The Case for Focus Investing

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Abstract

Most equity investment funds fail to beat their benchmark, a fact usually attributed to market efficiency. A substitute or at least complementary explanation to the disappointing returns is presented in the form of a hypotheses according to which most funds follow and deploy sub-optimal philosophies, strategies and processes. Two main suspects are identified: (1) over-diversification (leading to the dilution of: (i) investment ideas, and; (ii) manager resources), and; (2) excessive portfolio turnover ((i) indicating investment horizons that are too short to allow value-contrarian bets to unfold, and (ii) leading to excessive risk-aversion). An alternative philosophy and strategy, Focus Investing, is presented, that may alleviate some of these problems. Not actually anything radically novel, Focus Investing simply means an investment approach where the portfolio holdings are concentrated on relatively few, deeply researched positions with the intention to hold them for several years. No doubt unorthodox and perhaps even controversial compared to current industry standards, the Focus Investing –approach nevertheless rests on logically sound arguments, is intuitively appealing and is supported by a small but convincing academic and empirical body of evidence. Focus Investing is a sub-category of the time-tested Graham&Dodd value investment philosophy, the most famous adherent of which is the legendary Warren Buffett. Ignoring the increased volatility and high probability of short-term underperformance, Focus Investing should provide the industrious portfolio manager the optimal framework for long-term over-performance.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>3</td>
</tr>
<tr>
<td>Supporting facts</td>
<td>3</td>
</tr>
<tr>
<td>Diversification</td>
<td>3</td>
</tr>
<tr>
<td>Portfolio dilution</td>
<td>4</td>
</tr>
<tr>
<td>Dilution of manager attention and cognitive resources</td>
<td>4</td>
</tr>
<tr>
<td>Investment horizon</td>
<td>5</td>
</tr>
<tr>
<td>Unfolding time</td>
<td>5</td>
</tr>
<tr>
<td>Sub-optimal risk-aversion</td>
<td>5</td>
</tr>
<tr>
<td>Exacerbation of dilution of manager attention</td>
<td>5</td>
</tr>
<tr>
<td>Enter Focus Investing</td>
<td>6</td>
</tr>
<tr>
<td>The Pros and Cons of Focus Investing</td>
<td>6</td>
</tr>
<tr>
<td>Increased volatility</td>
<td>7</td>
</tr>
<tr>
<td>Short-term underperformance</td>
<td>7</td>
</tr>
<tr>
<td>Suggestions for solutions</td>
<td>7</td>
</tr>
<tr>
<td>Endnotes</td>
<td>9</td>
</tr>
</tbody>
</table>
Introduction
The overwhelming majority of equity investment funds fail to beat their respective benchmarks. This (at least for laymen) puzzling fact is often presented by finance academics as additional proof of perfectly efficient markets.

This paper attempts to present an alternative investment philosophy and strategy that perhaps could mitigate some of the problems inherent in contemporary fund management practices.

I start by presenting you with two interesting facts:

• Fact 1: The average US equity fund has 160 holdings, and the median US equity fund has just 28% of assets in their top-10 holdings.

• Fact 2: The average US mutual fund has an annual turnover of 110%, indicating an average holding period of approximately 11 months.

Hypotheses
Assuming that the EMH does not hold (at least not in its strong form), fund underperformance can, at least in part, be explained by: (a) over-diversification, and (b) over-trading (i.e. a sub-optimally short investment horizon and, as a result, a sub-optimally short holding periods).

Supporting facts
Both anecdotal evidence and several studies suggest that long-term outperforming funds are: (1) more concentrated, and; (2) have a lower turnover than the average fund. Furthermore, two recent academic papers present supporting evidence of the claims that: (a) concentrated portfolios typically outperform more concentrated portfolios, and; (b) a managers ”best ideas” (high-conviction holdings) typically outperform his or her other holdings, indicating both stock-picking ability and sub-optimal (i.e. excessive) levels of diversification. Let’s examine these two claims, beginning with diversification.

Diversification
As even most laymen know, diversification is one of the cornerstones of investing. The spirit of diversification is perfectly captured in the old folks advice against ”putting all one’s eggs in just one basket”. Diversification has been called the ”only free lunch” available in investing, for a good reason. However, surprisingly little effort seems to have been put into establishing what level of diversification, if any, should be considered optimal.

Based on observed behavior, it seems as if most fund managers assume that ”more is better” (they are i.e. maximizing instead of optimizing), the all too human line of reasoning apparently being that if diversification is a good thing, then more of the same must be better. However, as with most things in business and life, the law of diminishing returns apply; the bulk of diversification benefits are achieved surprisingly early, only to ebb out as diversification is further increased.

However, besides bringing clear benefits, diversification has some negative effects which are seldom discussed. These include at least: (a) increased operating costs; (b) loss of economies of
Portfolio dilution

Even if I, as an active manager, don’t believe that markets are perfectly efficient (after all, if I did, I wouldn’t be writing this paper!), I certainly do believe that markets are, for the most part, efficient (i.e., most securities are correctly priced most of the time) – to claim anything else would be simultaneously both monumentally arrogant and naive. That markets are, for the most part, efficient means that good investment ideas are, per definition, scarce and rare. And if good investment ideas indeed are rare, a manager should consider him- or herself lucky to spot a handful such ideas.

Having uncovered a few such gems, the manager should furthermore be free to take a position sufficiently large to make a difference, without having to dilute the portfolio with mediocre holdings.

Dilution of manager attention and cognitive resources

I will now make a statement that will shock most high-flying hedge-fund managers, macho investment bankers and other ”Masters of the Universe” – a statement that they will vehemently deny, and which they quickly will try to turn against me, presenting it as evidence, not of the general state of things, but of my lack of smarts, ambition and Cojones. So, risking ridicule, my embarrassing confession is the following: ”We are only human!” Let me explain: a (sad?) fact of the human condition is that we are creatures limited by a large number of constraints; physical and mental.

As hard as it is for most of us to accept, there are very real limits to our cognitive and intellectual capacity, not to speak of our physical capacity. Human cognitive resources (memory and intellectual capacity), physical resources (physical energy and stamina) and temporal resources (time available for effective mental work) are limited; in economic terms they are scarce resources.

This applies to even the smartest and most ambitious of us, and it’s a problem that has received surprisingly little attention – one explanation I suspect being the fact that the finance industry is so heavily populated by people with seriously inflated egos! So what does it have to do with investment management? The answer is that it has everything to do with investment management!

As we concluded above, one doesn’t have to believe that the markets are perfectly efficient in order to admit that they most probably are very efficient; consequently, beating the market is very hard.

The philosophical foundation of all active strategies is the assumption of edge; one takes a position if (and only if!) one has a good reason to believe that one has an edge – that one knows or understands something about the asset that ”the market” (i.e., the aggregate of all other active investors) does not know or understand. To gain an edge takes tremendous insight or tremendous effort, usually both (since insight usually follows effort). If we further accept the statement I made earlier, that in a world where markets are for the most part efficient, good investment ideas are, per definition, rare and thus hard to find.

One doesn’t have to be a psychologist, economist or process engineer to understand that in an endeavor (investing) that involves using a scarce resource (human cognitive and physical capacity) to find and analyze scarce assets (founded investment ideas), one cannot use a so-called ”shotgun-approach” (making a million half-hearted attempts, hoping a few will work out). A manager with too many leads to analyze and too many positions to monitor is spreading him or herself too thin. The average active manager with 160 holdings in his portfolio who seriously believes that he can
have an edge over the market is, IMHO, suffering from delusions of grandeur. For any real edge to be possible, one must focus.

**Investment horizon**

One of the most over-used marketing clichés being toted by the investment management industry is "long-term". Most fund managers claim to invest for the "long-term". This might have been the case in the olden times, and perhaps some of them still do, but available statistics make it clear that most of them definitely don’t. Assuming that the holding period is a reasonable proxy for the managers investment horizon (a quite reasonable assumption, in my opinion), we may conclude that the attention span and patience of the average fund manager is very short indeed!

By now, the reader might ask him or herself, "what’s so bad with a short investment horizon?" After all, isn’t the "long-term" just a series of short-terms, and isn’t it true, as some cynics like to point out, that a "long-term investment" is just a short-term speculation gone bad? Apart from the obvious increases in costs from excessive trading (broker fees, taxes etc.), a sub-optimally short investment horizon has other, more fundamental problems.

**Unfolding time**

All active management (or at least all value investing) is based on the assumption of asset mis-pricing; I buy today an asset that I believe the market has mispriced, in the hope that, sooner or later, the market will realize its mistake and the asset will rise to its correct (intrinsic) value (or, in the case of shorting, *fall* to its correct value). The problem is that more often than not, the correction comes (*if* it comes!) *later* rather than sooner. For true active (value) investing to make sense, it’s not enough to correctly identify the mispriced assets; one must also have patience and give the market enough time to realize it’s mistake – one has to give the investment idea time to mature and unfold. Anything else is speculation.

**Sub-optimal risk-aversion**

Another problem with a short investment horizon is that it reduces the investors ability to assume risk in a way that compromises returns. An investor with a very short investment horizon may decide to forgo an investment that promises good returns *in the long-run* because there is a high probability that the same investment will decline *in the short-run*. This phenomena is sometimes called Myopic (short-sighted) Loss Aversion. It is a major contributor to closet-indexing, and while it may spare the investor from short-term losses, it almost inevitably dooms the portfolio to poor or mediocre long-term returns.

**Exacerbation of dilution of manager attention**

Adding insult to the injury, excessive portfolio turnover exacerbates the problem of dilution of manager attention and cognitive resources discussed above. Portfolio turnover means, by definition, that the contents of the portfolio change. This means that the manager must find replacements to the stocks that are going out. The more diversified the portfolio, and the higher the turnover, the more substitutes the manager must scramble to find.
Enter Focus Investing

Assuming the above observations hold, what should one do? One solution has been suggested by the respected investment writer and fund-manager Robert Hagstrom. Hagstrom, who is a well known expert on the investing style of Warren Buffett, has coined the term “Focus Investing” to describe the investment style applied by Buffett, Munger and their ilk from the Graham&Dodd – family of investors.

So what is Focus Investing? Actually it’s nothing new; on the contrary, it could be described as "back-to-basics” – investing. In a nutshell, Focus Investing is a long-term, valuation based investment philosophy and strategy where one attempts to produce good investment returns by:

1. identifying high-quality companies that can be purchased at a significant discount (Graham’s "Margin of Safety") from one’s personal, on a very thorough fundamental analysis based best estimate of underlying (intrinsic) value;

2. assembling a concentrated portfolio (8 – 15 stocks) of such investments, and;

3. ignoring swings in the general market, stay put until: (a) the intrinsic value of the security is fully reflected in its market value; (b) the conditions regarding the security change so as to make the original investment thesis obsolete; (c) a markedly superior investment opportunity appears; or; (d) it becomes apparent that the original investment thesis was faulty.

The concept is neatly summarized in a quote by the great master Buffett himself:

"Choose a few stocks that are likely to produce above average returns over the long haul, concentrate the bulk of your investments in those stocks, and have the fortitude to hold steady during any short-term market gyrations."

To anyone remotely familiar with the truly great names in investing (Buffett, Munger, Fisher, Wanger, Miller etc.) it is self-evident that most of them followed an investment strategy that fits the above description.

The Pros and Cons of Focus Investing

By now, the Pros of a Focus Investing approach should be apparent; increased probability of superior long-term returns (caveat: naturally assuming manager talent!) Other, less dramatic but still meaningful Pros include low operating costs (as a result of low trading) and low infrastructure costs (due to simpler fund structure).

However, as the old cliché goes, there’s no free lunch! This applies to the world of investing too, and very much so. So what, if any, are the Cons of Focus Investing? At least two (somewhat related) problems stand out: (1) increased volatility, and; (2) high probability of short-term underperformance. Below these problems are discussed in more detail, along with suggestions as to what, if anything, to do about them.
Increased volatility
It is intuitively clear that, all other things being equal, a concentrated portfolio is more volatile than a more diversified portfolio. However, as we pointed out earlier, the bulk of the company-risk reducing benefits of diversification come quite early, only to ebb out as diversification is further increased. Thus a 10-stock portfolio need not be dramatically more volatile than a 100-stock portfolio (assuming both portfolios are otherwise equally well diversified, e.g. geographically and among industries).

One could, of course, use derivatives to hedge against volatility. However, like all insurance, they come at a cost. In this case the cost would be not just the dollar cost of the derivative instrument itself, but ”cost” in the form of hidden risks and increased complexity. In most cases, the proper way to ”insure” a focus portfolio is through: (a) adequate diversification, and; (b) sufficient due-diligence – not financial alchemy.

Short-term underperformance
There are several studies showing that funds that perform well over the long-term typically suffer stretches (sometimes stretches of several years) of underperformance. Although no reasons for this perhaps counter-intuitive fact has been presented, the most probable explanation is simply that the very strategies that gives the typical outperforming fund its long-term success comes at the cost of periods of short-term underperformance (please note: in this context, ”short-term” is defined as anything less than 1 - 2 years). In a typical Focus Investing portfolio (concentrated, long-term and value-contrarian), it is very likely that the problem of short-term underperformance is even more pronounced.

Suggestions for solutions
As far as I can see, there are no ”solutions” to the above problems (increased volatility and short-term underperformance) in the sense of some measure with which one could get rid of the phenomena. They seem like inherent characteristics of this particular investment approach. The best ”solution” I can think of is simply to accept the fact that ”one cannot eat the cake and have it!” – if one wants a portfolio with a chance to reach a high level of returns, one must accept a bumpy (and sometimes scary!) road as the price to pay!

In today’s investing environment, with most of us drowning in a torrent of real-time market data, asking clients to keep their head and keep a long-term perspective naturally amounts to a slight ”marketing problem”. I might be accused of naivety, but my only advice is twofold; communication and education.

By communication I mean presenting the prospective client with all available pros and cons of the strategy in a way that is intuitively understandable to the layman. This would include, e.g. carefully explaining the fact that a Focus portfolio is very likely to suffer occasional stretches of poor relative performance lasting from several months to several years.

By education I mean that all prospective investors should be offered a ”mini crash-course” in the basics of finance and investments. This should include at least such basic concepts as:
• the EMH (Efficient Market Hypotheses) and its implications for all investors.\textsuperscript{42, 43}

• the risk-reward \textsuperscript{-}tradeoff\textsuperscript{44}

• the magic of compound interest\textsuperscript{45}

• the role of randomness in investing\textsuperscript{46}

And what if some potential clients complain that they would be interested in investing, but that they just cannot stomach such a (low) level of diversification and the volatility that comes with it?

My advice for them would be to do some diversification of their own; instead of investing with one manager who spreads his bets on 160 holdings (with returns almost guaranteed to disappoint), why not invest with two or three Focus managers\textsuperscript{47} who actually have a fighting chance?\textsuperscript{48, 49}
Endnotes

2 Malkiel: "Returns from Investing in Equity Mutual Funds 1971 to 1991" (Journal of Finance 1995)
3 Carhart: "On Persistence in Mutual Fund Performance" (Journal of Finance 1997)

At closer examination, it is of course not surprising that the majority of active funds fail to beat the benchmark. After all, what is the benchmark but a representation of the market, and what is the market but the aggregate of all investors. Consequently, the average fund does, per definition, do exactly as the market. Subtract costs and the lag is explained. However, looking at the implicit and explicit promises made by marketing, it seems that the financial industry is the only place besides Lake Wobegon where "all the women are strong, all the men are good looking, and all the children are above average!" What this paper tries to do is not to find general explanations to this problem but to creatively examine why so few consistently outperform in a probabilistic endeavor.

In finance, the efficient-market hypothesis (EMH) asserts that financial markets are "informationally efficient", or that prices on traded assets, e.g., stocks, bonds, or property, already reflect all known information. The efficient-market hypothesis is that it is impossible to consistently outperform the market by using any information that the market already knows, except through luck. Information or news in the EMH is defined as anything that may affect prices that is unknowable in the present and thus appears randomly in the future. The question of market efficiency is one of the most important (if not the most important!) question any investor (both professional and non-professional) must address before deciding upon his or her investment philosophy and strategy. If the market is, as many academics claim, perfectly efficient, then the conclusion is crystal-clear: all active investment management is a futile exercise - a foolish and tragic waste of time and money. All apparent outperformance, both long term and short, are results, not of hard work or superior talent, but luck, randomness and the law of large numbers. If the EMH holds, the rational investor should invest only in passive index funds. But here we are struck by an exquisite paradox: in order for the market to be efficient in the first place, it must of course be populated by a large number of hard-working, smart and profit seeking active investors who, by definition, do not believe that the markets are efficient! If we all suddenly "converted" to EMH, sacked our active managers, and parked all of our assets in index funds, any efficiency of the market would suddenly vanish! (This phenomena is sometimes called the "Grossman and Stiglitz paradox", after the two economists who first made the observation)

5 Costs, and Expenses

6 Author comment: Since reliable data on European funds is much harder to obtain, I have mostly used US data. However, considering the international nature of the industry and the underlying practices, and based on both personal experience and anecdotal evidence, the trans-Atlantic differences in practices should be negligible, and thus also the data and conclusions should be globally applicable.

10 In 2003, Credit Suisse performed a screen on on large (+$1 Bn) US, single manager equity funds that had beaten the S&P500 over the past ten years in order to see what, if anything, was different about the long-term outperformers. Out of several thousand funds, 31 funds passed the test. When analyzing the results, four attributes stood out:
(1) Portfolio turnover – the outperforming group had an average turnover of 30% (vs. 110% for the average mutual fund and 7% for the S&P500);
(2) Portfolio concentration - the outperforming group had an average of 37% of assets in their top-10 holdings (vs. 28% for the average mutual fund and 24% for the S&P500);
(3) Investment style – the vast majority of the outperforming funds adhered to a contrarian-value investment philosophy, and;
(4) Geographical location – only a small fraction of the outperforming funds hailed from the major financial centers (NY, Boston); most were from smaller and/or less obvious places, such as Chicago, Salt Lake City, Memphis, Omaha and Baltimore.


In a paper by Lowenstein, the performance (1999-2003) and characteristics of ten highly respected value funds (Clipper, FPA Capital, First Eagle Global, Mutual Beacon, Oak Value, Oakmark Select, Longleaf Partners, Legg Mason Value Trust, Source Capital and Tweedy Browne American Value) were analyzed and compared to the average US mutual fund. Lowenstein reports the following observations:
(1) Concentrated portfolios (the funds in the study held 54 stocks on average; seven of the ten funds held less than 35 stocks – against 160 stocks in the average mutual fund);
(2) Low portfolio turnover (approximately 20 % p.a. against 121% p.a. in the average mutual fund);
(3) All fund managers were disciples of the Graham&Dodd value investing philosophy.

The next question is naturally “How did they do?” The answer is that they did phenomenally! All the funds in the study outperformed the index (S&P500) by a wide margin (by an average of 11% per year!). Louis Lowenstein, “Searching for Rational Investors In a Perfect Storm”, Columbia Law School, October 4, 2004, Columbia Law and Economics Working Paper No. 255.

Abstract: We document a positive relation between mutual fund performance and managers' willingness to take big bets in a relatively small number of stocks. Focused managers outperform their more broadly diversified counterparts by approximately 30 basis points per month, or roughly 4% annualized. The results hold for mimicking portfolios based on fund holdings as well as when returns are measured net of expenses. Concentrated managers outperform precisely because their big bets outperform the top holdings of more diversified funds. The evidence suggests that investors may enhance performance by diversifying across focused managers rather than by investing in highly diversified funds.


10 Abstract: We examine the performance of stocks that represent managers' "Best Ideas." We find that the stock that active managers display the most conviction towards ex-ante, outperforms the market, as well as the other stocks in those managers' portfolios, by approximately one to four percent per quarter depending on the benchmark employed. The results for managers' other high-conviction investments (e.g. top five stocks) are also strong. The other stocks managers hold do not exhibit significant outperformance. This leads us to two conclusions. First, the U.S. stock market does not appear to be efficiently priced, since even the typical active mutual fund manager is able to identify stocks that outperform by economically and statistically large amounts. Second, consistent with the view of Berk and Green (2004), the organization of the money management industry appears to make it optimal for managers to introduce stocks into their portfolio that are not outperformers. We argue that investors would benefit if managers held more concentrated portfolios. Source: Randolph B. Cohen, Christopher K. Polk, Bernhard Silli, "Best Ideas", March 18, 2009

12 Portfolio risk can be divided into company risk and market risk. Diversification lowers company risk but not market risk (provided that the chosen stocks are not otherwise strongly correlated, e.g. as a result of representing the same industry). Let’s look at five hypothetical portfolios and their respective levels of diversification and risk:

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>number of stocks</th>
<th>company risk</th>
<th>market risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>28%</td>
<td>72%</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>E</td>
<td>20</td>
<td>12%</td>
<td>88%</td>
</tr>
</tbody>
</table>

We don’t need sophisticated statistical tools to see a pattern: in the beginning, diversification dramatically decreases company risk (by increasing the number of stocks from one to five, company risk is almost cut in half), but as the number of stocks rise, the benefit gets smaller and smaller. Increasing diversification over and above about 10 to 20 stocks gives only marginal diversification benefits. Source: Richard Crowell, "Stock market strategy.", McGraw-Hill, 1977.

13 It’s intuitively clear that the more diversified a portfolio is, the more complex it becomes, and the more resources (e.g. IT infrastructure, paid third-party research) it’s management requires.

14 Trading costs (broker fees etc.) are usually levied as a percentage of the trade. Broker fees are usually subject to bulk discounts; the bigger the trade, the lower the fee percentage. All other things being equal, diversification makes the average transaction smaller, with resulting loss of bulk discounts.

15 “Strong-Form EMH” in academic parlance.

16 Commenting on the EMH and the academics endorsing it, Warren Buffett has said: "Observing correctly that the market was frequently efficient, they went on to conclude incorrectly that it was always efficient. The difference between these propositions is night and day!"

17 The dictionary defines “scarce” as: (a) insufficient to meet a demand; or (b) difficult to find! I have an intuitive feeling that the (active) investment community systematically underestimates the impact of the scarcity factor; i.e. most active investors don’t fully understand: (1) how scarce really good investment ideas actually are; and (2) how difficult they consequently are to find. Let’s highlight the phenomena of scarcity and its consequences by a hypothetical example. Let’s assume a stock-market that contains only 1,000 stocks. Let’s further assume two highly talented fund managers, A and B, that possess identical skills at stock-picking. The only difference between their two funds is the level of diversification. Manager A divides his assets evenly into 100 holdings, whereas the corresponding number for B is 10. Let’s also assume that the EMH does not hold – stocks can be both over- and undervalued. However, since the
market is for the most part efficient (i.e. most stocks are correctly priced most of the time) such mis-prices stocks are quite rare; at any given time, only 10% of stocks are underpriced and 10% are overpriced. Consequently, this investing universe contains 100 underpriced stocks, 100 overpriced stocks and 800 correctly priced stocks. The goal of an active long-only investor would thus be to find and value as many underpriced stocks as he or she can or needs (and to avoid the overpriced ones). To meet his requirements, B needs to find only 10 underpriced stocks, whereas A needs to find (all) 100. It’s intuitively self-evident that when in comes to finding any scarce resource, asset or item (underpriced stocks, four-leaf clovers, unicorns, honest lawyers etc.), the fewer one needs to find, the easier the task.

Let’s highlight and analyze the problem with the following hypothetical example. Let’s return to the above example with the stock-market that contains only 1,000 stocks. Let’s assume that the EMH does not hold - a talented stock-picker could rank the 1,000 stocks in order of future returns (based on their respective levels of under-valuation). Our friends, the highly talented fund managers, A and B, possess identical skills at stock-picking. The only difference between their two funds is the level of diversification. Manager A divides his assets evenly into 100 holdings, whereas the corresponding number for B is 10. Both managers being equally brilliant stock-pickers, they fill their portfolios with the best (i.e. most undervalued) stocks available from the universe of 1,000 stocks. Consequently, portfolio B contains the 10 "best" ideas (i.e. stocks ranked number 1 – 10) and portfolio A contains the 100 best ideas (i.e. stocks ranked number 1 – 100). All other things being equal (and ignoring e.g. volatility), portfolio B will outperform portfolio A, since portfolio A contains exclusively the 10 best stocks, whereas the return of portfolio A is "burdened" by stocks number 11 – 100 (all of which have inferior returns compared to stocks number 1 – 10). This example is no doubt highly stylized, but it should give the reader an intuitive insight of the problem of portfolio dilution.

According to a recent study, long working hours may in itself impair cognition, both in the long-run and the short-run. This study examined the association between long working hours and cognitive function in middle age. Data were collected in 1997–1999 (baseline) and 2002–2004 (follow-up) from a prospective study of 2,214 British civil servants who were in full-time employment at baseline and had data on cognitive tests and covariates. A battery of cognitive tests (short-term memory, Alice Heim 4-I, Mill Hill vocabulary, phonemic fluency, and semantic fluency) were measured at baseline and at follow-up. Compared with working 40 hours per week at most, working more than 55 hours per week was associated with lower scores in the vocabulary test at both baseline and follow-up. Long working hours also predicted decline in performance on the reasoning test (Alice Heim 4-I). Similar results were obtained by using working hours as a continuous variable; the associations between working hours and cognitive function were robust to adjustments for several potential confounding factors including age, sex, marital status, education, occupation, income, physical diseases, psychosocial factors, sleep disturbances, and health risk behaviors. This study shows that long working hours may have a negative effect on cognitive performance. Source: Marianna Virtanen et al., "Long Working Hours and Cognitive Function", American Journal of Epidemiology 2009

Surprisingly little psychological research has been made to establish just what are the limits to human cognition. I have found only one, somewhat obscure paper that addresses (albeit indirectly) the question. In his paper, the Princeton psychologist George Miller tries to establish the limits of human working memory capacity. Miller noticed that the memory span of test subjects was around seven elements, called ‘chunks,’ regardless of whether the elements were digits, letters, words, or other units. George A. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information", Princeton University, 1956.

James Montier of Societe Generale, one of the most original thinkers of the investment world today, is the only one I have come across who acknowledges the problem. In his excellent newsletter "Mind Matters" (October 2008) he writes: "It has long appeared to me that the first rule of finance often seems to be: don’t admit ignorance. Perhaps there is some secret broker school (a twisted Hogwarts) that I managed to bypass where you are taught never to admit ignorance or fallibility, and where any sense of humility is surgically removed...Once upon long ago I attempted to study some philosophy...However, I found eastern philosophy easier to un...I, Mill Hill vocabulary, phonemic fluency, and semantic fluency) were rated at baseline and at follow-up. Compared with working 40 hours per week at most, working more than 55 hours per week was associated with lower scores in the vocabulary test at both baseline and follow-up. Long working hours also predicted decline in performance on the reasoning test (Alice Heim 4-I). Similar results were obtained by using working hours as a continuous variable; the associations between working hours and cognitive function were robust to adjustments for several potential confounding factors including age, sex, marital status, education, occupation, income, physical diseases, psychosocial factors, sleep disturbances, and health risk behaviors. This study shows that long working hours may have a negative effect on cognitive performance. Source: Marianna Virtanen et al., "Long Working Hours and Cognitive Function", American Journal of Epidemiology 2009

Surprisingly little psychological research has been made to establish just what are the limits to human cognition. I have found only one, somewhat obscure paper that addresses (albeit indirectly) the question. In his paper, the Princeton psychologist George Miller tries to establish the limits of human working memory capacity. Miller noticed that the memory span of test subjects was around seven elements, called ‘chunks,’ regardless of whether the elements were digits, letters, words, or other units. George A. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information", Princeton University, 1956.

James Montier of Societe Generale, one of the most original thinkers of the investment world today, is the only one I have come across who acknowledges the problem. In his excellent newsletter "Mind Matters" (October 2008) he writes: “It has long appeared to me that the first rule of finance often seems to be: don’t admit ignorance. Perhaps there is some secret broker school (a twisted Hogwarts) that I managed to bypass where you are taught never to admit ignorance or fallibility, and where any sense of humility is surgically removed...Once upon long ago I attempted to study some philosophy...However, I found eastern philosophy easier to understand and less inclined to spend its time arguing over the meaning of words. Among the mass of wisdom that I came across there, two simple sayings managed to lodge in the Swiss cheese of my mind. The first was Buddha’s admonishment to his followers to “Doubt everything”. This has formed one platform of my approach to thinking about investment over the years...The second was Confucius’ observation that “To ask a question is but a moment’s shame, but to live in ignorance is lifelong shame”. In this spirit...The second was Confucius’ observation that “To ask a question is but a moment’s shame, but to live in ignorance is lifelong shame”. In this spirit...The second was Confucius’ observation that “To ask a question is but a moment’s shame, but to live in ignorance is lifelong shame”. In this spirit...The second was Confucius’ observation that “To ask a question is but a moment’s shame, but to live in ignorance is lifelong shame”. In this spirit...The second was Confucius’ observation that “To ask a question is but a moment’s shame, but to live in ignorance is lifelong shame”. In this spirit...

22 Here we are again reminded of the importance of proper semantics. Economists and finance academics, in their urge to build elegant mathematical models, usually prefer to "assume away" the messiness of reality; thus the abstraction "Homo Economicus", the perfectly rational man, who exists, alas, only on paper and in spreadsheets. One should remember the famous words of Chesterton: "The real trouble with this world of ours is not that it is an unreasonable world, nor even that it is a reasonable one. The commonest kind of trouble is that it is nearly reasonable, but not quite. Life is not an illogicality; yet it is a trap for logicians. It looks just a little more mathematical and regular than it is; its exactitude is obvious, but its inexactitude is hidden; its wildness lies in wait." Words carry enormous power over our thinking. It is important to know what words do and do not mean. I start by an obvious example: very, very large is not equal to infinite. We can now proceed to something more relevant: very efficient is not equal to perfectly efficient (As in: "the market is very efficient" vs. "the market is perfectly efficient"). If this holds, it should also hold that: difficult is not equal to impossible. (As in: "the market is difficult to beat" vs. "the market is impossible to beat").

23 In one of his excellent articles, Whitney Tilson, fund manager and chief-editor of "Value Investor Insight", comments: "I would argue that the vast majority of money in this country is managed by people who neither have the right approach nor the right personal characteristics. Consider that the average mutual fund has 86% annual turnover, 132 holdings, and no investment larger than 5% of the fund. Those statistics are disgraceful! Do you think someone flipping a portfolio nearly 100% every year is investing in companies or trading in stocks? And does 132 holdings indicate patience and discipline in buying stocks only when they are on sale and odds are highly favorable? Of course not. It smacks of closet indexing, attempting to predict the herds' next move (but more often mindlessly following it), and ridiculous overconfidence -- in short, rampant speculation rather than prudent and sensible investing." Whitney Tilson, "Traits of Successful Money Managers", 2001

24 Let's highlight and analyze the problem by returning to our hypothetical fund managers A and B, first introduced in footnote 13 above. As we recall, A manages a fund with 100 stocks and B manages a fund with 10 stocks. Assuming that the managers can use all their working time to monitor their current portfolios (admittedly not a very realistic assumption), the theoretical annual average limits (as measured in time, and assuming the manager never sleeps and works all weekends and holidays) per position are as follows:

<table>
<thead>
<tr>
<th>manager</th>
<th>number of stocks</th>
<th>days per year</th>
<th>days available per stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>365</td>
<td>3.6</td>
</tr>
<tr>
<td>B</td>
<td>10</td>
<td>365</td>
<td>36.5</td>
</tr>
</tbody>
</table>

As we see, manager A cannot use more than three and a half days per year to keep up-to-date with any one of his investments! What does it mean in practice? That depends on how the manager decides to allocate the time. He could, for example, decide to use the time to read the company annual report and three quarterly reports cover-to-cover, each requiring about one working day (assuming approximately 100 pages per report and a reading speed of approximately 15 pages per hour, quite an ambitious pace considering the heavy content) -- and nothing else! Hardly enough, no matter how smart a guy or gal, to give one an "edge" against a mostly efficient market, IMHO. Compare this with manager A, who has the luxury to allow himself time to really dig deep into each and every one of his investments, to read, not just company reports, but perhaps analyst reports, industry journals - heck, maybe he can even afford to do some research and valuation work himself! As stated above, this is a highly stylized example; in reality managers don't have the luxury to indulge all their working time to monitor their portfolios. Time must also be allocated to finding new, replacing investments, and (heaven forbid!) non-investing related tasks, such as administration, marketing and the rest of the "hassle" that seems to be an unseparable aspect of office life.

25 Robin Dunbar, an anthropologist at Oxford University, concluded that the cognitive power of the brain limits the size of the social network that an individual of any given species can develop. Extrapolating from the brain sizes and social networks of apes, Dr Dunbar suggested that the size of the human brain allows stable networks of about 148. Rounded to 150, this has become famous as "the Dunbar number". Many institutions, from neolithic villages to the maniples of the Roman army, seem to be organized around the Dunbar number. Because everybody knows everybody else, such groups can run with a minimum of bureaucracy. However, sociologists distinguish between a person's wider network, as described by the Dunbar number or something similar, and his social "core". Peter Marsden, of Harvard University, has found that people, even people that socialize a lot, tend to have only a handful of individuals whom they know very well, and who know them very well (Author comment: in earlier, more romantic times, such social network nodes used to be called "friends"). The Economist asked Dr. Cameron Marlow, the "in-house sociologist" at Facebook, to crunch some numbers. Dr Marlow found that the average number of "friends" in a Facebook network is 120, consistent with the Dunbar number, and that women tend to have somewhat more friends than men. But the range is large, and some people do have networks numbering more than 500. What struck Dr Marlow, however, was that the number of people on an individual's friend list with whom he (or she) actually frequently interacts is remarkably small and stable. The more "active" or intimate the interaction, the smaller and more stable the group. Thus an average man—one with 120
friends—generally responds to the postings of only seven of those friends by leaving comments on the posting individual’s photos, status messages or “wall”. An average woman is slightly more sociable, responding to ten. When it comes to two-way communication such as e-mails or chats, the average man interacts with only four people and the average woman with six. Among those Facebook users with 500 friends, these numbers are somewhat higher, but not dramatically so. Source: The Economist, Feb 26th 2009, "Primates on Facebook: Even online, the neocortex is the limit". It thus seems as if most of us can somehow loosely keep track of a network of about 120 acquaintances, but we are not capable of sustaining really close relationships with more than 7 – 10 people at any given time. For those keen on looking for patterns, the Dunbar number number (150) is quite close to the average number of holdings in mutual funds (i.e. 160). If we make a leap of faith and extrapolate these findings to the world of portfolio management, we could (half tongue-in-cheek, but only half?) suggest that if a portfolio manager wants to be sure that he really knows and understands all the stocks in his portfolio, he should skip scrambling to keep track of his 160 superficial “acquaintances” and focus on his real "friends” – companies he knows inside-out – limiting the contents of his portfolio to no more than 4 – 7 positions. If the manager is a she, the number could be extended to 6 – 10.

Average portfolio turnover has constantly been on the rise. In the 50’s it was approximately 20%, in the 70’s it was approximately 50%, and in 2003 it was a staggering 110% per year, indicating an average holding period of less than one year. The trend has shown no indication of reversing. In a study conducted in 2001, it was found that one fund in ten had a portfolio turnover exceeding 200%, four in ten had a turnover exceeding 100% and less than one in eight had a turnover below 25%. Source: Bogle Financial Markets Research

As Benjamin Graham, the father of value investing, has famously noted: "In the short run, the market is a voting machine but in the long run it is a weighing machine.”

An interesting question is:”why are not all investors long-term investors?” The answers are probably many-fold, but partial explanations could probably be found in both incentive structures (fund managers are evaluated on ever shortening time-spans, and a manager who otherwise could have produced an excellent 10-year track-record may well be fired after one or two disappointing quarters) and personal psychology (people differ hugely in their emotional and psychological make-up). Personal characteristics that assumedly go hand-in-hand with the ability to make long-term investment decisions probably include at least the ability to: (a) delay gratification; (b) take risk, and (c) make decisions and hold views that go against the public opinion.

One of the most plausible hypotheses explaining the puzzle of equity-risk premiums was given in a groundbreaking paper by Benartzi and Thaler (Shlomo Benartzi (UCLA) & Richard H. Thaler, University of Chicago - Booth School of Business; "Myopic Loss Aversion and the Equity Premium Puzzle", National Bureau of Economic Research (NBER) May 1993) Their argument rests on two claims: (1) Asymmetric loss aversion – i.e. in plain English; the pain and regret people feel when an asset drops in value is not symmetric (as assumed in classical economic theory), but felt approximately two times as strongly as the pleasure when it increases in value by the same amount. (Please note: this flies in the face of classical economic theory, which assumes people rationally and symmetrically weigh losses and gains). Here the probability of loss or gain is important. In financial markets, the longer the holding period, the higher the probability of positive return, and; (2) Myopia – the more frequently a person evaluates his portfolio, the more likely he is to see losses (and thus suffer the loss-aversion). Inversely, the less frequently a person evaluates his portfolio, the higher the probability to see gains. The below table illustrates the concepts with numerical examples. In the example is presented a hypothetical asset class with risk-return characteristics that closely resembles the stock-market. The annual geometric mean return is 10%, with a standard deviation of 20,5% (this is nearly identical with the actual return and standard deviation of the S&P500 from 1926 to 2006). The table also assumes: (a) that stock-prices follow a random-walk pattern, and; (b) that people have a loss-aversion factor of 2 (i.e. that Utility = Probability of price increase – (2 x Probability of price decline))

<table>
<thead>
<tr>
<th>Time horizon</th>
<th>Return (%)</th>
<th>Standard Deviation (%)</th>
<th>Positive Return Probability (%)</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hour</td>
<td>0.01</td>
<td>0.46</td>
<td>50,40</td>
<td>-0.488</td>
</tr>
<tr>
<td>1 day</td>
<td>0.04</td>
<td>1.27</td>
<td>51.20</td>
<td>-0.464</td>
</tr>
<tr>
<td>1 week</td>
<td>0.18</td>
<td>2.84</td>
<td>53.19</td>
<td>-0.404</td>
</tr>
<tr>
<td>1 month</td>
<td>0.80</td>
<td>5.92</td>
<td>56.36</td>
<td>-0.360</td>
</tr>
<tr>
<td>1 year</td>
<td>10,0</td>
<td>20.5</td>
<td>72.6</td>
<td>0.177</td>
</tr>
<tr>
<td>10 years</td>
<td>159,4</td>
<td>64.8</td>
<td>99.9</td>
<td>0.997</td>
</tr>
<tr>
<td>100 years</td>
<td>1,377,96</td>
<td>205.0</td>
<td>100.0</td>
<td>1,000</td>
</tr>
</tbody>
</table>

We see that in the short-run, the probability of a gain or loss is close to fifty-fifty (e.g. if the evaluation period is one month, the probability that the portfolio has suffered a loss is 43.64 % (= 100 % - 56.36 %). However, because we feel the losses much more intensely (two times more intensely, on average) than we feel the gains, a person who evaluates his portfolio every month will, on average, feel more pain than pleasure! (Hence the negative utility of 0,309 for a person evaluating his portfolio once a month). We can see from the utility table that in order for the utility to be positive, the probability of a positive return must be close to 70 %, requiring, on average, an evaluation period of nearly
one year. For an investor with a 10–year horizon, the probability of positive returns (and utility) is almost 100 %. If the hypotheses holds, the implications are critical for all investors: Asset values are not “objective” in the usual sense of the word, but they depend on one’s time-horizon! A long-term investor (i.e. one who evaluates and trades his portfolio infrequently) is able to assume more risk (and thus enjoy a higher expected returns) than a short-term investor.

“Closet-indexing” is an implicit portfolio strategy used by many portfolio managers whereby they, due to fear of lagging their benchmark index and the negative consequences thereof (e.g. career risk) follow a strategy and construct their portfolios so as to minimize tracking-error (the difference between the return of the portfolio and its benchmark). In practice this is usually achieved through assembling one’s portfolio so as to mimic the relevant index (e.g. including the same major companies and using the same weightings) The tragedy of closet-indexing is, of course, that by working to avoid losing to the index in the short-run, one sacrifices one’s chances to beat the index in the long-run. This perhaps counter-intuitive fact becomes clear when one remembers that in order for a portfolio to beat an index, the first requirement it has to fulfill is that it has to differ from the index. This fact is perfectly captured in a quote by the legendary investor Sir John Templeton: “It is impossible to produce superior performance unless you do something different from the majority.” Another problem with closet-indexing is ethical: the client has paid for active management, but he receives a de facto index-fund (However, with the fees of an active fund, and the performance of an index-fund less the fees of an active fund! A “Double-Whammy”, in other words.)

Let’s return to our hypothetical managers A and B, and add the factor of portfolio turnover to the equation. Let’s assume both portfolios have an annual turnover of 100%, indicating an average holding period of one year. Let’s further assume that they both employ a two-stage screening process when scanning for new investments ((i) an initial high-level screen, and; (ii) an in-depth analysis) . To keep things simple, we also put in place the following assumptions:

- The managers use one third of their working time to monitor their existing portfolios
- The managers use one third of their working time to perform the first stage of screening for new, replacing investments (high-level screen)
- The managers use one third of their working time to perform the second stage of screening for new investments (in-depth analysis)
- The percentage of stocks that pass the first stage of screening is 10 %
- The percentage of stocks that pass the second stage of screening is 50 %

The below table summarizes total time available per task.

<table>
<thead>
<tr>
<th></th>
<th>Time to monitor existing portfolio</th>
<th>Time to perform initial screening</th>
<th>Time to perform in-depth analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>manager A</td>
<td>121,7 (days per year)</td>
<td>121,7 (days per year)</td>
<td>121,7 (days per year)</td>
</tr>
<tr>
<td>manager B</td>
<td>121,7 (days per year)</td>
<td>121,7 (days per year)</td>
<td>121,7 (days per year)</td>
</tr>
</tbody>
</table>

So far, it looks quite equal. However, when we calculate the time available per stock, a different picture starts to emerge. Both A and B have a turnover of 100%, meaning that they must replace the whole of their portfolios every year. As we remember, the A portfolio contains 100 stocks, while the B portfolio contains 10 stocks. Consequently A must find 100 new stocks and B must find 10 new stocks every year. For B to find 10 eligible stocks (i.e. 10 stocks that have passed both the first and second screenings), he must first perform a high-level screen on 200 stocks, out of which 20 stocks qualify (200 x 10% = 20), after which he performs an in-depth analysis on the 20 stocks, after which 10 stocks eligible stocks remain (20 x 50% = 10). The same numbers for A are: first stage – 2,000 stocks, second stage – 200 stocks, eligible stocks - 100. Let’s summarize the findings in a table with time available per task per stock.

<table>
<thead>
<tr>
<th></th>
<th>Time to monitor existing portfolio</th>
<th>Time to perform initial screening</th>
<th>Time to perform in-depth analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>manager A</td>
<td>1,2 (days per stock per year)</td>
<td>0,06 (~1,4 h)</td>
<td>0,6 (~14 h)</td>
</tr>
<tr>
<td>manager B</td>
<td>12,2</td>
<td>0,6 (~14 h)</td>
<td>6,1</td>
</tr>
</tbody>
</table>

As we see, now the differences in available time are becoming dramatic. B has ten times as much available time to monitor each stock in his existing portfolio. To perform his initial screening, A can only allocate 0,06 days per stock, translating into about 1,5 hours per stock (please remember, this is assuming that A never goes on holiday, works all weekends and all night long! Perhaps doable by some Übermenschen Hedge-Fund Honcho, but not quite realistic for us mere mortals!) As to the in-depth analysis, the 0,6 days per stock (i.e. approximately 12 hours) doesn’t convince me as being quite enough to give anyone an edge in a market that is even remotely efficient.

Let’s once again return to our guinea-pigs, managers A and B. This time we see how things would look if manager B was allowed to have a portfolio turnover more fitting a true long-term value investor. Let’s say manager B walks his talk and that he has turnover of 20 % p.a., indicating an average holding period of 5 years per stock (admittedly glacial in todays world, mostly populated by managers with chronic ADHD, but nothing compared to many investment legends such as Buffett and Fisher). We thus continue from where we left in our last footnote, but with the said twist. Let’s compare how much time and attention per stock our dear managers now have to do with (The situation of A is naturally not changed, nor are any other of the assumptions in the previous example) Time available per stock: B has a turnover of 20 % and A has a turnover of 100%. (We already calculated A’s requirements above, so here we’ll concentrate on B)
B must replace 20% of his portfolio every year. As we remember, the B portfolio contains 10 stocks, consequently B must find 2 new stocks every year. For B to find 2 eligible stocks (i.e. 2 stocks that have passed both the first and second screenings), he must first perform a high-level screen on 40 stocks, out of which 4 stocks qualify (40 x 10% = 4), after which he performs an in-depth analysis on the remaining 4 stocks, after which 2 eligible stocks remain (4 x 50% = 2). Let’s summarize the findings in a table with time available per stock.

<table>
<thead>
<tr>
<th>Manager</th>
<th>Time to monitor existing portfolio (days per stock per year)</th>
<th>Time to perform initial screening (days per stock per year)</th>
<th>Time to perform in-depth analysis (days per stock per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.2</td>
<td>0.06 (~1.5 h)</td>
<td>0.6 (~14 h)</td>
</tr>
<tr>
<td>B</td>
<td>12.2</td>
<td>3.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Now things are getting interesting. To anyone with any experience of M&A work, private equity deals, or (heaven forbid!) real work in real companies, 30 days is beginning to look like just maybe enough time to perform a due-diligence deep enough to give one some semblance of an edge.


34 Derivative contracts are (at least when used in this way) somewhat like insurance policies, and insurance policies cost money. Assuming the issuer of the insurance knows what he is doing, the cost of insurance is usually set at a level so as to more or less eliminate the risk that the issuer lose money. (And if the insurer actually doesn’t know what he is doing – which in the light of recent developments at e.g. AIG and Lehman seems to be less rare than expected – one shouldn’t do business with him in the first place!) If there is any doubt about the quality of a security, instead of buying an insurance in the form of a derivative, one should probably skip the security altogether. The essence of investing is calculated risk taking – if one buys insurance against every eventuality the costs of the insurance would eat up all future investment returns.

35 Some hedging and volatility smoothing strategies deploy shorting (e.g. the so-called 130-30 –strategies). All shorting introduces potentially devastating risk to the portfolio. There are three fundamental problems with shorting: (1) unfavourable general odds; (2) skewed economics, and; (3) radically different mind-set requirements. Let’s examine the first claim, unfavourable general odds. For the past century or so, world stock-markets have, on average, returned approximately 8 – 10% per year. This means that every time I take a short position, the odds are 8 – 10% against me from the very outset. Let’s take a look at the second claim; the basic economics of a short position, but let’s do it through a seemingly naive detour. A normal (long) investment in a stock has a theoretical downside limit of minus 100% – i.e. if the company goes bust I loose all the money I invested in the stock. However, here’s an important thing to realize, something that investors in the old times couldn’t always take for granted; my losses are limited to 100% of my investment (Hence the legal term ”Ltd.” – ”Limited Liability Company” – see!) The upside of a long investment, on the other hand, has no theoretical limit – a company can keep growing and growing until it becomes (if not, in practice, infinitely big) at least very very big indeed! For example, in 2006 Wal-Mart had sales (in $US billions) of 315 and a market capitalization of 197 – compare that to the 2006 GDP’s of, e.g. Greece (308), Finland (210) and Portugal (195). The economics of a (unleveraged) short position is a mirror image of that of a long position; the maximum theoretical upside is 100% – if the value of the shorted stock goes to zero, I double my money. However, the theoretical downside is infinite! One single short position gone really bad (e.g. as a result of a so-called ”short squeeze”) can wipe out the entire portfolio. Shorting is financial Russian Roulette, and the reason I have decided not to short is the same reason I don’t play Russian Roulette, no matter how much money is on the table: even if the odds of getting the bullet are just one to six (less than 17%), the downside is too big to accept. But wait a minute, I hear you say, what about obviously overvalued stocks? Yes, it’s true that stocks can and do become overvalued, sometimes grossly so. (Yet more grist to the mill for EMH sceptics like me, BTW) The problem is that there’s really no reliable way to tell if or when the valuation will return to sensible levels. Many years before the Internet bubble finally burst in early 2000, a chorus of value managers yelled out what in hindsight was obvious; that most Internet and other Hi-Tech companies had reached ridiculous valuations. However, during the long stretch from 1995 to 2000, many shorters were killed when ridiculously valued companies reached even more ridiculous valuations! (As Keynes said: ”The markets can remain irrational longer than you can remain solvent”) It doesn’t help to be right if you are right too early. The below story highlights some of the dangers of shorting. In January 2009, the German industrialist and investor Adolf Merckle (no. 94 on the 2008 Forbes billionaires list, estimated net worth $US 9.2 billion), committed suicide after having lost hundreds of millions of euros. Most of his losses came from shorting the car-maker Volkswagen. Merckle took a substantial short position in Volkswagen based on his belief that its shares would fall. However, in October 2008, rival auto-maker Porsche announced that it had indirectly acquired a 74% stake in Volkswagen, triggering panic and a short-squeeze in the several hedge-funds that had shorted the stock. Hedge funds desperate to cover their short positions propelled the Volkswagen stock from €210 to over €1.000 in less than two days. On October 28, 2008, Volkswagen was for a brief moment the world’s largest company by market capitalization. Several of the hedge-funds involved in the speculation were wiped out. My third and final argument against shorting is based on psychology. The mind-set for successful
shorting (looking for overvalued companies and "accidents waiting to happen") is so radically different from the mind-set of long-only investing (looking for undervalued companies with favourable prospects) as to be almost incompatible. The art of long investing and the art of short investing are in themselves so challenging that very few people truly master any one them; to truly master both would be very rare indeed, just like very few athletes dream about winning both Wimbledon and the Masters Tournament. Please note that this discussion was not intended to imply that one can never short profitably or that all shorting strategies are doomed to disaster. On the contrary, there are many investors who have shorted successfully and without problems for decades, and many of them have made fortunes shorting. My point is that shorting is a tool requiring special skills and a special mindset; a tool that is potentially very dangerous in the wrong hands, and thus better left to specialists.

When introducing derivative instruments, the complexity of the portfolio is instantly increased many-fold. Not only does one load the portfolio with yet one more security to value; since derivatives are contracts derived from an underlying asset plus a right or obligation linked thereto, they are more complex than "regular" securities and thus harder to value. Furthermore, one also exposes the portfolio to counterparty-risk (i.e. the risk that the issuer of the derivative cannot fulfill his obligations under the contract. The debacles of AIG and Lehman Brothers was a shocking reminder to the investment community that counterparty-risk is unfortunately not just a theoretical concept.


"Death, Taxes, and Short-Term Underperformance", Brandes Institute Brandes Investment Partners
February 1, 2007, Brandes Institute Research Paper No. 2007-01

In a fascinating study, seven highly acclaimed value investors (most of whom followed a philosophy fitting the Focus Investing approach) were analyzed to find out how they had typically done in the short-term. All the sample managers had stellar long-term investment results that ranged from beating the DJIA by an average of 7.7 % p.a. to beating the S&P500 by an average of 16.4 % p.a. Their track-records ranged from 13 to 28 years. The below table summarizes the results.

<table>
<thead>
<tr>
<th>No. of years</th>
<th>Total annual return (%)</th>
<th>Avg. outperformance vs. benchmark (%)</th>
<th>No. of underperforming years</th>
<th>Underperforming years as % of all total</th>
<th>Worst 3 year performance vs. benchmark (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffett</td>
<td>13</td>
<td>25,8 %</td>
<td>15,8</td>
<td>1</td>
<td>1,7%</td>
</tr>
<tr>
<td>Pacific P.</td>
<td>19</td>
<td>23,6</td>
<td>12,0</td>
<td>8</td>
<td>42,1%</td>
</tr>
<tr>
<td>S. Perlmeter</td>
<td>18</td>
<td>19,0</td>
<td>9,0</td>
<td>3</td>
<td>30,0%</td>
</tr>
<tr>
<td>Sequoia</td>
<td>13</td>
<td>18,2</td>
<td>7,7</td>
<td>5</td>
<td>35,7%</td>
</tr>
<tr>
<td>W. Schloss</td>
<td>28</td>
<td>16,1</td>
<td>7,7</td>
<td>5</td>
<td>35,7%</td>
</tr>
<tr>
<td>Tweedy B.</td>
<td>15</td>
<td>16,0</td>
<td>7,7</td>
<td>5</td>
<td>35,7%</td>
</tr>
<tr>
<td>C. Manger</td>
<td>14</td>
<td>13,7</td>
<td>7,7</td>
<td>5</td>
<td>35,7%</td>
</tr>
</tbody>
</table>

The following observations were made:

- None of the seven managers outperformed his benchmark every year
- Six of the seven managers underperformed their benchmark from between 28,3 % to 42,1 % of the years covered
- The average underperformance of the six managers was 33,3 % of the years covered
- Stretches of consecutive underperformance ranged from one to six years

The writer concluded: "Unfortunately, there is no way to distinguish between a poor 3-year stretch for a manager who will do well over 15 years, from a poor 3-year stretch for a manager who will continue to do poorly. Nor is there any reason to believe that a manager who does well from the outset cannot continue to do well, and consistently." Source: V. Eugene Shahan, "Are Short-Term Performance and Value Investing Mutually Exclusive?" Columbia University, Hermes Magazine, Spring 1986 issue

"It is the duty of the long-term investor to endure great losses with equanimity." John Maynard Keynes

The obsession with low volatility can lead investors astray. Low volatility was a large part of the fraudster Bernard Madoff’s appeal. One of the victims of the Madoff scandal was actually an American hedge fund called “GMB Low Volatility”, which found it had 17% of its assets invested in Madoff’s hedge fund through a third party. Other risks include murky sources of smoothness - where is that low volatility coming from? It might be that the manager is buying illiquid assets. Because such assets are traded rarely, they change price rarely as well. The returns may look smooth but this is an illusion—property and private equity can fall into this category. A second possibility is that the manager is buying a strategy with highly skewed returns; lots of small gains but the occasional big loss. For example, the manager could be selling insurance (i.e. puts) against a big stock-market fall. Most of the time such falls do not happen, and the manager keeps the premium. But when the market falls, the insurer may have to pay out all his previous gains. Such strategies have been described as “picking up nickels in front of steamrollers”. Markets do not rise at a steady pace and business conditions do not allow for a smooth rise in profits. A focus on meeting short-term targets, whether for profits or for investment returns, is likely to be detrimental in the long run.
I would like to elaborate on this point. In spite of my personal conviction that the market is not perfectly efficient (and thus beatable), all prospective investors should in the name of honesty be clearly told that there are many very smart people, backed by very solid data, who think otherwise, and that if these people are right, then all active investment management is a waste of time and money. At it’s core, the EMH debate is a philosophical one, and at the end of the day it’s a question that the client must answer him- or herself. A manager of moral integrity will help the client in his or her decision-making by laying down all available evidence, both pro and con, and then let the client decide for him- or herself. If the client is more convinced by the pro arguments (i.e. arguments supporting EMH) the implications are clear; the manager should steer the client to a reliable provider of index funds and other passive investments. If, on the other hand, the client still thinks the market can be beaten, I see nothing morally questionable in pointing out that investing with a manager with 100 + holdings and a 100 % + turnover is like betting on a fighter who steps into the ring blindfolded and with one arm tied behind his back; a Focus Investing strategy has (assuming that markets indeed are not perfectly efficient) a higher probability to achieve superior long-term returns (assuming manager talent) than a conventional (highly diversified, high-turnover) strategy.

In practice this would, of course, require turning down client money – something almost unheard of in today’s investment industry obsessed, not with client returns, but AUM. Although I have often been accused of naivety, I think the investment world is ready for, nay, craves some integrity for a change! For an interesting discussion on firm-client conflict of interest, see Charles D. Ellis, “Will Business Success Spoil the Investment Management Profession?”, The Journal of Portfolio Management, Spring 2001.

i.e. that the only way to pursue high returns is through accepting high risk, and anybody who pushes a product that is said to offer one without the other is a snake-oil salesman. This problem becomes apparent in e.g. so-called “capital guaranteed” products (i.e. securities in which the principal or part of the principal is guaranteed not to decrease below a certain level). This of course sounds nice, but many pushers of such instruments seem to “forget” to explain to the client that such guarantees should be seen as insurance policies, and that insurance always has to be paid for.

i.e. how even small differences in return make a big difference over the long-term. According to a well known (but probably false) urban legend, Albert Einstein called compound interest “the most powerful force in the universe”.

e.g. how the inherent randomness of returns makes performance evaluations based on short-term returns almost meaningless.

Abstract: We document a positive relation between mutual fund performance and managers’ willingness to take big bets in a relatively small number of stocks. Focused managers outperform their more broadly diversified counterparts by approximately 30 basis points per month, or roughly 4% annualized. The results hold for mimicking portfolios based on fund holdings as well as when returns are measured net of expenses. Concentrated managers outperform precisely because their big bets outperform the top holdings of more diversified funds. The evidence suggests that investors may enhance performance by diversifying across focused managers rather than by investing in highly diversified funds.


Let’s return to our hypothetical managers A and B and this time we introduce a healthy dose of realism into our calculations. We keep the old assumptions and constraints unchanged, but this time we see how much time each manager has available after we have added a few real-life constraints:

- the managers don’t work on weekends
- the managers take three weeks (15 working days) of holiday each year
- the managers are able to put in eight hours of effective work per day
- a total of two hours per working day (corresponding to one working day per week) have to be allocated to activities not directly related to managing the portfolio (i.e. analyzing new leads and monitoring the existing holdings). Such non-investing activities include e.g. reading newspapers, administrative tasks, marketing tasks and meetings with clients.

First we calculate the time available to core investing activities (i.e. analyzing new leads and monitoring the existing holdings).

- Total days per year – 365
- Less weekends – 2 x 52 = 104
- Less holidays – 15
- Less working days consumed by non-investing activities – 49
- Total working days available for core investing activities = 197 days per year
- Total effective working hours available for core investing activities – 197 x 8 = 1,576 hours per year.

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The below table summarizes the time that the managers can allocate *per task* per year.

<table>
<thead>
<tr>
<th></th>
<th>Time to monitor existing portfolio (hours per year)</th>
<th>Time to perform initial screening (hours per stock per year)</th>
<th>Time to perform in-depth analysis (hours per stock per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>manager A</td>
<td>525</td>
<td>2,6</td>
<td>2,6</td>
</tr>
<tr>
<td>manager B</td>
<td>52 (~ 1.5 weeks)</td>
<td>0,26 (~ 15 min.)</td>
<td>13</td>
</tr>
</tbody>
</table>

Let’s comment on these figures. With his 100 stock portfolio and 100 % turnover, manager A can allocate on average a little more than 5 hours *per year* to keep up with what’s happening in each of his portfolio companies. Five hours is just enough time to e.g. hurriedly skip through the company annual report once a year – *and nothing else!* Not quite enough to convince me that he’s up-to-date! What about the resources that manager A can allocate to find replacing investments (remember, with his 100 % turnover he must find 100 eligible new investments every year). I might accept that an initial, high-level screening could be performed in 15 minutes (e.g. by making the process automatic or semi-automatic), but whatever activities one manages to cram into one afternoon, one simply cannot call it an “in-depth analysis” while keeping a straight face!

An interesting question is how the *quantity* of manager *resources* (time and attention) allocated to each investment idea effect the *quality of analysis* (i.e. level of ”correctness”). Does the utility function exhibit diminishing returns? (i.e. is any extra time beyond a very superficial analysis more or less a waste of time?) Or does it exhibit increasing returns? (i.e. the payoff of deep analysis is big and growing?) My intuitive feel is that the returns follow a stationary normal distribution – i.e. a shallow analysis (defined as an analysis that is in line with those made by the vast majority of other investors) has a low payoff. Since (almost) everybody has dug this deep, the findings are already reflected in the price. One has to dig beyond the point that most competitors do in order to (perhaps) find something of value (i.e. an edge). This is where the potential big insights are made - by going the ”extra mile”. (However, after a certain point, the law of diminishing marginal returns probably starts to apply; the value of additional information and insight level off; hence the bell-shaped curve.) Let’s once more return to our hypothetical fund manager friends A and B, that possess identical skills at stock-picking (i.e. finding and correctly valuing undervalued stocks). Let’s assume that the market return (i.e. benchmark or index return) is 10 % per annum – this is what ”correctly priced” (i.e. neither under- nor overvalued stocks) return. Correspondingly, let’s assume that *undervalued* stocks return 20 % per annum and *overpriced* stocks return 0 % per annum. As you recall, A manages the portfolio with 100 holdings and B manages the portfolio with 10 holdings. As we calculated above, A can allocate only 2.6 hours *per stock* to analyze his favorite ideas, whereas B has the luxury to commit a full 4 weeks to analyze his favorite ideas. The goal of both managers is to *find* and *correctly value* undervalued stocks. Let’s assume that by allocating 2.6 hours *per stock* to analysis, the probability of *correctly identifying* an undervalued stock is 50 %, whereas the probability increases to 60 % if one can allocate a full 4 weeks to the process. Let’s furthermore assume that under these conditions, the *risk* (i.e. probability) of *mistakenly* investing in an *overpriced* stock is 20 % respective 10 %. (Please note that these assumptions are probably very generous to manager A; in a real-world setting A would most probably be at a much more significant disadvantage!)

The below table summarizes the respective portfolio holding compositions and returns.

<table>
<thead>
<tr>
<th></th>
<th>Portfolio A</th>
<th>Portfolio B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent undervalued stocks</td>
<td>50 %</td>
<td>60 %</td>
</tr>
<tr>
<td>Percent overpriced stocks</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Percent ”correctly” priced stocks</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Total portfolio return</td>
<td>13 %</td>
<td>15 %</td>
</tr>
</tbody>
</table>

In this case both managers beat the market, but manager B also beat manager A with a margin of 2%.