Report 76

The Skilled¹

The process of civilization is usually perceived as an effort to master unpredictability and chance. This can be done with different levels of skill but it is, nevertheless, necessary in order for the world to progress. The anatomy of this dualism – chance x skill – is relevant to almost all human activity. In the previous Report, we explored one side of the equation, Luck. This Report deals with Skill, the other side. We will start using the example of physics to build a brief introduction to the matter that interests us more deeply, which we will discuss later: the way that asset managers face the dilemma.

The paths that lead to the world of sub atomic particles are unassailable to the non specialized traveler. There is no landscape on the way there. Aside from an intricate set of numbers and questions, there is nothing to see. The calculations make sense, but the scene is barren.² We are in the empire of mathematics that is distilled from senses.

For the historical background, the easiest way is to follow the footsteps of giants. October 7th, 1900. The problem is almost mundane. The color of a steel rod, when heated, varies with its temperature. Each color corresponds to a different amount of radiation. A chart can be made using the two variables (temperature x radiation). Interestingly, this was precisely the relationship that physicists could not explain. Then Max Planck had lucky guess. Until then, radiation had always been considered a continuous phenomenon. "No," said Planck, with a conviction from who knows where, "it happens in chunks, in pieces". It worked. The phenomenon was domesticated. Later, these chunks were called quanta and this triggered one of the greatest scientific revolutions of the last century.

Once the first step was taken, ideas started to blossom. Einstein, with his usual creativity, states that light is a particle as well as a wave. Ernest Rutherford shows that a cloud of negative electrons spins around a positive core. But, he does not have a precise idea of what that cloud of electrons is. Neils Bohr suggests that the electrons are in distinct orbits, absorbing or issuing radiation when jumping from one to the other. A French physicist, Louie de Broglie, well known for his originality, goes further when insisting that particle matter, like the electrons, are simultaneously wave and particle. This is where the mathematical journey begins. Werner Heisenberg demonstrates that the specter of hydrogen and of other elements can be explained using complex matrixes. Shortly thereafter, Erwin Schrödinger explores differential equations in relation to waves, as a possible contribution to his theoretical advances. Finally, Max Born verifies that the atomic space is probabilistic. Nothing is certain in the infinitesimal world. This proposition found full expression in Heisenberg's admirable Uncertainty Principle. It is not possible to determine, simultaneously and accurately, the speed and position of an electron. Nothing similar can be found in the macroscopic world. Bohr complicates the physicist's life even further, indicating that in quantum spaces, things only become real when measured or observed by human action. The existence of an object depends on our gaze.

Determinism has always been a pillar of the other physics, the classical. In it, the universe is exact, precise and follows immutable laws. If the position, speed and energy of a body are known, its trajectory can be traced till the end of times. The calculation effort would be considerable, but the task would be feasible. A complete, dynamic and infinite map of the

¹ This Report is a sequel to Report #75, to which direct or indirect references are made throughout.

² The text that follows is based on Parker, Barry "Quantum Legacy," Gao, Shan, "Understanding Quantum Physics," and Kumar, Manjit, "Quantum: Einstein, Bohr, and the Great Debate about the Nature of Reality."

universe would be, in theory, doable. Moreover, the mere presence of an observer would not influence the results. Teleological or not, the universe's destiny would be predictable as long as the initial information and the necessary computer power were available. Furthermore, the whole mechanism relies on the unbreakable causality principle. All events have a cause and can become, in turn, the cause of other events. The causal chains form the explanatory sequences of the phenomena.

All of this vanishes in the sub atomic world as we understand it today. The Uncertainty Principle contradicts traditional determinism. The object (sub atomic particles) can only exist when it is observed. If a photon collides with an electron in a known position, we have no idea where it will be in the following moment. The present is not an indicator of the future and, as such, the causality principle is trivially violated. In this case, whoever is running the show is apparently rolling the dice. From the point of view of our Western mania for order, what we find inside of the atom lies between chaos and randomness, passing through the phantasmagoric. It is as if nature were governed by the will of Tyche (a goddess from Greek mythology who dictates the luck of mortals who was the main character of our previous Report), forging a reality that is governed by the unpredictable spinning of the Wheel of Fortune (the Roman name of Tyche). For this reason, physics Nobel laureate Richard Feynman, a pioneer in quantum electrodynamics, prophesied that it is safe to assume that no one understands quantum mechanics.

Nevertheless, it is precisely out of this bedlam, where all sorts of accidents and accidents of luck never stop happening³, that the skilled are able to extract useful and applicable knowledge. It is a metaphor that parallels the classic confrontation between skill and luck, which we began addressing in our previous Report. Chips, lasers and all the solid state physics are, in due measure, creatures of quantum mechanics. The impact of those inventions on everyday life requires no further comment. Working hard "against the gods", efficiently and systematically, a legion of scientists, engineers and other professionals built an admirable cathedral of human genius challenging the vicissitudes of nature. The adventure of confronting chance with skill is also an issue for less obvious candidates.⁴ Recent research shows that photosynthesis, the efficient process through which plants and some bacteria obtain the molecules they need using solar energy, depends, to a certain degree, on quantum properties. The navigation system of some migrating birds that cross countries, continents or even the whole planet from one pole to the other relies on the processing of light along the way. On the birds' retinas, the information is distributed into small packages that are organized by quantum principles. Darwin certainly would celebrate this adaptation effort, with species quantically fighting the vagaries of Nature.

When once asked about the traits of a successful man, Warren Buffett stated, "It is the one who disembarks by mistake in a completely unknown city in the middle of the night, with no luggage, only ideas in his mind, and eventually becomes the most successful businessman in the region." Without any influence of luck, exposed to the mysteries of the deeply unknown (and maybe, as in the old saying, not knowing that it was impossible), he still does the job. Buffett's hero, individualistic and confident, has a name. He is called Robinson Crusoe. He lived for twenty-eight years on a desert island off the South American coast, near the mouth of the Orinoco River, where he found himself after a shipwreck in which he was the only survivor. During his stay, he excelled in managing the island. With a creative mind and a transformative attitude, he worked alone in the beginning. Later, he recruited natives and built a village. He became the almighty master of the colony and supreme governor of his island. He accumulated enough capital to become, after being rescued by pirates, an important entrepreneur in Europe and in other countries, including Brazil, where, apparently, he ventured successfully in the sugar cane and land businesses. Crusoe is, obviously, Daniel Defoe's literary invention to portray the new man that rose with liberal capitalism. The skillful man. A new type who, through his own effort, work and dedication, no help from luck, no coin toss, overpowers the natural world and puts himself on the trail of progress. Facing randomness and a set of what appears to be arbitrary circumstances, he fights to create a satisfactory personal order. He is a man of action, a man of triumphal energy.

³ In Portuguese, the words 'sort' and 'luck' have the same spelling.

⁴ Palmer, Jason and Mansfield, Alex, "Quantum biology: Do weird physics effects abound in nature?" BBC News/Science & Environment.

The capital market has its atoms, its undividable parts. A stock, a debenture, a put or a call option. Those essential particles are influenced by the constant and daily movement of price fluctuations. The strong force behind this kinetic state is well known: the interaction between supply and demand. It consolidates individual preferences, each with its own logic. The result is mathematically robust, but does not have an objective meaning because adding the sum of a the decision to sell based on gut feeling, with one based on a wrong calculation or even with one based on the most sophisticated quant system does not provide any intelligible information, except for the actual number of shares offered to the market. We are not in the world of algorithms, but in a world of entropy. As in the quantum universe, here we are also governed by uncertainty, and not by determinism. The observer's presence, the investor, in this case, generally affects the analyzed object, the traded asset. The relationship between present and future, and therefore causality, is tenuous. Parodying Feynman, some are tempted to say that nobody really understands price variations in the markets (not considering insiders, whom we prefer to ignore). But could fund managers be, in their arena, like physicists, mathematicians and engineers who use skill to counteract the apparent chaos of quantum mechanics? Is the successful manager, at the end of the year, the winner of multiple coin tosses, our old friend from the previous Report? Is there room for strategic intelligence in the competition between buyers and sellers or is it just a myriad of opinions and chance? Was Berkshire, in a broad sense, the "protoisland" for Warren Crusoe?

The answer in favor of the talent of fund managers may seem obvious (and we would really want it to be), but there is an infinite number of academic papers that exhaustively discuss the subject.⁵ The majority (but not all!) point to an optimistic conclusion on the profession: skill definitely plays a role in performance. A differentiated group is capable of showing consistent returns that beat the market average over long periods of time. Several econometric pyrotechnics, in conjunction with extremely long-dated series are offered in support of the thesis that skill can be detected amid market convulsions. Buffett and Munger keep reminding us of the existence of a small town of investors that could be called Graham-Doddsville, where an important sub-group of this elite resides.

The complicated part is to explain what that skill is. In general, what we find is, with varying degrees of sophistication, the poorly inspired argument that it happens when one does what has to be done. For example, M.J. Mauboussin states in the famous paper cited in footnote #4, that the skill of managers is divided into three attributes. The first is to find situations where one has an analytical advantage. Well, this seems reasonable, but how does one obtain such an advantage? The point really is, can it even be obtained? The second is psychological and behavioral. It refers to the ability to go against the common sense. But, sometimes, the common sense is right. How do you know when it is not? How do you avoid adopting a contrarian position just for the pleasure or habit of doing so? Finally, the third one is related to the alignment of interests between managers and investors. But here the question lies less in highlighting the manager's skill than in his care (or lack thereof) when dealing with investor's interests.

To complicate things even further, the Machiavellian and perverse actions of the tireless Tyche are always hovering around. It is tempting to attribute an imagined merit to a lucky outcome. It only takes a bit of vanity, an abundant trait in our species. But there is no denying that we still maintain the Enlightenment belief that luck can be helped. Gary Player is supposedly the author of a maxim that became famous with golfers: "The more I practice, the luckier I get." The Australian writer Christina Stead reminds us that the self-made man is the one who believes in luck while at the same time he sends his son to study at Oxford. "Diligence is the mother of good luck," mocks Cervantes in Don Quixote. Jorge Paulo Lemann agrees, "Luck is always the result of sweat."6 On the other hand, one of the most recurring stories in the literature on the subject is about the winner of the Italian lottery who insisted on buying a ticket with 48 as the last two digits.⁷ He was the sole winner. When asked which science he used to make that decision he said, "For seven consecutive nights I dreamt with the number seven. And seven times seven is forty-eight."

⁵ To access a vast bibliography, see the references used in Mauboussin, Michael, "Untangling Skill and Luck," July 15, 2010. In particular, note Gompers, Kovner, Lerner and Scharfstein, "Skill vs. Luck in Entrepreneurship and Venture Capital Evidence from Serial Entrepreneurs," October 2006; Cuthbertson, Nitsche and O'Sullivan, "UK Mutual Fund Performance: Skill or Luck?" October 2007 and "Mauboussin, Andrew and Arbesman, Samuel, "Differentiating Skill and Luck in Financial Markets with Streaks."

⁶ Lemann, Jorge Paulo, "18 Princípios do Banco Garantia."

⁷ Mesler, Stanley, "First in 1763: Spain Lottery – Not Even a War Stops It," LA Times, Dec. 30, 1977.

Here at Dynamo, we do recognize the tribulations of randomness and duly respect all the relevant goddesses. However, as argued by many top-notch people, "proved" in many studies and argued by Mauboussin's superb work, we believe that it is possible to build the skill to analyze companies in order to invest in them. We will try to summarize, with a bit more objectivity, the four paths we believe to be essential to achieve this competency.

Numbers: one of the most obvious ways of getting to know a company is through its annual reports and financial statements. Understanding revenues, operational costs, expenses, debt, investments and tax regime is an absolutely necessary condition (though far from sufficient) to analyze it. The older the company is, the more data there is available, and it is essential to have a profound understanding of these numbers. One must be sensitive to the fluctuations of the main accounts, to extraordinary events and to the way problems are explained in the financial filings and press releases. As Buffett says, "When managers want to get across the facts of the business to you, it can be done within the rules of accounting. Unfortunately, when they want to play games, at least in some industries, they can also do it without breaking those rules. If you can't recognize the differences, you shouldn't be in the business of equity investing."8 In the case of annual reports, it is advisable to delve into the text, understand the emphasis, omissions and, especially, the differences in rhetoric between one year and the next. From this material, each analyst will choose the ratios and strategic variables to prioritize in their mapping. All of this is very effective for understanding the past and reasonably important for the present. With regards to the future, one should always be wary of projections, which should not be trusted uncritically. Based on assumptions chosen by the analyst or by the company, projections should be seen as guidelines, never as an exact science. On this cautionary note, Charles Munger says, "Projections are put together by people who have an interest in a particular outcome, have a subconscious bias, and (their) apparent precision makes them fallacious (...) projections in America are often lies, although not intentional ones, but the worst kind because the forecaster often believes them himself".9

Company: from our point of view, a company is constituted by a set of physical and contractual characteristics that are put in motion by those who work there. "Deconstructing" it into its components, meticulously studying each one of them and then analytically rebuilding the whole company is a watchmaker's task. And each one assembles his watch according to his convenience. But, ideally, the watch should tell the correct time once it is assembled. Generally speaking, and depending on the case, at Dynamo we use an extensive array of parts and components. For example (in no order of importance): location, lay-out, engineering technology. Insertion within the sector. Competitors, creditors, suppliers. Statutes, shareholders' agreements, minutes of Board of Directors' meetings. Market share, image, brand recognition. Compensation policy and capital allocation. The attribution of the relative importance to each one of these items and the right dosage of effort to understand them as thoroughly as possible is essential to guide this part of the analysis. But, as with inflation, where price variations are more important than their absolute values, we have the same issue in this case. It is only after we have seen the year-by-year evolution of this framework that our knowledge becomes substantive. This is the reason why the fundamental way of investing, the search for solid facts about a company, is similar to income distribution. Easy to defend, but not so easy to implement. Buffett, once again, "There is no formula to figure out (intrinsic value). You have to know the business (whose stock you are considering buying)." 10

Management: What makes a company thrive or not are the people who work there. Since every hierarchy is pyramidal, the key executives must be evaluated constantly. How do they react when faced with tough times? Their projects. Thinking big or small. Dedication. Eyes that sparkle. Eagerness. Creativity, capacity, diligence. We can even say that we are leaving the field of economics and finance and entering that of psychology. For those who are interested in this angle, Munger's speech on the subject is a classic.¹¹ As Jorge Paulo Lemann states in one of his 18 basic management principles, "The biggest asset of a company is good people, working as a team, evolving in accordance to their talents and being paid for that... Finding people that are better than themselves, training

⁸ Lowe, Janet, "Warren Buffet Speaks," pg. 114.

⁹ Lowe, Janet, "Warren Buffet Speaks", pg. 46.

¹⁰ Lowe, Janet, "Warren Buffett Speaks," pg. 100.

Munger, Charles, "Psychology of Human Misjudgment," Speech at Harvard University, 1995.

them, challenging them and keeping them must be the main task for managers...Leadership through personal example is vital both in heroic actions and in small day to day gestures."¹² If you cannot trust the skill and ethics of the executives, there is no reason to be interested in what is being executed.

Business: simple. One must know how to distinguish a good business from a bad one. Easy to say, extremely difficult to accomplish. To begin with, what is a good business? From an investor's point view, nothing is better than a unregulated monopoly that grows. Problem: it does not exist. And nothing could be worse than perfect competition. Relief: it does not exist either. But those two ideal types (in Weber's sense of the word), these two poles, form extremes that are useful for the analysis. The closer to the first one, the better. The farther, the worse. An inexhaustible source of insights results from seeing a multitude of failed projects. And a few that succeed. The mistake is repulsive. We want to get away from it as quickly as possible. Wrong attitude. One has to dig into it, understand it, autopsy it. It is from its deepest roots that one can extract the best lessons. Success is glorious. It is always good to remain there for a longer period, enjoying its good feeling. Fault. What is important is to separate luck from skill and keep forever the genes of the latter. Speak with entrepreneurs, understand their initial logic and compare it to what was achieved at the finish line. Read, read and read once again the vast literature that is available about companies and their history. Research the beautiful epopees as well as epic failures. All this is necessary because in a bad business, no genius or stock option program will make a difference. As Buffett recalls, "with few exceptions, when management with a reputation for brilliance tackles a business with a reputation for poor fundamental economics, it is the reputation of the business that remains intact."13

Because they are more objective, the first two vectors, the numbers and the company, are always easier to be transformed into an executable task. Here, perspiration and effort are valuable. But it is the other two, management and business quality that will be definitive. Buffett says, "Stocks are simple. All you do is buy shares in a great business for less than the business is intrinsically worth, with managers of the highest integrity and ability. Then you own those shares forever."¹⁴ It is precisely for that reason that long term fundamental investing is so complex and difficult. All these plates must be kept spinning in order to reach the investment thesis. Once there, one must endure to overcome the more immediate contrarian evidence that will appear down the road. The task requires an endurance that would impress even a triathlete. But this is where the skill will show its power. We usually say that, once the homework of knowing the company and its numbers is done, the definitive secret lies in the management and the quality of the business. This is where one cannot make a mistake. This is what separates one investor from another. Above all, this is the key so-called skill of the value investor. Not for any other reason, Charles Munger always reminds us that investing in stocks is part science (because of the quantitative, verifiable and objective characteristics) and part art (because of the subjective, intuitive and insightful aspects).

We conclude this Report by apologizing for the exaggerated use of quotes. It was not an accident, it was done on purpose because we are sure that you, skilled reader, will perfectly understand this justifiable excess.

Rio de Janeiro, March 26th, 2013.

14 Lowe, Janet, "Warren Buffet Speaks," pg. 162.

| Period | Dynamo Cougar | IBX | Ibovespa | | |
|--------------|------------------|---------------|-----------|--|--|
| 60 months | 104,8% | 1,7% | -9,5% | | |
| 36 months | 66,4% | 1, 9 % | -13,6% | | |
| 24 months | 36,6% | -2,3% | -14,8% | | |
| 12 months | 12,0% | -3,1% | -12,7% | | |
| Year to date | -0,1% | -2,7% | -5,8% | | |
| | E L Ooth | | 0000/0/70 | | |

DYNAMO COUGAR x IBX x IBOVESPA Performance up to February/2013 (in R\$)

NAV/Share on February 28th = R\$ 403,008063672

¹² Lemann, Jorge Paulo, "18 Princípios do Banco Garantia."

¹³ Lowe, Janet, "Warren Buffet Speaks," pg. 158.

DYNAMO COUGAR x FGV-100 x IBOVESPA (Performance – Percentage Change in US\$ dollars)

| | DYNAMO COUGAR* | | FGV-100** | | IBOVESPA*** | | |
|--------|----------------|-------------------|-----------|-------------------|-------------|-------------------|--|
| Period | Year | Since 01/09/93 | Year | Since 01/09/93 | Year | Since 01/09/93 | |
| 1993 | 38,8% | 38,8% | 9,1% | 9,1% | 7,7% | 7,7% | |
| 1994 | 245,6% | 379,5% | 165,3% | 189,3% | 62,6% | 75,1% | |
| 1995 | -3,6% | 362,2% | -35,1% | 87,9% | -14,0% | 50,5% | |
| 1996 | 53,6% | 609,8% | 6,6% | 100,3% | 53,2% | 130,6% | |
| 1997 | -6,2% | 565,5% | -4,1% | 92,0% | 34,7% | 210,6% | |
| 1998 | -19,1% | 438,1% | -31,5% | 31,5% | -38,5% | 91,0% | |
| 1999 | 104,6% | 1.001,2% | 116,5% | 184,7% | 70,2% | 224,9% | |
| 2000 | 3,0% | 1.034,5% | -2,6% | 177,2% | -18,3% | 165,4% | |
| 2001 | -6,4% | 962,4% | -8,8% | 152,7% | -25,0% | 99,0% | |
| 2002 | -7,9% | 878,9% | -24,2% | 91,7% | -45,5% | 8,5% | |
| 2003 | 93,9% | 1.798,5% | 145,2% | 369,9% | 141,3% | 161,8% | |
| 2004 | 64,4% | 3.020,2% | 45,0% | 581,2% | 28,2% | 235,7% | |
| 2005 | 41,2% | 4.305,5% | 30,8% | 790,7% | 44,8% | 386,1% | |
| 2006 | 49,8% | 6.498,3% | 43,2% | 1.175,8% | 45,5% | 607,5% | |
| 2007 | 59,7% | 10.436,6% | 68,4% | 2.048,7% | 73,4% | 1.126,8% | |
| 2008 | -47,1% | 5.470,1% | -50,1% | 973,3% | -55,4% | 446,5% | |
| 2009 | 143,7% | 13.472,6% | 151,9% | 2.603,3% | 145,2% | 1.239,9% | |
| 2010 | 28,1% | 17.282,0% | 15,2% | 3.013,2% | 5,6% | 1.331,8% | |
| 2011 | -4,4% | 16.514,5% | -20,6% | 2.373,0% | -27,3% | 929,1% | |
| 2012 | 14,0% | 18.844,6% | 11,8% | 2.664,3% | -1,4% | 914,5% | |

| | DYNAMO COUGAR* | | FGV- | FGV-100** | | IBOVESPA*** | | |
|------|----------------|------|-------|-----------|--|-------------|-------|--|
| 2013 | Month | Year | Month | Year | | Month | Year | |
| JAN | 1,7% | 1,7% | 3,3% | 3,3% | | 0,8% | 0,8% | |
| FEV | 1,7% | 3,4% | -2,7% | 0,5% | | -3,3% | -2,5% | |

Average Net Asset Value for Dynamo Cougar (Last 12 months): R\$ 1.906.605.156

(*) The Dynamo Cougar Fund figures are audited by Price Waterhouse and Coopers and returns net of all costs and fees, except for Adjustment of Performance Fee, if due. (**) Index that includes 100 companies, but excludes banks and state-owned companies. (***) Ibovespa closing.

Please visit our website if you would like to compare the performance of Dynamo funds to other indices:

www.dynamo.com.br

This report has been prepared for information purposes only and it is not intended to be an offer for sale or purchase of any class of shares of Dynamo Cougar, or any other securities. All our opinions and forecasts may change without notice. Past performance is no guarantee of future performance. According to the brazilian laws, investment funds are not guaranteed by the fund administrator, nor by the fund manager. Investment funds do not even count for any mecanism of insurance.



DYNAMO ADMINISTRAÇÃO DE RECURSOS LTDA. Av. Ataulfo de Paiva, 1235 / 6° andar. Leblon. 22440-034. Rio. RJ. Brazil. Phone: (55 21) 2512-9394. Fax: (55 21) 2512-5720