixed price bids? Long term contracts?, etc.

23. Describe your competitive advantages/disadvantages as compared to each of your competitors. How sustainable are the particular company's advantages? Why? What prevents the company's

earnings power and growth prospects from getting wrecked by competition? If it seems hard to wreck, then the company probably has sustainable economic advantage.

24. What worries management about the company and competitors' moves and potential moves?

25. Looking out five years, what is the company's best guess concerning the growth rate of revenues, and e.p.s.?

26. Looking out 5 to 10 years, how does the company plan to invest cash that is retained in the business? Expected return on equity on incremental investment?

27. What new investments, new ventures, new experiments, that the company is working on (or envisions) could have a significant positive impact on the value of the company in the future? What exciting stuff does the company have up its sleeve? (Several of our best long term holdings, such as Jefferies Group and Fingerhut, generated significant shareholder wealth from new investments/ventures that were only a "gleam in the eye" of management when we initially bought these stocks. Jefferies Group's investment in Investment Technology Group and Fingerhut's investment in Metris Corp. were both highly successful new ventures that we obtained for free when we acquired shares of Jefferies Group and Fingerhut.)

28. What is the company's philosophy/strategy with respect to using free cash flow for stock buybacks when it is not required to support same-store growth?

29. How is management paid/incentivized?

30. How are personnel who make risk decisions, such as insurance underwriters, security traders, bank loan officers, etc. paid? Do they have "one-way" incentives which encourage risk but do not punish loss such as bonuses based on insurance sales, loan volume or trading gains without the particular individual sharing in the losses from unprofitable insurance policies, loans that have gone sour or trading losses? Does management have a history of enhancing shareholder value?

31. Company's acquisition plans? When the company's stock is cheap, how does it view buying back stock versus acquiring companies at full value?

32. What are the company's plans concerning its capital structure over the next five years:

33. Who makes pricing decisions for the company's products? How are pricing decisions made?

34. What else is important? What should we ask about, but didn't?

35. What information does management monitor and consider to be important in managing its business? How does the company's information compare to competitors' information? Does the company have an edge that is sustainable?

36. Are there substitutes for the company's products that are gaining or likely to gain ground? (For example, Kellogg Company has faced substitute competition to its cereal products from bagels as a breakfast food. Producers of checks, such as Deluxe and John Harland, face increased substitution competition from Paypal, CheckFree and other electronic forms of payment as well as (in Finland right now) cell phones that can make wireless payments including even for the purchase of a Coke from a vending machine. )

37. In light of what we have learned about the particular company and the competitive game in which it is a player, do the historical financial statements of the company seem to be representative of the nature of the company, or has there been or is there likely to be such a change in the competitive game that the future financial statements are unlikely to look like the historical record? (We know that, on average, most companies with great 10-year e.p.s. growth and return on equity records tend to perform poorly or in a very average way over the next seven years. Only about one-fifth of the companies continue to be top performers over the next seven years. These companies had sustainable competitive advantages. They were able to maintain or enhance their positions in the competitive games in which they operate.)

38. Does the information cross-check? Warren Buffett has often mentioned how much he has learned and benefitted form Philip Fisher's book, ***Common Stocks and Uncommon Profits***. The Philip Fisher method of researching a company, which Mr. Fisher refers to as the "scuttlebutt" method, is to interview several sources, piecing together an information mosaic about a company and its field of business. It is easier to have greater confidence in information and insights when several sources confirm the same insight or the same murkiness and uncertainty (which, in itself, is also an insight) about a company and its competitive position and economics. The facts may be so simple and obvious and make so much sense that questioning other sources to seek additional confirmation of an insight may be unnecessary.

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* First five favorite questions from Jack Welch, CEO of General Electric

Source: ***Jack Welch Speaks*** by Janet Lowe

**Tweedy, Browne Company LLC**
**350 Park Avenue**
**New York, New York 10022**

*Telephone: 212-916-0600*
*Facsimile: 212-916-0649*
*Website: www.tweedy.com*