

The Illusion Of Diversification: The Myth Of The 30 Stock Portfolio

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Jim Cramer, the star of CNBC's Mad Money use to do a segment called "Am I Diversified?" in which viewers would call in, give Cramer their top five [holdings](#) and Cramer would let them know if they were well [diversified](#). The idea of five stock diversification is absolutely amazing and mostly refuted by the "stock picking" community, which tends to believe the number of individual stocks needed to be diversified is actually closer to 30. While 30 is no doubt better than five, it just isn't good enough.

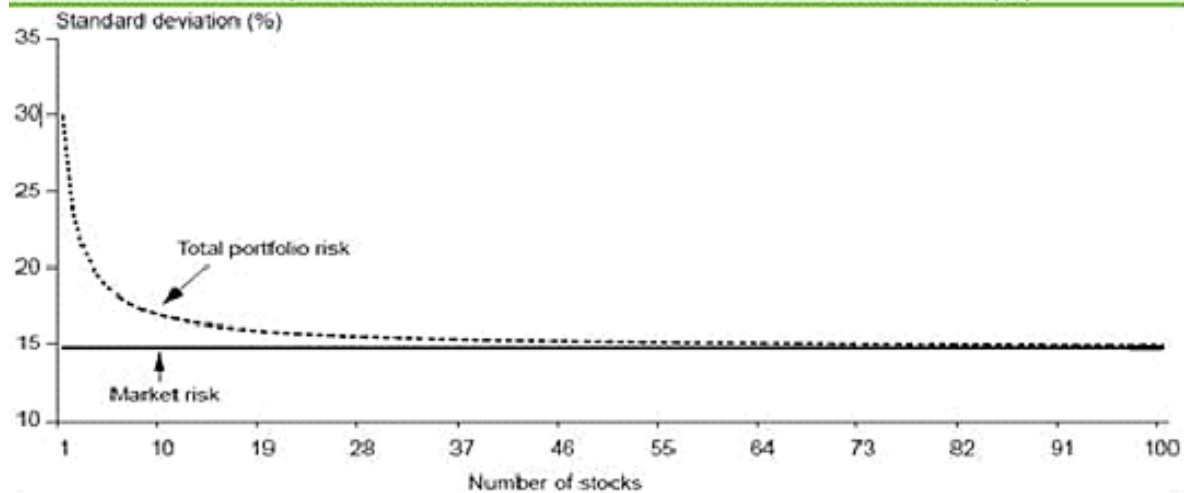
TUTORIAL: [Risk and Diversification](#)

Where does the magical number 30 come from?

In 1970, Lawrence Fisher and James H. Lorie released "Some Studies of Variability of Returns on Investments In [Common Stocks](#)" published in *The Journal Of Business* on the "reduction of return scattering" as a result of the number of stocks in a portfolio. They found that a randomly created portfolio of 32 stocks could reduce the [distribution](#) by 95%, compared to a portfolio of the entire [New York Stock Exchange](#). From this study came the mythical legend that "95% of the benefit of diversification is captured with a 30 stock portfolio." Of course, no self respecting stock jock would tell people they create a random portfolio so the [investment managers](#) adjusted this to "We pick the best 30 and achieve max diversification at the same time." In this statement they are essentially saying, "we can capture the return *of* the market and capture the diversification *to* the market by picking the 30 best stocks," and they often use the something like Figure 1 to prove their claims.

Unfortunately, neither point is really true. (For more on creating a diversified portfolio, check out [Introduction To Investment Diversification](#).)

Diversification: total portfolio risk as a function of number of stocks held (%)



Source: Dresdner Kleinwort Macro research

Figure 1: Total portfolio risk as a function of the number of stocks held (%)

The Reduction of Risk Is Not the Same as Increasing Diversification

The Fisher and Loire study was primarily focusing on the 'reduction of risk' by measuring [standard deviation](#). The study was not actually about any improvements in diversification. A more recent study by Sur & Price addressed the short comings of the Fisher and Loire study by using proper diversification measurements. Specifically, they looked to [r-squared](#) which measures diversification as the percent of [variance](#) which can be attributed to the market as well as [tracking error](#) which measures the variance of [portfolio returns](#) versus its [benchmark](#). The results of their study, Table 1, clearly shows that a portfolio of even 60 stocks captures only 0.86 or 86% of the diversification of the market in question.

Figure 3: [Total returns](#) of individual stock vs. Russell 3000 (1983-2006)

Number of Stocks

	1	15	30	60	Entire Market
Standard Deviation	45.00%	16.50%	15.40%	15.20%	14.50%
R ²	0.00	0.76	0.86	0.86	1.00
Tracking Error	45.0	8.1	6.2	5.3	0.0

It is important to remember that even this concept of being 90% diversified with only 60 stocks is only relative to the specific market in question, i.e. U.S. [large capitalization](#) companies. Therefore when you are building your portfolio, you must remember to diversify against the entire global market.

As we concentrate on decreasing risk in the portfolio, we must also remember to consider [opportunity cost](#); specifically, the risk of missing out on the best performing [stock markets](#).

Figure 2 illustrates the 2010 performance among different areas of investments broken down by style, sizes and domestic or foreign.

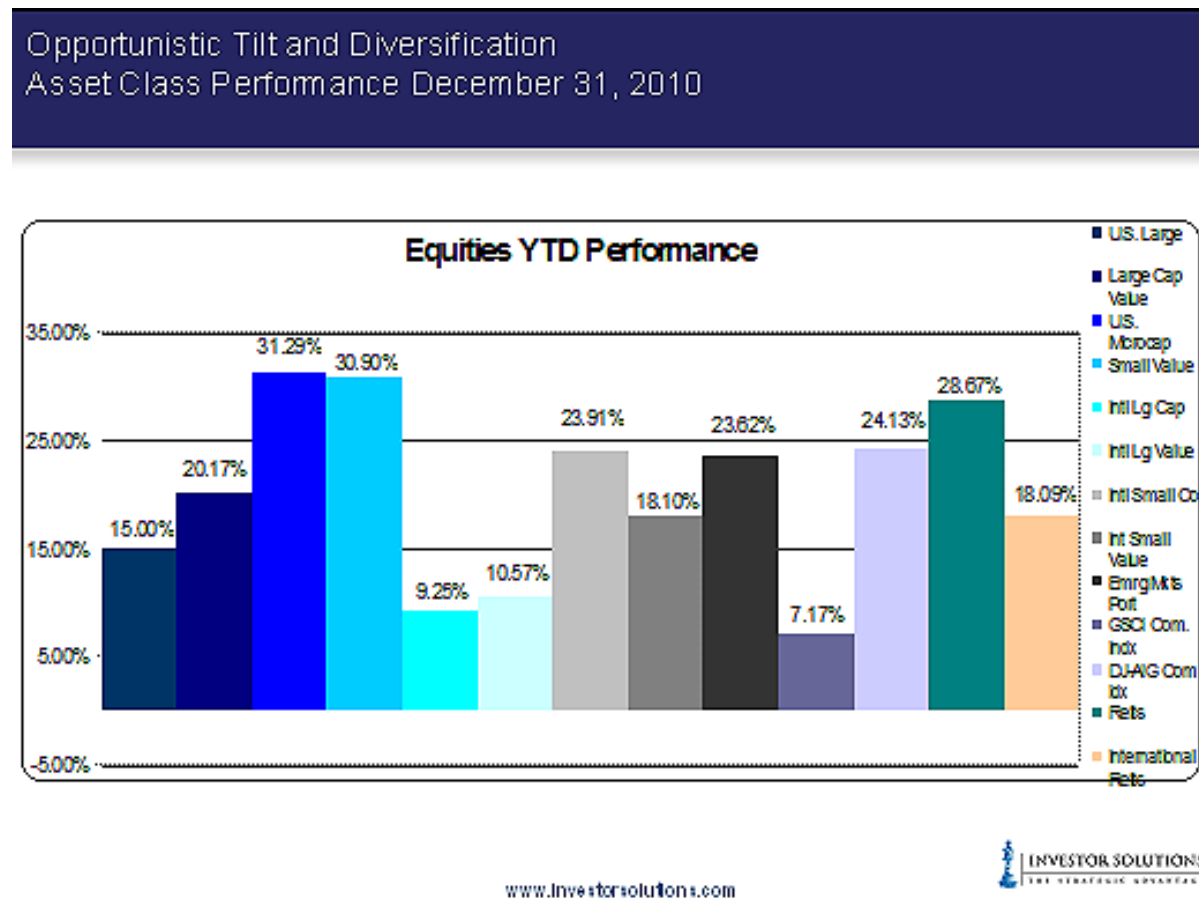


Figure 2: Opportunistic tilt and diversification

To be properly diversified in order to adequately capture the market's returns and reduce risk, you must capture the entire global market and its known dimensions of size and style as listed.

1. Domestic Growth Small Companies
2. Domestic Value Small Companies
3. Domestic Growth Large Companies
4. Domestic Value Large Companies
5. Foreign Growth Small Companies
6. Foreign Value Small Companies
7. Foreign Growth Large Companies
8. Foreign Value Large Companies
9. Emerging Market Companies

Additionally, you must capture the entire industry diversification within each of the above markets.

1. Telecom Services
2. Utilities
3. Energy
4. Consumer Staples
5. Health Care
6. Materials
7. Information Technology
8. Financials
9. Consumer Discretionary
10. Industrials

Finally, you must be sure to own the next great overachievers. A study entitled *The Capitalism Distribution*, by Eric Crittenden and Cole Wilcox, of the [Russell 3000](#) during 1983-2006 illustrates just how difficult that is. Below are some of the highlights of their study and Figure 3 presents a visual representation of just how few of the individual stocks are actually going to be the winners you need to be picking.

Summary Findings by Crittenden and Wilcox

- 39% of stocks were unprofitable
- 18.5% of stocks lost at least 75% of their value
- 64% of stocks underperformed the Russell 3000
- 25% of stocks were responsible for all of the market's gains

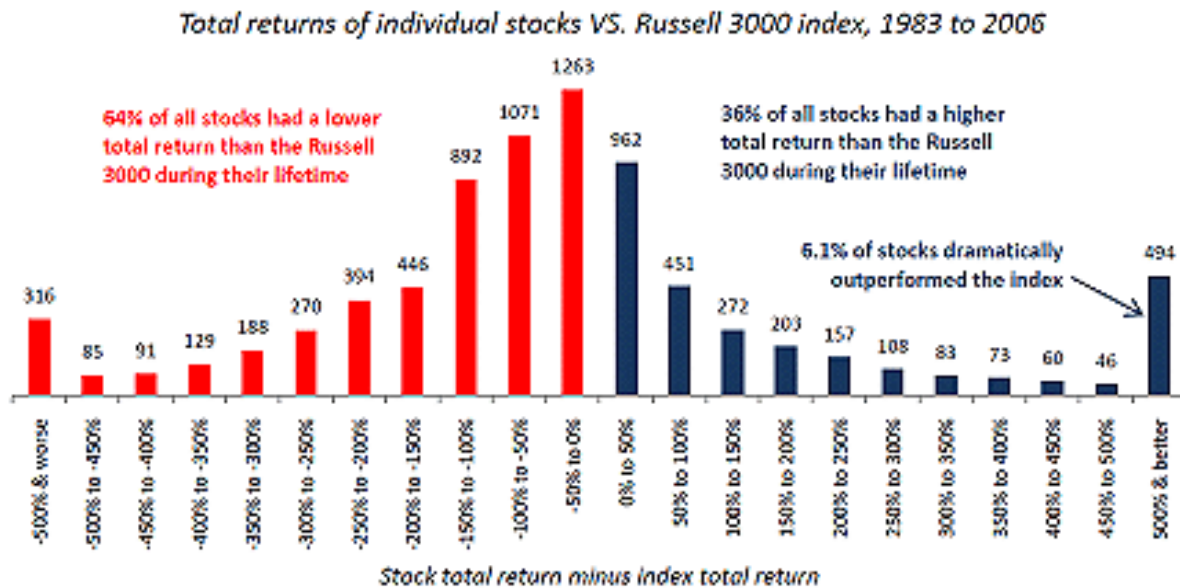


Figure 3: [Total returns](#) of individual stock vs. Russell 3000 (1983-2006)

You must ask yourself how realistic is it that you or your stock manager can identify the top performers before they perform? How unrealistic is it to pick a few stocks and for one of them to be the next **Dell** (Nasdaq:[DELL](#)) or **Microsoft** (Nasdaq:[MSFT](#)) at the early stages of their run?

How realistic is that you end up with one of the almost 40% of stocks which lost money or one of the 18.5% that lost 75% of their value? What are the chances today that you have the undiscovered overachievers in your account? The global stock universe is huge. Ask yourself, how many stocks do you really need to capture any one specific area such as the [energy sector](#) or the [financial sector](#)? What if you only picked one and it was the one that went bankrupt? I doubt five per area would be enough, but for arguments sake, we'll say five stocks are adequate per area to feel confident.

Minimum Needed

When you look at it like this, you need a minimum of five stock in over 200 industries, which equals over 1,000 stocks!

Realistically I doubt even this number would be enough to capture the global equity portfolio. Some important things to consider before you start building a 1000 stock portfolio:

1. You would still have your or your managers [biases](#) embedded into the portfolio.
2. Is your portfolio large enough to have a meaningful position size in each?
3. So many stocks to trade would increase trading cost.
4. Administrative record keeping and statements would be overwhelming.
5. Very difficult, time consuming and expensive to research and manage.
6. You still couldn't be 100% sure to capture every future super stock.
7. Performance dependent on your proprietary system or "stock picking guruness."

Why bother? (Learn how to spot over-diversification in your portfolio and find out why some [financial advisors](#) are motivated to do it, read [Top 4 Signs Of Over-Diversification](#).)

Why do some people prefer individual stocks to funds?

There are valid and rational concerns for not wanting to get into funds:

1. Cost
2. Fund Flows
3. Taxes

Fortunately, all of these concerns are easily overcome by only using low cost, passive [institutional funds](#) or [exchange traded funds](#) (ETFs). For example, **Vanguard MSCI Emerging Market ETF** (NYSE:[VWO](#)) can tax-efficiently capture emerging [market segment](#) well, while minimizing [fund flow](#) issues and for a relatively low cost annually, but the fees could change. DFA International Small Cap Value Fund is a [mutual fund](#) which attempts to capture the entire foreign value small company segment.

Though there are some valid concerns about funds, there is also a prevalence of invalid and irrational concerns:

1. Bad experience due to poor fund selection, application and timing

2. Comfort in seeing familiar names such as **General Electric** (NYSE:[GE](#)), **Procter & Gamble** (NYSE:[PG](#)), **Coke** (NYSE:[KO](#)), etc.

Unfortunately, little can be done to overcome these concerns besides education and patience. (Learn the differences between these [investment products](#) and how to take full advantage, read [*Mutual Fund Or ETF: Which Is Right For You?*](#))

The Bottom Line

A properly diversified portfolio should include a meaningful allocation to multiple asset styles and classes. Not just industry diversification. Otherwise you risk missing out on significant market opportunities. By using ETFs and institutional passive mutual funds, you can capture meaningful exposure to the entire global [market portfolio](#) with as few as 12 securities and a relatively low total portfolio cost. It's tax efficient, easy to understand, monitor, manage and it makes good common sense.