



May 8, 2017

2017 Q1 Partnership Letter

Dear Partner,

For the quarter our performance was 13.6% vs. indices of 3.8% HFRI Hedge Fund Equity Index, 2.5% Russell 2000 and 6.1% S&P 500. Longs contributed 14.5% while shorts detracted 0.9% net of borrow fees and ended the quarter 29% net long exposure.

	Meson Net	HFRI Equity	Russell 2000	S&P 500
Q1 2017	13.6%	3.8%	2.5%	6.1%
2016	0.3%	5.4%	21.3%	12.0%
2015	4.0%	-0.8%	-4.4%	1.4%
2014	4.7%	1.8%	4.9%	13.7%
Since Jan 1, 2014	24.1%	10.4%	24.6%	36.9%

It is no secret that it has been extremely difficult for most investors to find appealing value investments in the current environment. The 'Buffett-metric' US market cap to GDP stands at 131%, eclipsed only in history for 6 months at the 2000 bubble peak where it reached 145% briefly. In order to stay fully invested, many investors have to reach outside of their value discipline and some, like ValueAct Capital have been returning capital to investors. In contrast, we have been busier than ever and have more opportunities than capital and bandwidth to tackle, particularly in the field of electrification where we are working on a major new investment. We refuse to stretch outside our discipline and instead have deepened our capabilities to adapt to the current more challenging environment.

Since the industrial revolution, technology has been a wedge between those that can adaptively use tools to amplify their capabilities and those that are displaced by it. A map of the 2016 US election outcome approximates the boundary of the amplify vs displace effect. Today, automation and AI are accelerating this trend to unprecedented impact. In 1990 the 'Big 3' in Detroit (GM, Ford, Chrysler) had a market capitalization (inflation adjusted) of \$65 billion with 1.2 million employees. Today – the 'Big 3' in Silicon Valley (Apple, Google, Facebook) have a market cap of over \$1.5 Trillion with 190,000 people: a **14,500%** increase in value per employee. If you thought you could avoid this by excluding tech from your investment universe, good luck: in 2016 for the [first time](#), there were more \$1B+ acquisitions of tech startups by NON-tech companies. After a century of dominance, Buffett favorite Gillette lost 16% of its US market share in just 4 years to startup Dollar Shave Club thanks to YouTube and inexpensive overseas manufacturing.

This letter expands on the machine learning toolset that I mentioned previously. For the investors who have been with us with some time, you will know that we have always worked hard to embrace innovation while staying deeply rooted in a foundation of long term value investing. Our research

toolset started in 2009 with screening the universe one metric at a time and using Excel. By 2014, we had built a database driven system to take in hundreds of screens and integrate them together. In 2017 our new system takes all those perspectives and captures history going back decades so we can rigorously and scientifically test all of our assumptions with hard data. Our goal is two pronged: A) To generate multiples of our capital in long positions in companies that we can influence and improve their strategy and operations via entrepreneurship and targeted activism and B) To hedge external / macro factors *and* generate absolute return by shorting low quality companies. The goal is to make consistent profits while being positioned strategically to benefit disproportionately when there is a market dislocation.

As Buffett says in his recent Berkshire annual letter:

Charlie and I have no magic plan to add earnings except to dream big and to be prepared mentally and financially to act fast when opportunities present themselves. Every decade or so, dark clouds will fill the economic skies, and they will briefly rain gold. When downpours of that sort occur, it's imperative that we rush outdoors carrying washtubs, not teaspoons. And that we will do.

Today is not a storm to wait out but the best opportunity set *with* the right skillset

Times like 2009 are not just to be weathered through, they are to be taken advantage of aggressively. Anyone can pay for insurance, but what if you could create insurance that *pays you* a premium and then offers purchasing power exactly when the opportunity set is most interesting? We believe in the importance of preparing for the once-a-decade 'downpour' so strongly that we have invested considerable effort and expense in our 'ark building'. The upshot is that in preparing for the worst, we end up with a powerful toolkit that can provide a significant competitive advantage across all periods. The machine learning capabilities we have developed are not 'black boxes' but rather systems to enhance our capabilities as long term fundamental investors. With these tools we can apply our principles more consistently for our more diversified passive positions while continuing to use our entrepreneurial efforts to grow select businesses.

The number of investors who outperform with the 'traditional' value-focused stock-picking methodology has dwindled as the world has changed in deeply structural ways. The fundamental change driver is technological and to a lesser degree, demographic – the monetary policy changes are mostly symptomatic, rather than causal as is commonly misunderstood.

It was impressed upon me by a mentor, Richard B. Fullerton, who is one of the most successful investors of recent times, to always be on the 'right side' of larger trends. In my view the clearest and most predictable trend in capitalism are the exponential price/performance curves in technology: Moore's Law for integrated circuits has now spilled over into the price/performance of solar panels, batteries, sensors, drones, robotics, etc. Consumers of these types of products are delighted by the massive

increase in capability at a given price point. Producers, on the other hand must keep pace with an exponentially deflating revenue per unit of capability!

A 'traditional' stock picking approach is firmly on the wrong side of this trend which is why we have sought to do more and physically transform companies we invest in as entrepreneurial activists. We concentrate our long investments on businesses positioned strategically to benefit from declining *input costs* and capability advancements. With respect to stock picking - humans are simply bandwidth constrained, emotionally biased, and can rarely appreciate the compounding effects of change.

To be perfectly clear: we 100% subscribe to the idea that we seek to buy companies for less than their intrinsic value and short companies at prices significantly above their intrinsic value. My argument is that 1) the market has become more competitive as more parties analyze and make investment decisions this way and 2) the business environment itself changes faster and in a more exponential way making 'intrinsic value' much harder to assess. To understand the 'dynamic intrinsic value' of a Company requires real business depth of understanding how things evolve in a market and also within a Company. Some types of businesses can scale and quickly saturate their market while others may have positive feedback loops where they get even stronger as they grow larger. A copper miner expanding its production will cause prices to decrease and mean revert its revenue growth, Amazon builds more datacenters and *expands* its lead as it furthers its per-unit cost advantage over rivals.

How Quant Funds Work in 1 Paragraph

The first investors to take advantage of computers to process data and make investments were 'quant funds' that continue today to be successful at scale. The tools at their disposal were statistics and linear models – limited by the computational capacity and the availability of structured data to apply statistics to. Today – the successful quants have become enormous, managing \$30+ billion and the smaller players moved towards high frequency trading. At their core, traditional 'quant' strategies are based on statistical correlations: i.e. linear models. At a small scale - stand on the surface of the earth, the horizon looks flat – step back to big scale in space and you see the curvature. Same idea with statistical correlations with time scale – in the next day or week the linear correlation can be a fairly good representation of reality but over the next year you're in the flat earth society. The consequence of this is that the strategies tend to be high-turnover: a 1 week holding period means trading your portfolio 52x per year. Strategies with lots of trading tend to require scale to have low enough trading costs (including the infrastructure to execute) to be practical. But of course scale (>\$1B+ AUM) means that you can't take meaningful positions in small companies to move the needle. This size barrier to entry has meant there have been few new entrants to the quant fund landscape for some time and why, despite having an engineering background, we did not focus on this direction at first. Long-term success is driven by competitive advantage and we had little chance of creating against large incumbents playing their game.

Instead, our approach has been to 'depth first search' as investors by being entrepreneurs and activists and invest in smaller companies where we could be the largest and most sophisticated – and energetic!

– stakeholder. This gave us a competitive advantage and a number of demonstrated successes. Along the way we have thought hard about how to generalize what we have learned about what drives the change in intrinsic value over time and codify it so that we could continue to screen and search for similar situations later in a systematic way. Lots of investors know how to look for clues to a stock being mispriced relative to its apparent intrinsic value NOW but very few have been in the trenches seeing how intrinsic value can increase or decrease from management decisions in the boardroom.

Machine Learning Changes the Game

Starting several years ago the landscape around the traditional quant funds shifted. New technology has allowed for 1) the ability to work with unstructured data (i.e. natural language) that can be gathered less expensively and 2) nonlinear predictive models. These tools were extremely expensive until the last year or two and impractical to use for the investment process. Now it's possible to build a machine learning investing system with a small group of talented engineers using open source software and low cost cloud computing. Add to the formula an activist investor, who also happens to be an engineer, to help direct what data factors are important to predict how a company will perform in the future and that is exactly what we have now built. I introduce: *Meson Gravity*, our machine learning system to predict the *long term* performance of companies using data.

Our approach, although utilizing computational tools, is fundamentally the same business-focused approach we have been deploying for years employing a long term perspective. The term “quantamental” (quantitative + fundamental) has been recently popularized to describe this class of strategy. We aren't competing with other quants on trading-like timescales – we continue to focus on small companies where the markets are less efficient and we can compete against other predominantly human, emotional, biased investors. Now we have a machine. Most of our competitors don't, because it is very hard to build. What usually happens when machines compete against humans at the same game? Year when machines defeated the human world champion: Checkers (1990), chess (1997), Jeopardy! (2011), go (2016), poker (2017).

Going back to principles in my very first letter to investors from 2009:

There are two potential sources of return when investing: 1) Mispricing and 2) Intrinsic value change. Phrased another way, these two sources are: 1) The Market and 2) The Business. Ben Graham famously says, "In the short run, the market is a voting machine, but in the long run it is a weighing machine." The market source of return is from a change in "votes" while the business source is a change in "weight."

Mr. Market's “votes” reflect the current state of the world and clarity of a company's prospects ahead. The data accounting for this has continued to become more available – from credit card transaction data to Walmart parking lot satellite imagery. I can't imagine making a strong argument for our ability to compete from a position of strength in this dimension. We have become experts in the “weighing machine” and understanding the effects of “diet” on future weight of a business, to extend the analogy

to include time. This has been learned from the inside out after experience on half a dozen corporate boards and numerous other entrepreneurial experiences. I believe understanding what drives a business to change over time in a fundamental way is likely to be out of reach from the pure quants for some time.

Meson Gravity Approach: A Dynamic View of Intrinsic Value

Our investment strategy has always been to buy companies at a big discount to their intrinsic value and either a) be patient or b) act as a catalyst to close the gap or increase the intrinsic value over time. Sounds simple – but how do you determine intrinsic value? Even if you could determine intrinsic value today precisely, what if the company changes? The static view of intrinsic value is so incomplete that it can be a dangerous concept. The world is dynamic and we can only see a little bit up the road – even companies themselves can't predict their own revenues a year out with the benefit of total inside information. We can estimate a range for intrinsic values but that too is limited when framed in linear thinking tied to today.

A 30-year lease on a commercial building has a pretty clear intrinsic value but the range for operating businesses is as wide as ever. The core value of businesses is increasingly the [intangible](#) (i.e. informational) component and decreasingly the stack of bricks or factory floor with easy to observe GAAP accounting metrics. The first derivative of value is the quality of the people and the thousands of decisions that get made each day to cumulatively determine future value.

We aim to compete with other human investors while utilizing our machine learning tools to achieve superior consistency and depth of research for our own fundamentally driven investment process. As long as there are emotional and biased people in the market and Jim Cramer, et al. have the attention of investors wielding meaningful capital and 95% of sell-side broker recommendations are "BUY" etc. there will be an opportunity set for a cool rational approach. Stocks are not bought, they are sold.

Core tenets of our machine learning enabled strategy include:

- 1) A long term fundamental approach over a year or longer, not weeks or months with short term traders. This timescale is uncompetitive with quant investors as few have the long term conviction about a business to ride out a month or quarter that isn't 'working' in the stock.
- 2) We focus on the deeper causal factors in our data – people, business quality over time, and supply/demand dynamics in an industry. What drives the *change* in intrinsic value over time for a company? Valuation metrics are important but generally too obvious to gain an edge.
- 3) We short for the long term: economic gravity always wins in the end with low quality businesses run by self-motivated people.

Requirements to follow these tenets and the barriers to entry are:

- 1) A long term approach requires *non-linear* models to make investment decisions – i.e. machine learning, not merely statistics. The technology to implement this has only recently become

feasible at a reasonable cost and the software engineering requirements are substantial. As an investment strategy – this type of modeling can capture nuances about a company the same way that a human investor does. This is in stark contrast to ‘smart beta’ or ‘factor’ investing where the characteristics are easily measured (such as low price/book value) and [arbitraged away](#).

- 2) Knowing what data to look at requires real domain expertise as a long term investor *and* the ability to translate that into the same language that a machine can understand: typically orthogonal skillsets. This is the most proprietary piece of our investment process and requires meaningful effort to gather and structure data that is not available from commercial vendors. We agree with Google’s Alon Halevy that the hardest problems and biggest breakthroughs come from [integrating different datasets](#) into one multifaceted view of reality.
- 3) To maintain long term conviction in shorts, diversification is required so a short going against you doesn’t need to be reacted against adversely *solely* due to price action. A problem still remains: if you are right on 99% of your shorts but 1% of the time you short Amazon in 2003, you lose. To validate our models, we had to build a proprietary simulation architecture to realistically play out thousands of alternate versions of history. The computing infrastructure required for this would have cost millions of dollars before recent cost reductions and software advances in cloud computing. As a quick aside – why short at all if it’s so hard? A) Despite the rising index, the performance is mostly from the big winners and [most stocks perform worse than T-bills](#). B) We are trying to predict the future using historical data – great businesses are almost always doing something new and harder to predict whereas failure is much easier to predict.

Note that this approach is very different from how typical quant funds work: rather than running 1000 back-tests to search for what strategy would have worked, we forward-test our fundamental ideas with many variations on history to reduce tail risks before anything starts. Risk control is paramount and simple metrics like VaR are inadequate. We will undoubtedly encounter new market situations that have never happened before and will respond our best, but at least we can start with knowing we won’t likely repeat the same mistakes from history.

Portfolio Updates

Our biggest winner in the quarter was Sevcon, which increased as the Company disclosed a number of contract wins highlighting the fact that the market for electrification is growing extremely rapidly. I have been passionate about the advancement of electric propulsion and its ability to displace polluting internal combustion engines since a very young age and it’s incredible to see the economics now work. We have a new investment we are working on that builds on this competence that I will be reaching out to investors shortly. The key technology challenges are involved in the power electrics and software subsystems which present new obstacles to the incumbents who are electro-mechanical and are not oriented towards R&D or software. A new type of motor technology that is fundamentally

programmable and can benefit from Moore's Law seems likely to displace the current standard DC & induction motors in the \$100B+ global market for electric motors.

InfuSystem has managed to navigate through the Medicare change that disrupted its revenue base May 2016. I do not intend to stand for re-election at the coming annual shareholder meeting as my time and effort can be redirected more profitably to our investments that have more exponential upside. I'm extremely proud of what we have accomplished at the Company since we acquired stock at \$1.20/share in November 2011 and saved it from its career towards bankruptcy. I stepped down as Chairman over two years ago and today our opportunity set leveraging technology in rapidly changing markets is too exciting to spread efforts thin. Additionally, as we have developed more relationships with private equity firms, our activist efforts will continue to be more focused on situations where we can potentially help small public companies avoid the burden and costs of public reporting during a transition period – that may require significant growth investment. In the case of InfuSystem, we made a public friendly bid at \$2.00/share with a private equity partner in July 2013 following the company's unsuccessful sale process. The special committee at the time decided that the offer was inadequate. Onwards.

A Challenging Market Environment for Long-Only Stock Pickers, Better than Ever for Entrepreneurs:

The current environment of high valuations and rapid technology change should provide tailwinds for both sides of our strategy. On the long side, it has never been better to be an entrepreneurial business builder. Cost of growth capital is as low as any point in history and the amplification effects of technology make human willpower and intelligence more economically potent than ever. On the short side – increased competition and technological disruption is making the lifecycle of poorly run companies shorter than ever. The inflated valuations across the market allow for attractive entry points, decreasing upside risk for these companies going forward.

Ever since I founded Meson in 2009, I have taken the path knowing that I would be doing this for 50 years. I have always reinvested our management and incentive fee revenues for the long term to improve our investment process and am tremendously excited for this new chapter. It has been a significant up-front investment and will be ongoing. I believe we are uniquely positioned to take advantage of the current and future market environment.

I continue to have virtually all of my investable net worth committed alongside investors in the Partnership. Please email me at rmorris@mesoncapital.com or call at 415-322-0486 if you have any questions or are interested in investing. As always, thank you for reading.

Sincerely,

Ryan J. Morris

President
Meson Capital Partners, LLC

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