A Study of Risky Business Outcomes

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A Study of Risky Business Outcomes: Adapting to Strategic Disruption

BY

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Table of Contents

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List of Figures and Tables

Figures

Tables

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Preface

More than five years ago, we were contemplating the need for further studies to help us better understand how organizations, or firms, respond to rapidly changing environmental conditions often interrupted by extreme unexpected events. Indeed, the beginnings of the *Emerald Studies in Global Strategic Responsiveness* book series emerged from a similar urge to uncover how responsive global organizations could adjust and adapt their business operations across multiple overseas markets as they deal with unpredictable changes in the turbulent reality that describes the global marketplace.

In recent years, we have seen these turbulent conditions excel as international business activities have been affected by several abrupt and largely unexpected disruptive incidents including a pandemic, a major military conflict, and mounting geopolitical tensions. Hence, we have observed a general development toward global business contexts characterized by radical uncertainty with many unknown factors in play that call for new and more effective ways to deal with the changing risk landscape. As the recent incidents of pandemic and war have demonstrated, most institutions were not prepared for the ensuing chaotic, uncoordinated, and somewhat divergent approaches adopted typically influenced by national political interests. Hence, we continue as societies to struggle with ways to deal with the severe economic ramifications imposed by these events including the formation of resilient global supply-chains in a world of increasing regional tensions while dampening the intermediate effects of inflationary pressures not seen for decades. In short, the challenges foreseen a few years back have not diminished but have rather exacerbated.

Back then, we noted how organizations operating in the global economy were exposed to a daunting array of possible risk events including fiscal crisis, cyberattack, social instability, governance failure, and an increasing frequency of extreme weather incidents. In view of these challenges, some organizations were noted as adjusting better to the changing conditions and thriving under adverse odds whereas many others, maybe most, had a hard time adjusting. This fundamental issue inspired the formulation of a research project attempting to better understand how the observed performance differences were related to strategic response capabilities and expected adaptive outcomes. It was observed as a regular empirical artifact that over given time periods several firms would outperform their peers competing under comparable business conditions and generate favorable performance outcomes whereas a vast number of the firms seemed to produce

often extremely poor financial returns. While these extreme occurrences often are overlooked in mainstream management studies, we thought they might provide some interesting insights. Hence, we attempted to study this phenomenon closer to gain more insights about how competing firms and organizations respond and adapt when they are exposed to adverse conditions that at times are inflicted in the form of sudden unexpected events. So, the project attempted to fill an apparent gap in our understanding of how the common contours of realized economic performance come about.

Other motivations include the seeming increase in extreme environmental events of various kinds that generate many surprising disruptions and strategic discontinuities that largely went unnoticed before. This means that contemporary business environments present complex and dynamic contexts where many extreme events may arise that are difficult to predict and therefore notoriously hard to respond to. Hence, it may be difficult for otherwise successful firms to observe ongoing changes and orchestrate effective responses to major shifts in the competitive environment, which in turn may have an adverse effect on their economic fortunes. These characteristics could explain the observed performance data of few over-performers and many underperformers. They also accentuate concerns for strategic adaptation whereby organizations can adjust to gain a better fit with the changing business environment over time where we need a better understanding of the adaptive processes that may lead to the extreme observed outcomes. Hence, the study aimed to develop a deeper understanding of the phenomenon with few high-performers and many extreme negative outcomes typically observed in the empirical data. The insights derived from the study should ideally help organizations increase their awareness of strategic adaptation and improve their response capabilities to gain better adaptive outcomes with stronger performance avoiding downside losses while thriving from an ability to exploit emerging opportunities.

This four-year research effort eventually received financial support from the Independent Research Fund Denmark (Danmarks Frie Forskningsråd Grant #8019-00046B) with the formal title: Risky Business – Managing in a world with extreme exposures (2019–2022). We acknowledge and appreciate this support that made the ensuing reporting of findings possible.

The project name, Risky Business, also the title of a (famed) Tom Cruise movie (1983), and as the movie hints, risky events and circumstances also present opportunities, even if partially self-inflicted, but we know too little about how firms can take on risky initiatives and exploit them to their advantage as the external circumstances change. So, the research project was inspired by an urge to better understand the regularly observed fat-tailed distributions of financial returns across firms, where many of them underperform but a few excel displaying higher performance with lower performance risk. Hence, implicit in this effort was an aim to better understand why some firms appear to adapt rather well to extreme exposures consistently outperforming their peers in the industry when many more of the firms underperform with a substantial number of them posting extreme negative returns.

The project collected extensive datasets for all registered European and North American firms over the 25-year period 1995–2019 which spans diverse economic scenarios of global expansion, recession, and recovery up until the COVID-19 pandemic in 2020. The analyses of both datasets reproduce the extreme left-skewed performance distributions with small positive tails of high-performers across different geographies, industrial sectors, and time intervals. More refined analyses of complete datasets show how the left-skewed returns are associated with negative risk-return relations as high-performers generate superior average returns at lower variation in returns. It is further shown that unfavorable risk-return outcomes are related to overconfident executives whereas high-performers retain a high degree of investment flexibility.

These results resonate with propositions arguing for the advantages of interactive decision-making processes where executives use frequent dispersed insights to update ongoing strategy deliberations expressed in a quantitative model. This strategic responsiveness model is used as a basis to perform computational simulations that show how it can produce empirically observed negatively skewed performance distributions and inverse risk-return relationships. Hence, the studies altogether indicate that interactive collaborative decision-making processes can drive effective strategic adaptation to extreme exposures.

The book presents some of the key findings from this four-year research program conducted between 2019 and 2022 investigating the commonly observed left-skewed distributions of financial returns based on reported accounting performance.

As international economic actors struggle to make necessary adjustments that align their transnational production structures and global value-chains with the evolving political reality, it is clear that multinational organizations must improve their ability to deal with uncertainty and abrupt events. This also includes concerns about increasing demands to deal with potentially extreme weather effects from climate change influenced by ongoing degradation of the natural environment, for example, CO_2 emissions, waste, and pollution. Hence, it is becoming apparent that organizations are incapable of resolving these challenges on their own but require collaborative solutions for sustainable long-term outcomes. We hope that this monograph of sequentially ordered book chapters provides relevant insights to current thinking about strategic adaptation, needed response capabilities, and the formation of resilient organizations within the global economic systems.

The nine chapters that constitute this monograph are included as standalone contributions although they emerge as sequential presentations much in line with the planned progression of the research project. This should provide for flexible use of individual chapters while presenting progressing insights that lead to a conclusion to the extent such is possible. Nonetheless, we hope this can contribute with some interesting and insightful reading.

Torben Juul Andersen
Frederiksberg, March 18, 2023

Chapter 1

Managing (in) a Disruptive World

Abstract

The global environments that surround contemporary business activities are uncertain, fast-changing, and frequently exposed to abrupt unexpected events with the potential to inflict extreme impacts where the ability to respond and adapt the organization effectively becomes a primary strategic concern. However, various firms that operate across diverse industry contexts approach this adaptive challenge in distinct ways that lead to quite diverse outcomes with many negative performers and some high performers with positive risk features. The heterogeneous approaches appear to consistently form extreme left-tailed performance distributions with inverse risk-return features but we are not really able to explain why and how these regularly observed phenomena come about. Hence, we want to study these organizational artifacts by collecting an extensive updated dataset to test the proposed relationships, explore alternative explanations, and learn from the extreme exemplars often referred to as outliers. There are extensive literatures in (strategic) management and finance that have dealt with the distribution of firm returns from slightly different angles but with some emerging commonalities that can inspire further analyses of the performance data. As a precursor for this, we discuss the odds of effective strategic adaptation in complex dynamic environments and introduce resilience as a proper outcome when simple solutions are scarce, and consider conditions that may facilitate these aims. The premises for the ensuing analyses are laid out and the main contents of the following chapters are presented.

Keywords: Extreme events; flexibility; performance outcomes; randomness; response capabilities; strategic adaptation

A Study of Risky Business Outcomes: Adapting to Strategic Disruption, 1–13

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Introduction

Contemporary firms are exposed to a variety of developments and events some of which are hard to predict and may significantly affect performance outcomes. To the extent organizations engage in, or depend on international business activities, the portfolio of potential risk events is even increased exponentially. Companies that maintain operations in different multinational locations engage in various cross-border transactions and confront a complex set of economic, political, and social risk factors that permeate the global economy. This complex dynamic setting gives rise to a multitude of incidents that (often) arise with abrupt unexpected intensity, as noted over recent decades, to inflict (potentially) extreme adverse economic effects. The most impactful of these events constitute non-insurable incidents that are hard to quantify and assign meaningful probabilities to. This includes some of the recently experienced phenomena, such as, global financial crisis, pandemic, military conflict, geopolitical tensions, climate change, and extreme weather events (World Economic Forum, 2022). As a common denominator for these occurrences, they all have general socioeconomic impacts that affect all types of organizational activities both public and private at the same time and thereby have the potential to assume catastrophic dimensions where outcomes are hard to predict as they are influenced by many complex interrelated factors.

Organizations pursue their own individual strategic objectives and adopt different leadership approaches and structural features to accomplish their aims. It should not really surprise us, therefore, that organizations deal with abrupt environmental changes in quite distinct ways and respond to them differently and with highly diverse outcomes. That is, some (maybe few) organizations show an ability to adapt activities and thrive their business against adversities whereas many (possibly most) are less favorable and eventually fail (e.g., Van der Vegt, Essens, Wahlström, & George, 2015). In other words, the effects of heterogeneous abilities of firms to deal with rapid changes have diverse outcomes commensurate with a left-skewed distribution where many firms record mediocre, or negative returns with some high performers. Hence, a fraction of firms seem able to adapt to the changing circumstances and generate superior results.

An organizational ability to consistently outperform over longer periods of time is often referred to as sustainable competitive advantage and is frequently applied to characterize performance by firms that pursue effective adaptive strategies. Nonetheless, the observed results of the concept appear to represent a relatively rare and fleeting phenomenon that only prevails over shorter periods of time. Hence, a typical observation from realized performance data is that a vast number of firms perform relatively poorly expressed in a left-skewed tail of underperformers with some outliers that show extreme negative returns (e.g., Bloom & Reenen, 2007). Empirical examinations of realized economic returns quite consistently show that many firms underperform while some outperform their industry peers and display favorable risk-return outcomes in given time intervals (e.g., Andersen, Denrell, & Bettis, 2007).

These negatively skewed performance distributions typically violate the Gaussian normality features assumed in conventional statistical methods including commonly adopted linear regression analysis (e.g., Baum & McKelvey, 2006). It is also a challenge to statistical analyses applied in dynamic factor and vector-autoregressive models used to analyze longitudinal relationships. The left-skewed tails of underperformers attest to the difficulty otherwise successful firms may have in orchestrating effective responses to ongoing changes and major shifts in the competitive environment where some may end up in the negative performance tail (Fig. 1.1). Empirical data studies typically manage these outliers by applying automated screening techniques that cut-off the extreme observations in a sample that violate the nice features of a normal distribution. However, this may overlook important aspects of firm performance where outliers both in the negative and positive tails of the distribution could help uncover (new) and relevant insights (e.g., Boisot & McKelvey, 2011; Taleb, 2007).

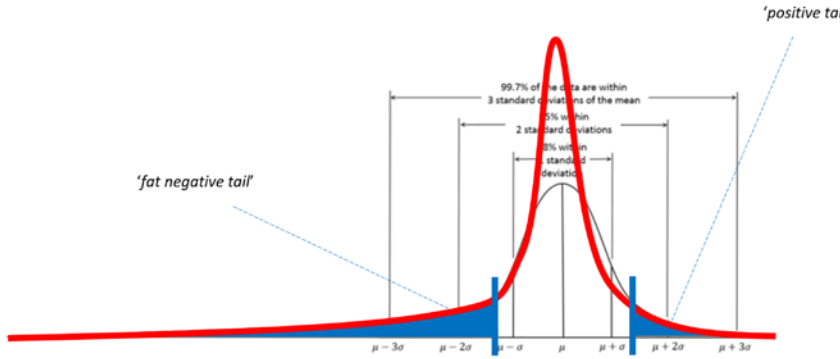

Fig. 1.1. A Display of (Extreme) Negative Outliers and Some Positive Outliers.

Given the frequent use of semiautomated approaches to eliminate the outlier phenomenon,[1] we tend to ignore (potentially) important aspects of the empirical evidence and as a consequence, we are (really) unable to explain how, and why, the often-observed negatively skewed performance distributions arise. We are also short of plausible explanations for the (related) inverse risk-return characteristics observed in the standard accounting-based financial return measures. That is, we cannot really explain seemingly essential "empirical regularities" observed in the real-world performance data (Helfat, 2007). This identifies a need to (better)

[1]A common approach is to eliminate all observations that fall below the mean value (μ) minus three times the standard deviation (3σ) and above the mean value plus three standard deviations (see Fig. 1.1). Provided the data follow a normal distribution, it means that "extreme" values falling beyond the lower and upper limits cut off 1.5 per-mille of the observations on either side of the distribution. However, if the distribution is leptokurtic and very left-skewed there can be a substantially higher share of outliers particularly in the left tail.

understand how these regularly observed empirical phenomena arise while investigating central factors that influence performance outcomes and their relative position in the performance distribution.

Further exploratory studies of response models and behavioral traits as well as actions pursued by negative and positive outliers may generate interesting insights that can help us (better) understand why some organizations show more or less effective adaptive outcomes. The real data seem to indicate that only some organizations are able to thrive against adversity whereas a majority of firms are challenged by emergent environmental events and underperform. We would like to better comprehend what may cause these differences in outcomes, so the ensuing chapters present different exploratory analyses pursued to fill this apparent knowledge gap.

General Background

One view on the left-skewed performance outcomes is that it might reflect poor adaptation to changing competitive conditions that leave some firms in an outdated position in terms of living up to the current demands in the market. Adapting the strategic position of the firm to provide a better fit with prevailing conditions in the business environment is a rather old perspective that can be traced in the management field for more than 30 years (Andersen, 2015a). Yet, we still know little to explain how organizational adaptation processes among firms lead to the extreme left-skewed outcomes observed in the performance distributions. The ensuing chapters will attempt to gain more detailed insights about this phenomenon and create a better understanding of the dynamic processes that lead to few high performers and many negative performers as observed empirically. The acquired insights might help organizations refine their adaptive processes and improve performance outcomes by avoiding downside losses, reducing excessive adjustment costs, while thriving on opportunities that can redesign the business and enhance its value-creating potential.

The observation that some firms outperform within given time-periods and display favorable risk-return outcomes in the context of an erratic environment with large exposures is a real empirical artifact (e.g., Andersen et al., 2007; Bromiley, 1991a, 1991b). The ability to increase performance and reduce risk at the same time as expressed in negative risk-return correlations reflects the so-called "Bowman paradox" where high average returns was found associated with low variance in returns (Bowman, 1980). It is referred to as a "paradox" because it was a controversial finding at odds with conventional assumptions in the finance field (Fig. 1.2).

There was a general belief that financial assets priced on liquid exchanges would fall along a capital market line showing a positive relationship between the perceived risk and the required rate of return expressed as a premium above the risk-free rate (Sharpe, 1964). This is the basis for the so-called capital asset pricing model (CAPM) that continues to prevail in present-day corporate finance applications. Part of the explanation for the noted difference relates to the fact that the management studies adopt an *ex post* return construct that reflects realized

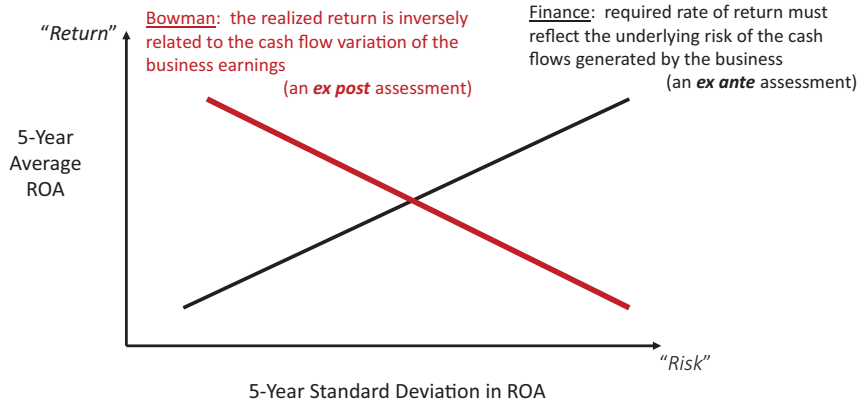

Fig. 1.2. Two Views of the Relationship Between Performance (Return) and Risk.

accounting performance whereas finance adopts an ex ante return construct that reflects the return required by investors to accept the perceived risk of the traded asset. We discuss these conceptual differences further in Chapter 5. The phenomenon observed by Bowman (1980) over given time-periods can be explained by the effects of organizational adaptation processes where the competing firms display differences in their ability to respond to major environmental changes. How this may come about through different longitudinal relationships between firm performance and risk propensity is the topic of a rather diverse range of research streams that will be discussed in more detail in later chapters.

Andersen et al. (2007) used empirical analyses, computational simulations, and mathematical derivations to show that heterogeneous abilities of firms to respond to frequent environmental changes can lead to negatively skewed *ex post* performance outcomes with inverse risk-return conditions. That is, for a given state of the economy, firms with superior adaptive capabilities will lead to favorable risk-return outcomes with many firms showing adverse results. Hence, those performance distributions that display negatively skewed outcomes are closely associated with the inverse risk-return characteristics (e.g., Andersen & Bettis, 2014; Henkel, 2009). However, there is little evidence that firms with effective strategic adaptation and superior performance prevail for extended periods as the favorable risk-return outcomes show diminishing effects as time-lags are increased (Andersen & Bettis, 2015). This may support the claims that the ability to conduct effective adaptive responses as the means to gain sustainable advantage is a rather fleeting phenomenon where organizations, leaders, and governance systems may face (at times) quite dramatic reshufflings as time goes by.

Resilient recovery from sudden incidents and environmental changes appears associated with decentralized engagement where dispersed entities and managers respond to emerging events (Van der Vegt, Essens, Wahlström, & George, 2015). This may combine central reasoning with delegation of decision power corresponding to an interactive strategy-making approach (e.g., Andersen, 2015b) where adaptive capabilities seem to thrive on entrepreneurial initiatives that may

contravene the official strategy (e.g., Bower & Gilbert, 2005; Burgelman, 1983, 1996). Hence, interacting information processing between slow-structured analyses at the center and fast-dispersed initiatives around the periphery may form an effective organizational response dynamic (e.g., Andersen & Fredens, 2013; Andersen & Hallin, 2016; Burgelman & Grove, 2007). However, Taleb, Goldstein, and Spitznagel (2009) argue that executives favor short-term profits for investments to avoid future losses and thus optimize operations, which makes adaptive processes supported by organizational slack highly vulnerable (e.g., Bromiley, 2005). So, part of the explanation for unsustainable performance outcomes may relate to an executive urge to pursue short-term profitability at the expense of longer-term resilience.

The adaptive capabilities may also be affected by executive characteristics that can change over time. For example, CEO tenure has an inverted relationship to the introduction of new inventions (Wu, Levitas, & Priem, 2005) and risk-taking behaviors that drive entrepreneurial initiatives (Simsek, 2007). Risk behavior and ethical conduct matter with firms performing above expectations display more adverse illegal executive activities (e.g., Harris & Bromiley, 2007; Jennings, 2006; Mishina, Dykes, Block, & Pollock, 2010). Psychological factors such as humbleness, optimism, and overconfidence can have adverse effects on executive risk preferences (e.g., Brenner, 2014; Ou, Seo, Choi, & Hom, 2017; Ou, Tsui, Kinicki, Waldman, Xiao, & Song, 2014; Schrand & Zechman, 2012; Shefrin, 2016a, 2016b). Hence, a comparative case study finds that organizational transition from high performance to failure *begins with dysfunctional leadership and ineffective corporate governance* (Heracleous & Werres, 2016, p. 491).

In short, the negative performance tails and inverse risk-return dynamic are influenced by executive behaviors and longer-term effects from the ability to adapt to disruptive changes imposed by extreme events in the global environment. So, we need to go behind the performance data and uncover the true nature of these intermediate and longer-term dynamics to understand the adaptive processes that lead to the observed risk-return relationships with few high performers and many extreme negative performers across different industries.

Methodological Approach

While the rationales derived from the literature can develop propositions that address the implied how, what, and why questions (e.g., Whetten, 1989) there is not a comprehensive theory to explain how the observed performance phenomena come about. Maybe there is a need for insights from multiple theories to reach at satisfactory explanations for the complex phenomena. To set in motion the task of uncovering such insights, the ensuing chapters describe how we extract a comprehensive dataset to test and further explore the implied performance characteristics and risk-return relationships based on updated information. However, given the shortcomings of conventional normality-based statistical techniques, we find a complementing case study approach relevant (Yin, 2013), which we apply in more detailed studies of outlier firms using a forensic information collection approach. Adopting multiple case studies allows for comparative and contrastive

analyses (Eisenhardt, 1989, 1991) between underperforming and over-performing firms located in the tails of the performance distribution. We consider data over the extended 25-year sampling period applying a mixture of retrospective and contemporaneous information from multiple sources to enhance the internal validity of findings (Leonard-Barton, 1990). Adopting more qualitative studies to complement the analyses can help us uncover important circumstances that generate new insights (Bettis, Gambardella, Helfat, & Mitchell, 2015).

The eventual examination of the outlier firms is preceded by a review of the related strategic adaptation literature to provide a *framing logic* (Bettis et al., 2015, p. 637) combined with quantitative analyses of the collected dataset to guide the search for insights. In some ways this represents an abductive learning process that can help reassessment of prior and current observations (Dougherty, 2016) and inspire new ideas to update existing theories (Siggelkow, 2007). In support of the empirical analyses, we extracted annual performance data over the previous 25 years from the Compustat database. The collected data cover periodic economic scenarios linked to financial crisis, market adjustments, and shifts in industry structure that constitute major environmental changes the sampled firms would have to deal with.

The events that affect the observed firm performance outcomes appear to change in frequency and intensity counting the impacts from financial crisis, military conflict, cybercrime, climate change, and extreme weather events (World Economic Forum, 2022). Some of these causes derive from systemic socioeconomic mechanisms, destructive behaviors, and effects of climate change beyond direct control of individual organizations and societies (e.g., Taleb & Goldstein, 2012). We also see that extreme events often are international in scope with reinforcing global systemic effects (Smith & Fischbacher, 2009). Yet, we note that some organizations are able to deal with adversity and thrive on changing conditions, which can inspire the study of effective approaches to deal with abrupt environmental changes. A resilience perspective attempts to do this by engaging available resources across networked relationships to enable effective responses and support strategic adaptation.

Resilience to Complexity

Dynamic complex systems can also lead to spontaneous innovation and creativity that may arrive at future solutions in unpredictable ways as networked individuals engage to take action and learn from their positive experiences as possible ways forward. Resilient organizations prepare for the worst and take actions when risk events emerge and come to fruition. This thrives on leadership support, engaged interaction, slack resources, and creativity to foster adaptive responses in the face of abrupt changes (Kantur & Isery-Say, 2012). It entails supportive belief, emotional stability, self-efficacy, autonomy, reflective thinking, and social behavior among engaged individuals (Abdullah, Noor, & Ibrahim, 2013). Resilience is an ability to face disruption from unexpected events and persevere (Annarelli & Nonino, 2016). This ability is influenced by inclusive decision structure, open information processing, engagement and

entrepreneurial drive to reduce adversity and move toward a more desirable state by redesigning and transforming operations learning along the way (Park, Seager, Rao, Convertino, & Linkov, 2013).

Formal planning is a common approach to deal with anticipated changes attempting to prepare for them through comprehensive analyses. It requires that major events can be identified and assessed in advance to prepare timely responses. It reflects control-based balanced scorecard thinking where performance is monitored and adjusted when it diverges from the original plan. However, these approaches are less effective when faced with the so-called wicked problems girded with high uncertainty. Wicked problems reflect highly complex issues that cannot be resolved using traditional optimization techniques. Collaborative approaches engaging multiple stakeholders with a diversity of relevant expertise and knowledge may facilitate the development of better solutions that exceed the capacity of individual decision-makers.

Organization studies consider decentralization as a proper structure to deal with dynamic environmental changes (Child & McGrath, 2001) but is insufficient on its own. It requires structural regularity that can accommodate structure and adaptive responses at the same time. It may call for combined advantages of central integration and decentralized responsiveness in line with conceptualizations of organizational actions and outcomes coming about though both planned decisions and emergent initiatives taken as the environments changes (Mintzberg & Waters, 1985). Hence, firms with successful strategic renewal capabilities seem to allocate resources both as centrally induced investments but also in the form of autonomous investments (Burgelman & Grove, 2007). The central investments support the current business model and decentralized investments focus on new business opportunities thus creating a balance between exploiting existing competencies and exploring for new ways to operate. Hence, organizations that combine central intended processes with decentralized autonomous initiatives are found to outperform their peers and display better risk-return profiles (e.g., Andersen, 2010). The dynamic adaptive systems in organizations are, therefore, arguably constituted by combinations of fast decentralized responses and slow analytical thinking at the center (Andersen & Fredens, 2013).

Interim Conclusion

The contemporary risk landscapes appear to be changing toward situations of high uncertainty and unpredictable conditions with (potentially) extreme outcome effects resembling dynamic complex business contexts that impose wicked problems on organizations that are hard for them to resolve. The conventional planning-based control approaches are ineffective in dealing with the implied non-linear and unpredictable surprises that arise from these environmental contexts. There appears to be a need for new adaptive approaches in organizations that may hone the firms' collaborative stakeholder relationships. These possibilities will be considered as the study of updated performance data progresses in the following presentations.