Your Investment Eggs Are In Too Many Baskets

"Don't put all your eggs in one basket." Though romantic relationships may be an exception, that is pretty sound advice on almost any life topic. It is especially true in the world of investing, as some former employees of Enron, who had more than 50% of their net worth invested in their employer's stock, found out the hard way.

But how many baskets are enough? Instead of owning just one stock in your portfolio, should you own two? Twenty? Two hundred? A thousand?

503 Is the New 500

Another sound bit of advice in the investment field is, "If you can't beat 'em, join 'em." This is the theory behind buying a broad market index mutual fund such as the Vanguard 500, since the majority of mutual funds which strive to do better than the S&P 500 index actually fail to do so. And if you were to buy shares of the Vanguard 500 Index Fund (VFINX), how many stocks would you own? You may guess, as we did, that the answer would be 500. We looked it up, though, and strangely enough the number is currently 503.

So that's 503 baskets into which an owner of the Vanguard 500 would be putting his or her eggs. For the sake of comparison, we consulted the mutual fund rating organization Morningstar to find out how many stocks a typical fund may hold.

So we sorted Morningstar's fund database to find the largest actively managed domestic funds, and we chose the largest fund from each of five different fund families at the top of the list. The fact that these are some of the largest funds out there mean that a broad swath of individual investors own shares in these. You may even own one of these funds yourself:

Family	Fund	# of Stocks	5-Year Annualized Return
American	AGTHX	294	-0.7%
Fidelity	FCNTX	363	1.1%
Dodge & Cox	DODGX	76	-2.0%
Vanguard	VWNFX	269	-0.5%
T. Rowe Price	PRGFX	113	1.1%
median		*269*	*-0.5%*
Vanguard	VFINX	503	0.3%

source: Morningstar

So, four of the five funds have at least 100 stocks in them, and two of the five beat the market benchmark (but not by much).

Even Communism Works *In Theory*

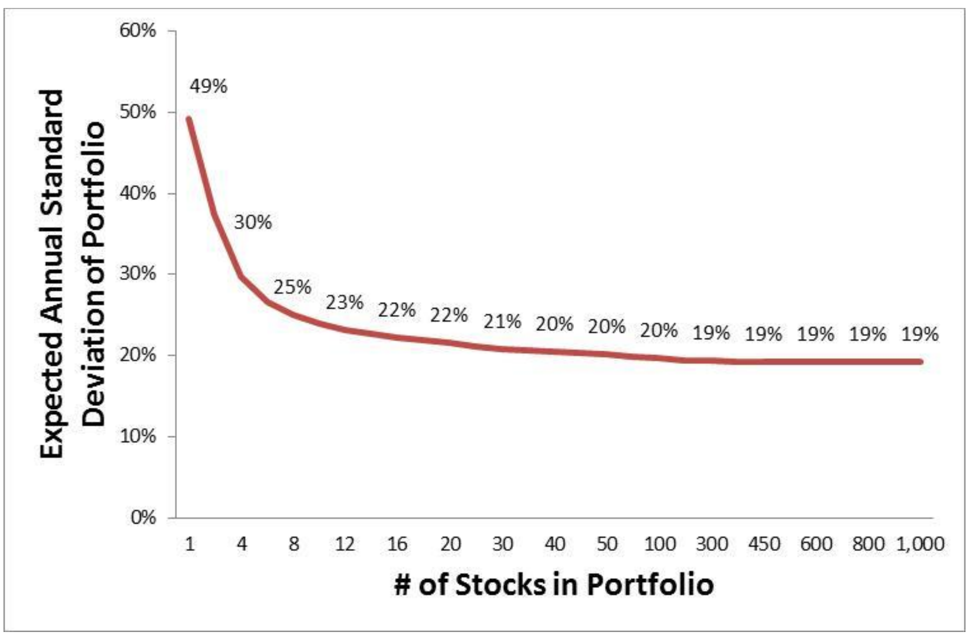
The theory behind these mutual funds, their very reason for existence, is that they try to deliver performance that is better than an investor could get simply by owning the whole market. If one of these funds were to buy the same 503 stocks as VFINX and in the same weightings, then by definition its performance would exactly match that of VFINX.

But each of these funds invests in *less* than 503 stocks, which means that the funds' managers are trying to cherry pick the best investment ideas and pass over the worst. Theoretically, this should cause the funds' performance to significantly outpace that of the overall market.

But that theory stands in contrast to the practical numbers in the table above. And the reason for that is that the funds, even though they are invested in fewer stocks than are in the overall market index, still own too many stocks.

Less Is More

Consider this chart, which is based on a paper from the September 1987 issue of the Journal of Financial and Quantitative Analysis:



What this chart says is that you probably don't want to put your investment eggs into more than about 30 different baskets, and you could get away with using only about 15.

That is, no matter how many stocks you buy, you will never be able to decrease your fund's volatility (represented here by standard deviation in returns) below 19% per year. But if you have a portfolio of 30 stocks, your expected standard deviation is already at 21%. Or if you have 15 stocks, 22%, neither of which is that much higher than the 19% limit.

And as the first table above illustrates, when your portfolio owns 113, or 269, or 363 different stocks, not only will your volatility match that of the overall market, but your returns will also probably be in the same ballpark.

The Best Use Less

Let's test the converse of this idea. That is, let's look at the best performing mutual funds over the last five years and see how many stocks they own. If it's a low number, then we may be onto something here.

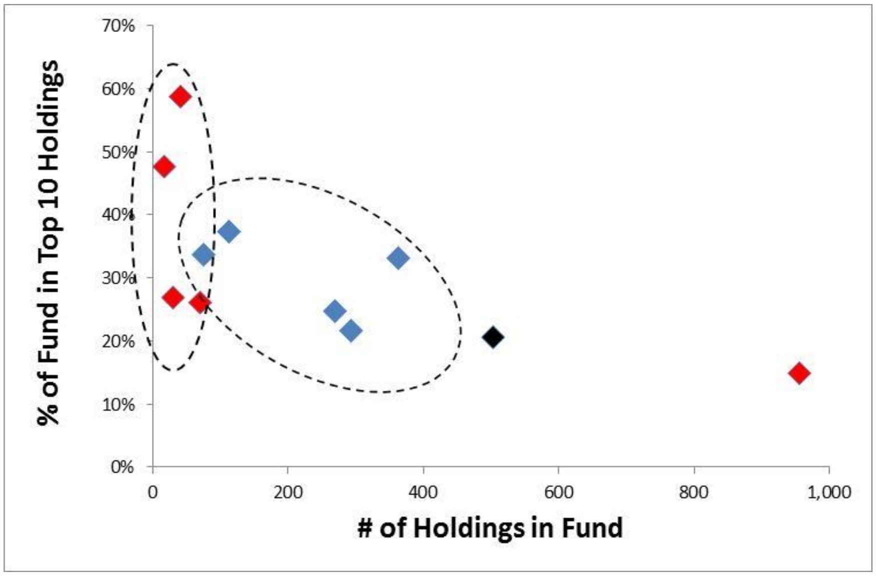
So we again sorted the Morningstar database for domestic mutual funds, but this time we looked not for the five largest but the five with the highest five-year performance figures:

Family	Fund	# of Stocks	5-Year Annualized Return
Oceanstone	OSFDX	17	36.2%
Intrepid	ICMAX	30	11.4%
Reynolds	RBCGX	956	11.3%
Fidelity	FSCRX	70	9.8%
Yacktman	YAFFX	41	9.7%
median		*41*	*11.8%*
Vanguard	VFINX	503	0.3%

source: Morningstar

The Reynolds fund sticks out like a sore thumb here, with over 956 stocks in its portfolio. But each of the other four funds owns fewer stocks than any of the five largest funds listed above. In fact, to make the point a bit more succinctly, let's look at the numbers for all ten funds in graphical form. The red points on the graph below represent the five best-performing funds over the five-year period which ended October 31, 2012, the blue points represent the five largest actively managed funds, and the black point represents the Vanguard 500 index fund.

One thing to note about this graph is the vertical axis, which shows how much of each fund is invested in its top ten stocks. One of the large funds, FCNTX, owns 363 stocks, but it still manages to be relatively concentrated in its biggest positions. That is, the top ten holdings of FCNTX make up 33% of the entire fund, which is a relatively high proportion. DODGX, another large fund, has 34% of its assets in its top ten, and PRGFX has 37%. We should not be surprised that these three funds had five-year performance numbers which were the furthest removed from the benchmark.



Is it just a coincidence that these high-performing funds also own relatively few stocks? We would vote for "no." Also, does owning only a few stocks imply that a portfolio will out-perform the benchmark? Again, we would vote for "no." We have not done the exercise, but we are certain that we could find many examples of funds that own only a few dozen stocks but still manage to under-perform the market as a whole.

So What to Do?

The level of diversification in a portfolio is only one attribute among many important ones. The take-home message here is that, if your portfolio owns at least a hundred stocks, your volatility is virtually guaranteed to be the same as the overall market's volatility. Also, we think there's a good chance that your return will be in the same neighborhood as the market's return, probably just a percent or two higher or lower than the S&P 500.

If you want to increase your odds of beating the market, though, we think one of your first orders of business will be to concentrate your holdings down to the range of, say, 15 to 50 stocks. This is a constraint you can impose on your portfolio whether you invest through mutual funds, hire an investment adviser like Inkwell, or do it yourself.

But keep in mind that setting that limit on your diversification is only the first step. The next part, indeed the hardest part, is trying to decide *which* 15 or 50 stocks you're going to own.

Sincerely,

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