The heartbeat of strategic moves

Unravelling the influence of sequence patterns of acquisitions and divestments on financial performance through the lens of organizational learning theory

Master Thesis

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Abstract

This study explores the relationships between sequence patterns of acquisitions and divestments and their influence on financial performance through the lens of organizational learning theory. The uniqueness of this research lies in its inclusion of divestments viewed from a temporal perspective. It contributes to understanding how divestitures can be used as proactive and strategic tools to create value. By testing five hypotheses, this research tries to fill three theoretical gaps. An analysis of the high-tech industry between 2004 and 2022 shows that organisations which follow an even-event paced acquisition rhythm realize better performance than an even- or event-paced rhythm. A plausible rationale for the non-significant findings of divestiture rhythm and sequence pattern influencing financial performance, could be that divestitures do not directly impact parents' firm financial resources. The findings contribute to organizational learning theory by showing that organisations perform better by adapting, refining or replacing routines and technologies in an even-event paced rhythm. Additionally, this research helps to understand restructuring rhythms in the institutional context in which organisations are embedded. This research opens an opportunity for further research to provide a broader understanding of various factors that can impact moderation effects between restructuring rhythms and financial performance.

Preface

This master thesis marks the final step towards earning my Master's in Business Administration, specializing in Strategic Management. Over the past year, Radboud University has provided me with a solid academic foundation, enabling me to conduct this research. I have really enjoyed exploring this endlessly fascinating topic related to corporate restructuring. I would like to thank my supervisor, Rick Aalbers, who asked critical questions that pushed me to get the most out of this reach and who was always willing to think along with me. I also want to thank Kilian McCarthy for the supportive feedback and time. Lastly, I am grateful to my parents, who have always supported me in everything I do.

I hope you enjoy reading,

Merel Hooijschuur
4th of June 2024

Table of contents

Introduction

Corporate restructuring is essential for organisations to survive competition (Schönhaar, Pidun, Nippa, 2014). Acquisitions and divestments represent restructuring tools (Amiri, King, DeMarie & Brown, 2022), both aiming to address the gap between actual and aspired performance (Kuusela, Keil & Maula, 2017). However, acquisitions and divestments are based on two different and competing logics: acquisitions are resource-consuming investments, aimed at improving a firm's competitive position, whereas divestments free resources and narrow a firm's focus (Kuusela et al., 2017). According to Ma and Wang (2018) a divestment of today may be a consequence of an acquisition in the past. Meaning, acquisitions and divestments are causes and consequences of each other and are intertwined activities (Mellewight, Thomas, Weller & Zajac, 2017). However, they are often studied as single events, examining their characteristics and performance consequences, rather than a pattern of interconnected activities and their performance implications. Yet, when an organisation engages in multiple acquisitions, the overall performance impact also depends on the pattern of acquisitions (Laamanen & Keil, 2008). This research uses the temporal perspective to study patterns of acquisitions and divestments. One common thread among M&A research is a shared orientation of assessing temporal-related constructs to describe organisational outcomes (Shi, Sun & Prescott, 2012). Therefore, research has embraced a temporal perspective endeavouring to enhance our comprehension of how managing time can create a source of competitive advantage (Shi et al., 2012). From a strategy perspective, *"time remains a hidden and unrecognised dimension of strategy that has the potential to create competitive advantage"* (Shi et al., 2012, p. 165). Researchers in different disciplines agree that a temporal lens holds great potential for advancing research (Blagoev, Hernes, Kunisch & Schultz, 2023). Therefore, the concept of a sequence pattern is used to examine the pattern of acquisitions and divestments throughout the organisation's history and its performance outcomes. A sequence pattern is: *"an ordered set of different activities carried out across time, where one activity predicts the likelihood of the next activity"* (Zhang et al., 2023, p. 1944). The relevance of studying sequence patterns is emphasized by the fact that firms engage in repetitive restructuring activities that have significant resource allocation and performance implications (McNamara, Haleblian & Dykes, 2008). Nevertheless, an academic understanding of combining acquisitions and divestments from the temporal perspective using sequence patterns is missing. Prior research focused only on repetitive acquisitions and alliances (Shi & Prescott, 2011; Shi & Prescott, 2012) or rhythms of strategic activities (Klarner & Raisch & Zhang et al., 2023). This approach excludes divestments from the research scope. At the same time, Feldman and Sakhartov (2022) argue that a temporal perspective is not only an important consideration in the study of divestments viewed from a temporal perspective but also an important subject for future quantitative research. Therefore, the first theoretical gap this research addresses is viewing acquisitions and divestments as patterns of activities from a temporal perspective, aiming to enrich strategic management literature. This contributes to a better empirical understanding of how managers can use divestitures as a proactive and strategic tool to create value for their organisations in combination with scope expansion (acquisitions). Including divestitures in a sequence pattern is relevant for explicitly considering their influence on financial performance (Feldman & McGrath, 2016). By doing so, this research highlights that divestitures do more than only solve problems for a firm, which is how these activities are often perceived (McCarthy & Aalbers, 2024).

Furthermore, the notion of sequence pattern is an emerging topic and is still viewed from a few theoretical lenses. Shi et al. (2012) identified two articles studying the topic either from a rational decision-making lens or a historical sociology view. Addressing this theoretical gap, there is room to explore sequence patterns of acquisitions and divestments using an organizational learning theory perspective. In essence, organizational learning theory emphasizes that organisations learn and adapt by refining or replacing routines and technologies as they cycle through and gain experience from, repetitive iterations of a particular activity (Eggers, 2012). Meaning, organisations can improve as they gain experience in repetitive activities such as acquisitions (Desai & Madsen, 2021). Since variation in learning rates exists, understanding these differences could explain why some organisations can innovate, learn and perform more effectively than comparable peers (Desai & Madsen, 2021). Following this logic, adopting an organizational learning theory perspective provides a suitable framework for investigating how different sequence patterns may exert various influences on financial performance. Examining this gap, this research enriches organizational learning theory in the light of acquisitions and divestment patterns.

Finally, the third theoretical research gap addresses the moderating role of acquisition and divestment experience on the relationship between sequence patterns and financial performance. Feldman (2020) argues that firms accumulate experience and capabilities by continuously engaging in acquisitions and divestitures. This experience influences firm and transaction performance (Haleblian and Finkelstein, 1999; Bergh & Lim, 2008; Feldman, 2020). Therefore, this inter-organisational perspective highlights that learning and experience grow through the interactions between organisations (Feldman, 2020). Prior sequence-orientated studies (Haleblian & Finkelstein, 1999) examined repetitive acquisitions and experience.

However, they did not focus on the sequence pattern of acquisitions and divestments and the experience or learning role. This represents an important gap because learning mechanisms and restructuring capacities may vary across sequence patterns (Shi & Prescott, 2012). This research tries to fill the gap by using a sequential approach to study the moderating impact of experience on the relationship between sequence patterns of acquisitions and divestments and financial performance. Addressing this gap adds nuance to our comprehension of how inter-organisational relationships benefit strategic decision-making (Feldman, 2020). In doing so, it contributes to an empirical understanding of the impact of experiences on restructuring activities. This could lead to a more effective execution and ultimately enhance financial performance.

Objective and research question

This research addresses the following research question: *How do sequence patterns of acquisitions and divestments influence financial performance?* The subsequent chapter examines five hypotheses which allow the researcher to answer the research question. Figure 1 illustrates the conceptual model of this research, integrating all the hypotheses to test the relationship between different constructs.

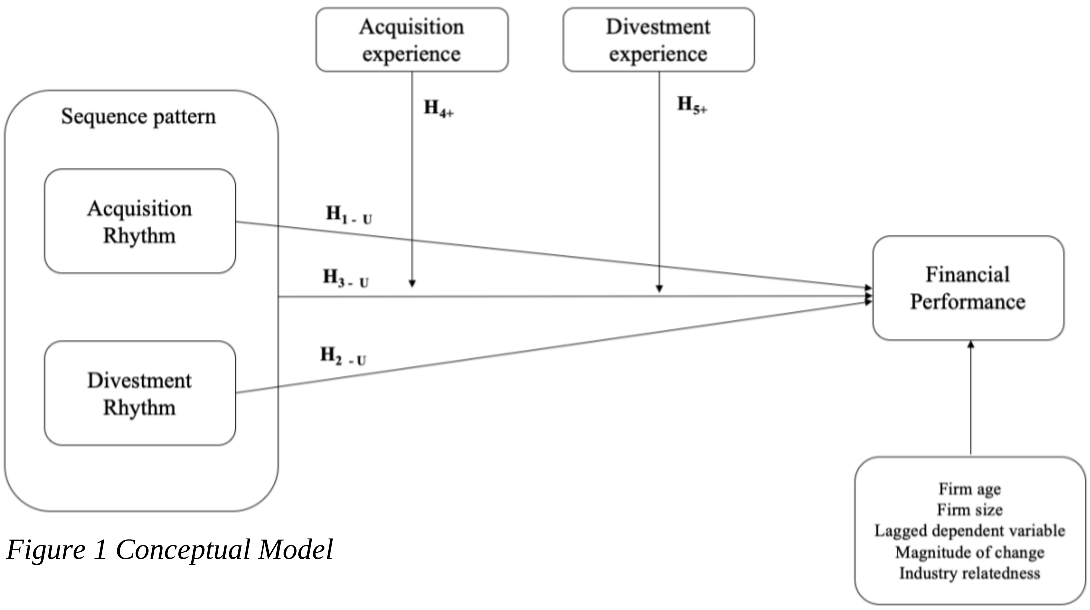

Figure 1 Conceptual Model

Outline

First, the theoretical background outlines the foundation for the hypotheses. Subsequently, the methodology section elaborates on the sample selection, measurement of variables and research ethics. This is followed by the analysis method and a presentation and interpretation of the results. Lastly, a discussion of the research contribution, future research directions and limitations is outlined.

Theoretical Background

This chapter elaborates on the key concepts of this research, which are sequence patterns of acquisitions and divestments viewed from an organizational learning theory perspective. Furthermore, based on the literature review, theoretical gaps are explained, which will be filled by testing hypotheses in this research.

Organizational learning theory

This research uses organizational learning theory as a lens to shed light on the effect of sequence patterns of acquisitions and divestments on financial performance. Organizational learning theory emphasizes that organizations learn and adapt by refining or replacing routines and technologies as they cycle through, and gain experience from, repetitive iterations of a particular activity (Eggers, 2012). Meaning, organisations can improve as they gain experience in repetitive activities such as acquisitions (Desai & Madsen, 2021). The paper of Dutt and Lawrence (2022) has similar findings, illustrating that organizational learning indicates that accumulating experience from repetition and adaptation on activity level enhances performance. Organizational learning literature has often used outcomes to capture changes in knowledge, such as learning curve effects, innovation launches, growth and acquisition patterns (Aranda, Arellano, Davila, 2017). Despite these general patterns, variations in learning rates exist. Some organisations improve more rapidly than others after acquiring comparable levels of experience. An explanation for these different learning outcomes is that implementing changes based on learning outcomes requires organisations to disrupt their existing activities (Agarwal & Helfat, 2009; Dutt & Lawrence, 2022). The effect of these disruptions on performance varies among organisations (Dutt & Lawrence, 2022). Understanding these differences in firm origins and context matters because they can explain why some organisations can innovate, learn and perform more effectively than comparable peers (Desai & Madsen, 2021). Conventional explanations address differences in the volume of experience or contextual factors that determine how organisations learn from their experience. However, another critical aspect of the experience is its timing (Desai & Madsen, 2021). Following this logic, adopting an organizational learning theory perspective provides a suitable framework for investigating how different sequence patterns may exert various influences on financial performance.

Organizational learning theory has been applied to several contexts. Zooming in on acquisitions, the value generated by an acquisition depends on a firm's acquisition capabilities, which firms develop through repeated experience (Haleblian & Finkelstein, 1999; Villalonga & McGahan, 2005). Villalonga and McGahan (2005) extend this logic by covering divestitures, firms with divestment experience may be more effective at managing disintegration than those without experience. Doan, Rao Sahib and Witteloostuijn (2018) argue that acquisition and divestiture experience allows organisations to better understand issues related to implementing restructuring activities and develop routines for handling these activities. Additionally, since acquisitions and divestitures are complex and heterogeneous, the learning effects of experiences may not be constant and stable, rather it is likely that variation occurs across different circumstances and contingencies (Doan et al., 2018). Although organizational learning theory has been applied to several contexts, the notion of sequence patterns is an emerging topic and is still viewed from a few theoretical lenses. A literature review by Shi et al. (2012) identified only two articles studying the topic, either from a rational decision-making lens or a historical sociology view. Addressing this theoretical gap, there is room to explore sequence patterns of acquisitions and divestments using an organizational learning perspective. Therefore, a temporal perspective is applied to investigate the sequence pattern. The following section provides further elaboration on the temporal perspective.

Temporal perspective

Time has become an influential research lens in management and organisation studies. A temporal perspective encourages scholars to employ time constructs such as pacing, timing and rhythm to cultivate insights about managerial and organisational phenomena (Blagoev et al., 2023). Enhancing our comprehension of how managing time can create a source of competitive advantage (Shi et al., 2012), highlights the importance of studying this topic. Despite its growing influence, the temporal lens has often been applied *"haphazardly rather than systematically to organizational topics"* (Shipp & Cole, 2015, p. 238.) Blagoev et al. (2023) addressed this by reviewing time-based assumptions and concepts in their research, establishing three dominant manifestations of the temporal lens: time as resource, time as structure and time as process. In the context of this research, time as process allows the analysis of sequence patterns including acquisitions and divestments. The underlying logic for viewing time as a process is based on the assumption that time is an indivisible flow of interconnected events. These events take meaning through their interrelated narratives that link past, present and future (Blagoev et al., 2023). Opposed to the other two lenses, which imply that events are objective activities, time as a process assumes that they take meaning through the way they are interrelated (Hussenot & Missonier, 2016). A link can be observed between the assumption of time as process and organizational learning theory. As described earlier, organizational learning theory assumes that learning outcomes depend on experience and organisational context (Desai

& Madsen, 2021). This context is also important in the interrelation between activities and their temporal orientations – past, present and future – within their organisational setting as described by Blagoev et al. (2023). This observation facilitates a coherent integration of the assumptions regarding time as process and organizational learning theory.

Zooming in on the link between the time-as-process lens and the concept of a sequence pattern, viewing time as a process provides insights into how temporal concepts are interconnected (Blagoev et al., 2023). This interconnectedness is evident in a sequence pattern, where acquisitions and divestments are perceived as intertwined activities (Mellewight et al., 2017).

The relevance of time in strategic management research manifests in all three elements of any empirical research. Kunisch, Bartunek, Mueller and Huy (2017) studied time in the light of strategic change. First, their evidence suggests that time relates to various phenomena concerning strategic change because it is central to strategy. Second, time is crucial to theories about strategic change, especially concerning process theories. Lastly, it is crucial to the methods of strategic change investigations. For example, cross-sectional versus longitudinal (Kunisch et al., 2017). Considering this research, the last category sheds light on the sequence pattern, frequency and rhythm of change. Viewing through an organizational learning theory lens, firms draw on their experiences and tend to repeat the same types of activities (Kunisch et al., 2017). Based on these insights, the assumption is made that the role of experience moderates the relationship between sequence patterns and financial performance. This will be explained in the last section of the literature review.

Sequence patterns

A temporal role is a function attributed to time-related constructs (Shi et al., 2012). Shi et al. (2012) provided a systematic review of temporal research and classified seven temporal roles, focusing on how organisations manage time as a critical resource. Temporal roles are: when, how frequent, speed, experience, learning, what order or sequence and rhythm. This section focuses on sequence patterns.

The sequence concept has been studied consistently with a sociological view (Abbott, 1990). A sequence pattern is defined as: *"an ordered set of different activities carried out across time, where one activity predicts the likelihood of the next activity"* (Zhang et al., 2023, p. 1944). This research focuses on the sequence patterns of acquisition and divestment activities within a historical context of the firm and their related performance implications, following the conceptualization of Zhang et al. (2023). Extant research in alliance and acquisition literature focussing on the sequence concept has been built upon three main streams of literature (Shi & Prescott, 2011). First, decision-making literature focuses on a single acquisition process instead of examining the life history and whole sequence of firms' alliance and acquisition programs (Tallman & Shenkar, 1994). Second, the real options approach is used to study when and under what conditions a firm's activity leads to an acquisition or divestment (Kogut, 1991). While the real options approach adopts an integrated focus on alliance and acquisition sequence, it has not been used to examine a sequence over a firm's life course (Shi & Prescott, 2011). Third, evolutionary economics and organizational learning literature. Doz (1996) conceptualized repetitive alliances and acquisitions as sequences of interactive cycles of learning, re-evaluation and readjustment. Although these studies are sequence-orientated, their focus is not on sequence patterns. This is an important limitation because learning mechanisms and capabilities may vary across sequence patterns (Shi & Prescott, 2011). Adding on this, Bingham and Davis (2012) argue that despite the critical role of organizational learning, prior studies have mainly focused on individual learning processes and rarely examine how different learning processes might be used sequentially. Their research reveals that firms temporally order multiple learning processes over time and identify various learning sequences. However, evidence of those learning sequences in the context of restructuring activities is missing.

This leads to the existence of a gap in the literature. Prior research focused on sequence patterns of alliances and acquisitions (Shi & Prescott, 2011; Shi et al., 2012). This approach excludes divestments from the research scope, while Feldman & Sakhartov (2022) state that a temporal perspective is an important consideration in the study of divestiture and suggest the temporal dynamic of divestitures as an important subject for future quantitative research. This proposed suggestion for further research is important because it holds the potential to shed light on the temporal dynamics of divestments, which contributes to a deeper understanding of how strategic decisions evolve over time, as well as the factors influencing the timing of these decisions. Through an examination of the temporal dimensions of divestments, combined in a sequence pattern with acquisitions, research can gain insights into how organisations navigate environmental changes and adapt their resource allocations accordingly (Feldman & Sakhartov, 2022). Additionally, it offers a way to view the corporate scope dynamically, allowing divestitures to be viewed as a positive part of the organizational reconfiguration process (Feldman, 2020). A practical contribution of understanding the temporal dynamics enables organisations to plan and respond more effectively to changing market conditions. Therefore, this research fills the gap by viewing acquisitions and divestments as patterns of activities from a temporal perspective.

Sequence pattern leading to rhythm in restructuring activities

When firms engage in multiple restructuring activities, managers must deal with additional complexity by considering the sequence or cycle of different activities. The repetitive cycle of acquisitions can lead to a rhythm (Shi & Prescott, 2012). According to Klarner and Raisch (2013) rhythm results from the timing of multiple activities. Optimal rhythm can streamline processes, exploiting interdependencies among various activities to generate synergy and save time (Zhang, Priem, Wang & Li, 2023). Vermeulen and Barkema (2002), Laamanen and Keil (2008) and Shi and Prescott (2012) have established a foundation for theorizing about performance implications of activities on the continuum of rhythm. Rhythm is defined as *"a repeatable, firm-level rhythm that is instituted intentionally by top managers in hopes of improving a firm's long-term performance"* (Zhang et al., 2023, p. 1941). Vermeulen and Barkema (2002) examine rhythm as the degree of variability in activities. Rhythm creates a sense of order and predictability in organisations' strategic activities (Zhang et al., 2023).

Conceptually and methodically, the concepts of rhythm and sequence pattern are close to each other, both essential temporal dimensions of strategic restructuring activities within organisations. While the concepts exhibit proximity, nuances exist between the two (see Table 1). Where rhythm emphasizes the pacing and regularity of activities over time, sequence pattern focuses on the specific order and context of activities to achieve a goal. This research integrates both concepts, using an operationalization of rhythm to measure three types of sequence patterns. Combining these concepts offers the advantage of enabling a comprehensive understanding of the interplay between the regularity of activities (rhythm) and the specific order of activities (sequence patterns) in strategic restructuring processes. It also allows a nuanced analysis of how different types of rhythm in a sequence pattern influence financial performance. The integration of these concepts contributes to practical relevance by understanding how an optimal rhythm in a sequence pattern can lead to optimizing resource allocation, improved coordination of activities, and enhancing overall organisational performance.

Concept	Definition	Theoretical differences	Methodological similarities	Methodological differences	Key references
Sequence pattern	An ordered set of different activities carried out across time, where one activity predicts the likelihood of the next activity	Focus on order and context of events, capturing detailed sequences rather than frequency or regularity	Both focus on temporal aspects of (strategic) activities, providing insights into timing and performance	Uses sequence analysis to understand exact order and dependencies between events	Abbott (1990); Shi et al. (2011); Shi et al. (2012)
Rhythm	Repeatable, firm-level rhythm that is instituted intentionally by top managers in hopes of improving a firm's long-term performance	Emphasize the regularity and pacing of activities, rather than their specific sequence or contextual factors	Both concepts uses statistical methods to analyse temporal patterns, often employ panel or longitudinal data	Uses statistical techniques as kurtosis calculation to measure regularity over time	Vermeulen & Barkema (2002); Shi & Prescott (2012); Zhang et al. (2023)

Table 1 Overview of similarities and differences of sequence pattern and rhythm

Three types of patterns

This research builds upon Shi and Prescott (2011) who examined seven types of sequence patterns of alliances and acquisitions, leading to three different rhythms with different performance implications. The three patterns - predictable, unpredictable and non-players - are translated into three measurable types of rhythm in related research (Vermeulen & Barkema (2002); Laamanen & Keil, 2008). This study will similarly employ these three types of rhythm: even-paced, event-paced and even-event paced. The rhythm of strategic activities impacts performance through the coordination of internal events (Shi & Prescott, 2012). The following sections explain each type of rhythm and its influence on financial performance.

Even-paced patterns and financial performance

Even-paced patterns involve low variability in the timing of repetitive acquisitions and occur at roughly equal intervals (Shi & Prescott, 2012). An even-paced rhythm or regular pattern is defined as a constant pace of expansion, illustrated in, for example, engaging in restructuring activities every year (Vermeulen & Bakerma, 2022). When acquisitions are performed at a predictable rate, they can become part of a planned process where responsibilities and actions are clear and appropriate resources are available (Laamanen & Keil, 2008). Extant research has found a positive linear relationship between a predictable rhythm and performance. The positive effect of a predictable rhythm mainly stems from the establishment of absorptive capacity, because regular patterns do not overstretch their absorptive capacity (Vermeulen & Barkema, 2002). Firms with a regular pattern can interpret and absorb experiences because they can relate to the development of an acquisition routine (Laamanen & Keil, 2008) and the coordination of learning processes throughout a sequence of repeated acquisitions (Hayward, 2002). Brown and Eisenhardt (1997) suggest that firms with a rhymical pattern implement and absorb changes which can lead to a state of flow. Additionally, Klarner and Raisch (2013) suggest that an even-paced rhythm could alleviate the negative impacts of time compression diseconomies. This mitigates the risk of information overload (Dierickx & Cool, 1989), which often arises when multiple activities are initiated within a short time frame. While an even-paced pattern has many positive attributes, it also generates negative effects. A disadvantage of an even-paced rhythm is the risk of creating blind spots, where managers rely on their routines that were developed from previous acquisitions and could potentially overlook interesting opportunities (Shi & Prescott, 2012). This disadvantage becomes pronounced when managers learn rapidly during deals, but then become stale as they lose touch with the external environment (Henderson, Miler & Hambrick, 2005). In high-tech industries, where knowledge and skills decay quickly, blind spots become particularly salient (Bakerma & Schijven, 2008). Another disadvantage of even-paced patterns is that managers tend to become ritualized, resulting in managers who are likely to frame new deals symbolically without paying attention to how these deals can create additional value for the organisation (Shi & Prescott, 2012). For example, managers stick to outdated target identification methods, ignoring new or alternative methods developed by other firms. Once information becomes embedded in a firm’s routine, it creates inertia (Hedstrom, 1998; Shi & Prescott, 2012). Consequently, an overly even-paced rhythm prevents the timely renewal and upgrading of these routines (Shi & Prescott, 2012).

Event-paced patterns and financial performance

Event-paced patterns involve high variability in repetitive acquisition initiatives where the timing of the initiatives occurs irregularly (Shi & Prescott, 2012). An event-paced rhythm suggests that firms change in response to environmental changes, occurring irregularly at different intervals between those changes (Klarner & Raisch, 2013). Additionally, Klarner and Raisch (2013) argue that the benefits of an event-paced rhythm lie in the continuous change paradigm, because firms learn more by changing more often. However, peaks of rapid expansion may lead to overload and reduced absorptive capacity by managers (Vermeulen & Bakerma, 2002). Firms are unable to absorb activities because they cannot interpret and assess them (Vermeulen & Bakerma, 2002). In addition, an event-paced rhythm makes it hard to accumulate and institutionalize knowledge routines (Shi & Prescott, 2012). Periods of inactivity reduce a firm’s absorptive capacity (Cohen & Levinthal, 1990). During these inactive periods, organisations tend to become more entrenched in their existing structures, cultures and mental models. Consequently, firms that follow an event-paced pattern are prone to experience diseconomies to time compression sooner than firms following an even-paced pattern, leading to less profitability (Vermeulen & Bakerma, 2002). According to Shi & Prescott (2012), event-paced patterns also create blind spots for managers if they pay overwhelming attention to temporally local deals, which ignores knowledge accumulated through experience.

The best of both worlds: even-event patterns

An even-event paced pattern synthesises the two mentioned in the previous section (Cunha, 2004). In this pattern, repetitive initiatives follow an even-paced pattern but at the same time, the firm is responsive to opportunities in the external environment (Shi & Prescott, 2012). In light of the trade-offs between the advantages and disadvantages of even-paced and event-paced rhythms, Shi and Prescott (2012) suggest five theoretical explanations for an inverted U-shaped relationship between rhythm and performance.

First, an even-event paced rhythm increases the likelihood of managers recognising blind spots and adjusting their routines (Shi & Prescott, 2012). This is the opposite of relying on an even-paced rhythm that can negatively impact performance by creating blind spots. Conversely, an event-paced might create blind spots if managers pay overwhelming attention to temporally recent deals while ignoring the knowledge accumulated through experience.

Second, an even-event paced rhythm facilitates the timely renewal of routines and helps avoid the pitfalls associated with core rigidities (Shi & Prescott, 2012). When the temporal rhythm is overly even-paced, managerial behaviour becomes ritualized. This leads managers to frame new deals symbolically, without adequality considering how these deals provide new information about the appropriateness of their routines or targets. Shi and Prescott (2012) highlight the risk of inertia when information is coded in firms' routines and new information is unlikely to influence established routines. This means that an even-paced rhythm hinders renewal and upgrading of routines in a just-in-time manner (Shi & Prescott). Conversely, an event-paced rhythm makes it challenging for firms to accumulate and institutionalize knowledge routines.

Third, an even-event paced rhythm fosters creativity by aligning with opportunities in the environment (Shi & Prescott, 2012). An even-paced rhythm causes organisations to allocate resources linearly and continuously, potentially suppressing creative approaches to resource bundling and allocation (Geibler, 2002). Geibler (2002) argues that creativity does not emerge from a series of fixed points and steps that unfold regularly. Instead, creative resource allocation entails freedom, flexibility and diverse forms of absorptive capacity (March, 1991). In addition, relying too heavily on experiences reduced the likelihood of proactive learning (Shi & Prescott, 2012). Therefore, a reflective resource allocation process is most effectively realized through an even-event paced rhythm that incorporates both rhythms (March, 1991: Shi & Prescott, 2012).

Fourth, in contrast to many internal activities that may escape competitor notice, restructuring activities are easily observable by competitors (Shi & Prescott 2012). Viewing from an action and reaction perspective, adhering to an overly even-paced rhythm reduced within-firm variability, making the firm's sequence of competitive actions more predictable (Shi & Prescott, 2012). This predictability diminishes the likelihood of surprise actions, as competitors can map out a firm's action and reaction activities. While an event-paced rhythm offers the potential for surprise, it is unclear if firms effectively leverage these surprises (Shi & Prescott, 2012).

Lastly, the concept of entrainment quotients is introduced to grasp the benefits of an even-event paced rhythm. Entrainment quotients are: *"the relative ease and speed at which individuals or organizations can shift or adjust their time orientation to effectively entrain or detrain"* (Ofori-Dankwa & Julian, 2001, p. 427). This is a critical competitive advantage for firms driven by acquisitions or divestments, as it necessitates managers to coordinate their activity temporally (Shi & Prescott, 2012). Firms that balance even- and event-paced rhythms develop entrainment quotients that align planned actions with emerging opportunities, leading to some degree of planning flexibility based on target availability in the market (Shi & Prescott, 2012).

These five theoretical explanations for an inverted U-shape relationship between rhythm and performance are consistent with improvisation literature (Shi & Prescott, 2012). Cunha (2004) argues that an improvisation perspective requires firms to engage in reflective planning while exercising flexibility when needed. Improvising firms establish an even-event paced rhythm. This rhythm involves both future prediction based on past actions (reflection) and the intentional maintenance of flexibility to adapt to environmental uncertainty. The five explanations suggest that following an even-event paced pattern overcomes the disadvantages of even- and event-paced rhythms (Shi & Prescott, 2012).

McCarthy and Aalbers' (2024) research offers an opportunity to deepen this logic. The authors suggest that organisations which engage in alliances and acquisitions aim to acquire new resources. However, effectively integrating these resources with existing ones is imperative for effective resource utilization (McCarthy & Aalbers, 2024). Nevertheless, organisations have a finite absorptive capacity, hindering their ability to recognize and absorb new information (McCarthy & Aalbers, 2024). As a result, acquisitions do not inherently lead to improved performance. When organisations keep engaging in acquisitions, organisations keep growing, making it more difficult to coordinate them (McCarthy & Aalbers, 2024). The expansion through acquisitions may incur costs and risks. McCarthy and Aalbers (2024) suggest divestments as a mean to foster focus and space for organisations to leverage their acquisitions more effectively. The authors argue that by enhancing focus, organisations alleviate the burden on their absorptive capacity and thereby potentially improve performance. The article of McCarthy and Aalbers (2024) assumes that acquisitions and divestments alternate, this logic can be applied within the context of an even-event paced pattern. Shi & Prescott (2012) suggest that performance at an even-event pattern is characterized by an inverted U-shape. This phenomenon implies that while both extremes of the temporal spectrum entail numerous disadvantages, the even-event paced rhythm situated in the middle offers the most advantages and is likely to have a more favourable impact on firm performance (Shi & Prescott, 2012).

Shi and Prescott (2012) posit that the underlying theoretical reasons for alliances and acquisitions hypotheses are the same. However, the literature identified similarities and distinctions underlying the logic of alliance and acquisition management and their research tests for individual effects. Following Shi and Prescott (2012), this research tests two hypotheses for the separate effects of acquisitions and divestments, followed by a hypothesis to test the combined effect.

Hypothesis$_1$: The relationship between acquisition rhythm and financial performance is characterized by a curvilinear relationship (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm.

Hypothesis$_2$: The relationship between divestment rhythm and financial performance is characterized by a curvilinear relationship (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm.

Hypothesis$_3$: An even-event paced pattern of acquisitions and divestments together has a curvilinear relationship on financial performance (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm

Acquisitions and divestments

This section elaborates on the building blocks of the sequence patterns, which are acquisitions and divestments. Acquisitions and divestments represent restructuring tools (Amiri et al., 2022), both have the same goal of addressing the gap between actual and aspired performance (Kuusela et al., 2017). However, acquisitions and divestments are based on two different and competing logics: acquisitions are resource-consuming investments, aimed at improving a firm's competitive position, whereas divestments free resources and narrow a firm's focus (Kuusela et al., 2017).

Acquisitions

Acquisitions represent a strategy for corporate scope expansion, wherein a firm can extend its boundaries through the acquisition of business units from other companies or the entire operations of those firms (Feldman & McGrath, 2016). Acquisitions are resource-consuming, when firms engage in acquisitions, firms invest substantial financial and managerial resources intending to achieve positive performance (Kuusela et al., 2017). The most common motive for acquisitions is the search for synergy, the concept that the sum of merging two firms is greater than their parts (i.e. 1 + 1 = 3) (King et al., 2003). Kuusela et al. (2017) argue that acquisitions provide firms with opportunities to improve operations, add new capabilities and knowledge, restructure operations, enter into new business fields or increase efficiency via economies of scale and scope. However, outcomes on the relationship between acquisitions and financial performance are mixed. A literature review of acquisitions by Haleblian et al. (2009) found that some studies showed positive financial returns, but by contrast, most studies found neutral or negative returns. Negative effects of acquisitions on the long-term financial performance of the acquiring firm are found by Agrawal et al. (1992), King et al. (2003) and King et al. (2021). Others describe acquisitions as failures (Moeller, Schlingemann & Stulz, 2004; McCarthy & Aalbers, 2016). This illustrates a need for more consensus regarding the financial performance outcomes of acquisitions. Additionally, acquisitions introduce new resources, such as knowledge, technologies and services. However, before these resources can be utilized, they must undergo integration within the organization, necessitating their combination and recombination with extant resources (McCarthy & Aalbers, 2024). An organisation’s absorptive capacity is important in understanding its ability to engage in acquisitions. The risk of continuing to engage in acquisitions is that it results in a more diversified organisation with varied knowledge, which is more difficult to coordinate (McCarthy & Aalbers, 2024). Recent research suggests divestitures to increase organisational focus and space (McCarthy & Aalbers, 2024). The next section elaborates on the theoretical background of divestments.

Divestments

By contrast, a firm can reduce its corporate scope by undertaking divestitures, defined as the removal of one or more of a firm’s businesses, subsidiaries, or divisions by sell-off, spinoff, or other mode of corporate scope reduction (Feldman & McGrath, 2016). M&A research has attracted substantial academic attention. However, divestitures have received much less attention and are often misinterpreted as an inverse of acquisitions (Amiri & DeMarie, 2020). This discrepancy becomes apparent when acknowledging that divestitures contribute to approximately one-third of the total deal-making value annually. Furthermore, it is noteworthy that a divested business is often a buying firm acquisition (Feldman & McGrath, 2016). This underlines the importance of studying divesture in more detail. Feldman (2020) views divestitures as a solution to conflicts arising from agency-driven scope expansion or attenuating managerial focus and as an intermediary response to the unsuccessful adaption of an organisation’s governance structure (Bettinazzi & Feldman, 2021).

The existing research on divestitures has been conducted in two broad domains: financial economics and strategic management. Whereas financial economics literature treats divestitures as a mean of resolving the challenges a diversified firm faces, such as information asymmetry, including over-diversification managerial entrenchment and inefficient internal capital market, strategic management literature views divestitures as a proactive strategic tool that can leverage to create value for their firms (Feldman & McGrath, 2016). In addition, the strategic management literature leverages an alternative view of managerial behaviour to analyse the way divestitures might create value by helping firms shift their boundaries. Strategic management research on divestitures builds on two key assumptions. First, managers are value-maximizing and can use divestitures as a proactive strategy to enhance their firm internal operations and external image. Second, managers undertake divestitures voluntarily. Most studies explore the motives or implications of divestitures that managers choose to undertake, rather than managers are mandated to undertake due to external pressure (Feldman & McGrath, 2016). Regardless of which of these perspectives one espouses, the theoretical and practical importance of the divestiture topic is unquestionable as more and more firms use divestments to alter their firm scope (Feldman & McGrath, 2016). The importance of studying divestitures lies in the proactive strategic tool divestitures represent for managers to create value for their organisations, often as part of a dynamic and iterative process of scope expansion (acquisitions) and reduction (divestitures) (Feldman & McGrath, 2016). This highlights the point that divestitures do more than only solve firm problems, which is often how divestitures are viewed (McCarthy & Aalbers, 2024). Instead, divestitures can function as a mechanism through which managers can facilitate the growth and improvement of their firms (Feldman & McGrath, 2016).

Bennett & Feldman (2017) suggest future research seeking to explore the pattern of acquisitions and divestitures in more detail, as well as the outcome of this strategy. Drawing on the suggestion to explore the outcome of a pattern of acquisitions and divestitures, this research addresses the impact on financial performance. Zooming in on strategic management literature, Capron et al. (2001) and Villalonga and McGahan (2005) align with those findings and view divestments as a proactive tool used in combination with acquisitions or alliances. Divestitures alleviate problems of misallocation of resources, improve the managerial ability to coordinate a leaner organisation and increase profitability. As such, divestitures strengthen internal structural arrangements and improve the competitive position in the market (Lee & Madhavan, 2010; Kolev, 2016). Combining these findings of past research, academic relevance becomes clear to study of this topic. Multiple studies examined how divestitures relate to financial performance. Divesting a loss-making business has an immediate positive impact on ROA (Shimizu, 2007; Kuusela et al., 2017). As a result, divestiture activity grows as the decline or need for improvement in performance becomes greater (Vidal & Mitchell, 2015).

The moderating role of experience

Learning starts with experience, which is then interpreted to generate knowledge (Argote, Lee & Park, 2020). Previous research has established that acquisitions are driven by experience, which also applies to divestments driven by divestment experience (Kolev, 2016; Feldman, 2020). In this research, the focus is on the moderating role of experience. Interruptions, such as restructuring activities, prompt teams to reassess their current learning routines (Argote et al., 2021). Feldman (2020) argues that firms accumulate experience and capabilities by continuously engaging in acquisitions and divestitures. This experience influences firm and transaction performance (Haleblian and Finkelstein, 1999; Bergh & Lim, 2008; Feldman, 2020). Therefore, this inter-organisational perspective highlights that learning and experience grow through organisational interactions and relationships (Feldman, 2020). Prior studies (Haleblian & Finkelstein, 1999) examined repetitive acquisitions and their influence on performance from an experience perspective. While this study was sequence-orientated, it did not focus on the sequence pattern of acquisitions and divestments and the experience or learning role. This represents an important gap, because learning mechanisms and restructuring capacities may vary across sequence patterns. For instance, for two firms with similar degrees of acquisition experience, how each firm has accrued this experience will be different in terms of their underlying learning mechanism (Shi & Prescott, 2011). Extending this logic covering divestitures based on Villalonga and McGahan (2005), this research fills the gap by using a sequential approach to investigate the moderating impact of different experiences on the relationship between sequence patterns and their financial performance. As organisations accumulate acquisition experience, they develop routines and cognitive frameworks that enhance the likelihood of future acquisitions (Keil, Deutsch, Laamanen & Maula, 2023). Focusing on acquisition experience and organisation performance, M&A research has traditionally assumed a direct link (Schweizer, Wang, Koscher & Michaelis, 2022). However, the findings are somewhat contradicting. Some research found that acquisition experience does not relate to performance (Lubatkin, 1983), in contrast, Kusewitt (1985) found a negative relationship. More recent studies analysed experience effects in more detail and found that the beneficial learning effects of acquisitions required multiple acquisitions (Laamanen & Keil, 2008). In addition, Felker, Bauer, Friesl & King, (2023) shed light on the importance of experience, routinization and strategic direction and their effect on performance through an organizational learning theory lens. Doan et al., (2018) confirm that firms' experience with acquisitions has a significant impact on the profitability of a completed deal. In line with Laamanen and Keil (2008), this research hypothesizes from an organizational learning perspective that prior acquisition experience positively moderates the effect on financial performance.

Hypothesis$_4$: Acquisition experience positively moderates the effect of acquisition rhythm on financial performance.

Zooming in on divestments, prior research demonstrated that experience with prior divestments can enhance firm performance. Similar to learning from acquisitions, divestiture experience allows firms to better understand issues related to implementing divestitures and to develop routines for handling these activities (Shimizu and Hitt, 2005; Doan et al., 2018). Brauer & Schimmer (2010) studied the relationship between experience and timing through the organizational learning lens, testing whether specific experiences between divestitures influence abnormal returns. They found that experience in restricting action increases post-restructuring in terms of financial performance (Bergh & Lim, 2008; Brauer & Schimmer, 2010). Brauer, Mammen and Luger (2017) suggest a positive moderating effect on divestment experience and overall accounting performance. In their article, the authors argue from an organizational learning perspective that repeatedly engaging in divestment tasks improves individual task performance, thereby generating a positive divestment outcome. In line with these findings and drawing on organizational learning theory, this research hypothesizes the following:

Hypothesis$_5$: Divestment experiences positively moderate the effect of a divestment rhythm on financial performance.

Methodology

Empirical setting

The hypotheses will be tested using a sample of firms in the high-tech industry, following McCarthy and Aalbers (2022). This context is chosen because acquisitions in the high-tech industry are everyday occurrences (Makri, Hitt & Lane, 2010; Sears & Hoetker, 2014), meaning that there is sufficient data available to test the hypotheses. Furthermore, acquisitions and divestments are important in these sectors because it is a dynamic sector in terms of technological change (Kuusela et al., 2017). Lastly, this context is attractive for this study because its high rate of change implies a need for learning (Bingham & Davis, 2022). Following prior research (Cloodt, Hagedoorn & van Kranenburg, 2006; McCarthy & Aalbers, 2016) high-tech industries are defined as the pharmaceuticals (SIC-code 283), computers (SIC-code 357), electronics and communications (SIC-code 36), and aerospace and defence (SIC-codes 372 and 376) industries. This is consistent with the theoretical logic of this research. Zhang et al. (2023) state that firms operating in a dynamic environment can organise multiple activities over time that enable firms to create a competitive advantage. Meaning, that this context is ideal for firms to develop sequence patterns of multiple activities.

Data sources

The Orbis M&A database is used to build a sample of firms that are actively making acquisitions in the period January 2004-December 2022, following Shi and Prescott (2012). The sample includes publicly listed companies, having a completed confirmed or completed assumed deal status. From this, an unique set of acquirers in the high-tech industry is identified. Then, the LSEG database is used to track the acquirers' divestment activities. Using the ISIN code as a common identifier, Orbis M&A and LSEG data are merged to match acquisitions and divestments. Other financial data is also derived from the LSEG database and converted into US dollars to ensure the same currency.

Variables

This research includes a dependent variable, two independent variables, two moderating variables and eight control variables. Table 2 provides an overview of the conceptualization and transformation needed for analysis purposes.

Type variable	Variable	Label	Operationalization	References	Categories	Transformations
Dependent variable	Financial Performance	Return on Assets (ROA)	$\mathrm{ROA}i, \mathrm{t}-1=\frac{\text{Net Income}i, t-1}{\text{Total Assets}i, t-1}$	Brauer (2006), Laamanen & Keil (2008) King et al. (2021)	Scale: 4.76-5.47	Adding constant, natural logarithm and winsorization
Independent variable	Acquisition rhythm	Acquisition rhythms	$Kurtosis =\{\frac{n(n+1)}{(n-1)(n-2)(n-3)} \Sigma\left(\frac{x_i - x_m}{s}\right) \wedge 4\ \}-\frac{3(n-1)^{2}}{(n-2)(n-3)}$	Laamanen & Keil (2008), Shi & Presott (2011) & Vermeulen & Barkema (2002)	Scale: 0-3.25	
	Divestment rhythm	Divestment rhythms	See column above	See column above	Scale: 0-3.25	
Moderator	Acquisition experience	Acquisition experience	Calculated based on the acquisition count five year prior the window of observation	Laamanen & Keil, (2008); Haleblian & Finkelstein, (1999); Kusewitt, 1985)	Scale: 0-3.85	Adding constant, natural logarithm
	Divestment experience	Divestment experience	Calculated based on the acquisition count five year prior the window of observation	See column above	Scale: 0-3.91	Adding constant, natural logarithm
Control variable	Firm size	Total assets acquirer	Total assets	Santor & McGill, 2005); Laamanen & Keil (2008)	Scale: 0-5	Natural logarithm
	Firm age	Total years after founding year	Total years	Laamen & Keil (2008) & Vermeulen & Bakerma (2002)	Scale: 8.25-19.74	Natural logarithm

Acquisition industry relatedness	Acquisition relatedness	Comparing SIC-codes	Aalbers et al. (2021); Clougherty & Duso (2023); Laamanen & Keil (2008)	0 (not related) – 1 (related)	Dummy
Divestment industry relatedness	Divestment relatedness	See column above	See column above	0 (not related) – 1 (related)	Dummy
Change magnitude	Small scale change	Years in which firms conducted at least acquisition or divestment and change in turnover was smaller than 5%	Klarner & Raish (2013)	0 (no change)-1 (small change)	Dummy
Change magnitude	Large scale Change	Years in which firms conducted at least 1 acquisition or divestment and change in turnover was bigger than 5%	Klarner & Raish (2013)	0(no change)-1 (large change)	Dummy
Lagged ROA	ROA lagged 1	ROA variable that is lagged 1 year in time	Ullah, Akhtar & Zaefarian (2018)	Scale:-136.41 -126.70	
Lagged ROA	ROA lagged 3	ROA variable that is lagged 3 years in time	Ullah, Akhtar & Zaefarian (2018)	Scale:-136.41 -126.72	

Table 2 Variable summary

Dependent variable

The dependent variable is financial performance and is operationalized as Return on Assets (ROA). This variable is chosen because ROA is the dominant measure used in acquisition research to measure financial performance (King et al., 2021). Brauer (2006) used the same argumentation covering divestitures, suggesting that in strategy-orientated divestiture research, divestitures are assessed by ROA measure. Another argumentation stems from its relevance in examining the performance effects of acquisition and divestment patterns. Rather than a focus on individual activities where shorter time windows are used, longer time periods are used in sequence pattern research (Laamanen & Keil, 2008). For interpretation reasons, the ROA variable was transformed using a natural logarithm.

Independent variables

The independent variable of this research is the sequence pattern, which contains the variables acquisition rhythm and divestment rhythm. This research builds upon Shi and Prescott (2011) who examined seven types of sequence patterns, leading to three overarching patterns. The three patterns; predictable, unpredictable and non-players are translated into three comprehensive and measurable types of rhythm used by Laamanen and Keil (2008) and Vermeulen and Barkema (2002). The rhythm of an activity evaluates acquisitions and divestments in terms of their degree of variability. A high variability implies that an organisation concentrates its activities within a specific period, without a fixed pattern. Organisations that acquire a large number of targets during a short period, followed by periods of low activity or even inactivity have a higher variability (Laamanen & Keil, 2008). The three types of rhythm will also be applied to measure the three different sequence patterns, meaning the sequence pattern is measured by the use of the different types of rhythms determined by their degree of variability. The variability of activities can be measured using a kurtosis formula to derivate activities over time (Shi & Prescott, 2012; Vermeulen & Barkema, 2002).

$$Kurtosis = \{ \frac{n(n+1)}{(n-1)(n-2)(n-3)} \sum \left(\frac{x_i - x_m}{s} \right) \wedge 4 \ \} - \frac{3(n-1)^{\ 2}}{(n-2)(n-3)}$$

In this context n = total number of observations, x_i = number of acquisitions in year i, x_m = average of all observations and s= standard deviation of acquisition. Large peaks in acquisition patterns, combined with periods of inactivity will result in a concentrated distraction resulting in a high kurtosis. A constant pattern of acquisitions results in a relatively flat distribution resulting in a lower kurtosis. This research uses the cut-off point for firms that acquired or divested at least 1 time in the period of observation. Two variables were constructed based on this formula: **acquisition rhythm** and **divestment rhythm**. Following Shi and Prescott (2012), the variables were calculated using a 5-year time window, which means that the kurtosis of *t* is subtracted by *t*-4. The variables were mean-centred to compute interaction terms. Previous research (Coxe, West & Aiken, 2013) argues that mean-centring variables before computing interaction terms allow one to read the coefficients directly. After mean-cantering the interaction terms were computed to interpret a hypothesised curvilinear effect (Hair et al., 2019).

Moderator

The methodology employed in prior research is adopted for the moderating variables **acquisition and divestment experience**. This involves using a proxy of acquisition and divestment experience (Kusewitt, 1985; Haleblian & Finkelstein, 1999; Laamanen & Keil, 2008). The variables of acquisition experience and divestment experience are calculated based on the acquisition or divestment count five years prior to the window of observation.

Control variables

Several control variables were included to mitigate potential misinterpretation of the findings. The control variables were selected based on prior research establishing that they can confound or impact the relationship of interest.

Firm size

Firm size is measured using the logarithm of a firm's total assets at the beginning of the window of observation of this research. Prior research found that firm size influences organisation performance (Santoro and McGill, 2005; Laamanen & Keil 2008). Larger firms have more resources to invest in managing pre- and post-restructuring processes that enable them to engage in more complex restructuring activities than smaller firms (Laamanen & Keil, 2008).

Acquisition and divestment industry relatedness

Acquisition and divestments industry relatedness are determined following prior research (Aalbers et al., 2021), by comparing the SIC-codes and including this as a dummy variable to control for the effect 0: no industry relatedness 1: industry relatedness. Relatedness reduces the difficulty of assessing the strategic and organisational fit between the acquirer and target

(Laamanen & Keil, 2008; Clougherty & Duso, 2023). It is also easier to estimate and realize synergies in related industries (Aalbers et al., 2021).

Firm age

Firm age can influence organisational performance (Klarner & Raisch, 2013). The variable is measured as the years since the firm was founded (Wischnesky, 2004).

Change magnitude

Following Klarner and Rainsch (2013), this research controls for the magnitude of change as the relative extent of change may impact performance. A large-scale acquisition could have a greater performance impact than a small one (Amburgey & Dacin, 1994). A large-scale change is measured as 5% or more of a firm turnover in a given year. Small-scale change is below 5%. To calculate change magnitude, the number of large-scale or small-scale changes between 2004-2022 is divided by the total number of changes in the same period.

Lagged version ROA

Following Ullah, Akhtar and Zaefarian (2018), two lagged versions of the dependent variable ROA are used to control for dynamic endogenous relationships. The ROA is lagged one year and three years in time.

Research ethics

This research adheres to the ethical guidelines outlined in the APA Ethic code, to ensure integrity and quality of the research process. In addition, the databases used safeguard the anonymity of the organisations involved. Assumptions based on literature are made explicit and research findings will be published to ensure transparency. AI tools are used to check SPSS formulas or identify mistakes in SPSS handling during the analysis. Grammarly is used for spelling checks.

Results

This chapter delves into the analysis technique employed for this research. The first part describes the data preparation process and the final dataset, including an assessment of descriptive statistics and correlations. The second paragraph explains the assumptions that were tested before performing the analysis. The final section presents the key findings of the analysis.

Method of analysis

Linear quantile regression analysis is used to test the hypotheses. This method extends multiple regression in which the dependent variable is divided into subgroups and models (Hair et al., 2019). When testing different scores between the rhythm of acquisitions and divestments, each firm has a different number of acquisitions and divestments, resulting in complex heteroscedasticity issues arising from variances among firms and non-constant variance over time (Shi & Prescott, 2012). Linear quantile regression allows panel data analysis and accounts for unobserved heterogeneity and heteroscedasticity in panel data (Canay, 2011). This analysis method predicts the effects of acquisitions and divestment rhythms and their pattern on financial performance. Quantile regression allows estimating the effects at different distribution points, quantiles, of the financial performance variable. This reveals how the impact of acquisition and divestment rhythm on ROA might vary for low- and high financial performance. It also allows the identification of potential variations in the moderating effect of experience at different performance levels. Therefore, linear quantile regression helps to obtain a more complete picture of the underlying relationship (Coad & Rao, 2008) between sequence patterns and financial performance.

To ensure that the interactions' significance is not caused by spurious correlations, each interaction term in the model incorporates squares of the main variables (Hair et al., 2019). Lastly, the hypothesised inverted U-shaped relationship between an even-event paced pattern and ROA will be interpreted following Aalbers et al. (2021) by using a quadratic term after mean-centering the variable (Haans, Pieters & He, 2016).

Univariate analysis

Data preparation

For each observation unit (ISIN) that had missing values, the total window of observation for that unit was deleted. Given the large sample size, missing data is listwise excluded from the dataset, resulting in the final sample (N=6878). The next step contains analysing the shape of the data, by assessing the skewness and kurtosis of each continuous variable between the range of -3 to +3 for the skewness and +7 and -7 for the kurtosis (Hair et al., 2019). The analysis of descriptive statistics for the continuous variable ROA revealed a broad range of values. Given this wide range, the variable was analysed for potential outliers. According to Hair et al. (2019), outliers are observations that deviate from the normal distribution within the dataset. For all continuous variables, a boxplot was constructed to identify outliers visually. When analysing the boxplots, ROA was the only variable that contained outliers. Winsorizing is used to deal with the outliers, which means that data replaces outliers with the next highest score that is not an outlier (Field, 2018). The variable is winsorized at the upper percentile of 97,6% and the lower percentile of 2,7%. Appendix A shows the boxplots of the variables before and after winsorizing. The boxplots of other variables are not presented because they did not have outliers. After this step, Table 3 reports the descriptive statistics, including the number of observations, means, standard deviations and correlations for all variables.

Variable	N	Minimum	Maximum	Mean	S.D.	Skewness statistic	Kurtosis statistic
ROA	6878	4.76	5.47	4.925	.058	.244	6.845
Acquisition rhythm	6878	0	3.25	1.186	1.355	.552	-1.379
Divestment rhythm	6878	0	3.25	1.138	1.383	.613	-1.381
Acquisition experience	6878	0	3.85	.580	.693	1.155	1.124
Divestment experience	6878	0	3.91	.538	.734	1.159	2.430
Firm age	6878	0	5.00	3.169	1.068	-1.256	2.100
Firm size	6878	8.25	19.74	13.703	2.106	.292	-.359
ROA lagged 1	5388	-136.41	-126.70	-130.906	.922	2.279	-.646
ROA lagged 3	4787	-136.41	-126.72	-130.905	.920	2.240	-.675
Acquisition relatedness	6878	0	1	.05	.210		
Divestment relatedness	6878	0	1	.06	.240		
Large scale change	6878	0	1	.34	.474		
Small scale change	6878	0	1	.18	.384		

Table 3 Descriptive statistics

Bivariate analysis

After the data preparation and univariate analysis, the correlation matrix is analysed. Table 4 provides the Pearson correlations for all the variables and provides insight into the relationship between the variables. Hair et al. (2019) classify correlations as follows: values of 0.1 equal a weak correlation, values of 0.3 equal a medium correlation and values of 0.5 equal a strong correlation. Values exceeding 0.9 indicate possible multicollinearity. An examination of Table 4 shows that there are no extremely high correlations with 2 exceptions. First, the moderator variables and the independent variables correlate. The moderator variables have a medium to strong correlation with the acquisition rhythm (*r*: .423) and divestment rhythm (*r*: .372), this is expected since the interaction term is based on the rhythm of the acquisition or divestment. Second, the moderator variable and total assets positively correlate with acquisition experience (*r*: .412) and positively correlate with divestment experience (*r*: .430).

Assumptions

After the univariate and bivariate analysis, assumptions are tested. Multivariate techniques are based on assumptions representing the requirements of the underlying statistical theory (Hair et al., 2019). This research uses four assumptions that affect every univariate and multivariate statistical technique. The analysis of the assumptions for normality, homoscedasticity, linearity, absence of correlated error terms and multicollinearity show that all assumptions are met, except homoscedasticity. The scatterplot shows that the dispersion is unequal across values of the independent variables, meaning that the relationship is heteroscedastic. Heteroscedasticity does not pose a problem for quantile regression analysis, as it can handle unequal error variances. Appendix B elaborates on the assumptions in more detail.

	1	2	3	4	5	6	6	7	9	10	11	12	13
Dependent variable													
1. Financial Performance	1												
Independent variable													
2. Acquisition Rhythm	.032**	1											
3. Divestment rhythm	.003	.155**	1										
Moderator													
4. Acquisition experience	.080**	.423**	.132**	1									
5. Divestment experience	.014	.150**	.372**	.315**	1								
Controls													
6. Age	.030*	.189**	.103**	.079**	.157**	1							
7. Total assets	.191**	.220**	.190**	.412**	.430**	.199**	1						
8. Acquisition relatedness	.049**	.126**	.037**	.139**	.056**	.031*	.135**	1					
9. Divestment relatedness	.040**	.071**	.183**	.113**	.228**	.023	.226**	.106**	1				
10. ROA lagged 1	.473**	.036**	.011	.074**	.022	.051**	.184**	.045**	.008	1			
11. ROA lagged 3	.373**	.048**	-.006	.095**	.007	.052**	.217**	.047**	.031*	.404**	1		
12. Small scale change	-.042**	-.046**	.058**	-.075**	.003	.071**	.030*	-.103**	-.008	-.004	.002	1	

13.	Large scale change	-.140**	.129**	.044**	.161**	.043**	.014	.017	.218**	.027*	-.054**	-.042**	-.337**	1

Table 4 Correlation matrix

Linear quantile regression analysis

Table 5 reports the results of hierarchical linear quantile regression analysis. Two quantiles are used to assess the impact of low financial performance (quantile .25) and high financial performance (quantile .75). Control variables are entered first in Model 1. To avoid multicollinearity from including all interaction terms in one model, these terms are included stepwise. Meaning that the (interaction) terms are added based on the order of hypotheses. Model 1 reflects the base model, Model 2 tests the relationship stated in hypothesis 1, Model 3 for hypothesis 2 and so on. This hierarchical approach has been adopted in previous research (e.g. Lin, Yang & Arya, 2009).

Hypothesis 1 argues that an acquisition rhythm has an inverted U-shaped effect on financial performance. In Model 2, support was found for hypothesis 1. This support is found in the upper quantile (.75) (Model 2: Pseudo-R^2: .215, β: -.003, *t:* -5.807, p <.001). Figure 2 visually represents the inverted U-shaped effect, thereby providing additional evidence for its significant effect. In the lower quartile (.25) no significance is found, which means that the inverted U-shaped effect of acquisition rhythms is evident when the financial performance is higher.

Hypothesis 2 argues that a divestment rhythm has an inverted U-shaped effect on financial performance. No support was found for hypothesis 2 in Model 3, failing to support hypothesis 2.

Hypothesis 3 tests whether an even-event paced pattern of acquisitions and divestments exhibits an inverted U-shape relationship on financial performance. It suggests that an even-event paced pattern outperforms even- and event-paced rhythm. No support was found in Model 4, meaning that hypothesis 3 is rejected.

Furthermore, hypothesis 4 predicts a positive moderation effect of acquisition experience on acquisition rhythm and financial performance. Model 5 introduces the interaction effect between acquisition rhythm and acquisition experience, which shows a significant effect at a P-value <.05 for the upper quartile. However, the β-coefficient represents an effect of .000, meaning that the expected relationship is not supported and hypothesis 4 is rejected. In the lower quartile (.25) no evidence is found for this moderation effect.

Hypothesis 5 contends a positive moderation effect of divestment experience on divestment rhythm and financial performance. The interaction term in Model 5 is not signification for both quartiles, failing to support hypothesis 5. Table 6 summarizes all these findings.

Finally, zooming in on the control variables, firm age has no significant effect in any of the models in both quartiles. Firm size has a positive influence on financial performance in the upper quartile (.75), while it has a negative influence in the lower quartile (.25). Either the acquisition industry relatedness and the divestment industry relatedness show significant, positive values in the upper quartile in all models. For acquisition and divestment industry relatedness, no significant influence is found in all the models in the lower quartile (.25), except divestment industry relatedness in Model 2, showing a negative relationship. The influence of the lagged versions of the dependent variable is the same across all models and quartiles. Lastly, the magnitude of change is negatively related to financial performance, for both large- and small-scale change.

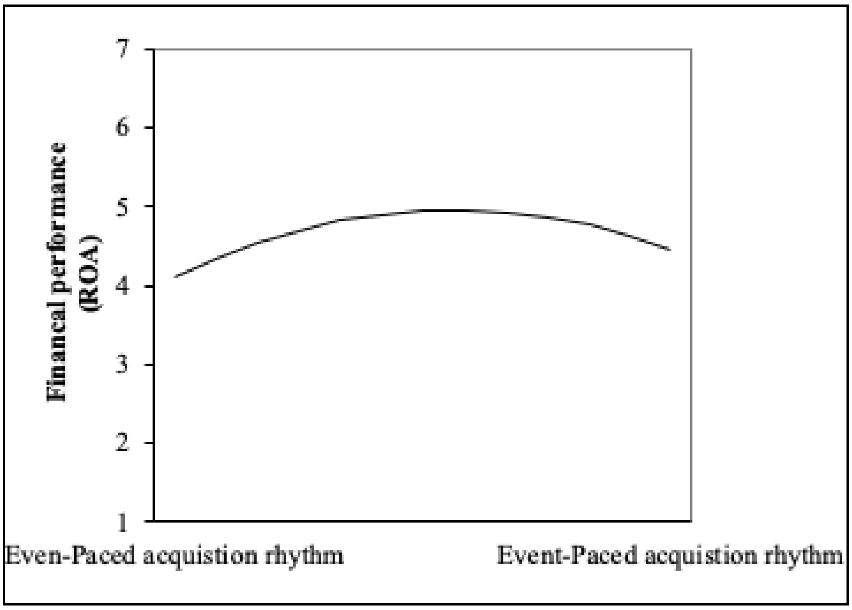

Figure 2 Visual relationship between financial performance and acquisition rhythm

	Quantile .25					Quantile .75				
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	4.865**	4.867**	4.864**	4.866**	4.862**	4.944**	4.951**	4.944**	4.950**	4.951**
	(.0036)	(.0038)	(.0037)	(.0038)	(.0040)	(.0039)	(.0040)	(.0040)	(.0041)	(.0044)
Acquisition		.002		.003	.003		.011**		.011**	.010**
Rhythm		(.0018)		(.0017)	(.0018)		(.0019)		(.0019)	(.0020
Divestment			-.003	-.003	-.001			-.001	.000	.001
Rhythm			(.0019)	(.0019)	(.0019)			(.0021)	(.0020)	(.0022)
Acquisition		-.001		-.001	-.001*		-.003**		-.003**	-.003**
Rhythm^2		(.0005)		(.0005)	(.0005)		(.0006)		(.0006)	(.0006)
Divestment			-.001	.001	-.001			.000	9.246E-5	.000
Rhythm^2			(.0006)	(.0006)	(.0019)			(.0006)	(.0006)	(.0006)
Acquisition					8.052E-5					.000*
experience					(9.1165E-5)					(.0001)
Divestment					.000*					.000
experience					(6.8365E-5)					(7.5560E-5)
Firm age	.000	.000	.000	.000	.000	-7.296E-5	.000	-3.722E-5	.000	1.847E-5
	(.0005)	(.005)	(.0005)	(.0005)	(.0005)	(.0005)	(.0005)	(.0005)	(.0005)	(.0005)

	Quantile .25					Quantile .75				
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Firm size	.002**	.002**	.002**	.002**	.003**	-.001*	-.001**	-.001*	-.001**	-.001**
	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)
Acquisition relatedness	.004	.004	.004	.004	.004	.009**	.007*	.009**	.007*	.007*
	(.0025)	(.0025)	(.0024)	(.0024)	(.0024)	(.0026)	(.0026)	(.0026)	(.0026)	(.0026)
Divestment industry relatedness	-.004	-.004*	-.002	-.003	-.002	.009**	.007**	.009**	.008**	.008**
	(.0021)	(.0021)	(.0021)	(.0021)	(.0021)	(.0022)	(.0022)	(.0023)	(.0022)	(.0023)
ROA lagged 1	.003**	.003**	.003**	.003**	.003**	.003**	.003**	.003**	.003**	.003**
	(5.0510E-5)	(5.0448E-5)	(4.9230E-5)	(4.8646E-5)	(4.8128E-5)	(5.4143E-5)	(5.2829E-5)	(5.4056E-5)	(5.2791E-5)	(5.3194E-5)
ROA lagged 3	.001**	.001**	.001**	.001**	.001**	.001**	.001**	.001**	.001**	.001**
	(5,4810E-5)	(5.4729E-5)	(5.3493E-5)	(5.2847E-5)	(5.2379E-5)	(5.8752E.5)	(5.7312E.5)	(5.8737E-5)	(5.7350E-5)	(5.7892E-5)
Large scale change	-.025**	-.026**	-.025**	-.025**	-.026**	-.008**	-.010**	-.008**	-.010**	010**
	(.0011)	(.0012)	(.0011)	(.0011)	(.0011)	(0012)	(.0012)	(.0012)	(.0012)	(.0012)
Small scale change	-.007**	-.007**	-.007**	-.007**	-.007**	-.012**	-.012**	-.012**	-.012**	-.012**
	(.0014)	(.0014)	(0013)	(0013)	(.0013)	(.0015)	(.0014)	(.0015)	(0014)	(.0014)

Variable	Quantile .25 Model 1	Model 2	Model 3	Model 4	Model 5	Quantile .75 Model 1	Model 2	Model 3	Model 4	Model 5
Observations (N)	6.878	6.878	6.878	6.878	6.878	6.878	6.878	6.878	6.878	6.878
Pseudo R Squared	.256	.256	.257	.257	.258	.212	.215	.212	.215	.217
Mean Absolute Error (MAE)	.0346	.0347	.0346	.0345	.0346	.0346	.0345	.0346	.0344	.0345
df	5781	5779	5779	5777	5775	5781	5779	5779	5777	5775

Table 5 Linear quantile regression

*The table presents dependent variable ROA, standard errors in parenthesis, * significant at P-value <.05, ** significant at P-value <.001*

Hypothesis	Expected sign	Empirical conclusions
Hypothesis 1: *The relationship between rhythm of acquisitions and financial performance is characterized by a curvilinear relationship (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm.*	U-shaped	Supported
Hypothesis 2: *The relationship between rhythm of divestments and financial performance is characterized by a curvilinear relationship (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm.*	U-shaped	Not supported
Hypothesis 3: *An even-event paced pattern of acquisitions and divestments together has a curvilinear relationship on financial performance (inverted U-shape), such that an even-event paced pattern outperforms even- and event-paced rhythm*	U-shaped	Not supported
Hypothesis 4: *Acquisition experience positively moderates the effect of acquisition rhythm on financial performance*	+	Not Supported
Hypothesis 5: *Divestment experience positively moderates the effect of a divestment rhythm on financial performance.*	+	Not supported

Table 6 Summary of hypotheses and empirical conclusions

Robustness analysis

By conducting a robustness analysis, the research findings are validated. Following Klarner and Raisch (2013) who conducted similar research, another measure for financial performance is used to conduct a robustness analysis. Their research used an alternative measure for financial performance, Return on Equity (ROE) is used. ROE measures the efficiency of a firm's resource utilisation and is commonly employed in similar studies (Klarner and Raisch, 2013). Since the robustness analysis does not change the findings, the analysis is represented briefly in Table 7. The analysis generally provides the same results as the analysis with ROA as dependent variables, except Model 2, where acquisition rhythm is significant for both quantiles.

	Quantile .25					Quantile .75				
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	7.394**	7.393**	7.394**	7.393**	7.393**	7.368**	7.367**	7.368**	7.367**	7.367**
	(.0017)	(.0017)	(.0017)	(.0017)		(00.13)	(.0014)	(.0013)	(.0014)	(.0014)
Acquisition		.000**		.000**	.000**		.000**		.000**	.000**
Rhythm		(3.3076E-5)		(3.2757E-5)	(3.3778E-5)		(26110E-5)		(2.6142E-5)	(2.7443E-5)
Divestment			5.925E-5	3.502E-5	1.658E-5			4.168E-5	7.417E-6	-7.276E-6
Rhythm			(3.4900E-5)	(3.5826E-5	(3.7285E-5)			(2.8413E-5)	2.859E-6)	(3.0292E-5)
Acquisition		-3.767E**		-3.617E-5**	-3.587E-5**		-3796E-5**		-3.563E-5**	-3.445E-5**
Rhythm^2		(9.8756E-6)		(9.7660E-6)	(9.9089E-6)		(7.7958E-6)		(7.7939E-6)	(8.0504E-6)
Divestment			-1.912E-5		-8.468E-6			-1.445E-5	-4.623E-6	-5.088E-7
Rhythm^2			(1.0632E-5)		(1.1181E-5)			(8.6560E-6)	(8.6927E-6)	(9.0838E-6)
Acquisition					2.134E-7					9.214E-7
experience					(1.6166E-6)					(1.3134E-6)
Divestment					1.748E-6					1.075E-6
experience					(1.3129E-6)					(1.0667E-6)
Firm age	1.311E-5	1.100E-5	1.053E-5	1.042E-5	1.007E-5	-7.434E-6	-8.464E-6	-6.065E-6	-8.929E-6	-8.183E-6
	(9.2706E-6)	(9.5999E-6)	(9.1313E-6)	(9.3868E-6)	(9.3591E-6)	(.0013)	(7.5782E-6)	(7.4340E-6)	(7.4913E-6)	(7.6038E-6)

	Quantile .25					Quantile .75				
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Firm size (TA)	4.443E-5** (4.9646E-6)	3.876E-5** (5.4864E-6)	4.427E-5** (5.3547E-6)	3.647E-5** (5.6986E-6)	3.435E-5** (6.0648E-6)	3.0004E-5** (3.9871E-6)	2.342E-5** (4.3310E-6)	2.878E-5** (4.3594E-6)	2.347E-5** (4.5478E-6)	2.082E-5 (4.9273E-6)
Acquisition relatedness	-2.698E-6 (4.2416E-5)	-3.990E-5 (4.3765E-5)	3.856E-6 (4.1759E-5)	-3.229E-5 (4.2798E-5)	-3.767E-5 (4.2207E-5)	-2.114E-5 (3.4065E-5)	-2.690E-5 (3.4548E-5)	-1.502E-5 (3.3997E-5)	-2.510E-5 (3.4155E-5)	-2.071E-5 (3.4291E-5)
Divestment industry relatedness	-1.217E-5 (3.7183E-5)	-3.804E-5 (3.8038E-5)	-3463E-5 (3.8078E-5)	-3.744E-5 (3.8646E-5)	-4.192E-5 (3.8185E-5)	.000** (9.8909E-6)	.000** (3.0027E-5)	.000 (3.1000E-5)	.000** (3.0842E-5)	.000** (3.1023E-5)
ROA lagged 1	.000** (1.2316E-5)	.000** (1.2315E-5)	.000** (1.2129E-5)	.000** (1.2343E-5)	.000** (1.2195E-5)	.000** (9.8909E06)	.000** (9.9584E-6)	.000** (9.8742E-6)	. 000** (9.8504E-6)	.000** (9.9080E-6)
ROA lagged 3	9.4991E-5** (1.2230E-5)	9.417E-5** (1.254E-5)	9.574E-5** (1.2046E-5)	9.381E-5** (1.2279E-5)	9.353E-5** (1.2145E-5)	4.521E-5** (9.8221E-6)	4.602E-5** (9.9027E-6)	4.186E-5** (9.8074E-6)	4.357E-5 ** (9.7991E-6)	4.428E-5** (9.8668E-6)
Large scale change	.000** (2.177E-5)	.000** (2.2629E-5)	.000** (2.4172E-5)	.000** (2.2127E-5)	.000** (2.1921E-5)	-4.613E-5* (1.7487E-5)	-8.089E-5** (1.7863E-6)	-5.476E-5** (1.7452E-5)	-7.986E-5 ** (1.7659E-5)	8.368E-5** (1.7809E-5)
Small scale change	. 000** (2.4548E-5)	.000** (2.5158E-5)	.000 (2.4172E-5)	.000** (2.4604E-5)	.000** (2.4267E-5)	.000** (1.9715E-5)	.000** (1.9860E-5)	.000** (1.9679E-5)	.000** (1.9636E-5)	.000 ** (1.9715E-5)

Variable	Quantile .25 Model 1	Model 2	Model 3	Model 4	Model 5	Quantile .75 Model 1	Model 2	Model 3	Model 4	Model 5
Observations (N)	6878	6878	6878	6878	6878	6878	6878	6878	6878	6878
Pseudo r2	.228	.231	.229	.232	.232	.144	.147	.144	.147	.148
Mean Absolute Error (MAE)	.0004	.0004	.0004	.0004	0004	.0004	.0004	.0004	.0004	0004
df	3843	3841	3841	3839	3837	3843	3841	3941	3839	3837

Table 7 Robustness test

Dependent variable ROE, Table present coefficient, standard errors in parenthesis, significant at P-value <.05, ** significant at P-value <.001*

Discussion

The objective of this research was to provide a temporal view of the sequence pattern of acquisitions and divestments and their influence on financial performance through the lens of organizational learning theory. Organizational learning theory emphasizes that organisations learn and adapt by refining or replacing routines and technologies as they cycle through, and gain experience from, repetitive iterations of a particular activity (Eggers, 2012). Meaning, organisations can improve as they gain experience in repetitive activities such as acquisitions (Desai & Madsen, 2021). Conventional explanations address differences in the volume of experience or contextual factors that determine how organisations learn from their experience. However, another critical aspect of the experience is its timing (Desai & Madsen, 2021). Therefore, organizational learning theory is an interesting lens for investigating this research topic. This research refines organizational learning theory by shedding light on acquisitions and divestment patterns from a temporal perspective. In doing so, this research provides insights into how organisations can enhance their performance as they gather experience. This study is unique for its inclusion of divestments as a strategic restructuring activity and thereby addresses the need for future research in two ways. The uniqueness lies not only in exploring the interrelationship between restructuring activities that shift organisations scope (Bennett & Feldman, 2017) but also in addressing the importance to consider divestitures in a sequence pattern to explicitly examine their influence on financial performance (Feldman & McGrath, 2016; Feldman & Sakhartov, 2022). Additionally, it provides an alternative view to strategic management literature and managerial behaviour by analysing how divestitures create value by shifting firm boundaries (Feldman & McGrath, 2016; Bennett & Feldman, 2017; McCarthy & Aalbers, 2024), together with acquisitions, leading to effective strategic decisions. The practical relevance is supported by Feldman (2020), suggesting that corporate scope decisions impact organisational performance and shareholder value and substantially impact organisations. Therefore, these decisions are central topics in corporate boardrooms. Table 6 provides a summary of the research findings.

Rhythms and financial performance

This research extends the study of Shi and Prescott (2012), by testing whether the rhythm of acquisitions and divestment and their relationship with financial performance is characterized by an inverted U-shape. Support was found for acquisitions (hypothesis 1) in the upper quartile, but no support was found for divestments (hypothesis 2). This finding is in line with Shi and Prescott (2012), where similar evidence was found. Theoretically, the inverted U-shaped effect of an even-event paced mitigates the negative impact of blind spots and ritualized behaviour. Additionally, the advantage of an even-event paced rhythm can unfold by fostering creativity by aligning opportunities in the environment (Shi & Prescott, 2012). This means that the highest firm performance occurs at the midpoint of the continuum of temporal heterogeneity, characterized by an even-event paced rhythm (Cunha, 2004; Eisenhardt & Brown, 1998; Shi & Prescott, 2012). An even-event paced acquisition rhythm aligns with organisational improvisations (Brown & Eisenhardt, 1997; Cuhna, 2004; Shi & Prescott, 2012). Improvising organisations maintain restricted flexibility, staying responsive to events in their environment (Shi & Prescott, 2012). This finding is important because it shifts a key controversy in acquisition literature from categorizing these initiatives as either planned or opportunity-driven to a dialectical discourse aiming to integrate these approaches (Cuhna, 2004; Shi & Prescott, 2011). The absence of support for hypotheses 2 and 3 contradicts the existing literature. McCarthy and Aalbers (2024) suggest divestments to foster focus and space in organisations to leverage acquisitions more effectively. McCarthy and Aalbers (2024) argue that by enhancing focus, organisations alleviate the burden on their absorptive capacity and thereby potentially improve performance. Based on this theoretical logic, a significant effect is expected for the influence of divestment rhythm (hypothesis 2) and for a sequence pattern where acquisitions and divestment are combined influencing financial performance (hypothesis 3). A plausible rationale for this non-finding that divestiture rhythm does not influence financial performance, could be that divestitures do not directly impact the parent’s financial resources. Divestitures may primarily affect nonfinancial resources, such as time and attention of top management, by reallocating these resources to other purposes within the parent firm (Bennett & Feldman, 2017; Feldman, 2016). However, theoretically, this contradicts Kuusela et al. (2017) and Shimizu (2007) who argue that divesting a loss-making business has an immediate positive impact on financial performance. This contrast brings up an interesting direction for further research, suggesting the need to examine the reversed causality of these constructs and explore how financial performance influences the choice of restructuring activities. Since organisations may engage in different types of restructuring activities depending on whether their performance is above or below the aspiration level (Iyer & Miller, 2008).

The theoretical argument of Keil et al. (2022) can serve as a justification for the non-finding of hypothesis 3. As management must alternate attention to various activities differing in their activity load, different types of managerial attention and organisational resources are needed (Keil et al., 2022). When a sequence pattern includes acquisitions and divestments, entailing a different activity load, the dynamic allocation of attention could determine the influence on financial performance (Keil et al., 2022).

Through the lens of organizational learning, these findings can refine existing insights from prior research (Bingham, Heimerinks, Schijven & Gates, 2015). While previous studies focused on understanding the development of individual dynamic capabilities and the learning effects of acquisitions (Bingham et al., 2015) or divestitures, this research extends this by examining the interconnectedness among these activities. The finding that an even-event paced acquisition rhythm enhances financial performance could suggest that there is a synergy among dynamic capabilities, where learning from these capabilities can influence the learning effectiveness of others. Additionally, this study highlights the need for an even-event paced rhythm when using divestitures to create value as part of a dynamic and iterative process of scope expansion and reduction (Feldman & McGrath, 2016). The findings show that even-event paced acquisition rhythms lead to better financial performance, suggesting that organisations benefit from this rhythm in both their acquisition strategies and learning cycles. By following an even-event paced rhythm for adapting, refining or replacing routines and technologies (Desai & Madsen, 2021), organisations will perform better.

In addition, building on Doan et al. (2018) who suggest that acquisitions and divestments are complex and heterogenous, it is suggested that learning effects may vary across different circumstances and contingencies. Therefore, a fruitful suggestion for future research would be to study the dynamic of learning processes within acquisition and divestment sequence patterns. Focusing on identifying specific circumstances and contingents that influence learning processes and their impact on organisational performance. Understating these dynamics can better equip managers to make strategic decisions, considering the varying learning effects.

Beyond these theoretical contributions framed on the firm level, this research enhances the broader institutional context in which transaction governance choices are embedded. By comprehending restructuring rhythms, organisations can identify strategic growth patterns and tailor their restructuring strategies to align with dynamic institutional environments. In doing so, managers can deal with uncertain environments as part of risk management and maximum value creation in organisations. This aligns with Bucheli, Ciravenga and Sáenz (2023), who studied how the institutional environment influences vertical integration strategies. Their research suggests that strategic decisions are based on thoroughly assessing how the broader institutional environment impacts its bargaining power (Bucheli et al., 2023; Luise et al., 2022). Meaning, the interaction between the institutional environment and organisations shapes strategic choices in response to uncertainty (Bucheli et al., 2023) and influences managers' restructuring choices.

A suggestion for further research is to incorporate the institutional environment into the research scope and examine its influence on strategic restructuring rhythms. Rather than assuming its context as given, as has been done in this study.

The moderating role of experience

Another theoretical contribution arises from the moderating effect of acquisition and divestment experience studied. No support was found for hypotheses 4 and 5, meaning that there is no evidence for a positive moderation effect of acquisition or divestment experience on the relationship between rhythm and financial performance. This non-finding contradicts the theoretical argument that an acquisition rhythm may facilitate learning from past experiences and the establishment of routines, ultimately resulting in improved performance (Klarner & Raisch, 2013). From an organizational learning perspective, Felker et al. (2023) suggest that two learning mechanisms are important to cope with complex restructuring activities and benefit from prior experiences: routinization and codification. By codifying experiences, firms can extract lessons learned and comprehend cause-effect relationships between managerial actions and acquisition outcomes. On the other hand, routinisation could improve financial performance by automating activities and increasing the speed of task performance (Felker et al., 2023). However, a possible explanation for the non-significant moderating effects of experience may indicate that codifying and routinizing experiences alone is insufficient to affect restructuring outcomes. Iyer and Miller (2008) their argument clarifies that acquisition experience can affect financial performance, however, other variables such as contextual factors may influence this relationship as well. While their research does not explicitly focus on divestments, this reasoning clarifies the observed non-findings, suggesting a more complex hypothesized moderation effect. This opens opportunities for further research to provide an understanding of various factors that can impact such moderation effects.

In addition to these theoretical and practical contributions, this study also makes a methodological contribution by researching the influence of the variables on two different quantiles of financial performance.

Overall conclusion

In general, support is found for variables related to acquisitions, which allows to conclude that empirical findings are in line with theory. The non-significant findings for divestment rhythm, the sequence pattern and moderation effects are noteworthy and contrast the extant literature, as discussed in the previous sections. Therefore, further research is necessary to provide a complete answer to the research question: *How do sequence patterns of acquisitions and divestments influence financial performance?*

Limitations

While this study aims to advance strategic management literature, it is important to consider the findings in light of its limitations. Firstly, this sample focuses on the high-tech industry, which represents important boundaries that may limit the generalizability of the findings to other contexts (Aalbers et al., 2021). Secondly, since significant results are only found in the upper quantile (.75), further research is needed to explore the effects in other quantiles, thereby covering a limitation of this research. Thirdly, through the operationalization of sequence patterns by using rhythms, it may not capture the nuances and complexity of the sequence pattern of activities. Rhythm captures certain aspects of a sequence pattern, but does not consider contextual factors. This aspect deserves further research and could help get a more complete overview of the interconnectedness of events that take meaning through the way they are interrelated into the firm context (Blagoev et al., 2023). Lastly, due to winsorizing of the dependent variable for interpretation and statistical reasons, it is important to take into account that this could potentially distort the results.

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Appendix A

This appendix shows the boxplots for the ROA variable. Figure 3 represents the variable before winsorizing, Figure 4 illustrates the variable after winsorizing.

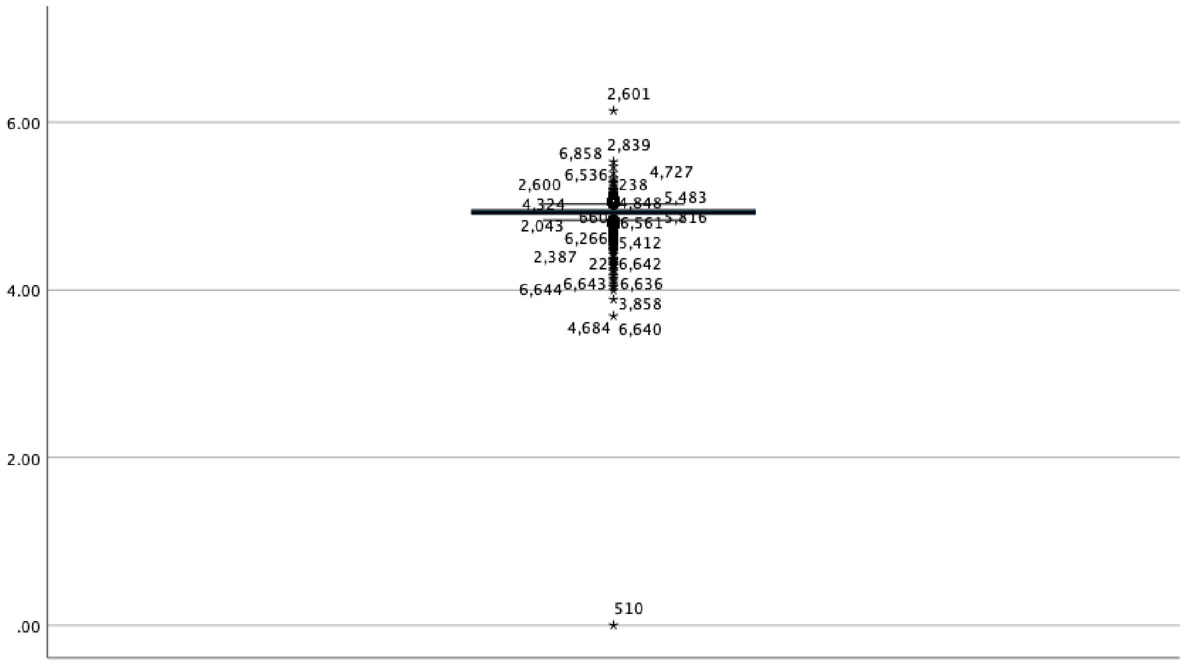

Figure 3 Boxplot before winsorizing ROA

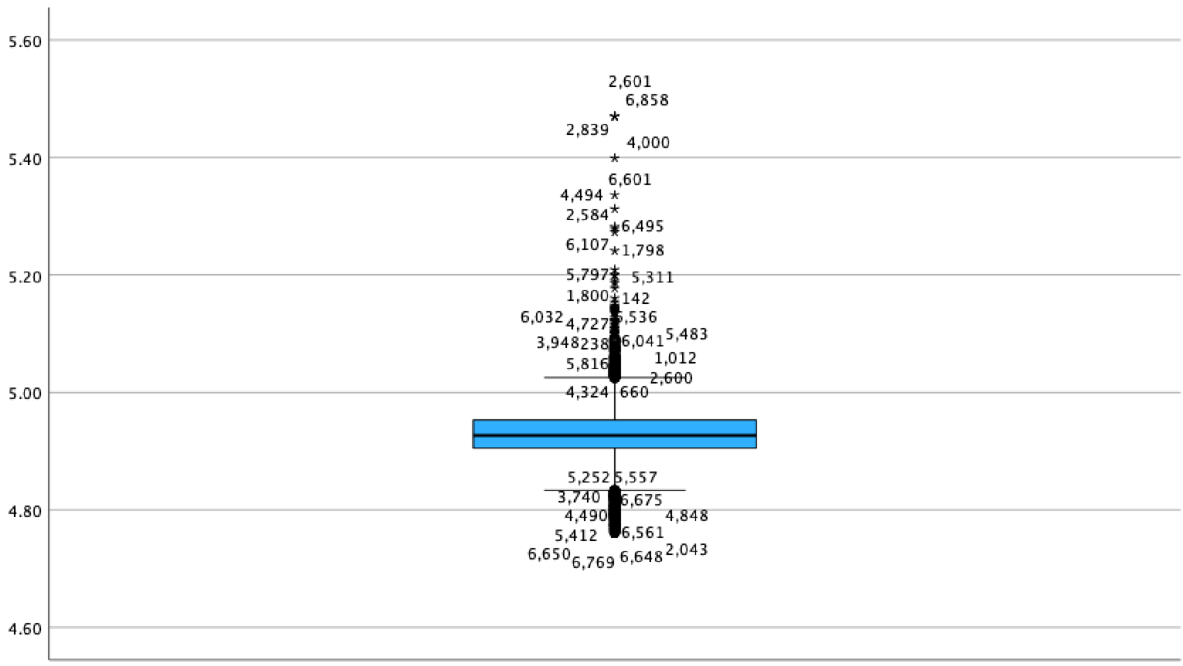

Figure 4 Boxplot after winsorizing ROA

Appendix B

This appendix elaborates on the assumptions which were tested before conducting the linear quantile regression analysis.

Normality

The normality assumption refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution (Hair et al., 2019). The normality of error term distribution is assessed to ensure comparability between the model and the observations. Ideally, the difference between these should be close to zero. However, the assumption of normality is generally considered less critical for samples exceeding 200 observations (Hair et al., 2019). This assumption is examined by using a P-P plot (see Figure 5). The error term exhibits an S-shape, indicating slightly more variance than a normal distribution. Fortunately, this variance is unlikely to be problematic due to the large sample size of this research (Hair et al., 2019).

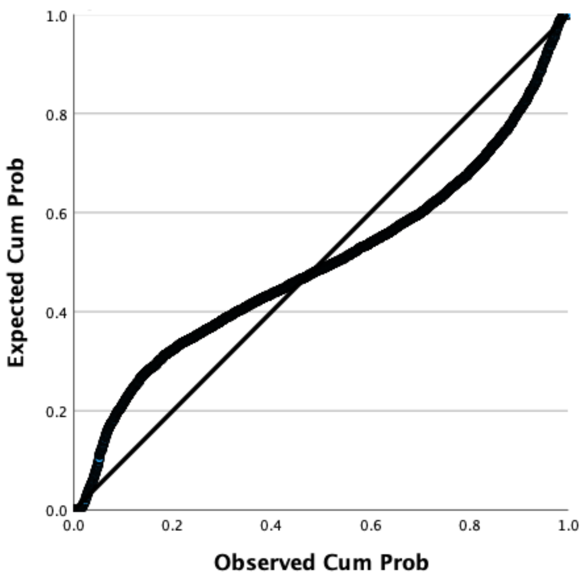

Figure 5 P-P plot, dependent varaible: ROA

Homoscedasticity

The homoscedasticity assumption requires that the dependent variables exhibit equal levels of variance across the range of predictor variables (Hair et al., 2019). The scatterplot in Figure 6 shows that the dispersion is unequal across values of the independent variables, meaning that the relationship is heteroscedastic. Heteroscedasticity does not pose a problem for quantile regression analysis, as it can handle unequal error variances.

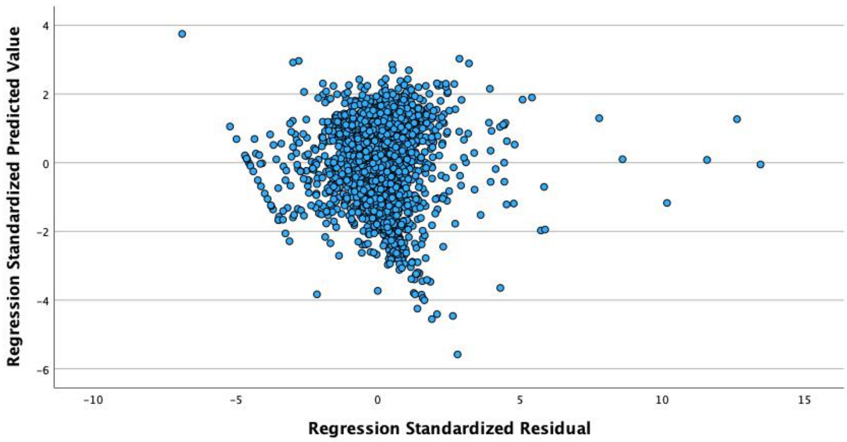

Figure 6 Scatterplot, dependent variable: ROA

Linearity

The linearity assumption is fist assessed univariately, by checking the skewness and kurtosis of the variables between +3 and -3 for the skewness and +7 and -7 for the kurtosis (Hair et al., 2019). Table 3 shows that all variable lie within the this range. A bivariate assessment of the scatterplot is conducted as next step. The scatterplot does not reflect suspicious patterns (Hair et al., 2019), with indicated that the assumption is met.

Absence of correlated error terms

To ensure that any prediction errors are uncorrelated with each other, the assumption of correlated error is checked (Hair et al., 2019). Table 8 reflects a mean of 0 and a standard deviation of 1. Therefore, the assumption of absence of correlated error terms is met.

	Minimum	Maximum	Mean	Std. Deviation
Predicted Value	4.8001	5.0363	4.9396	.02468
Residual	-.27605	.53123	.0000	.03947
Std. Predicted Value	-5.653	3.917	.000	1.000
Std. Residual	-6.982	13.436	.000	.998

Table 8 Residuals Statistics, Dependent Variable: ROA

Multicollinearity

Finally, the multicollinearity is assessed with the variance inflation factor (VIF). The VIF measure has to be <10 (Hair et al., 2019). Table 9 reflects that all variables are below 10, meaning that the extent to which a variable can be explained by another variable in the analysis is not problematic. Therefore, the assumption of multicollinearity is met.

	Collinearity Statistics	
Variable	Tolerance	VIF
Acquisition rhythm	.815	1.226
Divestment rhythm	.866	1.115
Acquisition experience	.686	1.458
Divestment experience	.693	1.444
Firm age	.934	1.071
Firm size	.644	1.552
Acquisition industry relatedness	.926	1.080
Divestment industry relatedness	.914	1.094
ROA lagged 1	.820	1.219
ROA lagged 3	.810	1.234
Large scale change	.817	1.223
Small scale change	.856	1.168

Table 9 Collinearity Statistics