Report
DYNAMO 127
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When Designs Deviate

- The "Great Famine" in China (1959–1962) became known as one of the greatest tragedies in human history, when tens of millions of people lost their lives to starvation. Like any event of great magnitude, multiple factors contributed to the calamity. Today, it is widely recognized that misguided human decisions were the primary cause, with natural phenomena playing a secondary role. Among the main drivers of the disaster was the campaign against the "Four Pests," in which the government of the People's Republic of China mobilized citizens to eliminate mosquitoes, rats, flies, and sparrows. This was one of the initiatives of the "Great Leap Forward," a policy aimed at modernizing agrarian China and transforming it into an industrial power. Apparently, sparrows were included on the extermination list based on the mistaken belief that their primary diet consisted of agricultural seeds, when in fact they feed mainly on insects. The mass eradication of sparrows led to an uncontrolled increase in the locust population – true crop destroyers – contributing to a sharp reduction in grain production, which fell by as much as 70% in 1960 compared to 1958. Instead of a Great Leap Forward, what ensued was a tragic setback.
- It is said that Queen Elizabeth I, upon questioning her financial adviser Thomas Gresham about the reasons for the severe financial difficulties of her reign, was told that the precarious situation stemmed from the monetary policy adopted earlier by her father, King Henry VIII. Seeking alternatives to finance his government without burdening citizens with higher taxes, the king decided to mint coins with a lower silver content. Henry VIII's initiative was not original, as the practice of seigniorage through currency debasement had been repeatedly employed by profligate sovereigns. The long-term results were also well known. Merchants, realizing that the new coins had lower intrinsic value, preferred to hoard, export, or melt down the older coins to appropriate the precious metal's intrinsic worth. The reduction in the quantity of money in circulation led to a contraction in economic activity and a deterioration in living standards – an effect opposite to what was originally intended. This outcome, summarized in the statement "bad money drives good money out of circulation," became known as Gresham's Law.
- In 1915, a new U.S. maritime regulation, known as the Seamen's Act, required that any ship over one hundred tons carry enough lifeboats to accommodate all passengers in the event of an emergency. The law was a response to the Titanic disaster three years earlier, when hundreds of passengers perished due to an insufficient number of lifeboats. The SS *Eastland* was a poorly designed ship, regarded as one of the most awkward vessels of all time. Complying with the new requirement, lifeboats were stacked on its deck, making the ship even more unstable. On July 24, 1915, just a few meters from the dock, shortly after passengers boarded for a leisure trip, the ship began to list and within minutes capsized. More than 800 passengers were unable to escape. In this case, regulation intended to enhance safety ended up "causing" a large-scale accident.
- Facebook was created in 2004 by Mark Zuckerberg as a networking tool for Harvard students. It subsequently expanded to connect students from other universities. In 2012, it became a publicly traded company with the mission of "giving people the power to share and make the world more open and connected." Its original purpose was to foster social interaction, with profit seen as a means to provide better services while pursuing these more noble objectives. With its explosive growth, however, the platform began to capture and reflect realities that were not initially envisioned: the proliferation of misinformation, fake news, and hate speech; cultures of exclusion and cancellation; increased polarization (extremism) and violence (toxicity); bullying; and conspiracy theories – making adequate content curation extremely difficult. In addition, concerns about data privacy and the monetization of users' personal information became frequent, as did vulnerabilities related to interactions with third-party applications. These ingredients were far removed from the platform's original purpose. On the other hand, these socially and morally negative

behaviors ended up generating engagement rates well above the company's initial business plan.

- Birds occupy a particular symbolic role in Shakespeare's work, embodying profound realities such as power, freedom, peace, affection, death, and evil, serving as instruments that quite literally give wings to his incomparable imagination. It is said that 65 species are mentioned in his texts. Known for their intelligence and ability to mimic sounds, starlings are mentioned only once, in *Henry IV*, when the character Hotspur, seized by conspiratorial impulses, fantasizes about training the bird to repeat the name "Mortimer" during the king's sleep in order to incite him to rescue his brother-in-law. Eugene Schieffelin, a German immigrant and passionate admirer of the "Bard of Avon," wished to bring elements of the Shakespearean universe into his daily life in New York. In 1890, he released a few dozen starlings in Central Park so he could admire them from his window. From an aesthetic standpoint, the experiment was a success. Energetic and aggressive, starlings proliferated rapidly – too rapidly. Today, the United States is home to approximately 200 million of them. Known among farmers as "feathered bullets," they are estimated to cause about one billion dollars in agricultural damage annually, earning a reputation for selecting the highest-quality grains. With a denser physical build, flocks of starlings pose a particular threat at airports and have been identified as responsible for the worst bird-related aviation accident in U.S. history. Ignoring the complexity of ecosystem balance, a naïve aesthetic adventure turned into a bizarre nightmare.
- The journey of Alexander Fleming, a physician and researcher at St. Mary's Hospital in London, is widely known. Fleming combined clinical practice (vaccines) with bacteriological research. Before leaving on vacation in the summer of 1928, he inoculated culture plates with staphylococcal colonies and stacked them in a corner of his laboratory bench, out of the way of an assistant who would be working during his absence. When he returned about a month later, he observed several plates contaminated with mold and noticed that the bacteria surrounding the mildew had died. Fleming quickly and correctly identified the contaminating mold as a species from a common fungal family, *Penicillium rubens*. Fourteen years later, after continuous research, the yellowish substance produced by the mildew – penicillin – began to be manufactured on a commercial scale, becoming the first antibiotic widely used, precisely at a time of great need during World War II. Considered the greatest medical victory of all time, it is estimated that more than half a billion lives have been directly saved by the substance discovered by accident.
- It is said that at some point during British colonial rule in India, alarmed by the excessive number of venomous snakes in the city of Delhi, the British authorities decided to offer a monetary reward for each snake killed. Initially, the strategy seemed successful, with large numbers of snakes captured. Over time, however, the local population began breeding the reptiles. Dead snakes earned rewards; new hatchlings were killed for more rupees, and so on. The British eventually realized the locals' cleverness and terminated the incentive program. In response, breeders simply released the snakes. As a result, the British ended up with less money and even more snakes in the city. The episode became known as the **cobra effect**, the most frequently cited example of what economists call a "perverse incentive scheme," in which an incentive system produces results opposite to those intended in its original design.

What aspect aligns the episodes above – so different in domain, dispersed in purpose, and distant in time? They are cases in which so-called "unintended consequences" (hereafter UCs) occur. UCs arise when a deliberate action produces an effect different from what was intended at the time of the act – an effect that very likely would not have occurred had the original initiative not been taken. UCs are pervasive phenomena across all social and human disciplines. Who does not recall Adam Ferguson's famous phrase (1767), which could well serve as the epigraph of this text: *"History is the result of human action, but not of human design."* Not to mention economics, the science par excellence defined as "praxeological," that is, the study of human action precisely as reflected and purposeful behavior.

UCs are referred to by various names and are often confused with other expressions, depending on conceptual perspective. When the causal chain of events and the temporal dimension are emphasized, they are commonly called "second-order effects." In disciplines such as medicine and engineering, undesirable results of an intervention are referred to as "side effects." In psychology, the "boomerang effect" is well documented, when persuasive arguments trigger antagonistic reactions in the interlocutor. UCs can be negative or positive. Negative ones are generally described in phenomena where the outcome occurs in the opposite direction of the original intention, also known as "perverse outcomes." In this Report, we will focus specifically on these situations, leaving the consideration of positive repercussions for a later discussion.

In another distinction, UCs can be classified as anticipated or unanticipated. A classic example of the former is medication, where potential side effects are known in advance, even though no one desires them at the time of

prescription. Unanticipated UCs are the primary object of our curiosity and investigation, since by definition they escape adequate risk assessment and introduce uncertainty into outcomes. UCs are so frequent and apparently inevitable that they have acquired categorical status: it is very common in the literature to find articles describing events under the "law of unintended consequences."

The corporate environment is fertile ground for UCs. Many well-known examples involve global companies:

Kodak invented the digital camera in 1975 but chose not to commercialize it in order to avoid undermining its leadership in the profitable film market. Competitors such as Fuji, Sony, Canon, and Nikon embraced the technology, produced higher-quality models, and dominated the market. Kodak lulled itself with generous patent royalties until 2007, but by the time it awoke, it had already lost relevance in the digital domain. In 2012, it filed for bankruptcy.

In order to counter Pepsi's growing market share driven by a sweeter flavor appealing mainly to younger consumers, Coca-Cola launched "New Coke" in 1985. The result was far from desired. Consumers deeply attached to the original formula reacted intensely, questioning brand loyalty and publicly criticizing the company. Coca-Cola was forced to reverse course, incurring high costs to promote a "Coca-Cola Classic" campaign.

Boeing decided to confront the success of the Airbus A320neo with a different strategy. Instead of designing a new aircraft, it chose to develop a modified version of the 737, the Max series. By saving time and cost, it intended to offer competitive quality and pricing. After two tragic accidents, the company had to pay approximately USD 20 billion in compensation and suffered a severe reputational blow.

Closer to home, we also observe numerous situations in which companies face UCs – strategic moves that, instead of producing progress in desired directions, placed them at a disadvantage or increased vulnerability. To avoid unnecessary embarrassment, we prefer to omit company names, which we believe does not in any way compromise the conceptual validity of the argument.

Example 1 – Company "1" makes a major acquisition in the sector of an iconic brand, aiming to capture management synergies by offering a broad portfolio of complementary brands. The acquisition leads to a significant increase in operational complexity that apparently surprised the management team, ultimately precipitating the company's "sale" to a competitor.

Example 2 – Company "A" acquires an asset intending to strengthen itself in response to a strategic move by its main competitor "B," which, through a recent joint venture, built an attractive integrated position in the sector. A third relevant player, "C," fearing isolation, unexpectedly decides to partner with "B" as well. Thus, "A's" defensive move – meant to create a credible threat – ended up triggering a decision by "C" that further strengthened "B's" competitive position.

Example 3 – Riding the post-pandemic euphoria, Company "3" announces an ambitious investment cycle in manufacturing capacity and product portfolio, while simultaneously making a major overseas acquisition at multiples that proved ex post to be stretched. Subsequently, the domestic market cools and the acquired brand's strength fails to materialize. The company is forced to retrench: it replaces the executive team, reduces the number of SKUs, and shifts focus to efficiency and scale. Enormous effort is expended simply to return to its prior position.

Example 4 – A holding company decides to acquire a stake in a new asset, involving a significant volume of resources through a leveraged purchase. The investment underperforms financial expectations. The holding company must divest other assets to meet its obligations. Additionally, governance disputes related to the investment strain relations with the government, eventually contaminating the institutional relationships of other assets. Finally, financial distress reverberates internally, destabilizing the partnership and culminating in the need to admit a new reference shareholder.

Example 5 – A controlling shareholder acquires a partner's stake, ending a long-standing ownership dispute, and transfers the acquisition debt to Company "5," which operates in a commodity environment. With high leverage, priority shifts to managing the financial liabilities. The company is forced to sell valuable assets to a neighbouring competitor, helping it enable a large greenfield project – likely contributing to a more challenging pricing environment in the future.

Example 6 – Company "6" holds a concession to operate a logistics transport mode that appears to grant it a natural monopoly. Under this perception, it announces substantial price increases at a time when customers lacking sufficient storage capacity need to ship a strong harvest of perishable goods. Surprisingly, a significant portion of customers manage to find alternative transportation solutions. Paradoxically, in a year of high potential demand, the company faces low asset utilization in a business with high fixed costs. As a consequence, margins and profitability suffer.

Ideally, companies should seek to avoid the undesirable – and often dramatic – encounter with negative UCs. And we, as long-term investors, for the sake of portfolio performance, should also recognize early warning signs

of strategic decisions that will prove misguided. But is this possible? If UCs have even become a "law," can future unintended consequences be detected and defused in time? To investigate this dynamic, we must understand it better, which naturally leads us to inquire about its origins: how can the occurrence of UCs be explained? There are two main lines of argument.

The first originates in the seminal work on the subject by sociologist Robert K. Merton (1936)[1]. Merton identifies five "limiting factors" that hinder correct anticipation of the consequences of purposive action: (i) ignorance; (ii) error; (iii) the "imperious immediacy of interest"; (iv) "basic values"; and (v) "self-defeating prophecies."

"Ignorance" refers to insufficient knowledge, incomplete information, and the fact that decisions are often based on opinion and estimation rather than scientific knowledge. "Error" can occur at any stage of purposive action: assessing the current situation, inferring future conditions, choosing a course of action, or execution itself. Merton touches on decision-making problems that empirical research in cognitive and behavioral psychology would later explain in detail, such as difficulty handling statistical probabilities, anchoring in past experience, habit rigidities that prevent exploration of better alternatives, emotional involvement, obsession, wish fulfilment, among others. The "imperious immediacy of interest" consists of excessive focus on the short term, leading us to ignore second-order effects. The dominance of "basic values" acts as a magnetic force exerted by a fundamental value system that prevents independent evaluation of reality, producing blind spots. Finally, self-defeating prophecies occur when the announcement of predictions triggers mechanisms that prevent their realization[2,3].

Thus, the understanding took hold that UCs could be explained primarily by cognitive limitations infiltrating individual decision-making processes. Under this view, a person with broad knowledge, effective information-processing tools, training to avoid judgment errors and visualize second-order effects, and awareness of the dangers of belief and value capture would theoretically be able to avoid forced encounters with UCs[4].

Subsequently, a second line of interpretation gained traction. With the development of complexity theory and systems thinking, UCs came to be analysed not only through the lens of individual decision-making psychology, but as emergent properties of dynamic systems. Under this view, regardless of cognitive missteps, UCs emerge from individual interactions reverberating through the social fabric. In networked environments, a single initiative triggers countless possible responses. Other agents process the information and react. At the aggregate level, what we observe is a tangle of actions and reactions that collide, conform, cancel, amplify, or self-reinforce, producing coordinated or random behaviors, continuously reshaping the physical environment and incentive structures, generating perpetual novelty, and constantly inviting agents to update and adapt. In this dynamic ecosystem, collective behaviors sometimes emerge that are neither explained, programmed, nor even desired by local individual actions. In other words, the aggregate outcome of these interactions becomes unpredictable. UCs would thus be intrinsic and inevitable properties of such environments, emerging independently of assumptions about agents' profiles and intentions.

The reality of the economy – and the microcosm of companies embedded within it – fits perfectly into this framework, exhibiting characteristics that favor the occurrence of UCs, among which we can highlight:

(i) The presence of mechanisms that propagate signals and trigger simultaneous responses among numerous interconnected agents that are difficult to anticipate. For example, market prices capture dispersed information and reveal elements of subjectivism available only in the mind of each agent. As a result, it is quite common for companies to raise prices relying on brand strength and then be surprised by demand elasticity higher than expected; or to cut prices believing they will gain market share, only to realize that competitors follow suit and everyone ends up worse off, transferring income to consumers;

(ii) Agents respond to changes in incentives in unpredictable ways, and thus interventions in the system may

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1 *As usual, in order to make the text more fluid, we have moved the full bibliographic references to our website:* https://www.dynamo.com.br/

2 *The example cited in the text is the Marxist theory of the progressive concentration of wealth, which would lead to the increasing impoverishment of the working masses. In the author's view, however, this process ended up giving rise to labor unions, which in turn led to more favorable bargaining outcomes for labor income, thereby helping to prevent the original prophecy from coming true.*

3 *Twelve years later, Merton (1948) would publish another article reversing the argument and introducing the now widely used concept of the "self-fulfilling prophecy," whereby a false definition of a situation evokes new behavior that causes the originally erroneous conception to become true.*

4 *Theoretically because we know that cognitive perfection and extreme rationality are unattainable premises, as convincingly demonstrated by the findings of Behavioral Economics/ Finance, which show that judgment biases and heuristics generate systematic deviations, as discussed in Dynamo Reports 44 and 45.*

produce outcomes far removed from those initially expected (as in the "cobra effect" described above). A common example is the design of corporate compensation packages with metrics and incentives that sometimes encourage gaming behavior by employees;

(iii) Economic phenomena exhibit time-lagged effects. This is very common, for instance, in fiscal stimulus programs or monetary easing cycles, where effects at the end point (economic activity) are felt with delays of two or three quarters. In companies, changes in strategic orientation – such as cultural transformations, decisions to become more consumer-centric, or more asset-light – also take time to produce tangible effects. Accepting one of the classic definitions of risk as "more things can happen than will happen," the longer the response cycles, the more uncertain (risky) the final outcomes become;

(iv) The presence of feedback loops, non-linear reactions, and cascade effects, such as during a reputational crisis or in the wake of a technological disruption, which can rapidly lead to a company's loss of relevance and/or business obsolescence;

(v) Because economic systems deal with highly sensitive issues – such as meeting basic needs, household financial health, and employment – non-rational reactions and excessively emotional judgments frequently occur among agents and consumers, distorting the intended effects of public policies and often leading to disappointment relative to corporate budget projections;

(vi) Business decisions do not occur in a vacuum, but depend on the political substrate, the phase of the economic cycle, the institutional arrangement, and the regulatory environment, all of which add layers of interference, complicating analysis and amplifying the range of possible repercussions;

(vii) The various agents involved in the economic system possess different levels of information and dispersed interests. Public policy choices are based on simplified models, and business decisions on incomplete information. In both cases, cognitive biases and blind spots are present. The reaction functions of taxpayers, workers, consumers, and investors often rely on exaggerated short-term reflexes rather than sober and logical deliberation, producing effects that are difficult to anticipate.

We are thus confronted with a constellation of elements capable of sabotaging the intended constraints and promised causal links between the initial purposes of decisions and their final outcomes, leaving the door open to the occurrence of unintended consequences (UCs). This type of environment, with intricate and seemingly confusing relationships, presents a permanent challenge to our linear way of thinking. The pretence to knowledge, the desire for control, and the intent to assign purposeful causality to events are deeply ingrained dispositions of human psychology. Any instances that threaten this ordering of convictions generate discomfort and tend to be dismissed or forcibly "corrected." As a result, we persist in intervening, believing we can "fix" this diffuse reality by adapting it to our mental frameworks.

There are countless examples of regulatory initiatives or incentive designs aimed at providing nudges to move the system in a desired direction. The outcomes invariably resemble a "backfire," the more popular expression for the phenomenon of UCs. Just a few brief illustrations: (i) excessive increases in certain compliance rules disproportionately burden smaller companies, leading to greater market concentration and discouraging entrepreneurship; (ii) mark-to-market accounting requirements for banks force them to report losses, generating pro-cyclical movements that exacerbate financial crises; (iii) the U.S. healthcare reform (Affordable Care Act, 2010) emphasized patient satisfaction surveys as a metric for evaluating physicians, leading some doctors – seeking to avoid delivering bad news – to refrain from prescribing difficult lifestyle changes and to become more permissive in opioid prescriptions; (iv) in the United Kingdom, ambulances carrying patients were found to circle hospitals to avoid worsening emergency waiting-time metrics; (v) it is also well known that police officers may manipulate cases to inflate "clearance" rates; and (vi) teachers may narrow the scope of learning by teaching students primarily how to pass exams, only.

The more valuable it is in a given activity to associate observed outcomes with the ingenuity of the human mind, the more inconvenient the reality of UCs becomes. Not by chance, the ingredients listed above pose a formidable challenge for public policymakers as well as for those responsible for corporate strategic planning – roles that are justified only under the premise of such a causal link.

Fortunately, there is a strong tradition of economists who understood the mechanics of these broad processes of social interaction and warned about the dangers of deliberate "constructivist" interventions. Along similar lines, the management literature offers valuable references from those who questioned excessive confidence in strategic planning, emphasizing instead its limitations as a forecasting exercise. By way of illustration, let us consider two examples from each domain.

In the mid-19th century, France was undergoing a severe economic crisis, along with intense political agitation, as socialist, interventionist, and protectionist ideas gained popularity. In this context, Frédéric Bastiat published in 1848 the pamphlet *"What Is Seen and What Is Not Seen,"*

reminding us that economic initiatives produce immediate and visible effects, as well as longer-term repercussions that are less perceptible. According to Bastiat, the bad economist sees only the former, while the good economist trains their eye to trace the less obvious paths of consequences as initiatives affect other individuals and propagate through successive transactions across multiple sectors. The broken window example became a classic. Why not break windows to stimulate the glass industry and bring prosperity to its owners? That is what is seen. What is not seen is that the person who pays for the broken window no longer spends money on shoes or books. Repairing the window does not increase the economy's capital stock nor generate additional well-being for the person who paid for it. Had the money been spent on shoes, well-being would be higher: the individual would have both the window and the shoes. In the first case, the capital stock remains unchanged; in the second, it increases, along with social welfare. Bastiat concludes that destruction for the sake of repair does not generate "national labor," nor is there merit in calculating how much "industry would gain from the burning of Paris." Beyond the window-breaker and the glazier, Bastiat reminds us of a third crucial actor operating in the shadows of the unseen: the shoemaker. Only with this expanded scope of vision can one fully grasp the true second-order, unintended consequences triggered by an initial action[5].

A century later, we encounter Friedrich Hayek, a pioneering explorer of complexity in economics. For Hayek, the central economic problem lies in ensuring the best use of resources given that the knowledge of "the particular circumstances of time and place" (Hayek, 1945) necessary for sound allocation decisions is entirely fragmented across dispersed individuals. The market price mechanism emerges as the most efficient solution to this coordination problem. Prices function both as signals of relative scarcity and as incentives for individuals to adjust their goals and behaviors accordingly. The price system arises organically from decentralized interactions among agents pursuing their objectives within a coherent legal and institutional framework. The stability of rules allows agents to interpret others' intentions coherently, facilitating the formation of mutually compatible plans. Coordination, therefore, is not the result of deliberate human design, but an expression of collective intelligence that produces a "spontaneous order" – an emergent property of the rational economic order. Given the epistemic superiority of the price mechanism, any targeted intervention becomes counterproductive, as it disrupts this sophisticated system of information and incentives. Hence the recurring surprise of governments and planners at the unintended and counterintuitive consequences of public policy experiments. Despite noble intentions, the system follows the logic of complexity: price controls generate shortages and inflation; stimuli produce distortions, malinvestments, and, later on, contraction.

Bastiat and Hayek reached similar conclusions through different paths. Both warned against the traps of deliberate intervention in complex systems such as the economy. Bastiat emphasized our cognitive limitations and the need to expand analytical scope to successive layers of consequences, anticipating the line of explanation later formalized by Merton. Hayek inaugurated the second path, framing unintended consequences as intrinsic outcomes of densely interactive environments – here, the market price system[6].

We know that companies and their competitive environments are also living, adaptive, and complex realities. Unlike economies, whose order emerges spontaneously from individual motivations and everyday interactions, firms are born of deliberate initiatives by one or more individuals whose shared purposes are embedded in corporate charters. As such, the desire to plan and intervene to reduce uncertainty in pursuit of these objectives is intrinsic to organizational nature. Consequently, companies are equally exposed to unintended consequences arising from such deliberate steering efforts.

Strategic planning emerged precisely as a tool to address uncertainty, based on the premise that corporate prosperity depends on business predictability and precise operational control. By defining choices regarding scope and resource allocation, strategy sets general direction and seeks to secure competitive advantages that optimize performance. Implicit in this logic is the assumption that ordered choices require the ability to predict the consequences of actions.

There is nothing fundamentally wrong with this reasoning. On the contrary, we at Dynamo have learned to admire companies with strong strategic formulation capabilities. The problem arises when this logic is taken

5 *Bastiat extends the same line of reasoning to other circumstances, such as preventing the dismissal of unproductive employees or the substitution of labor by machines; increasing taxes to finance public works or war efforts; subsidizing the arts; nationalist protectionism; subsidized credit; among others*

6 *As a logical corollary of these perspectives, both authors advocated a more "liberal" view of the economy. Here, however, we are not addressing the normative merits of these interpretations but rather considering the argument from an epistemic standpoint and how this view sheds light on the phenomenon of UCs, which is the object of interest of this Report.*

to extremes – when there is excessive, sometimes blind, reliance on linear causality implied by strategic actions, while ignoring competitive dynamics, interaction "noise," and unanticipated responses from other agents. When outcomes are assumed to flow mechanically from intentions, the possibility of surprise or contingency is dismissed – and unintended consequences are ruled out.

Several influential management thinkers have explored precisely this vulnerability. Henry Mintzberg (1994) argues that traditional strategic planning failed to deliver the promised "sustainable competitive advantage" because it rests on false premises:

(i) The fallacy of prediction or predetermination – the belief that reliable projections about firms and their environments are possible, as if the world stood still during planning and then followed the planner's script;

(ii) The fallacy of detachment – treating planners as distant observers rather than deeply embedded actors, often relying on abstract models that miss operational nuances;

(iii) The fallacy of formalization – viewing planning as a set of formal procedures and analytical techniques, overemphasizing data while neglecting intuitive and experiential knowledge, often favoring short-term incremental improvements over long-term transformational change, fostering bureaucratic inertia and suppressing creativity and innovation.

To counter these traps, Mintzberg proposes a more collaborative and participatory approach to strategic thinking, engaging multiple organizational levels and stakeholders to incorporate collective wisdom and diverse experiences. He advocates a more holistic and integrated strategy process that allows room for creative intuition and emergent – not just deliberate – strategies. This leads to his well-known formulation that traditional strategic planning is an "oxymoron," since planning is analytical whereas strategy must be synthetic.

Ralph Stacey and Chris Mowles (2016) remind us that companies are living organisms – complex adaptive systems – capable of change and novelty precisely because stability and instability coexist and interact. From this tension, a dynamic of creative destruction emerges through self-organization[7]. Under this paradigm, companies are shaped primarily by bottom-up local interactions (among employees, suppliers, and customers at the front line), rather than by top-down plans and commands. Strategic planning is challenged because, from a complexity perspective, "stability, harmony, and consensus cannot be equated with success, and unpredictability becomes fundamentally unavoidable" (Stacey & Mowles, 2016). Under this unconventional view, it is not even appropriate to claim to be "in control," since emergence is incompatible with the notion that the company is governed by a plan or program designed by someone. Strategy, instead, results from the interaction of individual intentions and choices within local relationships.

When strategic planning rests on questionable premises and fails to consider the vibrant dynamics of corporate interactions, it can lead to disappointment, surprise, or unintended consequences. Here again we see echoes of the two explanatory lines: Mintzberg highlights the cognitive limitations of traditional planners, while Stacey and Mowles emphasize firms as complex systems from which outcomes may emerge organically, beyond deliberate design.

Companies expend significant organizational effort and deploy substantial productive resources in an attempt to domesticate their business environment, with the aim of reducing uncertainty and achieving a favorable competitive position that ensures differentiated and sustainable returns.

Dynamo Cougar x Ibovespa
Performance in R$ up to December 2025

Period	Dynamo Cougar	Ibovespa*
120 months	249.30%	271.70%
60 months	7.20%	35.40%
36 months	50.40%	46.80%
24 months	22.70%	20.10%
12 months	38.70%	34.00%
Year (2025)	38.70%	34.00%
Month (December)	-0.10%	1.30%

(*) Ibovespa closing. Indices are presented as economic reference only, and not as a benchmark.

7 *Self-organization means that local interactions among agents in a complex system spontaneously give rise to coherent patterns, structures, or behaviors in the absence of command, control, or planning.*

Encountering negative unintended consequences (UCs) along this journey is therefore deeply unwelcome news. It reaffirms the presence of the imponderable and exposes the frustration inherent in a costly endeavor. Given the well-known frequency with which UCs occur, avoiding them would represent a meaningful achievement – an attestation of competence, possibly a source of competitive differentiation, and even a credential of corporate longevity. As such, they should rank among the top concerns of those responsible for the formulation and execution of corporate strategic guidelines. They should also be an essential component of the analytical toolkit of diligent investors. This is precisely why we at Dynamo have devoted sustained effort to understanding this reality, surrounded as it is by enigmatic contours.

We do not possess a magic formula or a precise indicator capable of detecting in advance the likelihood of UCs in strategic and business decisions. However, we have been developing and refining a set of diligences embedded in our analytical process. In line with the two explanatory paths for the emergence of UCs, we organize these efforts into two broad groups:

(i) Continuously improving our cognitive repertoire, with the objective of reducing errors, biases, and blind spots – whether by pursuing greater analytical sophistication, practicing self-criticism, accumulating experiential knowledge year after year, refining our mental models, developing tools to process structured and unstructured data, or by strengthening our collegiate investment selection process – our so-called *System 3* (Dynamo Report 82) – aimed at fostering collective intelligence and overcoming, through group discussion, individual cognitive myopias and emotional entanglements;

(ii) Thinking systemically and incorporating into the investment process an understanding of companies and their businesses as complex adaptive systems, thereby driving research efforts in this direction as well. In practice, this translates into:

  (a) Paying closer attention to the less visible, fine-grained dynamics of interactions among the various participants in the corporate environment;

  (b) Recognizing that new properties and novel situations (emergent phenomena) may arise "spontaneously" from these interactions, independent of the commands and controls exercised by corporate leadership;

  (c) Considering that corporate initiatives unfold within a dynamic competitive environment, and from there envisioning a spectrum of third-party reactions and a branching tree of sequential responses and subsequent initiatives. Likewise, imagining what might go wrong in the future within this dynamic context and working backward to map risks – a technique known as *pre-mortem* analysis;

  (d) Understanding that interactive realities contain mechanisms with spillover and feedback effects – that is, internal forces that extend beyond their original boundaries, affecting other dimensions and potentially accelerating the rate of change of the "system," pushing it toward outcomes far removed from initial intentions;

  (e) Acknowledging that, by the very nature of this environment, planning and interventions often fail to proceed in the intended direction. This entails questioning executives about their understanding of these realities and about the diligences they are undertaking in light of such possibilities.

The short-term investor, who frequently enters and exits positions, executes over the course of a year a large number of "bets" that typically do not require deep analysis and are often assessed through a statistical lens. The long-term investor, by contrast, concentrates on a small number of investments selected through lengthy and careful diligence. Position sizes tend to increase as confidence grows – confidence that results from an exhaustive risk-management process composed of successive layers of checks and rechecks, akin to the most robust security systems, with multiple keys. In this setting, a negative surprise is accompanied by a much higher degree of frustration. Put simply, mistakes are more painful for the long-term investor because they undermine the entire construction of what was intended to be achieved. Hence our permanent disposition at Dynamo to dig deeply into such events until we fully understand what occurred. We must determine whether eventual surprises stemmed from a conspiracy of remote accidents or from connections that were undetectable *ex ante* but, once combined, produced the UCs in question. Or, alternatively, whether – upon rigorous and honest *ex post* examination – we uncover clues pointing to elements that we could have identified earlier, but failed to see at the time. When this is the diagnosis, the red button is pressed. As a collective priority, we immerse ourselves in the case until regret is transformed into learning and practical initiatives.

This is the rationale behind the list of diligences outlined above. Incorporating them means adding an analytical dimension that has traditionally been underexplored. By seeking to avoid negative surprises hidden within corporate decisions – and within our own – we believe we strengthen

DYNAMO COUGAR x IBOVESPA (Performance in US$)*

Period	DYNAMO COUGAR Year	DYNAMO COUGAR Since Sep 1. 1993	IBOVESPA** Year	IBOVESPA** Since Sep 1. 1993
1993	38.8%	38.8%	7.7%	7.7%
1994	245.6%	379.5%	62.6%	75.1%
1995	-3.6%	362.2%	-14.0%	50.5%
1996	53.6%	609.8%	53.2%	130.6%
1997	-6.2%	565.5%	34.7%	210.6%
1998	-19.1%	438.1%	-38.5%	91.0%
1999	104.6%	1,001.2%	70.2%	224.9%
2000	3.0%	1,034.5%	-18.3%	165.4%
2001	-6.4%	962.4%	-25.0%	99.0%
2002	-7.9%	878.9%	-45.5%	8.5%
2003	93.9%	1,798.5%	141.3%	161.8%
2004	64.4%	3,020.2%	28.2%	235.7%
2005	41.2%	4,305.5%	44.8%	386.1%
2006	49.8%	6,498.3%	45.5%	607.5%
2007	59.7%	10,436.6%	73.4%	1,126.8%
2008	-47.1%	5,470.1%	-55.4%	446.5%
2009	143.7%	13,472.6%	145.2%	1,239.9%
2010	28.1%	17,282.0%	5.6%	1,331.8%
2011	-4.4%	16,514.5%	-27.3%	929.1%
2012	14.0%	18,844.6%	-1.4%	914.5%
2013	-7.3%	17,456.8%	-26.3%	647.9%
2014	-6.0%	16,401.5%	-14.4%	540.4%
2015	-23.3%	12,560.8%	-41.0%	277.6%
2016	42.4%	17,926.4%	66.5%	528.6%
2017	25.8%	22,574.0%	25.0%	685.6%
2018	-8.9%	20,567.8%	-1.8%	671.5%
2019	53.2%	31,570.4%	26.5%	875.9%
2020	-2.2%	30,886.1%	-20.2%	679.0%
2021	-23.0%	23,762.3%	-18.0%	538.9%
2022	-7.8%	21,899.9%	12.0%	615.4%
2023	32.1%	28,965.0%	31.8%	842.8%
2024	-30.8%	20,002.8%	-29.9%	560.7%
2025***	56.1%	31,224.4%	50.8%	845.5%

(*) Considering that this is a Fund that has existed since 1993. the figures were converted into dollars (US$) as a way to eliminate the volatility of the Brazilian currency throughout the period and. in this way. minimize the risk of possible misinterpretations by the reader in the case of an investment decision/ divestment. Dynamo Cougar is a fund that invests in NAV of an equity investment fund and is currently closed for new investments. (**) Ibovespa closing price. The index is presented as a mere economic reference and does not constitute a target or benchmark for the Fund. (***) Return up to December 2025.

the consistency of our investment process and enhance protection for our investors.

Rio de Janeiro, January 26th, 2026.

Additional information:

- **Inception:** 09/01/1993
- **Objective:** Deliver NAV appreciation above inflation in a medium/ long term horizon by investing at least 95% (ninety-five percent) of the fund´s net worth in the NAV of Dynamo Cougar Master Equity Investment Fund ("Master Fund")
- **Target investor:** Qualified investors
- **Status:** Closed for new investments
- **Redemption grace period:** 12 months grace period or liquidity fee of 3% for redemption within this time period*
- **Redemption NAV:** D+12 (calendar days)*
- **Redemption payment:** D+2 (working days) after NAV conversion*
- **Applicable taxation:** Equity
- **Anbima´s classification:** "Equity – Free Portfolio"
- **Management fee:** 1.90% per year for the Fund + 0.10% for the Master Fund
- **Performance fee:** on the top of IPCA + IMAB*
- **Average monthly net worth last 12 months:** R$ 5.287,4 Million.

(*) Detailed description provided in the bylaws

To find more information about Dynamo and our funds. or if you wish to compare the performance of Dynamo Cougar to other indices in different time periods. please visit our website:

www.dynamo.com.br

DYNAMO

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