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TURNAROUND ACTIONS AND PERFORMANCE: STRATEGIES FOR UNDERPERFORMING
FIRMS IN GROWTH INDUSTRIES

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TURNAROUND ACTIONS AND PERFORMANCE: STRATEGIES FOR UNDERPERFORMING
FIRMS IN GROWTH INDUSTRIES

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ABSTRACT

Organizational turnaround has been an important facet of management research for decades. It has been examined from a variety of perspectives; however, findings remain equivocal as to which actions are associated with positive results. Research has been shaped by an ideology, perhaps owing to roots in firm failure, that a firm needs to deteriorate for years and face a crisis in order to recognize and react to a performance decline. What if these concepts erected unnecessary hurdles, contributing to ambiguous results? Perhaps the lengthy period utilized to measure a performance decline and the ensuing turnaround period contribute to the lack of clarity.

To minimize the impact of internal and external environmental effects, I examine turnaround performance within a condensed timeframe. Rather than the average period of three years, I analyze performance declines that range from as little as three quarters to three years.

I use life cycle theory to guide this study. It serves as both the theoretical grounding in addition to providing a framework for selecting an industry stage—growth. I examine turnarounds by measuring the association between two predominantly studied turnaround actions--operational and strategic actions--and firm performance. The data indicates that underperforming firms in a growth industry are able to recognize and react to a performance decline within a short timeframe. Although a layoff is the only action significantly associated with performance, the situational variable of firm

size indicates a significant, negative association with performance. Post hoc analyses indicate that decline severity is also significantly related to turnaround performance in a growth industry.

TABLE OF CONTENTS

ABSTRACT	v
CHAPTER 1: INTRODUCTION	1
Research Problem	2
CHAPTER 2: LITERATURE REVIEW	6
Stage 1: Decline	7
Stage 2: Recognition	14
Stage 3: Action	15
Stage 4: Outcome	19
Operational outcomes	23
Strategic reorientation outcomes	26
Combination outcomes	28
Additional variables of interest	28
CHAPTER 3: INDUSTRY AND ORGANIZATIONAL LIFE CYCLE FRAMEWORKS	32
Strengths and Weaknesses	32
Life Cycle Literature and Turnaround Stages	35
Decline stage	35
Recognition stage	35
Action stage	36
Outcome stage	36
CHAPTER 4: THEORETICAL FRAMEWORK AND HYPOTHESES	38
Operational Actions and Turnaround Performance	40
Strategic Reorientation Actions and Turnaround Performance	45
Firm Size	46
CHAPTER 5: METHODS	48
Context	48
Sample	49
Measures	53
Dependent variables	53
Independent variables	53
Control variables	55
CHAPTER 6: ANALYSES AND RESULTS	56
CHAPTER 7: IMPLICATIONS FOR THEORY AND PRACTICE	66
Discussion	66
Practice	68
Future Research	71
REFERENCES	73
LIST OF TABLES	viii
LIST OF FIGURES	ix

LIST OF TABLES

1. Decline Measures	8
2. Studies That Identified Cause of Decline as Important	13
3. Turnaround Actions	16
4. Measured Length of Turnaround	21
5. Studies That Identified Severity of Decline	31
6. Means, Standard Deviations, and Bivariate Correlation Matrix	57
7. Linear Regression of Turnaround Actions and ROC	60
8. Linear Regression of Turnaround Actions and EBITDA Margin Change	62

LIST OF FIGURES

1. Turnaround Process	7
2. Research Model	40
3. Performance Decline Criteria	50

Chapter 1

INTRODUCTION

The reversal of organizational decline represents one of the most significant challenges in the life of a firm. The Bureau of Labor Statistics¹ reported a startling trend: fewer than 40% of firms survive past one decade. An interesting paradox has arisen—while innovation is escalating in the U.S. economy (McGrath, 2013), so too is firm instability. Management teams grow their firms only to be displaced at an unprecedented pace. Indeed, 70% of Fortune 1000 firms were new to the list over the past 10 years (2003-2013); this rate has doubled over the past three decades (ServiceNow, 2014). While this may be good for the stakeholders that benefit from a firm's innovation, there is a downside. Many firms, unable to turn around, face negative consequences in terms of valuation, morale, and at times failure (Filatotchev & Toms, 2006; Morrow, Sirmon, Hitt, & Holcomb, 2007).

Despite decades of research and practitioner experience, clear patterns of turnaround success remain elusive (Bethune, 1998; Heine & Rindfleisch, 2013). It is widely believed that a management team can enact changes that will benefit the firm (MacKay & Chia, 2013; Martin & Kimberly, 2008); nevertheless, selecting the type and

¹ BLS data from 2014. Data ends in 2010.

level of necessary action remains undetermined (Balcaen & Ooghe, 2006; Trahms, Ndofor, & Sirmon, 2013).

Many studies necessitate that a firm experience a performance decline of several continuous years, some more than than six years, prior to measuring the performance of turnaround actions (Balgobin & Pandit, 2001; Mueller & Barker, 1997). On the other hand, what if turnarounds were examined within a shorter timeframe? We may find a clearer path as to which turnaround actions impact firm performance with fewer distortions from endogenous and exogenous factors.

Research Problem

Our understanding of turnaround success remains in contention in spite of decades of research. Scholars have examined a wide array of industries in conjunction with turnaround actions and performance outcomes. One area that has not been examined thoroughly is the impact of environmental change throughout the turnaround period. While it isn't feasible to constrain the majority of events that impact a firm during both its performance decline and its turnaround efforts, a study over a shorter timeframe may offer greater clarity in the realm of effective turnaround actions.

Research investigating a shorter timeframe for a performance decline remains sparse. In a study of potentially bankrupt firms, Sudarsanam and Lai (2001) found evidence that with a minimum decline of one year some firms were able to recapture performance within two years. Morrow et al., (2007) employed a different approach, analyzing investor expectations in terms of a market-based measure, Jensen's alpha. They reported that after one year of decline firms could rebound to meeting investor

expectations. Although expectations deviate from the audited financial statements that the majority of researchers use, this study highlights the possibility that firms are capable of quicker turnarounds than previously assumed.

In this paper I test a model of turnaround actions over a shorter than average timeframe in an attempt to clarify which actions may lead to a successful turnaround. It is my belief that a briefer period for measuring the decline and turnaround will help minimize environmental factors inherent in longer time spans. I propose that a firm may recognize and react to its underperformance in as few as three quarters, without the caveat of impending bankruptcy (Sudarsanam & Lai, 2001).

In addition, I use only one industry life cycle stage, to reduce the influence of environmental impact on the relationship. Life cycle literature supports the notion that industry stage indicates how a firm will react to environmental changes. In growth industries a firm may behave with a sense of urgency, however this drive generally slows with maturity (Hamrouni & Akkari, 2012; Teece, 2007). Research from mature industries, those with little to no growth, indicates that a firm may lack motivation to change (Francis & Desai, 2005). Thus, despite the common belief that a performance decline needs to be measured over many years, contradictory evidence indicates a shorter period may suffice (Chen & Hambrick, 2012; Ndofor, Vanevenhoven, & Barker, 2013; Pearce, 2007).

I examine the model in the context of growth industries. Since an underperforming firm in a growth industry typically faces vigorous competition in

addition to market growth, I expect firms in this situation to react much quicker to a performance decline, thereby providing a sufficient sample size for the study.

I assess the performance impact of two broadly studied turnaround actions: operational and strategic actions. Operational actions focus on internally centric changes. Examples include reductions in property, plant, and headcount, or process changes. Strategic actions focus on externally centric changes. These may incorporate examples such as the introduction of new products, the addition of external relationships, or a shift in strategy.

My research offers three major contributions. First, I test the association between turnaround actions and firm performance within a short time span. I sample seven industries to test the idea that management may indeed react quickly to a performance decline. Research generally has eschewed this notion perhaps owing to the broad-based perspective that a crisis is needed (Clapham, Schwenk, & Caldwell, 2005; Martin & Kimberly, 2008; Sudarsanam & Lai, 2001).

Second, I expand our knowledge base of how a management team can turn around firm performance in growth industries. While organizational decline evokes images of mature stage firms, performance deterioration occurs across all life cycle stages. Specifically, underperforming firms in growth industries are also in need of a turnaround (Ndofor et al., 2013). Unfortunately our understanding of the turnaround process in growth industries remains vastly overlooked. The majority of the studies have emphasized mature firms or a portfolio approach without consideration of the characteristics of a life cycle (Barker & Mone, 1998; Grinyer & McKiernan, 1990; O'Neill,

1986b). Yet, research indicates that the life cycle stage impacts firm focus (Mintzberg, 1984; Strebel, 1987) and the degree of competition (Gort & Klepper, 1982)--factors that impact decision making.

Third, I contribute to the growing knowledge base that examines technology-driven industries. This sample incorporates a range of technology industries, broadening our understanding of one of the major drivers of the economy. Technology-driven firms face a complex challenge when they underperform. They risk becoming irrelevant quicker than many other industries as the pace of innovation tends to be higher. Additionally, innovation may be more critical to sustaining a competitive advantage (Porter, 1985) or to survival (McGrath, 2013). Thus, the relationship between turnaround actions and outcomes in technology-based firms may differ from the results in previous studies.

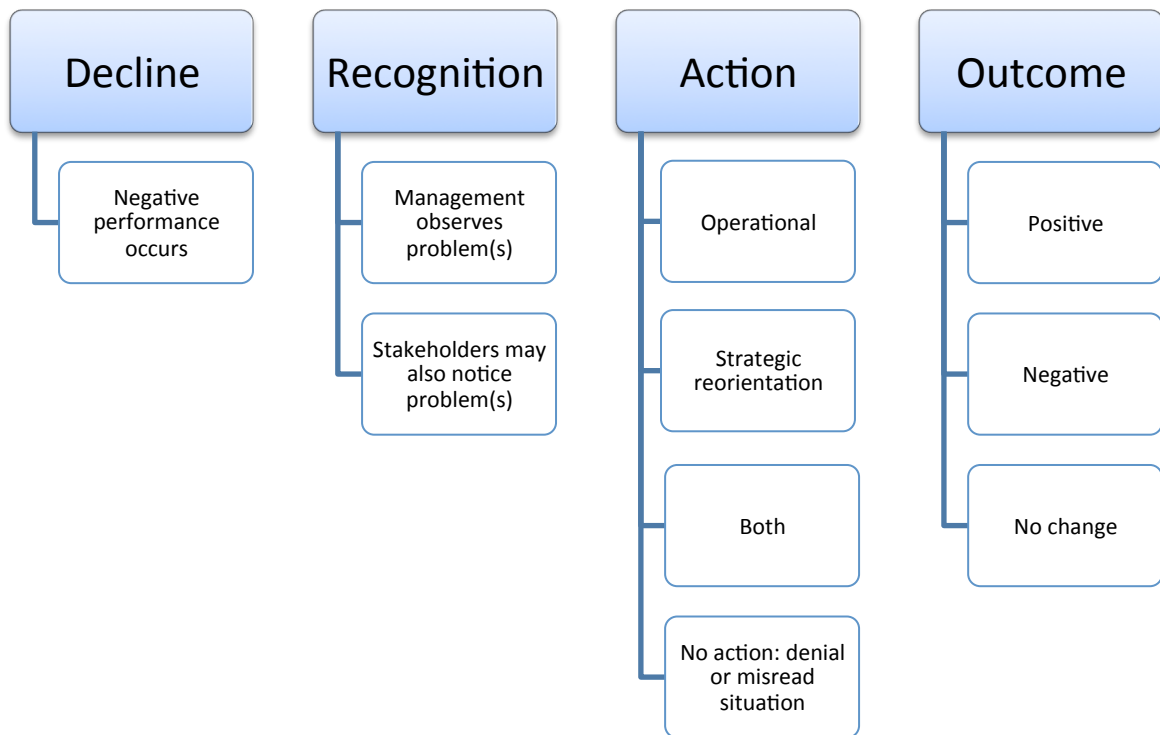
This paper is organized into six sections. I begin with an in-depth look at the turnaround process. I follow this with an industry and organizational life cycle stage related literature review. I proceed to describe the theoretical framework and hypotheses. I then define the sample, measures, and statistical methods employed in the study. After I discuss the data analysis I close with implications for theory and practice.

Chapter 2

LITERATURE REVIEW

In this section I review turnaround literature using the steps depicted in Figure 1 as a guide. The initial stage incorporates a performance decline. It can be driven by external or internal events and it may present itself in many forms. To clarify, in this study, a performance decline is deterioration in a performance metric to a rate below a firm's industry average. I also refer to a performance decline as underperformance. I retained the concept of *decline* as the broader field of turnaround literature collectively speaks in terms of firms in decline. Second, the performance decline is recognized by the upper management team. Third, the management team makes a decision to act or not. Action may take several forms such as cutting costs, pursuing a new strategy, or both. Finally, there is an outcome associated with the selected action(s). The outcome associated with the actions may be measured using numerous metrics with results varying from positive to negative.

FIGURE 1
Turnaround Process



Stage 1: Decline

Before a firm may experience a turnaround it must first experience a decline.

The decline, or underperformance, has to be of sufficient size to be recognizable and to warrant action. If the problem is not recognized, there can be no corrective action.

Typically one would expect a decline to occur at any point in an organization's life cycle, such as when a management team has made strategic mistakes (Boyle & Desai, 1991), when technological discontinuities arise, or when an industry slows (Suarez & Utterback, 1995). In this section I discuss the parameters defining a decline, categorization, and causes of declines.

In general, a decline has been characterized extensively as economic performance degradation, yet there is no consensus as to how large the decline must be. In addition, the performance measurement of choice varies widely as shown in Table 1. Researchers studying turnarounds predominately selected accounting metrics in the quantification of a decline. This diverges from other literature streams that characterize a decline differently, such as a reduction in resources (Cameron, Kim, & Whetten, 1987), a market contraction (Porter, 1980), or the lack of organizational fit (Hansen & Wernerfelt, 1989).

TABLE 1
Decline Measures

Authors	Decline Measures
Morrow, Sirmon, Hitt, & Holcomb, 2007	Jensen's alpha
Clapham, Schwenk, & Caldwell, 2005	Market to book ratio of equity & Z-score
O'Neill, 1986 (a)	Net income (NI)
Schendel & Patton, 1976	NI
Schendel, Patton, & Riggs, 1976	NI
Furrer, Pandian, & Thomas, 2007	Operating cash flow
Chen & Hambrick, 2012	Operating loss
Zimmerman, 1991	Profitability & market position
Hofer, 1980	Profitability & sales
Krueger, 1997	Profitability & Z-score
Kesner & Dalton, 1994	ROA
Mueller & Barker, 1997	ROA
Ndofor, Vanevenhoven, & Barker, 2013	ROA
Pant, 1991	ROA
Abebe, Angriawan, & Ruth, 2012	ROA & Z-score
Dawley, Hoffman, & Lamont, 2002	ROA, ROS, & z-score
Pearce, 2007	ROE
Bruton & Wan, 1994	ROI
Chowdhury & Lang, 1996	ROI

Authors	Decline Measures
Morrow, Johnson, & Busenitz, 2004	ROI
Ramanujam, 1984	ROI
Hambrick & Schecter, 1983	ROI
Thietart, 1988	ROI & market share
Bruton, Ahlstrom, & Wan, 2003	ROI & NI
Francis & Desai, 2005	ROI & NI
O'Kane & Cunningham, 2012	ROI & NI
Barker & Mone, 1994	ROI & ROS
Robbins & Pearce, 1992	ROI & ROS
Barker & Patterson, 1996	ROI & Z-score
Schmitt & Raisch, 2013	ROI, ROA, & decline relative to industry
Arogyaswamy & Yasai-Ardekani, 1997	ROIC
Barker & Duhaime, 1997	ROIC
Arogyaswamy, 1992	ROIC & NI
Boyne & Meier, 2009	TAAS score
Sudarsanam & Lai, 2001	Z-score

Several issues drive the absence of a measurement consensus. First, there is concern that some metrics have drawbacks based on industry or firm characteristics, such as asset intensity. Second, the newer models that address economic value added (Bacidore, Boquist, Milbourn, & Thakor, 1997) or earnings adjusted ratios may not be familiar to strategy researchers. Third, the measurement of underperformance varies between firm specific (Chen & Hambrick, 2012; O'Kane & Cunningham, 2012) and relative measures (Abebe et al., 2012; Boyne & Meier, 2009).

Regardless of the decline metric, there is a considerable problem with an absence of a relevant deviation benchmark. As mentioned, studies vary between firm specific and relative degradation. However, even in the context of calculating relative degradation, the benchmarks range from risk-free rates (Bruton, Ahlstrom, & Wan,

2003; Francis & Desai, 2005) to gross national product rates (Schendel, Patton, & Riggs, 1976) to industry comparisons (Morrow, Johnson, & Busenitz, 2004; Pearce, 2007). Yet, even if a benchmark is chosen, selection issues arise. For example, measuring decline relative to a general risk-free rate or the overall market does not provide necessary industry specific context. Additionally, if a firm realizes a multi-year decline of 5% while its industry declines 7% annually, then the firm has outperformed relative to its peers.

Researchers have typically categorized the cause of the decline as stemming from internal (operational), external (strategic), or management sources (Balgobin & Pandit, 2001; Barker & Barr, 2002). However, it should be noted that there is often overlap between the categories, such as distinguishing between management and internal causes. Categorization rubrics also differ among scholars. For example, Boyle and Desai (1991) characterize declining profit margins as an internal cause of decline, while Schendel et al. (1976) and Hofer (1980) classify it as a strategic problem. I argue that neither position is absolute; internal and external factors are frequently intertwined which I illustrate. Using revenue as an example, it is apparent that something as seemingly simple as a revenue decline may be difficult to classify. Revenue is determined by volume and unit prices, which are derived from a mix of internal based decisions such as pricing, quality, and uniqueness, in addition to external market trends and demand. In the context of labor, it too may be viewed as an ambiguous category. While labor rates are impacted by inflation and other external economic factors they may also be altered via operational changes such as process refinement, outsourcing, and the addition of flexible work conditions.

Literature typically discerns internal causes as an operational problem (Hofer, 1980; Pajunen, 2006). Illustrations from several functionalities highlight internally generated issues. Operations may become less efficient or fail to leverage new processes and techniques (Chowdhury & Lang, 1996; Grinyer, Mayes, & McKiernan, 1990); financial structuring and decisions may become inappropriate and require change (Schmitt & Raisch, 2013); and human capital may become bogged down in bureaucracy, unmotivated, or incapable of activities required within the firm (Buller & McEvoy, 2012; Mintzberg, 1984).

Research from many fields illustrates a range of perspectives on externally triggered declines. Industry life cycle literature emphasizes difficulties competing against disruptive technologies (Anderson & Tushman, 1990) and maintaining a competitive position in changing markets (Klepper, 1996). Evolutionary economic scholars site alternative reasons for decline, such as shifting selection or demand (Vergne & Durand, 2011), carrying capacity changes (Zammuto & Cameron, 1985), and shifting relationships due to fluid competitive interactions (Chen, Katila, McDonald, & Eisenhardt, 2010; Nelson & Winter, 1982). External sources of decline can also stem from a lack of internal innovation (Schumpeter, 1934) or industry altering shifts that misalign the firm's competitive position with the environment (Porter, 1980).

In spite of empirical studies that portray decline as an external-internal dichotomy (Chowdhury, 2002; Krueger, 1997), Bibeault (1982) illustrates that they are frequently commingled. Many root causes are symbiotic-- the industry changes and the firm does not adapt, or as Bibeault suggests, an external event triggers an internal

problem. This misalignment can be seen as a “failure to maintain the alignment of a firm’s strategy, structure, and objectives with an evolving and changing environment” (Furrer, Pandian, & Thomas, 2007: 375).

One would think that identifying the cause of the decline would be a necessary first step in attempting to fix the problem. As Table 2 indicates, only a few dozen studies have associated the cause with actions prescribed for a successful turnaround. However, it is difficult, costly, and at times likely unfeasible to determine a root cause for the performance decline, especially if the turnaround emanated long before the study.

In summary, there is neither consensus among academics as to the definition nor the measurement of a performance decline. Even though most studies do not clearly define the cause of the performance decline, it is typically identified at a macro-level as a mixture of internal and external factors (Schmitt & Raisch, 2013; Schoenberg, Collier, & Bowman, 2013).

TABLE 2**Studies That Identified Cause of Decline as Important**

Study	Cause of Decline
Schendel, Patton, & Riggs, 1976	Ill-fitted strategy & inefficient operations
Grinyer & Spender, 1979	Obsolete business "recipe" is the cause for decline
Hofer, 1980	Strategic turnaround needed when the firm has lost strategic positioning
Bibeault, 1982	Internal & external; most were internal
Hambrick & Schechter, 1983	Low market share or low capacity utilization or any combination therein
Melin, 1985	Multiple related industry changes
O'Neill, 1986 (b)	Causes are varied & important in selecting turnaround strategy
Grinyer & McKiernan, 1990	Study causes of decline & events triggering change
Grinyer, Mayes, & McKiernan, 1990	Turnaround strategy depends on the cause of the decline; but upper management is ultimately responsible
Boyle & Desai, 1991	Internal & external causes (administrative & strategic)
Gopal, 1991	Internal & external causes
Robbins & Pearce, 1992	internal & external causes in addition to decline severity
Barker & Mone, 1994	Decline needs to be understood, rather than assuming retrenchment is mandatory
Arogyaswamy, Barker, & Yasai-Ardekani, 1995	Cause of decline is important to selecting recovery strategy
Barker & Duhaime, 1997	Important
Krueger, 1997	Internal & external causes
Slatter & Lovett, 1999	Internal & external causes
Pandit, 2000	Understood to be important
Balgobin & Pandit, 2001	Poor management response to internal or external issues
Barker & Barr, 2002	Internal or external attribution of decline
Chowdhury, 2002	Internal & external causes
Lohrke, Bedeian, & Palmer, 2004	An important factor to address
Lamberg & Pajunen, 2005	Embedded in the article, not explicit
Filatotchev & Toms, 2006	Governance based exit barrier by those that invested
Lohrke, Ahlstrom, & Bruton, 2012	U.S. Civil war
Schmitt & Raisch, 2013	Internal & external causes
McKinley, Latham, & Braun, 2014	Important

Stage 2: Recognition

The second stage of a turnaround is recognition. The management team must recognize the decline in order to make changes. Most researchers have bypassed the recognition stage and instead focused on the outcome (Clapham et al., 2005; Dowdell, 2010). In spite of the paucity of research on recognition, some evidence indicates that a decline will be recognized if it is severe or if the firm is in a crisis state.

Researchers proposed that the more severe the decline, the more likely the firm would engage in various turnaround actions (Arogyaswamy, Barker, & Yasai-Ardekani, 1995; Musteen, Liang, & Barker, 2011). The general idea is that if the performance decline is large enough, the management team will acknowledge the decline. Once the performance decline has been acknowledged management can attempt to address it (Lohrke, Bedeian, & Palmer, 2004).

On a similar note, many researchers believe that a crisis is needed to trigger recognition of a decline (Fredenberger & Bonnici, 1994; Martin & Kimberly, 2008). However, the definition of a crisis remains ambiguous. A crisis has been described as a significant event that implies a firm is headed for bankruptcy to a more stringent definition derived from financial bankruptcy scores (Barker & Barr, 2002; Dawley et al., 2002). Other researches have adapted a tempered approach, asserting that the level of severity is critical, rather than a crisis (Francis & Desai, 2005; Schmitt & Raisch, 2013).

While recognition may occur at any point in the decline, it is generally believed that the decline needs to be serious and timely. Thus, slowly drifting into a decline may

inhibit recognition (Zimmerman, 1991) while also making it difficult to differentiate from stagnation. Literature has not clearly delineated between the two. While the former may indicate a drawn out, subtle decline, a stagnating firm is apt to be in a state of organizational inertia (Hambrick & D'Aveni, 1988; Hannan & Freeman, 1984). Commingling the two states likely mediates the relationship between variables and turnaround performance (March & Simon, 1958; Miller & Shamsie, 2001).

In this study, I focus on an active decline, which coincides with the tendencies of the growth industries that I analyze. Even though Bibeault (1982) asserts that problems are generally years in the making, there is evidence that a firm in a growth industry will react much more quickly to a decline once it is recognized (Teece, 2007).

Admittedly, few researchers have focused on this stage. Instead they primarily focus on the action and outcome stages. Nevertheless, the recognition stage is of vital importance as it triggers the cognitive need, at the very least, to contemplate the changes needed for the firm to regain its competitive progress.

Stage 3: Action

Turnaround actions generally fall into two domains: a) operational actions, which typically focus on internal reductions and efficiency, and b) strategic reorientation actions, which predominantly focus on entrepreneurial actions. Researchers have embraced studying a wide variety of turnaround actions as highlighted in Table 3.

TABLE 3
Turnaround Actions

Authors	Actions
Arogyaswamy, Barker, & Yasai-Ardekani, 1995	Decline stemming & recovery
Boyle & Desai, 1991	Internally or externally focused
Bibeault, 1982	Management processes, business cycle, competitive environment, product breakthrough, & government related
O'Neill, 1986 (b)	Management, cutback, growth, & restructuring
Bruton & Wan, 1994	Operational
Chowdhury & Lang, 1996	Operational & strategic
Fredenberger & Bonnici, 1994	Operational & strategic
Furrer, Pandian, & Thomas, 2007	Operational & strategic
Hambrick & Schechter, 1983	Operational & strategic
Hofer, 1980	Operational & strategic
Lohrke, Bedeian, & Palmer, 2004	Operational & strategic
Sudarsanam & Lai, 2001	Operational, asset, managerial, & financial strategies
Thietart, 1988	Operational, reorganization, & strategic
Barker & Mone, 1994	Retrenchment
Bruton, Ahlstrom, & Wan, 2003	Retrenchment
Filatotchev & Toms, 2006	Retrenchment
Francis & Desai, 2005	Retrenchment
Morrow, Johnson, & Busenitz, 2004	Retrenchment
Musteen, Liang, & Barker, 2011	Retrenchment
Schmitt & Raisch, 2013	Retrenchment & recovery
Boyne & Meier, 2009	Retrenchment & repositioning
O'Neill, 1986 (a)	Retrenchment & revenue generation
Ndofor, Vanevenhoven, & Barker, 2013	Retrenchment & strategic
Robbins & Pearce, 1992	Retrenchment followed by efficiency maintenance & entrepreneurial expansion
Arogyaswamy, 1992	Retrenchment, efficiency, & rejuvenation
Arogyaswamy & Yasai-Ardekani, 1997	Retrenchment, efficiency, & technology investment
Barker & Mone, 1998	Strategic reorientation & internal change
Schendel, Patton, & Riggs, 1976	Strategic & efficiency
Barker & Barr, 2002	Strategic reorientation
Barker & Duhaime, 1997	Strategic reorientation

Authors	Actions
Morrow, Sirmon, Hitt, & Holcomb, 2007	Strategic reorientation
Pearce & Robbins, 2008	Strategic reorientation
Clapham, Schwenk, & Caldwell, 2005	Strategic, organizational, & internal
Evans & Green, 2000	Strategy type (Miles & Snow)

Operational actions involve a broad range of activities meant to improve the firm's financial position via retrenchment or efficiency improvements. Retrenchment is the proverbial *cut the fat* aspect of a turnaround. Operational actions yield the most contention from researchers even though this approach is frequently employed in reaction to a decline. These actions typically include asset reductions, plant closures, or decreases in areas such as employment and inventory levels (Furrer et al., 2007; Schmitt & Raisch, 2013).

Other internally focused actions do not involve retrenchment. These include actions to improve processes, asset utilization, and capital efficiency (Clapham et al., 2005; Pearce & Robbins, 1993; Sudarsanam & Lai, 2001). However, since the preponderance of internally based actions involves retrenchment, this is my core focus. Retrenchment is generally one of the first actions a firm takes when it reacts to a decline; this is likely due to the relative ease of making cuts and the quick impact retrenchment may have on a firm's financial statements.

Scholars typically cite exogenous changes as the impetus for strategic reorientation (Robbins & Pearce, 1992; Schendel et al., 1976). In general, they believe that a decline triggered by external sources can be addressed through strategic reorientation (Morrow et al., 2007; Pearce & Robbins, 2008). This includes actions such

as business model changes, the introduction of new products, entrance into new markets, and the addition of external relationships (Morrow et al., 2007; Thietart, 1988). Strategic reorientation is also referred to as recovery (Schmitt & Raisch, 2013), repositioning (Boyne & Meier, 2009), rejuvenation (Arogyaswamy, 1992), and entrepreneurial initiatives (Chowdhury & Lang, 1996; Hambrick & Schechter, 1983).

A few scholars have taken a different approach to externally based changes, such as Evans and Green (2000) who analyzed turnarounds using strategy typologies derived from Miles and Snow (1978). Others have opted for finer granularity by inserting changes in the top management team into the equation. However, even in the area of leadership change, researchers disagree as to whether this represents a strategic reorientation action or a new category of action (O'Neill, 1986b; Sudarsanam & Lai, 2001).

Some firms may opt to engage in both actions or opt to ignore the decline. The decision emanates from the upper management, perhaps in conjunction with various stakeholders (Filatotchev & Toms, 2006; Lohrke et al., 2004). However, little work has been done in the area of deciding which action to select if any at all (Schmitt & Raisch, 2013).

In summary, after a turnaround has been identified, the main actions are retrenchment, strategic reorientation, or a combination of the two. Retrenchment is generally used as an immediate response to stabilize the decline (Pearce & Robbins, 2008). Strategic reorientation typically takes longer to enact as it involves business combinations or product regeneration.

Stage 4: Outcome

The final stage of a turnaround is measuring performance. In this section I discuss issues with defining a turnaround, the time frames used in measuring it, and how performance measurements vary. I also provide an overview of the outcomes associated with operational and strategic reorientation actions. However, I would like to emphasize that a turnaround may likely be an iterative process, where a firm embarks on a series of actions until the desired results are achieved (Bethune, 1998; Hoffman, 2012).

Efforts to define a turnaround have resulted in a loose consensus. Generally speaking a firm has turned around if its performance rebounds to a pre-decline level as measured or defined in each study. Yet there are limits. Many researchers will exclude samples that have experienced stagnation or a decline much greater than several years (Morrow et al., 2007; Pearce, 2007). Reasons for this exclusion stem from the belief that firms confronting long-term stagnation will experience different impediments than firms facing near-term performance degradation (Cyert & March, 1963; Grinyer & McKiernan, 1990). These impediments may stem from far-reaching industry changes, such as technology evolution and adoption trends, to the waning of internal abilities once used to recognize and react to changes.

The length of time needed to qualify as a turnaround also varies. However, it typically mimics the same period used to account for the performance decline. An example from Francis and Desai (2005): three consecutive years of return on investment (ROI) growth below the risk-free rate was used to define a downturn, and three

consecutive years of ROI growth above a risk-free rate was used to measure the turnaround. On average researchers allotted a little over three years for a turnaround as indicated in Table 4. The actual period tends to take much longer. In a study of 81 firms, Bibeault (1982) reported the average turnaround time was 4.1 years after 3.7 years of decline. Schendel & Patton (1976) found firms recovered in 7.5 years after a decline of 6.5 years on average.

Performance is generally defined and measured using an accounting-based performance. Similar to most variables the measurement metric differs across studies. Early measures used net income (Schendel & Patton, 1976; Schendel et al., 1976), however subsequent studies migrated towards slightly more advanced metrics. While net income is readily available and easily understood it suffers from being a bit simplistic. Subsequent researchers generally utilized either ROI or return on assets (ROA) metrics.

TABLE 4
Measured Length of Turnaround

Authors	Years
Pearce, 2007	1
Morrow, Sirmon, Hitt, & Holcomb, 2007	1
O'Neill, 1986(a)	2
Robbins & Pearce, 1992	2
Barker & Mone, 1994	2
Chowdhury & Lang, 1996	2
Sudarsanam & Lai, 2001	2
Kesner & Dalton, 1994	3
Bruton & Wan, 1994	3
Barker & Patterson, 1996	3
Mueller & Barker, 1997	3
Barker & Duhaime, 1997	3
Balgobin & Pandit, 2001	3
Bruton, Ahlstrom, & Wan, 2003	3
Morrow, Johnson, & Busenitz, 2004	3
Francis & Desai, 2005	3
Abebe, Angriawan, & Ruth, 2012	3
O'Kane & Cunningham, 2012	3
Schendel, Patton, & Riggs, 1976	4
Hambrick & Schechter, 1983	4
Ramanujam, 1984	4
Arogyaswamy, 1992	4
Krueger, 1997	4
Arogyaswamy & Yasai-Ardekani, 1997	4
Chen & Hambrick, 2012	4
Ndofor, Vanevenhoven, & Barker, 2013	4
Clapham, Schwenk, & Caldwell, 2005	5
Pant, 1991	6
Bibeault, 1982	4**
Schendel & Patton, 1976	8**
*Includes single industry studies; **average	Average 3.1

There is no universal best choice for measuring performance as all measures raise concerns. In terms of the most widely used metric, ROI, most studies do not articulate how they calculated the measure. A typical formula for ROI is: $((\text{gain from investment} - \text{cost of investment}) / \text{cost of investment})$. Yet, the majority of the studies do not address the cost basis for the measure (Francis & Desai, 2005; Hambrick & Schechter, 1983). As such it is unclear as to *which* investment is measured.

ROA, a simpler method that can be calculated at any point and that does not rely on investment periods or classes, is the second most popular measure. The downside to using an asset based measure is that some industries and firms may present skewed comparisons if the industry is asset heavy or light. The same is true for firms that deviate from industry norms due to outsourcing policies. Some studies may minimize ROA concerns by sampling similar industries, such as manufacturing (Abebe et al., 2012; Mueller & Barker, 1997).

Infrequently used, but perhaps a better measure of health, is return on capital (ROC). ROC is a measure of how effectively a firm uses its capital to generate earnings. The advantage to using ROC is that income, which may be scrubbed of taxes, is assessed without regard to asset levels. Additionally, it may be used at any point in time rather than for a specific investment. ROC is not a perfect measure either; one particular issue is the variance in computing total capital. While it is beyond the bounds of this study to propose the best method, I contend that measuring the capital generating value is superior to ROI and ROA given the ambiguities in investment periods and deviances in asset ownership.

Many of the empirical studies affirmed the need to benchmark performance deviations from an industry peer group to control for cycles and environmental differences (Grinyer, Mayes, & McKiernan, 1988; Pant, 1991). Some scholars used broad domestic benchmarks to assess performance, such as the gross domestic product (GDP) or a risk-free U.S. Treasury bill rate (Barker & Duhaime, 1997; Schendel & Patton, 1976). The presumption inherent in these metrics is that if a firm is growing below the growth of the GDP or a short-term risk-free rate, the firm is underperforming. However, many researchers did not apply a benchmark, even when analyzing multiple industries in their study (Clapham et al., 2005; Kesner & Dalton, 1994).

Generalizability among outcomes is difficult due to several issues. First, many studies are either firm or industry specific (Morrow et al., 2007; Pajunen, 2006) thereby decreasing the degree of predictability. In addition many studies have focused on a single phase, such as stagnating firms (Grinyer & McKiernan, 1990) or mature firms (Bibeault, 1982). Second, the results are equivocal. Regardless of the classification of the actions results remain contradictory across studies. Third, some research explores three organizational responses: retrenchment, strategic reorientation, and upper management changes, thereby further partitioning the results.

Operational outcomes. In general, a firm will opt for retrenchment first to stabilize performance. Firms will attempt this via reductions in operations and activities that are unproductive. Ideally, cost cutting would be a quick-fix to shore up a firm's financial position (Bruton & Wan, 1994). However, there is a cadre of empirical evidence both for and against retrenchment. Over time, as the number of studies grew, so have

the contingencies related to retrenchment. I present findings and a few key variables frequently associated with retrenchment.

The case for retrenchment as a turnaround action began early. Hofer (1980) proposed that firms should use their internal break-even points to guide retrenchment. He found that firms operating near break-even were more likely to turn around if they used cost retrenchment. However, for firms operating far below their break-even point, a more extensive use of asset reduction was needed. Robbins & Pearce (1992) found a similar outcome in their sample of 31 textile manufacturing firms. They reported that the degree of retrenchment was positively related to turnaround success, regardless of whether the decline was caused by internal or external sources. In a study of 51 commercial banks, O'Neill (1986a) found a positive relationship between cost cutting and performance. Likewise, in a study of mature, industrial, strategic business units, Hambrick & Schechter (1983) found that turnaround success was associated primarily with retrenchment and efficiency actions.

Some studies found discernable sub-group differences within their samples. In a study of 412 manufacturing firms, Morrow et al. (2004) reported results mediated by industry growth. In growth industries, asset retrenchment was positively and significantly related to performance improvements while cost retrenchment was unrelated. However, in mature industries, cost and asset retrenchment were each positively and significantly related to performance improvements. In declining industries they found that cost retrenchment was positively and significantly related to

improved performance while asset retrenchment had a significant negative effect on performance.

The case against retrenchment is slim. A large study of Texas public school districts (Boyne & Meier, 2009) indicated that retrenchment exacerbated decline. Likewise, in a study of high-growth, prepackaged software firms (Ndofor et al., 2013), asset reductions and layoffs presented a significant negative relationship with the odds of a turnaround.

Research also indicated many insignificant relations between retrenchment and turnaround success. This middle ground occurred across many sample typologies including turnaround consultants (Schmitt & Raisch, 2013), textile manufacturers (Barker & Mone, 1994), manufacturers (Arogyaswamy, 1992), and a broad swath of industries (Bruton et al., 2003).

In spite of the inconsistent findings associated with retrenchment there is evidence that adding efficiency into the equation alters the results. Numerous studies that included efficiency measures with retrenchment actions generated a positive relationship with turnaround success (Chowdhury & Lang, 1996; Zimmerman, 1989). These studies concluded that cuts may be easy, but the effective streamlining of a business requires much more managerial skill and dexterity.

While many researchers commingle efficiency measures with retrenchment (Arogyaswamy & Yasai-Ardekani, 1997), a few have isolated the two measures. One would expect a firm with greater efficiencies to perform better than its peers. However, as with much of the strategy field, efficiency only helps insofar as the marketplace

desires the strategy and entrepreneurial offerings. Studies indicate that firms with higher efficiencies have a significantly positive relationship with performance (Chowdhury & Lang, 1996; Pearce, 2007).

Although the impact of altering operational processes was frequently mentioned in turnaround research, it has taken a subordinate role behind retrenchment. Research indicates that firms might adjust processes and financially restructure (Sudarsanam & Lai, 2001; Thain & Goldthorpe, 1989); however the specifics remain ambiguous as this topic remains under-studied.

Strategic reorientation outcomes. The association between strategic actions and turnaround performance represent another widely studied phenomenon in turnaround literature. Strategic actions include activities that are thought to be market oriented endeavors to improve a firm's competitive position. These may include additions such as new products, new markets, and new organizational form factors.

Similar to retrenchment the findings between strategic reorientation actions and performance remain inconsistent. Research indicates having more strategic options rather than fewer is preferable in terms of performance (Dawley et al., 2002). However, the key to reorientation lies within the need for competitive change, and not as an answer to poor internal processes (Hofer, 1980; Thietart, 1988). In fact, some research indicated that several changes might be needed (Barker & Duhaime, 1997; Thain & Goldthorpe, 1989).

Not all research indicates that entrepreneurial actions are necessary for a turnaround. Ndofor et al. (2013) reported no significant association between new

product introductions and acquisitions in the prepackaged software industry. While their sample did specify that alliances indicated a significant relationship, neither the introduction of new products nor acquisitions were significantly helpful.

Frequently overlooked is the seemingly simple act of expanding revenue. After all, if the firm sold more units, it should perform better. On the contrary, studies indicate that revenue growth is not a significant factor in turnaround success (Bruton & Wan, 1994; Hambrick & Schechter, 1983). Perhaps more substantial entrepreneurial changes are needed to improve performance (Schendel & Patton, 1976; Schendel et al., 1976).

Researchers have suggested also that the CEO, upper management, and the board of directors all have a role in a turnaround. Within this power triumvirate, the role of the CEO is primarily explored. Research generally indicates that CEO succession and upper management changes are positively associated with turnaround performance (Clapham et al., 2005; O'Kane & Cunningham, 2012; O'Neill, 1986b). However, other studies have questioned whether a CEO change is necessary (Chen & Hambrick, 2012). Perhaps management change is necessary depending on contingencies, such as the presence of inertia or a mismatch between the type of innovation required versus that which is produced (Barker, Patterson, & Mueller, 2001; McKinley, Latham, & Braun, 2014).

Which comes first- retrenchment or strategic reorientation actions? A few researchers have proposed that firms should perform retrenchment actions prior to engaging in strategic actions (Robbins & Pearce, 1992) to minimize losses. In practice

retrenchment is often easier and quicker. Cutting staff or a product line is frequently swifter than creating a new product line or integrating an acquired firm. The *cut first* action appears to be supported by research. A study of 32 textile manufacturers (Robbins & Pearce, 1992) displayed a highly consistent, positive relationship between retrenchment actions and performance. As such, the researchers profess that changes should begin with retrenchment and then progress. Filatotchev and Toms (2006) extended this idea, adding that before a firm can begin retrenchment actions it should align the expectations of the principal players.

Combination outcomes. Schmitt and Raisch (2013) employed a unique approach that incorporated retrenchment with strategic reorientation. They found that instead of selecting either a retrenchment or an entrepreneurial approach as the first step, the combination of both actions was positively and significantly associated with turnaround performance.

Additional variables of interest. Industry, firm size, and the severity of the decline are also analyzed, primarily as contingency factors in the relationship between turnaround actions and performance outcome.

Turnaround research that included industry as a factor yields interesting ideas for future investigation. In a sample of 90 East Asian firms, Bruton et al. (2003) reported that turnarounds were more successful in heavy manufacturing and service industries than in light manufacturing, hotel, real estate, and travel industries. On the other hand, evidence also indicated that industry volatility, growth, and concentration were not significantly different between firms that turned around and those that did not

(Ramanujam, 1984). Likewise, several studies reported that industry growth was not a significant factor (Francis & Desai, 2005; Pant, 1991).

There is a general conception that smaller firms are more nimble and thus more flexible (Pant, 1991). Nevertheless, the impact of firm size on the turnaround outcome appears tenuous from the viewpoint of conflicting results across studies. Bruton et al. (2003) found a negative association in a multi-industry study of East Asian firms. In addition, Morrow et al. (2004) reported in their study of 412 manufacturing firms that size was negatively and significantly associated with turnaround performance in growth and mature industry life cycle stages. Yet they found no significance in declining industries. Conversely, some studies reported no relationship between firm size and performance (Sudarsanam & Lai, 2001; Zimmerman, 1991).

Decline severity has evoked substantial researcher interest as well. Nevertheless, inconclusive patterns persist here as well. Evidence linking severity to turnaround performance remains contradictory, as shown in Table 5. The seminal idea driving this research position was that a management team would react to severity, in part because the decline would be recognizable and in part due to alleged necessity. Yet, empirical evidence indicates a divide—with some results indicating a positive link (Robbins & Pearce, 1992; Zimmerman, 1991) and other results indicating that the degree of severity is negatively associated with performance (Morrow et al., 2004; Sudarsanam & Lai, 2001). While there is evidence that problems need to reach a heightened level to garner a reaction from some management teams (Filatotchev &

Toms, 2006; Krueger, 1997), there is evidence that if the decline is too steep, additional constraints tend to arise that may limit turnaround actions.

In summary, outcomes from operational actions, strategic reorientation actions, and a combination of the two may have an association with turnaround performance. However, since the evidence appears inconclusive there is no significant body of evidence that any type of action characteristically studied can be reliably leveraged to produce a turnaround.

TABLE 5
Studies That Identified Severity of Decline

Study	Finding
Schendel, Patton, & Riggs, 1976	Appears that a major decline is needed before recovery actions are taken
Ramanujam, 1984	In situations of steeper ROI decline, non-turnaround firms were significantly different from turnaround firms
Zimmerman, 1991	Firms with a successful turnaround were more likely to have experienced a severe decline
Robbins & Pearce, 1992	Significantly stronger association between both cost and asset retrenchment for firms experiencing more severity than less severity
Barker & Mone, 1994	No significant difference between firms that retrench and those that do not, taking into account steepest decline
Bruton & Wan, 1994	Severity required more turnaround actions
Barker & Duhaime, 1997	Severity was associated with greater level of strategic change during the turnaround
Krueger, 1997	Results indicate turnaround actions vary based on severity
Sudarsanam & Lai, 2001	Severity was significantly associated with recovery; also severity impacted the pace of restructuring actions
Morrow, Johnson, & Busenitz, 2004	Severity was significantly associated with recovery in a mature, declining industry
Francis & Desai, 2005	Perceptions of severity vary greatly; severity of decline was negatively and significantly associated with turnaround prediction
Filatotchev & Toms, 2006	Severity of crisis and length impacted strategy
Musteen, Liang, & Barker, 2011	Severity of decline positively and significantly mediated relationship between: locus of strategic control, gender, functional background, maturity, and extent of retrenchment activity
Chen & Hambrick, 2012	Severity of industry decline impacts performance and CEO replacement
Ndofor, Vanevenhoven, & Barker, 2013	Severity of decline significantly and negatively associated with the chance of turnaround
Schmitt & Raisch, 2013	In firms with high severity of decline, retrenchment and recovery are each positively and significantly associated with turnaround performance; the interaction is not significant. In firms with low severity, only the interaction was positive and significant

Chapter 3

INDUSTRY AND ORGANIZATIONAL LIFE CYCLE FRAMEWORKS

Strengths and Weaknesses

The industry and organizational life cycle frameworks are an illuminating tool for exploring steps in the turnaround process. Life cycle scholars provide a wealth of research on inertia and change, both of which impact turnaround success. In general, industry life cycle scholars study an industry as a unit, examining macro environment attributes such as product and firm entry and exit rates, innovation levels, and event triggers. Organizational life cycle literature focuses on the firm. It predicts that as a firm ages and growth slows it will become bogged down with policies, procedures, management layers, and formalized decision-making. Eventually the sense of market urgency is lost resulting in a degree of inertia. Research indicates that external and internal events trigger changes both within industries (Anderson & Tushman, 1990; Gort & Klepper, 1982) and firms (Quinn & Cameron, 1983).

Literature generally depicts three to five stages in a life cycle with labels such as: introduction, growth, maturity, and decline. The stages are typically grounded on the variable being studied such as: learning and knowledge (Miller & Shamsie, 2001), firm

problems (Kazanjian, 1988), firm revenue growth (Lester, Parnell, & Carraher, 2003), and the rate of new entrants within an industry (Agarwal, Sarkar, & Echambadi, 2002).

Fredenberger and Bonnici (1994) proposed that the traditional organizational life cycle be extended to allow for the turnaround phases of crisis, stability, and recovery. This idea of extending the life cycle curve is not necessarily novel; scientists previously suggested that life cycle stages vary in length (Gort & Klepper, 1982) and are repeatable. The interesting point is that some firms may experience unique post-decline stages that are not necessarily a revisit to an earlier stage.

Research indicates that firms in growth industries may be more sensitive to recognizing market fluctuations and the need for entrepreneurial change (Barreto, 2010; Eisenhardt & Martin, 2000). Likewise, some researchers associated the growth stage with technology and innovation capability. Teece, Pisano, and Shuen (1997) suggested that firms in a high-growth environment, such as technology firms, could achieve a competitive advantage by using their internal resources to find and seize opportunities. This capability, to integrate internal capabilities with external opportunities, has been cited as a critical component in rapid growth markets (Jorgenson, Ho, & Samuels, 2011; Teece, 2007).

In spite of the benefits of applying life cycle stages to explore the association between turnaround actions and outcomes, there are weaknesses. Chiefly there is considerable ambiguity in the differentiation between stages. In addition, duration and measurement issues present further challenges.

Scholars have struggled to clearly delineate stages and rubrics for movement among stages in organizational life cycle literature. This enervates the power of decades of fine-grained analysis. Additionally it may evoke uncertainty in cases of strategic renewal. As an example, there may be instances where a firm in a mature stage with little to no growth prospects repositions itself and re-enters a growth stage. However, the firm will likely retain its mature stage structure. Grabowski & Mueller (1975) highlight this issue; they assert that a firm may be mature in years, but have new products or technology. Thus, classifying a firm as young or mature (old) hinders the utility of some research. Perhaps to combat this issue, some researchers use revenue growth as the metric for defining life cycle stages. In this study I define a growth industry as one with cumulative annual revenue growth at least 50% greater than GDP growth.

Even with an ordinal growth classification duration problems arise. Since the length of a stage is frequently based on growth rates, the onset of a performance decline may force a firm into a new life cycle stage. For example, if a firm is in an high growth stage yet experiences a performance decline, it may be viewed as mature stage firm in some organizational life cycle models. Therefore a question arises as to which stage a firm is experiencing and at what point the stage will change.

Measurement issues also present obstacles. Comparability across studies is frequently hindered by the varying number of stages across studies. Additionally, since researchers study a variety of phenomenon via a life cycle framework, the actual measurement metric varies widely, which limits generalizability across studies.

Life Cycle Literature and Turnaround Stages

In this section I review findings from industry and organizational life cycle literature as it applies to the turnaround framework in Figure 1.

Decline stage. Contrary to frequent perception, performance declines do occur in growth industries and they arise from a multitude of causes. This seeming contradiction is likely the result of a changing environment; as the market changes, the firm's performance will be dynamic over time as it engages with the fluctuations (Gort & Klepper, 1982). Firms in a growth industry may particularly suffer from causes such as limited cognition in an information rich context (Tripsas & Gavetti, 2000), failure to keep pace with innovation (Strebel, 1987), and misunderstanding the importance of adapting to changes while managing a firm (Raisch & Birkinshaw, 2008). In addition to environmental factors, growth stage firms may also experience underperformance due to strategic blunders or operational issues, just as firms do in other life cycle stages.

Recognition stage. I have not found any empirical studies that assess management's capability to recognize a performance decline in growth industries. Depending on one's viewpoint, it could be debated that the recognition stage is either more or less likely in the growth stage than in mature stage. Life cycle literature generally indicates that rivalry is more intense in the early stages (Mazzucato & Semmler, 1999), especially at the product or business unit level (Karniouchina, Carson, Short, & Ketchen, 2013). However, scholars of a qualitative study of ten high-technology CEOs suggested that management may suffer from information overload in growth industries (McCarthy, Spital, & Lauenstein, 1987). Perhaps the sheer volume of

information, competitive maneuvers, and noise subjugates the ability for some management teams to recognize a true decline.

Action stage. Evidence indicates that firms in earlier life cycle stages, such as the introductory and growth stages, will be more likely to enact change due to an increased focus on innovation (Strebel, 1987) and market orientation (Dibrell et al., 2011). These life cycle based perspectives are in direct conflict with some assumptions and evidence (Filatotchev & Toms, 2006; Martin & Kimberly, 2008) that indicate the fear of firm failure is a primary motivator for action. Evidence indicates that firms will engage in retrenchment and strategic reorientation actions in both growth and maturity stages. However, as Zeidler (2000) points out, the efficacy of actions may vary across the stages.

Outcome stage. Research outcomes involving growth industries remain sparse. The majority of studies either focus on mature stage firms or a variety of growth stages. In a technology-based study of seventy firms, Bruton and Wan (1994) examined outcomes from the decline and post-decline phases. They found several divergences between the two periods. For example, they found that a reduction in capital expenditures was significantly associated with turnarounds in the decline phase. However, in the potential turnaround phase, capital expenditure changes were not significantly associated with performance. A similar trend occurred in working capital; a reduction in working capital was negatively associated with performance in the decline phase, but in the turnaround phase it was not significant.

In a study of high-growth software firms, Ndofor et al. (2013) found evidence that the higher a firm's pre-decline performance, the steeper the decline; this

combination increased the odds of a turnaround. In terms of strategic actions, the study found that alliances increased the odds for turnaround. On the operational side, they found layoffs and asset reductions were negatively related to turnaround odds.

Likewise, differences between growing and declining industries were recognized in a large study of manufacturing firms (Morrow et al., 2004). They reported that while asset reduction was significantly and positively associated with performance in growth industries, it was significantly and negatively associated in mature industries. Conversely cost retrenchment in declining industries was significantly and positively related to performance but demonstrated no relationship in growth industries.

Chapter 4

THEORETICAL FRAMEWORK AND HYPOTHESES

This study expands our knowledge of the association between actions taken to regain performance in growth industries. Realizing that there are substantial competitive and organizational differences between firms in a growth industry than those in other life cycle stages, especially the most commonly studied stage of maturity, it seems probable that the relationship between actions taken and firm performance will present different results as well. An analysis of life cycle literature suggests why this statement can be justified.

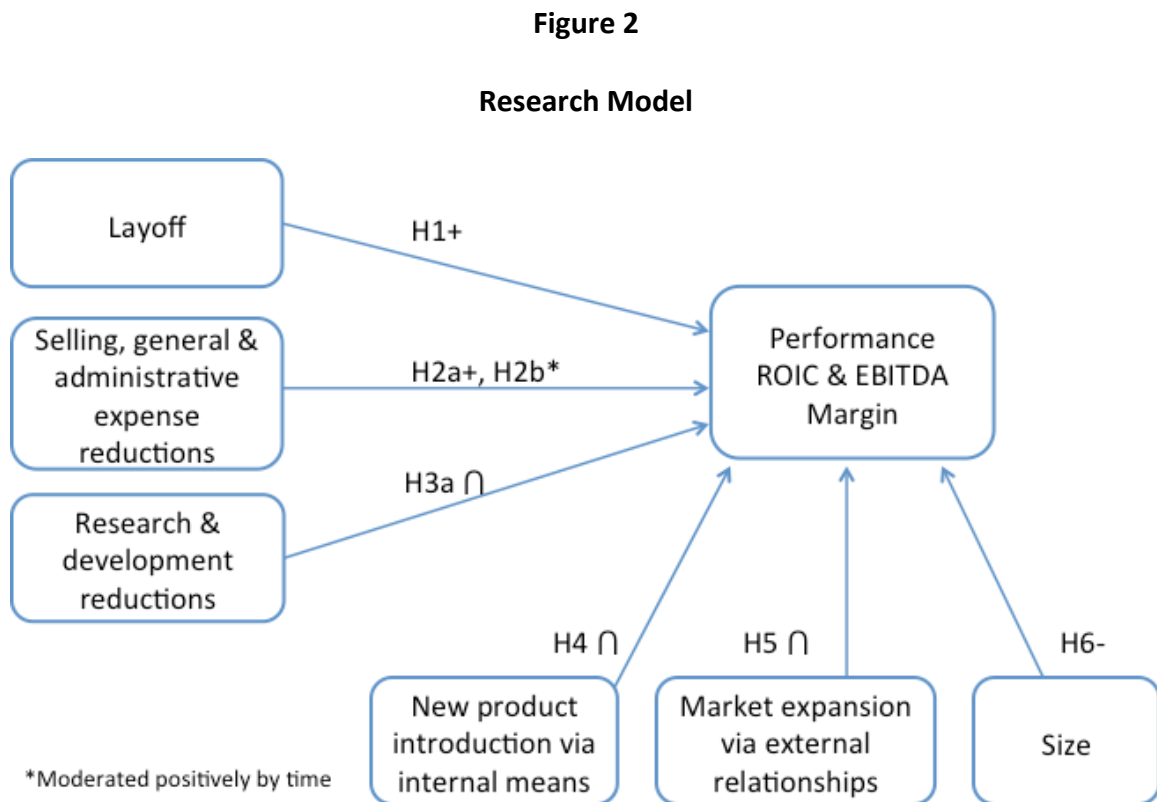
Industry life cycle research reveals that growth stage industries face more competition, uncertainty, and pressure from innovation. Industries wax and wane with changes in competitive aggressiveness (Lumpkin & Dess, 2001) and the opportunity for product innovations via technology curve iterations (Anderson & Tushman, 1990; Taylor & Taylor, 2012). In the early stages of an industry there is generally a large influx of firms. The entry rate tends to remain high until a dominant design occurs (Gort & Klepper, 1982). Once a dominant design appears it generally heralds more innovation and repeat cycles with accompanying uncertainty and completion until growth slows foreshadowing a transition to maturity, witnessed by a reduction in both new entrants

and existing firms (Klepper, 1996). Evidence indicates that firm survival rates vary based on technological intensity (Agarwal & Audretsch, 2001), demonstrating that industry stage impacts not only the entrepreneurial intensity of firms but also the competitive intent of management teams as they innovate over time (Kotha, Zheng, & George, 2011).

Scholars have found that organizational characteristics also differ by life cycle stage. Growth stage firms tend to be more focused on external markets and product offerings than mature stage firms (Kazanjian & Drazin, 1990). Life cycle research suggests that firms may experience increasing inertia, perhaps driven by increasing formalization and institutionalization as the firm progresses (Adizes, 1979; Amburgey, Kelly, & Barnett, 1983). Mintzberg (1984) argues that leadership in mature firms tends to turn inwards, focusing on the organization itself rather than external objectives. As the organization evolves into a closed system it begins to experience increasing institutionalization (Adizes, 1979; Quinn & Cameron, 1983), serving as a further bridge to market ennui that is generally absent in growth firms.

In summary, I propose that life cycle theory offers considerable substantiation of how industry and firm behavior may manifest as a growth stage firm attempts a turnaround. I test a model that associates change and innovation with successful turnarounds. My reasoning in highlighting the expected influence of those two factors stems from knowledge that the decision and the capability to act are impacted by the significance and the degree of environmental change (Hannan & Freeman, 1984; March & Simon, 1958), both customarily high in a growth industry. My model, as illustrated in

Figure 2, indicates the operational and strategic actions and the anticipated performance associated with the variables.



Operational Actions and Turnaround Performance

Life cycle research portrays the growth era as one of market orientation-- in which firms exhibit entrepreneurialism and a rapid response to market change. These elements provide underperforming firms with a variety of options for engaging in operational actions. The market focus and abundance of opportunities for innovation will likely provide a firm with ample motive to engage in turnaround actions (March &

Simon, 1958; Teece et al., 1997). However, even if the management team does not originate a reaction, external pressure from a variety of stakeholders (Pajunen, 2006) may compel the firm to undertake actions in an attempt to revert to mean industry growth.

From an operational viewpoint, actions may include opportunities to minimize resources, reduce assets, and improve processes. Because there is always a threat of a better or cheaper product (Anderson & Tushman, 1990) time is of the essence when an industry is experiencing growth. This pressure may encourage a firm to satisfice quickly rather than to consider invasive structural changes. As such, it is likely that the turnaround actions a firm does deploy will offer performance improvements within quarters rather than years. Considering the major categories of firm expenses, a layoff and a reduction in selling, general and administrative expenses (SG&A) may provide timely results without impinging on future productivity and innovation.

A layoff characteristically provides a relatively quick reduction in costs with few external hurdles. A reduction in the workforce typically does not require board approval, creditor approval, or a broad endorsement from stakeholders. Additionally, the cost to implement a reduction is relatively inexpensive and the impact may appear in the financial statements within quarters. Assuming that the reduction boosts the efficiency of the remaining workforce, a firm may increase its performance (Chowdhury & Lang, 1996).

Hypothesis 1: A lay-off is positively associated with turnaround performance.

Given the entrepreneurial nature of the growth stage, the firm may search for other reductions in resources that can improve its financial position while retaining its ability to rebound competitively. Two of the largest expenses for a firm are its cost of goods sold (COGS) and SG&A. Since a growth stage firm is focused on innovation with time pressures, I anticipate that the management team will focus on SG&A rather than COGS reductions as changes to goods sold will likely incur supplier and manufacturing process changes that can take much longer to analyze and implement than a reduction of SG&A costs. Furthermore, reductions in SG&A expenses enable the firm to make organizational changes that may have a large impact but do not require external approval, as may be the case in the sale of other large ticket items related to COGS expenses, such as property, plant, and equipment.

Hypothesis 2a: Reductions in SG&A are positively associated with turnaround performance for underperforming firms in growth industries.

The passing of time is likely to impact the degree of reductions. Competitive pressure from the external environment intensifies the need to produce performance gains. While the need to preserve projects and satisfaction with prior routines may curb

early reductions, consecutive quarters of poor performance may increase the reduction altering the relationship between action and performance.

Hypothesis 2b: Time positively moderates the relationship between SG&A reductions and turnaround performance.

Innovation, a central component to growth in life cycle literatures (Miller & Shamsie, 2001; Schumpeter, 1934; Suarez & Utterback, 1995), tends to be driven by research and development (R&D). R&D has been specifically emphasized as a critical component to competitive positioning and innovation in a growth industry (Dibrell et al., 2011; Jawahar & McLaughlin, 2001). Not only do firms in the growth phase depend on innovation (Bos, Economidou, & Sanders, 2013; Klepper, 1996) but current R&D activities may also be intertwined across multiple projects or part of a long term plan. Thus, cuts may impinge competitive success based on the degree of tacit ties across products (Nelson & Winter, 1982), especially compared to mature industries that tend to compete on cost and process innovation (Porter, 1980).

The significance of R&D also has been supported by research from turnaround studies. These studies further indicate that technology-based firms may need to continue or increase industry average rates of R&D spending to maintain a pipeline of innovation (Arogyaswamy & Yasai-Ardekani, 1997; Bruton & Wan, 1994). Thus, if an industry has been operating with a certain level of R&D expenditures, stakeholders may

not favor a reduction unless they believe the viability of a firm is in question (Filatotchev & Toms, 2006; Trahms et al., 2013).

Evidence from several disciplines suggests that R&D expenditure reductions will produce a weaker future competitive position and likely be unfruitful in terms of turnaround performance in a growth industry. However, it is feasible that small reductions in R&D spending may lead to positive performance results. For example there may be some programs that can be eliminated or realigned into ongoing programs (Westerman, McFarlan, & Iansiti, 2006). Nevertheless, if the firm competes on an entrepreneurial platform, which evidence points to in growth industries, larger cuts may prove deleterious to a firm's future competitive position and financial performance. In the long run, more reductions may lead to an "illusion of temporary well-being that gets harder to maintain" (D'Aveni, 1989: 600).

Consequently, evidence suggests that R&D reductions may not have a linear relationship with performance. Instead, there appears to be considerable need to remain competitive and thus protect the innovative capacity of a firm while balancing the need for performance gains.

Hypothesis 3: R&D reductions display an inverted U-shaped curvilinear relationship with turnaround performance for underperforming firms in growth industries.

Strategic Reorientation Actions and Turnaround Performance

Industry growth is realized by innovation that stems from a recombination of existing routines and knowledge or the creation of new ones (Nelson & Winter, 1982; Schumpeter, 1934). Firms in the growth stage may react to recognized changes and new opportunities with a variety of market oriented strategies (Miller & Friesen, 1984). Scholars suggest that context and routines may also shape the behavior of a firm (DiMaggio & Powell, 1983; Van de Ven & Sun, 2011). Thus, if peer firms experience rapid growth, it is likely that the internal and external pressures will encourage this routine to continue. These changes may entail activities such as adjusting its structure (Hannan & Freeman, 1984) or creating a new competitive plan (Jay, 2013). Structural changes could also produce strategic reorientation actions from combinatory measures with external firms.

Strategically based growth may originate from internal or external product line expansion. Depending on the length of the product development cycle, the projected sales cycle, and the resources required to bring a new product to market, the firm may opt for internally based options such as generating new products to achieve strategic change. Conversely, externally based growth may occur from a wide variety of sources such as marketing relationships, mergers, acquisitions, alliances, and joint ventures.

In spite of the access to a wide selection of growth prospects, there are limits to the trade-off between growth and the cost of growth. At moderate levels of strategic oriented growth it is likely that a firm can manage the integration of innovation with the goal of improving performance. However, at higher levels of strategic growth a firm will

likely experience negative consequences. Information overload not only deters performance (O'Reilly, 1980) but it also presents obstacles in analyzing and selecting alternatives due to cognitive and organizational limitations (Cho & Hambrick, 2006; Ocasio, 1997). Thus at higher levels of new product introduction or relationship integration, negative consequences of overload are likely to counter the positive impact of growth.

Hypothesis 4: New product introductions will have an inverted U-shaped curvilinear relationship with turnaround performance for underperforming firms in growth industries.

Hypothesis 5: The addition of external relationships will have an inverted U-shaped curvilinear relationship with turnaround performance for underperforming firms in growth industries.

Firm Size

Although size is neither an action nor an easily changeable reorientation tactic, given that this study focuses on a single life cycle stage and that firm size is frequently associated with both firm actions and life cycle theory, I address size as a main effect.

Several researchers have indicated that smaller firms may be more flexible and thus more inclined to change (Klepper, 1996; Quinn & Cameron, 1983). The

reason for the flexibility stems from three primary factors: lessened institutional forces and control (Salancik & Pfeffer, 1977), a honed focus on survival and market readiness (Churchill & Lewis, 1983), and reduced bureaucracy in the planning and decision making roles (Adizes, 1979). Literature suggests that smaller growth stage firms have more flexibility, which appears to support the ability to transition in a turnaround.

Hypothesis 6: Firm size will be negatively related to turnaround performance.

Chapter 5

METHODS

Context

The relationship between turnaround actions and performance remains equivocal across a broad range of variables. My goal was to produce a clearer picture of the relationship between turnaround actions and performance by minimizing many of the externalities inherent in previous studies. To limit much environmental impact I used a shorter timeframe. Generally researchers have incorporated a decline of at least three years. One issue that many years of decline presents it is that it may inadvertently mask the relationship between turnaround actions and performance as environmental changes impact both the firm and the industry. In this study the average industry relative decline is six quarters.

In addition, I selected a single life cycle stage to reduce externalities of variations due to industry evolution (Karniouchina et al., 2013; Sørensen & Stuart, 2000) and innovation characteristics (Kotha et al., 2011) that occur over a life cycle. I selected the growth stage as research from both industry and organizational life cycle studies indicate that firms in this stage may be more willing to react to opportunities (Klepper, 1996; Ndofor et al., 2013).

Sample

I selected technology-based industries that have been acknowledged to represent growth in previous strategic management research (Eisenhardt & Martin, 2000; Teece, 2007). The industries selected are A) semiconductors and semiconductor equipment, B) prepackaged software, data processing, and related services, and C) computer storage, computer communications, and office equipment. Cumulative annual growth rates (CAGR) measured during the potential performance decline period of 2005-2013 ranged from 4.9% in the semiconductor industry to 12.9% in the computer storage device industry. During the same period the U.S. GDP grew at an annual rate of 3.1% (Worldbank.org). All CAGRs in the sample are at least 150 basis points above the GDP growth, indicating strong growth in comparison to the general economy, but not hyper-growth. Hyper-growth rates are generally found in the nascent stages of an industry, which would categorically occur in an earlier life cycle stage.

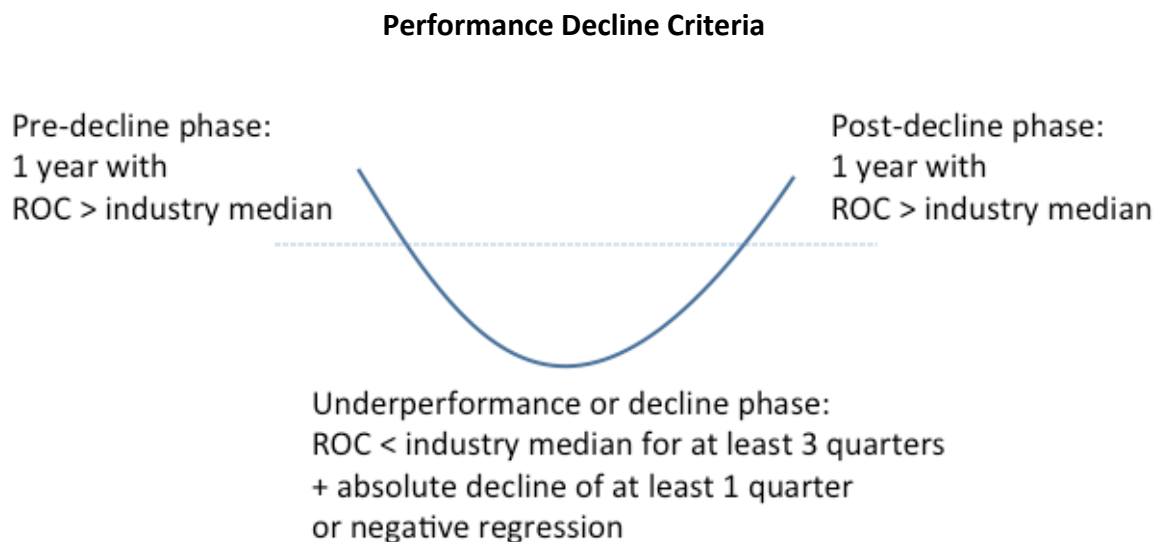
I employed several constraints to minimize extraneous effects in the study. I excluded firms incorporated outside of the United States to minimize social and cultural heterogeneity (Abebe et al., 2012); I included only stand-alone firms with their own management team and audited financial reports; and I included firms traded on a major U.S. exchange during a ten year period beginning in 2005. This period was selected for its timeliness, which may make the results more relevant as accounting rules evolve over time. In addition, this period begins after the technology collapse of 2000-2001, minimizing the possibility of industry specific abnormalities due to that adversity. Limiting the sample to firms traded on a major exchange allows for greater

comparability as the samples are all required to comply with heightened regulations monitored by the Securities and Exchange Commission such as the Sarbanes-Oxley Act of 2002. Using these constraints 311 firms remained in the sample.

Aside from the aforementioned macro constraints, additional performance criteria had to be met for a firm to be included in the turnaround sample. These criteria, as depicted in Figure 3, include:

- 1) Prior to a performance decline a firm must have reported at least one year with its ROC being greater than its industry's median ROC. I measured the year on a quarterly basis allowing for a firm to report one quarter below industry mean. The objective in requiring a period of positive ROC relative to the industry is to eliminate firms experiencing stagnation (Barker & Duhaime, 1997; Grinyer et al., 1988).

FIGURE 3



- 2) A firm must have experienced at least three consecutive quarters with its ROC below its industry median during 2005-2013. Recognizing that turnaround actions may begin soon after performance degrades, there may a quarter or two of positive performance associated with early actions. However, I wanted to include clear turnaround cases, not samples that experienced ambiguity. Thus, after the initial 3 quarter decline, firms with more than two quarters of nonconsecutive, positive industry relative ROC were excluded from the sample. Additionally, as a firm may not be focused on relative performance to a peer group, I included an absolute measure of performance degradation. A firm's net margin must also have been either: a) negative for at least one quarter during the first two quarters of the firm's industry relative ROC decline, or b) present a negative regression between quarters elapsed in the decline and the firm's net margin. While having a negative association was a first step, I wanted to evaluate the impact of an absolute decline (Arogyaswamy & Yasai-Ardekani, 1997) rather than what may be considered to be bumpy quarters. Therefore, I only included firms that produced a minimum fit line of $R^2 = .2$. A few prior studies also used a dual approach in defining a performance decline (Robbins & Pearce, 1992; Schmitt & Raisch, 2013).
- 3) A firm must have achieved industry median ROC or higher within 12 quarters of the initial decline and maintained it on average for a year, similar to the

pre-decline phase. I chose this span to minimize longer term impacts from environmental changes, and to test the recognition and urgency with which I propose management will react to a declining competitive position (Pearce, 2007) in a growth industry.

The financial data was retrieved from Standard & Poor's Capital IQ database. The final sample includes 59 turnarounds: 29 from the semiconductor industry, 23 from the prepackaged software and services industries, and 7 from the computer storage, computer communications, and office equipment industries. The sample firms include 36 (61%) manufacturing firms and 23 (39%) service firms.

I examined the power to find a Type II error, failing to find a difference in the data when a difference exists. Recognizing that there is frequently a tradeoff between attaining a high power level and the resources to collect the data, I made several decisions in order to estimate the sample size needed in this study. First, I selected an effect size of 0.4, similar to previous studies (Bruton & Wan, 1994; Ndofor et al., 2013; Schmitt & Raisch, 2013). Second, in the absence of convention, I selected a power level of 0.80, a common, middle range choice in social science (Cohen, Cohen, West, & Aiken, 2003). Third, similar to previous studies, I selected an alpha of .05. Using an online calculator to determine my sample size (Statistics Calculators) I realized that I needed a sample size of 49 for the main 9 variables in the study and that I needed a sample of 57 for the full model.

Measures

Dependent variables. I measure performance in two ways. One measure is the change in the return on capital ratio, an assessment of how efficiently a firm deploys its capital (Arogyaswamy & Yasai-Ardekani, 1997; Barker & Duhaime, 1997). ROC is calculated as:

$$ROC = \frac{\text{Earnings before interest \& tax} * .625}{\text{Total equity} + \text{Total debt} + \text{Minority interest}}$$

The second measure is the change in earnings before interest, taxes, depreciation, and amortization (EBITDA) margin. The EBITDA margin assesses how effectively a firm generates sales; it is a measure of operating profitability. While this metric has not been utilized in turnaround research to my knowledge, it is similar to ROI with the exclusion of a few variables driven by accounting and financing decisions. This formula is calculated as:

EBITDA margin

$$= \frac{\text{Operating income} - (\text{interest} + \text{tax} + \text{depreciation} + \text{amortization})}{\text{Revenue}}$$

Independent variables. Operational actions. Given that I use a short time frame for decline in this study, I sought actions that are generally quick to implement and not in need of board or creditor approval. Additionally, it seems unlikely that large-scale reductions will be needed (Ndofo et. al, 2013) as the sample comprises underperforming firms in growth industries. Similar to prior research (Schmitt & Raisch, 2013), I operationalized a layoff using a dummy variable of 1 for a firm that engaged in a

layoff and a 0 for firms that did not. A layoff is defined as a broad reduction in the workforce. Some layoffs were measured in terms of a percentage decline in the workforce while others were described as a monetary amount for employee 'restructuring.' This variability in quantifying layoffs has been identified in previous strategy research (Ndofor et al., 2013). Changes in SG&A and R&D were measured as the percentage change from the year after the performance decline to the year prior to the decline. I chose to average the four quarters prior to the performance decline as this should smooth any seasonality while providing a view of how the company was spending its resources before it began to underperform its peers. Likewise, I selected four quarters after the decline, rather than during the decline as using multiple quarters raised overlap issues with firms that had a short decline. Time was used as a moderator to study its impact on the relationship between SGA changes and performance. Time is measured in calendar quarters.

Strategic reorientation actions. Reorientation actions were operationalized as: 1) the introduction of new products, and 2) the addition of new external relationships such as alliances, mergers, acquisitions, and joint ventures. For each variable I counted the number of times the action occurred per variable as identified via searching: LexisNexis, annual reports, quarterly announcements, investor relations and firm websites, Bloomberg, and general web searches. These announcements were then categorized into two areas: new product introductions and the addition of external relationships. Previous research has primarily focused on LexisNexis (Morrow et al., 2007; Ndofor et al., 2013).

Organizational life cycle research associates growth and firm size with flexibility in adapting to changes (Quinn & Cameron, 1983). Thus, even though many researchers included size as a control (Boyne & Meier, 2009; Bruton et al., 2003), I address firm size in the theoretical section. I measured firm size as the average annual revenue of the four quarters prior to decline. I chose to measure firm size by revenue rather than by the number of employees as headcount presents two complications that prevent this option from being useful. First, the employee count is reported once a year, not quarterly for the vast majority of firms. Second, even if this data were reported quarterly, the use of outsourcing impedes a clear comparison between firms.

Control variables. I control for several variables that may impact the association between turnaround actions and performance. To capture firm type differences I created a dummy variable of 0 for service industries and 1 for manufacturing industries. To capture possible variance due to the nationwide financial crisis, I created a dummy variable of 1 for firms that began a downturn in 2008 and 0 for those that did not begin a performance decline in 2008. Financing and capital resources may also have an impact on the relationship (Abebe et al., 2012; Morrow et al., 2004). Therefore to control for the firm's short-term ability to meet financial needs I measured financial slack as free cash flows.

Chapter 6

ANALYSIS AND RESULTS

I used ordinary least squares regression to assess the relationship between turnaround actions and performance; this was one of the more common methods employed in previous research (Boyne & Meier, 2009; Musteen et al., 2011). One independent variable and two control variables are dummy coded; these are the only categorical variables within the analysis. As the data suffered from a lack of homoscedasticity I transformed the data. Typically the transformation procedure includes a trial and error process, where different transformations are applied based on the characteristics of the data, common practices within a research topic, or generally used transformations (Hair, Black, Babin, & Anderson, 2010; Field, 2009). As data transformations were not addressed in the studies that I read, I began with a natural log transformation to all non-dummy variables. This transformation resolved the data issues.

The means, standard deviations, and bivariate correlations of the data are presented in Table 6. Total number of new products and the total number of new external relationships are highly correlated ($r = .69$, $p < .01$) indicating that firms tend to pursue the two strategies together.

Table 6
Means, Standard Deviations, and Bivariate Correlation Matrix^a

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1 ROC change	11.04	7.48	1										
2 EBITDA change	14.34	13.86	0.54**	1									
3 Layoff	0.32	0.47	0.28*	0.32*	1								
4 SGA % change	0.35	0.51	-0.08	-0.05	-0.15	1							
5 R&D % change	0.26	0.56	-0.09	-0.08	-0.23	0.71*	1						
6 Total # new products	8.51	11.58	-0.24	-0.20	0.10	0.12	0.21	1					
7 Total # new external relationships	2.69	3.77	-0.17	-0.18	0.10	0.27*	0.21	0.69**	1				
8 Size ^b	4.52	1.42	-0.42**	-0.18	0.19	-0.28*	-0.06	0.40**	0.25	1			
9 Firm type	0.61	0.49	-0.01	0.27*	0.25	-0.31*	-0.11	-0.01	-0.32*	0.29*	1		
10 Financial crisis 2007	0.20	0.41	0.14	0.39**	0.19	-0.16	0.01	-0.02	0.00	0.08	0.06	1	
11 Financial slack	7.12	26.80	-0.17	-0.10	-0.08	0.17	0.25	0.29*	0.23	0.19	0.08	0.05	1

^a n = 59

^b Natural log of revenue

* p < .05

** p < .01

Tables 7 and 8 present the results of the regression analysis with the dependent variables, ROC and EBITDA margin respectively. In both tables, Model 1 reports the control variables, Model 2 reports the controls in addition to incorporating main effects, and Model 3 shows the full model with interaction and curvilinearity effects. Data interpretation is a bit tricky given the many natural log transformations and dummy variables. To interpret coefficients from the dummy variables, I calculate the semi-elasticity or percentage change in Y when X (dummy variable) changes by 1 unit. Using Model 1 in Table 7 as an example, where X_1 = firm type, X_2 = financial crisis, and X_3 = financial slack, the model is:

$$(Y) = b_0 + b_1X_{1dummy} + b_2X_{2dummy} + b_3\ln(X_3) + \dots + \varepsilon.$$

This model is algebraically equivalent to the “raw” relationship:

$$Y = e^{b_0} * e^{b_1X_{1dummy}} * e^{b_2X_{2dummy}} * X_3^{b_3} \dots * e^{\varepsilon}.$$

Therefore a change of 1 unit for a dummy variable is moving from 0 $\rightarrow$ 1. Using dummy 1, firm type, as an example, the algebraic equation is:

$$Y(X_{1dummy} = 0) = e^{b_0} * e^0 * e^{b_2X_{2dummy}} * X_3^{b_3} \dots * e^{\varepsilon}.$$

Introducing the 1 unit change of $X_{1dummy} = 1$, we have:

$$Y(X_{1dummy} = 1) = e^{b_0} * e^{b_1} * e^{b_2X_{2dummy}} * X_3^{b_3} \dots * e^{\varepsilon}.$$

The percentage change in Y is:

$$\begin{aligned} \frac{\Delta Y}{Y} 100 &= \frac{Y(X_{1dummy} = 1) - Y(X_{1dummy} = 0)}{Y(X_{1dummy} = 0)} 100 = \left(\frac{Y(X_{1dummy} = 1)}{Y(X_{1dummy} = 0)} - 1 \right) 100 \\ &= \left(\frac{e^{b_0} * e^{b_1} * e^{b_2X_{2dummy}} * X_3^{b_3} \dots * e^{\varepsilon}}{e^{b_0} * e^0 * e^{b_2X_{2dummy}} * X_3^{b_3} \dots * e^{\varepsilon}} - 1 \right) 100 = (e^{b_1} - 1) 100. \end{aligned}$$

As an example, Model 1 in Table 7 indicates that the coefficient for firm type is -0.05. To find what this means in terms of the expected change in ROC margin, one would calculate $\exp(-0.05) = .9512$, subtract 1 and then multiply times 100.

$$(.9512-1)*100 = -0.0487*100 = -4.88\%.$$

Thus, a manufacturing type of firm triggers ROC margin to decline by 4.9%

To interpret coefficients from the natural log transformed predictor variables I choose to analyze the elasticity of Y with respect to a continuous variable X_i . The percentage change in Y that occurs in response to a 1 percentage increase in X_i :

$$\frac{\frac{dY}{Y}100}{\frac{dX_i}{X_i}100} = \frac{dY}{dX_i} \frac{X_i}{Y} \equiv b_3.$$

Using this equation, a 1% increase in financial slack causes a 0.23 of 1 percent reduction in return on capital (Model 1) and a 0.20 of 1 percent reduction in EBITDA margin (Model 4).

TABLE 7
Linear Regression of Turnaround Actions and ROC Change

Variable	Hyp.	Model 1		Model 2		Model 3	
		B	s.e.	B	s.e.	B	s.e.
Constant		2.80	0.21	3.28	0.27	3.18	0.30
Firm type		-0.05	0.15	0.00	0.16	-0.03	0.17
Financial crisis		0.33	0.18	0.24	0.17	0.32	0.18
Financial slack		-0.23**	0.07	-0.06	0.08	-0.05	0.08
<i>Main effects</i>							
Layoff	1			0.40*	0.16	0.32	0.17
SGA change	2a			-0.31	0.30	-0.57	0.56
R&D change				0.07	0.27	-0.20	0.31
New product				-0.09	0.07	-0.26	0.19
New relationship				0.07	0.11	0.37	0.25
Firm size	6			-0.21**	0.07	-0.19**	0.07
<i>Interaction or curvilinearity effects</i>							
SGA X time	2b					0.04	0.06
R&D^2	3					0.51	0.29
New product^2	4					0.06	0.06
New relationship^2	5					-0.16	0.11
R ²		0.22		0.44		0.50	
Adjusted R ²		0.18		0.33		0.35	
F change		5.13*		3.11*		1.23	

n = 58

Standard error in parentheses

* p < .05

** p < .01

Hypothesis 1, which proposed that a layoff would be positively related to turnaround performance, was supported by both measures of performance, ROC change and EBITDA margin change. However, only the association with EBITDA margin is significantly related in the full model ($b = 0.82$, $p < .05$), as shown Model 6. Even though firms frequently engage in a layoff to combat poor performance, research presents conflicting evidence (Ndofor et al., 2013; Robbins & Pearce, 1992; Schmitt & Raisch, 2013). I proposed that a layoff in a growth firm would be positively related to

performance, as this data supports. Perhaps the growth stage management team understands the weak areas and is able to cut projects associated with weaker margins and growth prospects.

Given that firms are required to report headcount annually and that most do not choose to disclose more often, finer granularity on a quarterly basis was not possible. In the future it would be useful to survey firms for quarterly data in addition to plans to use current staff for short-term new projects. Post hoc analysis indicated the length of the decline is not a significant factor in the association between a layoff and performance.

Although gains in SG&A were negatively related to ROC as predicted, Hypothesis 2a was unsupported as the relationship was insignificant. Interestingly, SGA increases were positively related to EBITDA change; nevertheless it was also insignificant. Perhaps the differing signs are a result of the complexity of the performance measures. ROC includes a broader range of variables while EBITDA margin is a relatively simple measure that indicates ongoing business model profitability, devoid of financing and tax choices. Hypotheses 2b failed to find support; SGA change did not appear to be moderated by the number of quarters of the downturn. The lack of significance held across both ROC change and EBITDA margin change.

Table 8
Linear Regression of Turnaround Actions and EBITDA Margin Change

Variables	Hyp.	Model 4		Model 5		Model 6	
		B	s.e.	B	s.e.	B	s.e.
Constant		2.51	0.33	2.83	0.45	2.70	0.52
Firm type		0.39	0.24	0.49	0.27	0.40	0.29
Financial crisis		0.68*	0.29	0.62*	0.29	0.64*	0.30
Financial slack		-0.20	0.11	-0.06	0.13	-0.02	0.13
<i>Main effects</i>							
Layoff	1			0.74**	0.27	0.82*	0.31
SGA change	2a			0.35	0.50	0.65	0.95
R&D change				-0.10	0.45	-0.04	0.52
New product				0.07	0.12	-0.05	0.33
New relationship				0.00	0.19	0.52	0.43
Firm size	6			-0.25*	0.11	-0.27*	0.12
<i>Interaction or curvilinearity effects</i>							
SGA X time	2b					-0.04	0.11
R&D^2	3					-0.12	0.50
New product^2	4					0.04	0.10
New relationship^2	5					-0.24	0.18
R ²		0.18		0.37		0.40	
Adjusted R ²		0.14		0.26		0.23	
F change		3.96*		2.47*		0.56	

n = 58

Standard error in parentheses

* p < .05

** p < .01

R&D change did not indicate a significant inverted U shaped relationship with either performance measure, thus H3 is unsupported. I tested curvilinearity by examining whether the relationship produced a better fit with a linear or quadratic model. Although the association was close to being significantly U shaped with ROC ($b = 0.51$; $p < .10$), the linear model provided a better fit. The lack of a significant linear or quadratic fit is noteworthy given the studies that indicate the importance of R&D in

technologically based firms. Further analysis would be illuminating; perhaps R&D expenditures are reallocated, thus not requiring a material change in the amount spent.

New product introductions did not indicate an inverted U shaped relationship with performance, thus H4 was unsupported. Hypothesis 5 which predicted that the addition of new relationships would display an inverted U relationship with performance was partially supported. The data indicates the predicted curvilinear pattern, however it was not strong enough to be significant as displayed in Model 3 ($b = -0.16, p < .15$) and Model 6 ($b = -0.24, p < .20$).

As hypothesized in H6, firm size is negatively associated with turnaround performance. This is the only variable consistently significant across all models. As shown in Model 3, firm size presents the only significant relationship with ROC change ($b = -0.19, p < .01$) in the full model. In the Model 6, firm size is one of two other variables that are significantly associated with EBITDA margin change ($b = -0.27, p < .05$). Perhaps small firms exhibit flexibility by pivoting to new markets, new customers, and changing the product mix. This idea is partially supported as indicated by the significantly positive relationship between firm size and new product introductions.

Model 1 indicates that financial slack is the only control variable ($b = -0.23, p < .01$) that is negatively and significantly associated with turnaround performance as measured by ROC; however that relationship abates as more variables are added. Financial crisis is the only control variable that is positively and significantly associated with turnaround performance at the $p < .05$ level as measured by EBITDA margin. This variable remains significant across Models 4 – 6. Interestingly financial crisis is only

significant with performance as measured by the EBITDA margin. One may associate the tightening of liquidity in the global markets with this relationship, but the absence of significance with financial slack suggests this may not be the case.

Given the large gap between the effect size and the adjusted effect size, I ran a series of post hoc analyses to test for potential differences in the order and quantity of variable elimination. Overall, the additional analyses indicated an inferior fit compared to the models presented herein. Yet, even as I pared the models, size and layoff remained significant throughout. I also examined possible moderating effects of time with the predictor variables. New relationships moderated by time indicate a significant positive association with ROC; all others associations were insignificant.

I also ran supplemental analyses to assess the potential impact of the number of actions taken. The results indicate that there was not a significant performance difference between firms that engaged in all three operational actions versus no operational actions. Additionally there was no significant performance difference between firms that engaged in both strategic actions versus those that did not engage in any strategic actions. Likewise, there was no significant difference in performance between firms that engaged in all actions and those that did not.

My study tested overall action rather than the more typical decline severity. In additional post hoc analysis I examined the data by decline severity using ROC change as the measure for turnaround performance. I broke the decline into three categories: a) a low decline of less than 5%; b) a medium decline consisting of 5% to 10%; and c) a high decline that was greater than 10%. I found a significant difference between each level

of severity with greater severity associated with improved turnaround performance.

Reasons for this remain unclear; my current sample size is too small to perform the analysis needed to examine further linkages. Perhaps management teams react quicker, with more actions or types of actions, or more effectively as the severity worsens. Interestingly, using EBITDA margin change as the performance measure the only significant difference in performance variance was between high and low severity levels.

Chapter 7

IMPLICATIONS FOR THEORY AND PRACTICE

Discussion

This research contributes to theory by broadening the spectrum under which a life cycle framework may apply. Specifically it extends organizational life cycle theory, indicating that management teams will engage in a multitude of actions within a short period during a performance decline. In relation to industry life cycle this examination of growth firms indicates that even when firms are underperforming management teams will push forward to engage in strategic change. This study also expands our knowledge base in turnaround literature by assessing the relationship between turnaround actions and performance in underperforming firms in high-growth industries. The results indicate a clearer picture of which actions may benefit a firm's turnaround performance without the burden of environmental changes that impact industries and firms over longer periods of time (Chandler, 1962; Cyert & March, 1963).

I separated the actions into two categories, operational and strategic reorientation, similar to prior research (Lohrke et al., 2004; Robbins & Pearce, 1992). Overall the full models were significant but the specific actions that I tested generally lacked a strong relationship with turnaround performance. Firm size, the one predictor

that is a situational variable, was the most consistently significant indicator of turnaround success. Engaging in a layoff was the second most effective action in improving performance. In spite of the lack of significant associations with changes in SGA and R&D expenses and the strategic variables, the results indicate that firms engage in multiple actions, as supported in previous findings (Bruton & Wan, 1994; Melin, 1985).

This study extends our knowledge of growth stage industries. This study supports the body of evidence that firms in a growth industry are actively engaged in a multitude of actions to regain performance. It also reinforces the idea that firms in a growth industry are nimble and aggressive (Klepper, 1996; Tripsas & Gavetti, 2000). While the variables I tested were not all significant, the lack of significance is also telling in that firms overwhelmingly employ strategic actions during a performance decline. On average firms announced nine new products and three new external relationships, as shown in Table 9.

The data clearly indicates that firms are actively attempting to produce strategic reorientation opportunities but they are not paying off quickly enough to substantially contribute to a performance rebound. However, interpreting the results as a reason to disregard reorientation actions may not be ideal for several reasons. First, certain strategic reorientation actions may take longer to integrate into a firm's business model than my period of interest. Second, the data that I used in this study, like other studies, includes announcements but does not consider the timing of implementation. While this information would be beneficial, it would require a much longer data

collection period as only the firm can provide the date as to when changes are complete. Third, although the number of new relationships a firm commenced was close to exhibiting a quadratic relationship with turnaround performance it was not significant. This suggests that there may be more to this action than I have found in this particular study.

These findings also indicate that the rate of industry growth may impact the relationship between turnaround actions and performance. Contrary to my findings, Ndofer et al. (2013) indicated that a layoff was detrimental to a turnaround. However, their study sampled the prepackaged software industry when it was growing at an average annual revenue rate of over 30%. That is a CAGR three to six times greater than the industries in this study. Taking a cue from the life cycle literature, perhaps the rate of change matters, especially when the life cycle is divided into only a few stages. Accordingly, turnaround actions may produce different results in extremely high growth industries, or perhaps software was in the infancy stage at that point in time, and not yet in the growth stage.

Practice

The data illustrates that firms are able to regain above average industry growth in as little as several quarters. Nevertheless, just as 'one-size does not fit all,' neither does one prescription for turnaround success. Even so, this study will help practitioners appreciate that nuances are important in creating a turnaround plan. With significant models, actions are working together to create a turnaround, even though we still need a better understanding of the levers that lead to a more efficient turnaround.

Practitioners may find the association between size and turnaround performance to be useful. For those managing small firms it may provide the confidence to act early. It may also serve as evidence to stakeholders that cuts, especially in layoffs, may help the firm. On the other hand, perhaps managers of larger firms may contemplate the value of nimbleness and action when confronted with their own decline or in the competitive maneuverings of their rivals.

In this sample nearly a third of the firms engaged in a layoff. This particular action significantly helps. Management teams appear to have not only the ability to cut headcount, but also the ability to discriminate effectively as to which human capital to let go. What is still unclear is how soon and how much. There was no association between timing and layoffs, indicating that perhaps management has a sense of when a layoff is needed. Yet, the scale of each layoff varies across firms, as does the size, leaving an opportunity for future research.

The lack of significance between changes in SG&A and R&D with performance are similar to other studies (Bruton et al., 2003; Morrow et al., 2004). With no clear path as to which action to engage there is a grain of usefulness in the lack of results: perhaps there is no rule of thumb in this area. And perhaps the requisite growth in expenses does not form systematic opportunities for expense reductions. These results imply that management teams know how to craft a turnaround; however there may be pivoting, realignment, or firm-specific nuances that are not differentiated in my examination.

As the association between new relationships and turnaround success indicates a curvilinear function, management teams may anticipate a turning point where external growth will dilute or degrade performance. An important query for practitioners is whether a management team has the resources, knowledge, and skills to integrate growth via external means (Villalonga & McGahan, 2005). Likewise, understanding when to engage in growth and when to curb expansion (Shi, Sun, & Prescott, 20012) appears to be a critical component of performance.

Interestingly it appears that management may want to avoid organic product introductions. The lack of association between product introductions and performance may stem from boundaries used in this study, however it may also reflect a greater issue. Perhaps it signals an inability to pivot quickly to areas that bring accretive margins and future growth. Or perhaps it identifies opportunities in the greater market that the firm failed to act upon at an earlier time.

An important finding is that severity matters, even in a growth industry. However, it is beyond the bounds of this study to examine how severity impacts managerial choice and the speed of implementation in a turnaround situation. It may be that the management team might more easily identify larger performance degradations. Or perhaps institutional theory can help address this: if the norm is a certain range of growth which the firm fails to achieve, it may experience isomorphic pressures to return to industry parity from internal and external sources (DiMaggio & Powell, 1983) to take actions.

Future Research

Over a decade ago Morrow et al. (2004) highlighted the need for more empirically based research outside of mature industries. As the authors aptly noted, the mechanisms for a successful turnaround may not be generalized from mature to growth stage industries. A recent study on hyper-growth firms (Ndofor et al., 2013), in addition to this study, adds to our empirical knowledge base. Nevertheless, additional research is still required in order to have a better understanding of the factors impacting turnaround performance. A deeper understanding might help answer several questions such as why new external relationships are almost significantly associated with turnaround performance or why R&D is not associated with performance.

Research from large data banks offers many insights into a phenomenon and may offer a strong base from which finer analysis can be made. However our collective knowledge of which actions benefit performance remains unclear. For example, my research indicates growth stage firms engage in a variety of actions to turn around, but a knowledge gap remains in understanding how and when a firm selects various actions. Some firms may have a higher propensity for internally generated change while others may require varying degrees of pressure from their stakeholders. Additionally, my study addressed a limited set of variables; there may be other variables that shed additional light on the levers that impact turnaround performance, such as the degree of outsourcing in addressing labor changes. Consequently, direct observation and qualitative research may offer greater insight in future studies.

An additional challenge lies in the ability to recognize how the pace and expanse of global competition have impacted recent research. Many studies, including this one,

site studies that occurred decades ago. However, the speed of change has escalated (DeSilver, 2014) while global competition has simultaneously increased. Thus, it is likely that management perceptions and actions differ markedly from those several decades ago. Concurrently, the actions may be similar, but the performance outcomes may have changed.

Another opportunity for future research lies in understanding the differences between firms that turnaround and those that do not. My study inspects firms that engaged in successful turnaround actions; nonetheless, future research could benefit from examining firms in growth industries that failed to turn around.

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