Strategic Management Journal
Strat. Mgmt. J., **38**: 1435–1454 (2017)
Published online EarlyView 1 November 2016 in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/smj.2556
Received 2 October 2014; *Final revision received 11 April 2016*

CONFLICT INSIDE AND OUTSIDE: SOCIAL COMPARISONS AND ATTENTION SHIFTS IN MULTIDIVISIONAL FIRMS

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Research summary: *Behavioral Theory highlights the crucial role of social comparisons in attention allocation in adaptive aspirations. Yet, both the specification of social reference points and the dynamics of attention allocation have received little scholarly examination. We address performance feedback from two social reference points relative to divisions in multidivisional firms: economic reference point and political reference point. Comparing divisional performance with the two reference points can give consistent or inconsistent feedback, which has important consequences for the dynamics of attention allocation in adaptive aspirations. We find consistent feedback leads to more attention to own experience, while inconsistent feedback results in more attention to the social reference point the focal division underperforms. Results reveal that political reference point plays an important role in determining managerial attention allocation.*

Managerial summary: *This article is based on how goal-based performance of divisions relative to both their relevant external market rivals and sister divisions in multidivisional firms influences corporate resource allocation. As a result, various combinations of performance against the two groups of peers drive the reallocation of divisional management attention. We show that specific attention shifts occur on average as a function of the focal division's performance relative to the marketplace performance* and *that of sister divisions.*

INTRODUCTION

A central tenet of the Behavioral Theory of the Firm (BTOF) is that performance feedback directs how organizations learn and adapt (Cyert and March, 1963). The generalized model of performance feedback depends on a satisfactory performance level—referred to as *the aspiration level*—against which an organization compares its actual performance. According to BTOF (Cyert and March, 1963), organizations adapt their aspirations based on historical comparisons with their own experience (i.e., prior aspiration and prior performance) and social comparisons with others' experience (i.e., others' performance). That is,

Keywords: adaptive aspirations; social comparison; political coalition; attention allocation; multidivisional firms
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organizations allocate attention to these different reference points when adapting their aspirations. While own experience is generally well defined, there is considerable ambiguity in the specification of social reference groups, a crucial but largely neglected source of firm heterogeneity (e.g., Massini, Lewin, and Greve, 2005; Washburn and Bromiley, 2012).

We focus on social comparisons and the related feedback from social reference points in adaptive aspirations. Notwithstanding the well recognized importance of social comparisons in adaptive aspirations, the selection of social reference groups remains underexplored and lacks theoretical development. Extant empirical studies (e.g., Audia and Greve, 2006; Baum and Dahlin, 2007; Greve, 1998; Miller and Chen, 2004) have largely assumed an entire population of external marketplace competitors as the reference group, which we call the *economic reference group*, and the mean or median performance of this reference group as the social reference point, which we call the *economic reference point*. This simplified specification of a single reference group has provided important insights. However, recent studies (e.g., Massini *et al.,* 2005; Moliterno, Beck, and Beckman, 2014; Washburn and Bromiley, 2012) have questioned this and called for a more careful specification of social reference groups to increase the precision and realism of performance feedback models. Furthermore, the firm-level aspiration has been the focus of these studies whereas firms can have different aspirations across different levels of an organizational hierarchy (March and Simon, 1958), with varying implications for adaptation of business units or divisions within the firm (Gaba and Joseph, 2013; Vissa, Greve, and Chen, 2010).

We extend the study of attention allocation in adaptive aspirations to divisions of multidivisional firms by introducing a second social reference group, consisting of sister divisions that compete for corporate resources, in addition to the economic reference group[1]. With varying degrees of centralization (or alternatively divisional autonomy), multidivisional firms feature headquarters that allocate resources among divisions and divisions that focus on business-level strategy, implementation, and operations (Chandler, 1962; Williamson, 1975). While corporate strategy often dictates that divisions or business units are designed to create synergies from sharing capabilities and resources such as manufacturing or distribution (Ansoff, 1965; Collins and Montgomery, 1997), it is well established that competition for corporate resources among divisions of multidivisional firms exists. Depending on the particular firm and the degree of centralization, this internal competition may vary in intensity. Following March (1962), and Cyert and March (1963), we model the overall firm as a conflict management system or political coalition of members with different preference functions[2]. Cyert and March (1963) explicitly state that complete goal consistency among the different coalition members is generally not achievable: "Except at the level of nonoperational objectives, there is no internal consensus. The procedures for 'resolving' such conflict do not reduce all goals to a common dimension or even make them obviously internally consistent" (Cyert and March, 1963: 117).

We submit that the management teams of different divisions within a multidivisional firm represent different coalition members with divergent preference functions. They often manipulate information, misdiagnose problems, and devise solutions in ways that reinforce their power and importance relative to other members of the coalition (March, 1988; Pfeffer, 1992). They also resort to various "influence activities" to win more favorable treatment from the corporate office, for instance, in budget allocation, human resources, and new product introduction (Lechner and Floyd, 2012; Milgrom and Roberts, 1988). Getting a larger share of corporate resources means increased prestige for division managers and more resources to invest in division projects. This results in a second social reference group for each division, the *political reference group* consisting of sister divisions, and the associated *political reference point* representing the performance of sister divisions.

It is important to incorporate both economic and political reference points into division-level adaptive aspirations of multidivisional firms, since

[1] In this study, we do not differentiate between "divisions" and "business units" or other similar terminology; similarly, we do not differentiate between "multidivisional firms" and "diversified firms."

[2] For those unfamiliar with the concept of a political coalition, a reasonable example is the Democratic Party in the USA. As a political coalition, this party consists largely of union members, the poor, teachers, single women, government workers, minorities, college professors, and young voters. These groups have different goals and interests on some important issues, but cooperate in a manner that benefits all to some degree.

DOI: 10.1002/smj

division managers compete for both marketplace success in terms of market share and profits, and political success in terms of securing corporate resources. Without marketplace success, it becomes more difficult to compete politically for corporate resources; and without adequate corporate resources, it is more challenging to compete economically for market share and profits. Hence, division managers must simultaneously consider both social comparisons when adapting their aspirations at the division level. This raises the possibility of *consistent feedback* from comparing performance with both social reference points (the focal division outperforming or underperforming both) or *inconsistent feedback* (the focal division outperforming one and underperforming the other).

The present article examines how consistent and inconsistent feedback from social comparisons with the economic and political reference points affects the dynamics of divisional attention allocation in adaptive aspirations. We develop hypotheses for this issue and test them using a longitudinal dataset from the German magazine industry. The analysis reveals an interesting mix of economic and political behavior with regard to attention allocation in adaptive aspirations. Specifically, our results suggest that consistent feedback from the two social comparisons directs divisions to allocate more attention to their own experience (prior aspiration and prior performance), whereas inconsistent feedback leads divisions to allocate more attention to the social reference point that they underperform.

Our study makes several theoretical contributions and has some practical implications. First, we reemphasize the political coalition theory of the firm (Cyert and March, 1963; March, 1962). The BTOF views the firm as a political coalition resulting from the quasi-resolution of conflict among different coalition members with divergent preferences, yet this theoretical view has rarely been subject to empirical examination, especially in terms of its tight link with adaptive aspirations (Gavetti *et al.,* 2012). Studying social comparison with a political reference point allows us to integrate important aspects of the political coalition view into the model of adaptive aspirations at the division level. Second, our investigation of attention allocation dynamics in adaptive aspirations contributes to a better understanding of aspiration formation and updating. This further raises the opportunity to develop a more complete theory of attention allocation, in conjunction with the attention-based view of the firm (Ocasio, 1997). Finally, we suggest some general practices with regard to managerial attention allocation.

We start with a review of the relevant literature on adaptive aspirations, political coalitions, and performance feedback. We next develop three hypotheses that relate the dynamics of attention allocation in adaptive aspirations to performance feedback from social comparisons. Then, we elaborate on the empirical setting, methodology, and results. Finally, we discuss some implications of our findings.

RELEVANT LITERATURE

Adaptive aspirations

An aspiration level plays a key role when an organization categorizes its performance as a success or failure, which further directs organizational behavior such as search and change (Greve, 2003c). Building on *A Behavioral Theory of Firm* (Cyert and March, 1963: 123), an organization adapts its aspiration based on own prior aspiration, own prior performance, and prior performance of social reference group(s)[3]. Organizations allocate relative attention to these reference points when adapting aspirations. The amount of relative attention is represented by the weights of these reference points in the adaptive aspiration formula. The larger the weight of a reference point, the more relative attention it receives, and the more sensitive the organization is to that reference point. Furthermore, own prior aspiration and prior performance are generally well defined as they are based on the focal organization's experience. However, there is considerable ambiguity in the specification of social reference groups.

Such ambiguity in the selection and the number of relevant social reference groups complicates the monitoring and interpretation of others' experience (Audia and Brion, 2007). It is widely acknowledged that the value of others' experience for learning depends on comparability between the focal and other organizations, for instance, whether they belong to the same strategic group (McNamara, Deephouse, and Luce, 2003) or have a shared category membership (Durand and Paolella, 2013).

[3] Since this is a recursive, path-dependent process, all prior values of the variables in Cyert and March's (1963: 123) aspiration adaptation formula are reflected to a greater or lesser degree in the current aspiration level.

DOI: 10.1002/smj

However, the standard reference group used in the extant empirical research on organizational aspirations is the economic reference group consisting of all external market rivals with whom the focal organization competes for market share and profits. This economic reference group is the sole reference group used in the vast majority of empirical studies of adaptive aspirations (e.g., Baum and Dahlin, 2007; Baum *et al.,* 2005; Greve, 2003a; Mezias, Chen, and Murphy, 2002).

There is a growing interest in considering multiple and more precise specifications of social reference groups in the aspiration literature, ranging from innovating and imitating reference groups (Massini *et al.,* 2005), internal and external reference groups (Arrfelt, Wiseman, and Hult, 2013; Blettner *et al.,* 2015; Kacperczyk, Beckman, and Moliterno, 2015), upward and downward reference groups (Moliterno *et al.,* 2014), to competitive and striving reference groups (Labianca *et al.,* 2009). Moreover, although the literature predominantly focuses on the firm-level aspiration, a few recent studies (Gaba and Joseph, 2013; Vissa *et al.,* 2010) have shown that aspirations at other levels of the overall firm have important implications for learning, search behavior, and decision making.

The current study examines two social reference groups (and the two associated social reference points) relative to each division in a multidivisional firm when adapting divisional aspirations: the economic reference group and the political reference group.

Multidivisional firms as political coalitions

March (1962) introduced the concept of the firm as a political coalition or conflict management system resulting from the quasi-resolution of conflict among different members with divergent preference functions. However, since the original work there has been little research on the firm as a political coalition, especially in terms of its tight link with adaptive aspirations (Gavetti *et al.,* 2012). This is surprising given the importance attached to this view of the firm as a political coalition in the seminal book *A Behavioral Theory of the Firm* (Cyert and March, 1963).

The divisional organization structure has become increasingly favored by business firms, and consequently, received a large number of scholarly investigations (e.g., Chandler, 1962; Gaba and Joseph, 2013; Siggelkow and Rivkin, 2005; Vissa *et al.,* 2010; Williamson, 1975). Divisions and division managers in multidivisional firms tend to differ in preferences and goals, resulting in internal conflict within the firm. On the one hand, to succeed, business-level strategies play an important role in creating competitive advantages for divisions that often compete in different markets or market segments. On the other hand, to grow, divisions rely on allocation of resources from corporate-level management that monitors, evaluates, and rewards their performance to varying degrees.

There is generally no corporate allocation of resources that will satisfy the preferences of all division managers in a multidivisional firm. As a result, the political conflict is never fully resolved (March, 1962)[4]. Readers are urged to consider the parallel situation of the preference functions of department chairs in a business school relative to resource allocation by the Dean's office. Recently, in an interesting paper, Arrfelt *et al.* (2013) develop an integrated behavioral framework of corporate resource allocation. They find that social feedback from comparing business units with their sister business units compromises the efficiency of internal capital market view of Williamson (1975). For instance, corporate management tends to overinvest in business units that underperform sister business units, though such overinvestment in low-performing business units may further hurt their performance (Arrfelt *et al.,* 2015). This highlights the importance of social comparison with the political reference group (sister divisions) in adaptive aspirations for any division of a multidivisional firm. Thus, it is important to include the political reference point as another key reference point in adapting divisional aspirations.

Social comparisons and attention allocation dynamics

Many scholars have studied social comparisons in adaptive aspirations and performance feedback

[4] Cyert and March (1963) develop a theory of coalition formation, based on shared objectives through bargaining. Without formation of a coalition, the firm would be unable to adapt. The coalition is maintained by side payments from organizational slack in many forms: "money, personal treatment, authority, organization policy, and so forth" (Cyert and March, 1963: 29). We will not treat slack in the article since it is generally impossible to measure rather intangible items of slack such as "personal treatment," "authority," and "organization policy." We focus on adaptive aspirations. In this regard, we consider performance against the political reference point to be an important determinant of division managers' bargaining power vis-à-vis other division managers in the coalition.

models (e.g., Baum and Dahlin, 2007; Baum *et al.,* 2005; Greve, 2003c; Mezias *et al.,* 2002). These studies have greatly enhanced our understanding of aspirations, yet generally assumed *homogeneity* of attention allocation in adaptive aspirations across organizations and across time within organizations, that is, the attention allocated to any of the different reference points in the adaptive aspiration formula is the same for all organizations and stable over time. Cyert and March (1992: 173) suggest that the attention coefficients should not be fixed, and they anticipate a model in which these coefficients vary over time. Recently, Washburn and Bromiley (2012: 913) also state that "models of aspiration levels should allow for differential influences of performance and social comparison depending on the relation between individual performance and social comparison." In short, attention allocation should be allowed to vary across firms, and more emphasis should be placed on social comparisons when studying adaptive aspirations.

Social comparisons with multiple reference groups can lead to consistent or inconsistent feedback. For example, comparing performance with both the economic and political reference points, a division can outperform one and underperform the other. This represents inconsistent feedback. Such inconsistent feedback may introduce ambiguity in performance interpretation that can result in managerial confusion and lack of direction (Ethiraj and Levinthal, 2009; Jensen, 2001), and complicate subsequent attention allocation and decision making (Audia and Brion, 2007).

We contribute to this literature by investigating attention allocation to multiple reference points (i.e., own experience and experience of the two social reference groups) in forming an overall aspiration level. Specifically, we examine how divisions in multidivisional firms shift their attention in response to feedback from social comparisons with the economic and the political reference points. The consistency and inconsistency in feedback from social comparisons are important issues for divisions of multidivisional firms since they are competing economically for profits and market share, and politically for corporate resources and prestige.

We now turn to our hypotheses on how consistent and inconsistent feedback from social comparisons affects the dynamics of attention allocation in adaptive aspirations.

THEORY DEVELOPMENT AND HYPOTHESES

Consistent feedback from social comparisons includes two cases. First is when comparisons with both economic and political reference points indicate that the focal division outperforms these two reference points, which we term *consistent feedback above both social reference points*[5]. The other case is when the focal division underperforms both reference points, which we term *consistent feedback below both social reference points*. We discuss attention shifts in adaptive aspirations for the two scenarios of consistent feedback separately.

Consistent feedback *above* both social reference points

When a division in a multidivisional firm receives consistent feedback above both economic and political reference points, it indicates that the division has both external legitimacy with regard to market competitors and internal legitimacy relative to sister divisions (DiMaggio and Powell, 1983). This translates into economic and political power for attracting and retaining critical corporate resources, *everything else being equal*. Thus, when a division experiences consistent feedback above both social reference points, it provides division managers with a reliable signal of success and the associated bargaining power in the corporate resource allocation process. In this case, division mangers may have little motivation to learn from the social reference groups because they tend to consider these groups less relevant given that there is little apparent value to learn from lower-performing social reference groups. Thus, they are likely to shift attention from both social reference groups (Ocasio, 1997).

On the other hand, division mangers tend to have higher motivation to learn from own experience when receiving consistent feedback above both social reference points. There are several reasons. First, due to self-serving bias (Levitt and

[5] We choose not to use terms "positive feedback" and "negative feedback" since these refer to the feedback loop literature of dynamic modeling in the social sciences (e.g., Sterman, 2000), and similar literature in the hard sciences and engineering. In the social science context, positive feedback implies that success breeds more success and failure breeds more failure, while negative feedback means the unit or system returns to equilibrium when displaced.

DOI: 10.1002/smj

March, 1988; Salancik and Meindl, 1984), division managers tend to attribute past successes of the division to their own strategic actions and special skills, and consequently, believe that the division's current competence repertoire is excellent and that the trajectory of strategies and activities is favorable (Milliken and Lant, 1991). As a result, managers will be more likely to foster local search and exploitative learning by persisting with current strategies, activities, and products (Baum and Dahlin, 2007). In addition, outperforming both social reference points may increase the division managers' confidence and produce an upward striving goal (Baum and Lant, 2003; Collins, 1996; Lant, 1992; Levinthal and March, 1981). The excess resource allocation likely produced by such superior performance will allow the division managers to increase internal search or exploration to potentially fulfill the upward striving goal (Cyert and March, 1963). Hence, when receiving consistent feedback above both social reference points, division managers will shift more attention to their own experience.

These arguments jointly suggest that, in the context of adaptive aspirations, division managers will pay relatively more attention to their own experience (prior aspiration and prior performance) when they receive consistent feedback above both social reference points. Thus, we elaborate the first hypothesis:

> *Hypothesis 1: If there is consistent social feedback that a division in a multidivisional firm outperforms both the economic reference point and the political reference point, the division will subsequently allocate relatively more attention to its own experience when forming the future aspiration.*

Consistent feedback *below* both social reference points

Consistent feedback below both social reference points may serve as a powerful signal of divisional underperformance, and likely creates a double threat and stimulates more extensive problemistic search (Cyert and March, 1963; Joseph and Gaba, 2015). On the one hand, division managers are likely motivated to attend to others' experience. This is because consistent feedback below both social reference points confirms managerial concerns that the focal division's current strategy is not working and that its own experience provides inadequate guidance for dealing with the new situation (Baum and Dahlin, 2007). As a result, division managers may attend to others' actions and outcomes to reduce uncertainty and determine their future course of action (Chuang and Baum, 2003; Miner and Haunschild, 1995).

On the other hand, however, BTOF suggests that division managers may instead focus more on their own experience when facing underperformance. Consistent feedback below both social reference points indicates the focal division's declining political power and status within the family of sister divisions and its slipping competitive positions relative to market competitors. This mounting pressure regarding negative internal evaluation by the corporate head office and negative external evaluation by the market leads to division managers' *urgent* problemistic search to find solutions. BTOF suggests that, in this case, division managers tend to *initially* "search in the neighborhood of the current alternative" (Cyert and March, 1963: 121). As division managers know what is or is not working within the division, they tend to initiate problemistic search within the division[6]. After all, experience within the division is embedded in a more familiar context and likely generates more immediate feedback than that of social reference groups, which is critical to resolving the urgent problem within the division.

Overall, we take the direction that, when facing consistent feedback below both social reference points, division managers will attend more to their own experience. Thus, we formulate the following hypothesis:

> *Hypothesis 2: If there is consistent social feedback that a division in a multidivisional firm underperforms both the economic reference point and the political reference point, the division will subsequently allocate relatively more attention to its own experience when forming the future aspiration.*

The above two hypotheses suggest that in the presence of consistent social feedback (either above or below both social reference points), divisions of

[6] Cyert and March (1963: 121–122) point out that "The neighborhood of symptom rule can be related to the subunits of the organization and their association with particular goals and with each other. … Thus, if the problem is the failure to attain the sales goal, the search begins in the sales department and with the sales program."

DOI: 10.1002/smj

multidivisional firms tend to pay relatively more attention to their own experience when forming the subsequent aspiration. We now turn to the hypothesis that addresses the situation of inconsistent social feedback.

Inconsistent social feedback

Inconsistent social feedback occurs when a division of a multidivisional firm outperforms the economic reference point yet underperforms the political reference point, or vice versa. In the presence of inconsistent social feedback, division managers will likely rely on either of two decision rules: fire-alarm (Baum *et al.,* 2005; Greve, 1998, 2003a, 2003c) and self-enhancement rules (Audia and Brion, 2007; Baum *et al.,* 2005; Greve, 1998; Jordan and Audia, 2012). Both rules assume that managers will selectively attend to reference points that generate inconsistent feedback to reduce the level of complexity.

When division managers react to inconsistent social feedback through the use of the fire-alarm rule, they shift their attention to the social reference point that they underperform (Baum *et al.,* 2005; Greve, 1998). This can be attributed to division managers' motivation to correct any negative discrepancy between desired and realized outcomes by paying attention to "a ringing fire alarm" (e.g., Greve, 1998). Furthermore, the fact of outperforming one social reference point, either economic or political, gives division managers confidence to correct the gap of their underperformance on a particular social reference point. For instance, when a division outperforms the political reference point (and underperforms the economic reference point), its managers will become confident of attracting a larger relative share of corporate resources in the political battle given the favorable position relative to the sister divisions. This allows the focal division to attend to external market rivals, aspiring to perform better against the economic reference point. Similarly, when the division outperforms the economic reference point (and underperforms the political reference point), managers will strive to compete with sister divisions based on their strong position relative to external market rivals, aspiring to perform better against the political reference point. Such confidence allows division managers to continue striving to correct any negative discrepancy between desired and realized outcomes (e.g., Cyert and March, 1963; Jordan and Audia, 2012). Also, the fact that the focal division outperforms one social reference point signals to its managers a chance to realize a more favorable social position by displacing nearby, higher-performing counterparts (Baum *et al.,* 2005).

There is an alternative response to inconsistent social feedback: self-enhancement behavior (Audia and Brion, 2007; Baum *et al.,* 2005; Greve, 1998; Jordan and Audia, 2012). This suggests that managers focus more on the social reference point that they outperform. Division managers' self-enhancement behavior can be attributed to their desire to maintain a positive self-image from negative information (Sedikides and Strube, 1997) and their need to account for unsatisfactory performance outcomes (Jordan and Audia, 2012). Division managers may be compelled to highlight outperformance to the corporate management to increase the chance of winning the political battle with sister divisions. Hence, with the ambiguity introduced by inconsistent feedback, managers likely revise standards of performance evaluation to make them align more favorably with observed performance (Audia and Brion, 2007; Jordan and Audia, 2012).

The above arguments suggest two opposing directions of attention shift. Following BTOF, we take the position that, in the presence of inconsistent social feedback, division managers will focus more on the social reference point that they underperform when forming the future aspiration. Hence, we formulate the hypothesis below:

> *Hypothesis 3: If there is inconsistent social feedback that a division in a multidivisional firm outperforms one social reference point and underperforms the other, the division will subsequently allocate relatively more attention to the social reference point that it underperforms when forming the future aspiration.*

DATA AND METHODS

Data sources

Our panel data came from the German magazine industry. We collected data on 267 German magazines with national coverage from 1972 to 2010. The primary reason we chose this industry context is that it provides us with observed aspiration levels that are set by the managers (more in the section below). Moreover, this industry allows us to

DOI: 10.1002/smj

clearly define two social reference groups: a political reference group that consists of sister magazines under the same publisher and an economic reference group that consists of other magazines competing in the same content category (e.g., computer magazines, TV magazines, or news magazines). These 267 magazines belong to 60 different publishers each owning 4.5 magazines on average and compete in 21 different content categories each including 12.7 magazines on average. The data were collected mainly from the *Informationsgesellschaft zur Feststellung der Verbreitung von Werbetraegern* e.V. website, and complemented by data from *Medialine*.

In the magazine industry, publishers provide resources to individual magazines and exert their influence at the magazine level. Despite a common corporate head office, individual magazines within a publishing house often have separate identities and distinct management teams, and must meet individual performance targets (Granatstein, 2001). A publisher therefore can be seen as a political arena where its magazines are political coalition members having different preference functions and competing with each other for resources, power, and status (Cyert and March, 1963; March, 1988). Given such political contestation, other magazines under the same publisher form a highly relevant social reference group.

Each magazine further serves a specific readership group that can be defined as a distinct content category. Magazines in the same content category target the same readership group and compete with each other to attract readers. They form a strategic group within the broader magazine industry to help conduct strategy and competitor analysis, in the purpose of gaining more market share and profits (Porter, 1980). Taken together, each magazine in the sample competes politically with sister magazines within the same publisher and economically with other magazines in the same content category.

Measures

Aspiration (A) is measured as the *number of magazine copies printed*, which indicates how many copies the manager of a given magazine aspires to sell. In contrast with the standard measures such as an exponentially weighted average of past performance used in previous studies (e.g., Audia and Greve, 2006; Greve, 1998), our measure is more direct as it is observable and verifiable. In addition, our aspiration measure is set by the magazine division because division managers decide how many copies to be printed. Though not perfect, this measure has advantages over those used in the literature typically relying on proxies based on performance. Our interviews with 10 managers of magazines and 3 publishers confirmed that it is a goal decision made by magazine management.

Own performance (P) is measured as the *number of magazine copies sold*. We choose this measure of performance mainly because our interviews suggested that, for a magazine, the most valuable resources it brings to its publisher are readers and sales. In general, sales numbers represent a more objective, accurate, and verifiable indicator of magazines' performance. Managers who participated in our interviews confirmed that sales volume is the primary method of comparing performance across magazines of the same publisher or in the same content category. For this reason, the *political reference point (PR)* is calculated as the *average number of copies sold* of magazines under the same publisher excluding the focal magazine, and the *economic reference point (ER)* the *average number of copies sold* of magazines in the same content category excluding the focal magazine.

Step 1: A grid search to estimate attention weights (dependent variables)

To test our hypotheses of attention shifts among one unified own experience reference point (reflected in own prior aspiration and prior performance), and two social reference points of others' experience (the political and the economic reference points), we first need to estimate the three corresponding attention amounts (weights) to the three reference points in the model of aspiration adaptation. We start with Cyert and March's (1963) original model. We then show that the model we use to estimate the three attention weights is adapted from and mathematically equivalent to Cyert and March's (1963) model.

Based on Cyert and March (1963), aspiration adaptation at any time t (A_t) is modeled as

$$A_t = a_1 A_{t-1} + a_2 P_{t-1} + a_3 SR_{t-1}, \qquad (1)$$

where A_{t-1} is own prior aspiration, P_{t-1} own prior performance, and SR_{t-1} prior performance of social reference group(s) at time $t-1$; the weights a_1, a_2,

DOI: 10.1002/smj

and a_3 must be non-negative and sum to one, thus representing the relative attention the organization allocates to each reference point.

Since our theory predicts that a division in multidivisional firms allocates its attention among one unified own experience reference point and two social reference points (political and economic), we merge own prior aspiration (A_{t-1}) and own prior performance (P_{t-1}) into a single own experience reference point (HA_{t-1}), and we divide prior performance of social reference group(s) (SR_{t-1}) into two, namely, the political reference point (PR_{t-1}) and the economic reference point (ER_{t-1}). The adapted model is presented as

$$A_t = w_1 HA_{t-1} + w_2 PR_{t-1} + w_3 ER_{t-1}, \quad (2)$$

where w_1, w_2, and w_3 are non-negative and must sum to one.

Since, operationally, the single own experience reference point cannot be observed or directly measured in our empirical setting, a full model of aspiration adaptation is used in a grid search to determine the attention weights:

$$A_t = \gamma_1 A_{t-1} + \gamma_2 P_{t-1} + \gamma_3 PR_{t-1} + \gamma_4 ER_{t-1}, \quad (3)$$

where γ_1, γ_2, γ_3, and γ_4 are non-negative and must sum to one.

It can be shown that Equations 1–3 are mathematically equivalent (see Appendix S1 in the online supplementary document), where $w_1 = \gamma_1 + \gamma_2$, $w_2 = \gamma_3$, and $w_3 = \gamma_4$. Therefore, by estimating Equation 3, we can simply regard $\gamma_1 + \gamma_2$ as attention to the own experience reference point, γ_3 attention to the political reference point, and γ_4 attention to the economic reference point.

To estimate the attention weights (γ_1, γ_2, γ_3, and γ_4) in Equation 3, the solution of least squares is inappropriate because the interval constraint that the attention weights can only vary between zero and one and must sum to one turns the aspiration adaptation formula into a nonlinear function, where a grid search must be used to find an optimal solution for the attention weights (Greene, 2002: 934; Greve, 2003c; Vissa *et al.,* 2010). Although grid search in empirical studies on adaptive aspirations has generally been done in 0.1 increments (Greve, 2002; Vissa *et al.,* 2010), we use 0.025 increments to increase precision. Because both aspiration and performance measures are available in quarterly data, we use quarterly data, rather than commonly used yearly data, as inputs for the grid search. To generate stable estimates and avoid bias, we rely on 21 quarterly observations, more than the 11 periods as used by Greve (2002).

The solution is obtained by minimizing the Root Mean Square Percentage Error (RMSPE):

$$\sqrt{\sum_{t=1}^{20} \left(\frac{A_{i,t} - \hat{A}_{i,t}}{A_{i,t}} \right)^2}, \quad (4)$$

where $A_{i,t}$ is the observed aspiration level for magazine i in quarter t, which is evaluated as the number of magazine copies printed for that quarter[7]. $\hat{A}_{i,t}$ is the estimated aspiration level from the full adaptive aspiration model, Equation 3, resulting from searching all possible grids in the problem space described above. There are 235 magazines with enough quarterly observations to estimate at least one set of attention weights, which give us an initial sample of 16,534 observations for the regression analysis. To conserve degrees of freedom, we only include in the subsequent regression analysis a final sample of 11,675 observations from 156 magazines that have the vector of attention weights and non-missing covariate values for more than five years.

It is important to note that we study the dynamics of attention allocation at *the level of individual divisions* of multidivisional firms. With our unique longitudinal dataset, we obtain for each division a set of *division-* and *time-specific* weights (w_1, w_2, and w_3) that reveal its attention allocated to the three reference points as specified in Equation 2 by actually estimating Equation 3, where $w_1 = \gamma_1 + \gamma_2$, $w_2 = \gamma_3$, $w_3 = \gamma_4$. In the existing literature, although the locus of causation for antecedents and outcomes of attention shifts is at the individual organization level, nearly all empirical studies have used the same set of attention weights for the whole sample or a subsample of organizations, ignoring the idiosyncratic nature of individual organizations[8]. Such undifferentiated treatments need refining because aspiration

[7] Note that one quarterly observation is lost due to the lag structure in Equation 3 for the grid search.

[8] For example, in Greve (2003b), all shipbuilding firms in the sample were imposed with the same set of attention weights to update their aspiration levels (0.04 for the focal firm's prior aspiration, 0.16 for the focal firm's prior performance, and 0.8 for the average prior performance of other firms). Vissa *et al.* (2010) used two sets of weights, one for the subsample of business group affiliated firms, and the other for the subsample of unaffiliated firms.

DOI: 10.1002/smj

formation and adaptation are inherently an organization level (division level in our setting) decision making, shaped by contingencies internal or external to the organization (Cyert and March, 1963; Washburn and Bromiley, 2012). One obvious way to account for such heterogeneity is to use a different set of attention weights for each organization in the sample, which requires estimation based on longitudinal data for each organization, as we do in the present study. In other words, because we have longitudinal data and we use a rolling window of 21 quarters in the grid search for each magazine division, *our estimated attention weights not only vary across magazines, but also change over time within individual magazines*. Hence, the three attention weights can be more suitably labeled w_{1it}, w_{2it}, and w_{3it}.

Another unique feature of our study is that we estimate attention weights (w_{1it}, w_{2it}, and w_{3it}) separately from the subsequent regression analysis that tests our hypotheses. This is possible because we have observable data on aspiration levels so that we can obtain a set of attention weights for each division by maximizing the match between predicted aspiration levels and observed aspiration levels (i.e., minimizing RMSPE in Equation 4). The prevailing practice in the literature, however, is to fit jointly an adaptive aspiration function and a regression model of hypothesis testing. We believe this way of fixing attention weights in the adaptive aspiration function by maximizing model fit for the subsequent regression analysis is at variance with the scholarly convention that measures, especially measures for key constructs in BTOF such as organizational attention and aspiration, have to be established prior to and independent of statistical analyses that test hypotheses. Our approach implements the two steps separately rather than jointly: first, a grid search using the adaptive aspiration function to obtain division-specific and time-varying attention weights, and second, a regression analysis to test our hypotheses regarding how consistent and inconsistent feedback from social comparisons affects attention shifts.

Step 2: Regression analysis to test hypotheses

From the results of the grid search, we create a panel of the three attention weights (i.e., w_{1it}, w_{2it}, w_{3it}) for each magazine at each point in time. To test our hypotheses, we use multivariate regression analyses (*mvreg* in Stata) to account for non-independence across equations which is inevitable due to the constraint that these three weights must sum to one. Specifically, three equations are estimated where we regress *relative attention to the own experience* (w_{1it}), *relative attention to the political reference point* (w_{2it}), and *relative attention to the economic reference point* (w_{3it}), respectively, on magazine fixed-effects, year fixed-effects, and a set of independent and control variables. Equation 5 is the full model testing our hypotheses:

$$w_{jit} = b_{ji} + b_{jt} + \boldsymbol{B}_j\boldsymbol{X} + u_{jit}, \tag{5}$$

where w_{jit} denotes the weight $j = 1, 2, 3$ (i.e., the three attention weights explained above) of magazine i in quarter t, b_{ji} the magazine fixed-effects, b_{jt} the year fixed-effects and quarter dummies, $\boldsymbol{B_j}$ a vector of coefficients, $\boldsymbol{X}$ a vector of covariates, and u_{jit} the error term.

To code independent variables, we compare a magazine's performance with the two social reference points. As shown in Figure 1, (I) *consistent feedback above both social reference points* = 1 if the magazine's performance in quarter $t - 1$ is above or equal to both publisher average performance (the political reference point) and category average performance (the economic reference point) in quarter $t - 2$; (II) *below political reference point* = 1 if the magazine's performance in quarter $t - 1$ is below publisher average performance but above or equal to category average performance in quarter $t - 2$; (III) *below economic reference point* = 1 if the magazine's performance in quarter $t - 1$ is below category average performance but above or equal to publisher average performance in quarter $t - 2$; and (IV) *consistent feedback below both social reference points* = 1 if the magazine's performance in quarter $t - 1$ is below both publisher average performance and category average performance in quarter $t - 2$. In doing so, we *lag* the independent variables by one period. The use of lagged independent variables reflects the temporal ordering in our causal arguments. Note that because this coding scheme fully specifies all four possible situations as shown in Figure 1, no intercept can be included in our regression Equation 5.

We also include a number of control variables, most of which are available only on a yearly basis. *Magazine reach* in terms of the population in millions aware of the magazine in a given year is useful to control for reputation and the size of the audience.

DOI: 10.1002/smj

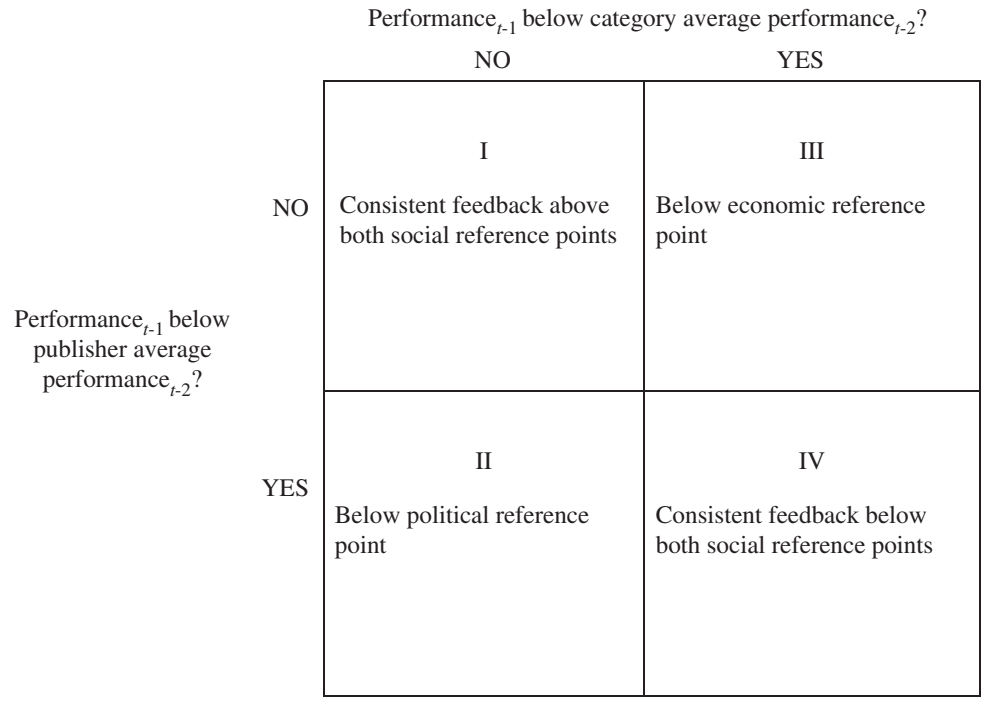

Figure 1. Coding independent variables

Magazine price (in Euros per magazine copy) is used to control for a magazine's strategic positioning. *Advertising price*, calculated as the average price in Euros of advertisements placed in a magazine each year, and *advertising ratio*, calculated as the average percentage points of pages devoted to advertising each year, give further evidence of a magazine's strategic positioning, and to some extent, its success. Further, we control for changes in demand using *average category growth rate in the past three years*. Finally, we include *number of other magazines in the same category* and *number of other magazines under the same publisher* to control for economic and political competitive intensity, respectively. We also include magazine fixed-effects to control for any time-invariant unobserved heterogeneity across magazines, year fixed-effects to account for any exogenous shocks that influence all magazines in the sample, and quarter dummies to control for seasonality. As a result, no time-constant control variables (e.g., whether a magazine has a foreign origin) or a variable whose change across time is constant (e.g., magazine age) can be included in the regression.

We have made a number of "good faith" efforts in the present study to improve the plausibility that performance feedback from social comparisons has a causal impact on attention allocation, including using lagged independent variables, controlling magazine fixed-effects, conducting a series of robustness checks, among others. However, we acknowledge that endogeneity can still be an issue not least because of the inherently recursive and dynamic relationship between performance feedback and attention allocation. Indeed, our study only focuses on one crucial link of a large circle of chain reaction: a given goal with actions to accomplish that goal leads to performance outcome and associated performance feedback from social comparisons, which then directs attention allocation, which in turn, influences the goal and associated strategic actions, which in turn, gives rise to a new performance level in the next period, and so on (Blettner *et al.,* 2015). Not to forget that magazines in the two social reference groups are simultaneously conducting performance feedback loops that iteratively and interdependently update the social reference points faced by the focal magazine. In sum, it is generally impossible to model a full circle of the chain described above. Future research is needed to better identify the causal impact of performance feedback on attention allocation, possibly by including more relevant time-variant control variables or by instrumenting social comparisons.

DOI: 10.1002/smj

RESULTS

Table 1 presents the descriptive statistics. While there is competing attention allocation between the own experience reference point and two social reference points ($r = -0.721$ and -0.758, respectively), attention to the political reference point and attention to the economic reference point are mildly mutually reinforcing ($r = 0.094$). On average, magazines adapt their aspirations based a lot more on their own experience than the experience of social reference groups. This is no surprise because magazine managers have easy and timely access to their prior aspiration and performance, which embody lessons the focal magazine has learned from the past and reveal information regarding its existing strategies, structures, and procedures (Denrell and March, 2001; Greve, 2002). In contrast, information access to other magazines may be less accurate and in some cases even unavailable (Levitt and March, 1988).

In Model 1 of Table 2, we notice that, when magazines receive consistent feedback *above* both political and economic reference points, magazine managers become more focused on their own experience when forming the subsequent aspiration, supporting Hypothesis 1. The coefficient of cell 1 (consistent above) is 0.991, significantly larger than the coefficients (i.e., 0.907 and 0.923) of cell 2 and cell 3 (inconsistent feedback) as shown in the F tests ($F = 134.72$, $p = 0.000$; $F = 117.21$, $p = 0.000$). Specifically, based on Model 1, magazines outperforming both social reference points allocate 0.084 (= 0.991 – 0.907) and 0.068 (= 0.991 – 0.923) extra attention to own experience than those underperforming the political reference point and those underperforming the economic reference point, respectively. Given that the average attention to own experience is 0.874 in the sample, these amount to an average 9.7 and 7.8 percent increase in attention allocated to own experience, respectively.

Similarly, we find that, when a magazine receives consistent feedback *below* both political and economic reference points, magazine managers will allocate more relative attention to their own experience when forming the subsequent aspiration, supporting Hypothesis 2. The coefficient of cell 4 (consistent below) is 0.948, significantly larger than the coefficients of cell 2 and cell 3 (inconsistent feedback) as shown in the F tests ($F = 46.87$, $p = 0.000$; $F = 22.30$, $p = 0.000$). Specifically, magazines underperforming both social reference points allocate 0.041 (= 0.948 – 0.907) and 0.025 (= 0.948 – 0.923) extra attention to own experience than those underperforming the political reference point and those underperforming the economic reference point, respectively. These effect sizes are apparently smaller than those in the above situation of consistent feedback above both social reference points, but they still carry important organizational implications given that the standard deviation of attention to own experience is just 0.176. Taken together, we find that in the presence of consistent social feedback (either above or below both social reference points), magazines tend to pay relatively more attention to their own experience when forming the subsequent aspiration.

In Model 2, we find that, when a magazine's performance is below the political reference point and above the economic reference point, managers subsequently shift more attention to the political reference group when forming the future aspiration. The coefficient of cell 2 (below publisher average) is 0.071, significantly larger than the coefficients (i.e., 0.009 and 0.027) of cell 1 and cell 4 (consistent feedback) and the coefficient (i.e., 0.013) of cell 3 (below category average) as shown in the F tests ($F = 148.71$, $p = 0.000$; $F = 105.70$, $p = 0.000$; $F = 128.93$, $p = 0.000$). This means, magazines underperforming the political reference point allocate 0.062 (= 0.071 – 0.009), 0.058 (= 0.071 – 0.013), and 0.044 (= 0.071 – 0.027) extra attention to the political reference point than those outperforming both social reference points, those underperforming the economic reference point, and those underperforming both social reference points, respectively. As the average attention to the political reference point is 0.062 in the sample, these represent an average 99.7, 92.6, and 70.2 percent increase in attention allocated to the political reference point, respectively.

Similarly, in Model 3, when a magazine's performance is below the economic reference point and above the political reference point, managers subsequently shift more attention to the economic reference group when forming the future aspiration. The coefficient of cell 3 (below category average) is 0.064, significantly larger than the coefficients (i.e., 0.000 and 0.025) of cell 1 and cell 4 (consistent feedback) and the coefficient (i.e., 0.023) of cell 2 (below publisher average) as shown in the F tests ($F = 192.34$, $p = 0.000$; $F = 101.02$, $p = 0.000$; $F = 59.38$, $p = 0.000$). This suggests that

DOI: 10.1002/smj

Table 1. Descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Attention to own experience reference point	0.874	0.176													
2. Attention to political reference point	0.062	0.115	−0.721												
3. Attention to economic reference point	0.064	0.125	−0.758	0.094											
4. Magazine reach	1.848	1.893	0.263	−0.200	−0.190										
5. Magazine price	2.154	1.327	−0.157	0.120	0.112	−0.284									
6. Advertising price/10,000	1.484	1.013	0.192	−0.127	−0.155	0.786	−0.038								
7. Advertising ratio/100	0.280	0.116	0.031	0.002	−0.046	0.202	0.222	0.255							
8. Average category growth rate in the past three years	−2.510	3.945	−0.029	0.021	0.023	−0.063	0.124	−0.101	0.208						
9. Number of other magazines in the same category	11.997	8.019	0.004	−0.033	0.025	−0.035	−0.296	−0.013	−0.240	−0.171					
10. Number of other magazines under the same publisher	11.172	8.733	−0.099	0.140	0.010	0.142	−0.161	0.358	−0.201	−0.199	0.300				
11. Consistent feedback above both social reference points	0.291	0.454	0.404	−0.307	−0.283	0.558	−0.200	0.582	0.142	−0.111	0.076	0.057			
12. Below political reference point (publisher average)	0.129	0.336	−0.134	0.256	−0.051	−0.106	0.151	−0.010	0.104	0.000	−0.149	0.182	−0.229		
13. Below economic reference point (category average)	0.155	0.362	−0.051	−0.080	0.147	−0.019	−0.093	−0.062	−0.026	0.076	0.010	−0.182	−0.267	−0.161	
14. Consistent feedback below both social reference points	0.425	0.494	−0.238	0.167	0.180	−0.428	0.149	−0.474	−0.178	0.045	0.022	−0.037	−0.553	−0.333	−0.389

All correlations with an absolute value larger than 0.030 are significant at 0.1 percent level.

DOI: 10.1002/smj

Table 2. The effects of consistent and inconsistent social feedback on attention shifts

	Model (1) Attention to own experience reference point	Model (2) Attention to political reference point	Model (3) Attention to economic reference point
Magazine fixed-effects	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes
Quarter 2	−0.0001 (0.0033)	0.0003 (0.0023)	−0.0002 (0.0024)
Quarter 3	0.0003 (0.0032)	0.0005 (0.0023)	−0.0008 (0.0024)
Quarter 4	−0.0006 (0.0032)	−0.0001 (0.0023)	0.0007 (0.0024)
Magazine reach	−0.0157 (0.0030)	0.0059 (0.0021)	0.0098 (0.0022)
Magazine price	−0.0196 (0.0045)	0.0256 (0.0032)	−0.0060 (0.0033)
Advertising price/10,000	−0.0001 (0.0054)	−0.0073 (0.0038)	0.0075 (0.0040)
Advertising ratio/100	0.0525 (0.0290)	0.0925 (0.0202)	−0.1451 (0.0212)
Average category growth rate in the past three years	−0.0023 (0.0004)	0.0001(0.0003)	0.0022 (0.0003)
Number of other magazines in the same category	−0.0017 (0.0006)	−0.0018 (0.0004)	0.0036 (0.0004)
Number of other magazines under the same publisher	−0.0031 (0.0004)	0.0031 (0.0003)	−0.0001 (0.0003)
Cell 1: Consistent feedback above both social reference points	**0.9911 (0.0244)**	0.0087 (0.0170)	0.0001 (0.0179)
Cell 2: Below political reference point (publisher average)	0.9066 (0.0243)	**0.0705 (0.0169)**	0.0229 (0.0178)
Cell 3: Below economic reference point (category average)	0.9231 (0.0237)	0.0131 (0.0165)	**0.0638 (0.0173)**
Cell 4: Consistent feedback below both social reference points	**0.9482 (0.0232)**	0.0270 (0.0164)	0.0247 (0.0170)
Test ***Cell 1* = *Cell 2*** for Equation 1	$F = 134.72$ ($p = 0.000$)		
Test ***Cell 1* = *Cell 3*** for Equation 1	$F = 117.21$ ($p = 0.000$)		
Test ***Cell 4* = *Cell 2*** for Equation 1	$F = 46.87$ ($p = 0.000$)		
Test ***Cell 4* = *Cell 3*** for Equation 1	$F = 22.30$ ($p = 0.000$)		
Test ***Cell 2* = *Cell 1*** for Equation 2		$F = 148.71$ ($p = 0.000$)	
Test ***Cell 2* = *Cell 3*** for Equation 2		$F = 128.93$ ($p = 0.000$)	
Test ***Cell 2* = *Cell 4*** for Equation 2		$F = 105.70$ ($p = 0.000$)	
Test ***Cell 3* = *Cell 1*** for Equation 3			$F = 192.34$ ($p = 0.000$)
Test ***Cell 3* = *Cell 2*** for Equation 3			$F = 59.38$ ($p = 0.000$)
Test ***Cell 3* = *Cell 4*** for Equation 3			$F = 101.02$ ($p = 0.000$)
R-squared	0.981	0.574	0.594
N	11,675	11,675	11,675

Note: Standard errors in parentheses after estimated coefficients. Four decimal places are used to avoid obscure coefficients or standard errors such as 0.000.

magazines underperforming the economic reference point allocate 0.064 (= 0.064 – 0.000), 0.041 (= 0.064 – 0.023), and 0.039 (= 0.064 – 0.025) extra attention to the economic reference point than those outperforming both social reference points, those underperforming the political reference point, and those underperforming both social reference points, respectively. As the average attention to the economic reference point is 0.064 in the sample, these represent an average 99.5, 63.9, and 61.1 percent increase in attention allocated to the economic reference point, respectively.

In either case of inconsistent feedback, there is clear evidence that division managers face up the problem and search for solutions by scanning the relevant reference group. This is consistent with the fire-alarm rule as magazine divisions in our sample focus more on the social reference point that they underperform. This provides support for our Hypothesis 3.

Robustness checks

We conduct a number of additional analyses to assess whether our key findings are robust when alternative measures or model specifications are used. These results are available in the online supplementary document. The first robustness test is associated with the measure of aspiration (*A*, *the number of magazine copies printed*). One may be concerned that this measure contains noise such as a buffer stock of magazine copies because no magazine would want to disappoint its customers by running out of stock. Thus, in a separate analysis, we adjust this number downward by 5–15 percent, depending on the ratio of a magazine's subscription base to its total sales[9]. The rationale is that a magazine with a larger percentage of subscription sales normally needs to maintain a smaller percentage of buffer stock. Similar findings are obtained with this alternative measure of aspiration.

Second, although we focus on consistent and inconsistent feedback from two social comparisons in theorizing and testing, we need to assess whether our results depend on the focal magazine's improving or deteriorating performance compared to its own prior performance[10]. Put differently, magazines may simultaneously consider three types of performance feedback: two social comparisons and one comparison with their own prior performance, which is often referred to as "historical comparison/feedback" in the literature (e.g., Baum *et al.,* 2005). To test the effect of historical feedback, we split the sample into two: one with observations experiencing *improving* performance (own performance$_{t-1} \geq$ own performance$_{t-2}$), and the other with observations experiencing *deteriorating* performance (own performance$_{t-1} <$ own performance$_{t-2}$). We find magazines in the subsamples experiencing improving and deteriorating performance yield very similar results and all three hypotheses remain supported. Therefore, it seems that how feedback from two social comparisons affects attention shifts is very much independent of historical feedback. We encourage future research to further explore how these three types of performance feedback jointly influence attention shifts in adaptive aspirations.

The third robustness check involves alternative specifications of social reference points. We have conducted two extra tests. First, in one analysis, we use the median publisher and category performance, rather than the mean performance, as the social reference points. We find the results become slightly weaker, but all three hypotheses are still supported. In the second analysis, we exclude two largest magazines, *rtv* and *Hörzu*, because leading magazines may not compare themselves with the average (e.g., Joseph and Gaba, 2015). Again, we find no material changes to the results, and all hypotheses are strongly supported.

The final robustness check deals with autocorrelation and heteroscedasticity issues. Pooling observations on the same magazine violates the assumption of independent observations, causing possible autocorrelation in the residuals. Moreover, despite including magazine fixed-effects, residuals of different magazines may still have different variances, resulting in heteroscedasticity across magazines (Certo and Semadeni, 2006). Following Sine, Haveman, and Tolbert (2005), we use *xtgls* in Stata (panel data generalized least squares) to model autocorrelation within panels and heteroscedasticity across panels. We find evidence of significant heteroscedasticity across magazines and negligible autocorrelation within magazines over time, but similar coefficient estimates are obtained. We choose to focus on the results based on multivariate regression because the three dependent variables are obviously highly intercorrelated, and hence, an estimation method like *mvreg* in Stata is necessary to account for non-independence across the three equations.

DISCUSSION

In this article, we introduce a political reference group relative to divisions in multidivisional firms, in addition to the economic reference group commonly used in the literature. We examine the effect of consistent and inconsistent feedback from the two social comparisons on subsequent divisional attention shifts in forming the future aspiration. The data analysis generates a set of results as summarized in Table 3. These results reveal an interesting mix of economic and political behavior with regard to attention allocation. Below, we turn to the associated theoretical and practical implications from our study.

[9] This 5–15 percent range of adjustment was also recommended to us by some managers of magazines and publishers we interviewed.

[10] We greatly appreciate one of our referees raising this interesting point.

DOI: 10.1002/smj

Table 3. Summary of results

Situations	Direction of attention shift (to)	Possible explanations
Consistent feedback above both social reference points	Own experience reference point	• Strong signal of success • Little motivation to learn from lower-performing reference groups • High motivation to learn from own experience - Reassure the value of current competence repertoire, and thus more local search and exploitative learning - Increase in confidence and upward striving, and thus more internal search or exploration
Consistent feedback below both social reference points	Own experience reference point	• Powerful signal of underperformance • Mounting pressure of internal selection by the corporate head office and external selection by the market • Urgent problemistic search in the neighborhood of the problem area, that is, within the division
Inconsistent feedback below political reference point and above economic reference point	Political reference point	• Fire-alarm rule • Strive to correct any negative discrepancy between desired and realized outcomes • Confidence built through outperforming the economic or political reference point
Inconsistent feedback below economic reference point and above political reference point	Economic reference point	

Theoretical implications

The firm as a political coalition

The most obvious theoretical implication is the focus on the political coalition theory of the firm first introduced by March (1962) and featured as a key concept in *A Behavioral Theory of the Firm* (Cyert and March, 1963). This political coalition theory has lain fallow for many years. We use this theory in the context of the multidivisional firm where an important corporate role is the allocation of capital and other resources among individual divisions. We hope that this article will stimulate more research based on the model of the firm as a political coalition. In this regard, we suggest a research issue directly related to our study.

Our research raises the issue that any division in a multidivisional firm may suffer from an inherent weakness relative to a single-business competitor firm that faces no political conflict of resource allocation from a corporate office in competition with other divisions. This is not to say that a single-business firm will be without other political considerations, but that it will not have to include political considerations at the division level. To be sure, multidivisional firms do have distinct and important advantages over single-business firms such as synergies among the divisions (Collins and Montgomery, 1997), yet such synergies should be large enough to compensate the managerial costs of coalition maintenance.

Adaptive aspirations

The dynamics of attention allocation as studied in this article and based in the theory of adaptive aspirations have only begun to be examined (Audia and Brion, 2007; Blettner *et al.,* 2015; Short and Palmer, 2003). This raises two opportunities. First, this study suggests an opportunity to build a more complete theory of the antecedents of aspirations by providing a specific mechanism of attention shifts in adaptive aspirations based on social comparisons. Second, it raises the possibility, in conjunction with the attention-based view (Ocasio, 1997), to build a more complete theory of attention allocation. Such theory could be an important precursor to resource allocation. It seems reasonable that resource

DOI: 10.1002/smj

allocation decisions will follow where attention flows or is directed.

Our research also points to the need for a better understanding of the fire-alarm and self-enhancement rules. The present study extends both rules to the attention shifts among different reference points in forming an overall aspiration level, complementary with the extant literature on these rules that guide attention shifts among multiple aspiration levels (Audia and Brion, 2007; Baum *et al.,* 2005; Greve, 2008). This naturally raises the issue of attention allocation among multiple reference points across multiple aspiration levels and whether the fire-alarm and self-enhancement rules are relevant in these more complex situations.

Practical implications

Our research has some managerial implications. We assert that political conflict is inevitable since it is based in human nature. However, that does not mean that it cannot be managed and perhaps reduced. One suggestion is to build an organizational structure and culture that include the expectation of frequent movement of managers across divisions. A second suggestion is that, under certain circumstances, firms may consider replacing managers or sale of businesses for those divisions with heavy political carrying costs as a signal of what level of political behavior will not be tolerated. These may help avoid entrenched managerial positions that can exacerbate political conflict. More importantly, it can encourage key managers to focus more on the overall corporate goal and less on divisional or personal preference functions.

Furthermore, based on our results and subject to the boundary conditions imposed by the nature of the sample, divisions underperforming both economic and social reference points tend to avoid learning from others' experience despite such learning likely being crucial to competitive performance. We suggest two practices that could be helpful in such situations. First is the use of performance measures and incentive structures that can appropriately direct division managers' attention. An incentive structure that rewards managers based on an appropriate balance of the corporate overall performance and divisional outcome may help improve constructive focus. Second, as part of annual review process, corporate managers could require division managers to report their performance compared to relevant economic competitors, particularly those with performance just above and below performance of the focal division. This can act to focus attention on achievable improvement in competitive position on an annual basis (Hu, Blettner, and Bettis, 2011).

Caveats and opportunities for future research

We consider the sister divisions as the political reference group since the analysis is conducted at the *division* level. Yet, this conflict for resources, politics, and coalition groups is omnipresent because organizations can be characterized as individuals and groups pursuing their own interests (March, 1988). The inter-group conflict is part of the negotiation process within the coalition with different individual interests and has an important (possibly beneficial) effect on the overall organization goal of the company (March, 1988). Such conflict is embedded in organizational hierarchy and goal priority (Cyert and March, 1963). Thus, a model integrating multiple levels of organizational units naturally becomes the focus of future research to enhance our understanding of the attention allocation among different political actors within organizations.

We find that the two opposing situations, consistent feedback *above* and *below* both social reference points, paradoxically generate the same result of more relative attention to the focal division's own experience. We theorize different mechanisms for the converging prediction and ascribe different meaning to the apparently indistinguishable outcome between the first two hypotheses. To empirically disentangle their subtle yet critical differences, a large number of unobservables have to be defined and operationalized, which far outstrips the data available to us. Thus, we call for future empirical research to burrow more deeply into the different processes and embodiments below the surface of the same predicted outcome in the first two hypotheses.

Also, given this study is anchored and developed primarily in the BTOF, we follow the use of the term "attention" in the adaptive aspirations approach and related literature going back to the original *A Behavioral Theory of the Firm* by Cyert and March (1963). The area of "attention" needs extensive theoretical attention. Outside of the stream of adaptive aspirations, there are other methods available for revealing managerial attention, for example, content or

DOI: 10.1002/smj

cognitive map analysis (Barr, Stimpert, and Huff, 1992; Short and Palmer, 2003), interviews or surveys (Ocasio, 2011).

Furthermore, while selecting relevant social reference groups is one key argument in our study, we use the average or median performance of the two social reference groups as the reference points. This operational approach can certainly be improved as discussed in the literature review. Future research can examine the possible interaction of different social reference groups and various strategies/criteria organizations use to select their reference groups, for example, stepwise or ambitious strategies (Hu *et al.,* 2011); and competitive or striving strategy (Labianca *et al.,* 2009). Future work may also investigate how these different strategies in selecting reference groups affect organizational performance.

In conclusion, we hope that this research will stimulate increased scholarly interest in the dynamics of attention allocation and organizations as political coalitions. Political behavior is a fact of organizational life and important to understanding managerial agency in the context of strategic management. We hope this research will encourage others to explore the political coalition model of organizations as a necessary step to a more complete understanding of behavioral strategy and the limits on purely economic models of firm decision making.

ACKNOWLEDGEMENTS

We thank our editor Philip Bromiley and two anonymous reviewers for their excellent comments and guidance. We also thank conference participants at the 2013 Strategic Management Society Meeting for their helpful comments.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix S1. Models of adaptive aspirations.