

1. Introduction

Management earnings guidance, or management forecast, refers to “a company publicly disclosing its own projections of its financial results for the upcoming quarter or fiscal year” (Diamond & Yevmenenko, 2011, p. 44).² Researchers have had a long and continuing interest in examining the antecedents, characteristics, and consequences of management earnings guidance (for a review, see Hirst, Koonce, & Venkataraman, 2008). The early research focused primarily on using archival methods to test economic theories of earnings guidance (see Cameron, 1986; King, Pownall, & Waymire, 1990 for reviews). Several recent studies have employed the experimental approach to test psychology theories of earnings guidance (see Hirst et al., 2008 for a review across all methodologies).

Experimental studies in this area are important since they provide unique advantages that are unavailable to other paradigms. First, experimenters are able to hold information constant across treatment conditions, and are better able to establish stronger causal relation between the independent and dependent variables (Libby, Bloomfield, & Nelson, 2002). Second, experimenters can measure process variables and provide answers to questions such as why certain phenomena occur (Libby et al., 2002). Finally, experimental research is able to provide *ex ante* evidence on guidance issues for which little or no archival data are available (e.g., Nelson & Rupar, 2011). It thus may contribute to accounting policy research (Maines, 1994). Hence, the experimental approach has the potential to shed important insights on why and how corporate managers issue earnings guidance and the effect of such guidance on stakeholders' (investors' and managers') behavior.

The purpose of this paper is to provide a comprehensive analysis and synthesis of experimental research on management earnings guidance. This literature synthesis is important in assessing the unique insights that experimental research has offered in understanding the guidance literature, identifying gaps in the literature, evaluating the extent to which the experimental research corroborates or contradicts archival findings and identifying unresolved and important issues for further research. A synthesis is also important to managers, who seek to make better disclosure decisions by shedding light on how investors react to disclosures, and to regulators, who seek evidence of how investors are impacted by voluntary disclosures, such as earnings guidance (Elliott, Hodge, Kennedy, & Pronk, 2007).

The experimental literature has concerned itself with whether or not management will issue guidance and, if they do, why and how the guidance is issued (e.g., Libby & Rennekamp, 2012). Researchers have also been interested in the effect of the presence, nature and form of guidance on investors (e.g., Libby & Tan, 1999); and finally, how does the commitment to guide affect management's contemporaneous and subsequent operating and disclosure behaviors (Wang & Tan, 2013). Corresponding to this research focus, the remainder of this paper is structured as follows. I provide background information about the guidance environment by introducing and defining key terms and concepts in the next section. The organizing framework for synthesizing the extant research follows this (Section 3). In Section 4, I provide a synthesis of the literature on whether, why and how corporate managers issue earnings guidance. In Section 5, I synthesize the literature on whether, how and why investors react to management guidance. Section 6 focuses on whether and how the decision to guide affects the guider's behavior. The last section explores directions for future research and offers concluding remarks.

2. Background and concepts

Some public companies have a long history of voluntarily disclosing projections of their financial results for the upcoming quarter or fiscal year. This practice, referred to as providing earnings guidance, became more common during the latter half of the 1990s, after the US congress enacted the Private Securities Litigation Reform Act of 1995, which included safe harbor provisions for such projections (Hsieh, Koller, & Rajan, 2006). The impetus for providing guidance is a subject of continuing debate with lower share price volatility, higher valuations, stock liquidity and maintaining

² Several other terms have been used in the literature to refer to particular types of management earnings guidance. For example, earnings guidance for negative earnings prospects may be referred to as “earnings warnings” (e.g., Libby & Tan, 1999).

good communication with market participants cited as some of the potential benefits (Hsieh et al., 2006). In recent years, there has been a slow down in the rate of growth in the number of companies issuing guidance and some companies, like general Electric and McDonald's corporation, have stopped issuing guidance (also called “going dark”; Fuller & Jensen, 2010).

It is this institutional richness that has attracted research into the earnings guidance process. In the remainder of this section, I introduce and define several key terms and concepts that researchers employ in this literature to facilitate the subsequent analysis and synthesis.

2.1. Guidance timeline

Guidance timeline issues arise because of management's ability to control the timing of earnings guidance. Management may provide earnings guidance at any time before the actual earnings announcement date (i.e., the release of actual earnings; Hirst et al., 2008).³ Usually the earnings guidance for the upcoming quarter or fiscal year is short-term guidance while guidance for more distant fiscal period is long-term guidance (Cheng, Subramanyam, & Zhang, 2005). There is interdependence between management earnings guidance and analysts' earnings forecasts. One motive for managers to provide earnings guidance is to align market expectation (primarily the analysts' forecasts) with their own earnings expectations (Ajinkya and Gift, 1984). Correspondingly, researchers generally find that analysts often revise their earnings forecasts subsequent to management earnings guidance (e.g., Baginski & Hassell, 1990).

Management often provides earnings guidance contemporaneous, in time and venue (e.g., at the earnings conference call), with the announcement of the current actual earnings results. This phenomenon is commonly referred to as “bundled guidance” (Rogers & Buskirk, 2013; for additional institutional information on the intersection of earnings guidance and earnings release, see Diamond & Yevmenenko, 2011).

2.2. Guidance news valence

The guided EPS (Earnings per Share) is usually compared with an earnings benchmark to define its news valence; i.e., whether the guidance news is positive (when the guided EPS is more positive than the benchmark) or negative (when the guided EPS is more negative than the benchmark). If there are analysts following the guiding company, usually the analysts' consensus forecast (mean forecast of all analysts following the guiding company) is used as a proxy for the market expectation at that time and therefore the comparison benchmark (e.g., Tan, Libby, & Hunton, 2002). An alternative earnings benchmark, if there is no analysts' consensus forecast available, can be prior EPS (Degeorge, Patel, & Zeckhauser, 1999).

2.3. Guidance news division

At the time that actual earnings become available, comparisons can be made among the actual earnings, the prior guided earnings and the relevant benchmark (as discussed above). In this vein, “total earnings news” is defined as the difference between actual EPS and the most recent relevant benchmark. Total earnings news can be decomposed into “guidance news” and “actual earnings news.” Guidance news refers to the difference between guided EPS and the relevant benchmark just prior to the guided EPS. Actual earnings news refers to the difference between guided and actual EPS (Tan et al., 2002). A guiding firm has non-zero guidance news, and total earnings news is split into guidance news and actual earnings news. In particular, a guiding firm has no actual earnings news and guidance news equals to total earnings news if the guided EPS equals to actual EPS. A non-guiding firm, obviously, has no guidance news and total earnings news equals to actual earnings news.

³ US federal securities law require companies to only file an annual report on the Form 10K or a quarterly report on the Form 10Q. In practice, most companies voluntarily release their earnings before filing their annual or quarterly reports (Hsieh et al., 2006).

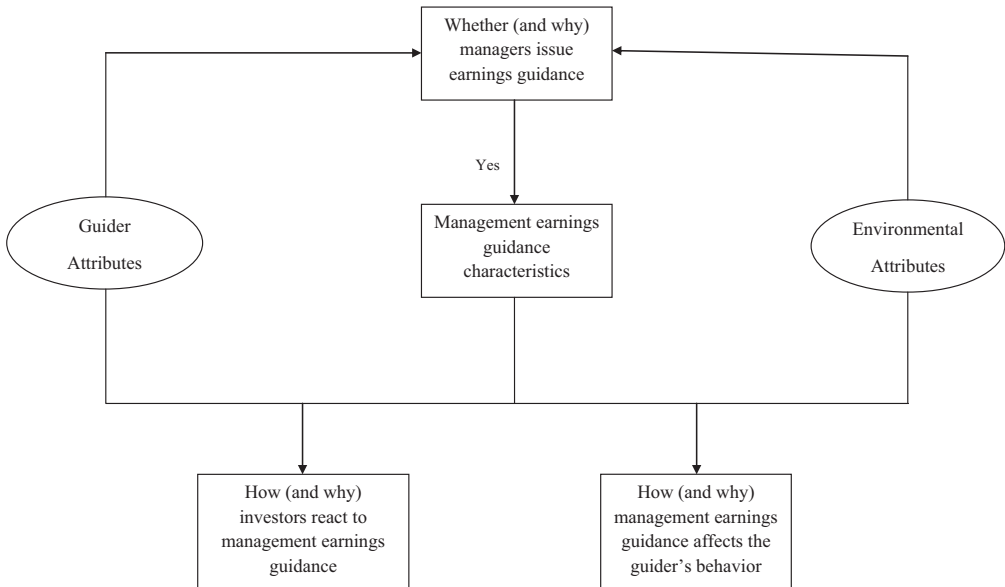


Fig. 1. A synthesis framework.

3. Organizing framework

Fig. 1 presents the organizing framework for the synthesis, which captures experimental researchers' current focus on understanding management's decision to guide and how that decision affects investors and management. In the framework, management decides to guide (or not to guide) and the nature, form, and frequency of this guidance. I refer to these as the guidance characteristics. Research has examined guider and environmental attributes that affect the decision to guide and the guidance characteristics. Guider attributes are attributes of the guiding firm or management, such as the firm's earnings record and the manager's personal attributes. Environmental factors are factors outside of the firm and/or management's control that may play a role in the management earnings guidance process. This includes the operating and regulatory environment, peer company's earnings guidance behavior, etc. The second strand of research has focused on the effect of the guidance characteristics (sometimes interacting with the guider attributes and/or the environmental attributes) on investors and management.

Accordingly, I first analyze and synthesize the literature on guider attributes and/or environmental attributes that determine whether and how management issue earnings guidance (Section 4). Next, I synthesize the literature on investors' reactions to guidance (Section 5). Finally, I discuss how guidance can affect the guider (Section 6).

Hirst et al. (2008) employ a framework of forecast antecedents – forecast characteristics – forecast consequences to review the area of management earnings guidance (including both experimental and archival studies). My synthesis extends their important work in three respects. First, I separately compare guiding firms versus non-guiding firms (in Section 5.2.1), which is not discussed by Hirst et al. (2008). Second, in Hirst et al. (2008), both environmental factors and forecaster characteristics (comparable to guider attributes in my framework) are forecast antecedents that determine whether management issue earnings guidance. In contrast, in my review, guider attributes and environmental factors appear as both guidance determinants and moderators of the effect of guidance characteristics, according to whether such guider attributes and/or environmental factors affect management earnings guidance decision or investors' reactions to management earnings guidance. Third, I further divide guidance characteristics into guidance record characteristics and specific guidance characteristics, which is absent in Hirst et al. (2008).

4. Whether, why and how management issues guidance

As indicated in Fig. 1, research has examined guider and environmental attributes that affect the decision to guide and the guidance characteristics. With respect to guider attributes, prior research has examined the effect of guiders' confidence and incentives on whether and how to provide guidance. With respect to environmental attributes, prior research has examined the effect of environmental uncertainty on the form of guidance.

4.1. Guider attributes (overconfidence effect)

There is a paucity of research on the extent to which managers' personal attributes affect their decision to guide. The only experimental study in this area is Libby and Rennekamp (2012), which shows that overconfident managers are more likely to perceive that the benefits associated with earnings guidance exceed its costs; hence, overconfident managers are more likely to issue earnings guidance. This finding holds regardless of whether the overconfidence is induced by self-serving attribution (attributing better task performance to skill or ability rather than to luck or the task being less difficult) or is an inherent personal trait (Libby & Rennekamp, 2012). This experimental finding corroborates the archival study that shows that managers' overconfidence does affect their tendencies to issue earnings guidance at a market level (Hribar & Yang, 2011). Compared with archival research, experimental studies have the advantage of providing a clean and direct measure of managers' personal attributes and hence more experimental studies are needed that examines the effects of other personal attributes.

4.2. Guider attributes (incentive-or-pressure-to-manipulate effect)

Managers who provide disaggregated guidance have the discretion over the choice of line items (e.g., revenue, research and development expenses, etc.) to add to the earnings guidance (Hirst et al., 2007). Holderness and Hunton (2011) show that managers who are under pressure to manipulate earnings are more likely to disaggregate earnings guidance for line items that are not manipulated, but not to provide guidance on items where manipulations are involved. However, managers who do not face pressure to manipulate earnings are not likely to issue disaggregated guidance in such a strategic manner.

4.3. Environmental attributes (environmental uncertainty)

Archival studies show that guidance form is often used to express management's estimation uncertainty (e.g., Hughes & Pae, 2004). Specifically, the higher the earnings uncertainty, the less precise guidance form management tends to use (Hughes & Pae, 2004). An experimental study by Du, Budescu, Shelly, and Omer (2011) corroborates this finding. Du et al. (2011) ask the participants in their experiment to provide their own earnings estimates, without restricting the form of the estimates. Du et al. (2011) find that participants are more likely to provide point estimates in a highly informed (therefore less uncertain) scenario, but they are more likely to provide range estimates in a poorly informed (therefore highly uncertain) scenario.

5. How and why investors react to management guidance

In this section, I review studies on (1) how earnings guidance characteristics affect investors' reactions to the earnings guidance. Guidance characteristics are divided into: (a) guidance record characteristics, i.e., how does management earnings guidance behave over time (Section 5.1); and (b) specific (or one-time) guidance characteristics (Section 5.2). Next, I review how guider attributes and/or environmental attributes interact with guidance characteristics to affect investors' reactions (Section 5.3).

5.1. Guidance record characteristics

5.1.1. Prior guidance accuracy (or bias)

Investors' reactions to current guidance forms depend on the firm's prior guidance record (Hirst, Koonce, & Miller, 1999). One line of research focuses on prior guidance accuracy, that is, *magnitude* of the difference (be it positive or negative) between actual EPS and the guided EPS. This line of research shows that investors are more confident in their own earnings estimates when more precise point guidance is provided than less precise range guidance; but this effect only exists when the company has an accurate prior earnings guidance record. When the company has an inaccurate prior guidance record, investors do not react to guidance forms (Hirst et al., 1999).

In Hirst et al. (1999), prior management guidance is manipulated to be without obvious bias. Some studies investigate biased EPS guidance. For instance, Tan et al. (2010) show that compared to a consistent bias record, an inconsistent bias record gives analysts stronger excuse not to adjust for bias in earnings guidance. That is, analysts are more likely to follow earnings guidance (i.e., to copy management guided EPS in their own forecasts) if prior guidance is inconsistently biased (than consistently biased), even though the analysts are aware of the bias contained in management guidance.

5.1.2. Guidance frequency (or guidance commitment)

Investors' views about a manager's commitment to disclosure also depend on the manager's prior guidance accuracy. More committed guiders are regarded as more credible than less committed guiders when prior guidance is accurate. When prior guidance is inaccurate, investors' views on more versus less committed guiders reverses; i.e., less committed guiders are more credible than more committed guiders (Venkataraman, 2008).

5.1.3. Guidance retractions and corrections

Managers sometimes retract or correct previous earnings guidance. "Retraction" refers to the cancellation or withdrawal of previous guidance, and "correction" refers to replacing the original erroneous disclosure with a new disclosure correcting any erroneous information contained in the previous disclosure. Tan and Koonce (2011) find that when there is a retraction of a piece of earnings-relevant news (but no new information is provided), the effect of previous erroneous information linger (i.e., investors cannot fully eliminate the impact of erroneous news even though they are explicitly informed of its invalidity). In contrast, when there is a correction (with new information provided), investors tend to overreact; i.e., they react more strongly to the correct news with the contrast of erroneous news, than to the correct news alone (Tan & Koonce, 2011).

5.2. Specific guidance characteristics

5.2.1. Earnings news division

In this section, I review research on (1) how and why investors react differently to firms that guide versus firms that do not guide; and (2) how investors react differently for firms with different earnings news division strategies. While analysts claim that they welcome warnings of future earnings disappointments, archival researchers document that market reactions are more negative for firms that warn than for firms that do not warn (e.g., Kasznik & Lev, 1995). Libby and Tan (1999) argue that the disparity between what analysts say (i.e., analysts welcome warnings of upcoming negative news) and what analysts do (i.e., analysts punish warning firms) is a result of two processes: (1) analysts *sequentially* evaluate company earnings guidance and actual earnings when they make earnings and investment-related judgments, (2) analysts *simultaneously* review guidance and actual earnings news when they make comments about the desirability of earnings warnings. Libby and Tan (1999) provide evidence consistent with different information processing (sequential versus simultaneous) as an explanation for the seemingly paradoxical findings.

Libby and Tan (1999) examine investors' short-term reactions to guiding firms. Mercer (2005), in contrast, suggests that managers should not place too much emphasis on whether to provide earnings guidance. Mercer (2005) finds that, although in the short-term, management credibility is

assessed to be higher for guiding firms than for non-guiding firms, in the long run management credibility is determined largely by whether total earnings news is positive or negative.

Assuming that managers are able to precisely predict total earnings news and they decide to issue earnings guidance, they need to decide how to split total earnings news into guidance news and actual earnings news. Broadly speaking, a manager can *overstate*, *accurately state*, or *understate* the total earnings news in his/her guidance.⁵ Tan et al. (2002) suggests that different guidance strategy may lead to different investors' reactions, depending on whether total earnings news is positive or negative. Mental accounting theory (Thaler, 1999) suggests that providing two pieces of news with the same sign may increase investors' reactions relative to a single piece of news; in contrast, providing two pieces of news with contradicting signs may alleviate investors' reactions relative to a single piece of news. Based on this argument, Tan et al. (2002) suggest that for a firm with positive total earnings news, the best strategy is to split the total earnings news into two pieces of smaller positive news (i.e., to understate the positive total earnings news in its earnings guidance), and the worst strategy is to overstate the positive news in guidance, while having negative actual earnings news. In contrast, for a firm with negative total earnings news, the best strategy is to overstate the negative news in guidance, while having positive actual earnings news; and the worst strategy is to split the total earnings news into two pieces of smaller negative news (i.e., to understate the negative total earnings news in its earnings guidance). The effect of an accurate guidance strategy lies in the middle for both positive and negative domains.

Tan et al.'s (2002) findings are consistent with several theories. One is cue consistency theory, which argues that two earnings signals of consistent signs result in stronger investors' reactions than two earnings signals of opposite signs (Slovic, 1966). The second theory is recency effect, which predicts that investors' reactions are predominantly determined by the more recent actual earnings news than by the earlier guidance news (Hogarth & Einhorn, 1992). Another theory is diminishing marginal reaction theory, which predicts that investors' marginal reactions to an earnings signal diminish as the magnitude of the earnings news increases (Thaler, 1999). Miller (2006) attempts to discriminate among the three theories and employs a setting of understated positive total earnings news (i.e., both guidance news and actual earnings news are positive). There are three scenarios in Miller (2006). One is that total earnings news is divided *equally* into guidance news and actual earnings news; one is that total earnings news is divided into a piece of larger guidance news and a piece of smaller actual earnings news; and the other scenario is that total earnings news is divided into a piece of smaller guidance news and a piece of larger actual earnings news. Cue consistency theory would predict similar reactions across the three scenarios. Recency theory predicts that investors' reactions are highest when the total earnings news is divided into a piece of large actual earnings news and a piece of small guidance news, followed by when the total earnings news is divided equally between the guidance news and the actual earnings news, then lowest when the total earnings news is divided into a piece of large guidance news and a piece of small actual earnings news. Diminishing marginal reaction theory predicts that investors' reactions would be stronger when the total earnings news is divided *equally* into the guidance news and the actual earnings news, relative to being divided into one piece of large news and one piece of small news. Miller's (2006) result is consistent with diminishing marginal reaction theory, but inconsistent with other competing theories such as cue consistency effect or recency effect.

The above studies examine the division between the guidance news and the actual earnings news in a single-firm setting. That is, they do not consider whether investors' reactions to a given firm's earnings guidance are affected by the guidance strategy of similar firms in the same industry. Maletta and Zhang (2011) extend Miller (2006) to a multi-firm setting. They find that Miller's (2006) finding may not hold once the peer firm's guidance strategy is considered (see Section 5.3.5).

⁵ For example, EPS for the coming quarter is 10 cents higher than the analysts' consensus forecast. In guidance, the firm manager may state in guidance that EPS will be 15 cents higher than the consensus analysts forecast (overstate), while the actual EPS is 5 cents lower than the guided EPS. The firm manager may state in guidance that EPS for the coming quarter will be 10 cents higher than the analysts' consensus forecast (accurately state), and the actual EPS turns out to be the same as the guidance. Or, the firm manager may state that EPS for the coming quarter will be 5 cents higher than the analysts' consensus forecast (understate), and the actual EPS turns out to be 5 cents higher than the guided EPS.

5.2.2. Guidance news valence

A few studies have examined how the predicted effect varies with guidance news valence (i.e., whether the guidance news is positive or negative, see Table 1). Some studies show that the proposed effect varies *symmetrically* across positive and negative guidance news domain (e.g., Libby, Tan, & Hunton, 2006; Rennekamp, 2012; Tan et al., 2002). By applying mental accounting theory, Tan et al. (2002) show that for positive (negative) guidance news, understating total earnings news in guidance news leads to more positive (negative) reactions than accurate guidance news, which in turn leads to more positive (negative) reactions than overstating total earnings news in guidance news. Libby et al. (2006) show that for positive (negative) total earnings news, narrow range guidance (where the actual EPS exceeds (misses) the whole range) leads to more positive (negative) investors' reactions compared with point guidance, whereas wide range guidance (where the actual EPS falls within the range) leads to less positive (negative) investors' reactions compared with point guidance. Similarly, Rennekamp (2012) shows that compared with less readable disclosure, more readable disclosure leads to more positive (negative) investors' reactions for positive (negative) guidance news.

Some studies show that the proposed effect varies *asymmetrically* across positive and negative guidance news (Du, 2009; Han & Tan, 2010). Investors are ambiguity averse (seeking) for negative (positive) guidance news, hence investors favor range (point) guidance when the news is positive (negative; Du, 2009). Given that positive guidance is inherently less credible (therefore more elastic) than negative guidance, Han and Tan (2010) propose that motivated reasoning is more likely to happen for positive guidance than negative guidance.

5.2.3. Guidance forms

In this section I review studies on how investors react to forms of earnings guidance. Research on guidance forms focuses on comparing point and range guidance (e.g., Hirst et al., 1999; Libby et al., 2006). The primary reason for the popularity of point and range guidance in research is the ease with which information can be held constant between them (Hirst et al., 1999). Researchers normally set the midpoint of range guidance equal to point guidance, and point guidance can thus be viewed as extreme range guidance where the range width is zero (Hirst et al., 1999).

Hirst et al. (1999) suggest that guidance form affects investor confidence, with investors being more confident when management guidance takes the form of more precise point guidance than less precise range guidance. Hirst et al. (1999) suggest, however, that guidance form does not affect investors' earnings estimates. Du (2009) extends Hirst et al. (1999) in two ways. First, Du (2009) shows that although investors' earnings estimates are not affected by guidance form, their resource allocation (investment dollar amount) decision (between a firm issuing point guidance versus a firm issuing range guidance) is affected by guidance form. Second, investors' resource allocation decision depends on whether the guidance news is positive or negative. Specifically, investors prefer ambiguity for positive news but they are ambiguity averse for negative news. Hence investors allocate more resource to the firm issuing range (point) guidance when the news is positive (negative).

More recent research extends Hirst et al. (1999) by documenting that, although investors' post-guidance earnings estimates are not affected by guidance form, their earnings re-estimates after the actual earnings announcement are affected by guidance form (Libby et al., 2006; Han & Tan, 2007). Libby et al. (2006) show that when the actual earnings are higher (lower) than point guidance (which equals to the midpoint of range guidance), investors' reactions are most positive (negative) for narrow-range guidance (where the actual earnings exceed the high-end of the range for positive guidance or miss the low-end of the range for negative guidance), followed by point guidance, then by wide-range guidance (where the actual earnings fall within the range). Han and Tan (2007) corroborates findings of Libby et al. (2006) by proposing and testing a set of multiple-reference-point rules, and comparing point and range guidance with a hybrid guidance form – MID guidance.⁶ Du et al. (2011) propose a two-stage process to explain investors' preference for point or range management earnings guidance. First, congruity principle (Budescu & Wallsten, 1995) argues that investors prefer a guidance form that is congruent with the environmental uncertainty. Based on this argument,

⁶ A typical format of MID guidance is, for example, "EPS is expected to be \$1, plus or minus \$0.1."

Table 1
Key research findings.^a

Article	Theory	Main independent variables	Main dependent variables	Key research findings
Hirst, Koonce, and Miller [1999,JAR] ^b	Source credibility	Prior guidance accuracy (high, low) Guidance form (point, range)	Investors' confidence and dispersion in earnings estimates	For guidance with inaccurate prior record, guidance form does not matter; for guidance with accurate prior record, investor confidence (dispersion) is higher (lower) for point guidance than for range guidance.
Libby and Tan [1999,JAR]	Cue consistency	Guidance issuance (no guidance, sequential guidance, simultaneous guidance)	Earnings re-estimates after actual earnings announcement	Analysts' earnings re-estimates are lowest in sequential processing condition, followed by no guidance condition, then by simultaneous processing condition.
Sedor [2002,TAR]	Scenario thinking	Information structure (list, scenario) Prior earnings (loss, profit)	Earnings estimates after management guidance	Analysts' earnings estimates are more optimistic where management plan is presented as a scenario than as an unstructured list, and the difference is bigger for prior-loss firms than for prior-profit firms.
Tan, Libby, and Hunton [2002,JAR]	Mental accounting	Total earnings news valence (positive, negative) Guidance news in proportion to total earnings news (50%, 100%, 150%)	Earnings re-estimates after actual earnings announcement	For positive total earnings news, earnings re-estimates are higher (lower) when the news is understated (overstated) in guidance than when it is accurately stated in guidance. For negative total earnings news, earnings re-estimates are lower (higher) when the news is understated (overstated) in guidance than when it is accurately stated in guidance.
Mercer [2005,TAR]	Attribution theory and affective decision theory	Forthcomingness (guiding, non-guiding) News valence (positive, negative) Assessment horizon (short, long)	Management credibility	For a short-term assessment horizon, management credibility is assessed higher for a guiding firm than for a non-guiding firm, and the difference is larger for negative guidance than for positive guidance. For a long-term assessment horizon, management credibility is determined by news valence – higher credibility for positive news than for negative news – and is not affected by whether there is earnings guidance.
Kadous, Krische, and Sedor [2006,TAR]	Counter-explanation	Number of counter-explanations (no, few, many) ^c	Earnings estimates after management guidance	Asking participants to generate a few counter-explanations reduces their optimism in earnings estimates induced by scenario thinking, but asking them to generate many counter-explanations does not reduce optimism.
Libby, Tan, and Hunton [2006,TAR]	Range precision effect	Guidance error (downward bias, upward bias) Guidance form (point, narrow range, wide range) ^c	Earnings re-estimates after actual earnings announcement	When the actual EPS exceeds (misses) the point guidance (the midpoint of the range guidance), investors' earnings reestimates are highest (lowest) for the narrow range guidance (where the actual EPS fall outside of the range), followed by the point guidance, then by the wide range guidance (where the actual EPS fall within the range).

Miller [2006,CAR]	Diminishing marginal reactions and cue consistency effect	Guidance news in proportion to total earnings news (150%, 88.9%, 50%, 11.1%, -50%)	Earnings re-estimates after actual earnings announcement	Earnings re-estimates are highest when guidance news equals one-half of total earnings news, followed by understated guidance news (guidance news and actual earnings news are consistent in sign), then by overstated guidance news (guidance news and actual earnings news are inconsistent in sign).
Han and Tan [2007,TAR]	Multiple-reference-points theory	Guidance form (point, MID, range) Investor knowledge (high, low)	Earnings re-estimates after actual earnings announcement	For high-knowledge participants, earnings re-estimates are highest for range guidance, followed by MID guidance, then by point guidance, when earnings falls in the lower end (missing the midpoint but above the lower endpoint). For low-knowledge participants, earnings re-estimates are not different between the MID guidance and point guidance conditions, and both are lower than the range guidance condition.
Hirst, Koonce, and Venkataraman [2007,JAR]	Disaggregation enhances management credibility	Earnings manipulation incentives (high, low) Guidance disaggregation (aggregated, disaggregated)	Management credibility	For disaggregated guidance, management incentive to manage earnings does not affect management credibility. For aggregated guidance, management credibility is higher for managers with low (versus high) incentive to manage earnings.
Libby, Hunton, Tan, and Seybert [2008,JAR]	Analysts' forecasts are driven by their economic incentives	Analysts' incentive (accuracy, relationship) Guidance timing (early, late) ^c	Earnings re-estimates after actual earnings announcement	Analysts' earnings forecasts exhibit an optimistic-to-pessimistic pattern (being optimistic early then later become pessimistic), and this pattern is more obvious for those analysts have the relationship incentive.
Venkataraman [2008,WP]	Omission bias theory	Guidance commitment (more, less committed) Prior guidance accuracy (high, low)	Management credibility	Committed disclosers (those firms with a regular and predictable guidance record) are viewed as more (less) credible than less committed disclosers when prior forecasts are more (less) accurate.
Du [2009,JBF]	Ambiguity theory	Guidance news (positive, negative) Guidance form (point, range)	Investors' resource allocation decision	When guidance news is positive (negative), investors allocate more resource to the firm issuing range (point) guidance where there is more (less) ambiguity.
Fleming [2009,BRIA]	Expectancy Violation Theory	Guidance disaggregation (disaggregated, aggregated) Guidance form (point, range)	Venture capitalists' initial investment screening decision	Disaggregated guidance leads to better (worse) screening decision than aggregated guidance for point (range) guidance.
Han and Tan [2010,JAR]	Motivated reasoning and elastic justification theory	Investor position (long, short) Guidance news valence (positive, negative) Guidance form (point, range)	Earnings estimates after management guidance	Motivated reasoning (long investors make higher earnings estimates than short investors) is more likely to occur for range guidance than for point guidance, and more likely for positive guidance than for negative guidance.
Tan, Libby, and Hunton [2010,CAR]	Elastic justification theory	Analysts' incentive (accuracy, relationship) Management guidance bias record (consistent, inconsistent) ^c	Earnings estimates after management guidance	Analysts adjust for guidance bias when they have accuracy objective but not so for relationship objective. The difference between these two analysts groups is greater for a consistent guidance record than for an inconsistent guidance record.

Table 1 (Continued)

Article	Theory	Main independent variables	Main dependent variables	Key research findings
Du, Budescu, Shelly, and Omer [2011,OBHDP]	Congruity theory & ambiguity aversion theory	Information vagueness (high, low) Guidance form (point, narrow range, and wide range)	Investors' preferences for more precise guidance form	Investors prefer more (less) precise point (range) guidance form when the information given is less (more) ambiguous. Investors prefer narrow range to wide range guidance.
Elliott, Hobson, and Jackson [2011,TAR]	Activation of different knowledge schemes associated with earnings	Guidance disaggregation (Aggregated, disaggregated) Actual earnings outcome (favorable, unfavorable)	Investment attractiveness	Earnings fixation is lower for disaggregated than for aggregated guidance.
Hales, Kuang, and Venkataraman [2011,JAR]	Motivated reasoning and vividness effect	Investor position (long, short) Language vividness (vivid, pallid)	Earnings growth	For positive news, short investors who receive vivid presentation assess higher future earnings growth than those who receive pallid presentation. Long investors are less affected by presentation vividness. For negative news, long investors who receive vivid presentation assess lower future earnings growth than those who receive pallid presentation. Short investors are less affected by presentation vividness.
Holderness and Hunton [2011,WP]	Strategic information transmission theory and anticipatory obfuscation theory	Earnings management pressure (absent, present) Disaggregated guidance pressure (absent, present)	What Income Statement items to disclose in their earnings guidance	Managers who are under pressure to manage earnings choose to aggregate information where earnings management takes place (i.e., not to disclose) and disaggregate guidance in other places (i.e., to disclose). Managers who are not under pressure to manage earnings do not exhibit such a guidance disaggregation pattern.
Maletta and Zhang [2011,CAR]	Contrast effect	Guidance news in proportion to total news (25%, 50%, 75%) Guidance provider (own firm, peer firm)	Earnings re-estimates after actual earnings announcement	When there is no difference in terms of percentage of guidance news relative to total earnings news between the target and peer firms, investor re-estimates for the target firm are higher when 50% of the total earnings news is released in guidance. When there is a difference in terms of percentage of guidance news relative to total earnings news between the target and the peer firms, investors' re-estimates for the target firm are higher if the target firm releases more positive news in guidance (than the peer firm).
Nelson and Rupar [2011,WP]	Ratio bias effect	Numerical format (dollar, percentage) Disclosure management opportunity (mandatory, voluntary) Disclosure management incentive (low, high) ^c	Investment risk perception	For the mandatory disclosure format, investor risk assessment is higher for dollar disclosure than for percentage disclosure in the sensitivity analysis. For the discretionary disclosure format, investor risk assessment is not different between dollar and percentage disclosure in the sensitivity analysis.

Rupar [2011,WP]	Attribution theory	Guidance form (point, range) Environmental uncertainty (high, low)	Management credibility, Firm growth expectations, Stock price estimates	Within each uncertainty setting, when management guidance form is aligned with its operating environment uncertainty (i.e., point/range guidance for low/high uncertainty), management credibility is assessed to be higher, which in turn leads to higher growth expectations and higher stock price estimates, relative to when management guidance forms is misaligned with its operating environment uncertainty (i.e., point/range guidance for high/low uncertainty).
Tan and Koonce [2011,AOS]	Affect theory	Guided EPS (low, high) Retraction & correction (both retraction & correction, correction only) ^c	Earnings potential, investment attractiveness	When guidance news is retracted, investors cannot fully eliminate the impact of previous erroneous disclosure. When guidance news is retracted and corrected, investors tend to over-react by overweighting the new corrected news.
Libby and Rennekamp [2012,JAR]	Over-confidence	Task difficulty (easy, difficult)	Commitment to high performance in second round	Overconfident managers (for whom the overconfidence is induced by an easy task) are more likely provide earnings guidance.
Rennekamp [2012,JAR]	Processing fluency	News nature (positive, negative) Readability (high, low)	Valuation judgment; management credibility	More readable disclosures make investors' reaction to positive (negative) guidance more positive (negative) compared to less readable disclosures.
Tan, Wang, and Zhou [2012,WP]	Readability effect; message consistency effect	Message consistency (high, low) Language readability (high, low)	Disclosure credibility Valuation judgment	Readability matters only when messages are inconsistent, but not when messages are consistent. When messages are inconsistent, more readable disclosures lead to higher disclosure credibility, and also higher valuation judgment, than less readable disclosures.
Wang and Tan [2013,JAR]	Mental accounting and goal setting theory	Guidance frequency (frequent, infrequent) Guidance goal (accurate, beat/meet)	Marketing strategy preference and choice	Frequent guiders tend to prefer the marketing strategy with more predictable quarterly earnings (but with lower total expected earnings) than infrequent guiders. Accuracy-goal guiders tend to prefer the marketing strategy with higher predictable quarterly earnings (but with lower total expected earnings) than beat/meet-goal guiders. The difference in preference between guiders with different goals is smaller for frequent guiders than for infrequent guiders.

^a This table summarizes the theory, main independent variables, main dependent variables, and key research findings of the 29 papers reviewed.

^b I include the journal name in brackets. JAR is a short for *Journal of Accounting Research*, TAR is a short for *The Accounting Review*, CAR is a short for *Contemporary Accounting Research*, AOS is a short for *Accounting, Organization, and Society*, BRIA is a short for *Behavioral Research in Accounting*, JBF is a short for *Journal of Behavioral Finance*, OBHDP is a short for *Organizational Behavior and Human Decision Processes*, and WP stands for working paper.

^c Based on Experiment 1.

investors prefer point guidance when the environmental uncertainty is very low. Otherwise, investors prefer range guidance. Second, as the range guidance gets wider, it loses informativeness although it is more accurate (i.e., more likely to contain actual EPS). Investors prefer narrow range guidance to wide range guidance due to the informative advantage of narrow range guidance (than wide range guidance). Hence, in most cases, investors prefer narrow range guidance to point guidance and/or wide range guidance.

5.2.4. Guidance timing

Analysts may react differently to EPS guidance issued at different points in time. Libby, Hunton, Tan, and Seybert (2008) show that analysts tend to be more optimistic at earlier points in time than at later points in time due to analysts' incentives to please management, so that it is easier for the actual earnings to meet or beat the analysts' forecast. Hence analysts are more likely to adjust for any optimistic bias in management guidance if the guidance is provided later but not earlier (Libby et al., 2008). Libby et al.'s (2008) findings are consistent with findings of archival studies (Richardson, Teoh, & Wysocki, 2004). More importantly, Libby et al. (2008) establish the causal relationship between analysts' relationship incentives (see p. 16) and the optimistic-to-pessimistic pattern in analysts' forecasts.⁷

5.2.5. Guidance disaggregation

The literature documents several benefits of disaggregated guidance to the guider. For example, Hirst et al. (2007) find that for positive guidance news, which is typically less believable than negative guidance news, disaggregated guidance leads investors to perceive higher management credibility (relative to aggregated guidance), hence leads to lower cost of capital, particularly when managers have strong incentives to manipulate earnings. More recent research suggests that such benefits of disaggregated guidance may be limited to point guidance (which is fairly precise), but not to range guidance (which is less precise; Fleming, 2009). Another benefit with issuing disaggregated guidance is that it reduces investor fixation on net income⁸ (Elliott, Hobson, & Jackson, 2011), because disaggregated guidance facilitates investors' activation of a knowledge structure in which net income is one of several inputs to evaluate company performance, rather than a knowledge structure where net income is the sole sufficient performance measure.

Nevertheless, certain costs (to the guider) are associated with issuing disaggregated guidance. Disaggregated guidance makes it more difficult for managers to hide earnings manipulation activities, because more detailed and specific guidance restrict managers' ways to maneuver earnings results (Holderness & Hunton, 2011).

5.2.6. Sensitivity analysis

Future earnings results are sometimes subject to the influence of factors beyond management control. For example, an airline company's earnings are affected by oil prices, and the general interest rate environment affects a financial company's performance. It is common practice for firms to disclose future earnings sensitivity to such external, uncontrollable factors. Koonce, Lipe, and McAnally (2005) examine how investors respond to one-sided loss-only sensitivity disclosure, which is mandated under current accounting standards (SEC Financial Reporting Release No. 48). Koonce et al. (2005) indicate that investors likely infer a smaller amount of potential gain than the disclosed loss amount. However, such inference corresponds to the company using a fairly infrequent risk management strategy. Nelson and Rupa (2011) study whether investor risk assessment is affected by numerical disclosure versus percentage disclosure for potential downside risk. Nelson and Rupa (2011) find that numerical disclosure leads to higher risk assessment compared with percentage disclosure, but only when the disclosure format is mandatory rather than discretionary. Investors

⁷ Optimistic-to-pessimistic pattern refers to the observation that analysts' early earnings forecasts are usually optimistic, then analysts gradually "walk down" their earnings forecasts, until the forecasts become pessimistic (so that the actual EPS is able to meet or beat analysts' forecasts) when it comes to the actual earnings announcement date (Richardson et al., 2004).

⁸ Investors' earnings fixation refers to investors' tendency to over rely on the bottom-line earnings figure while neglect other relevant information (Elliott et al., 2011).

subconsciously anchor on the bigger number (compared with percentage) and therefore infer higher risk. They argue that when managers have discretion over numerical versus percentage disclosure, investors may view a percentage disclosure as the manager's attempt to understate downside risk, which investors counter-react by raising their risk assessment.

5.2.7. Narrative disclosures

Disaggregated earnings guidance and sensitivity analysis both relate to quantitative information contained in management earnings guidance. Another stream of research examines the narrative words used in management earnings guidance (i.e., narrative disclosure). Several dimensions of narrative disclosure have been examined in the literature.

Scenario construction. Sedor (2002) finds that analysts are subject to “scenario thinking;” wherein a manager's earnings guidance is assessed to have a higher probability of being realized if it is described in a scenario than if it is provided in a simple list of facts.⁹ Sedor's (2002) findings compliment archival research on analyst optimism in earnings guidance where it is usually suggested that analyst optimism is solely driven by their incentive to please management (Cowen, Groysberg, & Healy, 2006). However, Sedor (2002) suggests that such optimism can be an unintentional cognitive bias rather than a result of any economic or business incentive. Kadous, Krische, and Sedor (2006) extend Sedor (2002) by investigating how to reduce analyst optimism induced by scenario thinking. Drawing from psychology literature, Kadous et al. (2006) suggest that asking analysts to provide reasons why managers could fail (“counter-explanations”) may reduce the effect of scenario thinking, but only if it is easy to generate the counter-explanations (e.g., asking analysts to generate 2 counter-explanations compared to 12 counter-explanations).

Readability. Readability refers to the ease with which text can be read and understood (Tan, Wang, & Zhou, 2012, p. 7). Rennekamp (2012) examines how readability of the guidance press release affects investors' reactions. Rennekamp (2012) finds that investors' reactions are more extreme (i.e., more negative for negative guidance and more positive for positive guidance) in response to more readable disclosures. Tan et al. (2012) suggest that more readable disclosures are associated with higher management credibility, but this effect is stronger when the message content is inconsistent (e.g., actual earnings beat one benchmark but miss the other) than when the message content is consistent (e.g., actual earnings consistently beat multiple benchmarks). The implication is that message delivering (here, readability) does not matter so much when message content is clear-cut; however, message delivering is crucial if message content is arguable.

Vividness. Vivid language is “(a) emotionally interesting; (b) concrete and imagery-provoking, and (c) proximate in a sensory, temporal, or spatial way,” while pallid language is “more bland, sterile, or less emotionally charged” (Hales, Kuang, & Venkataraman, 2011, p. 224). Hales et al. (2011) show that vivid presentation tends to influence investors who hold contrarian positions (i.e., short investors in a bull market or long investors in a bear market), but the influence is less for investors who hold momentum positions (i.e., long investors in a bull market or short investors in a bear market). Interestingly, vivid presentation alleviates contrarian investors' bias in interpreting news rather than deepening momentum investors' bias in interpreting news, contrary to common belief in practice.

Narrative words can vary in multiple dimensions and there is usually no database maintained on narrative disclosures, hence it is difficult for archival researchers to conduct meaningful research on narrative disclosures (see Li, 2010 for a review of archival studies on textual disclosures). Experimental researchers are able to make unique contribution in this area because of their ability to hold constant other dimensions of language while varying only one or more interested dimensions in their studies (Libby et al., 2002). Experimental research provides very important supplements to archival findings in this area.

⁹ Managers can construct a scenario by vividly describing the events, or providing the causal links of facts, etc. For example, the following sentence is a scenario description – “The strong economy and the publicity given to the health benefits of moderate wine consumption continue to fuel consumer demand for wine. In fact, industry-wide sales of red wine have more than doubled in the past few years.” A corresponding list of facts would be: (1) Industry wide sales of red wine have more than doubled in past few years; (2) Strong economy (Sedor, 2002, p. 748 and 749).

5.3. Guider or environmental attributes

This section analyzes the literature on how guider characteristics and/or environment attributes affect investors' reactions to management earnings guidance, including guider's incentives to manage earnings, guider's prior earnings record, analyst incentives, investors' investment positions, peer company guidance strategy, operating environment uncertainty, and finally regulatory environment.

5.3.1. Guider's incentives to manage earnings

Several studies examine how managers' incentives to manage earnings interact with other factors to affect investors' reactions to earnings guidance. Hirst et al. (2007) show that investors take managers' incentives to manage earnings into account when they evaluate the credibility of earnings guidance. Hirst et al. (2007) compare the credibility of aggregated versus disaggregated earnings guidance. For an aggregated guidance, investors perceive that the guidance is more credible when managerial compensation consists only of fixed salary (therefore low incentives to manipulate earnings) than when it consists largely of performance-based pay (therefore high incentives to manipulate earnings). One measure to improve the perceived credibility of earnings guidance is to provide disaggregated earnings guidance. Disaggregated earnings guidance reduces managers' opportunities to meet their guided earnings through earnings management, therefore investors perceive higher financial reporting quality for firms providing disaggregated guidance (*albeit* the management has high incentive to manipulate earnings).

5.3.2. Guider's prior earnings record

Investors' reactions to current earnings guidance may differ systematically between firms with prior profits versus losses. Analysts and investors assume that prior losses are less persistent than prior profits and hence are more motivated to rely on other relevant information (here, management guidance) when predicting future earnings for prior-loss firms than for prior-profit firms (Sedor, 2002).

5.3.3. Analyst incentives

Analysts desire to have more accurate earnings forecasts since higher accuracy in earnings forecasts means better reputation and brighter career future (Brown, 2001). Other than an incentive to provide accurate guidance, analysts may sometimes have incentives to maintain a good relationship with managers to generate business opportunities and/or gain access to management information (i.e., "relationship incentives;" Schipper, 1991). The relationship incentives have been found to partly contribute to the observed optimistic-to-pessimistic pattern in analyst forecasts (Libby et al., 2008). When analysts are provided with pessimistically biased earnings guidance, analysts with relationship incentives (compared with analysts with accuracy incentives) are more reluctant to adjust for such bias in manager earnings guidance. Their earnings forecasts tend to follow the downward biased pattern so that it is easy for the actual EPS to meet or beat the analysts' forecasts (Tan et al., 2010).

5.3.4. Investors' investment positions

Investment positions (i.e., whether long-holding or short-selling a stock) may affect investors' reactions to earnings guidance. Motivated reasoning theory suggests that investors are more likely to interpret earnings guidance with a bias toward a gain rather than a loss (Hales, 2007). For example, long (short) investors tend to evaluate the same EPS guidance more optimistically (pessimistically), since long (short) investors make a gain if stock price appreciates (depreciates). Han and Tan (2010) show that such an effect can occur only when there is enough elasticity in the news (i.e., when there is room for investors to maneuver their evaluation). Positive guidance is less credible than negative guidance given managers' incentives to announce positive news (Lang & Lundholm, 2000). Hence positive guidance is more elastic than negative guidance. Range guidance offers a range of possible future earnings, whereas point guidance offers only one expected point EPS. Hence range guidance is more elastic than point guidance. Han and Tan (2010) find that investors are more likely to engage in motivated reasoning for positive guidance (compared with negative guidance) or for range guidance (compared with point guidance). Hales et al. (2011) suggest that investors are more sensitive to

preference-inconsistent news than to preference-consistent news. Hales et al. (2011) demonstrate that investors react more strongly to vivid language than to pallid language, but this effect holds only for preference-inconsistent news (i.e., long/short investors reading negative/positive news) and not for preference-consistent news (i.e., long/short investors reading positive/negative news).

5.3.5. Peer company guidance strategy

Maletta and Zhang (2011) suggest that investors' reaction to a firm's earnings guidance is dependent on the earnings guidance strategy of a peer firm. In particular, Maletta and Zhang (2011) investigate the effect of a firm's relative guidance news surprise (i.e., how positive or negative the firm's earnings guidance news is relative to peer firm earnings guidance news). They find that when the two firms release a similar percentage of guidance news to total earnings news, Miller's (2006) finding continues to hold (i.e., investor earnings estimates are highest when guidance news equals half of total earnings news compared with scenarios of releasing guidance news that comprises 25% or 75% of total earnings news). However, when the two firms differ in terms of percentage of total earnings news released in guidance news, investors' reactions to firm earnings guidance increase as the percentage released by the firm relative to its peer firm increases. Maletta and Zhang's (2011) paper is an example of how guidance characteristics and environmental factors sometimes interplay to affect investors' reactions to earnings guidance.

5.3.6. Operating environment uncertainty

Rupar (2011) suggests that investors consider a firm's operating environment uncertainty when reacting to earnings guidance. Rupar (2011) introduces investors' *ex ante* expectations induced from environmental uncertainty as a factor and examines its joint effect with guidance form on investor earnings estimates. Rupar (2011) finds that investors' earnings estimates (as well as their assessments of management credibility) are higher when guidance precision and investor expectations are aligned (precise/less precise guidance form with low/high environmental uncertainty) than when they are not aligned (less precise/precise guidance form with low/high environmental uncertainty). Du et al. (2011), similarly, call for matching earnings guidance precision with information uncertainty. More (less) precise guidance form should be used when information uncertainty is low (high).

5.3.7. Regulatory environment

Research shows that investors consider the regulatory environment when reacting to management disclosures. When the disclosure format is mandated, investors perceive little room for managers to manipulate it and therefore are less vigilant to manager's strategic disclosure. In contrast, when the disclosure format is voluntary, investors are vigilant to managers' attempt to manipulate the disclosure format and therefore try to counteract the effect of this manipulation (Nelson & Rupar, 2011).

6. Effect of management guidance on guider behavior

Guidance frequency may affect manager operating activity decisions because of managers' consideration on the implication of any operating decisions on earnings (since more frequent guidance imposes more benchmarks to evaluate actual earnings; Bhojraj & Libby, 2005). Wang and Tan (2013) show that a frequent guider tends to sacrifice total long-term earnings to meet short-term earnings targets. That is, a frequent guider is more likely to choose an operating strategy with lower total expected earnings but higher earnings predictability over the other strategy with higher total expected earnings but lower earnings predictability.

Management myopic behavior refers to management tendency to sacrifice long-term earnings growth in order to meet short-term earnings targets (Cheng et al., 2005). Bhojraj and Libby (2005) suggest that increased disclosure frequency (quarterly reporting versus semiannual reporting) induces management myopia. Similarly, more frequent guidance (compared with less frequent guidance) also leads to lower research and development investment and therefore lower long-term earnings growth rate (Cheng et al., 2005). The concern of management myopia has led to recent calls to stop short-term earnings guidance while focusing on disclosure of long-term strategies and goals

(Hsieh et al., 2006). Clearly, management should weigh the benefits and costs of issuing guidance (especially short-term guidance) including any implications of issuing guidance on their operating decisions (Diamond & Yevmenenko, 2011).

Table 1 summarizes the theory, main independent variables, main dependent variables, and key research findings of the papers reviewed in Sections 4–6.

7. Future research directions and conclusions

In this section, I suggest several potential areas for future research based on the literature review above and offer concluding remarks.

7.1. Managers' personal attributes

The literature thus far has little to say regarding the extent to which managers' personal attributes affect their earnings guidance behavior (Libby & Rennekamp, 2012). As a result, there is considerable room for additional research to explore the effect of managers' personal attributes on their earnings guidance decisions (Brochet, Faurel, & McVay, 2011). Based on a small-scale review on literature of CEO personal attributes, I offer the following possible future research avenues.

7.1.1. CEO demographics

Several studies have shown that overconfident managers are more likely to issue earnings guidance (than less overconfident managers; e.g., Hilary & Hsu, 2011; Libby & Rennekamp, 2012). Psychology research has demonstrated that several demographic characteristics are associated with overconfidence; such as age, gender, years of experience, and political preferences (e.g., Barber & Odean, 2001). In particular, psychology research has documented mixed findings regarding the effect of age on overconfidence. Some research suggests young people are more overconfident than old people (Pliske & Mutter, 1996) while others suggest the opposite (e.g., Job, 1990). Future research may examine the effect of the CEO's age on earnings guidance behavior and whether this effect is via overconfidence.

A recent working paper (Hutton, Jiang, & Kumar, 2013) suggests that Republican managers (compared with Democratic managers) are more conservative in corporate policies (for instance, republican managers take on lower debt level and lower R&D expenses). Future research may investigate the effect of manager's political ideology on their guidance behavior.

7.1.2. CEO self-monitoring

Self-monitoring refers to a person's sensitivity to other people's comments and therefore his/her own reputation (Seybert, 2010). Seybert (2010) finds that high self-monitoring managers are more likely to over-invest in R&D projects than low self-monitoring managers. Prior studies show that the desire for a better reputation is one of the reasons for managers to provide guidance (Graham, Harvey, & Rajgopal, 2005; Hirst et al., 2008). Future research may examine whether high self-monitoring managers (i.e., those managers who are more likely to alter their behaviors in order for a better image) are more likely to issue earnings guidance than low self-monitoring managers.

7.1.3. CEO narcissism

Narcissists believe that they are better than most others for almost every task (Resick, Whitman, Weingarden, & Hiller, 2009). Olsen (2011) demonstrates that Narcissist CEOs tend to report higher EPS. Future research may investigate whether Narcissist CEOs are more likely to issue earnings guidance and in particular, if their earnings guidance is more optimistic (than non-Narcissist CEOs' guidance).

7.2. Guidance characteristics

7.2.1. Earnings guidance attributions

Research on guidance content thus far largely examines quantitative information accompanying earnings guidance (e.g., disaggregated earnings guidance or sensitivity analysis). However, earnings

guidance also often includes qualitative information (e.g., manager explanations as to why future earnings are predicted to be better or worse; Baginski, Hassell, & Kimbrough, 2004; Hutton, Miller, & Skinner, 2003). Experimental research has investigated attribution effects in other contexts, such as earnings restatements (Elliott, Hodge, & Sedor, 2012) and management discussion and analysis (Barton & Mercer, 2005; Koonce, Seybert, & Smith, 2012). Barton and Mercer (2005) find that analysts are able to differentiate plausible versus implausible explanations offered by managers for a poor earnings result, and they think more positively on a firm providing plausible attributions for their earnings results (compared with a firm with implausible attributions). Elliott et al. (2012) show that investors have greater trust in managers who accept responsibility for earnings restatements than in those who deny responsibility, and this difference is enlarged by an online restatement compared to a paper restatement. Koonce et al. (2012) express concern that investors may not be able to attend to the *completeness* of management explanations. Future research might examine attribution effects in the earnings guidance context and thereby complement archival research in this area (Rupar, 2011).

7.2.2. Guidance forms

Extant experimental research on guidance forms has focused primarily on point or range guidance with relatively less emphasis on examining other guidance forms, such as minimum, maximum, and qualitative guidance. Nevertheless, the literature indicates that minimum and maximum guidance is significant in practice, accounting for 68.2% of the sample in Pownall, Wasley, and Waymire (1993), and 33% in Baginski, Hassell, and Wieland (2011). In the context of contingent environmental liability disclosure, Kennedy, Mitchell, and Sefcik (1998) compare minimum and maximum estimates with best estimates and range estimates. Kennedy et al. (1998) find that investors tend to anchor on the numbers provided and generate ranges of estimated environmental liability that are too narrow. Further, investor risk assessments are significantly higher for a maximum environmental liability disclosure than for a minimum disclosure. Future research may investigate whether the results of Kennedy et al. (1998) generalize to the earnings guidance setting where the financial figures involved are much smaller in scale, or whether other variables moderate the effect of different guidance forms.

Qualitative guidance accounts for a non-trivial percentage in earnings guidance as well. Qualitative guidance is 7.8% within the sample in Bamber and Cheon (1998). Again, research on qualitative guidance is rather limited (one exception is Libby & Tan, 1999). Thus, future research examining the nature and effect of qualitative guidance will be productive.

7.2.3. Guidance media

Managers may provide earnings guidance orally in earnings conference calls or in written form published in press releases (Bamber & Cheon, 1998). Thus far, experimental research on management earnings guidance has been conducted in written format, be it on paper or electronically. Elliott et al. (2012) find that investor trust in management is higher (lower) when the manager accepts (denies) responsibility for earnings restatements via online video announcements, compared with text announcements. Future research may investigate how investors' reactions differ for the same earnings guidance issued in different media formats. Based on the findings of Elliott et al. (2012), evaluations of manager personal attributes, such as credibility (competence and integrity), are particularly subject to media effects.

7.2.4. Confirming management guidance

For those studies that examine investors' reactions to management guidance, almost all involve positive or negative guidance news. However, as indicated by Clement, Frankel, and Miller (2003), approximately 19% of their total guidance sample for the 1993–1997 period relates to confirming guidance (i.e., there is neither a positive nor a negative surprise in the earnings guidance – management issues the guidance to confirm current market expectations). Future research may consider studying the phenomenon of confirming guidance directly, by comparing it with positive or negative guidance or indirectly, by studying its joint effect with other guidance/guider characteristics and/or environmental factors. For example, it would be interesting to determine whether the documented effects of disaggregated earnings guidance generalize to confirming guidance.

7.3. Environmental attributes

7.3.1. Multi period and/or multi-firm settings

Most studies reviewed in this paper consider a single-period, single-firm scenario. In practice, however, management earnings guidance is a repetitive decision and investors' reactions are affected not only by a firm's own disclosure strategy, but also by the disclosure strategy of its peer firms. For instance, Miller (2006) documents that investors react more positively when the total earnings news is split equally between guidance news and actual earnings news, than when the total earnings news is divided into one piece of large news and one piece of small news. However, Maletta and Zhang (2011) show that the conclusion of Miller (2006) holds only when there is no contrast between the disclosure strategies of the target firm and its peer firm; when there is such a contrast (e.g., the percentage of total earnings news released in guidance news differs), investors focus on the target firm in comparison with its peer firm, rather than on the target firm in isolation. Researchers should incorporate this multi-firm, multi-period setting into their experimental designs to increase the external validity of their studies. Future research could also test whether findings documented in a single-firm, single-period setting generalize to multi-firm and/or multi-period settings.

7.3.2. Regulatory environment

Experimental studies have the unique advantage of creating a regulatory environment in the lab which may not exist in the real world, and being able to compare and contrast management and/or investor behaviors under existing versus proposed regulations (Bhojraj & Libby, 2005; Nelson & Rupar, 2011). Management earnings guidance is voluntary disclosure where very few regulations are in existence (Hirst et al., 2008). Experimental researchers may utilize their methodological advantages and continue to make contributions to policy research in the area of management earnings guidance (Maines, 1994).

7.4. The effect of management guidance on guider's behavior

There is little research on whether and how managers' operating and/or other disclosing decisions are affected by their earnings guidance strategies (see Holderness & Hunton, 2011; Wang & Tan, 2013 as exceptions). Future research may study how managers' operating and disclosing decisions are affected by managers' earnings guidance behavior.

7.5. Conclusions

This paper reviews experimental research on management earnings guidance. First, I review guider and environmental attributes that may affect management earnings guidance decisions. Next, I review whether and how investors react differently to management guidance characteristics, which sometimes jointly work with guider attributes and/or environmental attributes. Finally, I review how management earnings guidance behavior may affect their operating and disclosing decisions. Based on my literature synthesis, I also offer my views on promising future research directions.

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