

The Risk of a Non-Diversified Portfolio

The pioneering work in modern portfolio theory done by Harry Markowitz and Bill Sharpe in the 50's and early 60's was that risk and return are related. This is a widely accepted concept now, but was revolutionary then. Investors are compensated for taking risks by earning higher returns. Over long periods of time – say 20 years – common stocks produce higher returns than bonds because they are more risky. Later, Gene Fama and Ken French built on this research to show that small company stocks and value stocks produce higher returns than large company growth stocks because they are an even more risky subset of stocks in general.

However, investors are not compensated for all risk. Bill Sharpe won a Nobel Prize in economics in part for determining that there are three elements of the risk of owning an individual stock. Owners of Disney stock could lose money as a result of something that impacts only Disney stock. They could lose money as a result of something that impacts only the entertainment industry. Or, they could lose money as a result of a decline in the stock market in general.

The first two risks are avoidable. By investing in other entertainment stocks, company specific risk is avoided and by investing across several industries, industry risk is avoided. However, it is not possible to invest in the stock market and avoid stock market risk. Bill Sharpe showed that we expect compensation for taking risk that cannot be avoided.

Of course, owning a single stock can have a positive outcome. But for every positive outcome, there will be a negative outcome. The expected return is the same for a single large company stock as for a portfolio of large company stocks. The investor could come out way ahead – or way behind. This is speculative risk as opposed to investment risk. Speculating on the future can produce tremendous returns but this requires an accurate prediction of future events.

So why is this such a bad deal? It is a bad deal in the context of trying to achieve financial goals. Much of Modern Portfolio Theory has come out of funding defined benefit pension plans. In funding such plans actuaries make calculations based on various assumptions and tell the plan sponsors how much they need to contribute to the plan to have enough to make the promised pension payments.

Predictability is extremely important for making funding calculations for defined benefit pension plans. Missing the expected return by as little as ½% can cause these plans to be under-funded by millions over time. The plan sponsor must then make up the shortfall out of corporate earnings. So plan sponsors and pension consultants endeavor to maximize returns while keeping the returns as predictable as possible.

Saving for retirement is very similar to funding a defined benefit plan. The only difference is that the plan sponsor and the beneficiary are the same. If the plan is under funded, there are no corporate profits to make up the shortfall. Therefore, in saving for retirement, making returns as predictable as possible is even more critical than for pension plans. A single large position can thwart the best financial plan.

Disasters like Enron, Worldcom and Tyco are recent examples of company specific risk. These companies suffered losses much greater than the market or their specific industries. The collapse of the tech market is an example of industry specific risk. Of course the market as a whole declined during this period as well, but broadly diversified investors suffered much less than those who owned concentrations of the wrong stocks and industries.

But what about the best companies? Surely one cannot go wrong with Coca Cola, Procter & Gamble and General Electric. The truth is that no companies are immune to periods of poor performance. It does not mean that they are bad companies. It is simply an unavoidable element of investing in common stocks. Virtually all of them have periods of bad performance. Following are some examples of blue chip stocks that have suffered in other periods:

Blue Chip Company	Outcome
Aluminum Co. of America	Maker of key space age material delivers zero growth to investors between 1959 and 1983
Black & Decker Corp.	Shares of "do-it-yourself" tool maker up 500-fold in 15 years. 1972 peak price not revisited until 1998.
Campbell Soup Co.	Investors lose appetite for two decades - 1961 price not regained until 1982.
Coca-Cola Co.	Shares slip below \$30 in early 1982 - down 60% from \$75 peak nine years earlier.
Digital Equipment Corp.	Shares of Massachusetts minicomputer pioneer skyrocket 1,000-fold from 1967 - 1987. Lose 85% of value in subsequent five years.
General Electric Co.	Zero price appreciation 1965 - 1980.
Gillette Co.	Market value sinks 65% over 19 years from 1961 - 1979. Stock buyer in 1961 reaches breakeven in 1984.
IBM	Growth stock icon plunges from \$175.875 in 1987 to \$40.625 in 1993 amid huge losses, dividend cut, management turmoil.
Polaroid Corp.	1998 stock price one-third that of 30 years ago.
Procter & Gamble	1973 high not exceeded until 1985.

While these examples exclude dividends and are therefore not completely representative of total return, they make the point that there is significant risk in any single stock. This risk may or may not materialize during the period you own the stock, but that is the nature of risk. You do not know whether it is going to affect you or not. The question is how does a non-diversified portfolio impact the probability that you will achieve your goals? The answer to that question cannot be quantified. What is certain, however, is that it throws a wild card into the planning. You have a 50/50 chance that you will have better or worse results.

Over a 20 year period there is an 83% probability that the S&P 500 will earn 6.5% per year or more. For the 19-year period ended 1979 Gillette lost 65%. For the 30-year period ended 1998 Polaroid lost 67%. It is clear that these risks should be avoided where possible. In retirement plans where there is no tax cost, the decision is easy – diversify. Taxable positions with large gains are another matter.

What should an investor do who has a large position in a single stock in which his basis is low? Is it worth paying capital gains tax to diversify? If my single stock has a 50/50 chance of doing better or worse than a diversified portfolio aren't my chances better than 50/50 after accounting for taxes? The answer to these questions may be yes. It is possible that a single stock with a low basis has a better than even chance of beating a diversified portfolio net of capital gains taxes. However, the question is not which alternative is likely to do the best; the question is which has the highest probability of achieving your goals! A single stock may have a better than even chance of beating a diversified portfolio if there is a significant tax cost in diversifying. But the single stock also has a higher probability of stepping on a land mine and creating a dramatic loss.

Capital gain taxes were reduced from 20% to 15% in 2003. The tax cost to sell the highly appreciated stock went down by 25% to the lowest rate in modern tax history. We think this makes the case for selling and diversifying even more attractive.

This is where financial planning becomes a crucial part of the investment process. If you can achieve your goals net of taxes with a diversified portfolio, why take the risk with a large position in a single stock?