# Asymmetric Ratcheting and Target Difficulty: Experimental Evidence

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October 2024

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## ABSTRACT

This paper conducts four experiments to investigate whether and to which extent high vs. moderate target difficulty can attenuate asymmetric target ratcheting, i.e., the phenomenon that targets are often adjusted more strongly upwards after being exceeded than adjusted downwards after being missed. The first two experiments, with different populations, (1) replicate prior findings of asymmetric targets ratcheting under moderate prior target difficulty, (2) predict and find that under high prior target difficulty, asymmetric ratcheting is mitigated and that this mitigating effect of high prior target difficulty is stronger when managers perceive low rather than high information asymmetry between them and their employees regarding the market environment. Experiment 3 provides evidence about managers' biased view on how permanent and transitory factors explain prior target variances. Experiment 4 manipulates, instead of measures, information asymmetry and again finds that information asymmetry moderates the effect of high prior target difficulty on asymmetric adjustments.

# I. INTRODUCTION

Managers often use current performance as a (partial) basis for the future targets they set for their employees (Weitzman 1980). This phenomenon is usually referred to as target ratcheting (e.g., Bouwens and Kroos 2011; Indjejikian, Matějka, and Schloetzer 2014b; Kim and Shin 2017). This paper focuses on *asymmetric* ratcheting, i.e., the phenomenon that targets are often more strongly "ratcheted up" than down (e.g., Feichter, Grabner, and Moers 2018; Guidry, Leone, and Rock 1999; Holthausen, Larcker, and Sloan 1995). Specifically, this paper investigates how a prior period's target difficulty and the perceived information asymmetry between manager and employees affect the asymmetry in managers' target adjustments.

While prior research has provided some economic arguments for the asymmetry in ratcheting (Leone and Rock 2002), we focus on behavioral reasons for such an asymmetry in a setting without economic reasons for asymmetric target adjustments. Studying such behavioral reasons for asymmetric ratcheting is important as such biased reasoning can lead to irrational and potentially suboptimal decisions about target adjustments and rapid escalation of targets in firms. In fact, complaints about stronger upwards than downward adjustments are frequent in practice (e.g., Half 2022; Smith 2013). More importantly, asymmetric target ratcheting may lead to (too) aggressive target setting, which can contribute to unethical employee decisions and may even lead to big corporate scandals at firms such as Wells Fargo, Volkswagen, and Ford (Kell 2022; Oliver 2017; Ordóñez, Schweitzer, Galinsky, and Bazerman 2009). Thus, asymmetric target ratcheting driven by biased reasoning can have detrimental consequences in firms.

Prior empirical evidence on asymmetric ratcheting is mixed. Some papers find empirical evidence that targets are more strongly adjusted upwards than downwards (Bouwens and Kroos 2011, 2017; Kim, Matějka, and Park 2023; Lee and Plummer 2007; Leone and Rock 2002). However, others find that targets are symmetrically adjusted (Anderson, Dekker, and Sedatole

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2010; Matějka, Mahlendorf, and Schäffer 2022). Recent experimental work has provided evidence for asymmetric ratcheting in settings where market expectations are kept constant at the prior year level, particularly for ability-driven tasks (Arnold, Artz, and Tafkov 2022). To better understand mixed findings in prior literature and offer insights to the issues in practice, our paper examines whether and to what extent two factors—the prior period's target difficulty and manager's perceived information asymmetry—affect this asymmetry.

Both target difficulty and information asymmetry are highly relevant for target setting. First, target difficulty is one of the major elements in target setting (Arnold and Artz 2015; Shields, Deng, and Kato 2000). Difficult but attainable goals are usually seen as most motivating (Locke and Latham 1990, 2002). While many studies examine the effects of target difficulty on performance (e.g., Arnold and Artz 2015; Ioannou, Li, and Serafeim 2016; Webb, Williamson, and Zhang 2013), only a few studies have looked at the effect of target difficulty on target ratcheting and, if so, have mainly taken an *employee* perspective. Matějka, Mahlendorf, and Schäffer (2022) examine employees' perceived target difficulty and find that symmetric target ratcheting based on prior performance may actually imply lower perceived target difficulty from the perspective of employees. Aranda, Arellano, and Davila (2014) analyze the effect of *relative target setting* on target adjustments and find that when managers use relative target setting, they adjust targets less upwards (more downwards) when an employee's prior target is higher than the average actual performance of the employee's peers. In contrast, we focus on target difficulty from the perspective of managers who set these targets and use a controlled experiment to investigate managers' potential biases in adjusting targets asymmetrically more upwards than downwards and the effect of target difficulty on it.

This research question is also directly linked to the information asymmetry between manager and employees. As we will explain in more detail below, information asymmetry can

cause ambiguity in information interpretation, which results in biased decision-making (Babcock and Loewenstein 1997; Farmer and Pecorino 2002; King 2002) and can, thus, contribute to the asymmetry in target ratcheting. While prior budgeting work has identified information asymmetry as an important factor for the budgeting process and the final budget (e.g., Lee and Plummer 2007; Leone and Rock 2002), substantially less is known about how information asymmetry between manager and employees about the market potential affects target adjustments (Matějka 2018).

We first predict that when target difficulty is moderate and the previous period's target represents the expected value of the prior period's outcomes, target adjustments are greater when the prior target is exceeded than when it is missed. It is based on a result of Arnold et al. (2022) and establishes the basis for our subsequent hypotheses. As managers' own success depends on the success of their unit, they are motivated to extend success and avoid acknowledging performance failure. This can lead to self-serving attribution of exceeded targets to more permanent factors, allowing an increase in targets, and missed targets to more transitory factors, allowing a less strong decrease in targets. Second, we predict that high (vs. moderate) target difficulty of the prior period's target generally mitigates this asymmetry since high difficulty likely reduces the ambiguity of the situation. When the prior target difficulty is high (vs. moderate), it is more difficult for managers to engage in self-serving justifications about asymmetric target adjustments as it is likely harder to argue that exceeded (missed) targets are mainly due to permanent (transitory) factors. This should result in less upward and/or more downward target adjustments under high prior target difficulty.

Finally, we predict that the mitigating effect of target difficulty on target ratcheting is less strong when the perceived information asymmetry between the manager and employees is high than when it is low. In other words, if high perceived information asymmetry contributes to the ambiguity of the situation (Babcock and Loewenstein 1997; Farmer and Pecorino 2002; King

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2002; Thompson and Loewenstein 1992), it is likely that even when a prior period's target is difficult, managers may continue to self-servingly argue that prior target difficulty may not have been as high as they previously perceived and that the "true" target difficulty was likely lower. In contrast, if perceived information asymmetry is low, the less ambiguous setting leaves less room for self-serving justifications, reducing asymmetric adjustments under high prior target difficulty. Thus, the decreasing effect of high prior target difficulty on asymmetric target adjustments is expected to be stronger when perceived information asymmetry is low than high.

To investigate our research question, we conduct four experiments in which participants set individual sales targets for two of their salespersons for the upcoming year. We use a setting in which market conditions remain constant. It implies that while economic forces are relevant, there is no economic reason to adjust targets *asymmetrically* in our setting. In Experiment 1, we manipulate performance-to-target of the two salespersons by informing participants that both salespersons have either exceeded or missed their previous period's target. We also manipulate the perceived difficulty of this previous target. We inform participants that when setting the previous period's target, they set it to the average revenues they expected in this market situation (i.e., moderate target difficulty) or set it to a challenging revenue that was at the higher end of what would be achievable (i.e., high target difficulty). We measure participants' perceived information asymmetry on the post-experiment questionnaire. Participants are EMBA students from Europe (Experiment 1) and Prolific workers from the U.S. (Experiment 2) with substantial professional and target setting experience. Experiment 3 uses Prolific workers to capture their view on how permanent and transitory factors explain the employees' performance-to-target before setting the next period targets. In Experiment 4, to further test the effect of information asymmetry, instead of *measuring* the perception of information asymmetry as in Experiment 1 and 2, we *manipulate* high vs. low information asymmetry under high prior target difficulty.

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Our results support our predictions. In Experiment 1, with EMBA as participants, we find that managers asymmetrically adjust targets when target difficulty is moderate and that this effect is mitigated when prior target difficulty is high. However, even with high difficulty, target adjustments remain asymmetric. We then split the sample based on whether participants perceived high vs. low information asymmetry between them and the salespersons. We find that the mitigating effect of prior target difficulty on the asymmetry in target adjustments is stronger and only significant when perceived information asymmetry is low. Experiment 2 uses Prolific participants and replicates our findings from Experiment 1, particularly when restricting the sample to participants with more experience in target setting. In Experiment 3, we find evidence that the biased views—exceeding (missing) prior targets are more likely explained by permanent (transitory) factors—contribute to the asymmetric target adjustments in Experiments 1 and 2. In Experiment 4, we find that manipulated information asymmetry moderates the effect of high prior target difficulty on asymmetric adjustments.

Our paper contributes along several dimensions. First, we contribute to the literature in target setting by providing evidence that under controlled experimental conditions, asymmetric ratcheting is very prevalent even when market conditions are not changing, indicating biased target adjustments from managers. Moreover, we show that managers' perception of the previous target difficulty can affect this asymmetry and that in firms and settings where targets are set in challenging ways, asymmetric target adjustments may be less pronounced. This can contribute to our understanding of previous inconclusive findings in the empirical literature.

Second, by demonstrating that the mitigating effect of prior target difficulty on asymmetric target adjustments is more pronounced in settings with low rather than high perceived information asymmetry, we examine another factor that can contribute to managers' biases in asymmetric target adjustments. While prior empirical work has used various proxies such as, for

example, environmental volatility, to study information asymmetry (e.g., Bol and Lill 2015), our experimental approach allows us to directly measure and manipulate the information asymmetry while keeping other factors constant. Importantly, we find that its effects are not independent of the previous year's target difficulty but interact with it. Thus, the relevance of information asymmetry in explaining asymmetric target adjustments may not be equally relevant to all firms. Importantly, this also implies that high perceived information asymmetry may allow managers to asymmetrically adjust already challenging targets and eventually make them (too) aggressive.

Finally, through our finding that asymmetric target adjustments are more prevalent when ambiguity is high (i.e., high information asymmetry in our setting), we provide evidence about self-serving reasoning as the underlying theoretical driver of this phenomenon. Additionally, we show that the biased view on how permanent and transitory factors explain prior target variances serves as a self-serving reason for asymmetric target adjustments. Thus, we can also provide insight into the discussion about underlying theoretical drivers of asymmetric ratcheting.

## II. THEORY AND HYPOTHESES

Based on prior work, we first develop a hypothesis to predict that when prior period's target difficulty is moderate and represents the average value of the prior period's potential outcomes, target adjustments are greater when the prior target is exceeded than when it is missed. Importantly, we use a setting where market expectations remain constant. Thus, in contrast to empirical archival work, and target adjustments cannot be driven by changes in market expectations (Indjejikian et al. 2014b; Matějka et al. 2022). In such a setting where positive and negative target variances (i.e., the extent of exceeding vs. missing targets) are symmetric and market expectations do not change, there is no reason from an economic perspective to asymmetrically adjust targets for the upcoming year (Weitzman 1980).

However, we draw on cognitive psychology theory to predict that managers likely engage

in self-serving reasoning about the underlying reasons for exceeding vs. missing prior targets. Self-serving interpretations of information likely exist in settings with some level of ambiguity about the underlying reasons for an observed phenomenon (Babcock and Loewenstein 1997; Thompson and Loewenstein 1992). This is the case here because under *moderate* difficulty of the prior year's target, the manager is not able to perfectly infer the true underlying reasons for the target variances, and exceeding or missing prior targets can relatively easily be attributed to either transitory factors (e.g., good or bad luck, unexpected, transitory increases or decreases in demand) or permanent factors (e.g., fundamental shifts in productivity or salesperson ability). Even though such biased interpretations may lead to suboptimal target setting in the future, it is self-serving to managers in the sense that such biased interpretation of information is beneficial to their self-esteem (Babcock and Loewenstein 1997; Taylor and Brown 1988).[1] Additionally, even receiving feedback may not make the assessment of information more objective as even learning can be misguided due to self-serving interpretation of information (e.g., Goette and Kozakiewicz 2022). Because their own success usually depends on the success of the employees they manage and they prefer their unit to be successful (Benson 2015; Otley 1999; Zimmerman 2011), managers likely engage in motivated reasoning (Hales 2007; Kunda 1990) and thus are prone to these self-serving interpretations. The greater their motivations are, the greater should be the tendency to interpret information self-servingly (Babcock and Loewenstein 1997; Loewenstein and Moore 2004).

As a consequence, self-serving reasoning can lead managers to interpret positive target variances as more permanent and negative variances as more transitory because this allows them to signal to headquarters that high(er) performance can be maintained in future while low(er) performance will likely reverse in the following period. This is important because permanent

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[1] Self-serving interpretation of information is typically a subconscious rather than a conscious process (Babcock and Loewenstein 1997). We will provide evidence of this in the Results section of Experiment 1 and 2.

factors contributing to target variances are usually (at least partially) incorporated into new targets while transitory factors should not be incorporated (Aranda et al. 2014; Leone and Rock 2002).

As a result, we suggest that when the difficulty of a prior target is moderate, managers' own positive and negative consequences associated with the success of their employees likely leads them to self-servingly justify that targets can be adjusted upwards following positive target variances but do not need to be adjusted downwards (as much) following negative target variances (Arnold et al. 2022). We state the first (replication) hypothesis:

**H1:** *When prior target difficulty is moderate, target adjustments are greater when the prior target is exceeded than when it is missed.*

In the following, we will develop theory to predict that such self-serving justifications are likely mitigated when the prior year's target difficulty is high rather than moderate. When prior target difficulty is high, as opposed to moderate, it likely becomes more difficult for a manager to self-servingly argue that positive (negative) target variances likely represent permanent (transitory) changes in performance potential. The reason is that high prior target difficulty reduces the ambiguity about the factors underlying prior target variances.

Specifically, when prior target difficulty is high, the likelihood *decreases* that positive variances can still represent permanent changes in performance potential and are not due to transitory deviations. Vice versa, the likelihood *increases* that negative target variances indeed represent a permanently lower performance potential and not only transitory deviations from the prior target (Aranda et al. 2014). Thus, in general, high (vs. moderate) prior target difficulty reduces ambiguity for managers when evaluating the reasons for exceeding or missing prior targets. Reduced ambiguity makes it more difficult for them to engage in self-serving reasoning about target adjustments (Arnold, Hannan, and Tafkov 2020). Specifically, it is less likely that

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following a difficult prior target, managers can interpret positive target variances as a result of long-term trends, resulting in upward adjustments, and negative variances as an indicator of only temporary changes, resulting in no or less downward adjustment.[2]

The preceding discussion suggests that reduced ambiguity due to high (vs. moderate) difficulty of prior targets limits the possibility of engaging in self-serving justifications about target adjustments and, thus, can lead to less upward adjustments, more downward adjustments or both. While these arguments do not allow us to predict whether, under high prior target difficulty, target adjustments will still be asymmetrically larger for exceeded than for missed targets, will be symmetric or will even be asymmetric in the opposite direction (larger for missed than for exceeded targets), our theory allows us to predict that high prior target difficulty mitigates asymmetric target adjustments. We state the following hypothesis:

**H2:** *When prior target difficulty is high, target adjustments are less asymmetric following exceeded vs. missed prior targets than when prior target difficulty is moderate.*

We finally derive a hypothesis about how the decrease in asymmetric target adjustments (H2) is affected by managers' perceived information asymmetry about market potential. As discussed, high prior target difficulty likely reduces ambiguity about whether target variances are driven by permanent or transitory factors. Therefore, under high prior target difficulty, self-serving justifications for adjusting targets asymmetrically likely require extra arguments beyond referring to permanent vs. transitory factors as underlying drivers of target deviations. One prominent factor that increases ambiguity is information asymmetry (Farmer and Pecorino 2002; King

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[2] One may also argue that exceeding a difficult target represents great performance and signals very high ability making it unfair to increase targets even further for employees exhibiting very high ability. This suggests that managers' consciously consider fairness more strongly when target difficulty is high than moderate. However, if unconscious self-serving attributions drive our findings, managers likely consider fairness similarly under all conditions even if target adjustments themselves differ. We will provide evidence on this in our Supplemental Analyses section of Experiments 1 and 2.

2002). In line with prior research, the information asymmetry between manager and salespersons in our study relates to market potential (Lal 1986; Mishra and Prasad 2004). Thus, high perceived information asymmetry likely facilitates self-serving interpretations of available information.

Specifically, when managers perceive high information asymmetry about the market environment under high prior target difficulty, the reasons underlying target variances are likely highly ambiguous despite a high prior target difficulty level. With high perceived information asymmetry, managers, under high prior target difficulty, are likely able to self-servingly argue at the beginning of a new period that prior target difficulty was not really high.[3] That means, they can self-servingly argue ex post that salespersons know the market better than them and, therefore, prior target difficulty cannot be really classified as difficult. This allows managers to attribute prior target variances to the existing information asymmetry, instead of transitory factors when prior targets are exceeded and permanent factors when prior targets are missed. Under high prior target difficulty, this, in turn, allows managers to still self-servingly justify asymmetric target adjustments in the case of exceeding vs. missing prior targets. In contrast, under high prior target difficulty, ambiguity is low when perceived information asymmetry is low because managers cannot self-servingly refer to high information asymmetry to justify their target adjustments. Thus, the effects of high target difficulty described in the development of H2 are likely more pronounced in the case of low perceived information asymmetry.

Importantly, the effects of perceived information asymmetry just described are likely more relevant under high than under moderate prior target difficulty. The reason is that, as

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[3] Importantly, we are referring to a situation where managers have a perception of the target difficulty at the beginning of a period and use perceived information asymmetry ex post to self-servingly justify asymmetric target adjustments. This is descriptive of practice as individuals are able to judge target difficulties ex ante even when facing uncertainty (e.g., Courtney, Kirkland, and Viguerie 2000; Hall 2022). However, it could be that under high information asymmetry, managers may be less certain about target difficulty already at the beginning of the period. This would add additional ambiguity about target difficulty, which mainly reinforces our theoretical arguments.

described in the development of H1, a setting with moderate target difficulty likely exhibits a high level of ambiguity about the factors underlying target variances. Thus, even though, under moderate prior target difficulty, information asymmetry still increases ambiguity, it may not be as relevant for self-serving justifications as under high prior target difficulty.

The prior arguments suggest that the mitigating effect of high prior target difficulty on asymmetric target adjustments is likely more pronounced when perceived information asymmetry between manager and salespersons is low. In contrast, when it is high, the mitigating effect of high prior target difficulty is likely less strong and asymmetric target adjustments are more likely to persist.[4] Therefore, we state our final hypothesis:

**H3:** *When perceived information asymmetry is high (low), the mitigating effect of high vs. moderate target difficulty on asymmetric target adjustments is less (more) pronounced.*

# III. EXPERIMENTS 1 AND 2

**Experimental Design and Task Overview**

Experiments 1 and 2 are identical except for the participant group and minor adjustments made to fit the specific participant group, as we will explain below. Therefore, we present Experiments 1 and 2 side by side. We design a 2 x 2 between-subjects experiment where we manipulate performance-to-target (exceeding vs. missing prior target) and prior target difficulty level (high vs. moderate difficulty of prior target).[5] We keep the economic determinants of targeting setting constant across conditions and focus on behavioral reasons for asymmetric target

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[4] Bol and Lill (2015) use environmental volatility to proxy for information asymmetry. However, higher environmental volatility itself is related to transitory vs. permanent deviations from the target—independent of information asymmetry. That means, higher volatility implies a higher likelihood of transitory deviations which could attenuate rather than increase the asymmetry in target ratcheting (as implied by our theory). As we will explain in the Method section, our experimental approach allows us to keep market conditions constant and to measure (Experiments 1 and 2) or manipulate (Experiment 4) information asymmetry in a controlled way.

[5] All data collections for this paper were approved for research ethics by the university the authors are affiliated with.

ratcheting. Thus, while economic determinants are important, there is no *economic* reason in our setting to adjust targets asymmetrically. Participants assume the role of a regional manager in a firm manufacturing 3D printers. Their main task is to set the targets for two salespersons in one of the regional units the manager is responsible for. We design a contextually rich scenario to increase the realism for the experienced managers participating in our experiment.

Participants are informed that in the prior year, both salespersons were assigned the same target (10 million) because both operated in areas with the same expected market conditions.[6] The salespersons either both exceeded or missed the prior target, and one of the two salespersons (the stronger performer) always outperforms the other salesperson (the weaker performer).[7]

We inform participants that a major driver of sales performance is salespersons' ability, for example, their ability to identify suitable customers, to prepare individual customer visits, to understand customer needs and their production process and to close the sales deal (Arnold et al. 2022). We use a setting in which salespersons' ability is important for task performance for two main reasons. First, for many consultative sales tasks in the high-tech business settings, differences in salespersons' ability can strongly affect employee performance (Edlinger 2017; Rackham and DeVincentis 1999; Rojas 2021; Schultz, Croston, and Murray 2021).[8] Still, in such tasks, managers need to motivate high employee effort to obtain high performance, making it a realistic setting for target setting our participants. Second, because ability is likely perceived as a

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[6] Experiment 1 and 2 use Euro and USD respectively as the in-case currency to fit the intended participants.
[7] We use a scenario with two salespersons—a stronger and a weaker performer—who both either exceed or miss the prior target because it decreases the ambiguity of the setting. That means, two salespersons exceeding or missing their targets is likely more systematic than only information about a single salesperson. Thus, if anything, this design choice works against us getting results for H1, but should not affect the moderating effect of target difficulty tested in H2, as it is kept constant across all conditions. For the same reason, we also inform participants that both salespersons' tasks are very similar, and on the post-experiment questionnaire, participants indicate high similarity of salespersons' tasks, independent of the condition (overall mean: 5.64 on a 1-7 Likert scale).
[8] Likewise, in such settings, salespersons' ability to obtain knowledge about specific customers' needs and turn the needs into sales can be more relevant to their performance (Rackham and DeVincentis 1999), which allows for greater variation in perceived information asymmetry between managers and salespersons. Thus, it creates a setting that is both realistic and effective for examining the effect of information asymmetry.

more stable factor than effort, which can more permanently contribute to (positive or negative) performance, ability-driven tasks likely make target adjustments *generally* more relevant after positive or negative target variances, aligning the setting well with our research question.

In the experiments, we keep market conditions constant for the following period. Specifically, participants are informed that a change in both salespersons' market potential is not expected to occur in the next year. This ensures that participants do not increase targets simply because they assume that revenues will increase in the following year due to better market conditions (Indjejikian, Matějka, Merchant, and Van der Stede 2014a). Meanwhile, it can introduce ambiguity as participants can refer to either the ex ante set targets or the realized performance as the "true" market potential.

Instructions further inform participants that both salespersons know their own and the other salesperson's realized performance for the last year. However, salespersons do *not* know each other's sales targets, implying low target transparency (Arnold, Artz, and Tafkov 2024). As prior research shows that high target transparency reduces the difference between individual employee targets (Arnold et al. 2024), we implemented low target transparency to ensure managers' target setting discretion is not constrained.

Participants are also informed that their own success and career advancement as managers strongly depend on the success of their sales units and the revenues that the salespersons in their unit realize. Tying managers' compensation to their units' performance and granting them discretion in setting target for these units aligns with common practice (Aranda, Arellano, and Davila 2017; Shih 1998), which enhances the generalizability of our results.

**Performance-to-target Manipulation**

We manipulate performance-to-target by describing salespersons' prior year performance

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relative to their prior target. We inform participants that the two salespersons either exceeded or missed the prior target of 10 million, with one being a stronger performer and the other being a weaker performer. In the *Exceeded (Missed) Prior Target* condition, the two salespersons realized a revenue of 13 and 11 million (9 and 7 million), respectively. The exact wording of the manipulation is in Appendix A.

Prior year performance is sufficiently different from the target, which enables participants to properly process the performance-to-target manipulation, but also not too far from the target, which would likely make participants question prior decisions and targets. In all conditions, the average deviations from the prior target are kept constant at 2 million. This increases experimental control and allows us to compare the absolute amount of target adjustments across conditions.[9]

**Target Difficulty Manipulation**

We describe the difficulty of prior targets set by the manager as targets in a typical business-to-business environment. Our manipulation of prior target difficulty captures two points along the continuum of target difficulty: high vs. moderate difficulty. In the *High (Moderate) Difficulty Prior Target* condition, participants were informed that in the prior year, the targets they set for the two employees, i.e., 10 million, were at the higher end (their expected average) of what would be achievable in this market situation, and that, consequently, in their opinion, 10 million represented a high (moderate) target difficulty for their salespersons. The exact wording is included in Appendix A.

We use moderate difficulty, i.e., the expected value in the market situation, instead of low

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[9] The bonus scheme for salespersons is as follows: If the prior target is exceeded, each salesperson would receive a bonus of 15,000 and, on top, an additional bonus of 3 for every 1,000 of revenues above the target he/she achieved; if the prior target is missed, salesperson do not receive any bonus. Thus, the bonus function starts at a target achievement of 100 percent and does not have a cap. Compared to bonus schemes with a threshold of less than 100 percent (i.e. lower threshold) or a cap (i.e., upper threshold), our design makes the main target unambiguous to employees and managers (e.g., Merchant, Stringer, and Shantapriyan 2018).

target difficulty, i.e., a value below the expected value or even at the lower end of what could be expected because the practitioner literature often advocates not setting easily achievable sales targets (e.g., Cannon 2023; Cruz 2022; Feichter et al. 2018; Indeed Editorial Team 2023). Thus, low target difficulty could lead participants to perceive the situation as unrealistic and prompt them to change the target only because they perceive it as too low.[10] It also represents a conservative design choice considering our predicted mitigating effect of target difficulty since the increase of target difficulty from moderate to high is less substantial than from low to high.

The prior target difficulty was presented in the materials after the manager's position and general task description and *directly* before the salespersons' prior performance information. This ensures that when reading about prior year performance, participants are clear about how the prior targets were characterized and how performance-to-target can be explained. Likewise, manipulating target difficulty exogenously by informing participants about whether they perceived the target difficulty at the beginning of the prior year as high or moderate and not leaving it up to participants' subjective judgment increases experimental control and biases against finding results for self-serving interpretations.

**Information Asymmetry Measure**

On the post-experiment questionnaire, we capture participants' perceived information asymmetry about the market potential between them and salespersons by asking participants who they think knows the market potential better on an 11-point scale, with -5 (+5) labeled "I (Salespersons) know the market potential much better".[11]

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[10] Additionally, "easy" targets in practice are mainly advocated to free up employees for other creative tasks (Brüggen, Feichter, and Williamson 2018; Merchant and Manzoni 1989), which was not relevant in our setting.
[11] We measure information asymmetry as the salespersons' knowledge *relative to* the manager and not their *absolute* level of market knowledge because we are interested in the ambiguity created by the potentially *better* knowledge of market potential of the salespersons compared to managers' own knowledge. Focusing on an absolute level of knowledge of the employees may interfere with our operationalization of salespersons' ability.

**Participants and Procedures**

Both experiments were administered online. Participants were randomly assigned to one condition and informed that their responses were anonymous with no right or wrong answers. The instructions emphasized that participants should only start the study if they have sufficient time to complete it. Participants then read our case and completed the corresponding questions. At the end of the experiment, they answered the manipulation check and demographic questions.

*Experiment 1*

Participants in Experiment 1 are 72 EMBA students from two European business schools. They each receive a 20 Euro Amazon voucher for their participation. We exclude five participants from our final sample for the following reasons: Three participants fail the manipulation check about performant-to-target, indicating them being inattentive during the experiment, and two participants indicate that they would modify the bonus scheme while setting targets, violating an important prerequisite for obtaining meaningfully comparable targets.[12] Thus, our final sample consists of 67 participants.[13] The median time spent on the experiment is 21.78 minutes.

Participants have, on average, 14.38/5.07/5.43/4.12 years of professional work/ performance evaluation/target setting/sales experience. In the post-experimental questionnaire, participants rate their decision power in their current position (7-point scale from 1 - very little – most decisions have to be approved by a superior to 7 - very much – generally, decisions do not have to be approved by a superior), and the mean is 4.54. Also, they indicate their current

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[12] We include two manipulation checks in the post-experimental questionnaire. The first question asks whether the target of 10 million set in the prior year is a moderate or difficult target. The second question asks whether the prior target is exceeded or missed. We also ask participants how many years of target setting experience they have. We re-run all hypothesis tests after excluding all participants who fail any of the two attention checks or do not have more than one year of target setting experience and obtain inferentially and statistically the same results.

[13] In Experiment 1, the elimination of participants is neither significantly affected by performance-to-target ($z = -1.24$, $p = 0.22$) nor by target difficulty level ($z = -0.40$, $p = 0.69$). For all other experiments in this study, we also find that no manipulated variables significantly affect the elimination of participants (all p > 0.10).

organizational level (1 = Non-management employee, 2 = Team leader/Project manager with team responsibility, 3 = Department leader, 4 = Unit/Division manager, 5 = CEO/President/ Owner). The median (mean) is 3 (2.63). Thus, we consider our participants suitable to act as experienced managers making target setting decisions.

*Experiment 2*

To increase the generalizability of our findings from Experiment 1 and explore the opportunity to use the online participants in future experiments for this study, Experiment 2 focuses on participants located in the U.S. and recruited from Prolific, a web-based crowdsourcing marketplace. 221 participants recruited from Prolific properly completed Experiment 2. They each receive £2.50 (about $3.13) for their participation, which is at the high end of hourly payment rate on Prolific.[14] We exclude 28 participants for the following reasons: Seven participants fail the manipulation check about performance-to-target manipulation, and twenty-one participants fail the manipulation check about target difficulty level manipulation, indicating them being inattentive during the experiment. Thus, the final full sample consists of 193 participants. The median of the time spent on the experiment is 12.10 minutes.

Using pre-experiment filters provided by Prolific, we restrict participants to people who are fluent in English and currently live in the U.S. To increase the likelihood that participants possess the required working experience for the experiment, we also use the pre-experiment filter to restrict participants to people who primarily work in the sectors of business management or administration, finance, and marketing or sales. At the beginning of the experiment, we ask the pre-experiment filter questions again, and participants are allowed to proceed only when their

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[14] Prolific requires a minimum hourly payment rate of £6.00 and recommends an hourly payment rate of at least £9.00 (Prolific.co. 2023). Our experiment's hourly payment rate is £12.40 per hour.

responses to the questions align with their responses to Prolific.[15]

Participants have, on average, 17.58/6.39/5.21/6.85 years of professional work/

performance evaluation/target setting/sales experience. Mean decision power level is 4.22.

Median (mean) current organizational level is 2 (2.21). Participants of Experiment 2 differ from

those in Experiment 1 in two important aspects. First, they have a lower organizational level than

Experiment 1 participants (Mann-Whitney U: 2.21 vs. 2.63, z = 2.78, p < 0.01). Second, there is a

larger share of participants with no or very little target setting experience in Experiment 2 (target

setting experience ≤ one year: 43.52% vs. 25.38%, $\chi^2$ = 6.89, p < 0.01). As possessing target

setting experience is important for properly responding to the designed scenario, we also test a

restricted sample with participants possessing more than one year of target setting experience.

Results for this subsample are reported below.[16]

**Results**

*Descriptive Statistics*

Table 1 reports descriptive statistics from Experiment 1 (Panel A) and Experiment 2

(Panels B: full sample, Panel C: restricted sample). *Target adjustment* is calculated by subtracting

the prior target (10 million) from the new target level when the prior target is exceeded and

reversing the sign when the prior target is missed to make target adjustments comparable between

the *Exceeded* and the *Missed Prior Targets* conditions. Thus, positive target adjustments indicate

upward (downward) adjustments when the prior target is exceeded (missed). Figure 1 displays

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[15] To ensure the quality of responses, we also restrict participants to people who have a previous approval rate of 98% or above on Prolific (Bentley 2021). Additionally, we design two attention checks before capturing our main dependent variables, and only participants who answer those questions correctly can further proceed with the experiment. Lastly, to prevent ballot-box stuffing, we remove participants with duplicated IP addresses.

[16] In the restricted sample, participants have, on average, 20.90/9.80/9.12/4.96 years of professional work/ performance evaluation/target setting/sales experience. Mean decision power level and organization level are 4.95 and 2.70. The mean of organization level from the restricted Prolific sample is no longer significantly different from the EMBA sample (Mann-Whitney U; 2.70 vs. 2.63, z = 0.14, p =0.89).

*average target adjustment* for the stronger and weaker performers.

As reported in Table 1 and illustrated in Figure 1, *average target adjustment* in Experiment 1 is larger when the prior target is exceeded than when it is missed. This is the case for both moderate (2.26 vs. 0.21) and high target difficulty (1.82 vs. 0.94). The effect is larger when the prior target difficulty level is moderate (2.26 – 0.21 = 2.05) than when it is high (1.82 – 0.94 = 0.88). These findings provide initial evidence for H1 and H2. In Experiment 2, both the full and restricted sample results are directionally consistent with Experiment 1, with the magnitude of target adjustments in the restricted sample being closer to those in Experiment 1.

Our measure of managers' perceived information asymmetry explained above has a median of 2 (on an 11-point scale, with -5 (+5) labeled "I (Salespersons) know the market potential much better"). We use a median split on the information asymmetry measure to create subsamples and test the effect of information asymmetry on asymmetric target adjustments.

Figure 2 illustrates *average target adjustment* for the two subsamples from Experiment 1. For the high information asymmetry subsample (Panel A), *average target adjustment* is larger when the prior target is exceeded than missed, regardless of whether the previous target difficulty is moderate (2.23 vs. 0.42) or high (1.67 vs. 0.52). The difference is rather small. For the low information asymmetry sample (Panel B), *average target adjustment* is again larger when the prior target is exceeded than when it is missed, regardless of prior target difficulty (moderate: 2.38 vs. -0.13; high: 1.97 vs. 1.15), but here, the effect is substantially larger for moderate than for high prior target difficulty. Panel A (B) of Figure 3 illustrates *average target adjustment* for the high (low) information asymmetry subgroup of our restricted subsample in Experiment 2 and shows similar results. This provides initial evidence for H3.[17]

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[17] The descriptive evidence for the stronger and weaker performers' target adjustments seems to suggest that upward and downward adjustments are more similar for weaker than for stronger performers. However, as the target

*Hypotheses Tests*

To test H1 and H2, we regress *target adjustment* on an indicator variable *High Difficulty* (1 for high and 0 for moderate prior target difficulty), an indicator variable *Exceed* (1 for exceeding and 0 for missing prior target), and their interaction. We account for multiple observations within participant by clustering standard errors at the participant level. We report results in Table 2. For Experiment 1 (Model 1), the coefficient of *Exceed*, reflecting the simple effect of exceeding vs. missing prior targets when prior target difficulty is moderate (i.e., *High Difficulty* = 0) is significantly positive (2.05, $p < 0.01$), supporting H1.[18] Additionally, the effect of exceeding vs. missing targets is less pronounced when prior target difficulty is high than when it is moderate (interaction, -1.17, $p = 0.02$), supporting H2. For Experiment 2, the coefficient of *Exceed* is significantly positive in both the full and restricted samples (Model 2: 1.17, $p < 0.01$; Model 3: 1.60, $p < 0.01$). The moderating effect of prior target difficulty on *target adjustment* is marginally significant in the restricted sample (Model 3: interaction, -0.74, $p = 0.10$), but insignificant in the full sample (Model 2: interaction, -0.28, $p = 0.26$). The results broadly support H1 and H2. However, for unexperienced participants on Prolific, asymmetric ratcheting due to self-serving reasoning seems even *more* pronounced and persisting.

Simple effects presented at the bottom of Table 2 reveal that the effect of exceeding prior targets on target adjustment is still significant in all models even under high prior target difficulty (all $\beta$'s > 0.84, all $p$'s < 0.04, two-tailed), indicating that high prior target difficulty does not fully *eliminate* asymmetric target adjustments. It also suggests that managers are likely successful in finding self-serving justification to continue adjusting targets asymmetrically.

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variances are asymmetric for stronger and weaker performers (+3 and -1 for the stronger performer, +1 and -3 for the weaker performer), only the average target adjustment can inform about any asymmetric ratcheting.

[18] P-levels in this paper are one-tailed for directional expectations and two-tailed otherwise.

H3 predicts that the decreasing effect of high prior target difficulty on asymmetric target adjustments is stronger when perceived information asymmetry is low than when it is high. To test H3, we rerun the regression used to test H1 and H2 separately for the high (Models 1 and 3) and low (Models 2 and 4) perceived information asymmetry subsamples. For Experiment 1, Table 3 shows a significant simple effect of exceeding vs. missing prior targets when prior target difficulty is moderate (*Exceed*, Model 1: 1.80, $p < 0.01$; Model 2: 2.50, $p < 0.01$). Supporting H3, the mitigating effect of prior target difficulty on asymmetric target adjustment is only significant when perceived information asymmetry is low (Model 2: interaction, -1.68, $p = 0.07$), and smaller and insignificant when it is high (Model 1: interaction, -0.66, $p = 0.13$). For Experiment 2, using the restricted sample, the results replicate those of Experiment 1. Both models show significant simple effect of exceeding prior target when prior target difficulty is moderate (*Exceed*, Model 3: 1.15, $p = 0.01$; Model 4: 1.99, $p < 0.01$), and the effect of prior target difficulty on asymmetric target adjustment is only significant when the perceived information asymmetry is low (Model 4: interaction, -1.28, $p = 0.07$), but not when it is high (Model 3: interaction, -0.14, $p = 0.43$).

Importantly, the simple effects of exceeding prior target reported in Table 3 align with our reasoning. For Experiment 1, in the high prior target difficulty condition, the effect of exceeding prior targets is still significant when perceived information asymmetry is high ( 1.15, $p = 0.01$), but insignificant when perceived information asymmetry is low (0.82, $p = 0.23$). Results are again similar for Experiment 2, but not significant at conventional levels for high perceived information asymmetry (1.01, $p = 0.11$). This pattern further supports H3.

Interestingly, comparing the low information asymmetry conditions in Experiment 1 and 2 (see Panel B, Figure 2 and Panel B, Figure 3), we find that when target difficulty is high, both *differences* between and *levels* of *target adjustment* in the exceeding and missing prior target

conditions are quite similar (Experiment 1, 1.97-1.15=0.82; Experiment 2, 1.80-1.10=0.70).

When target difficulty is moderate, *differences* in *target adjustment* are again similar (i.e.,

Experiment 1, 2.38-(-0.13)=2.51; Experiment 2, 3.04-1.05=1.99), but *levels* of adjustments are

higher in Experiment 2. In other words, in Experiment 1, participants increase targets somewhat

less after they have been exceeded but are also more reluctant to decrease them after they have

been missed than participants in Experiment 2. A potential reason for this could be differences in

culture (Europe vs. US). While the differences in levels do not affect the conclusions we draw

about our theory, further exploring them may be an interesting avenue for future research.

**Supplemental Analyses[19]**

*Self-serving Bias*

On the post-experiment questionnaire, to capture participants' *dispositional* tendency to

self-servingly argue about target adjustments, we ask them to indicate their agreement to the

statements "increasing (decreasing) a salesperson's target in a period after he/she has exceeded

(missed) the previous period's target punishes (rewards) good performance" on 7-point Likert

scales. The questions were presented directly one after the other and, thus, different levels of

agreement likely indicate a biased assessment of these two statements. We subtract the response

to the first question from the second question as our measure of dispositional tendency. We

regress *target adjustment* on *Exceed*, the *self-serving bias* measure, and the interaction of both. For

Experiment 1, we find that higher *self-serving bias* leads to a more positive effect of *Exceed* on

*target adjustments* in both the moderate (0.83, $p < 0.01$, untabulated) and high (0.49, $p = 0.01$)

target difficulty conditions. Results are similar for Experiment 2 (moderate difficulty, 0.15, $p =$

0.34; high difficulty, 0.42, $p = 0.02$), but not significant at conventional levels for moderate

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[19] This section reports results for the restricted sample from Experiment 2. The full sample leads to same inferences.

difficulty. Our findings are in line with our theory about self-serving bias driving our results.

*Intended Change of Target Difficulty*

Our theory underlying H2 suggests that when prior target difficulty is high, participants less likely engage in unconscious self-serving reasoning about the underlying drivers of target variances. An alternative explanation could be that under high prior target difficulty, managers are intentionally more reluctant to further increase target difficulty after targets are exceeded so that targets will not be too high to still have motivating effects (Locke and Latham 1990, 2002).

To capture participants' intended change of target difficulty, we ask them to indicate on the post-experiment questionnaire whether they wanted to change target difficulty when setting the targets on an 11-point scale, with -5 (+5) labeled "I wanted to set a much easier (much more difficult) target than in the previous year". For Experiment 1, we find that their intended change in target difficulty is not significantly different between high and moderate prior target difficulty (exceeded targets: 1.39 vs. 1.38, $p = 0.98$; missed targets: -1.13 vs. -0.39, $p = 0.16$, untabulated). We also include this variable as a control into our analyses for H2. We find that it is insignificant ($p = 0.48$), and our main insights remain unchanged. For Experiment 2, results are very similar (exceeded targets: 1.07 vs. 1.34, $p = 0.51$; missed targets: -0.79 vs. -1.00, $p = 0.75$), and the variable is insignificant when controlling it in our test for H2 ($p = 0.13$). Thus, participants' asymmetric target adjustments are not driven by a conscious, intended change of target difficulty.

*Managers' Consideration of Fairness*

An alternative explanation for our findings could also be the conscious consideration of fairness. That is, when prior target difficulty is high, managers may refrain from further increasing targets as this would be unfair. On the post-experiment questionnaire, we ask participants to indicate whether they wanted to be fair when setting sales targets and whether they wanted to have salespersons think that their sales targets are fair on 7-point Likert scales. We use

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the average of the responses as the measure of their fairness consideration. Neither for

Experiment 1 (t-tests, $p = 0.73$) nor for Experiment 2 (t-test, $p = 0.17$) do we find significant

differences in the measure between high and moderate target difficulty. This is again in line with

our arguments that the differences in target adjustments are driven by unconscious self-serving

bias rather than by conscious considerations of fairness under high target difficulty.

## IV. EXPERIMENT 3

**Procedures**

Our theory suggests that ambiguity leads managers to self-servingly argue that compared

to negative target variances (i.e., missed targets), positive target variances (i.e., exceeded targets)

are more due to permanent factors, that is, factors that highly likely recur in future, as opposed of

transitory factors. In Experiments 1 and 2, to avoid being obtrusive and disrupting participants'

target setting (Asay, Guggenmos, Kadous, Koonce, and Libby 2021), we did not ask participants

how they think permanent and transitory factors explain their employees' performance-to-target.

However, Experiment 3 uses the setting of moderate target difficulty with the same performance-

to-target manipulation as before to test our theoretical arguments. First, in two conditions

(exceeded vs. missed prior targets), after reading the case material, participants indicate whether

they think both salespersons exceeding/missing their prior year's targets was rather due to

recurring or non-recurring factors on an 11-point scale with -5 (+5) labeled completely due to

non-recurring (recurring) factors (denoted as *Recurring* hereafter).[20] Second, in two additional

conditions (exceeded vs. missed prior targets), before eliciting the *Recurring* measure,

participants are asked to list up to five recurring and non-recurring factors that may explain why

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[20] In the experiment, we used "non-recurring" and "recurring" instead of the theoretical terms "transitory" and "permanent" for better participant understanding. The factors listed in the factor listing condition aligned with the concepts of "transitory" and "permanent" (e.g., product-related knowledge and relationship with customers are frequently listed as recurring factors, while luck and unusual issues are frequently listed as non-recurring factors).

both salespersons exceeded/missed their targets (the factor listing condition). While we do not expect different results by this factor listing manipulation, it allows us to capture on the post experiment questionnaire how difficult they felt when thinking about recurring and non-recurring factors, respectively (11-point scales from 0 not difficult at all to 10 extremely difficult). This allows us to test whether managers indeed have more difficulties coming up with recurring factors when the target was missed. Then, we collect the new targets as in Experiments 1 and 2.

We recruit participants from Prolific based on the same procedures and pre-experiment filters as in Experiment 2 with two exceptions. First, as Experiment 2 revealed the relevance of prior experience in target setting, we add a pre-experiment filter and restrict participants to those who have managed at least one subordinate to increase participants' target setting experience. Second, as this filter reduces qualified participants in the U.S., we expand participants' current residence to Canada and the U.K. At the beginning of the experiment, we ask the same questions as in the pre-experiment filters, and participants are allowed to proceed with the experiment only when their responses to the questions are consistent with the pre-experiment filter questions.

**Participants**

Overall, 196 participants recruited from Prolific properly completed the experiment. They each receive £3.50 (about $4.38) for their participation. We exclude 13 participants for the following reasons: Four participants fail the manipulation check about performance-to-target manipulation. Two participants indicate targets larger (lower) than 22 (3) million, representing clear outliers. Finally, in the condition with factor listing, six participants list identical factors as both recurring and non-recurring. Thus, the final sample consists of 184 participants. The median of the time spent on the experiment is 13.72 minutes.

In our sample, participants have, on average, 16.72/7.26/5.64/6.58 years of professional work/performance evaluation/target setting/sales experience. The frequency of participants with

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target setting experience less than or equal to one year is 21%. Mean decision power level is 4.97, and mean organizational level is 2.77. Organizational level and the frequency of low target setting experience are comparable to our EMBA sample in Experiment 1 and the restricted sample of Experiment 2, indicating our newly added filter about managing subordinate experience raises the chances of obtaining participants with target setting experience. We also follow Experiment 2 and form a restricted sample using only participants possessing more than one year of target setting experience (145 participants). We find all results are inferentially the same using the restricted sample, and thus, we do not further tabulate the results for the restricted sample.

**Results**

Table 4 reports descriptive statistics on *Recurring*, the number of recurring and non-recurring factors, the difficulties of coming up with recurring and non-recurring factors as well as individual and average target adjustments. Consistent with the results in Experiment 1 and 2, in the moderate target difficulty condition, *average target adjustments* are larger when prior targets are exceeded vs. missed (No factor listing: 2.00 vs. 1.08; Factor listing: 1.85 vs. 0.66). More importantly, both with and without factor listing, *Recurring* is larger when the prior target is exceeded than when it is missed (No factor listing: 1.24 vs. 0.27; Factor listing: 1.30 vs. 0.89). In the factor listing condition, the difficulty of coming up with the factors also follows our predicted pattern as the difficulty for non-recurring factors is higher than for recurring factors when targets are exceeded (5.89 vs. 4.89) but slightly lower when they are missed (5.11 vs. 5.26).

We test these differences by regressing both *Recurring* (Model 1) and *target adjustment* (Model 2) on *Exceed*, an indicator variable *Listing* (1 if participants had to list the factors and 0 if not), and the interaction of the two variables. Standard errors are clustered at the participant level for *target adjustment*. Results are reported in Table 5. Model 1 shows that the effect of *Exceed* on *Recurring* is positive when participants do not have to list factors (*Exceed*: 0.97, p = 0.02). The

interaction is insignificant (-0.56, p = 0.41), suggesting that the effect of *Exceed* on *Recurring* is not significantly different when participants have to list factors. However, the effect of *Exceed* is not significant at conventional level in this condition (0.40, p = 0.19).[21] Additionally, Model 2 shows that the effect of *Exceed* on *target adjustment* is significantly positive both with (Wald test: 1.19, p < 0.01) and without factor listing (*Exceed*: 0.92, p < 0.01). The effect is not significantly different (interaction: 0.28, p = 0.57).

In untabulated analyses, we also test whether, in line with our theory, the difference in indicated difficulties of coming up with recurring and non-recurring factors is smaller when targets were exceeded than when they were missed and also find this to be the case (t-test, -1.00 vs. 0.15, p = 0.02). This provides additional evidence that, when explicitly having to list factors, participants have more difficulties coming up with non-recurring than recurring factors when prior targets are exceeded than when they are missed.[22]

Finally, we examine the joint relation between *Exceed*, *Recurring* and *average target adjustment* by regressing *Recurring* on *Exceed* and *average target adjustment* on *Exceed* and *Recurring*. To consider the interdependence of variables, we use seemingly unrelated regressions. We collapse the with and without factor listing conditions due to their similarity in findings, as reported above. In line with our theory, we find that *Exceed* has a positive effect on *Recurring* (0.52, p = 0.06, untabulated), and that both *Recurring* and *Exceed* have a significantly positive effect on *average target adjustment* (*Recurring*: 0.13, p = 0.01, *Exceed*: 1.02, p < 0.01). These

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[21] On the post-experiment questionnaire, we asked participants to evaluate to what extent the considerations of stimulating positive sale growth and avoiding a decrease in sales influenced their target setting decisions, respectively (from 1 – not at all to 7 – to a large extent). We take the average of participants' responses to the two questions as a measure for their performance orientation. Using a median split, we find that, in line with our theory, the effect of *Exceed* on *Recurring* is stronger for the high than for the low performance orientation subsample. Specifically, for the high performance orientation subsample, this effect is significant both without (1.55, p = 0.01) and with factor listing (0.86, p = 0.10), but it is not significant for the low performance orientation subsample (all p's > 0.45).
[22] Likewise, the difference in the *number* of factors listed for recurring and non-recurring factors is larger when prior targets are exceeded than when they are missed (t-test, 0.55 vs. 0.23, p = 0.03).

findings provide evidence for our theory that under ambiguity, managers think more about permanent than transitory factors when prior targets are exceeded rather than missed.[23]

## V. EXPERIMENT 4

**Procedures**

In Experiments 1 and 2, we *measure* the perception of information asymmetry ex post. However, as *measured* perceived information asymmetry may be affected by the precedent manipulations or responses to the dependent variables, it may be subject to carryover concerns (Breakwell, Hammond, Fife-Schaw, and Smith 2006). To eliminate such concerns and further validate our conclusions, we conduct Experiment 4 in which we *manipulate* information asymmetry under high prior target difficulty. Besides manipulating information asymmetry, the scenario was identical to the high prior target difficulty scenario in Experiments 1 and 2.

To manipulate information asymmetry, we inform participants that two pieces of information contribute to the understanding of the 3D printer market in general: (i) information about general market trends and recent technology developments which is publicly available and (ii) knowledge about customers and their future plans which is mainly accessible only to the salespersons. In the *high (low) information asymmetry* condition, we then inform participants that they know from past experience that it is particularly important to know customers and their future plans about their production processes (general market trends and recent technology developments) and that, as a consequence, salespersons have a better understanding about the market potential than them (they and their salespersons have a similar level of understanding about the market potential). The exact manipulation is included in Appendix B.

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[23] We also test whether in the *Factor listing* condition, both difficulties of coming up with recurring and non-recurring factors matter similarly for participants by regressing *target adjustment* on *Exceed* and the corresponding difficulties. We find that the difficulty of coming up with recurring factors seems to be more relevant for *target adjustments* (-0.19, p = 0.09) than the difficulties of coming up with non-recurring factors (-0.01, p = 0.92).

**Participants**

Participants are recruited from Prolific based on the same procedures and pre-experiment filters as in Experiment 3. Overall, 177 participants properly completed the experiment and each receive £2.50 (about $3.13) for their participation. We exclude 29 participants for the following reasons: Two fail the manipulation check about performance-to-target manipulation, and twenty-seven fail the manipulation check about information asymmetry. Thus, the final sample consists of 148 participants. The median of the time spent on the experiment is 14.28 minutes.

In our sample, participants have, on average, 17.38/7.31/6.54/6.69 years of professional work/performance evaluation/target setting/sales experience. 23.65% of participants have target setting experience less than or equal to one year. Mean decision power level is 4.93, and mean organizational level is 2.74. Similar to Experiment 3, the restricted sample with only participants possessing more than one year of target setting experience (113 participants) shows inferentially the same results for the following analysis, and thus, we do not further tabulate these results.

**Results**

*Descriptive Statistics and Hypothesis Tests*

Table 6 reports descriptive statistics on individual target levels, individual and average target adjustments. The table shows and Figure 4 illustrates that *average target adjustment* is larger when the prior target is exceeded than when it is missed both in the high (1.76 vs. 0.80) and low (1.07 vs. 0.91) information asymmetry conditions. However, the asymmetry is much stronger when information asymmetry is high (1.76 – 0.80 = 0.96) than when it is low (1.07 – 0.91 = 0.16), providing initial evidence for H3.

We test H3 by regressing *target adjustment* on *Exceed*, an indicator variable *Low Asymmetry* (1 for low and 0 for high information asymmetry), and their interaction. Standard errors are clustered at the participant level. Results are reported in Table 7. The coefficient of

*Exceed*, reflecting the simple effect of exceeding vs. missing prior targets for high information asymmetry, is significantly positive (0.96, $p < 0.01$). This effect is significantly moderated by low information asymmetry (interaction, -0.80, $p = 0.04$), supporting H3. Finally, the asymmetry in target adjustments is no longer significant in the low information asymmetry condition (0.96 – 0.80 = 0.16, $p = 0.61$).

*Supplemental Analyses*

In our theory development, we argue that when target difficulty is high, high information asymmetry allows managers to self-servingly justify asymmetric target adjustment by not classifying prior targets as "truly" difficult. Therefore, when explaining their target setting decisions, we expect participants to be less likely to admit that prior targets were difficult in the high information asymmetry than in the low information asymmetry condition.

In an open-ended question immediately after setting the targets, participants are asked to explain how they set the targets for the upcoming years. We code their explanations based on whether they mention that the prior year's targets are difficult (1 when they mention it and 0 otherwise). Two coders, independent of each other and blind to the conditions, code the responses. The inter-rater agreement is 95.3%, and Cohen's Kappa is 0.889, indicating very high agreement (Landis and Koch 1977). All disagreements are mutually resolved. In line with our theory, we find that when information asymmetry is low, participants mention that prior year's targets were difficult significantly more frequently than when information is high (40% vs. 23% $\chi^2 = 4.86$, p=0.03). We regress *target adjustment* on *Exceed*, the indicator variable of mentioning prior year's targets being difficult, and the interaction of the two variables. The coefficient of *Exceed*, reflecting the simple effect of exceeding vs. missing prior targets when prior targets' difficulty is *not* mentioned, is significantly positive (0.99, $p < 0.01$untabulated). This effect of *Exceed* is significantly weaker when prior targets' difficulty *is* mentioned (interaction, -1.24,

*p* <0.01, untabulated). Thus, acknowledging prior targets' difficulty weakens asymmetric target adjustments, supporting our theory.[24]

## VI. CONCLUSION

This paper investigates how prior period's target difficulty and perceived information asymmetry affect managers' asymmetric target adjustments after prior targets are exceeded vs. missed (e.g., Arnold et al. 2022; Guidry et al. 1999; Half 2022; Smith 2013).

We use four experiments to investigate this question. In Experiment 1, using EMBA students from European business schools, we replicate prior findings of asymmetric ratcheting under moderate prior target difficulty. We then predict and find that this asymmetry is mitigated when the prior target difficulty is high. However, even under high prior target difficulty, this asymmetry persists. Finally, we predict and find that the mitigating effect of high target difficulty on asymmetric target adjustments is stronger when managers perceive low rather than high information asymmetry regarding the market potential. We replicate the findings in Experiment 2 using a larger sample of Prolific workers from the U.S. Experiment 3, with Prolific workers, provides evidence about managers' biased views on permanent (transitory) factors explaining exceeding (missing) prior targets. In Experiment 4, with Prolific workers, we manipulate, instead of measure, information asymmetry under high prior target difficulty and again find that information asymmetry moderates the asymmetry in target adjustments.

Our paper contributes to the literature in target setting by providing evidence that under controlled experimental conditions, asymmetric ratcheting is prevalent even without changes in

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[24] As we explained above, it may be that high information asymmetry may induce uncertainty about initial target difficulty at the beginning of the period. If this was the case, we would expect to see differences in participants' responses to the question of intended change of target difficulty between high and low information asymmetry conditions with respect to the *magnitude* and *variations*. However, neither the means (0.10 vs. 0.27, p = 0.60) nor the variances (p = 0.88) are significantly different between high and low information asymmetry.

market conditions. However, managers' perceived prior target difficulty mitigates the asymmetry to some degree. Additionally, we demonstrate that such mitigating effects may also depend on information asymmetry between the manager and salespersons. Thus, prior target difficulty may affect target adjustments only contingent on perceived information asymmetry. Finally, our paper also helps to understand the role of self-serving justification for target setting.

## Appendix A: Manipulation of Performance-to-target and Target Difficulty

**Target Achievement Previous Year**
In the previous year, both salespersons ("Salesperson A" and "Salesperson B") had a revenue target of 10 Million Euro. Both salespersons had the same target because both were operating in areas that had exactly the same expected market potential.

[*moderate prior target difficulty*]
In the previous year, you set a target of 10 Million Euro for each salesperson because this was your best guess and the average revenues that you expected to be achievable in this market situation. Thus, in your opinion, 10 Million Euro represented a moderate target difficulty for your salespersons.

[*high prior target difficulty*]
In the previous year, you set a target of 10 Million Euro for each salesperson because this represented a challenging revenue and was rather at the higher end of what would be achievable in this market situation. Thus, in your opinion, 10 Million Euro represented a high target difficulty for your salespersons.

[*exceeded target*]
In the last year, both salespersons have exceeded their target. Salesperson A realized a revenue of 13 Million Euro and Salesperson B realized a revenue of 11 Million Euro.

[*missed target*]
In the last year, both salespersons have missed their target. Salesperson A realized a revenue of 9 Million Euro and Salesperson B realized a revenue of 7 Million Euro.


**Compensation**
Salespersons receive a bonus if they meet or exceed the target. If a salesperson meets his/her target, s/he receives a bonus of 15,000 Euro. If a salesperson exceeds his/her target, s/he receives an additional bonus of 3 Euro for every 1,000 Euro of revenues above the target. If a salesperson misses his/her target, s/he receives no bonus.

*[exceeded target]*
That means, in the previous year, Salesperson A received a bonus of 24,000 Euro (15,000 + 3 * 3,000) and Salesperson B received a bonus of 18,000 Euro (15,000 + 3 * 1,000).
*[missed target]*
That means, in the previous year, both salespersons did not receive any bonus.
Your own success and career advancement strongly depend on the success of your sales unit. The higher the revenue generated by your salespersons in a year, the higher your own bonus in this year. Likewise, promotions strongly depend on how well you manage the sales unit. The higher the revenues generated, the better are your chances to be promoted.

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Note: In Experiment 1, we use Euro as the currency in the case material to accommodate the participants located in Europe. In Experiment 2, we change Euro to USD to accommodate the participants located in the U.S.

# Appendix B: Manipulation of Information Asymmetry

**The US 3D Printer Market**

Generally, there are two pieces of information that can contribute to the understanding of the 3D printer market potential. The first component is **general market trends and recent technology developments, which is publicly available and accessible to both the salespersons and you as a manager**. The second component is **the knowledge about the customers and their future plans about their production process.** This customer knowledge **is mainly accessible only to your salespersons** due to their direct contact with the customers.

*[high information asymmetry]*
You know from your past experience that for the understanding of the 3D printer market potential, it is **particularly important to know the customers and their future plans about their production processes**. Because this information is mainly accessible only to your salespersons due to their direct contact with the customers, **your salespersons have a better understanding about the market potential than you.**

*[low information asymmetry]*
You know from your past experience that for the understanding of the 3D printer market potential, it is **particularly important to know the general market trends and recent technology developments**. Because this information is publicly available, **you and your salespersons have a similar level of understanding about the market potential.**

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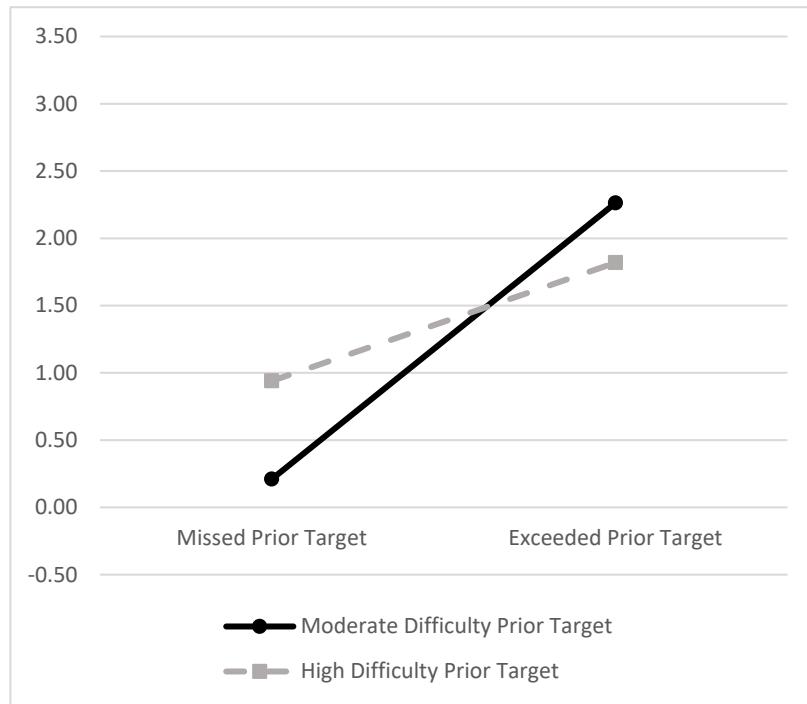
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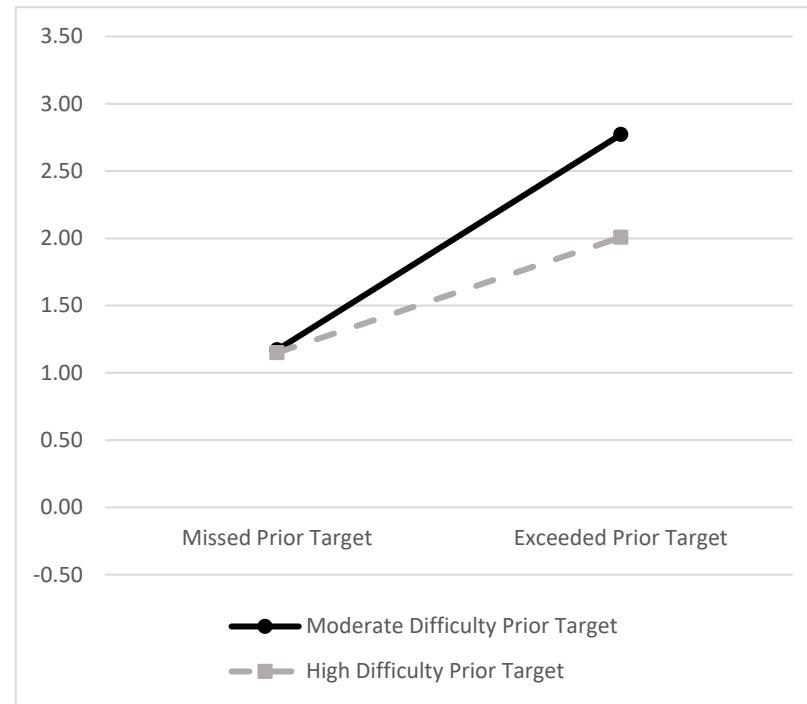
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**Figure 1. Experiment 1 and 2: Average Target Adjustment**

**Panel A. Experiment 1**

**Panel B. Experiment 2: Restricted Sample**
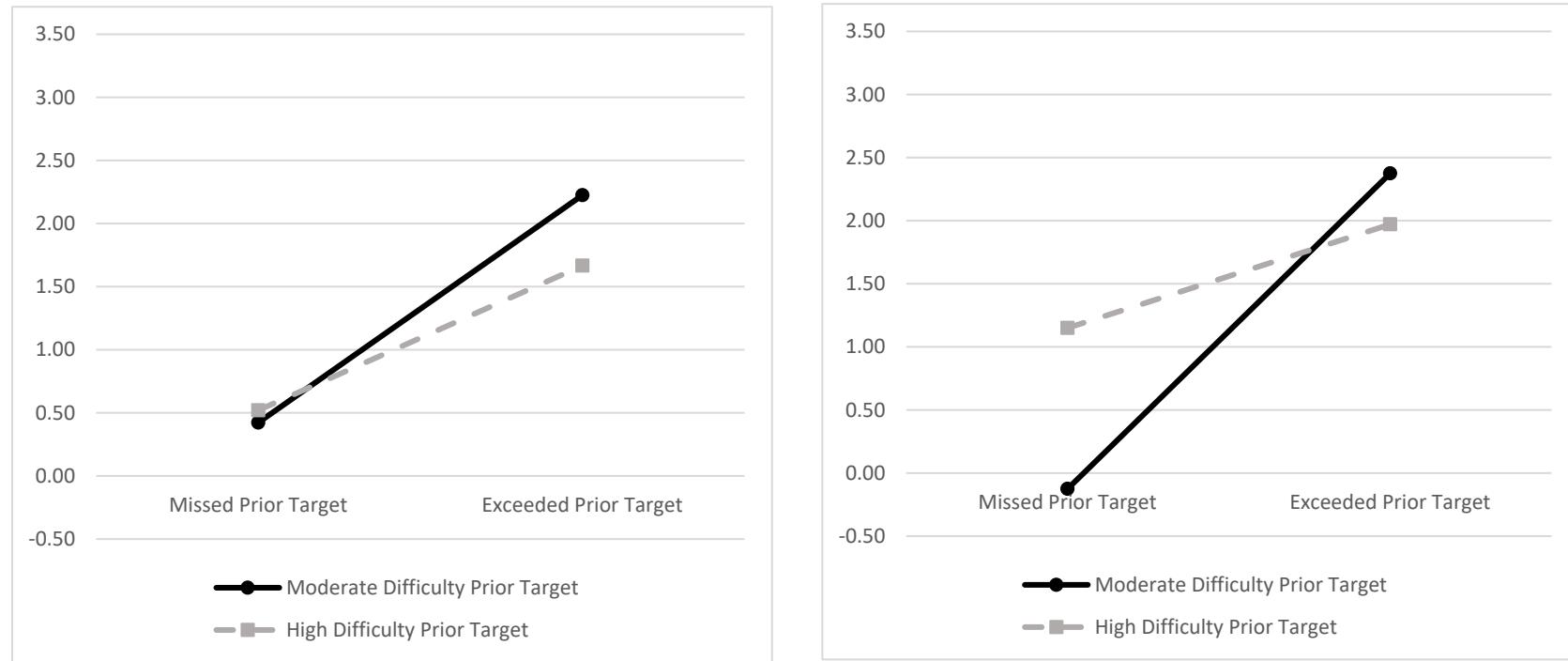


The figure displays average target adjustments of the weaker and the stronger performer per condition for Experiment 1 (Panel A) and Experiment 2 (Panel B). Prior targets are exceeded/missed when the stronger (weaker) performer has a realized performance in the prior period of 13 million /9 million (11 million /7 million). Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

Prior target difficulty is high/moderate when participants are informed that 10 million represented high/moderate target difficulty for their salespersons.

**Figure 2. Experiment 1: Average Target Adjustment Contingent on Perceived Information Asymmetry - EMBA Sample**

**Panel A. Subgroup with High Information Asymmetry Level    Panel B. Subgroup with Low Information Asymmetry Level**
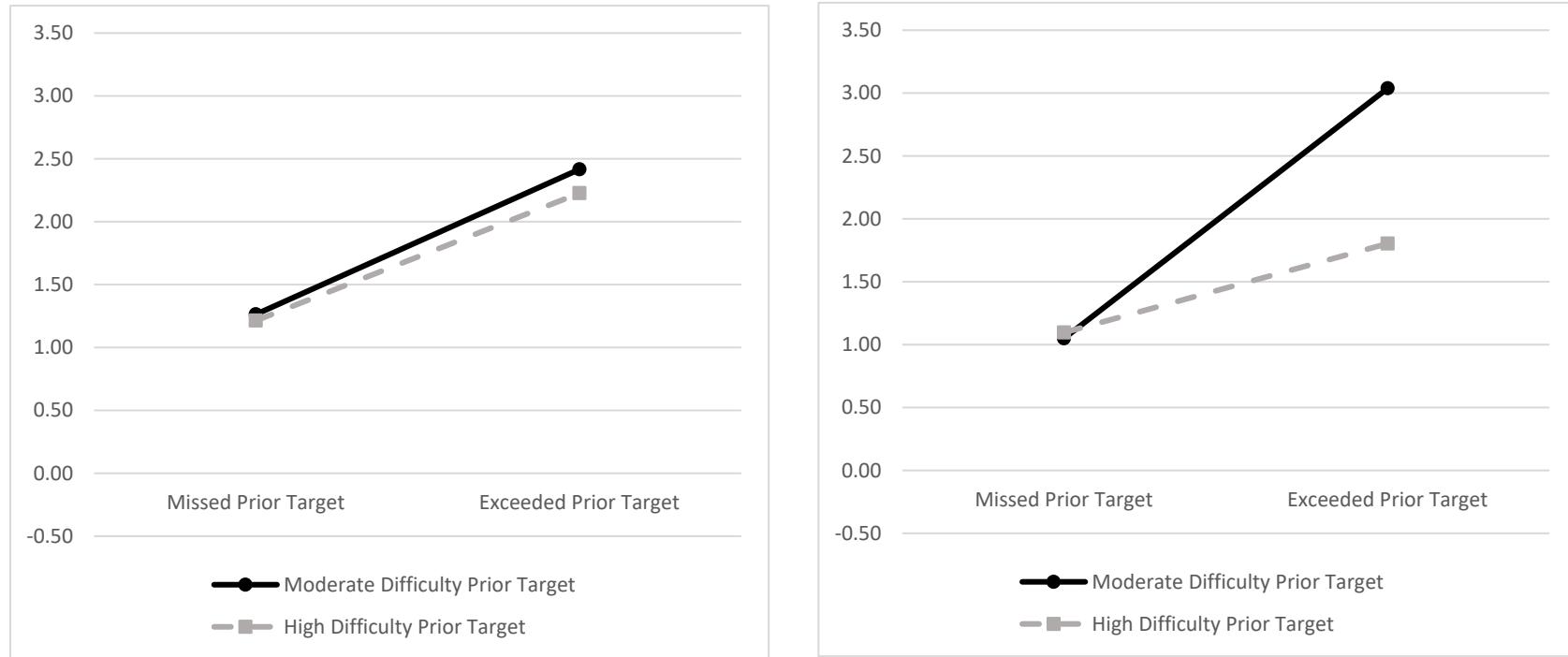


The figure displays average target adjustments of the weaker and the stronger performer per condition for Experiment 1.

Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

Information asymmetry level was measured by asking participants who they think knows the market potential better on an 11-point scale, with "-5" labeled "I know the market potential much better" and "+5" labeled "salespersons know the market potential much better." We obtain the two subsamples by splitting the sample at the median of 2.

**Figure 3. Experiment 2: Average Target Adjustment Contingent on Perceived Information Asymmetry – Restricted Prolific Sample**

**Panel A. Subgroup with High Information Asymmetry Level**    **Panel B. Subgroup with Low Information Asymmetry Level**
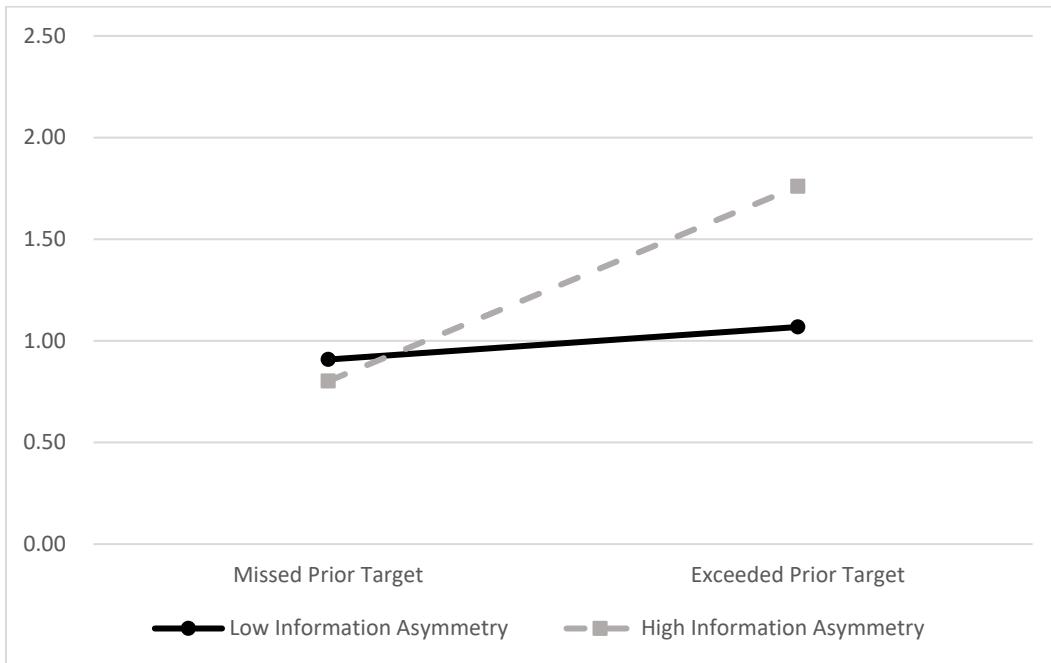


The figure displays average target adjustments of the weaker and the stronger performer per condition contingent on perceived information asymmetry with restricted Prolific sample for Experiment 2. The restricted sample was formed by removing eighty-four participants from the full sample who indicate their target setting experience is only less than or equal to one year.

Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

Information asymmetry level was measured by asking participants who they think knows the market potential better on an 11-point scale, with "-5" labeled "I know the market potential much better" and "+5" labeled "salespersons know the market potential much better." We obtain the two subsamples by splitting the sample at the median of 2.

**Figure 4. Experiment 4: Average Target Adjustment**



The figure displays average target adjustments of the weaker and the stronger performer per condition for Experiment 4.

Prior targets are exceeded/missed when the stronger (weaker) performer has a realized performance in the prior period of 13 million/9 million (11 million/7 million). Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

Information asymmetry is high when salespersons have a better understanding about the market potential than the manager, and is low when the manager and their salespersons have a similar level of understanding about the market potential.

**Table 1. Experiments 1 and 2: Descriptive Statistics**

**Panel A.** Experiment 1: Mean (Standard Deviation)

| | High Difficulty Prior Target | | Moderate Difficulty Prior Target | |
|---|---|---|---|---|
| | **Exceeded Prior Target** | **Missed Prior Target** | **Exceeded Prior Target** | **Missed Prior Target** |
| Target level stronger performer | 12.18 (1.75) | 9.46 (0.79) | 12.83 (1.58) | 9.99 (0.89) |
| Target level weaker performer | 11.46 (1.30) | 8.66 (1.00) | 11.69 (1.20) | 9.59 (0.89) |
| Target adjustment stronger performer | 2.18 (1.75) | 0.54 (0.79) | 2.83 (1.58) | 0.01 (0.89) |
| Target adjustment weaker performer | 1.46 (1.30) | 1.34 (1.00) | 1.69 (1.20) | 0.41 (0.89) |
| Average Target Adjustment | 1.82 (1.46) | 0.94 (0.77) | 2.26 (1.31) | 0.21 (0.82) |
| No. of observations | 18 | 15 | 16 | 18 |

**Panel B.** Experiment 2: Full Sample - Mean (Standard Deviation)

| | High Difficulty Prior Target | | Moderate Difficulty Prior Target | |
|---|---|---|---|---|
| | **Exceeded Prior Target** | **Missed Prior Target** | **Exceeded Prior Target** | **Missed Prior Target** |
| Target level stronger performer | 12.57 (2.26) | 9.28 (0.85) | 12.81 (2.61) | 9.35 (0.94) |
| Target level weaker performer | 11.42 (1.45) | 8.50 (1.14) | 11.64 (1.78) | 8.53 (1.27) |
| Target adjustment stronger performer | 2.57 (2.26) | 0.72 (0.85) | 2.81 (2.61) | 0.65 (0.94) |
| Target adjustment weaker performer | 1.42 (1.45) | 1.50 (1.14) | 1.64 (1.78) | 1.47 (1.27) |
| Average Target Adjustment | 1.99 (1.79) | 1.11 (0.90) | 2.23 (2.14) | 1.06 (1.00) |
| No. of observations | 50 | 43 | 59 | 41 |

**Panel C.** Experiment 2: Restricted Sample - Mean (Standard Deviation)

| | High Difficulty Prior Target | | Moderate Difficulty Prior Target | |
|---|---|---|---|---|
| | **Exceeded Prior Target** | **Missed Prior Target** | **Exceeded Prior Target** | **Missed Prior Target** |
| Target level stronger performer | 12.57 (2.37) | 9.23 (0.78) | 13.43 (2.69) | 9.26 (0.81) |
| Target level weaker performer | 11.45 (1.61) | 8.47 (1.21) | 12.11 (1.86) | 8.40 (1.19) |
| Target adjustment stronger performer | 2.57 (2.37) | 0.77 (0.78) | 3.43 (2.69) | 0.74 (0.81) |
| Target adjustment weaker performer | 1.45 (1.61) | 1.53 (1.21) | 2.11 (1.86) | 1.60 (1.19) |
| Average Target Adjustment | 2.01 (1.91) | 1.15 (0.90) | 2.77 (2.23) | 1.17 (0.89) |
| No. of observations | 27 | 24 | 35 | 23 |

The table reports average target adjustments of the weaker and the stronger performer per condition for Experiment 1 (Panel A) and Experiment 2 (Panels B and C). Panel B includes the full sample from Experiment 2. Panel B includes the restricted sample from Experiment 2. The restricted sample was formed by removing eighty-four participants from the full sample who indicate their target setting experience is only less than or equal to one year. Prior targets are exceeded/missed when the stronger (weaker) performer has a realized performance in the prior period of 13 million /9 million (11 million /7 million).

Prior target difficulty is high/moderate when participants are informed that 10 million represented high/moderate target difficulty for their salespersons.

Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

**Table 2. Experiment 1 and 2: Effect of Exceeding Targets and Target Difficulty on Target Adjustment**

| Coefficient (Standard Error) | Experiment 1 (EMBA) | Experiment 2 (Prolific) | |
|---|---|---|---|
| | **Model 1** | **Model 2 Full Sample** | **Model 3 Restricted sample** |
| Constant | 0.21 | 1.06 | 1.17 |
| | (0.19) | (0.15) | (0.18) |
| | p=0.28 | p<0.01*** | p<0.01*** |
| High Difficulty | 0.73 | 0.05 | -0.02 |
| | (0.27) | (0.21) | (0.26) |
| | p=0.01*** | p=0.82 | p=0.94 |
| Exceed | 2.05 | 1.17 | 1.60 |
| | (0.38) | (0.32) | (0.42) |
| | p<0.01*** | p<0.01*** | p<0.01*** |
| High Difficulty*Exceed | -1.17 | -0.28 | -0.74 |
| | (0.54) | (0.43) | (0.58) |
| | p=0.02** | p=0.26 | p=0.10* |
| Adj. $R^2$ | 0.29 | 0.08 | 0.13 |
| N | 134 | 386 | 218 |
| Simple Effect Exceed when High Difficulty = 0 | 2.05 p<0.01*** | 1.17 p<0.01*** | 1.60 p<0.01*** |
| Simple Effect Exceed when High Difficulty = 1 | 0.88 p=0.03** | 0.89 p<0.01*** | 0.86 p=0.04** |

The table reports results of an OLS regression with *target adjustments* for both the stronger and weaker performers as the dependent variable in Experiment 1 and 2 respectively. Experiment 1 uses the EMBA sample. Experiment 2, Model 1 includes the full Prolific sample. Experiment 2, Model 2 includes the restricted Prolific sample.
Standard errors are clustered at the participant level. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$; p-levels are one-tailed for directional predictions and two-tailed otherwise.

*High Difficulty* is an indicator variable equal to 1 when the prior target difficulty is high and 0 when it is moderate.

*Exceed* is an indicator variable equal to 1 when the prior target is exceeded and 0 when it is missed.

**Table 3. Experiment 1 and 2: Sample Split Based on Information Asymmetry Level - Effect of Exceeding Targets and Target Difficulty on Target Adjustment**

| Coefficient (Standard Error) | Experiment 1 (EMBA) | | Experiment 2 (restricted Prolific) | |
|---|---|---|---|---|
| | **Model 1** **High Perceived Asymmetry Sample** | **Model 2** **Low Perceived Asymmetry Sample** | **Model 3** **High Perceived Asymmetry Sample** | **Model 4** **Low Perceived Asymmetry Sample** |
| Constant | 0.42 | -0.13 | 1.26 | 1.05 |
| | (0.22) | (0.32) | (0.22) | (0.32) |
| | p=0.07* | p=0.70 | p<0.01*** | p<0.01*** |
| High Difficulty | 0.10 | 1.28 | -0.05 | 0.05 |
| | (0.30) | (0.41) | (0.31) | (0.43) |
| | p=0.75 | p<0.01*** | p=0.87 | p=0.91 |
| Exceed | 1.80 | 2.50 | 1.15 | 1.99 |
| | (0.40) | (0.91) | (0.47) | (0.66) |
| | p<0.01*** | p<0.01*** | p=0.01*** | p<0.01*** |
| High Difficulty*Exceed | -0.66 | -1.68 | -0.14 | -1.28 |
| | (0.55) | (1.13) | (0.77) | (0.86) |
| | p=0.13 | p=0.07* | p=0.43 | p=0.07* |
| Adj. $R^2$ | 0.35 | 0.28 | 0.11 | 0.15 |
| N | 74 | 60 | 104 | 114 |
| Simple Effect Exceed when High Difficulty = 0 | 1.80 p<0.01*** | 2.50 p<0.01*** | 1.15 p=0.02** | 1.99 p=0.01*** |
| Simple Effect Exceed when High Difficulty = 1 | 1.15 p=0.01*** | 0.82 p=0.23 | 1.01 p=0.11 | 0.71 p=0.20 |

The table reports results of OLS regressions with *target adjustments* for both the stronger and weaker performers as the dependent variable for the High (Model 1 and 3) and Low (Model 2 and 4) Perceived Asymmetry Sample in Experiment 1 and 2 respectively. Experiment 1 uses the EMBA sample. Experiment 2 uses the restricted Prolific sample.

Standard errors are clustered at the participant level. * p ≤ 0.10; ** p ≤ 0.05; *** p ≤ 0.01; p-levels are one-tailed for directional predictions and two-tailed otherwise.

*High Difficulty* is an indicator variable equal to 1 when the prior target difficulty is high and 0 when it is moderate.

*Exceed* is an indicator variable equal to 1 when the prior target is exceeded and 0 when it is missed.

Information asymmetry level was measured by asking participants who they think knows the market potential better on an 11-point scale, with "-5" labeled "I know the market potential much better" and "+5" labeled "salespersons know the market potential much better." We obtain the two subsamples by splitting the sample at the median of 2.

**Table 4. Experiment 3: Prolific Sample**

Mean (Standard Deviation)

| | No Factor Listing | | Factor Listing | |
|---|---|---|---|---|
| | **Exceeded Prior Target** | **Missed Prior Target** | **Exceeded Prior Target** | **Missed Prior Target** |
| Recurring | 1.24 | 0.27 | 1.30 | 0.89 |
| | (2.40) | (2.43) | (1.82) | (2.49) |
| Number - listed recurring factors | N/A | N/A | 3.19 | 3.02 |
| | | | (1.42) | (1.50) |
| Number - listed non-recurring factors | N/A | N/A | 2.64 | 2.78 |
| | | | (1.63) | (1.56) |
| Difference - numbers of factors | N/A | N/A | 0.55 | 0.23 |
| | | | (0.88) | (0.76) |
| Difficulty - recurring factors | N/A | N/A | 4.89 | 5.26 |
| | | | (2.31) | (2.62) |
| Difficulty - non-recurring factors | N/A | N/A | 5.89 | 5.11 |
| | | | (2.38) | (2.32) |
| Difference - difficulty in listing factors | N/A | N/A | -1.00 | 0.15 |
| | | | (2.13) | (3.12) |
| Target adjustment stronger performer | 2.45 | 0.84 | 2.15 | 0.33 |
| | (2.01) | (0.93) | (2.12) | (1.69) |
| Target adjustment weaker performer | 1.54 | 1.32 | 1.55 | 0.99 |
| | (1.47) | (1.14) | (2.01) | (1.86) |
| Average Target Adjustment | 2.00 | 1.08 | 1.85 | 0.66 |
| | (1.67) | (0.96) | (2.03) | (1.73) |
| No. of observations | 46 | 44 | 47 | 47 |

The table reports the *Recurring* measure, the number of recurring and non-recurring factors listed by the participants and the associated difficulty participants perceived (only applicable in the factor listing condition), and average target adjustments of the weaker and the stronger performer per condition for Experiment 3.
Prior targets are exceeded/missed when the stronger (weaker) performer has a realized performance in the prior period of 13 million/9 million (11 million/7 million).
*Recurring* is measured by asking participants to indicate whether they think both salespersons exceeding/missing their prior year's targets was rather due to recurring or non-recurring factors on an 11-point scale, with "-5" labeled " completely due to non-recurring factors" and "+5" labeled " completely due to recurring factors."
Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

**Table 5. Experiment 3: Prolific Sample - Effect of Exceeding Targets and Factor Listing on Recurring and Target Adjustment**

| Coefficient (Standard Error) | Experiment 3 | |
| --- | --- | --- |
| | **Model 1**<br>**Recurring as Dependent Variable** | **Model 2**<br>**Target Adjustment as Dependent Variable** |
| Constant | 0.27 | 1.08 |
| | (0.35) | (0.14) |
| | p=0.43 | p<0.01*** |
| Listing | 0.62 | -0.42 |
| | (0.48) | (0.29) |
| | p=0.20 | p=0.15 |
| Exceed | 0.97 | 0.92 |
| | (0.48) | (0.28) |
| | p=0.02** | p<0.01*** |
| Listing*Exceed | -0.56 | 0.28 |
| | (0.68) | (0.48) |
| | p=0.41 | p=0.57 |
| Adj. $R^2$ | 0.03 | 0.09 |
| N | 184 | 368 |
| Simple Effect Exceed when Listing = 0 | 0.97<br>p=0.02** | 0.92<br>p<0.01*** |
| Simple Effect Exceed when Listing = 1 | 0.40<br>p=0.19 | 1.19<br>p<0.01*** |

The table reports results of OLS regressions with *recurring* (Model 1) and *target adjustments* for both the strong and weaker performers (Model 2) as the dependent variable. Standard errors are clustered at the participant level in Model 2. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$; p-levels are one-tailed for directional predictions and two-tailed otherwise. Model 1 includes the full Prolific sample. Model 2 includes the restricted Prolific sample.

*Listing* is an indicator variable equal to 1 when participants are in the factor listing condition and 0 when not.

*Exceed* is an indicator variable equal to 1 when the prior target is exceeded and 0 when it is missed.

**Table 6. Experiment 4: Prolific Sample**

Mean (Standard Deviation)

| | High Information Asymmetry | | Low Information Asymmetry | |
|---|---|---|---|---|
| | **Exceeded Prior Target** | **Missed Prior Target** | **Exceeded Prior Target** | **Missed Prior Target** |
| Target level stronger performer | 12.11 (1.95) | 9.41 (0.77) | 11.26 (1.66) | 9.41 (1.34) |
| Target level weaker performer | 11.41 (1.78) | 8.99 (1.10) | 10.88 (1.17) | 8.77 (1.14) |
| Target adjustment stronger performer | 2.11 (1.95) | 0.59 (0.77) | 1.26 (1.66) | 0.59 (1.34) |
| Target adjustment weaker performer | 1.41 (1.78) | 1.01 (1.10) | 0.88 (1.17) | 1.23 (1.14) |
| Average Target Adjustment | 1.76 (1.78) | 0.80 (0.88) | 1.07 (1.38) | 0.91 (1.16) |
| No. of observations | 41 | 40 | 36 | 31 |

The table reports average target adjustments of the weaker and the stronger performer per condition for Experiment 4.

Prior targets are exceeded/missed when the stronger (weaker) performer has a realized performance in the prior period of 13 million/9 million (11 million/7 million).

Information asymmetry is high when salespersons have a better understanding about the market potential than the manager, and is low when the manager and their salespersons have a similar level of understanding about the market potential.

Target adjustment stronger (weaker) performer is equal to the new target level of the stronger (weaker) performance less the prior target level, i.e., 10 million, when prior targets are exceeded and reversing the equation when prior targets are missed. Average target adjustment is the average of the stronger performer's target adjustment and the weaker performer's target adjustment.

**Table 7. Experiment 4: Prolific Sample - Effect of Exceeding Targets and Information Asymmetry on Target Adjustment**

| Coefficient (Standard Error) | Experiment 4 |
|---|---|
| Constant | 0.80 |
| | (0.14) |
| | p<0.01*** |
| Low Asymmetry | 0.11 |
| | (0.25) |
| | p=0.67 |
| Exceed | 0.96 |
| | (0.31) |
| | p<0.01*** |
| Low Asymmetry *Exceed | -0.80 |
| | (0.44) |
| | p=0.04** |
| Adj. $R^2$ | 0.07 |
| $N^a$ | 296 |
| Simple Effect Exceed when Low Asymmetry = 0 | 0.96 p<0.01*** |
| Simple Effect Exceed when Low Asymmetry = 1 | 0.16 p=0.61 |

The table reports results of an OLS regression with *target adjustments* for both the stronger and weaker performers as the dependent variable. Standard errors are clustered at the participant level. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$; p-levels are one-tailed for directional predictions and two-tailed otherwise.

*Low Asymmetry* is an indicator variable equal to 1 when information asymmetry is low and 0 when it is high.

*Exceed* is an indicator variable equal to 1 when the prior target is exceeded and 0 when it is missed.