

FIRST AVENUE

INVESTMENT MANAGEMENT

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A PHILOSOPHY OF
SCIENCE VIEW ON
INVESTING

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An equity investment philosophy is a theory about how to best create wealth in the stock market. Active investment managers employ competing investment philosophies in an effort to consistently beat the market. Most managers fail either on account of the philosophy itself or their own abilities to persevere with it, or both. In fact, the globally quoted incidence of success is 20%. In other words, you have to be in the top fifth of your peers to be successful. We cannot think of a more demanding setting to examine this complex problem than a scientific study into the efficacy of our investment philosophy, and by comparison, other philosophies as well.

First Avenue is an active equity investment manager. Our research program (investment process) is premised on bottom up fundamental work for investment decision making purposes. An investment process is a step by step execution of an investment philosophy. But what is a philosophy? From the many definitions we came across of this term, the most impressive is advanced by philosopher of science, William Bartley, as follows:

"The three principal problems of philosophy are (i) the problem of knowledge, (ii) the problem of rationality, and (iii) the reconciliation of the first problem with the second"

In other words, an investment philosophy is based on (i) understandable and explainable insight into observable phenomena (e.g. the behavior of companies, industries, management, and investors) as well as (ii) a consistent application of that insight for investment purposes. The greater the explanatory power of a particular set of knowledge and its application, the greater the rigor or efficacy of a philosophy. To be clear, social sciences such as investment management will never produce the certainty of outcome that natural sciences are renowned for. Yet what better body of knowledge or discipline exists for us to benchmark investment management against than methodologies and laws found in natural sciences? Science is simply one of the very few human activities in which errors in cognition are systematically criticized and fairly often, in time corrected. As such, science is a problem solving activity.

Just some sixty years after Isaac Newton's discovery of the three laws of motion and one of gravitation, philosopher-economist Adam Smith wrote, and I paraphrase, that "Isaac Newton's system now prevails over all opposition, and has advanced to the acquisition of the most universal empire that was ever established in philosophy. His principles, it must be acknowledged, have a degree of firmness and solidity that we should in vain look for in any other system...Can we wonder then, that it should have gained the general and complete approbation of mankind, and that it should now be considered...as the greatest discovery that ever was made by man, the discovery of an immense chain of the most important and sublime truths, all closely connected together, by one capital fact, of the reality of which we have daily experience?"

Scientific discoveries in physics and astronomy spurred on mankind's quest to understand his natural and social existence: In Isaac Newton's time, there was only one developed science, physics. The late eighteenth century saw the emergence of chemistry, the nineteenth of biology and psychology, and the twentieth of the social sciences. Economics joined in. Historian and writer Frederich Engels writes that "just as Charles Darwin discovered the law of development of organic nature, economic philosopher Karl Marx discovered the special 'law of motion' governing the present-day capitalist mode of production and the class system this mode of production created". However noble these advances, economics shares many traits with investing that render it unsuitable for precise measurement.

Unlike in physics where parameters of our equations can, in principle, be reduced to a small number of natural constants (e.g. acceleration due to gravity on earth is $9.8m^2$), in economics, the parameters are themselves in the most important cases quickly changing variables. For instance, most of the 'macro' magnitudes which figure so largely in economic discussions (Gross Domestic Product, fixed Capital Investment, Balance of Payments, Employment, and so on) are subject to errors, revision and worse still, ambiguities which are far in excess of those which in most natural sciences would be regarded as tolerable. Rest assured our scientific inquiry into investing is not seeking precision where it both

doesn't exist, and is not required. However, the lack of scientific precision is not, and can never be, an excuse for investing to be a self-fulfilling prophecy (that it explains itself). To the contrary, a discipline or reality such as investing (i) reaches higher degrees of firmness or solidity if its practices and their efficacy find resonance elsewhere in reality (e.g. biology or psychology), and (ii) produces fruitful results (consistent outperformance). In fact, Karl Marx stressed the role of the natural sciences by pointing out in his preparatory work for "Capital" in 1863 that natural science "underlies all knowledge". Hence our scientific inquiry into investing!

Conformity of Investment Philosophy to Scientific Methodology

Engaging in scientific inquiry of investment management is to assume a vantage point one step removed from/above the practice itself (metaphysical). We want to examine how much resonance methodologies or practices in investment management have with how experimentation is carried out in natural science. Our analysis of scientific methodology in investment management is therefore a third order activity, the subject matter of which is the procedures and structures of investing in relation to those of found in the various sciences. Exhibit 1 is a schematic depiction of what we are referring to.

Exhibit 1: Third Order Analysis of Scientific Methodology and Explanation of Phenomena

Level	Discipline	Subject Matter
3	Philosophy of Science Review of Investing	Empirical analysis of investment philosophies and logical explanation of factors that lead to successful investment outcomes
2	Investment Management	Consistent outperformance of equity market
1	Science	Scientific explanation of the observed facts/reality in the natural world
0	Nature	Facts/Reality

Source: First Avenue

While Kepler, Aristotle, Copernicus, Galileo, and Newton used different experimentation methods to advance man's understanding of the universe, one thing is clear – the last of this problem solving exercise, Newton's Laws of Motion and Gravitation, explains natural occurrences with reliability and consistency. It is important for us to state here that the field of Philosophy of Science has established that there is not one standard method in which scientific discoveries are made. In fact, in "Dialectics of Nature", using ample evidence from the history of natural science (particularly from the Renaissance to the middle of the 19th century, Frederick Engels shows that the development of natural science is determined in the final analysis by practical needs of the experimenter (e.g. production processes). So while we will later use the well-worn null hypothesis method to empirically test the efficacy of different investment methodologies, we acknowledge that not all scientific discoveries were arrived at this way.

Yet in investment management, not only are there a plethora of both investment philosophies and valuation methodologies that claim to have the ability to produce sustainable excess returns, the vast majority (at least 80%) of managers (experimenters) using them fail at the task. Imagine if there were three competing laws to explain why physical matter contracts and expands. Which law would engineers use to build bridges? Would you and I be comfortable driving over those bridges not knowing if they were built on reliable laws to produce consistency of use? And if most of the bridges built using the second of those three laws crumbled, would more of the same bridges still get built? To further complicate matters, what if bridge builders gravitate toward any one of the three laws for a stretch of time, only to ditch it for the next law in the ensuing 40 years? Investing and economics present these challenges, as do other social sciences such as political science. All along, the various tenets or "laws" in investing, economics, or political science get their time in the sun. Economist and investor, John Maynard Keynes once remarked that, "the ideas of economists and political

philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed little else rules the world." *You can add fund managers and bankers to this list.* Having said all of that though, there are perspectives which lead to superior investing outcomes for sustained periods (+100years) and the purpose of study is to illuminate on them and the reasons for that.

At First Avenue, we distil a company to a single idea: the commitment of its capital to the creation of shareholder value. By capital we refer to resources resident on the balance sheet or generated via the income statement. Shareholder value creation is a company's ability to earn more than enough to recompense equity funders for the risk they've taken. Both resources and shareholder value are not stable factors over time. They either grow or shrink. This is the phenomenon the market anticipates by bidding share prices up or down respectively. In the final analysis, investors reward companies for optimally growing shareholder value and punish those that destroy capital.

Speaking scientifically, this is the hypothesis we wish to test – that superior and sustainable returns are NOT due to fundamental or investment factors other than shareholder value creation (investing in high quality). Our failure to do so will render the alternative hypotheses – that sustainable superior returns are not related to shareholder value creation - true. We outline the hypotheses as follows:

Null Hypotheses (Ho): *High quality (High ROE) investing sustains superior investment returns.*

Alternative Hypothesis (H1): *All or any of competing investing strategies sustain superior investment returns and not High Quality (High ROE) investing.*

One of the ways that knowledge or insight is generated (a process known as epistemology) is through empirical testing (of things or phenomenon we observe) for reliability and dependability of explanation. You want to weed out illusions (falsities parading as the truth). Empirical testing is a progression from (i) an observation of which investment philosophy results in sustained superior returns - a process called induction, to general principles that underlie that sustained outperformance, and (ii) back to observations - a process called deduction. This is not dissimilar from both Aristotle and Francis Bacon's view of a two-step operation of scientific inquiry which establishes factual knowledge (step 1) that leads to a particular outcome, and an understanding of not only why it happens, but also what enables it to happen (step 2).

Step 1: Empirical testing

In figure 1, we map out returns generated by fundamental factors that underpin a variety of investment philosophies as well as the commensurate volatility of those returns. The High Quality investment strategy, premised on High Return On Equity (High ROE), outperforms competing strategies as well as the market, and does so with very low volatility. Its derivative, High ROA, comes second. Taken individually, the fundamental factors associated with various investment philosophies (deep value, growth, and momentum) produce mixed results. Yet grouping them together would still not supplant High ROE investing.

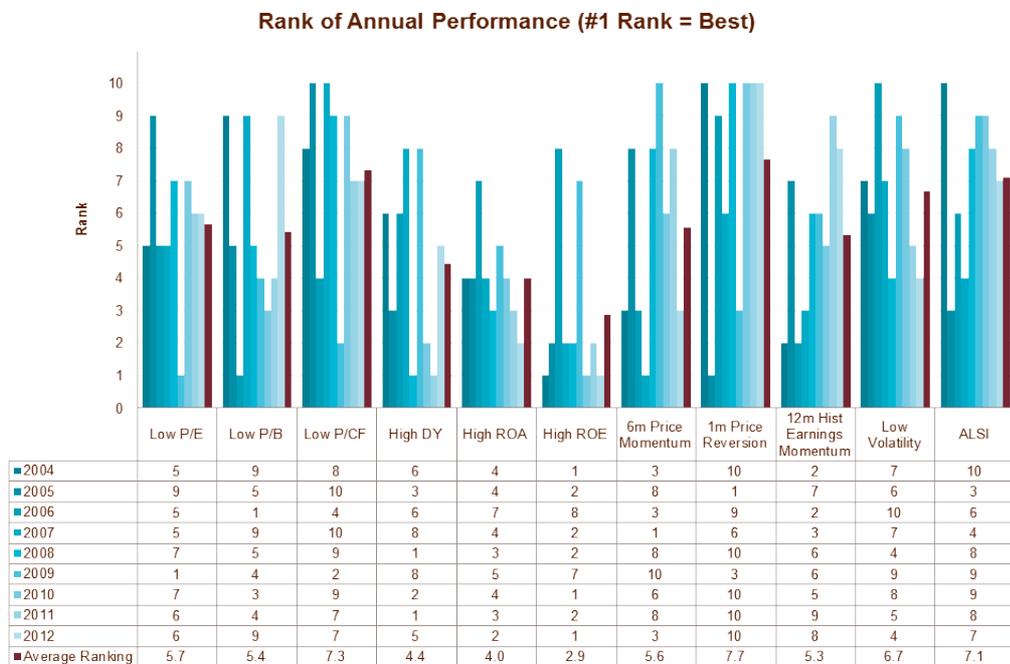
Figure 1: Testing for superior outperformance of various investment strategies (2004 - 2012)



Source: Cadiz BNP Paribas, First Avenue

Figure 2 gives us greater information on the efficacy of the various strategies by examining the consistency with which they perform (annual rank of performance over the measurement period).

Figure 2: Testing for consistency in outperformance of various investment strategies (2004-2012)

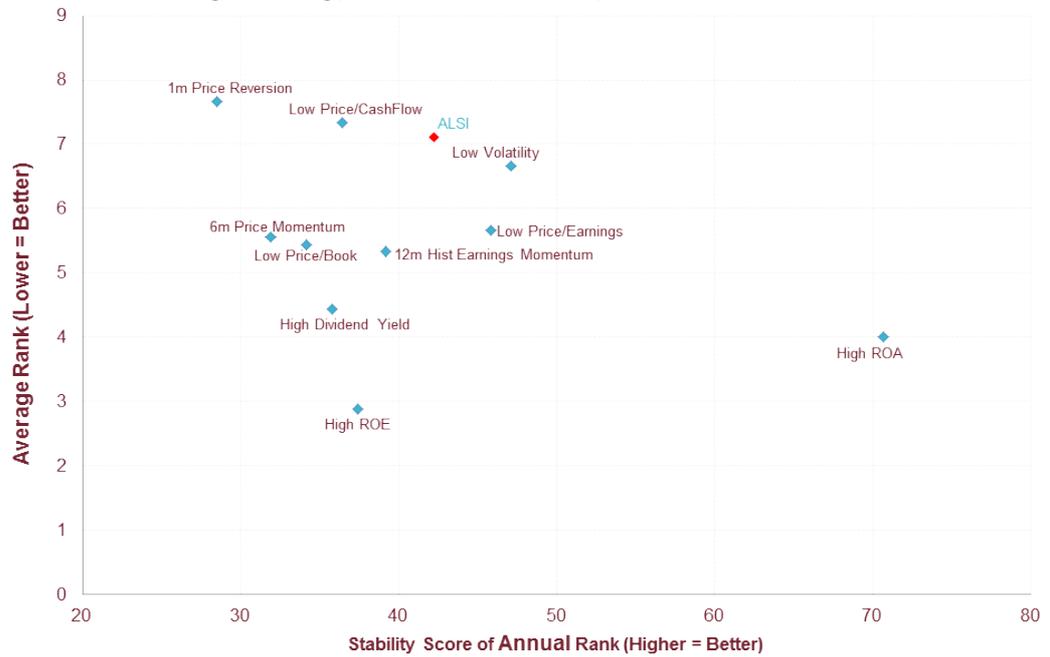


Source: Cadiz BNP Paribas, First Avenue

Out of the 11 strategies, the High ROE strategy ranks 1st or 2nd in 7 out of 9 years. In the remaining two years, it ranks 7th and 8th. Consequently, High ROE ranks 1st on an equally weighted arithmetic average of the annual rankings (2.9). Again, the derivative of this strategy, High ROA, comes second (4.0).

The visual effect of the ranking table above shows the superiority of the average rank of High ROE (and its derivative ROA) as well as the stability of the rank (see figure 3).

Figure 3: Average Strategy Rank versus Stability (2004-2012)



Source: Cadiz BNP Paribas, First Avenue

Let's return to our hypothesis – that investing in High Quality sustains superior returns over competing strategies, including passive. High Quality outperforms the market 88% of the time (8 out of 9 years) and comes 1st or 2nd 77% (7/9) relative to other strategies. A practical interpretation of this is that you would get the same result if you ran this exercise in any randomly chosen 9 year period from the full data set of returns from the Johannesburg Securities Exchange (JSE). While data limitations on the JSE prevent us from going further back, research into this phenomenon in the US since 1965 corroborate our findings (see figure 4). In fact the S&P High Grade Index outperformed the market since it came into being in 1925 to its termination in 1965. Second, we would be remiss if we didn't acknowledge that both (i) a 70% confidence interval is far too inadequate to be useful in the natural sciences, and (ii) a 9 year period may not be a long enough measurement period. Yet in investing, the probability of outperforming the market and other active management philosophies anything over 60% of the time qualifies as superior. How should this help you understand what we are trying to do here at First Avenue? We would be more that satisfied in our objective to create wealth for our clients if we generated superior returns in 7 out of every 10 years (if we beat the market 70% of the time you are with us). We believe our philosophical belief in High Quality best positions us to achieve that outcome. The rest is down to our temperament (discipline) to persevere with it in the 3 out of 10 years that we underperform the market.

Figure 4: High Quality Relative to the S&P 500 (1965 – Sept 30 2009)



Note: Quality companies defined as those with a high probability, low profit volatility and minimal use of leverage. Historic valuation is determined by GMO's proprietary intrinsic valuation measure

Source: GMO as of 30/09/2009

The sustained superior performance of ROE investing (High Quality) is rooted in what distinguished (i) academic and author Michael Porter termed competitive or structural advantages, (ii) investor Warren Buffet referred to as economic moats and (iii) academic and sociologist Robert K. Merton termed the "Matthew Effect" or cumulative advantage. All these terms refer to the same phenomenon – strong companies garner more and more of the profit pool of their industries because they reinvest a portion of these profits into further strengthening their competitive positions. Robert Merton equated this to a line in the biblical Gospel of Matthew, "For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken even that which he hath". Referring to companies, Warren Buffet advanced an analogous phrase as follows, "Time is a friend of the strong and an enemy of the weak". You may gather here that we're referring here to the rate of profitable growth or decay companies may experience.

This concept originates from the mathematical function of exponents as discovered by Swiss mathematician, Euler. Exponents arise naturally in the fields of physics, biology, or chemistry. For instance, when a quantity changes in proportion to itself, growth (e.g. bacteria reproduction) or decay (e.g. radioactive material) is exponential in nature. Bacterial infections are better treated quickly because you in fact just need bacteria to spawn new bacteria (in proportion to existing bacteria). Regarding economic moats, reinvestment of profits into what a company is great at results in additional profits (as a function of existing structural advantages).

Profits can also go backward by the way, and radioactivity holds the key for this phenomenon. Radioactive decay occurs because some atoms spontaneously emit particles which render the remaining atoms less and less effective (half pure). This calculation is vital to the disposal of radioactive material by nuclear power plants. As importantly, radiometric dating was used to determine the age of the earth based on the decay of long-lived radioactive isotopes that occur naturally in rocks, minerals, and fossils. So the question we always ask ourselves at First Avenue (whose answer goes directly into our valuation models) when we see incorrect capital allocation, or cash flow generation that is inadequate for reinvestment, is how long it will take to slip out of competitiveness (decay).

In an appreciation of this phenomenon, former US President Ronald Reagan once synthesized economic policy as follows, "If it moves, tax it. If it moves fast regulate it. If it stops, subsidize it."

It is these general principles that underlie the phenomenon of compounding (of shareholder value and commensurate market returns) that we observe in high quality (strong) companies. Understanding both the power of compound (interest) and the difficulty of getting it is the heart and soul of understanding a lot of things, including outperformance on the stock market. Never interrupt it

(compounding) unnecessarily! Perhaps it is appropriate to pause here for a moment and ask what general principles or realities underpin the success of competing investment strategies.

We've referred to capital allocation quite a bit in the preceding paragraphs as a means of fortifying competitive advantages. Company management has five options into which it is required to optimally allocate capital to create economic value, namely, (a) reinvestment for organic growth (b) reinvestment for acquisition growth (c) pay down debt (d) pay out dividends, and (e) buy back shares. We would have done you a great disservice if we gave you the impression that making the right capital allocation is easy as ticking the boxes on those five options. For experienced management teams, it is perhaps as difficult as performing a quadruple bypass surgery on the heart, and for novice managements, it is as ungodly as learning a new language at an advanced age.

Not only should capital allocation occur in the order we outline, management must avoid common afflictions such as envy, jealousy, greed, fear, ego, resentment, and so on while at it. To comprehensively illustrate, telecommunications company, Telkom, saw its returns on capital fall to below cost of equity from a peak of 32% after (i) divesting of a highly value creating mobile asset (Vodacom), and (ii) in the last seven years, investing over R50bn in acquisitions and capital expenditure in the fixed line assets. Consequently, the company has stopped paying dividends in order to conserve cash (*fear*). Taking on debt to augment shrinking cash flow generation given the heavy capital investment in a new mobile venture, 8ta, is becoming a very real possibility.

In seeking growth from Multi-Links in Nigeria, Telkom was afflicted with *envy* of MTN's success in Africa. In seeking growth from 8ta, Telkom was *envy* of Vodacom's prowess in South Africa. It was *egotistical* of Telkom to think it could enter a new market (media) to take on pay TV giant, Multi-Choice, with its own format Telkom Media. In cutting the dividend, Telkom was afflicted with *fear* of running out of cash to simply operate. Nowhere are the practical implications of afflictions (e.g. protectionism borne out of a combination of fear and envy) in economic policy better described than in Philosopher of Science, Karl Popper's work, "Postscript to The Logic of Scientific Discovery" as follows:

"You cannot introduce agricultural tariff and at the same time reduce the cost of living. You cannot, in an industrial society, organize consumer pressure groups as effectively as you can organize certain pressure groups (e.g. labor, business). You cannot have a centrally planned society with a price system that fulfils the main functions of competitive prices. You cannot have full employment without inflation."

Step 2: Rational Logic

Having established the superiority of High Quality investing, and explained the general principles that underpin it, we have to ascertain if that outperformance wasn't driven by factors other than those associated with quality. This is the process of deduction. In other words, do returns from the High Quality strategy disaggregate into capital allocation related factors or would we come across totally unrelated observations?

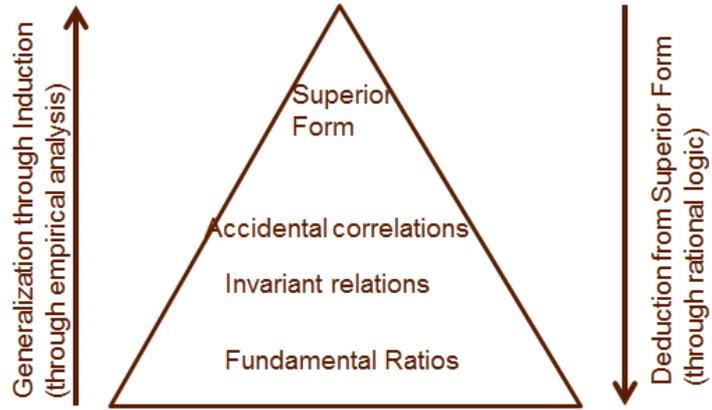
Rational logic affords the means through which we can criticize our own conclusions (the very facts we established through empirical analysis) with finer granularity. Philosopher William Bartley puts criticism at the center of rationality when he says, "a rationalist is one who holds all his positions – including standards, goals, decisions, criteria, authorities, and especially his own fundamental framework or way of life – open to criticism. He withholds nothing from examination and review."

Our objective is to ensure that the connection between High Quality returns and capital allocation related factors is neither frivolous, nor spurious nor does it owe its existence to accidental correlations or invariant relations (related factors whose presence or absence doesn't reliably impact the outcome). In short, the connection is not illusory or intermittent.

At the heart of our investment operations at First Avenue is our definition of High Quality and valuation/quantification of the enviable characteristics we identify in a company. We deal with the latter in detail in our Investment Guide. Having empirically established a link between sustained

superior performance and High Quality, it is imperative to confirm that the criteria we use for High Quality at First Avenue are a natural consequence of optimal capital allocation. In other words, does excellent capital allocation “boil down” to our criteria of High Quality? If our criteria are a rational and logical result of capital allocation, we can either exclude other fundamental factors (ratios) or mute their explanatory powers. Figure 4 demonstrates this operation in schematic form.

Figure 4: Ladder of superior fundamental forms



Source: First Avenue

Figure 5 only shows half of our High Quality metrics (in the interest of protecting our intellectual property). Suffice it to say, the undisclosed metrics are derivatives of the ones we disclosed, and in fact add robustness to our search for High Quality. However, it is evident in figure 5 that the disclosed metrics can only be a direct consequence of corresponding actions in capital allocation, and nothing else. Conversely (thought through in reverse), it is difficult to fathom how carrying out capital allocation actions can result in any other consequence but the ones we outline. For instance, it follows that if you purchase value accretive assets, you will grow your book (value destructive investments shrink your book). It is axiomatic that if you pay down your debt, you will end up with no debt (the greater your cash flow the faster this happens), and if you buy back shares, the claims on future cash flows will reduce by the amount of shares you buy back, and so on. It is the improbability of the existence of fundamental factors, other than those we pointed out, that assures us of the positive and exclusive relationship between High Quality and sustained superior performance.

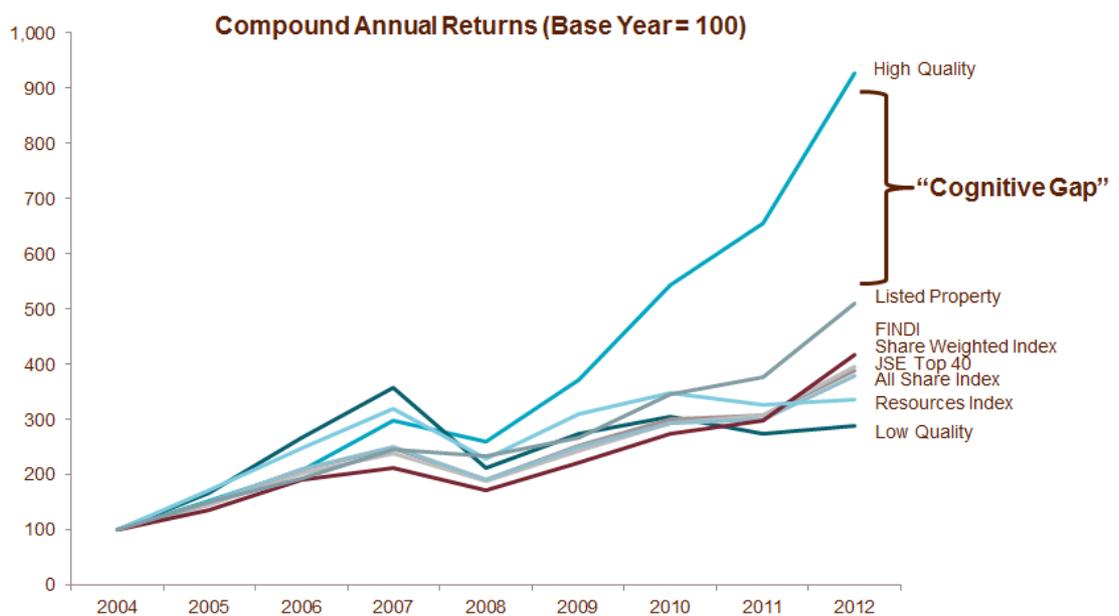
Figure 5: Effective Capital Allocation and High Quality Metrics



Source: First Avenue Investment Management

Yet investors who subscribe to competing investment strategies tend to make “inductive leaps” between (i) price related factors depicted in figure 1 and (ii) fundamental factors that drive value creation. This is despite the cognitive (empirically or rationally derived) gap between the two. In other words, we struggle to understand what 1month price reversion, 6month price momentum, low price to book or low price to earnings has to do with growth in book value, growth in dividends, or low or no leverage. The relationships, if at all, are indeed spurious, intermittent, or illusory. The gap in cognition shows up in the difference in market performance between companies that compound shareholder value and those that don’t (but look cheap on price related factors). The difference is substantial (see figure 6).

Figure 6: Compounding – The Super Power of Investing



Source: First Avenue

*All indices are shown are Total Return

Why does this cognition gap occur? Investing on the basis of price related factors is as easy as it is misleading in its implication that a low PE (or other price based metrics) stock is necessarily cheap and a high PE stock necessarily expensive. The "Cognitive Gap" in Figure 6 represents the high opportunity cost of not understanding fundamental factors that lead to profitable growth (value accretive growth).

Conclusion

The creation of wealth on the stock market is both a perplexing and vexing subject as it eludes a material percentage of investors to warrant in-depth study. As active managers, our primary responsibility is to outperform both the market and our peers at a rate decidedly indicative of skill rather than luck (+60%). How we solve this problem is determined by our ability to explain phenomenon that cause it. We employ empirical analysis and rational logic to aid our scientific inquiry into the explanation of sustained superior investment performance. We find that efficient capital allocation by management into company specific competitive advantages creates and sustains value creation (high quality). In turn, investors reward companies for value creation at a rate higher than they do companies that don't. Last, an investment philosophy and process that focuses on high quality will most likely result in superior wealth creation for a disproportionately long period of time relative to most investment strategies.

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Registration Number 2008/027511/07

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