

Resilience Coefficient: Measuring the Strategic Adaptability of Long-Term Investors Triggered by Artificial Intelligence

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Abstract. A core dilemma for long-term investors (LTIs) is that the very stability and patience which once defined them can breed strategic inertia. Artificial Intelligence (AI) is widely touted as the solution, yet conventional thinking often uncritically frames it as just a tool for efficiency. This study contends that this narrow perspective overlooks AI's truly transformative role. This paper reconceptualizes AI as a catalytic force that operates on an organization's foundational elements. Its impact reaches deeper than accelerating processes to actively reshape how institutions function by rewriting routines, shifting mental models, and redirecting resources. This study identifies three types of AI triggers that target routines, cognitive frameworks, and resource allocation. Each category presents distinct avenues for value creation alongside significant risks. Crucially, the ultimate effect of AI is not determined by its technical specifications but by the organization's absorptive capacity and its ability to learn, integrate knowledge, and adapt. Integrating dynamic capabilities theory with a micro foundations perspective, this study proposes a conditional model that reframes the essential challenge from one of technology adoption to organizational adaptation. Ultimately, this framework provides leaders with a diagnostic tool for guiding transformation. It highlights that in the AI era, sustainable competitive advantage is rooted not in technology itself, but in an organization's fundamental capacity to learn.

Keywords: Strategic adaptability, long-term investors, artificial intelligence, dynamic capabilities.

1. Introduction

However, these institutions continue to rely on strategies derived from historical precedent and linear forecasting. These tools are fundamentally ill-suited to the volatile, non-linear character of the contemporary environment. Clark and Monk aptly characterize this contradiction as a "strategic paradox," wherein the very attributes that once constituted the model's strength have now become its critical weakness [1].

In response, artificial intelligence is frequently promoted as a remedy. However, the prevailing perspective among both scholars and practitioners remains constrained by a technologically deterministic framework. This conventional approach simplistically treats AI as an amplification tool, assuming it will automatically enhance efficiency within existing structures without fundamentally challenging them.

This paper puts forward a sharper argument. This study contends that AI's primary role is not to amplify, but to catalyze. It functions as a catalyst with dual effects, operating at the most fundamental level of the organization. Rather than merely improving existing abilities, AI reshapes the foundation of the organization itself: the routines guiding action, the mental models shaping understanding, and the processes directing resources. Its effects are neither fixed nor predictable. Under favorable conditions, it accelerates the development of dynamic capabilities, improving how organizations sense opportunities, seize them, and transform themselves. Under unfavorable conditions, it speeds up their decline.

The key factors shaping these different outcomes is not technology, but organization. The success of an AI initiative depends on the long-term investor's absorptive capacity—its skill in acquiring, absorbing, transforming, and applying new knowledge [2]. This capacity for organizational learning, not the technical details of any algorithm, is what ultimately determines whether AI leads to growth or erosion.

To clarify this catalytic process, the paper develops a theoretical model that brings together dynamic capabilities theory, micro-foundational thinking, and absorptive capacity. The framework moves past technological determinism to offer a context-sensitive explanation of why AI drives renewal in some institutions but causes rigidity in others. It provides a diagnostic tool for leaders managing this essential transition.

After establishing the necessary theoretical background, this paper introduces an integrated framework to elucidate the mechanisms through which AI alters organizational micro-foundations. Next, this study tests the framework's plausibility by examining the case of Norges Bank Investment Management. Finally, this study discusses implications for both theory and practice.

2. Theoretical Foundation: Dynamic Capabilities, Micro-Foundations, and Absorptive Capacity

Given the limitations of single-theory approaches, this chapter constructs an integrated framework to explain not merely what AI does, but how, where, and under what conditions it affects long-term investors. This framework combines the Dynamic Capabilities View (DCV) to define strategic adaptation, a micro-foundations perspective to locate the site of AI's intervention, and Absorptive Capacity (ACAP) theory to explain heterogeneous outcomes.

2.1. The Dynamic Capabilities Framework

The Dynamic Capabilities Framework conceptualizes the strategic challenge for LTIs. It posits that in rapidly changing environments, sustained advantage derives not from static resources, but from a specific capacity: the ability to purposefully integrate, build, and reconfigure competences [3]. Teece operationalizes this through three core functions [4]. Sensing involves scanning, interpretation, and learning to identify opportunities and threats, such as systemic risks from climate change. Seizing requires mobilizing resources to capture value from new opportunities, primarily through capital allocation and governance decisions. Transforming involves the ongoing renewal of assets and organizational structures through strategic adjustments. The DCV usefully outlines the high-level capabilities needed for adaptation. However, its broad perspective also creates a significant "black box" effect, leaving the actual mechanisms for building and sustaining these capabilities unclear. This limitation is thrown into sharp relief when institutions grapple with the complexities of AI-driven data and algorithmic decision-making [5]. To address this gap, it becomes necessary to examine the micro-level processes where change actually occurs.

2.2. The Micro-Foundations of Capabilities

The micro-foundations perspective examines dynamic capabilities at the level of their constituent parts—the specific skills, processes, procedures, and decision rules—thus avoiding the tautological risk of the DCV. It is at this granular level—of organizational routines, cognitive frames, and resource flows—that change is enacted [6]. This makes the perspective indispensable, as it posits that AI's impact is not on capabilities abstractly, but on these specific micro-foundations. AI intervenes by automating and redesigning analytical routines, challenging and reconfiguring the cognitive frames of personnel, and influencing resource orchestration processes [7]. By altering these basic building blocks, AI reconstitutes capabilities from the bottom up, providing the mechanistic link needed to open the DCV's black box.

2.3. The Moderating Role of Absorptive Capacity

The integration of external knowledge is neither automatic nor uniform. Absorptive Capacity theory explains the variance in outcomes from similar AI adoptions. Zahra and George reconceptualized ACAP as the organizational routines to acquire, assimilate, transform, and exploit knowledge. The critical distinction between potential ACAP (acquisition and assimilation) and realized ACAP (transformation and exploitation) is paramount. An LTI can acquire a sophisticated

AI tool but, without the routines to assimilate its insights, transform its processes, or exploit its outputs, the technology will fail or even cause strategic drift. Therefore, ACAP acts not as a driver but as the essential moderating filter, a finding robustly validated by empirical research on technology adoption [8]. It determines whether an AI trigger leads to positive micro-foundational change and capability evolution, or to disruption and corrosion. This organizational learning capability, not the technology itself, is the ultimate determinant of success.

3. An Integrated Framework: AI as a Catalytic Trigger in Capability Evolution

This chapter integrates theoretical components into a cohesive framework, positioning AI not as a deterministic force but as a catalytic trigger. Its impact on an LTI's dynamic capabilities is contingent and mediated, initiating change at the micro-foundational level, which then propagates upward. This process is critically moderated by absorptive capacity and bounded by institutional context, providing a realistic, non-deterministic model for understanding organizational change.

3.1. The Nature of AI Triggers: A Typology of Intervention

A typology of AI triggers based on their primary point of impact on micro foundations helps clarify their disruptive potential. Routine disrupting triggers, for example natural language processing applied to document analysis, automate core workflows to improve efficiency. However, this gain often occurs at the expense of eroding traditional skills and fragmenting established processes. Cognitive challenging triggers, such as predictive analytics, generate insights that compel a revision of long held mental models. This process frequently provokes internal conflict and resistance as entrenched beliefs are challenged. The most consequential category involves resource reconfiguring triggers. Algorithmic trading systems that directly dictate capital allocation fall into this group, representing high stakes interventions. These offer substantial value creation potential but also introduce significant risks, including strategic drift and blurred accountability. A clear pattern links all three categories: as the potential for value creation grows, so too does the risk of significant disruption.

3.2. The Catalytic Pathway: From Micro-Foundations to Macro-Capabilities

The trade-off between value and risk unfolds along a specific catalytic pathway. AI triggers first exert their influence by altering the organizations micro foundations. They instill data driven routines, reframe how decision makers perceive risk and value, and steer resource allocation via algorithmic recommendations.

These granular changes collectively reshape higher order capabilities. For example, sensing improves through broader monitoring and faster response times. Seizing becomes more rational and agile. Transforming turns more proactive and precise.

This pathway can also operate in reverse. Failed AI implementation disrupts routines, creates cognitive confusion, and provides poor resource guidance. These failures corrode dynamic capabilities and increase the likelihood of strategic errors.

3.3. The Critical Moderator: The Filter of Absorptive Capacity

The translation of an AI trigger into constructive change is not automatic but is filtered by the organization's ACAP. Potential ACAP (acquisition and assimilation) determines an LTI's ability to identify and interpret a new technology's value. Realized ACAP (transformation and exploitation) determines its ability to integrate the tool, reconcile its outputs with human judgment, and act on its insights. High ACAP enables positive micro-foundational change and capability evolution. Low ACAP results in disruptive implementation, causing corrosion of routines and decay of capabilities. ACAP is thus the essential organizational filter determining the outcome.

3.4. Boundary Conditions: The Constraints of Context

The entire process is bounded by critical contextual factors. The LTI's mandate and mission (e.g., a sovereign fund's political constraints vs. an endowment's financial goals) fundamentally shape how AI can be deployed and its effects. The regulatory environment can enable or constrain the use of certain AI triggers. Most fundamentally, the inherent properties of the AI technology itself—its data quality, algorithmic fidelity, and explainability—form a critical technical boundary. A sophisticated tool built on biased data will produce corrosive outcomes irrespective of ACAP, making technological soundness a non-negotiable prerequisite for positive evolution [9].

4. Case Illustration: Applying the Framework to NBIM

Given the proprietary nature of internal data and processes at large financial institutions, this section cannot serve as a traditional empirical test. Instead, this study engages in a structured thought experiment. This paper uses the public case of Norges Bank Investment Management (NBIM)—an archetypal, sophisticated, and transparent LTI—as a plausibility probe for the framework. The objective is not to validate the model conclusively but to explore its explanatory power and, more importantly, to use it as a lens to generate novel and critical questions about AI adoption that transcend public disclosures. This exercise demonstrates how the framework shifts the debate from technological implementation to organizational learning.

Norges Bank Investment Management, manager of the Norwegian Government Pension Fund Global, is selected for this illustrative analysis. It is an ideal subject due to its explicit intergenerational mandate, colossal asset base, renowned long-term orientation, and advanced, well-documented approach to technology and innovation.

4.1. Triggers in Practice at NBIM

NBIM's public communications reveal deployments that align with two of three trigger categories. The fund extensively employs Routine-Disrupting Triggers, notably natural language processing (NLP) to systematically analyze corporate reports, news, and regulatory filings for governance and risk assessment. It also utilizes Cognitive-Challenging Triggers, such as sophisticated climate risk models and big data analytics that process alternative data to forecast long-term financial risks and opportunities. These tools are designed not merely to automate but to provide novel, forward-looking insights. Evidence of fully autonomous Resource-Reconfiguring Triggers is less pronounced in public discourse, suggesting a deliberate and cautious approach to ceding direct control over capital allocation to algorithms.

4.2. Tracing the Plausible Catalytic Pathway

The framework allows people to construct a plausible narrative of change from these deployments. The integration of NLP tools likely instantiates new organizational routines, moving from periodic, manual assessments to a continuous, automated scanning process, thereby altering the fundamental workflow of analysts. The outputs of climate risk models, by quantifying the financial materiality of environmental factors, have arguably reconfigured cognitive frames, elevating climate risk from an ethical concern to a core financial variable in the fund's collective understanding. Subsequently, these altered micro-foundations mediate enhanced dynamic capabilities. The fund's sensing capability is likely enhanced in scope (novel data) and depth (complex pattern detection). Its seizing capability benefits from more rational, data-driven engagement and allocation decisions. Its transforming capability is evidenced by a more proactive, anticipatory approach to long-term portfolio risk, such as its strategic emphasis on climate transition.

4.3. The Moderating Role of Absorptive Capacity at NBIM

NBIM's successful integration of AI is not an automatic outcome but a direct result of its exceptional absorptive capacity. The fund cultivates strong potential capacity by actively seeking

external knowledge. It forms partnerships with leading universities and technology firms, supported by dedicated internal R&D teams.

More importantly, NBIM displays notable realized capacity. It consistently demonstrates an ability to comprehend AI derived insights and embed them into core investment processes. These advancements are apparent in the fund's refined engagement strategies and improved risk assessment methods.

This robust absorptive capacity acts as a critical organizational filter. It allows NBIM to leverage AI's benefits while buffering against internal disruptions. Such disruptions often occur when technology evolves faster than institutional learning. Consequently, the fund's key strength lies in its proven ability to convert external knowledge into established practice. This capability, more than the technology itself, explains NBIM's successful adaptation.

5. Discussion and Implications

The case of NBIM demonstrates that the relationship between AI adoption and strategic adaptation is not direct but mediated by micro-foundational changes. This finding confirms the theoretical proposition: the impact of AI as a catalytic trigger is contingent upon the organization's absorptive capacity. The framework, therefore, moves the discussion beyond technological implementation to reveal the underlying mechanisms of organizational learning.

5.1. Theoretical Contributions

This research makes three pivotal theoretical contributions. First, it mounts a decisive critique against the technologically deterministic narrative dominating discussions of AI in finance. The study challenges the predominant instrumentalist view of AI as an optimizer of incumbent processes, theorizing it instead as a double-edged catalytic trigger that initiates non-linear, micro-foundational change. This contingent perspective is essential for explaining the heterogeneous outcomes observed in practice. Second, by employing a micro-foundational lens, the study opens the "black box" of dynamic capabilities. This study specifies the tangible mechanisms—alterations to routines, cognitive frames, and resource flows—through which AI reconstitutes organizational capabilities from the bottom up, thereby addressing long-standing critiques of circular reasoning in the DCV literature. Finally, by positioning absorptive capacity as the core moderating variable, the framework shifts the explanatory focus from technological attributes back to organizational ones. This study elevates ACAP from a peripheral capability to the central meta-capability of the AI age, providing a powerful theoretical explanation for why most AI transformations fail and why organizational learning is the ultimate determinant of success.

5.2. Practical Implications

For LTI managers, board members, and regulators, the framework offers concrete guidance. The primary implication for investment leaders is that strategic success hinges not on procuring the most advanced technology, but on building the organizational capacity to leverage it. This necessitates targeted investments in human capital and learning routines that bolster both potential ACAP (e.g., through R&D initiatives and external partnerships) and realize ACAP (e.g., by designing formal processes for integrating AI insights into decision-making). The framework serves as a diagnostic tool; managers can map their AI initiatives against the micro-foundations to preemptively identify potential points of failure, such as where a new tool might disrupt routines without redesign or create cognitive conflict without reconciliation. Furthermore, the analysis cautions against a blind pursuit of full automation. A human-centric augmentation model, where AI is designed to complement rather than replace human expertise and relational judgment, particularly in complex seizing and transforming activities, is more conducive to fostering long-term adaptability [10]. Regulators must therefore ensure that frameworks designed to foster innovation do not inadvertently constrain an LTI's

ability to evolve its dynamic capabilities. As recent policy reports advise, this necessitates a nuanced, risk-based approach to AI governance that balances innovation with systemic stability [11].

6. Conclusion

This investigation commenced by examining the strategic paradox confronting long-term investors: the need to leverage AI to break inertia while avoiding its disruptive potential. The analysis proposes a reconceptualization of AI, moving beyond its image as a mere efficiency tool. This study theorizes it as a catalytic force capable of fundamentally reshaping an organization's very fabric—its routines, mindsets, and resource flows. The developed framework demonstrates that the path from AI deployment to adaptation is neither linear nor guaranteed; it is contingent upon the organization's absorptive capacity. The NBIM case illustrates how strong organizational learning capabilities enable this positive evolution, shifting the core challenge from technology procurement to building adaptive learning systems.

Theoretical and practical implications follow directly. The study advances theory by providing a nuanced and non-deterministic explanation of AI's role in strategic change. It centers on organizational evolution rather than technological replacement. For leaders, it offers a structured diagnostic framework to guide AI adoption. The work underscores that building organizational learning, not merely acquiring technology, forms the true basis of competitive advantage.

As a conceptual study, this paper has limitations that point to useful directions for future research. While the framework is based on solid theory, it needs thorough testing with real-world data. Future studies should develop practical ways to measure the concepts introduced here—for example, measuring AI triggers by looking at automation levels, how often decisions change based on AI input, and the extent of algorithmic resource allocation. Absorptive capacity could be measured using existing scales that track how organizations acquire, understand, transform, and use knowledge. The model should also be tested across different types of long-term investors and settings through long-term case studies or controlled experiments. Further research should also explore the complex relationship between specific AI features (like explainability and bias) and organizational learning processes.

Ultimately, success in the AI era will be determined not by technological adoption alone, but by the capacity for fundamental organizational change. For long-term investors, AI's greatest potential is not in automating what they already do, but in helping them build a more adaptive, resilient, and insightful future. Success will depend not on having the best technology, but on being the best at learning, adapting, and evolving. This research, by clarifying the mechanisms of adaptation, provides a roadmap for navigating this essential evolution.

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