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Daniel Dongil Keum, Stephen Ryan

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Daniel Dongil Keum,[a,*] Stephen Ryan[b]

[a] Management, Columbia University Business School, New York, New York 10027; [b] Accounting, NYU Stern School of Business, New York, New York 10012
*Corresponding author

Contact: dk2721@columbia.edu, https://orcid.org/0000-0001-8661-7199 (DDK); sryan@stern.nyu.edu (SR)

Abstract. We provide evidence that in certain contexts, firms set upward-striving goals and that this upward striving yields significant performance and visibility benefits. We develop a model of variable attention in which, as firms' performance levels approach cognitively salient round numbers, managers strategically shift their focus from easier-to-reach goals based on historical and social reference points to more challenging goals that provide external visibility and capital market benefits. As one specific yet important instance of an upward shift in attention, we document a significant increase in revenue growth rates as firms' annual revenue approaches $100 million. Firms achieving this goal obtain discontinuous increases in analyst and media coverage, investment by new institutional investors, and executive compensation. We find no evidence of decreased investment efficiency or profitability, suggesting that managers typically build slack into their goal levels. Our theory extends to goals based on other salient round numbers, such as revenue of $10 million, $500 million, and $1 billion. This study recasts behavioral theory of firm research in an open systems perspective, highlighting the externally directed aspects of firm goal setting.

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1. Introduction

The premise that setting a specific and challenging goal motivates new initiatives and enhances performance is widely accepted (Cyert and March 1963, Ansoff 1987, Fiegenbaum et al. 1996, Kerr and Landauer 2004, Collins and Porras 2005). Although psychology and organizational behavior research provides robust support for this premise at the individual and group levels (Locke and Latham 1990, 2013), surprisingly little evidence exists at the firm level beyond anecdotal case studies (Sitkin et al. 2011, Gary et al. 2017).[1] Thus, despite early consideration of upward striving in Cyert and March (1963) and Bromiley (1991), whether firms upward strive by setting goals above historical or social reference points remains "contentious" (Shinkle 2012, p. 433). In fact, prior research finds that missing a goal even by a small amount can yield significant negative attention and penalties, such as negative capital market reactions, increased scrutiny of chief executive officers (CEOs) by boards of directors and demands for CEO dismissal (Lant et al. 1992, Tuggle et al. 2010, Jenter and Kanaan 2015). The potential for such adverse outcomes provides managers with incentives to set conservative goals (Keum and Eggers 2018).

We situate upward striving in firm goal setting in the multilevel context of organizations (Holmes et al. 2011, Gaba and Joseph 2013), focusing on the broader external resource environment that extends beyond competitors, the social referents typically considered in the literature. Since its initial publication in 1963, the behavioral theory of the firm (BTOF) has largely focused on the functions of goals within the firm, such as directing resource allocation across business units or aligning the organization's attention, agendas, and priorities (Chen and Miller 2007, Ocasio and Joseph 2008, Arrfelt et al. 2013, Moliterno et al. 2014, Hu et al. 2017). The emergence of more open and distributed modes of organizing (e.g., ecosystems, platforms, and communities) has motivated repeated calls to recast the pillars of the BTOF in an open-systems perspective (Gavetti et al. 2007, Joseph and Gaba 2020, Laureiro-Martinez 2021). Drawing from the attention-based view of the firm (ABV) (Ocasio 1997, Hoffman and Ocasio 2001, Joseph and Wilson 2018, Ocasio et al. 2018), we characterize firm goal setting as an externally directed strategic process in which managers balance the benefits of attracting the attention of external resource providers against the risk of underdelivery.

Firms regularly communicate goals and their attainment to current and prospective external resource providers (e.g., shareholders, lenders, employees,[2] financial analysts, and business press) through various channels that include quarterly and annual financial reports, press releases, management forecasts, conference calls, and even social media such as Twitter (Coller and Yohn 1997, Healy and Palepu 2001, Cotter et al. 2006, Jung et al. 2018, Keum and Eggers 2018, Audia et al. 2022).[3] These external resource providers allocate their attention and resources in part based on whether firms' performance levels reach cognitively salient numbers. Thus, as firms approach these performance thresholds, these providers become key "players" in the firms' attention structures. We develop a model of variable attention in which, as firms' performance levels approach cognitively salient round numbers, managers shift their focus from easier-to-reach goals based on historical and social reference points that reduce the risk of underdelivery to more challenging goals that provide external visibility and capital market benefits. The upward shift in attention complements March and Shapira (1987, 1992), who show that firms shift their attention downward to survival points as firm performance deteriorates toward bankruptcy.

We provide three sets of empirical evidence of a specific yet important instance of such an upward shift in firms' goal levels. First, firms with a challenging yet achievable chance of crossing the $100 million annual revenue threshold (colloquially, firms in the "shooting range") accelerate their revenue growth by two to four percentage points, which translates to 10%–20% of their normal revenue growth rate. Second, firms that reach $100 million in annual revenue obtain discontinuous increases in capital market visibility and related benefits, including increased investment by new institutional investors, analyst following, media coverage, and CEO bonuses and share-based compensation. Third, shooting range firms increase acquisitions, hiring of employees, and leasing of assets to accelerate growth. In addition, we find no evidence that these firms experience decreased investment efficiency or profitability or increased variance in performance. The findings suggest that firms typically build some slack (or conservatism) into their goals based on historical and social reference points and, as a result, grow at rates below their full potential. We expect the idea that firms set goals at cognitively salient thresholds that alter the pace of firm growth to generalize beyond our specific setting. We find empirical support for other salient revenue goals, such as $10 million, $500 million, and $1 billion.

This study establishes *strategic* upward striving as an antecedent to firm goal setting, which yields a complementary yet fundamentally different characterization of the organizational goal-setting process than that based on historical and social reference points (Cyert and March 1963, Greve 2003). We make four general contributions to the related literature. First, we complement the model of variable attention of March and Shapira (1987, 1992). In addition to shifting goals downward to mitigate survival threat, managers shift goals upward to increase visibility with external resource providers. Second, we connect BTOF and ABV research by characterizing goal setting and attainment as means to attract the attention of and communicate with external resource providers. This situates goal setting in the multilevel context of organizations (Holmes et al. 2011, Gaba and Joseph 2013), particularly the external resource environment (Keum and Eggers 2018). It also emphasizes the external role of goals, extending existing BTOF research that largely examines internal roles. Third, we show that a firm's attention structure is a strategic variable that firms actively shape rather than accept as a predetermined constraint (Ocasio 1997). Our findings highlight the strategic aspects of firm goal setting and thereby provide balance to the backward-looking, automatic adjustment of goals (Gavetti et al. 2007, 2012) that has overshadowed managerial agency and deliberate planning in research on firm goal setting (Ansoff 1987, Bromiley 1991, Fiegenbaum et al. 1996). Last, our findings contribute to the growing research on multiple goals (Gaba and Joseph 2013, McCann and Vroom 2014, Gaba and Greve 2019, Obloj and Sengul 2020), showing that the efforts to pursue multiple goals need not be negatively correlated. In fact, because managers in practice typically do not upward strive and firms operate with organizational slack, even inherently competing goals may not conflict.

2. Research on Organizational Goal Setting

2.1. Search for Organizational Upward Striving

Organizational research has long recognized the importance of goals (or performance targets) in directing firm behavior and explored how firms set goals. Studies grounded in the BTOF document that firms set goals in reference to both their own past performance and the past performance of industry peers (i.e., historical and social reference points) (Cyert and March 1963, Greve 2003).[4] A key assumption is that managers adjust goals "in response to their experience rather than acting on their expectations of future states of the world" (Lant and Shapira 2008, p. 60). In their model of variable attention, March and Shapira (1987, 1992) propose survival as a third reference point. Instead of always relying on social or historical reference points, as specified in Equation (1), managers shift their focus to survival as the firm's performance deteriorates toward bankruptcy, as specified in Equation (2). Taken together, BTOF studies have examined goal setting using variations of these two

equations:

$Goal_t =$

$$\begin{cases} \beta_1 Social\ References_{t-1} + \beta_2 Historical\ Reference_{t-1} \\ \quad + \beta_3 Goal_{t-1}\ \text{if } performance_{t-1} \geq bankruptcy + \alpha \quad (1) \\ Survival \qquad\quad \text{if } performance_{t-1} < bankruptcy + \alpha \quad (2). \end{cases}$$

Although immensely influential, the backward-looking, rule-based model of goal setting specified in Equation (1) allows little room for managerial agency and strategy and has been challenged by research that emphasizes managerial agency and forward-looking in the goal-setting process (Ansoff 1987, Fiegenbaum et al. 1996, Chen 2008, Keum and Eggers 2018, Shinkle et al. 2021).[5]

A few studies posit that overperforming firms are not content with just beating their prior performance or the industry average and posit upward striving as an additional antecedent to firm goal setting.[6] For example, Bromiley (1991, p. 46) proposes an upward adjustment of five percent in target profitability (ROA) for firms with performance above the industry mean to reduce inertia and improve firm performance. Such an adjustment traces back to the conjecture of Cyert and March (1963, p. 34) that "aspiration level exceeds achievement by a small amount."[7] However, upward striving as an antecedent to *firm* goal setting generally has been disputed or overlooked in subsequent empirical examinations. In rare studies that directly observe firm goals, Mezias et al. (2002) and Washburn and Bromiley (2012) find no evidence of upward striving in internal sales targets set by bank branches and auto dealers, respectively. In their study of U.S. public firms from 1970 to 1989, Gooding et al. (1996) find that managers are optimistic and aim for profitability (ROE) higher than the industry median. In contrast, in their examination of large European and U.S. firms from 1992 to 1997, Massini et al. (2005) reject upward striving.[8] These discordant and yet-to-be integrated findings underpin the conclusion of Shinkle (2012) that upward striving remains contentious.

In explaining why firms forgo the benefits of setting challenging goals, prior research emphasizes firm-level incentives and constraints that discourage upward striving. Perhaps most importantly, unfavorable discrepancies between stated goals and subsequently realized performance yield negative capital market reactions and managerial evaluations. For example, firms that report earnings just below thresholds salient to investors, such as consensus analyst forecasts, experience sharp drops in stock price despite the small numerical performance differentials (Bartov et al. 2002, Skinner and Sloan 2002). Similarly, firms missing performance goals increase the risk of CEO dismissal and monitoring by the board of directors (Lant et al. 1992, Tuggle et al. 2010, Jenter and Kanaan 2015). Accordingly, firms are better off setting

conservative goals that enable them to favorably surprise the market.

2.2. Setting Goals to Attract External Attention
This study presents an attention-based theoretical framework for strategic upward striving and its boundary conditions. According to the ABV, a firm is a system of "structurally distributed attention" in which managers focus on addressing selected issues (the principle of "focus of attention") based on characteristics of the situations with which they are confronted (the principle of "situated attention") given the "attention structure" of the firm, which governs managers' allocation of time, effort, and attentional focus (Ocasio 1997, pp. 189–191, 195). The attention structure is comprised of the rules of the organizational game, the key players in that game, the structural positions of those players, and the firm's resources (March and Olsen 1976, Ocasio 1997).[9] Key players include industry peers and "the CEO and the top management group … [and o]ther actors and groups of actors both internal and external to the firm … including middle and divisional management, workers and their union representatives, active board members, major customers and suppliers, institutional investors, financial analysts, consultants, and, more recently, the business press" (Ocasio 1997, p. 197).[10]

Of the components of the ABV, our discussion of upward striving most directly relates to the principle of situated attention (specifically, attention to cognitively salient round numbers) and to the players in the attention structure (specifically, external resource providers). We characterize setting and attaining goals as an externally directed attention-seeking process through which managers try to capture the attention of external resource providers. Specifically, we look beyond industry competitors and highlight the attention of these providers as a valuable resource that can provide tangible economic benefits, such as lower cost of capital and increased institutional investment (Grullon et al. 2004, Dhaliwal et al. 2011, Bushee and Miller 2012).

In examining upward striving, our attention-based approach suggests a contingent analysis that identifies *when* firms choose to upward strive rather than posit that upward striving applies to firm goal setting at all times (Bromiley 1991). We expect the attentional benefits of upward striving to be greater when goals are expressed in terms of round or otherwise cognitively salient numbers that attract the attention of key external resource providers, such as beating the zero earnings threshold to avoid reporting a loss, attaining a $1 billion valuation to qualify as a "unicorn" startup, or reaching $100 million in revenue; we discuss the significance of the last threshold in Section 2.3.

Our proposed model of strategic upward-striving complements the model of variable attention proposed

in March and Shapira (1987, 1992). In their model, a firm shifts its goal downward from an aspiration level to a survival point when it is sufficiently close to bankruptcy, with this distance represented by the parameter α in Equations (1) and (2). In our model, the external visibility benefits of attaining round number goals induce an upward shift in a firm's goal as its performance level approaches a cognitively salient round-number threshold. Compared with the internally focused goal-setting process as expressed in Equations (1) and (2), our situating of the goal-setting process within interactions with external resource providers yields a distinct yet complementary characterization of the behavioral underpinnings and functions of goals as well as of managers' ability to influence firms' attention structures.

2.2.1. Internal vs. External Function of Goals.

Prior BTOF and ABV research describes how goals function internally within the firm (Greve and Teh 2018), such as directing managerial attention and resource allocation. In contrast, we highlight the orientation of goals to the external capital market. Prior research shows that existing and prospective external resource providers carefully monitor firms' external communications for forward-looking information about the firm's future performance, priorities, and direction. The level of a firm's goals and whether the firm attains these goals are two of the most important types of information to which the external capital market pays attention (Beyer et al. 2010, Shivakumar et al. 2011). Because external resource providers rely at least partly on firms' expressed goals to screen, evaluate, and allocate scarce resources to alternative activities, firms' goal setting and attainment strongly influence their interactions with these providers and their ability to secure external resources. Merton (1987) and subsequent empirical studies (Lehavy and Sloan 2008, Hong and Kacperczyk 2009, Dhaliwal et al. 2011) show that external capital market visibility and attention are valuable resources that can lower firms' costs of external capital.

These external considerations are central to firm-level goal setting, a complex strategic process distinct from individual-level goal setting (Holmes et al. 2011; Gary et al. 2017). Extensive research in psychology, marketing, and other fields shows that goals are often based on cognitively salient round numbers. For example, marathon runners cluster in finishing the race in just under three and four hours (Allen et al. 2017), baseball players are more likely to end the season early when their batting averages are just above 0.300, and students are more likely to retake the SAT exam after receiving a score below a round number (Pope and Simonsohn 2011). These individual-level findings closely resemble our firm-level hypotheses but lack rewards and penalties, as well as managers' career concerns (Holmström 1999) that can constrain or encourage upward-striving.

2.2.2. Attentional Limits of External vs. Internal Players.

The strategic upward striving that we propose shifts the focus from the attentional limits and reference dependence of the firm's internal managers (Simon 1947) to those of its current and prospective external resource providers. We posit that these providers, especially prospective ones who have not yet collected detailed information about the firm, rely on objective, readily observable, and cognitively salient reference points to evaluate the firm's performance and allocate resources. Such reference points include the firm's social and historical performance and other highly salient benchmarks, such as zero earnings or consensus analyst earnings forecasts (Bartov et al. 2002, Tuggle et al. 2010, Jenter and Kanaan 2015). To these reference points, we add cognitively salient round-number thresholds for revenue and, by extension, other key financial measures.

We further posit that managers pay attention to what external resource providers pay attention to and set goals in an externally directed, strategic process that capitalizes on the attentional limits and reference dependence of these external players. In most circumstances, managers set goals using historical and social performance because these reference points can be readily observed, verified, and shared with both internal and external players. However, managers shift their attention to more challenging targets in cases where they expect the visibility benefits to exceed the risk of underdelivery.[11]

2.2.3. Strategic Shaping of Attention Structure.

Extant ABV research highlights how the existing attention structure shapes goal setting (Moliterno et al. 2014, Hu et al. 2017, Berchicci and Tarakci 2022). Attention structure is typically seen as a predetermined "pipe and prism" that filters and channels information and external stimuli to players, who then interpret these inputs based on their positions and situations (Ocasio et al. 2018, Berchicci and Tarakci 2022). This research views managers as accepting the existing attention structure rather than shaping it. In the same vein, extensive research in accounting and management provides evidence consistent with analyst earnings forecasts effectively setting firms' goals and determining managerial decisions (Bartov et al. 2002, Zhang and Gimeno 2010, Schulz and Wiersema 2018).[12]

In contrast, we propose that in certain contexts managers upward strive to strategically shape the firm's attention structure and, specifically, to create situations that attract the attention of external resource providers. This proposal answers the call of Ocasio et al. (2018, p. 155) for researchers to examine the roles of "communication practices, vocabularies, rhetorical tactics, and talk and text in shaping organizational attention in strategic change." Specifically, we view setting, disclosing, and attaining goals as a strategic communication process through which managers shape their firms' attention structures and exploit

situations that can attract new external resource providers. Cognitively salient round number goals provide intuitive and rhetorically powerful vocabulary (e.g., "a hundred-million-dollar" company) that simplifies communication with both internal and external players.[13]

Consistent with our proposal, a sizeable body of research examines the strategic disclosure of information by firms to influence the capital markets and other external resource providers in desired ways. For example, firms with higher costs of capital are more likely to disclose corporate social responsibility activities and thereby benefit from lower costs of capital, increased analyst coverage, and increased investment from dedicated institutional investors (Dhaliwal et al. 2011).[14] Bushee and Miller (2012) provide evidence that smaller, less visible firms that hire investor relations firms increase ownership by institutional investors, analyst following, media coverage, and firm value. While building upon this body of research, we focus on firms' disclosure of their goals as a central component of their communications with external resource providers that affects the firms' strategic planning and investments.[15]

To summarize, prior BTOF research generally characterizes goal setting as an inward-looking process guided by past experience and the existing attention structure (Greve and Teh 2018). This study responds to recent calls to advance this influential body of research by incorporating an open-system perspective of organizations (Gavetti et al. 2007, Laureiro-Martinez 2021) that captures how they are "increasingly characterized by *distributed* decision making (i.e., across ecosystems, platforms, or communities)" (Joseph and Gaba 2020, p. 294). The proposed strategic upward striving advances a more dynamic and open perspective by extending existing models of goal setting in three primary ways. We characterize goal setting as (1) a strategic and externally directed process that is (2) aimed at altering the existing attention structure to attract the attention of external resource providers. The proposed model of variable attention allows us to develop (3) a theoretical

basis for determining the circumstances under which firms' goals are likely to deviate upward from historical and social reference points, causing the firms to make more aggressive investments to capture the expected benefits of setting challenging goals.

2.3. Attentional Benefits of Round Numbers

Extensive research in psychology, organizational behavior, and marketing documents that cognitively salient round numbers induce experiment participants to be more attentive, motivated, and satisfied (Pope and Simonsohn 2011, Allen et al. 2017, Gunasti and Ozcan 2019). Goals are frequently anchored to numbers that are easy to communicate, as indicated by clustering of management revenue forecasts around round numbers (e.g., 80, 90, 100). However, the current prevailing approach to identifying goals uses a gradient search algorithm to estimate the weights on social and historical reference points that yield the best average fit in explaining the variables of interests (e.g., research and development (R&D) spending). This approach yields decimal values for firms' goals (e.g., 99.6 or 100.3 rather than 100) that are unlikely to be the actual goal for any firm.

Although emphasizing that other salient round numbers could also induce upward striving, we focus on firms' attainment of the $100 million revenue goal as a context of significant managerial salience and theoretical interest. Approaching the $100 million revenue threshold provides firms with the opportunity to enhance their visibility and thereby generate capital market benefits for their existing investors and attract new investors. For example, analysts and institutional investors rely on size-based thresholds to screen investment opportunities and market financial products (e.g., Vanguard small-cap versus large-cap funds) (Barberis and Shleifer 2003). Moreover, we expect that attaining this threshold is an achievement that managers can exploit to improve their compensation and career prospects. To illustrate the attentional salience of round numbers for external stakeholders in our research setting, Figure 1 depicts

Figure 1. (Color online) Attention to Round Salient Numbers: Google Search Results for *x* Million in Revenue
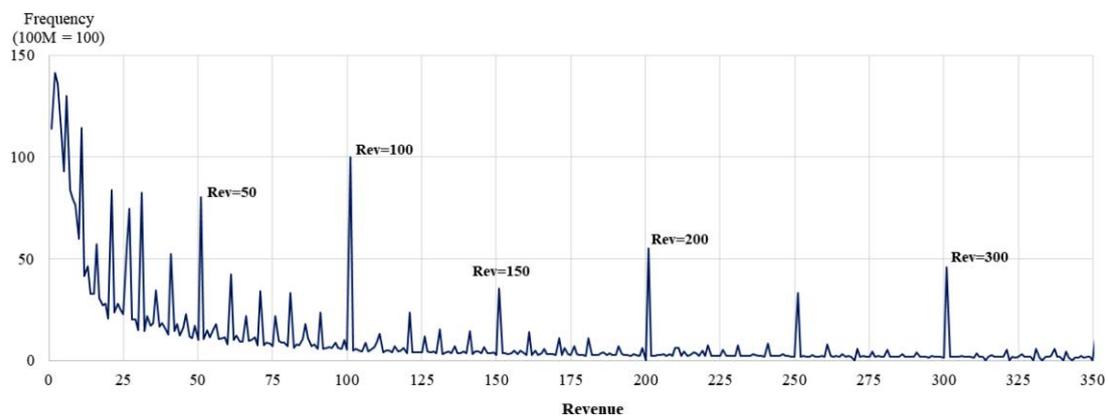
the frequency of Google search results from the query "*x million in revenue*" for *x* from 0 to 350.[16] Local peaks are evident at 50, 100, 200, and 300 million, with the largest peak at 100 million.

We expect that, as firms' performance approaches $100 million revenue or other cognitively salient round numbers, the benefits of upward striving toward that goal outweigh the increased risk of underdelivery. Put formally as an extension of the model traditionally used in the BTOF literature that is expressed in Equations (1) and (2), we propose a conditional upward shift in managers' attention as firms' performance levels approach cognitively salient round numbers. This shift is expressed in Equation (3), which when applicable overrides Equation (1)[17]:

$$Goal_t$$

$$
= \begin{cases}
\beta_1 Social\ References_{t-1} + \beta_2 Historical\ Reference_{t-1} \\
\quad + \beta_3 Goal_{t-1} \quad \text{if } performance_{t-1} \geq bankruptcy \\
\qquad\qquad\qquad\qquad\qquad\quad + \alpha \text{ and not(3)} \quad (1) \\
Survival \qquad \text{if } performance_{t-1} < bankruptcy + \alpha \quad (2) \\
Salient\ round\ number \quad \text{if } 0 < salient\ rounde\ number_g \\
\qquad\qquad\qquad\qquad\qquad\quad - performance_{t-1} < \theta. \quad (3)
\end{cases}
$$

The subscript *g* in Equation (3) indicates a particular salient round number that is above the firm's performance level in year $t-1$ and constitutes a challenging but achievable goal for year *t*. We include this subscript to clarify that our extension of the traditional model in Equation (3) generalizes to salient round numbers other than the $100 million revenue threshold we examine.

It is not a priori evident how close in practice firms' performance in year $t-1$ needs to be to the round number threshold (an amount represented by θ in Equation (3)) for the proposed upward shift in goals to occur. In the case we examine, we expect this shift to occur some distance below the $100 million revenue threshold.[18] Specifically, firms are most incentivized to upward-strive when their revenue in year $t-1$ is an amount below that threshold so that the goal of attaining the threshold year *t* is challenging but attainable.[19] A plausible example for a firm with an 8% historical annual revenue growth rate is revenue in year $t-1$ of $90 million and thus θ of $10 million. In contrast, a firm with revenue in year $t-1$ of $98 million and a historical revenue growth rate of 10% is highly likely to reach $100 million revenue in year *t* without any changes in business activities or managerial effort. Similarly, a firm with revenue in year $t-1$ of $80 million and a historical revenue growth rate of 2% will find it difficult to attain $100 million revenue in year *t* absent a major acquisition

or expansion of its production capacity. We thus hypothesize the following.

Hypothesis 1. *A firm's rate of revenue growth increases when it has a challenging yet attainable chance of achieving the $100 million revenue goal.*

We expect what constitutes a "challenging yet attainable" range of current year revenue to vary significantly across firms and industries. In Section 4.1, we identify this range through empirical analysis of firms' historical revenue growth rates in ranges around $100 million.

## 2.4. Upward Striving and Firm Investment

Extensive prior research examines how firms adjust the levels of their investment and risk taking to meet their goals. Greve (2008) documents that insurance firms increase their asset growth rates to reach social reference points. Chen and Miller (2007) and Moliterno et al. (2014) show that firms increase their investments in R&D and make operational changes in their human capital resources, respectively, in response to missed goals based on historical and social reference points. Ref and Shapira (2017) find that firms increase new market entry in response to below-historical-average return on assets until their performance falls close to the point of bankruptcy, when the relation reverses. These prior findings indicate a curvilinear relation between investment and performance, as depicted in model (a) of Figure 2. This relation is a core feature of the variable attention model in March and Shapira (1987, 1992).[20]

Consistent with this prior literature and as a corollary to Hypothesis 1, we expect upward striving and the resulting need to accelerate growth will lead to increased investment.

Hypothesis 2. *A firm with a challenging yet attainable chance of achieving the $100 million revenue goal increases investment to accelerate growth.*

Although building on the shared premise that goal level directs the level of firm investments, we expect the upward shift in revenue goals proposed in Hypothesis 1 to generate a distinct pattern of firm investment and growth rates across certain ranges of firm revenue, as depicted in model (b) of Figure 2. There are two key differences between the prior model (a) and our (additional) model (b). First, relative to the level of investments necessary to achieve goals based on historical and social reference points (i.e., the right, downward-sloping portion of model (a)), upward striving prompts firms to increase investments. Second, we expect upward striving to generate the most aggressive growth efforts when firms' current year performance levels are below the salient goal

Figure 2. (Color online) Growth Rate in Response to Upward-Striving Goals vs. Historical/Social Goals
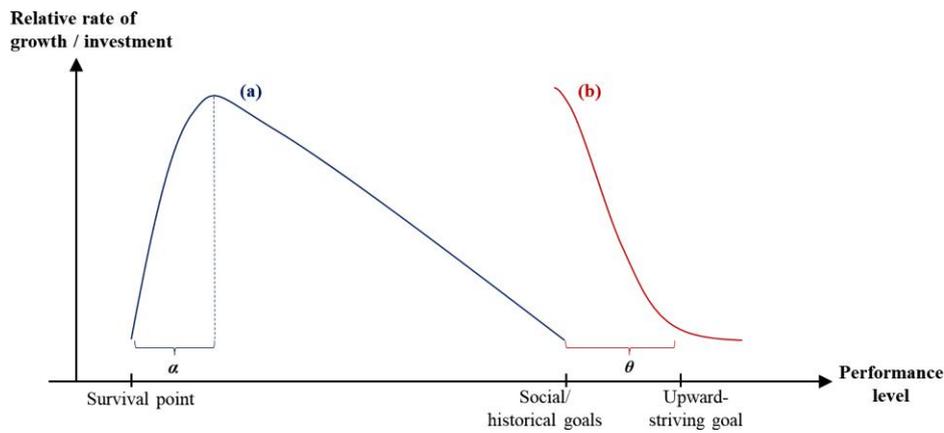
Notes. Model (a) depicts the relative rate of firm growth based on the distances of the firm's performance to its historical/social and survivorship goals (i.e., Equations (1) and (2), respectively). Model (b) depicts the growth rate based on the distance of the firm's performance to an upward-striving goal (i.e., Equation (3)). The peaks are scaled from minimum to maximum within each model and not across models.

for next year's performance (Hypothesis 1) by amounts that are challenging but attainable to overcome given their historical revenue growth rates. As firms' performance moves below or above these levels, we expect firms to revert to investing and growing at the rate depicted in model (a). That is, upward striving and increased investment occur only in specific contexts and then disappear.

3. Overview of Research Design and Analyses

3.1. Empirical Approach

We conduct three sets of empirical analyses. We first examine *whether* shooting-range firms accelerate growth to attain the $100 million revenue goal (Hypothesis 1). We then examine whether attaining $100 million revenue indeed provides significant visibility and capital market benefits, the rationale we posit in our attention-based theory as to *why* firms upward strive toward the $100 million revenue goal. Last, we examine *how* firms accelerate growth by increasing investments of various types (Hypothesis 2).

We closely follow the approach used in prior studies examining earnings thresholds (Hayn 1995, Burgstahler and Dichev 1997, Dechow et al. 1998, Roychowdhury 2006). These studies find clustering of firm earnings just above zero because managers manipulate accrual estimates or distort real economic decisions to avoid reporting a loss, for example, by reducing spending on R&D and advertising (Bushee 1998, Roychowdhury 2006, Dierynck et al. 2012). Similar earnings clustering has been found just above prior period earnings and consensus analyst earnings forecasts. The studies first visually inspect the distribution of earnings to detect a disproportionate clustering of observations around the thresholds to be examined. They then (1) estimate the "normal"

levels of potentially managed earnings components (e.g., normal R&D equals x percent of revenue); (2) define the "abnormal" level of these components as the differences between the actual and estimated normal level (e.g., actual R&D equals σ percent of revenue, so abnormal R&D equals $\sigma - x$ percent of revenue); and (3) regress the abnormal levels of the components on indicators for "suspect" firm-period observations that barely beat the thresholds and control variables. Although research on earnings thresholds is highly influential, this research has not been extended to round numbers other than zero or to any revenue thresholds.

We adopt this approach while accommodating the fact that our variable of interest is the *change* in the revenue *growth rate* (i.e., essentially the second derivative, or acceleration, of an income statement item) rather than the *level* of earnings (i.e., an income statement item). First, we determine the "normal" rate of firm revenue growth based on firms' average growth rates in (to-be-defined) revenue ranges below and above the $100 million revenue threshold. We control for changes in the industry-level revenue growth rate across these periods and other factors that might affect firm growth rates (e.g., financial slack). This approach controls for the firm's historical and social revenue growth rates. Second, we then compare this normal rate to each firm's growth rate when it enters the "shooting range." We define the shooting range as the revenue levels for which firms reaching $100 million revenue in the next year is challenging but attainable, so that firms switch their attention from an easier-to-reach goal based on historical and social reference points to the upward-striving $100 million revenue goal. Firms enter the shooting range at different times, reducing the likelihood that time- or industry-specific shocks drive our results.

3.2. Identification of the Shooting and Control Ranges

Rather than imposing an arbitrary shooting range, in our primary analyses, we empirically identify the shooting range from a minimum denoted R_{min} to a maximum denoted R_{max}. Specifically, we estimate "abnormal" revenue growth for firms in a moving range with a width (i.e., R_{max} minus R_{min}) of $15 million (e.g., from $70 million to $85 million, from $72 million to $87 million, and so on). We identify the range for which firms show the most positive abnormal rate of revenue growth consistent with upward striving. This approach resembles the empirical tests of March and Shapira (1987) that infer the shift in focus to survival as the point at which declining firm performance starts to decrease, rather than increase, firm risk taking (i.e., the peak in model (a) of Figure 2; Chen and Miller 2007, Ref and Shapira 2017). We chose a range width of $15 million based on the mean annual revenue growth rate of 20% for our main sample and 13.2% for Compustat firms during our sample period. We verify that our inferences are unaffected by the use of plausible alternative widths, including $5, $8, $10, and $20 million.

We use two approaches to determine the shooting range. Our first approach uses firm revenue in the current year. This approach is simple but ignores variation in revenue growth across firms. For example, two firms with current revenue of $90 million, one whose past revenue growth rate is 1% and the other whose past revenue growth rate is 10%, differ significantly in the likelihood that they will cross the $100 million revenue threshold in the next year. To incorporate this cross-sectional variation, our second and primary approach uses the predicted value of revenue in the next year based on the firm's current year revenue and average revenue growth rate over the last three years. For example, a firm with current revenue of $90 million and an average growth rate of 5% in the last three years has a predicted revenue of $94.5 million.[21]

To make meaningful comparisons of revenue growth rates before, during, and after firms are in the shooting range, we require a firm-year observation to have current-year revenue between $50 million and $150 million (the "sample range") to be included in the sample. In other words, in estimating the normal rates of growth for shooting-range firms, we use nearby observations and do not consider observations for which a firm has a revenue of $900 million (or any other values far removed from $100 million). However, our inferences are robust to using plausible alternative sample ranges, including the entire firm history available on Compustat. Figure 3 depicts the construction of the shooting and sample ranges. The "control range" is the sample range removing the shooting range. We emphasize that a firm being in the shooting range in a specific year does not guarantee that it will reach $100 million in revenue in the following year or ever. For example, in the full sample, 18.4% of the firm-year observations in the shooting range determined using the first approach exhibit negative revenue growth.

3.3. Analyses and Empirical Models

We test whether a firm-year observation being in the shooting range (i.e., the point of an upward shift in attention), rather than in the control range, leads the firm to accelerate its revenue growth (Hypothesis 1), using the following equation:

$$Revenue\ growth_{i,t \mapsto t+1} = \alpha_i + \alpha_t + \beta\ Shooting\ range_{i,t} + X_{i,t}, \qquad (4)$$

where the subscripts i and t indicate firms and years, respectively, *Shooting range* denotes an indicator for firm-year observations in the shooting range, X denotes the control variables, and α_i and α_t denote fixed effects for firms and years, respectively. We estimate Equation (4) using ordinary least squares. A positive coefficient β on *Shooting range* in Equation (4) is consistent with

Figure 3. (Color online) Sample, Shooting, and Control Ranges
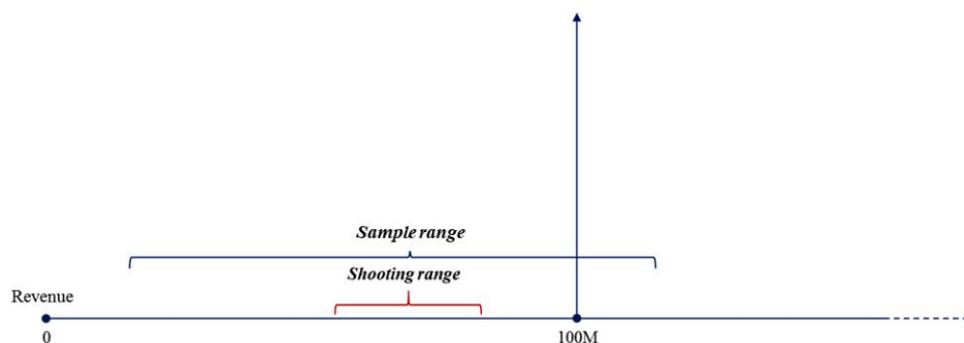
Notes. The *Sample range* is the range of firm revenue examined. The *Shooting range* is the range of revenue in which the firm has a challenging yet achievable chance of crossing $100 million revenue in the following year. The *Control range* is the portion of the *Sample Range* other than the *Shooting Range*.

upward striving by shooting range firms to cross the $100 million revenue threshold. We test Hypothesis 2 using a variant of Equation (4) that replaces the dependent variable with various types of investments.

We examine potential visibility and capital market benefits to firms from attaining the $100 million revenue goal using the following equation:

$$Benefits_{i,t+s} = \alpha_i + \alpha_t + \beta Crossing\ \$100M_{i,t} + X_{i,t}, \qquad (5)$$

where *Crossing $100M* is an indicator variable that takes a value of one for observations in which the firm's revenue crosses $100 million in the year. We test for three attentional benefits: the percentage ownership of the firm's outstanding shares by institutional investors (*Institutional Ownership*), the number of analysts covering the firm (*Analyst Coverage*), and the number of newspaper articles that mention the firm (*Media Coverage*). In supplementary analysis reported in Online Appendix C.1, we examine different types of institutional investors (e.g., growth versus value investors and transient versus dedicated investors) to further probe the attentional salience of round number goals as the mechanism. In Online Appendix C.2, we additionally examine potential managerial benefits based on increases in various components of executive compensation (*Executive Compensation*). A positive coefficient β on *Crossing 100M* is consistent with firms receiving capital market visibility and media coverage benefits from crossing the $100 million revenue threshold. We emphasize that these external visibility benefits induce upward striving rather than upward striving being implemented through round number goals. In estimating Equations (4) and (5), standard errors are clustered at the firm level and adjusted for heteroskedasticity.

3.4. Control Variables and Fixed Effects
Our empirical models include an extensive set of firm- and industry-level control variables that prior research finds influence firm growth. We control for industry revenue growth, calculated as the mean growth rate of all firms in the same four-digit Standard Industrial Classification (SIC) code, as a social benchmark and proxy for the change in demand (Caylor 2010). We control for Tobin's Q, a proxy for firm-specific growth opportunities reflected in the firm's stock price (Lang et al. 1996). We control for ROA, a proxy for firm performance, because better-performing firms grow faster, all else being equal. We control for two size proxies, the natural logarithms of firm revenue and assets, because larger firms tend to grow slower (Greve 2008). We control for five proxies for firms' financial resources, an indicator for whether the firm pays dividends,[22] financial leverage, current ratio, working capital-to-sales ratio, and Altman's Z-score, because financial constraints limit a firm's ability to fund its growth (Cabral and Mata 2003).

We also include firm and year fixed effects in the models to capture unobserved variation across firms and time. In analyses where we restrict the sample range from $50 million to $150 million, firms typically remain in the sample for four to six years. The inclusion of firm fixed effects in such narrow panels (largely) removes time-invariant (slow-moving) firm characteristics, such as long-serving CEOs. Because we include firm fixed effects, we do not include the lagged value(s) of the dependent variables in the base models due to the well-known downward bias that results from this inclusion (Nickell 1981). However, we verify the robustness of our results to the inclusion of these variables and additional control variables (e.g., firm age and R&D intensity).

3.5. Data and Sample
We construct the sample beginning with all firm-year observations with nonmissing control variables on Compustat between 1974 and 2014. Consistent with most prior empirical research, we eliminate observations of financial firms (SIC 6000–6999) and not-for-profit and governmental organizations (SIC 8000–9999). To mitigate the effect of outliers, we delete firm-year observations with revenue growth rates in the top and bottom 1% of the overall sample,[23] which yields 118,828 firm-year observations for 12,920 firms.

Because Equation (4) includes firm fixed effects and compares the rates of revenue growth for firms in the shooting range versus the control range (Figure 2), both the shooting range and the control range must be nonmissing for a firm for its observations to affect the estimated coefficient on *Shooting range*. Intuitively, a nonmissing control range enables the estimation of the "normal" revenue growth rates that serve as the baseline to determine "abnormal" growth rates in a shooting range. Consistent with this point, we remove firms for which the minimum reported revenue exceeds the $100 million threshold, as we cannot observe these firms entering the shooting range or crossing the threshold.[24] In addition, given that revenue growth tends to decrease with firm size (Cabral 1995), each firm in our sample would ideally have observations of revenue in the control range both below and above the shooting range.[25] To ensure a balanced control range with sufficient numbers of control observations on both sides of the $100 million revenue threshold, in our primary tests we require that firms eventually grow past $300 million revenue.[26] We selected this amount because it is sufficiently above the maximum of the sample range so that any hindsight/selection bias in the estimation of the normal revenue growth rate is close to identical for the shooting range and control range observations. Thus, this requirement does not yield appreciable bias in favor of Hypothesis 1, which looks at the difference in the rates of revenue growth between shooting and control range.

Acknowledging that some bias might remain from requiring firms to attain $300 million revenue, we conduct the following exhaustive supplementary tests to mitigate this concern. In Online Appendix A.1, we provide a side-by-side comparison of the results from samples in which firms are required to grow past $80, $100, $200, $300, $400, and $500 million in revenue and from a sample that imposes no such requirement. Our inferences are unaffected by the requirement imposed. In Online Appendix A.2, we show that our inferences are also unaffected by using a sample range of *current year* (i.e., year t) observations ranging from $0 million to $120 million revenue or of *next year* (i.e., year $t + 1$) observations ranging from $80 million to $200 million revenue.

We emphasize that this selection issue does not apply to our analyses on the ex post benefits of crossing the $100 million revenue threshold using Equation (5). Taken together, we believe that selection bias or other alternative explanations cannot explain the individual or collective results of our hypothesis tests and other analyses motivated by our theory of upward striving. Such alternatives would have to explain the documented time- and range-specific acceleration and deceleration in revenue growth as well as in the investments to support accelerated growth.

We obtain institutional ownership from 1980 to 2014 and analyst coverage from 1976 to 2014 from the Thomson Reuters Institutional Holdings Database.[27] Because institutional ownership and analyst coverage fluctuate within years, we use their maximums during each year.

We obtain information on media coverage, as proxied by the number of newspaper articles that mention the company's name each year, from LexisNexis (Fang and Peress 2009).[28] Because Compustat abbreviates company names, automated searches based on these names generate excessive null results, so we conduct these searches by manually entering names.[29] Given the time required, we restrict these searches to three years before and after a firm crosses the $100 million revenue threshold, which yields 15,505 firm-year observations for 2,214 firms. Media coverage exhibits extreme right skewness, so we winsorize this variable at its 97th percentile. Winsorization at reasonable alternative levels yields similar results. We obtain domestic acquisitions from the SDC Platinum database from 1983 to 2014 (Netter et al. 2011). We obtain CEO compensation data from Execucomp and pay-for-performance sensitivity and inside ownership data from 1992 to 2014 from Lalitha Naveen's website.[30]

3.6. Descriptive Statistics

Table 1 presents descriptive statistics for the firm-year observations with current-year revenue between $50 million and $150 million. Pairwise correlations are reported in the online appendix. The revenue growth rate has a mean of 20.4% and a standard deviation of 28%. Mean revenue and assets are $98.9 million and $136.4 million, respectively. Market capitalization has a mean of $201.7 million and a widely spread distribution with a standard deviation of $555.7 million. Mean institutional ownership and analyst coverage are lower for our sample than for the Compustat universe (34 versus 51%

Table 1. Descriptive Statistics

	Variable	Observations	Mean	Standard deviation	25th percentile	Median	75th percentile
1.	*Revenue growth*$_{t \mapsto t+1}$	8,309	0.20	0.28	0.06	0.17	0.31
2.	*Industry revenue growth*$_t$	8,309	0.14	0.19	0.05	0.14	0.22
3.	*Market capitalization*$_t$	8,309	201.74	555.69	32.83	76.95	190.88
4.	*Tobin's Q*$_t$	8,309	1.91	2.24	0.97	1.31	2.07
5.	*Revenue*$_t$	8,309	98.93	28.51	73.91	98.57	122.79
6.	*Total asset*$_t$	8,309	136.42	198.30	55.43	86.40	147.52
7.	*ROA*$_t$	8,309	0.04	0.19	0.02	0.06	0.10
8.	*Debt*$_t$	8,309	0.23	0.22	0.05	0.20	0.36
9.	*Current ratio*$_t$	8,309	2.80	2.32	1.53	2.29	3.36
10.	*Sales ratio*$_t$	8,309	0.35	0.71	0.11	0.23	0.41
11.	*Distance to bankruptcy*$_t$	8,309	5.32	10.04	2.09	3.57	5.73
12.	*Dividend*$_t$	8,309	0.49	0.50	0.00	0.00	1.00
13.	*Analyst coverage*$_t$	7,551	2.58	3.76	0.00	1.00	4.00
14.	*Institutional ownership*$_t$	4,534	0.34	0.23	0.15	0.29	0.47
15.	*Media coverage*$_t$	5,739	10.00	19.79	0.00	4.00	9.00
16.	*Acquisition*$_t$	6,149	0.30	0.87	0.00	0.00	0.00
17.	*Employee/Revenue*$_t$	8,068	14.17	33.77	5.10	9.42	16.13
18.	*Leasing/Revenue*$_t$	8,309	0.10	0.17	0.01	0.05	0.11

Notes. This table presents descriptive statistics for the variables. The sample includes all Compustat firm-year observations with revenues between $50 and $150 million from 1974 to 2014. Data are available for shorter periods for the following variables: *Analyst coverage* (1976–2014), *Institutional ownership* (1980–2014), and *Acquisition* (1983–2014).

ownership and 2.6 versus 5.0 analysts), consistent with prior research that finds that these variables increase with firm size (Irvine 2003).

4. Empirical Results
4.1. Increasing Revenue Growth to Cross the $100 Million Revenue Threshold

To test Hypothesis 1, Table 2 reports OLS estimations of Equation (4), first setting the shooting range from $80 million to $95 million; we fine tune the shooting range in subsequent analysis. Columns 1 and 2 of the table report results basing the shooting range on current-year revenue, and columns 3 and 4 report results basing it on predicted revenue for the next year. As the sample range, we use revenue from $50 million to $150 million in columns 1 and 3 and the entire firm history available on Compustat in columns 2 and 4. The control range portion of the sample range provides the estimate of the baseline rate of revenue growth.

As predicted, the coefficient on *Shooting range$_t$* is significantly positive in all four models. These coefficients indicate that firms in the shooting range on average increase their revenue growth rates by 1.9%–4.0% above

the baseline rate, controlling for other variables known to affect revenue growth. These incremental revenue growth rates translate to 10%–20% of the sample mean revenue growth rate of 20% and to additional revenue of $1.8 million to $3.5 million. This level of additional revenue growth is economically substantial yet plausibly achievable through focused effort. Untabulated analysis shows that these results are robust to omitting all or any subset of the control variables and fixed effects, and they are stable across subperiods of the sample period (e.g., bifurcating the period at 1995 or 2000) for which the economic significance of $100 million revenue threshold differs due to inflation.[31]

All the significant coefficients on control variables have the expected signs. Firms in faster-growing industries and with higher Tobin's Q and return on assets experience significantly faster revenue growth. Financial slack is positively associated with revenue growth, as indicated by significantly negative coefficients on *Debt$_t$* and *Sales ratio$_t$*. The coefficients on *Current ratio$_t$*, *Altman's Z$_t$*, and *Dividend$_t$* are insignificant.

Instead of imposing a fixed shooting range, Figure 4 depicts the coefficients on *Shooting range* and associated

Table 2. Shooting Range and Revenue Growth

	Dependent variable: *Revenue growth$_{t \mapsto t+1}$*			
	Current: (80, 95)		Predicted: (80, 95)	
	(50, 150) (1)	Full history (2)	(50, 150) (3)	Full history (4)
Shooting range$_t$	0.019*	0.039***	0.040***	0.033***
	[0.008]	[0.008]	[0.010]	[0.009]
Industry growth$_t$	0.057*	0.106***	0.058**	0.106***
	[0.022]	[0.009]	[0.022]	[0.009]
Tobin's Q$_t$	0.041***	0.016*	0.042***	0.016*
	[0.006]	[0.007]	[0.006]	[0.007]
Revenue (log)$_t$	−0.279***	−0.168***	−0.274***	−0.168***
	[0.025]	[0.009]	[0.025]	[0.009]
Asset (log)$_t$	0.212***	0.106***	0.214***	0.106***
	[0.022]	[0.009]	[0.022]	[0.009]
ROA$_t$	0.066*	0.055***	0.068*	0.055***
	[0.032]	[0.016]	[0.032]	[0.016]
Debt$_t$	−0.085*	−0.050***	−0.086*	−0.050***
	[0.036]	[0.013]	[0.036]	[0.013]
Sales ratio$_t$	−0.016***	−0.005**	−0.016***	−0.005**
	[0.004]	[0.002]	[0.004]	[0.002]
Current ratio$_t$	0.031+	0.000	0.031+	0.000
	[0.018]	[0.000]	[0.018]	[0.000]
Distance to bankruptcy$_t$	0.000	0.001	−0.001	0.001
	[0.001]	[0.001]	[0.001]	[0.001]
Dividend$_t$	0.017	0.004	0.016	0.004
	[0.014]	[0.005]	[0.014]	[0.005]
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.133	0.194	0.134	0.193
Observations	8,309	41,110	8,309	41,110

Note. Robust clustered standard errors are reported in brackets.
  ***, **, *, and +Two-tailed statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

Figure 4. (Color online) Incremental Firm Revenue Growth Around the $100 Million Revenue Threshold
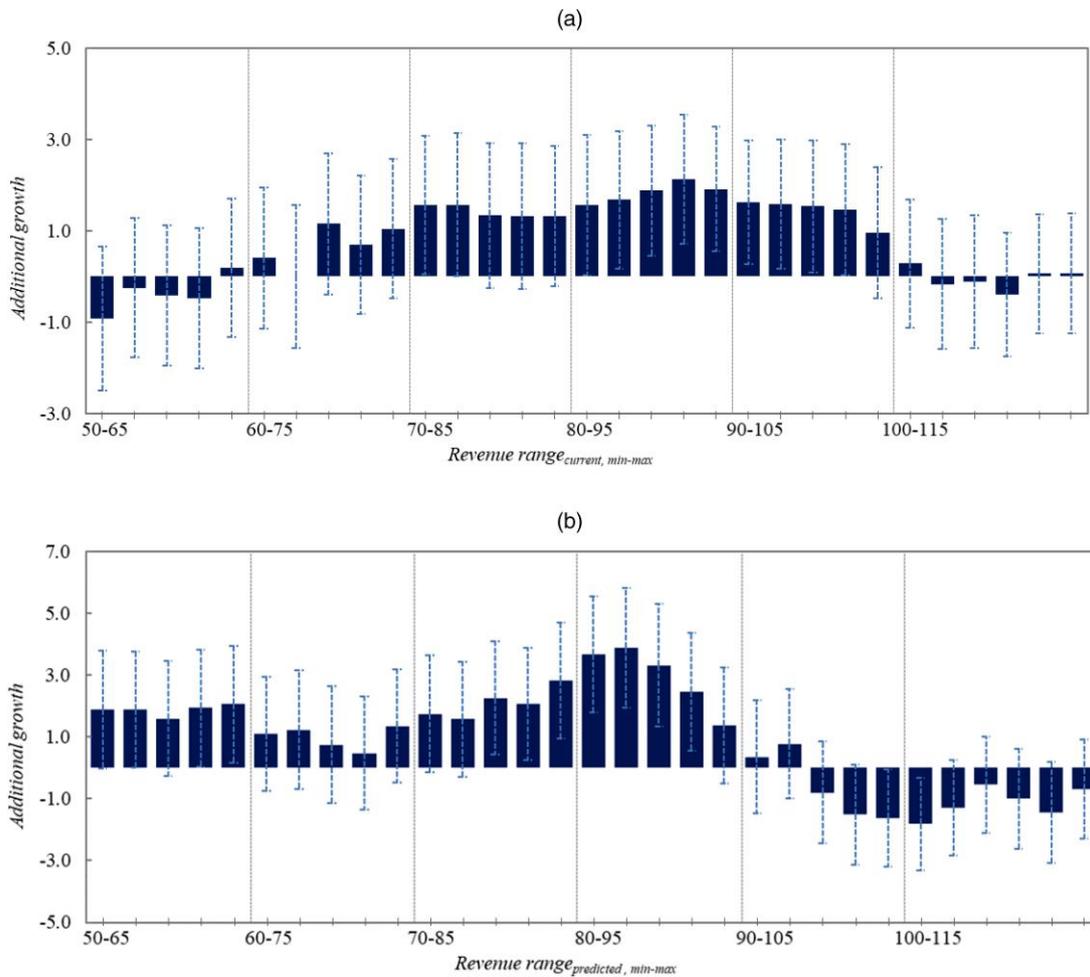
Notes. This figure depicts the average incremental revenue growth for alternative shooting-range firms compared with corresponding control range firms. Shooting ranges are based on current-year firm revenue in (a) and predicted firm revenue for the next year using the firm's growth rate in the past three years in (b). Shooting ranges are $15 million wide. These ranges start at from $50 million to $65 million and increase in $2 million increments to from $110 million to $125 million. Control ranges are from $50 million below the minimum of the shooting range to $50 million above the maximum of the range. Bars (dashed lines) represent the OLS estimates (95% confidence intervals) for β_1 in Equation (4): *Rev. growth*$_{i,t\rightarrow t+1} = \alpha_i + \alpha_t + \beta_1$ *Shooting range*$_{it} + X_{it}$.

confidence intervals from the estimation of Equation (4) using alternative shooting ranges with a width of $15 million. Figure 4(a) and (b), depicts these results using shooting ranges based on current-year revenue and predicted next-year revenue, respectively. The *y* axis indicates the coefficient for *Shooting range* and its confidence interval. The *x* axis indicates each shooting range interval, from its minimum R_{min} to its maximum R_{max}, in increments of $2 million from $50 million to $110 million. The sample range is from R_{min} minus $50 million to R_{max} plus $50 million.

Figure 4(a) indicates that the coefficient on *Shooting range*$_{current}$ is highest for a shooting range based on current year revenue from $86 million to $101 million. This coefficient implies a 2.07% increment in the revenue growth rate over the revenue growth rate for the control sample, which equates to approximately $1.8 million in

additional revenue. The coefficient on *Shooting range*$_{current}$ gradually decreases in magnitude and significance as the current shooting range rises or falls from this maximum, consistent with revenue growth peaking when firms face a challenging yet achievable chance of crossing the $100 million revenue threshold in the subsequent year.

Figure 4(b) indicates that the coefficient on *Shooting range*$_{predicted}$ is highest for a shooting range based on predicted next year revenue from $82 million to $97 million. This coefficient implies a 4.0% increment to the revenue growth rate over the revenue growth rate for the control sample, which equates to approximately $3.5 million in additional revenue. As expected, incorporating information about past revenue growth rates into the shooting range substantially increases the maximum increment to the revenue growth rate. Relatedly, compared with the coefficients on *Shooting range*$_{current}$

depicted in Figure 4(a), the coefficients on *Shooting range*$_{predicted}$ depicted in Figure 4(b) decrease more sharply in magnitude and significance as the predicted shooting range rises or falls from this maximum. Looking at firms' behavior after they achieve $100 million revenue, we find that firms revert to the baseline rate of growth (as depicted in the right portion of model (b) in Figure 2), consistent with the conditional and temporary upward shift in attention and revenue goals in our model of variable attention.

Although providing consistent support for Hypothesis 1, a key limitation of these analyses is that we do not directly observe firm goals. Following the vast majority of goal-setting research, we instead infer goals indirectly based on changes in firm behavior in line with a prespecified model, specifically, our model of variable attention as expressed in Equations (1)–(3).[32] To help validate this indirect approach, we obtain management revenue forecasts from the Institutional Brokers' Estimate System (IBES) guidance database (Keum and Eggers 2018).[33] Figure 5 plots the distribution of firm-year forecasted revenues in $2 million revenue intervals from $50 million to $150 million; Figure B in the online appendix provides this distribution using $1 million revenue intervals. We find a discontinuous increase in the frequency of revenue forecasts in the interval including and just above the $100 million threshold and an unusual decrease in the frequency just below the $100 million threshold. Managers' explicit communication of the revenue goal, which potentially subjects them and their firms to legal liability (Skinner 1994), strongly suggests that firms formally codify $100 million revenue as a goal. Although providing direct support for our theory, we emphasize that the guidance results depicted in

Figure 5. (Color online) Distribution of Revenue Guidance Values

Note. This figure depicts the distribution of all revenue guidance reported on the IBES guidance database from 1992 to 2014 with values between $50 million and $150 million in $2 million intervals.

Figure 5 are limited in that management forecasts are voluntarily provided and pertain mostly to earnings, with only about 10% of the shooting range firms in the sample providing revenue forecasts. We thus interpret the evidence in Figure 5 as reinforcing our main analyses in Table 2 and Figure 4.

Taken together, the results in Table 2, Figure 4, and Figure 5 indicate that firms indeed upward-strive and accelerate their revenue growth to achieve the $100 million revenue goal. Revenue growth peaks for a shooting range that provides the firm with a challenging but attainable chance to achieve the threshold. Revenue growth tapers off for higher and lower shooting ranges. As shown in Online Appendix A.3, these results are robust to the use of alternative control ranges and sample selection criteria. As reported in Online Appendix A.4, our results are also robust to controlling for the first lag of the dependent variable and momentum in the revenue growth rate in both random- and fixed-effects specifications.
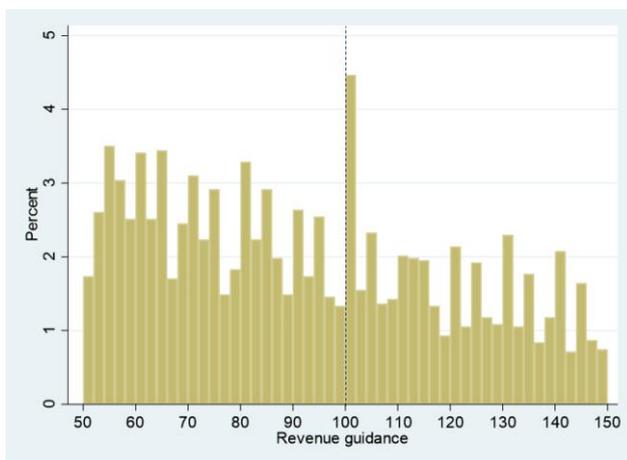
We expect our theory and findings to generalize to salient round numbers other than $100 million revenue. In Appendix B, we repeat our analysis for 12 alternative revenue thresholds from $10 million to $1 billion using similar approaches as in Table 2. We find that firms accelerate growth toward other salient round numbers, in particular $10, $100, and $500 million and $1 billion revenue. We do not find a statistically significant acceleration for other round yet less salient numbers, such as $200, $300, or $800 million revenue. Whether our theory extends to other financial and nonfinancial goals, particularly profit goals, is an important question left for future research.

4.2. Visibility Benefits to Crossing the $100 Million Revenue Threshold

The key assumption underpinning our characterization of firm goal setting is that firms' visibility with external resource providers increases when firms achieve the $100 million revenue threshold. This increased visibility motivates and may even warrant firms taking costly actions to increase their revenue growth rates to achieve this threshold. In this section, we provide evidence regarding this assumption. Specifically, we estimate Equation (5) to determine whether a firm achieving $100 million revenue attracts more analysts covering the firm, newspaper articles mentioning the firm, and institutional investment in years $t-1$, t, and $t+1$. Our theory predicts discontinuous increases in these variables in year $t+1$.

Table 3 reports the results of this analysis for analyst coverage for each of the three years in columns 1–3, media coverage in columns 4–6, and institutional investment in columns 7–9. For analyst coverage, the coefficient on *Crossing $100 million* is insignificant in years $t-1$ and t but significantly positive in year $t+1$. For

Table 3. Visibility and Capital Market Benefits to Reaching the $100 Million Revenue Threshold

	Dependent variable										
	Number of analyst coverage			Media coverage			Institutional ownership			Number of 13f investors	Number of >5% investors
	$t-1$ (1)	t (2)	$t+1$ (3)	$t-1$ (4)	t (5)	$t+1$ (6)	$t-1$ (7)	t (8)	$t+1$ (9)	$t+1$ (10)	$t+1$ (11)
Crossing $100M_t$	−0.030 [0.027]	−0.013 [0.020]	0.034* [0.017]	−0.016 [0.032]	0.059* [0.025]	0.059* [0.025]	−0.002 [0.005]	0.009+ [0.005]	0.019*** [0.005]	0.123*** [0.016]	0.024 [0.023]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2/log-likelihood	−6,020	−6,439	−7,013	−8,956	−9,184	−9,694	0.37	0.39	0.34	−14,708	−3,878
Observations	4,684	5,082	5,457	4,196	4,442	4,284	3,996	4,663	4,892	4,399	4,083

Note. Robust clustered standard errors are reported in brackets.
***, **, *, and +Two-tailed statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

media coverage in columns 4–6, this coefficient is insignificant in year $t-1$ but significant in years t and $t+1$. Similarly, for institutional ownership in columns 7–9, the coefficient is insignificant in year $t-1$, but weakly significantly positive in year t, and highly significantly positive in year $t+1$.

Our attention-based theory suggests that an influx of new investors attracted by a firm's increased visibility, rather than increased investment by existing investors, should drive the increase in institutional investment when firms achieve the $100 million revenue threshold. In columns 10 and 11 of Table 3, we examine the effect of this achievement on the number of institutional investors and the number of block investors who hold more than 5% of the firm's outstanding shares, respectively, in year $t+1$. We expect firms achieving the threshold to increase the number of institutional investors but not the number of block investors, because prior research finds that beating earnings thresholds has less effect on investors that are larger or that collect detailed information about and invest in a small number of firms (Bartov et al. 2000, Collins et al. 2003).

Consistent with this expectation, the coefficient on *Crossing $100 million* is significant in the model for the number of institutional investors in column 10 but not in the model for the number of block investors in column 11, providing nuanced support for our attention-based argument. Online Appendix C.1 reports additional results examining different types of institutional investors (e.g., growth versus value investors and transient versus dedicated investors) that are consistent with attention being the mechanism.[34] Collectively, these results suggest that various types of external resource providers use the cognitively salient $100 million revenue threshold in their screening, investment, and coverage decisions.

In addition, Online Appendix C.2 reports results examining CEO compensation. We find that the CEO of a firm that attains the $100 million revenue threshold experiences discontinuous increases of 40.3% in bonuses, 15.5% in pay-for-performance, and 16.4% in inside equity, but an insignificant increase in base salary. These results indicate that CEOs are highly incentivized to achieve the $100 million revenue threshold.

4.3. Do Shooting Range Firms Increase Investment to Increase Revenue Growth?

To test Hypothesis 2, Table 4 reports OLS estimations of Equation (4) using the shooting range defined based on predicted revenue for next year. In this analysis, we examine whether shooting range firms increase three types of investments, the number of acquisitions, the number of employees (scaled by revenue), and the dollar amount of leasing (scaled by revenue), in years $t-1$, t, and $t+1$ to increase revenue growth to cross the $100 million revenue threshold.

Table 4. How Do Firms Accelerate Revenue Growth to Achieve the $100 Million Revenue Threshold?

	Acquisition			Employment/revenue			Leasing/revenue		
	$t-1$ (1)	t (2)	$t+1$ (3)	$t-1$ (4)	t (5)	$t+1$ (6)	$t-1$ (7)	t (8)	$t+1$ (9)
Shooting range$_{predicted,\ t}$	0.120	0.207+	−0.091	0.101	0.476***	0.043	0.003	0.006**	0.001
	[0.106]	[0.108]	[0.126]	[0.142]	[0.134]	[0.137]	[0.002]	[0.002]	[0.002]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood/adjusted R^2	155	192	231	0.41	0.42	0.39	0.02	0.05	0.04
Observations	2,551	2,899	2,995	7,492	8,163	8,077	7,915	8,426	8,328

Note. Robust clustered standard errors are reported in brackets.
***, **, *, and +Two-tailed statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

With respect to the number of acquisitions in years $t-1$, t, and $t+1$ in columns 1–3, we find a weakly significant positive coefficient on *Shooting range*$_{predicted}$ in year t, consistent with acquisitions being one of the means by which these firms increase their revenue growth to cross the $100 million revenue threshold but insignificant coefficients in the other years. Excluding acquiring firms from the sample does not alter any of our prior results, however, suggesting that shooting range firms pursue both organic and inorganic growth to cross this threshold.

With respect to *Employment/Revenue* in years $t-1$, t, and $t+1$ in columns 4, 5, and 6, we find a significantly positive coefficient on *Shooting range*$_{predicted}$ in year t but insignificant coefficients in the other years. This significant coefficient in year t is consistent with increased employment being a means by which shooting range firms increase their revenue growth to cross the $100 million revenue threshold.

With respect to *Leasing/Revenue* in years $t-1$, t, and $t+1$ in columns 7, 8, and 9, we find a significant positive coefficient on *Shooting range*$_{predicted}$ in year t, consistent with increased leasing of assets being another means by which these firms increase their revenue growth to cross the $100 million revenue threshold but insignificant coefficients in the other years. In contrast, in untabulated analysis estimating Equation (4) with the capital investment-to-revenue ratio as the dependent variable, we find an insignificant coefficient on *Shooting range*$_{predicted}$ in all three years. This likely reflects leasing being a more feasible way than capital expenditures for shooting range firms to increase their available productive assets, as these firms are relatively small and typically financially constrained (Sharpe and Nguyen 1995).

Collectively, the results reported in Table 4 reinforce the significance of the $100 million revenue threshold as a central goal in shooting range firms' strategic planning processes. This goal appears to shape shooting range firms' investment strategy, leading to an increased likelihood of acquisitions, expansion of the employee base, and leasing of assets. All these investments, especially acquisitions, require planning, coordination across multiple divisions (e.g., human resources, accounting, finance, and information technology), and appreciable lead times. In this respect, the investment behaviors we document provide strong support for forward looking in goal setting and associated investment decisions. They also reinforce the analysis from Figure 5 that the $100 million revenue goal is codified and shared across the firm as part of a formal strategic plan.

4.4. Costs to Accelerating Revenue Growth to Cross the $100 Million Revenue Threshold

Last, we examine in Online Appendix D whether firms' upward striving and the accelerated revenue growth come at the cost of decreased performance in their pursuit of other goals. An important concern related to Hypothesis 2 is that accelerated growth from upward striving may come at the cost of decreased profitability, increased risk, or missing other goals (e.g., safety).[35] Mitigating this concern, crossing the $100 million revenue threshold brings increased scrutiny that may help to discipline the negative effects of setting challenging goals, for example, by limiting value-destroying acquisitions or sales to customers in excess of their current demand ("channel stuffing") or with marginal creditworthiness. We conduct a series of tests to determine whether upward striving toward the $100 million revenue threshold comes at the cost of reduced profitability and efficiency.

To summarize, we detect no short-term costs to shooting-range firms from attempting to attain $100 million revenue, as reflected in insignificant changes in earnings before interest and taxes (EBIT)/revenue (operating margin), ROA (overall profitability), and accounts receivable/revenue (discipline over credit extension to customers) for these firms. We also detect no longer-term costs, as reflected in insignificant changes in long-term investments in property, plant, and equipment and R&D. The lack of efficiency cost to accelerating growth addresses potential downsides of setting challenging

goals and provides support for its positive performance effects, albeit only in certain ranges of revenue.

5. Discussion and Conclusion

This study situates firms' goal setting in their interactions with external resource providers, including investors, analysts, and the media. It characterizes goal setting as an externally directed, attention-seeking process. Complementing the model of variable attention of March and Shapira (1987, 1992), in which managers of firms approaching bankruptcy shift their goals downward from historical and social reference levels to a survival point, we identify an upward shift in goals as firms' performance approaches salient round numbers, specifically $100 million revenue. Managers shift their attention upward to capture significant external visibility and attentional benefits. By placing the BTOF (Cyert and March 1963) and the ABV (Ocasio 1997) in interactions with external resource providers, our study makes three advances that have been called for by prior studies: taking an open-systems perspective (Gavetti et al. 2007, Joseph and Gaba 2020), incorporating a forward-looking sensibility (Gavetti et al. 2012), and developing a dynamic and strategic view of firm attention structure (Ocasio et al. 2018). In general, these are daunting tasks that entail revisiting and updating key theoretical pillars of BTOF research, but the $100 million revenue goal provides an intuitive and concrete context to begin to make these advances. Managers switch between looking internally and externally based on the availability of attentionally salient, round number goals. Managers are both affected by and affect the attention structure.

This study has implications for several strands of goal setting and broader organizational research. First, although we focus on external resource providers, we expect the strategic interactions we document to generalize to other external stakeholders, such as regulators and credit or environmental, social, and governance (ESG) rating agencies. Firms are increasingly pressured to track and disclose their performance on a wide set of metrics beyond traditional financial ones, such as ESG practices, which have garnered significant attention and visibility (Perks et al. 2013, Hawn and Ioannou 2016). For example, Google states that it aspires to be "the first major company to operate on 24/7 carbon-free energy" by 2030, committing itself to a specific target against which it will later be judged.[36] Whether firms upward strive with respect to nonfinancial social goals remains little researched, yet the immense interest in corporate and managerial social responsibility suggests that the potential contribution of such research is sizeable.

Second, our findings inform research on the strategic disclosure of information. The extant literature has predominantly focused on earnings thresholds (Richardson et al. 2004, Keum and Eggers 2018, Shipilov et al. 2019).

This study broadens the focus to a novel revenue-based threshold, for which we find an asymmetrical and beneficial tendency toward increased revenue growth. However, the idea that firms can strategically manage their visibility in either direction, for example, through increasing or decreasing investments in marketing and investor relations (Bushee and Miller 2012, Lou 2014), should generalize beyond the particular revenue goal we examine.

Third, although our theory is based on firms' attempts to attract external resource providers, we expect similar threshold dynamics to exist in firms' internal capital markets. As an illustrative example, a firm with a predicted revenue of $211 million revenue may comprise division *A* with a predicted revenue of $98 million and division *B* with $113 million, inducing an upward striving by division *A* interested in increasing its internal visibility to the corporate headquarters but not by *B*. This example also suggests that a firm can differ in its attention structure and the rate of growth depending on whether it communicates its revenue to the external market by division or only as a whole, for example, due to being organized in a functional rather than divisional form. As a case in point, one of the motivations for Google to restructure into the M-form alphabet was to initiate "segment" reporting and enhance visibility to investors, suggesting that organizational structure is another strategic variable used to influence visibility in the external capital market.[37] Hu et al. (2017), Joseph and Wilson (2018), and Berchicci and Tarakci (2022) provide important starting points for analysis along these lines.

Fourth, allowing for strategic upward striving provides greater room for managerial agency in firm goal setting than has been considered to date. Unlike social or historical reference points that are more objective and difficult to manipulate (Audia et al. 2022), upward striving toward an attentionally salient goal leaves it to managers to decide whether and when to upward strive (e.g., is a predicted revenue of $96.1 million too far below or close enough to shoot for $100 million?). Examining the potential managerial differences in the point at which an upward shift in attention occurs, for example, based on a prevention versus promotion focus (Ahmadi et al. 2017), (over)confidence (Schumacher et al. 2020), or temporal orientation (Souder and Bromiley 2012), presents opportunities to bring managers back into our understanding of how firms set their goals and to develop a psychological microfoundation for firm goal setting.

As one of the first investigations of any revenue-based threshold and *strategic* upward striving, our findings have important limitations. Most importantly, we do not directly observe goals. Despite the vast number of studies on goal setting, direct observation of firm goals and the goal-setting process remains exceedingly rare. The specific organizational processes and rhetoric

used by managers (Ocasio et al. 2018) to translate perceived opportunities and threats into formal financial and operational goals for the firm and its various levels of hierarchy (e.g., middle- and front-line managers) promise to be an important area of future research. Many other issues remain to be examined around the causes and consequences of attention-triggered growth and the performance potential of goal setting at the firm level, and we hope this study provides a useful first step.

Endnotes

[1] Although both "stretched goals" and "upward striving" refer to challenging goals, the former term is most often used in studies on individual- and team-level goal setting (Locke and Latham 1990, Ahmadi et al. 2022), whereas the latter typically is used in research at the firm level.

[2] Although current employees can be viewed as internal to the firm, they can choose to leave the firm, and prospective employees are entirely external.

[3] As a recent example of firms' communications that involved multiple stakeholders and modes of communication, Tesla stated in its letter to shareholders that it plans to deliver 400k vehicles on February 19, 2019. Within hours, Elon Musk tweeted that it will "make around 500k [cars] in 2019." Within a week, the Securities and Exchange Commission asked a judge to hold Musk in contempt for violating its settlement with Tesla that the firm would oversee Musk's tweeting after his 2018 tweet about taking Tesla private. Some of his tweets led to shareholder litigation that was recently settled in Musk and Tesla's favor.

[4] Recent studies show that firms specify peer groups that are smaller and more relevant than the entire industry as social reference points. Moliterno et al. (2014) highlight performance by peer firms with the most similar past performance levels (i.e., historically based social aspiration threshold). Vissa et al. (2010), Kacperczyk et al. (2015), and Hu et al. (2017) consider the performance of other affiliates in a conglomerate or divisions in multidivisional firms that compete for shared resources (i.e., internal social reference point).

[5] For example, Gavetti et al. (2012, p. 12) lament that "the field of strategic management … is imbued with backward-looking mindsets and much in need of a 'forward-looking' sensibility."

[6] As a concrete example, Joseph and Gaba (2015) note that when Nokia was a dominant market leader between 2002 and 2008, the company was highly unlikely to look downward to social reference points (or industry performance benchmarks) to assess its performance and set goals.

[7] At least two other models of upward-striving exist. Park (2007) and Joseph and Gaba (2015) suggest that firms with above-industry-median performance shift their goals from social reference points to upward-adjusted historical performance. Giachetti and Lampel (2010) find that U.K. mobile firms look to market leaders for the adoption of radical technologies but use social reference points for incremental technologies.

[8] In the context of noncorporate organizations, Labianca et al. (2009) and Moliterno et al. (2014) show that MBA schools and German football teams upward strive and make resource changes using the highest-performing peers as benchmarks.

[9] As illustrative examples, a rule of the organizational game can be internal evaluation of divisional performance based on the industry benchmarks; a structural position can be managers' formal positions in the corporate hierarchy; and resources include human and financial capital.

[10] Cyert and March (1963) note early in their book (p. 11) that "the goals of the firm are strongly influenced by both internal and external forces," but they focus almost exclusively on internal factors in subsequent chapters.

[11] Ocasio (2011) refers to the ability to freely attach and detach attention to stimuli as "executive attention."

[12] To avoid disappointing the market, managers often preemptively "walk down" market expectations by disclosing disappointing information (Richardson et al. 2004).

[13] Goals are also at the center of firm strategy and capital allocation plans and documents (i.e., "text").

[14] Relatedly, Hong and Kacperczyk (2009) find that analysts and the media spend more time analyzing and reporting on "good" firms than on "sin" (e.g., tobacco) firms, increasing the latter firms' cost of equity capital.

[15] Issue selling (Dutton et al. 2001), agenda setting (Ocasio and Joseph 2008), framing contests (Kaplan 2008), and coalitional politics (Cyert and March 1963) are other concrete instances of managers altering the attention structure to obtain favorable resource allocations inside the firm.

[16] We conducted the Google searches depicted in Figure 1 on December 13, 2019. Search counts vary somewhat when conducted at different times or locations, but the character of the results does not change.

[17] In contrast, in instances when firms' performance in year $t-1$ falls in the ranges indicated in both Equations (2) and (3), we generally expect Equation (2) to take precedence due to the exceedingly high salience of survival threat.

[18] This proposed pattern differs from prior research on firms' manipulation of accounting numbers around thresholds; for example, the literature examining earnings management around the zero earnings threshold finds the strongest evidence of manipulation for firms with earnings immediately above the threshold.

[19] As a Google search readily shows, "challenging but attainable" and similar phrases such as "challenging but achievable" are commonly used by practitioners in describing best practices in setting goals.

[20] The decrease in investment in response to approaching bankruptcy threat has been disputed (Miller and Chen 2004).

[21] All the results are robust to using a compound annual growth rate in revenue over the last three years or using two years instead of three.

[22] Our results are robust to replacing the indicator for whether the firm pays dividends with either dividends scaled by sales (a dividend payout variable appropriate for our rather small capitalization firms) or dividends scaled by stock price (dividend yield).

[23] This filter excludes firms with revenue growth rates above 58% or below −79%. Our inferences are unaffected by plausible alternative exclusion rules.

[24] Although most firms cross the $100 million revenue threshold only once, 8% of the firms crossing this threshold do so more than once. We include repeat crossers in our base analysis, but their exclusion does not alter any of our inferences.

[25] Another concern is that the $100 million revenue threshold induces excessive risk taking and thus yields more frequent failures or other sample exits by firms for which the increased risk does not pay off (Sitkin et al. 2011, Gary et al. 2017). To the extent this survivorship exists, the coefficient on *Shooting range* in Equation (4) would be biased upward and the number of observations in the portion of the control range above the shooting range would decrease.

[26] The sample requiring a firm to attain $300 million revenue includes 41,110 firm-year observations for 2,406 firms.

[27] Restricting the sample to 1980–2014, when both institutional ownership and analyst coverage are available, does not alter any of our inferences.

[28] See http://www.lexisnexis.com/hottopics/lnacademic/. We restrict the search to newspapers with the duplicates filter set to high. Each year starts on January 1 and ends in December 31.

[29] Common reasons for null results include abbreviations (such as INTL and INTEL for international, SVC for services, and CP for corporation), and the first names of firm founders in parentheses (such as (Jack) Henry & Associates).

[30] These variables are available at https://sites.temple.edu/lnaveen/data and were originally collected for and are described in Coles et al. (2006). A substantial share of executive compensation comes from stock options, which complicates the quantification of the values of these variables.

[31] Adjusted for price inflation, $100 million in 1974 approximately equals $510 million in 2014. However, we find that the coefficient on *Shooting range_t* is significant across subperiods, indicating that the salience of achieving the $100 million revenue goal has persisted over time despite this inflation.

[32] Beyond case studies, we are aware of only three studies that directly observe organizational-level financial goals: Mezias et al. (2002), Washburn and Bromiley (2012), and Keum and Eggers (2018).

[33] Performance targets disclosed in management forecasts affect firm investments and managerial and firm evaluation (Goodman et al. 2014, Pae et al. 2016), and managers often explain investments (e.g., hiring, capacity expansions) they are undertaking to justify performance targets disclosed in management forecasts.

[34] Because small or transient institutional investors are quick to exit on receiving bad news, they have disproportionate effects on firm investments and managerial attention relative to their ownership share, for example increasing the focus on quarterly profits and exacerbating short termism (Bushee 1998, Keum 2021).

[35] At individual and group levels, Gary et al. (2017) find that challenging goals increase the variance and skewness of performance but not its level. Ahmadi et al. (2022) find that challenging goals motivate high-quality employees but discourage other employees. Other individual or executive-level studies caution that setting challenging goals may increase the risk of unethical or illegal behavior (Harris and Bromiley 2007, Mishina et al. 2010, Ordóñez and Welsh 2015) and interpersonal conflicts (Zhang and Jia 2013).

[36] See https://www.gstatic.com/gumdrop/sustainability/carbon-free-by-2030.pdf.

[37] See https://www.reuters.com/article/us-alphabet-structure-idINKBN17T2O3.

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Daniel Dongil Keum is an associate professor at Columbia Business School. He received his PhD from the Stern School of Business at New York University. His research examines psychological and organizational processes that affect firm growth and innovation, especially layoffs and hiring.

Stephen Ryan is the Vincent C. Ross professor of accounting at the Stern School of Business, New York University. He received his PhD in business from Stanford Graduate School of Business. His research interests pertain to the usefulness of financial report information for capital market, contracting, regulatory, and other purposes.