SYM FINANCIAL ADVISORS

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UNCOMMON INSIGHTS

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PROFITABILITY, POWER LAWS, AND PUNY STOCKS

Of all the strange events unfolding in the investment markets, one of the strangest is taking place among the American small business category's most expensive stocks referred to as "zombie corporations."

"Zombie" is a term for businesses that are not sustained (i.e. "alive") as a result of their own corporate success, but rather by something external propping them up. This term is primarily used when a money-losing company stays alive from a series of bailouts or by making easy interest payments without ever repaying the principal of a loan.

In July of 2018, Bloomberg published an article describing a rally among the one-third of American small capitalization stocks that are unprofitable despite being years deep into the economic expansion. Since that article came out, the zombies' winning streak has continued: the Russell 2000 Growth Index of expensive small U.S. stocks outpaced its lower-priced small company counterpart by another 5.7% during the twelve-month period ended June 30, 2019.

Why is this one-off anomaly worth mentioning? After all, stock market winners rotate. True as that is, the stocks with great recent returns represent some pretty speculative parts of the market that have bad odds for the future. In fact, the most expensive small company landscape is often viewed as dangerous turf for investors so it's unusual to see their prices sustaining such a rally.

Consider a statement from Nobel Laureate Eugene Fama's 2015 study where his model found that "lethal portfolios contain small stocks of firms that invest a lot despite low profitability." Lethal. Ouch. AQR Founder Cliff Asness (Professor Fama's former Ph.D. student) found that emphasizing profitability measures within small cap research portfolios on average doubled the amount that small cap stocks outperformed large cap stocks. Unprofitable small caps typically generate very poor returns. Both studies were published within the last 5 years in the Journal of Financial Economics, a top-tier academic publication.

Why would someone pay any price for a business that, with all due respect, sells goods and services for an amount lower than their own costs?

Perhaps the most straightforward answer is that the investor expects conditions to improve: a combination of sales increasing and/or costs decreasing on the way to an eventually-valuable enterprise. Consider the largest holding in the Russell 2000 Growth index, Array BioPharma. The company's most recent quarterly filing showed $64.7 million in revenues generated, compared to $102.1 million in operating costs for the same period. The total market value of Array's stock? $10.456 billion. With a B. That stock price assumes things will get much better. In Array's case, shareholders are rooting for good news in the FDA approval process so that some medical treatments can be brought to market. Hypothetical bad news? Well, that would be rough.

Array's stock price was around $16 a year ago when the Bloomberg article was published, and today it's closer to $40. Does that make you feel anything?

Beyond cold calculations of Array's FDA-approval success odds, patient market size, and the nation's future health care funding dynamics, other forces come into play for stocks of this ilk: emotions and human behavior. People are drawn to lottery-type payoffs, and are often willing to overpay for them. People fear missing out, and in light of such optimism question if others know something they don't. Then they too flock to the darling.

Recency bias pushes investors to move away from what's recently hurt and toward investments that have recently done well. And of course, there's the good old greater fool theory – investors believe the stock is overvalued, but expect a greater fool to come along later and pay a higher price. Importantly, this list is a who's-who of behavioral investing pitfalls that lead people to overpay and sabotage their long-term outcomes.

Another fascinating way to assess the unprofitable small company landscape is to consider buying several of them, hoping that one of them hits it big enough to cover losses from the other companies that languish. In this effort, we borrow a concept from the venture capital industry: the power law.

Venture capital firms specialize in providing funds very early in a business's life cycle: think of ABC's Shark Tank television show. Even elite venture capital firms such as Founders Fund and Andreessen Horowitz fully expect to lose some or all of their investment on many of their backed companies. To work around this, they emphasize the importance of understanding the power law, a more skewed version of the Pareto Principle. (The Pareto Principle expects 80% of the outcomes to come from 20% of the causes and shows up in many parts of life.) To quote Marc Andreessen:

"The key characteristic of venture capital is that returns are a power-law distribution. So, the basic math component is that there are about 4,000 startups a year that are founded in the technology industry which would like to raise venture capital and we can invest in about 20." "We see about 3,000 inbound referred opportunities per year; we narrow that down to a couple hundred that are taken particularly seriously… There are about 200 of these startups a year that are fundable by top VCs. … about 15 of those will generate 95% of all the economic returns … even the top VCs write off half their deals."

And from Founders Fund's Peter Thiel:

"Bad VCs tend to think the dashed line is flat, i.e. that all companies are created equal, and some just fail, spin wheels, or grow. In reality you get a power law distribution (see chart to right).

An example will help clarify. If you look at Founders Fund's 2005 fund, the best investment ended up being worth about as much as all the rest combined. And the investment in the second best company was about as valuable as number three through the rest. This same dynamic generally held true throughout the fund. This is the power law distribution in practice. To a first approximation, a VC portfolio will only make money if your best company investment ends up being worth more than your whole fund. In practice, it's quite hard to be profitable as a VC if you don't get to those numbers."

Using Thiel's framework, we analyzed the 20 largest unprofitable companies in a Russell 2000 Growth index fund (i.e. Array BioPharma and the next 19). The sum of those companies' aggregate stock values amounts to $86.8 billion. If this collection were to follow a power law as Thiel describes, one of the companies would need to grow into an $86.8 billion entity to fund the middling or disappointing results of the others. For context, Goldman Sachs is a $76 billion company, Stryker is worth $78 billion, Lowes comes in at $81 billion, UPS is an $88 billion company and 3M is a $99 billion company. It is very difficult for any new company to attain such growth. Maybe there's a diamond in our bunch of small "unprofitables" and it's reasonably likely that these firms are less risky than the early-life companies that venture capitalists evaluate. However, this consideration provides a healthy dose of reality to those expecting one or two stellar stocks to carry the weight for several other overpriced dreams – a buyer of 20 lottery tickets. A winner would need to grow into a national powerhouse brand to fund the losers, and a few others would need to do okay as well to actually increase an investor's capital.

Not surprisingly, a recent TechCrunch article summarized:

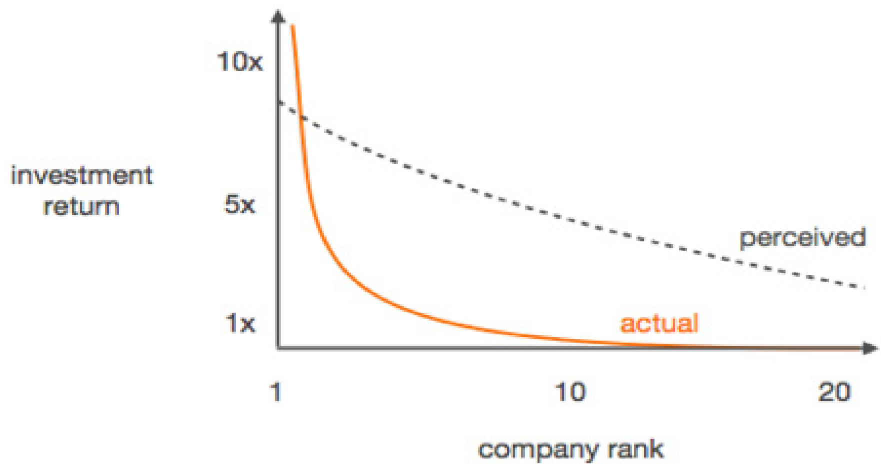
"Ninety-five percent of [venture capitalists] aren't actually

returning enough money to justify the risk, fees and illiquidity their investors (LPs) are taking on by investing in their funds." It's hard to find companies that will increase ten or twentyfold.

At SYM, we don't want our outcomes to resemble the grim venture capital payoff profile. The power law is an incredibly tough hurdle, even for elite players. Add to that the behavioral factors pushing small unprofitable companies' share prices ever higher and the typical outcomes investors realize from this corner of the market, and it becomes cause for worry. And, as the Bloomberg article summarized, there are quite a collection of these money-losing small caps.

Fortunately, there exist several tools at our disposal in the quest for reliable outcomes. We currently prefer to concentrate our small cap exposure in profitable companies. To quote our U.S. small cap manager PIMCO's language, their team "selects and weights small U.S. companies based on non-price measures of company size including sales, cash flow, dividends and book value. The strategy then refines these weights by incorporating active insights into quality, momentum, style and size with the goal of further enhancing returns. By removing price from the portfolio construction process, this value fund aims to buy low and sell high, outperforming cap-weighted indexes over time."

One can never know how long rallies in any corner of the market will last, but to us this seems like an unusually good time to stick with the odds.



Percentage of Small Cap Companies* Losing Money on a 12-Mo. Trailing Basis

2001 recession

2007-2009 recession

14%

15%

17%

31%

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*Companies no. 1001-3000 among largest 3000 publicly traded U.S. companies.

SYM News

For the second year running, SYM was named to **Investment News' Best Places to Work** list

Congratulations **Tami Hartman** for her promotion to Lead Trader

Congratulations **Jessica Way** for her promotion to Assistant Client Service Team Manager

We welcome CIO **Andy Popenfoose** to the SYM Board of Directors

SYM is growing - the South Bend office has moved to a larger location at 4215 Edison Lakes Pkwy, Suite 320, Mishawaka IN

Welcome to new employees **Jennesa Schweisberg**, Client Service Representative (Midland) and **Rob Trudell**, Financial Planner (Midland)

Congratulations to **Jonathan Slocum** and **Kris Black** for joining the group of SYM owners

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574-267-2300	260-387-6822	989-631-0244	317-848-2180	574-287-0035

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