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How Does Intentional Earnings Smoothing Vary With Managerial Ability?

Peter Demerjian[1], Melissa Lewis-Western[2], and Sarah McVay[1]

Abstract

We investigate if high-ability managers are more likely to intentionally smooth earnings, a form of earnings management, and when they are more likely to do so. Although prior studies provide evidence that high-ability managers report higher quality earnings, the literature does not indicate whether this behavior is common because of (or happens in spite of) high-ability managers' intentional smoothing activities. We find that (a) high-ability managers are significantly more likely to engage in intentional smoothing, (b) their intentional smoothing is associated with *improved* future operating performance, and (c) their intentional smoothing is more prevalent when the smoothing either benefits shareholders, the manager, or both. We do not, however, find evidence that high-ability managers who smooth are more likely to have engaged in informed trading or are more likely to consume perquisites. High-ability managers' intentional smoothing is also associated with increased voluntary (but not forced) executive turnover, consistent with high-ability managers being motivated, at least in part, by how the capital market consequences of smoothing are expected to benefit shareholders, thereby bolstering their reputation.

Keywords

managerial ability, earnings smoothing, accruals earnings management, real earnings management

Introduction

Prior research provides substantial evidence that high-ability managers generate more accurate future earnings forecasts and more effectively implement their chosen strategies than lower ability managers (Baik, Farber, & Lee, 2011; Bertrand & Schoar, 2003; Demerjian, Lev, & McVay, 2012; Holcomb, Holmes, & Connelly, 2009). These skills are the building blocks that underpin the superior earnings quality reported by high-ability managers (Aier, Comprix, Gunlock, & Lee, 2005; Demerjian, Lev, Lewis, & McVay, 2013). Yet, these same skills can also facilitate earnings management, including earnings smoothing. Earnings smoothing requires managers to accurately forecast future earnings, and then

[1]University of Washington, Seattle, USA
[2]Brigham Young University, Provo, UT, USA

Corresponding Author:
Melissa Lewis-Western, Brigham Young University, Tanner 517, Provo, UT 84602-0002, USA.
Email: melissa.western@byu.edu

increase or decrease current income to both reduce earnings volatility and generate future reporting slack (DeFond & Park, 1997). Thus, we investigate if high-ability managers are more likely than other managers to intentionally smooth earnings.[1] We also explore the future performance consequences and incentives associated with high-ability managers' intentional smoothing.

Ex ante, the relation between managerial ability and intentional smoothing is unclear. We expect that high-ability managers will have a better understanding of the trend line around which to smooth because they are able to generate better earnings forecasts (Baik et al., 2011; Beidleman, 1973; DeFond & Park, 1997; Moses, 1987). As a result, they are likely more capable of reporting smooth earnings than low-ability managers. We also expect that high-ability managers are better able to identify adjustments that smooth earnings at a lower cost than other managers, thereby maximizing the net benefits of intentionally smoothed earnings.[2]

Although we expect that high-ability managers have the ability to smooth earnings more effectively than other managers, this innate ability does not mean that they will necessarily choose to intentionally smooth. First, it is possible that high-ability managers more effectively manage their companies, obviating the need for discretionary smoothing. Second, even with the need to intentionally smooth, higher ability managers may opt not to do so. For example, if high-ability managers have valuable reputations, which garner them greater lifelong compensation (e.g., Demerjian et al., 2012; Fee & Hadlock, 2003), and intentional smoothing could harm their reputations, then they may avoid intentional smoothing.[3]

If high-ability managers intentionally smooth earnings, why they choose to do so is an empirical question. Smoothing could benefit the firm by improving the quality of information for outside users, for example, by bringing reported earnings closer to permanent earnings. Alternatively, high-ability managers could use smoothing for extractive purposes, such as claiming perquisites from the firm. For managers to choose smoothing for extractive purposes, however, the benefits would need to outweigh any reputational or litigation costs.

Understanding the relation between managerial ability and intentional smoothing is important for at least two reasons: First, boards of directors design compensation contracts to elicit desired actions from executives (Holmstrom, 1979), so it is important for them to know whether intentional smoothing by high-ability managers should be encouraged or discouraged. Second, as prior research provides evidence that earnings reported by high-ability managers are of higher quality (Aier et al., 2005; Demerjian et al., 2013), it is vital for capital providers to understand whether this relation is a result of (or happens in spite of) intentional smoothing.

At a conceptual level, intentional smoothing is managers' deliberate use of accrual and real earnings management to reduce earnings variability over time. Although prior archival research has focused on accrual-based smoothing activities, analytical smoothing models and survey evidence indicate that managers use both accrual and real earnings management to smooth earnings (Acharya & Lambrecht, 2015; Graham, Harvey, & Rajgopal, 2005; Lambert, 1984). Thus, our measure of intentional smoothing considers both types of earnings management. We find that more able managers are more likely to intentionally smooth earnings, consistent with the notion that these managers have the confidence and technical expertise to undertake this complex reporting strategy.[4] Our evidence suggests that our measure captures both upward and downward adjustments, leading to smoother earnings rather than systematically overstated or understated earnings. We use a firm fixed effects research design, which allows us to assess the effect of different managers in the same firm over time, as well as minimize the effect of time-invariant firm features. To further reduce concerns about endogeneity, we estimate a two-stage least-squares regression, which yields consistent results.[5] These analyses indicate that our results are attributable to variation in managerial ability, and that intentional smoothing is significantly greater among high-ability managers than among lower ability managers.

Because prior research provides evidence that high-ability managers are more effective at implementing financing and investing strategies than low-ability managers (Bertrand & Schoar, 2003; Demerjian et al., 2012; Holcomb et al., 2009), we also expect that when high-ability managers implement intentional smoothing strategies, their techniques are more effective than those of lower ability managers. To assess effectiveness, we examine the future operating benefits/costs of intentional smoothing, and the results are consistent with high-ability managers' smoothing being less costly (or more beneficial) than smoothing by other managers.

Finally, we examine if intentional smoothing varies with incentives to smooth. To start, we document an increase in intentional smoothing in response to incentives. This cross-sectional variation provides some assurance that our analyses capture intentional intervention into the financial reporting system, rather than natural smoothing due to the neutral application of generally accepted accounting principles (e.g., Dechow & Skinner, 2000). We then examine the types of incentives that influence high-ability managers' intentional smoothing. This analysis contributes to our understanding of the underlying motives for high-ability managers' intentional smoothing. We find evidence that high-ability managers intentionally smooth earnings when the firm is near debt covenant thresholds and when managers are younger (our measure of reputation incentives).[6] We do not, however, find evidence of high-ability managers smoothing for personal insider trading gains, or when the potential for consumption of perquisites is greater. Finally, we examine subsequent executive turnover, and find a positive association between high-ability managers' intentional smoothing activities and the incidence of voluntary executive turnover, but no association with forced executive turnover. In summary, these results indicate that high-ability managers' intentional smoothing is motivated, at least in part, by how they expect the capital market benefits of smoothing to benefit shareholders and bolster their own reputation.

Our results offer insights into the two opposing viewpoints of earnings smoothing: whether (on average) it (a) benefits shareholders (e.g., Badertscher, Collins, & Lys, 2012; Subramanyam, 1996; Tucker & Zarowin, 2006) or (b) obfuscates performance to facilitate perquisite consumption to the detriment of shareholders (e.g., Lang, Lins, & Maffett, 2012; Leuz, Nanda, & Wysocki, 2003; Levitt, 1998). Our results suggest that the ability to effectively smooth varies across managers, and that intentional smoothing by high-ability managers is a low-cost mechanism to help the firm avoid debt covenant violations, but it does not appear to facilitate insider trading or perquisite consumption. This evidence should be informative to boards as they assess the value of management and consider the desirability of intentional smoothing.

In addition, our analyses inform the academic debate on whether intentionally smoothed earnings represent high-quality earnings. Our results suggest that, when undertaken by managers with sufficient skill, smoothing leads to earnings that more consistently reach important earnings thresholds and that are associated more positively with future operating performance. To the extent that these earnings characteristics are important to shareholders, our results suggest that intentional smoothing improves earnings quality. Finally, our model of intentional smoothing broadens the scope of smoothing to consider real earnings management and should be useful to researchers examining intentional earnings smoothing.

Motivation and Hypothesis Development

Intentional Earnings Smoothing

At the construct level, intentional smoothing is management's purposeful intervention into the firm's operating and reporting processes to reduce the volatility of reported earnings (Acharya & Lambrecht, 2015; Beidleman, 1973; Graham et al., 2005; Lambert, 1984; Moses, 1987). Beidleman (1973) describes it as the intentional dampening of earnings fluctuations over time, and Graham et al. (2005) note that 78% of executives say that they would ''give up economic value in exchange for smooth earnings'' (p. 5). Thus, intentional smoothing reflects the ongoing and overtime use of income-increasing and income-decreasing accrual and real activities earnings management to reduce the volatility of reported earnings.

Some research provides evidence that intentionally smoothed earnings represent a deliberate distortion of reported performance (e.g., DeFond & Park, 1997; Lang et al., 2012; Leuz et al., 2003). This literature suggests that earnings smoothing distorts firm performance measures and, in general, benefits the manager at the expense of other stakeholders. An alternative motive for intentional smoothing is to improve the usefulness of earnings. Many analytical studies support this view, showing that smooth earnings are more informative and useful for contracting (Chaney & Lewis, 1995; Demski, 1998; Kirschenheiter & Melumad, 2002; Sankar & Subramanyam, 2001). A number of archival studies complement these models and provide evidence that smoothing improves the information content of earnings (e.g., Subramanyam, 1996; Tucker & Zarowin, 2006), and is associated with higher equity valuations when firms consistently meet the market's earnings expectations (Barth, Elliott, & Finn, 1999; Kasznik & McNichols, 2002; Myers, Myers, & Skinner, 2007).[7] This literature provides evidence that earnings smoothing enhances firm performance measures, improves contracting, and, in general, benefits stakeholders.

Intentional Earnings Smoothing and Managerial Ability

Our discussion has so far highlighted numerous motives for intentional smoothing, some of which benefit stakeholders and some of which benefit the manager at the expense of other stakeholders. We next discuss how we expect managerial ability to influence managers' propensity to smooth in each situation.

Smoothing income toward recurring or permanent earnings is a complex task. Managers must first be able to forecast the firm's future earnings, and then determine how to adjust reported earnings toward the forecast. As noted in DeFond and Park (1997), this process requires managers to increase or decrease current income both to achieve current period smoothness and to build up reporting slack to continue reporting smoothly in the future. An income smoothing strategy requires considerable foresight by managers, both to project the future conditions that the firm may face and to anticipate the reporting implications of those conditions.

We expect that high-ability managers are more able to make these projections and plan their reporting actions accordingly. The logic is similar to that of Demerjian et al. (2013), who contend that high-ability managers make superior estimates and judgments, and that these superior abilities are reflected in high-quality earnings.[8] Similarly, Trueman (1986) and Baik et al. (2011) posit that more able managers are better able to forecast earnings and should thus be able to identify the appropriate trend around which to smooth.[9] In addition, prior research suggests that high-ability managers are more effective at implementing chosen strategies than lower ability managers. For example, high-ability managers make better financing and investing decisions, and are less likely to restate earnings than lower ability managers (Aier et al., 2005; Bertrand & Schoar, 2003; Demerjian et al., 2013; Holcomb et al., 2009).

Reporting earnings that correspond more closely to economic performance is one of numerous possible benefits of intentional smoothing. Prior research also provides evidence of a market premium for firms that consistently beat earnings expectations (Barth et al., 1999; Kasznik & McNichols, 2002), where intentional smoothing is one path to this outcome (Myers et al., 2007), and reduced contracting costs for firms that intentionally smooth earnings (Demerjian, Donovan, & Lewis-Western, 2017). Chief financial officers (CFOs) indicate that they believe that meeting benchmarks is ''very important,'' and that ''hitting earnings benchmarks builds credibility with the market'' and increases the firm's stock price (Graham et al., 2005, p. 5). If intentional smoothing reflects managers' aims to report the smoothed earnings desired by stakeholders, then we expect that high-ability managers are better able to use smoothing to achieve the desired characteristics than lower ability managers whose forecasting skills and implementation acumen are weaker.

If intentional smoothing reflects opportunistic behavior, then the relation between managerial ability and intentional smoothing is unclear ex ante. If high-ability managers have valuable reputations, which, for example, garner them greater lifelong compensation (e.g., Demerjian et al., 2012; Fee & Hadlock, 2003), then they have an incentive to avoid reputation-harming behavior. High-ability managers' skills may, however, facilitate opportunistic smoothing because they are able to implement opportunistic smoothing strategies with a lower likelihood of detection, thereby garnering private benefits through insider trading or perquisite consumption (e.g., Wang, 2016). Thus, even if intentional smoothing is opportunistic, high-ability managers may still be more likely to implement the strategy.

Overall, this discussion suggests numerous situations that motivate intentional smoothing, as well as that high-ability managers are better able to smooth earnings than lower ability managers. Thus, we expect that, on average, high-ability managers are more likely to engage in intentional smoothing. This logic leads to our first hypothesis, which we state in alternative form:

Hypothesis 1 (H1): Intentional smoothing by high-ability managers is significantly greater than that by other managers.

Regardless of the aim of high-ability managers' intentional smoothing, we expect that high-ability managers are better able to assess the amount of expected slack (to rein in) or shortfall (to bump up) earlier in the period and also to implement strategies more effectively than lower ability managers, both of which will increase the net benefits of high-ability managers' smoothing activities.[10] Similar to the prior discussion, we expect high-ability managers to have a better understanding of the *actual* trajectory of earnings around which to smooth, whereas lower quality managers might project an unreasonable trajectory, creating a costly snowballing effect (e.g., Schrand & Zechman, 2012). Thus, we expect high-ability managers to implement a more effective intentional smoothing strategy than lower ability managers, leading to greater net benefits. This leads to our second hypothesis, which is stated in alternative form:

Hypothesis 2 (H2): The net future operating benefits of intentional smoothing are significantly greater for high-ability managers than for other managers.

We next consider if high-ability managers' intentional smoothing increases in response to specific incentives. We expect that if, on average, managers deliberately smooth earnings, we should observe increases in smoothing in response to incentives. Prior research has offered numerous motives for earnings smoothing; we consider six of these incentives, described in Section ''Incentives.'' Some incentives (e.g., consumption of perquisites) are clearly not in shareholders' best interests, while others may be (e.g., avoiding technical default). If high-ability managers use their ability to benefit themselves to the detriment of shareholders, we expect intentional smoothing to increase when it primarily benefits the manager (e.g., in the presence of informed insider trades). It is also possible, however, that management benefits from smoothing through reputational enhancements, which occur as the manager reports earnings that exceed important earnings benchmarks and increases her credibility with the market (Graham et al., 2005), or via increases in share price that benefit managers whose compensation is linked to firm value. If these incentives are the underlying motives for high-ability managers' intentional smoothing, then we should observe increases in smoothing for high-ability managers at times when the smoothing is more likely to benefit shareholders, such as when it allows the firm to avoid a debt covenant violation, meet earnings expectations, or when executives' compensation is more closely linked to firm value. Although the smoothing may still benefit the manager in these situations (via enhanced reputation or an increase in the value of equity compensation), the smoothing also benefits shareholders and would thus be desirable (or more desirable) than if opportunistic incentives motivate intentional smoothing. In summary, consideration of incentives provides additional evidence of intentional earnings management and offers insight into the motivation behind high-ability managers' intentional smoothing. We state our third hypothesis in alternative form:

Hypothesis 3 (H3): In response to smoothing incentives, high-ability managers increase their intentional smoothing more than other managers.

Data, Variable Definitions, and Descriptive Statistics

We obtain our data from the Annual Compustat file for our intentional smoothing and control variables, Center for Research in Security Prices (CRSP) to form returns variables, Institutional Brokers' Estimate System (I/B/E/S) for the consensus analyst forecast, ExecuComp for executive compensation data, Thomson Reuters for insider trades, and RiskMetrics for dual-class voting shares. We also obtain two publicly available datasets from researchers, managerial ability (Demerjian et al., 2012), and a list of U.S. firms with dual-class shares (Gompers, Ishii, & Metrick, 2010).[11]

We begin with all Compustat firms with nonmissing assets. Following McNichols (2002), we exclude firm-years experiencing accounting changes, merger or acquisition activity, or discontinued operations.[12] To remain in our sample, we require firms to have information available to calculate managerial ability and Compustat data necessary for the

Table 1. Sample Selection.

Data requirement	Firm-years
Initial sample without M&A activity or discontinued operations and nonmissing assets, post 1994	103,690
Less firms with cash flows, sales, and returns information	(20,146)
Less firms with sufficient data to calculate other control variables, including innate earnings quality variables	(53,957)
Less firms with sufficient data to calculate managerial ability and intentional smoothing	(2,835)
Less firms with sufficient data to calculate future operating performance	(4,384)
Less firms without CEO or CFO turnover from years $t - 2$ to t	(9,215)
Final sample	13,153

Note. M&A = merger and acquisition.

calculation of our control variables, including the innate earnings quality variables, which require four prior years of data for calculation. To examine how managerial ability maps into intentional smoothing, we require that the same management team be in place during the period over which we measure managerial ability ($t - 2$ and $t - 1$) and smoothing ($t - 2$ to t). Thus, we exclude firms with executive turnover in the 3-year period from $t - 2$ to t.[13] The period begins in 1995 because we require Securities and Exchange Commission (SEC) filings to be available electronically on Edgar to identify executive turnover, and ends in 2013 to allow for realizations of future operating performance. Our final sample consists of 13,153 firm-year observations and 3,523 firms. We summarize the sample selection procedure in Table 1.

Variable Definitions

Managerial ability. We base our assessment of managerial ability on the MA-Score, developed by Demerjian et al. (2012). They estimate the score in two stages: The first stage uses a frontier analysis method Data envelopment analysis (DEA) to provide an estimate of how efficiently managers use their firms' resources (including capital, labor, and innovative assets) to generate revenues relative to their industry peers. The second stage uses regression analysis to purge firm-level drivers of efficiency. Demerjian et al. (2012) attribute the unexplained efficiency to the management team (see Demerjian et al., 2012, for details). In essence, high-quality managers generate more sales for a given level of inputs than lower quality managers. Demerjian et al. (2012) conduct numerous validity tests, concluding that their measure outperforms existing measures such as historical returns and media citations.

To identify high-ability managers, we first form quartiles (by industry and year) of the MA-Score.[14] We define *High-Ability Managers* as those in the top quartile of MA-Score in both years $t - 2$ and $t - 1$. This approach reduces the likelihood that idiosyncratic performance in a single year affects our identification of high-ability managers. Note that we do not expect managerial ability to change in the short run. Rather, we consider the scores across 2 years to reduce possible measurement error. As an untabulated robustness check, we also define *High-Ability Managers* based on only 1 year. The results are similar, but weaker, as we would expect.

Intentional smoothing. As intentional smoothing is multidimensional and can be implemented using many different strategies (e.g., Acharya & Lambrecht, 2015; Dhole, Manchiraju, & Suk, 2016; B. Francis, Hasan, & Li, 2016; Graham et al., 2005; Lambert, 1984), our measure is based on four empirical proxies for reporting discretion and real activities management.[15] We begin with abnormal accruals (*AbnAcc*). We define abnormal accruals using the modified Jones model following Dechow, Hutton, Kim, and Sloan (2012).[16] Specifically, we estimate Equation 1 by industry (Fama & French, 1997):

$$\frac{WCAcc}{A_{avg}}_{t} = \alpha + \alpha_1 \frac{1}{A_{avg}} + \beta_2 \frac{(\Delta Sales - \Delta AR)_t}{A_{avg}} + \beta_3 \frac{PPE_t}{A_{avg}} + \sum_{i=1}^{n} \delta_i Firm_i + \sum_{i=1}^{t} \varnothing_i Year_i + \varepsilon_t. \tag{1}$$

Following Kothari, Mizik, and Roychowdhury (2016), we include firm and year fixed effects in this and all subsequent models of real earnings management.[17] Including the firm fixed effects in the first stage lessens the ''bad model'' problem (Kothari et al., 2016).[18] We define working capital accruals (*WCAcc*) as the change in current assets plus the change in short-term debt less the change in both current liabilities and cash. $\Delta Sales$ is the annual change in sales, ΔAR is the annual change in accounts receivable, and *PPE* reflects the firm's net property, plant, and equipment. The residual from Equation 1 serves as our measure of abnormal accruals, *AbnAcc.*

To capture real activities manipulation, we follow Roychowdhury (2006) and measure three activities that could be used to affect reported financial results: increasing sales by offering aggressive sales discounts or extending lenient credit terms (resulting in lower than expected cash flows given the level of sales, *AbnCFO*), overproducing inventory (to lower the per-unit fixed cost component of cost of goods sold, *AbnProd*), and cutting discretionary expenses to increase earnings (*AbnExp*).[19] For each activity, we use the empirical model from Roychowdhury (2006) supplemented with firm and year fixed effects following Kothari et al. (2016) to measure the normal level of the activity where the residual captures the ''abnormal'' activity level.

The first real activities management metric is abnormal operating cash flow, which we measure with the following model (estimated by industry Fama & French, 1997):

$$\frac{CFO_t}{A_{avg}} = \alpha_0 + \alpha_t \frac{1}{A_{avg}} + \beta_1 \frac{Sales_t}{A_{avg}} + \beta_2 \frac{\Delta Sales_t}{A_{avg}} + \sum_{i=1}^{n} \delta_i FirmFixed_i + \sum_{i=1}^{t} \varnothing_i Year_i + \varepsilon_t. \tag{2}$$

CFO is cash flow from operations.[20] *Sales* and *ΔSales* measure the level and change in sales, respectively. The residual reflects abnormal cash flows. Thus, we multiply the residual by −1, so that it is increasing in the extent of real activities management.

The second measure of real activities management is overproduction. The model of normal production (which we estimate by Fama & French, 1997) industry is as follows:

$$\frac{PROD_t}{A_{avg}} = \alpha_0 + \alpha_t \frac{1}{A_{avg}} + \beta_1 \frac{Sales_t}{A_{avg}} + \beta_2 \frac{\Delta Sales_t}{A_{avg}} + \beta_3 \frac{\Delta Sales_{t-1}}{A_{avg}} + \sum_{i=1}^{n} \delta_i FirmFixed_i + \sum_{i=1}^{t} \varnothing_i Year_i + \varepsilon_t. \tag{3}$$

Rotated Factor Pattern for the Intentional Smoothing Factor

Variable	Rotated Factor Pattern
$\sum_{t-2,t} AbsValue(AbnAcc)$	0.153
$\sum_{t-2,t} AbsValue(AbnCFO)$	0.718
$\sum_{t-2,t} AbsValue(AbnProd)$	0.747
$\sum_{t-2,t} AbsValue(AbnExp)$	0.841
Eigenvalue	1.992
Proportion of Variance Explained	0.498

Figure 1. Rotated factor pattern for the intentional smoothing factor.
Note. The principal components analysis is used to combine the individual earnings management metrics into one variable (*IntentionalSmoothing*$_{t-2,t}$). *IntentionalSmoothing*$_{t-2,t}$ is measured over years $t - 2$ to t.

PROD is costs of goods sold plus the change in inventory. The residual from this model is our measure of real activities management from overproduction (*AbnProd*). The third measure of real activities management is abnormal discretionary expenses. We estimate the model of normal discretionary expenses by industry (Fama & French, 1997) as follows:

$$\frac{Expenses_t}{A_{avg}} = \alpha_0 + \alpha_1 \frac{1}{A_{avg}} + \beta_1 \frac{Sales_t}{A_{avg}} + \beta_2 \frac{\Delta Sales_t}{A_{avg}} + \sum_{i=1}^{n} \delta_i FirmFixed_i + \sum_{i=1}^{t} \varnothing_i Year_i + \varepsilon_t. \tag{4}$$

We measure expenses subject to discretion (*Expenses*) as the sum of R&D and SG&A over the year. The residual reflects abnormal expenses. Thus, we multiply the residual by −1, so that it is increasing in the extent of real activities management (*AbnExp*).

We are interested in intentional smoothing, which may be implemented using both accrual and real earnings management. Because managers likely use the individual mechanisms concurrently (and thus the metrics may be highly correlated) and because a simple summation of the metrics may result in double counting or offsetting (particularly for the real earnings management metrics, for example, Roychowdhury, 2006), we use a principal components analysis to combine the individual metrics into one variable reflecting over-time income-increasing and income-decreasing earnings management. First, we sum the absolute value of each metric over years $t - 2$ to t. We then perform a principal components analysis with a Varimax rotation. The analysis results in 1 factor with an eigenvalue exceeding 1, which we retain as our variable of interest. The rotated factor pattern, as presented in Figure 1, indicates that all of the individual metrics load positively on the factor, with the real activities management metrics having the highest coefficients. Thus, this measure increases at times when management has made greater use of both income-increasing and income-decreasing abnormal operating and reporting decisions relative to the firm's own average level of abnormal operating and reporting activities. Thus, this factor is our measure of intentional smoothing (*IntentionalSmoothing*$_{t-2,t}$).

Incentives. We consider six incentives for managers to intentionally smooth earnings. First, we examine the firm's recent (current and prior two years) tendency to report performance metrics that just exceed its debt covenant thresholds (i.e., the firm's tendency to avoid covenant violations over the same time frame that we examine intentional smoothing). Demerjian et al. (2017) find that intentional smoothing helps the firm to avoid spurious technical default but does not aid the firm in delaying performance technical default.[21] As a result, intentional smoothing can improve the usefulness of earnings for contracting. Following Demerjian and Owens (2016), we define $Tight_t$ years as those where the firm's tightest debt covenant falls into the lowest decile of slack. These covenants are close to exceeding the contract threshold but do not actually violate the covenant. We set this variable to 0 for firms without private debt in the Dealscan database. To capture the proportion of years the manager is exposed to this incentive, we cumulate this variable over years $t - 2$ to t prior to ranking into deciles by industry and year ($Tight_{t\text{-}2,t}$).[22]

Similarly, we consider the firm's recent propensity to report earnings that just beat the market's earnings expectations because prior research provides evidence that firms are rewarded with higher stock valuations when they more frequently meet expectations (Barth et al., 1999; Kasznik & McNichols, 2002) where intentional smoothing is one path to this outcome (Myers et al., 2007). We set $JustBeat_t$ equal to 1 in years where the firm meets or beats analyst earnings per share (EPS) expectations by 1 cent or less. Again, to capture the proportion of years, the manager is exposed to this incentive, we cumulate this variable over years $t - 2$ to t prior to ranking into deciles by industry and year ($JustBeat_{t\text{-}2,t}$).

Third, we calculate a measure of perquisite consumption. The existence of two classes of shares with different voting rights limits the ability of noncontrolling shareholders to control the firm (e.g., Gompers et al., 2010). Reducing shareholders' rights has been found to negatively affect firm value (e.g., Gompers, Ishii, & Metrick, 2003). Shares with high voting rights and low cash flow rights are an extreme example of reducing the noncontrolling shareholders' rights, and have been associated with lower firm value and greater consumption of perquisites by managers (e.g., Gompers et al., 2010). In each year, we flag firms with dual-class shares where one class of shares has preferential voting rights. As with our other incentive variables, we sum the annual metric over years $t - 2$ to t, and rank by industry and year to obtain the proportion of years with shares traded that have unequal voting rights ($Perquisite\ Consumption_{t\text{-}2,t}$).

Fourth, we measure the sensitivity of executives' wealth to a 1% change in the firm's stock price from the average delta (over years $t - 2$, t) of the executive with the greatest sensitivity.[23] Specifically, *High_Delta* is an indicator set equal to 1 if the average delta of the highest delta executive falls among the top quartile for the sample year, 0 otherwise.[24] The literature is mixed with respect to the extent that equity-based incentives encourage opportunistic earnings management (e.g., Armstrong, Guay, & Weber, 2010; Cheng & Warfield, 2005), and we are not aware of research examining the influence of equity incentives on income smoothing. We conjecture that if intentional smoothing benefits shareholders, then managers with wealth more closely linked to the firm's stock price will engage in more intentional smoothing.

Fifth, we set *Informed Trade* to one in years where the executive team engaged in informed trade in year t. We measure informed trade following L. Cohen, Malloy, and Pomorski (2012), who classify traders as routine or informed based on their historical pattern of trades over the preceding years. Routine traders are those who consistently trade at regular intervals, whereas we classify traders with no discernible pattern of trades as informed. We cumulate this variable over the years $t - 2$ to t, and rank by industry and year to capture the proportion of years the manager is exposed to this incentive (*Informed* $Trade_{t-2,t}$). We posit that if intentional smoothing increases with informed trade, it is less likely to benefit shareholders.

Finally, we examine if reputation concerns motivate intentional smoothing. We calculate two variables based on the CEO's age that reflect either greater reputation-building incentives or short-employment horizons (i.e., reduced reputation-building incentives). We posit that if intentional smoothing increases when the firm is led by a younger (older) CEO, the smoothing is more likely to reflect reputation building (short horizons) (Ali & Zhang, 2015; Dechow & Sloan, 1991). We expect that if intentional smoothing aids the executive in reputation development, then it is more likely to be beneficial to shareholders; otherwise, it would not improve reputation. We measure reputation incentives with an indicator variable for CEOs whose age is less than or equal to 45 (*Young CEO*) and short-horizon incentives with an indicator variable for CEOs whose age is greater than or equal to 65 (*Mature CEOs*).[25] We provide details on variable definitions and measurement in Panel B of Table 2.

Control variables. Our main control variables are based on the determinants of earnings quality noted by Dechow and Dichev (2002) and Hribar and Nichols (2007), including firm size, proportion of losses, sales volatility, cash flow volatility, and operating cycle. We also control for the use of a Big N audit firm, which is associated with earnings quality (Becker, DeFond, Jiambalvo, & Subramanyam, 1998). We control for sales growth, the firm's market-to-book ratio, and market-adjusted returns to control for growth and economic shocks to performance, both of which could potentially affect our measures of managerial ability and intentional smoothing (Demerjian et al., 2013). We include an indicator variable for high-litigation industries to control for the increased incentive to avoid negative earnings surprises in highly litigious environments (J. Francis, Philbrick, & Schipper, 1994). Other controls include the number of analysts following the firm and the firm's share of industry revenue. We include these variables to control for investor recognition and SEC scrutiny, both of which increase the likelihood that abnormal reporting is detected (e.g., Beneish, 1997). We include an indicator variable for years following the passage of the Sarbanes–Oxley Act in 2002 because prior research suggests that the regulation changed managers' earnings management strategies (e.g., D. Cohen, Dey, & Lys 2008).[26] We provide variable definitions and measurement periods in Panel B of Table 2.

Descriptive Statistics

We provide descriptive statistics in Table 2. For the transformed variables (*SalesGrowth, AbnRet, NumAnalysts, ReportedEarnVolatility, Tight, JustBeat, Perquisite Consumption, Delta, Informed Trade*), we present the untransformed variable for ease of interpretation in Table 2. We classify about 19% of firm-years as having a high-ability manager. Mean reported earnings volatility (*ReportedEarnVolatility*) is 0.07. Mean (median) *IntentionalSmoothing* is 0.02 (–0.22). The large difference in the value of *IntentionalSmoothing* at the lower quartile (–0.65) relative to the upper quartile (0.42) indicates wide variation in intentional smoothing.

In Table 3, we present both Pearson's and Spearman's correlations. *High-Ability Managers* are associated with more profitable firm-years (*ROA*) and greater sales volatility

Table 2. Descriptive Statistics.

Panel A: Descriptive Statistics.

Variable	*n*	*M*	Median	*SD*	25%	75%
High-Ability Managers	13,153	0.190	0.000	0.391	0.000	0.000
$FirmSize_t$	13,153	6.012	5.884	1.813	4.750	7.141
$MB\ Ratio_t$	13,153	2.983	2.163	6.859	1.310	3.681
$SalesVolatility_{t\text{-}4,t}$	13,153	0.184	0.135	0.167	0.078	0.235
$CFOVolatility_{t\text{-}4,t}$	13,153	0.076	0.053	0.085	0.031	0.089
$OperCycle_{t\text{-}4,t}$	13,153	4.667	4.737	0.764	4.304	5.108
$Losses_{t\text{-}4,t}$	13,153	0.252	0.200	0.329	0.000	0.400
$BigNAuditor_t$	13,153	0.864	1.000	0.342	1.000	1.000
$SalesGrowth_t$ ♦	13,153	0.154	0.083	0.612	−0.007	0.201
$AbnRet_t$ ♦	13,153	0.121	−0.032	0.908	−0.278	0.275
$LitigationInd_t$	13,153	0.376	0.000	0.484	0.000	1.000
$NumAnalysts_t$ ♦	13,153	6.715	4.000	6.544	2.000	9.000
$IndRev\%_t$	13,153	0.013	0.000	0.043	0.000	0.010
PostSOX	13,153	0.560	1.000	0.496	0.000	1.000
ROA_{t+1}	13,153	0.069	0.095	0.234	0.023	0.167
$ReportedEarnVolatility_{t\text{-}2,t}$ ♦	13,153	0.067	0.031	0.135	0.013	0.073
$IntentionalSmoothing_{t\text{-}2,t}$	13,153	0.017	−0.219	1.023	−0.650	0.416
$Tight_{t\text{-}2,t}$ ♦	13,153	0.293	0.000	0.722	0.000	0.000
$JustBeat_{t\text{-}2,t}$ ♦	13,153	0.380	0.000	0.633	0.000	1.000
$Perquisite\ Consumption_{t\text{-}2,t}$ ♦	13,153	0.123	0.000	0.565	0.000	0.000
$Delta_{t\text{-}2,t}$ ♦	6,880	1,224.94	268.713	12,183.7	108.462	679.659
$Informed\ Trade_{t\text{-}2,t}$ ♦	13,153	1.614	2.000	1.070	1.000	3.000
$Young\ CEO_t$	6,475	0.080	0.000	0.271	0.000	0.000
$Mature\ CEO_t$	6,475	0.104	0.000	0.305	0.000	0.000
Executive Turnover	12,303	0.050	0.000	0.219	0.000	0.000
Voluntary Executive Turnover	12,303	0.027	0.000	0.163	0.000	0.000
Forced Executive Turnover	13,303	0.023	0.000	0.150	0.000	0.000

Note. All continuous variables are winsorized at the extreme 1%. The definition of and timing for each of the variables are provided in Panel B. *High-Ability Managers* are managers in the top quartile of MA-Score in both years $t-2$ and $t-1$. The "♦" denotes a variable that is transformed in regression analyses reported in subsequent tables, but the untransformed variable is reported in Table 1 for ease of interpretation. The sample consists of 13,153 firm-year observations from 1995 to 2013.

(*continued*)

(*SalesVolatility*) but with lower cash flow volatility (*CFOVolatility*). High-ability managers also appear to use intentional smoothing to a greater extent than other managers as we observe a significantly positive correlation between *IntentionalSmoothing* and *High-Ability Managers*. High-ability managers' smoothing efforts also appear successful as evidenced by the negative correlation between *High-Ability Managers* and *ReportedEarnVolatility*. In untabulated analyses, we also consider a factor comprised of the sum of *signed* reporting discretion over the same time frame, and find a negative association between *High-Ability Managers* and income-increasing discretionary reporting and real activities management. Thus, high-ability managers are not associated with greater income-increasing earnings management but rather appear to engage in greater smoothing activities.

Table 2. (continued)

Panel B: Variable Definitions.

Variable	Description	Definition
Ability and smoothing metrics		
High-Ability Managers	Highest managerial ability	Managers in the top quartile (by industry-year) of MA-Score in both years $t - 2$ to $t - 1$. The MA-Score is from Demerjian, Lev, and McVay (2012).
IntentionalSmoothing	The extent of intentional smoothing	The factor based on the absolute value of discretionary revenue, discretionary CFO, discretionary production, and discretionary expenses over years $t - 2$ to t.
Control variables		
ReportedEarnVolatility	Reported earnings volatility	The standard deviation of [earnings (*IBC*) / average assets (*AT*)] over the last 3 years ($t - 2$, t). In the regression analysis, we use the decile rank (by industry and year) of this variable.
FirmSize	Firm size	The natural log of the firm's assets (*AT*) reported at the end of year t. Assets is the untransformed variable and reported in millions.
SalesVolatility	Sales volatility	The standard deviation of [sales (*SALE*) / average assets (*AT*)] over at least 3 of the last 5 years ($t - 4$, t).
CFOVolatility	Cash flow volatility	The standard deviation of [cash from operations (*OANCF*) / average assets (*AT*)] over at least 3 of the last 5 years ($t - 4$, t).
OperCycle	Operating cycle	The natural log of the length of the firm's operating cycle, defined as sales turnover plus days in inventory [(*SALE* / 360) / (average *RECT*) + (*COGS* / 360) / (average *INVT*)], averaged over at least 3 of the last 5 years ($t - 4$, t).
Losses	Loss history	The percentage of years reporting losses in net income (*IBC*) over at least 3 of the last 5 years ($t - 4$, t).
Big N Auditor	Big N auditor Indicator	An indicator variable set equal to 1 for firms audited by Big N audit firms in year t; 0 otherwise. Big N audit firms are defined from Compustat as firms with "AU" codes between 1 and 8, inclusive. Thus, Arthur Andersen, Ernst & Young, Deloitte & Touche, KPMG, and PricewaterhouseCoopers are classified as Big N audit firms.

(continued)

Table 2. (continued)

Panel B: Variable Definitions.

Variable	Description	Definition
SalesGrowth	One year sales growth	The decile rank of industry-adjusted (by industry, year) sales growth defined as current year's sales ($SALE_t$) less prior year's sales ($SALE_{t-1}$) less the increase in receivables, all scaled by prior year's sales.
MB Ratio	Market-to-book ratio	The market-to-book ratio defined as the firm's market capitalization (*PRCC* × *CSHO*) divided by book value (*SEQ*) for year *t*.
AbnRet	Abnormal return	The decile rank (by industry and year) of the firm's market-adjusted buy-and-hold return for year *t*, where market returns are value weighted. Industry is classified per Fama and French (1997).
LitigationInd	Litigation industry	An indicator variable set equal to 1 for firms in litigious industries. Following prior research (J. Francis, Philbrick, & Schipper, 1994), we define high-litigation-risk industries as SIC codes: 2833-2836 (biotechnology), 3570-3577 and 7370-7374 (computers), 3600-3674 (electronics), and 5200-5961 (retailing).
NumAnalysts	Analyst coverage	The log of the number of analysts covering the firm in year *t*.
IndRev%	Industry revenue percentage	The firm's sales in year $t - 1$ divided by the total sales for the firm's industry in year $t - 1$.
PostSOX	Indicator for post-SOX years	An indicator variable set equal to 1 for fiscal years 2003 forward; 0 otherwise.
Other variables		
ROA_{t+1}	Future earnings	*ROA* (operating income after depreciation scaled by average total assets) in year $t + 1$.
$ROA_{t+1,t+3}$	Mean future earnings	Mean *ROA* (the mean of operating income after depreciation for years $t + 1$, $t + 2$, and $t + 3$ scaled by average total assets over the same period).
$AbnRet_{t+1}$	Future market-adjusted return	The firm's buy-and-hold return over year $t + 1$ less the market's buy-and-hold return over year $t + 1$. This variable is used in untabulated analysis.
$Tight_t$	Indicator for years close to violation of a debt covenant	Following Demerjian and Owen (2016), years where the firm's tightest debt covenant falls into the lowest decile of slackness, that is, it is close to exceeding the contract threshold, but does not actually violate the covenant. We set this variable to 0 for firms without private debt in the Dealscan database.
$Tight_{t-2,t}$	Number of years of Tight	The sum of *Tight* over years $t - 2$ to *t*. In the regression analysis, we use the decile rank (by industry and year) of this variable.

(continued)

Table 2. (continued)

Panel B: Variable Definitions.

Variable	Description	Definition
$JustBeat_t$	EPS just beat market expectations	An indicator variable set equal to 1 in years where the firm meets or beats analysts' EPS expectations by 1 cent or less.
$JustBeat_{t\text{-}2,t}$	Number of years of JustBeat	The sum of *JustBeat* over years $t - 2$ to t. In the regression analysis, we use the decile rank (by industry and year) of this variable.
Perquisite Consumption	Proxy for perquisite consumption	An indicator variable set equal to 1 in years where the firm has dual classes of shares with unequal voting rights. We identity firms with unequal voting rights using data from both RiskMetrics and the dataset provided by Gompers, Ishii, and Metrick (2010). Firms with greater voting than cash flow rights are more likely to consume perquisites.
Perquisite $Consumption_{t\text{-}2,t}$	Number of years with unequal voting	The sum of *Perquisite Consumption* over years $t - 2$ to t. In the regression analysis, we use the decile rank (by industry and year) of this variable.
Delta	Sensitivity of wealth to 1% change in stock price	Delta is calculated per the method of Core and Guay (2002). To calculate *Delta* for more recent years, we use the code provided by Kai Chen (https://csclub.uwaterloo.ca/~k55chen/?p=211).
$Delta_{t\text{-}2,t}$	Average delta over years $t - 2$ to t	Mean Delta of the executive with the greatest sensitivity of wealth to the firm's stock price over years $t - 2$, t. High Delta is an indicator set equal to 1 if $Delta_{t\text{-}2,t}$ falls among the top quartile of the sample year; 0 otherwise.
Informed $Trade_t$	Indicator for years with informed trade	An indicator variable set to 1 in years where the executive team engaged in informed trade in year t, with informed trade defined as in L. Cohen, Malloy, and Pomorski (2012).
Informed $Trade_{t\text{-}2,t}$	Number of years of informed trade	The sum of *Informed Trade* over years $t - 2$ to t. In the regression analysis, we use the decile rank (by industry and year) of this variable.
Young CEO	Reputation incentives of the CEO	An indicator set equal to 1 when the CEO's age is 45 years or less; 0 otherwise.
Mature CEO	Short-horizon incentives of the CEO	An indicator set equal to 1 when the CEO's age is 65 years or older; 0 otherwise. We chose 65 as the cutoff because Dechow and Sloan (1991) find that 65 is the age upon which most CEOs retire.
Executive Turnover	Executive turnover	An indicator variable set equal to 1 in year t if CEO or CFO turnover occurs in the following year. This variable is used in untabulated analysis.

(continued)

Table 2. (continued)

Panel B: Variable Definitions.

Variable	Description	Definition
Voluntary Executive Turnover	Voluntary executive turnover	An indicator variable set equal to 1 in year *t* if CEO or CFO turnover occurs in the following year, and the turnover is not classified as forced turnover. This variable is used in untabulated analysis.
Forced Executive Turnover	Forced executive turnover	An indicator variable set equal to 1 in year *t* if CEO or CFO turnover occurs in the following year and the turnover is classified as forced per Hazarika, Karpoff, and Nahata (2012). Specifically, the turnover is classified as forced if (a) the CEO was fired, forced out from the position, or departed due to policy differences; or (b) the departing CEO's age is less than 60, and the announcement does not report that the CEO died, left because of poor health, or accepted another position elsewhere or within the firm; or the CEO "retires" but leaves the job within 6 months of the "retirement" announcement. The circumstances surrounding CEO turnovers in the third group are further investigated by reading press articles to reduce the likelihood that a turnover is incorrectly classified as forced. These departures are reclassified as voluntary if the incumbent takes a comparable position elsewhere, or departs for previously undisclosed personal or business reasons that are unrelated to the firm's activities. This variable is used in untabulated analysis.

Note. SOX = Sarbanes–Oxley Act of 2002.

Table 3. Pearson's (Spearman's) Correlation Coefficients Below (Above) the Diagonal.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) *High-Ability Managers*$_{t\text{-}1}$		.05[a]	−.03[a]	.21[a]	−.08[a]	.17[a]	−.02[a]	.04[a]	.02[a]	.11[a]	.04[a]	.03[a]	.01
(2) *SalesVolatility*	.08[a]		.44[a]	−.05[a]	.31[a]	.08[a]	.04[a]	−.04[a]	−.04[a]	−.06[a]	−.01	.09[a]	−.04[a]
(3) *CFOVolatility*	−.04[a]	.37[a]		−.23[a]	.40[a]	.24[a]	.02[a]	−.08[a]	−.07[a]	−.11[a]	−.02[a]	.12[a]	−.03[a]
(4) *ROA*$_{t+1}$	.17[a]	−.07[a]	−.39[a]		−.25[a]	.07[a]	−.02[a]	.10[a]	.02[a]	.17[a]	.10[a]	.02	.00
(5) *ReportedEarnVolatility*$_{t\text{-}2,t}$	−.08[a]	.27[a]	.33[a]	−.23[a]		.00	.09[a]	−.11[a]	−.06[a]	−.14[a]	−.04[a]	.08[a]	−.05[a]
(6) *IntentionalSmoothing*$_{t\text{-}2,t}$	.15[a]	.17[a]	.39[a]	−.19[a]	.06[a]		−.04[a]	.07[a]	−.06[a]	.12[a]	.08[a]	.09[a]	.01
(7) *Tight*$_{t\text{-}2,t}$	−.02[a]	.03[a]	−.03[a]	.03[a]	.08[a]	−.03[a]		−.03[a]	.03[a]	−.04[a]	.04[a]	.01	.00
(8) *JustBeat*$_{t\text{-}2,t}$	.04[a]	−.03[a]	−.05[a]	.08[a]	−0.11[a]	.05[a]	−.03[a]		.00	.09[a]	.03[a]	.02	−.01
(9) *PerquisiteConsumption*$_{t\text{-}2,\ t}$	.03[a]	−.04[a]	−.06[a]	.03[a]	−.05[a]	−.05[a]	.03[a]	.00		−.03[a]	−.05[a]	.00	.08[a]
(10) *High Delta*$_{t\text{-}2,\ t}$	.11[a]	−.05[a]	−.10[a]	.15[a]	−.14[a]	.11[a]	−.03[a]	.09[a]	−.03[a]		.07[a]	−.02[a]	.11[a]
(11) *Informed Trade*$_{t\text{-}2,t}$	.04[a]	−.00	−.02[a]	.09[a]	−.04[a]	.04[a]	.04[a]	.04[a]	−.05[a]	.06[a]		.02[a]	−.06[a]
(12) *Young CEO*	.03[a]	.09[a]	−.09[a]	.02	.08[a]	.07[a]	.00	.01	.00	−.02[a]	.02[a]		−.10[a]
(13) *Mature CEO*	.01	−.05[a]	−.02[a]	.01	−.05[a]	.02	.01	−.01	.07[a]	.11[a]	−.06[a]	−.11[a]	

Note. Variable definitions are provided in Panel B of Table 2.
"[a]" indicates a significant correlation at the 5% alpha level or higher.

Test Design and Results

Managerial Ability and Intentional Earnings Smoothing (H1)

In Table 4, we present the estimation of the following model:

$$
\begin{aligned}
&Intentional\,Smoothing_{t-2,\,t} = \alpha + \alpha_1 \boldsymbol{High\text{-}Ability\ Managers}_{t-1} \\
&\quad + \alpha_2 FirmSize_t + \alpha_3 SalesVolatility_{t-4,\,t} \\
&\quad + \alpha_4 CFOVolatility_{t-4,\,t} + \alpha_5 OperCycle_{t-4,\,t} + \alpha_6 Losses_{t-4,\,t} + \alpha_7 BigNAuditor_t \\
&\quad + \alpha_8 SalesGrowth_t + \alpha_9 MB\,Ratio_t + \alpha_{10} AbnRet_t + \alpha_{11} LitigationInd_t \\
&\qquad + \alpha_{12} NumAnalyst_t + \alpha_{13} IndRev\% + \alpha_{14} PostSOX + \sum_{i=1}^{n} \delta_i FirmFixed_i + \varepsilon_{t-2,\,t}. \qquad (5)
\end{aligned}
$$

Our primary models include firm fixed effects to mitigate concerns of time-invariant correlated omitted variables. We also report results excluding firm fixed effects to illustrate differences in smoothing in the cross-section (rather than across time for each firm). Our dependent variable includes data from multiple years, so the errors are not independent across years within a firm. When the error terms are correlated within a firm, clustering standard errors by firm produces unbiased standard errors (Petersen, 2009).[27] Thus, we use robust standard errors clustered by firm in all models. For the models that exclude firm fixed effects, we also cluster the standard errors by year, and we supplement Equation 5 with industry fixed effects.

We present results in Panel A of Table 4. We find strong evidence that both across firms and across years (within a firm), *High-Ability Managers* are associated with significantly greater intentional smoothing.[28] To better understand the economic magnitude, we estimate model (a) using the decile rank of intentional smoothing as the dependent variable (results not tabulated). The significant coefficient for *High-Ability Managers* of 0.04 ($p < .01$) indicates that high-ability managers increase the rank of their firm's intentional smoothing by about half a decile. As a reference point, the coefficient for *NumAnalyst* in the same regression is approximately 0.02 ($p < .01$). Thus, the influence of analysts' demand for intentional smoothing is half the influence of high-ability managers. On this basis, we conclude that the ability of management has an economically meaningful impact on the magnitude of firms' intentional smoothing.

Our main variable of interest, *IntentionalSmoothing*, is increasing when a manager has made greater use of income-increasing and income-decreasing earnings management over time. We refer to this behavior as intentional smoothing. To provide further evidence that the measure does, in fact, reflect attempts to smooth, we consider incentives in Section ''Managerial Ability and the Incentives to Intentionally Smooth.'' To provide additional evidence, we also examine the relation between high-ability managers' intentional smoothing and earnings volatility in the last two columns of Table 4. The results reported in the third column indicate that when a high-ability manager leads the firm and engages in greater intentional smoothing activities, the firm reports lower earnings volatility than when the same firm is led by a lower ability manager. The results in Column 4 do not yield similar inferences, but this lack of significance is likely due to differences across firms that are more difficult to control for in the models that exclude firm fixed effects. For example, it is possible that intentional smoothing in the most volatile firms leads to earnings that are less volatile than they would have been otherwise, but that are still more

Table 4. Managerial Ability and Earnings Smoothing.

$$IntentionalSmoothing_{t-2,t} = \alpha + \alpha_1 High\text{-}Ability\ Managers_t + \alpha_2 FirmSize_t + \alpha_3 SalesVolatility_{t-4,t} + \alpha_4 CFOVolatility_{t-4,t} + \alpha_5 OperCycle_{t-4,t} + \alpha_6 Losses_{t-4,t} + \alpha_7 BigNAuditor_t + \alpha_8 SalesGrowth_t + \alpha_9 MB\ Ratio_t + \alpha_{10} AbnRet + \alpha_{11} LitigationInd_t + \alpha_{12} NumAnalyst_t + \alpha_{13} IndRev\%_t + \alpha_{14} PostSOX_t \varepsilon_{t-2,t}. \quad (5)$$

Panel A: OLS Regressions.

	Dependent variable =			
	$IntentionalSmoothing_{t-2,t}$		$ReportedEarnVolatility_{t-2,t}$	
High-Ability Managers	0.125***	0.426***	−0.012	−0.010
	5.63	9.63	−1.32	−0.87
$IntentionalSmoothing_{t-2,t}$			0.022***	−0.012***
			3.35	−2.91
$High\text{-}Ability\ Managers_{t-1} \times IntentionalSmoothing_{t-2,t}$			−0.025***	−0.001
			−3.01	−0.01
FirmSize	−0.105***	−0.094***	−0.016**	−0.026***
	−3.55	−6.09	−2.34	−6.80
SalesVolatility	0.018	0.160	0.188***	0.299***
	0.15	1.39	6.39	12.74
CFOVolatility	1.572***	3.358***	0.431***	0.417***
	2.57	7.36	5.90	5.01
OperCycle	0.047	0.038	0.014	−0.002
	0.48	1.36	1.10	−0.28
Losses	−0.326***	−0.240***	0.301***	0.324***
	−5.76	−3.66	13.57	21.92
BigNAuditor	−0.022	−0.053	−0.01	0.020**
	−0.54	−0.95	−0.34	2.21
SalesGrowth	−0.011	−0.052	−0.041***	−0.048***
	−0.55	−1.20	−5.06	−2.62
MB Ratio	−0.002	0.007**	0.001**	0.001*
	−1.22	2.14	2.46	1.67
AbnRet	0.000	0.067	−0.025***	−0.053***
	0.04	1.26	−3.55	−3.19
LitigationInd	0.005	0.335***	−0.058	−0.071***
	0.05	7.64	−1.51	−6.92
NumAnalysts	0.060***	0.147***	−0.028***	0.002
	2.80	6.07	−3.37	0.36
IndRev%	0.923***	0.710**	0.362***	0.193***
	2.84	1.93	2.88	2.59
PostSOX	0.069***	0.138***	0.030***	0.025***
	3.42	4.52	3.89	3.02
Intercept	0.235	0.413**	0.458***	0.393***
	0.54	2.36	5.93	8.05
Firm fixed effects	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes
N	13,153	13,153	13,153	13,153
R^2 (%)	11.93	26.18	23.85	28.84

(*continued*)

Table 4. (continued)

Panel B: Two-Stage Least-Squares Regression Analysis.

	First stage	Second stage
	Dependent variable =	
	Managerial Ability	$IntentionalSmoothing_{t-2,t}$
Pred. Managerial Ability		0.892***
		4.27
FirmSize	0.002**	−0.095***
	2.04	−9.15
SalesVolatility	0.128***	0.138
	18.55	1.35
CFOVolatility	0.063***	3.34***
	3.81	7.14
OperCycle	−0.007***	0.037**
	−4.32	2.35
Losses	−0.114***	−0.230***
	−29.85	−5.09
BigNAuditor	−0.010***	−0.053*
	−3.08	−1.87
SalesGrowth	−0.021***	−0.036
	−6.46	−1.24
MB Ratio	0.001	0.001***
	2.22	2.78
AbnRet	0.001	0.068***
	0.31	2.62
LitigationInd	0.002	0.328***
	0.59	13.91
NumAnalysts	0.020***	0.149***
	10.90	9.15
IndRev%	−0.240***	0.689***
	−5.86	3.86
PostSOX	−0.001	0.138***
	−0.46	8.78
MSA Average Ability	0.729***	
	43.23	
Firm fixed effects	No	No
Industry fixed effects	Yes	Yes
N		13,153
R^2 (%)		25.62
	Statistic	p value
Underidentification Test : χ^2 statistic	680.88	<.01
Weak Instrument Test: F statistic	1,558.83	<.01
Managerial Ability is Exogenous : χ^2 statistic	3.591	.06

Note. Variable definitions are provided in Panel B of Table 2. We present t statistics below the coefficients. For models that include (exclude) firm fixed effects, standard errors are clustered by firm (firm and year). Panel B reports the results of a two-stage least-squares regression. In the first stage, MSA Average Ability is the average ability of all managers in the same MSA as the firm's headquarters and measured in year t − 1. The dependent variable for the first stage is managerial ability (the average of managerial ability in years t − 2 and t − 1). Critical values for the underidentification test are based on Stock-Yago (2005). The weak instrument test is based on the Cragg–Donald Wald F statistic. The Hausman test examines the null hypothesis that managerial ability is exogenous.
*, **, and *** denote a two-tailed p value of less than .10, .05, and .01, respectively, for all control variables. For hypotheses tests, *, **, and *** denote a one-tailed p value of less than .10, .05, and .01, respectively.

volatile than the average firm. Nonetheless, the within-firm analysis suggests that high-ability managers' intentional smoothing is associated with lower reported earnings volatility, and provides some reassurance that our measure reflects managers' actual attempts to smooth. Overall, the results in Panel A of Table 4 provide evidence that high-ability managers engage in greater intentional smoothing consistent with H1.

Next, we conduct a two-stage least-squares analysis. As we lack a natural experiment where a firm's managerial ability is exogenously shocked, we use an instrumental variable to better assess causality. To conduct the analysis, we must identify an instrument that is related to managerial ability but unrelated to the firm's intentional smoothing strategies. We consider the availability of high-ability managers in the firm's local labor market, and expect that a greater supply of high-ability managers increases the likelihood that the firm's directors include in their network more high-ability managers and are thus, ceteris paribus, more likely to employ a high-ability manager.[29] At the same time, we expect that the average ability of other executives in the same geographic region as the firm is unrelated to the firm's intentional smoothing, and thus meets the exclusion criteria required for a valid instrument. The two-stage least-squares analysis requires the use of a continuous variable in the first stage, and thus we examine managerial ability rather than the indicator for high-ability managers (although we find similar results when we use *High-Ability Managers* in the first stage).

We present the results in Panel B of Table 4. We observe a significantly positive coefficient for the instrument (*MSA Average Ability*). Also, we present two diagnostic tests as suggested by Larcker and Rusticus (2010). The first, a test of underidentification, rejects the null that our instrument is irrelevant (based on critical values from Stock & Yogo, 2005). The second, a weak instrument test, rejects the null that the instrument is weak (based on the Cragg–Donald Wald *F* Statistic). We also conduct a Hausman test which rejects the null that there is no endogeneity in this setting. The second stage results provide evidence of a positive relation between the instrumented managerial ability measure and intentional smoothing. These results corroborate our assertion that differences in managerial ability rather than omitted firm characteristics influence differences in firms' intentional smoothing and provide evidence in support of H1.

Intentional Smoothing and Future Performance (H2)

H2 investigates the future performance consequences associated with high-ability managers' intentional smoothing. We explore these relations with Equation 6:

$$
\begin{aligned}
&Future\ ROA_{t+n} = \\
&\quad \alpha + \alpha_1 \boldsymbol{High\text{-}Ability\ Managers_{t-1}} + \alpha_2 \boldsymbol{IntentionalSmoothing_{t-2,t}} \\
&\quad + \alpha_3 \left(\boldsymbol{High\text{-}Ability\ Managers_{t-1}} \times \boldsymbol{IntentionalSmoothing_{t-2,t}}\right) + \alpha_4 FirmSize_t \\
&\quad + \alpha_5 SalesVolatility_{t-4,t} + \alpha_6 CFOVolatility_{t-4,t} + \alpha_7 OperCycle_{t-4,t} + \alpha_8 Losses_{t-4,t} \\
&\quad + \alpha_9 BigNAuditor_t + \alpha_{10} SalesGrowth_t + \alpha_{11} MB\ Ratio_t + \alpha_{12} AbnRet_t + \alpha_{13} LitigationInd_t \\
&\quad + \alpha_{14} NumAnalyst_t + \alpha_{15} IndRev\%_t + \alpha_{16} PostSOX_t + \sum_{i=1}^{n} \delta_i FirmFixed_i + \varepsilon_{t+n}.
\end{aligned} \tag{6}
$$

We consider two measures of future performance: 1-year forward *ROA* and the 3-year average *ROA* beginning in year $t + 1$.[30] We report the results from the estimation of Equation 2 in Table 5. First, we find a positive association between high-ability managers and future performance. Second, we examine if the positive influence of high-ability managers on future performance remains when they intentionally smooth. We find that the effect on 1- and 3-year-ahead future earnings of high-ability managers' intentional smoothing is positive. That is, we examine the coefficient on *IntentionalSmoothing* for high-ability managers (i.e., the sum of $\alpha_1 + \alpha_3$); the F tests indicate that intentional smoothing by high-ability managers is significantly positively associated with future performance (i.e., $\alpha_1 + \alpha_3$ are significantly greater than 0). We find similar results when we exclude the firm fixed effects from the model (see the last two columns of Table 5). Finally, the coefficient for *IntentionalSmoothing* is not significantly different from 0 in all but one specification where it is significantly negative. Overall, these analyses allow us to reject H2 that the future operating consequences of intentional smoothing are not different for high-ability managers, and conclude instead that the intentional smoothing of high-ability managers is associated with increases in future performance.

Managerial Ability and the Incentives to Intentionally Smooth (H3)

We continue by investigating if incentives influence the relation between high-ability managers and intentional smoothing. We investigate these relations with the following model:

$$\begin{aligned}
IntentionalSmoothing_{t-2,t} &= \alpha + \alpha_1 \boldsymbol{High\text{-}Ability\ Managers_{t-1}} + \alpha_2 Incentive_{t-2,t} \\
&+ \alpha_3(\boldsymbol{Incentive_{t-2,t} \times High\text{-}Ability\ Managers_{t-1}}) + \alpha_4 FirmSize_t \\
&+ \alpha_5 SalesVolatility_{t-4,t} + \alpha_6 CFOVolatility_{t-4,t} + \alpha_7 OperCycle_{t-4,t} \\
&+ \alpha_8 Losses_{t-4,t} + \alpha_9 BigNAuditor_t + \alpha_{10} SalesGrowth_t + \alpha_{11} MB\ Ratio_t \\
&+ \alpha_{12} AbnRet_t + \alpha_{13} LitigationInd_t + \alpha_{14} NumAnalyst_t \\
&+ \alpha_{15} IndRev\%_t + \alpha_{16} PostSOX_t + \sum_{i=1}^{n} \delta_i FirmFixed_i + \varepsilon_{t-2,t}.
\end{aligned} \tag{7}$$

In Equation 7, the firm fixed effects allow us to investigate how high-ability managers' intentional smoothing is associated with reporting incentives relative to both their own reporting discretion in other periods (i.e., α_1 vs. α_3) as well as the reporting discretion of other managers facing the same incentives in the same firm (α_2).

We report the results in Table 6. The first specification excludes the interaction term *Incentive* × *High-Ability Managers*. We note that none of the incentive variables have coefficients that differ significantly from 0. In the second specification, which includes the interaction terms, we observe a significantly positive coefficient for the interaction between *High-Ability Managers* and *Tight* (coefficient is 0.11, $p < .10$). In contrast, the interaction of *High-Ability Managers* and *Perquisite Consumption*, our proxy for greater agency costs, and the interaction of *High-Ability Managers* and *Informed Trade* do not differ significantly from 0. Thus, informed trading and agency conflicts do not appear to motivate high-ability managers to intentionally smooth earnings.

Demerjian et al. (2017) provide evidence that intentional smoothing reduces the likelihood of spurious technical default, but is not useful in avoiding defaults resulting from increases in credit risk. Motivated by their results, we partition our sample based on credit

Table 5. Future Operating Performance, Managerial Ability, and Intentional Smoothing.

$$FutureROA_{t+x} = \alpha + \alpha_1 \textbf{High-Ability Managers}_{t-1} + \alpha_2 IntentionalSmoothing_{t-2,t} + \alpha_3 (\textbf{IntentionalSmoothing}_{t-2,t} \times \textbf{High} - \textbf{Ability Managers}_{t-1}) + \alpha_4 FirmSize_t + \alpha_5 SalesVolatility_{t-4,t} + \alpha_6 CFOVolatility_{t-4,t} + \alpha_7 OperCycle_{t-4,t} + \alpha_8 Losses_{t-4,t} + \alpha_9 BigNAuditor_t + \alpha_{10} SalesGrowth_t + \alpha_{11} MB\,Ratio_t + \alpha_{12} AbnRet_t + \alpha_{13} LitigationInd_t + \alpha_{14} NumAnalyst_t + \alpha_{15} IndRev\%_t + \alpha_{16} PostSOX_t + \varepsilon_{t-2,t}. \quad (6)$$

	Dependent variable =					
	$FutureROA_{t+1}$ 1 year		$FutureROA_{t+1,t+3}$ 3 year		$FutureROA_{t+1}$ 1 year	$FutureROA_{t+1,t+3}$ 3 year
High-Ability Managers$_{t-1}$	0.017***	0.016***	0.012**	0.011**	0.028***	0.021***
	3.33	3.05	2.43	2.23	5.24	4.93
IntentionalSmoothing$_{t-2,t}$		−0.008		0.000	−0.032***	−0.016
		−0.68		0.02	−2.52	−1.42
High-Ability Managers$_{t-1}$ × *IntentionalSmoothing*$_{t-2,t}$		0.018**		0.010*	0.050***	0.033***
		2.10		1.41	4.55	2.88
Firm fixed effects	Yes	Yes	Yes	Yes	No	No
Industry fixed effects	No	No	No	No	Yes	Yes
Controls variables	Yes	Yes	Yes	Yes	Yes	Yes
N	13,153	13,153	8,494	8,494	13,153	8,494
R^2 (%)	3.99	5.05	4.10	3.88	40.18	37.20
Coefficient tests				(*F* statistic/*p* value)		
$\alpha_1 + \alpha_3 = 0$		8.24***		4.62**	31.75***	17.40***
		<.01		.03	<.01	<.01

Note. This table reports the results from the regression of future earnings on *IntentionalSmoothing*$_{t-2,t}$, managerial ability and controls. Variable definitions are provided in Panel B of Table 2. We present *t* statistics below the coefficients. Statistical significance is assessed with robust standard errors. For models that include firm fixed effects, standard errors are clustered by firm. For models that exclude firm fixed effects, standard errors are clustered by firm and year.

*, **, and *** denote a two-tailed *p* value of less than .10, .05, and .01, respectively, for all control variables. For hypotheses tests, *, **, and *** denote a one-tailed *p* value of less than .10, .05, and .01, respectively.

Table 6. Managerial Ability, Intentional Earnings Smoothing, and Incentives.

$$IntentionalSmoothing_{t-2,t} = \alpha + \alpha_1 \textbf{High-Ability Managers}_{t-1} + \alpha_2 Incentive_{t-2,t} + \alpha_3(\textbf{Incentive}_{t-2,t} \times \textbf{High-Ability Managers}_{t-1}) + \alpha_4 FirmSize_t + \alpha_5 SalesVolatility_{t-4,t} + \alpha_6 CFOVolatility_{t-4,t} + \alpha_7 OperCycle_{t-4,t} + \alpha_8 Losses_{t-4,t} + \alpha_9 BigNAuditor_t + \alpha_{10} SalesGrowth_t + \alpha_{11} MB\,Ratio_t + \alpha_{12} AbnRet_t + \alpha_{13} LitigationInd_t + \alpha_{14} NumAnalyst_t + \alpha_{15} IndRev\%_t + \alpha_{16} PostSOX_t + \sum_{i=1}^{n} \delta_i FirmFixed_i + \varepsilon_{t-2,t}. \quad (7)$$

	Dependent variable = *IntentionalSmoothing$_{t-2,t}$*				
	All firms	*All firms*	*Low-to-mid leverage*	*All firms*	*All firms*
High-Ability Managers$_{t-1}$	0.125***	0.091	0.048	0.069	0.333*
	5.65	1.04	0.52	0.89	1.51
Tight $_{t-2,t}$ × High-Ability Managers$_{t-1}$		0.114*	0.138**	0.198***	0.333***
		1.56	1.81	2.53	2.28
JustBeat$_{t-2,t}$ × High-Ability Managers$_{t-1}$		0.039	0.086*	0.054	0.005
		0.73	1.48	1.05	0.04
Perquisite Consumption $_{t-2,t}$ × High-Ability Managers$_{t-1}$		−0.114	−0.123	−0.098	−0.133
		−0.97	−0.91	−0.87	−0.48
Informed Trade$_{t-2,t}$ × High-Ability Managers $_{t-1}$		0.027	0.024	−0.054	−0.151
		0.57	0.48	−1.19	−1.21
High Delta $_{t-2,t}$ × High-Ability Managers$_{t-1}$				0.051	−0.006
				1.35	−0.08
Young CEO$_t$ × High-Ability Managers$_{t-1}$				0.155***	0.248**
				2.40	1.66
Mature CEO$_t$ × High-Ability Managers$_{t-1}$				−0.015	−0.049
				−0.29	−0.39
Tight$_{t-2,t}$	0.026	0.007	0.019	−0.011	0.102
	0.77	0.20	0.47	−0.26	1.36
JustBeat$_{t-2,t}$	−0.006	−0.014	−0.017	−0.001	0.023
	−0.28	−0.55	−0.64	−0.04	0.48
Perquisite Consumption$_{t-2,t}$	−0.079	−0.056	−0.09	0.035	−0.073
	−1.32	−0.88	−1.22	0.53	−0.63
Informed Trade$_{t-2,t}$	0.031	0.026	0.037	0.05**	0.089**
	1.49	1.16	1.50	2.04	1.80
High Delta$_{t-2,t}$				−0.000	0.089**
				−0.09	2.17
Young CEO$_t$				−0.134	−0.081
				−0.36	1.55
Mature CEO$_t$				−0.014	0.063
				−0.49	1.06
Firm fixed effects	Yes	Yes	Yes	Yes	No
Industry fixed effects	No	No	No	No	Yes
Control variables	Yes	Yes	Yes	Yes	Yes
N	13,153	13,153	10,051	6,398	6,398
R^2 (%)	12.00	12.04	3.22	9.43	28.12

Note. This table reports the results from the regression of *IntentionalSmoothing*, on managerial ability, reporting incentives and controls. Variable definitions are provided in Panel B of Table 2. We present *t* statistics below the coefficients. Statistical significance is assessed with robust standard errors. For models that include firm fixed effects, standard errors are clustered by firm. For models that exclude firm fixed effects, standard errors are clustered by firm and year. *Low-to-Mid Leverage Firm Years* are years when the firm's average leverage over years $t-2$ to t is among the bottom three quartiles of the sample. Leverage is calculated as long-term debt divided by average total assets.
*, **, and *** denote a two-tailed p value of less than .10, .05, and .01, respectively, for all control variables. For hypotheses tests, *, **, and *** denote a one-tailed p value of less than .10, .05, and .01, respectively.

risk (as measured by the extent of leverage). We only find a significantly positive relation between *Tight* × *High-Ability Managers* and *IntentionalSmoothing* for firms with low credit risk (i.e., firms with low-to-mid leverage).[31] This result is consistent with Demerjian et al. (2017) who find that intentional smoothing is used to avoid spurious technical default, but is not helpful in delaying performance-driven default. Demerjian et al. (2017) conclude that using intentional smoothing to reduce the likelihood of spurious technical default reduces contracting costs. Thus, our results suggest that high-ability managers' intentional smoothing benefits shareholders via reduced contracting costs.

Next, we examine the influence of compensation structure (*High Delta*) and CEO age (*Young CEO, Mature CEO*) on the relation between *High-Ability Managers* and *IntentionalSmoothing*. We consider them last because the sample is smaller for these tests due to missing data. We observe an insignificant coefficient for the interaction between *High Delta* and *IntentionalSmoothing*. We find a significantly positive coefficient for *Young CEO* × *High-Ability Managers*. This result indicates that young CEOs are more likely to intentionally smooth earnings, and is consistent with young executives having greater incentives to build their reputation via smoothing. We do not observe a significant coefficient for the interaction of *Mature CEO* × *High-Ability Managers*. The final specification excludes firm fixed effects but yields similar results.

Overall, our results suggest that high-ability managers engage in greater intentional smoothing over years when their firm reports earnings that are more frequently in close proximity to private debt covenant thresholds. Intentional smoothing among high-ability managers is concentrated among younger executives with greater reputation-building incentives, but does not increase when executives have a short-term focus because they are nearing the end of their careers. Finally, we do not find evidence that the high-ability managers' intentional smoothing increases with perquisite consumption or informed trading.

Examination of Additional Consequences

To provide additional evidence on the consequences of intentional smoothing, we consider both future returns and future executive turnover in tests not tabulated. We measure future returns as the firm's 1-year forward buy-and-hold return adjusted for the market return over the same period. Similarly, we measure executive turnover in year $t + 1$, and classify turnover of the CEO or CFO as forced or voluntary following the method of Hazarika, Karpoff, and Nahata (2012), where voluntary turnover is presumed to occur following superior executive performance and forced turnover indicates poor executive performance.[32]

The results suggest that the market appropriately prices the future performance implications of high-ability managers and their intentional smoothing as we find no association between *High-Ability Manager* or *High-Ability Manager* × $IntentionalSmoothing_{t\text{-}2,t}$ and future abnormal returns. Next, we examine total, voluntary, and forced executive turnover. The results suggest that high-ability managers are more likely to experience turnover, and that the increase in turnover is attributable to voluntary decisions to leave the firm, presumably for improved employment opportunities. Moreover, we do not find evidence of an association between high-ability managers' intentional smoothing and forced executive turnover. Overall, these analyses suggest that high-ability managers are motivated, at least in part, by how the capital market benefits of smoothing benefit shareholders, thereby bolstering their reputation.

Conclusion

We investigate whether high-ability managers are more likely to intentionally smooth earnings, a form of earnings management, and when they are more likely to do so. Our evidence indicates that high-ability managers are, on average, more likely to intentionally smooth earnings. The results also suggest that high-ability managers more effectively implement intentional smoothing strategies: We find that firms with high-ability managers experience incrementally superior earnings performance in the periods following intentional smoothing. Finally, we examine specific incentives related to smoothing, including those that benefit all shareholders (e.g., avoiding debt covenant violations, meeting or beating earnings benchmarks) and those that benefit the manager alone (e.g., perquisite consumption or informed trading). Our results reveal that high-ability managers smooth earnings when it benefits all shareholders but do not smooth earnings solely for their own personal benefit.

Our results offer insights into the two opposing viewpoints of earnings smoothing, whether it is beneficial or detrimental to shareholders. Our evidence is consistent with high-ability managers deploying their superior skill to report an earnings stream that avoids various reporting pitfalls to benefit all shareholders. We interpret these results as evidence that, when executed by a manager, intentional earnings smoothing can be viewed as a beneficial activity by managers. There are, however, limits to the inferences that can be drawn from this study. First, to appropriately test our hypotheses, we utilize a sample without executive turnover over the period that we measure intentional smoothing and with sufficient data to calculate our control variables. This process results in a sample of large, well-governed firms. The extent to which our results extend to smaller firms with less sophisticated governance systems is unclear but might be fruitful ground for future research. Second, we cannot observe managers' intentions in making reporting choices; we can only infer intention from observed behavior. It is thus possible that measurement error or omitted factors could allow different conclusions to be drawn from our evidence (e.g., compensation structure might vary with managerial ability and influence smoothing; Dhole et al., 2016). This being said, we believe the results of our tests (and particularly the results related to incentives) point to intentional smoothing by high-ability managers as providing benefits to shareholders.

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ORCID iD

Melissa Lewis-Western http://orcid.org/0000-0002-9769-0719

Notes

1. Intentional smoothing is management's purposeful intervention into the operating and reporting processes of the firm to reduce the volatility of reported earnings over time.
2. In particular, we expect them to make the adjustments that are most likely to achieve smoothed earnings using the lowest cost techniques, such as subtle timing differences of placing orders, or more quickly identifying the need for earnings management, thereby allowing them more time to assess the tradeoffs of each possible mechanism.
3. One way intentional smoothing could harm managers' reputations is through subsequent restatements and litigation. Income smoothing could increase the frequency of accounting restatements, which Palmrose and Scholz (2004) find are associated with a higher frequency of litigation.
4. We identify the most able managers as those in the top 25% of their industry-year of managerial ability for 2 consecutive years, where managerial ability is based on the MA-Score developed by Demerjian, Lev, and McVay (2012). The MA-Score is calculated with a two-stage estimation procedure: The first stage provides an estimate of firm-level operational efficiency, and the second stage extracts various firm features to better isolate the effects of the manager.
5. The instrument we use to identify the first-stage equation is the average ability of other managers in the same metropolitan area. Measures of network connectedness, which have been shown to influence executive employment opportunities, are increasing in physical proximity (Liu, 2008). Accordingly, we expect that firms operating in geographic areas with a greater supply of high-ability managers are more likely to have these high-ability managers in their networks, and are thus, ceteris paribus, more likely to employ a high-ability manager. We do not expect, however, the average ability of managers within the region to influence the firm's intentional smoothing activities.
6. Demerjian, Donovan, and Lewis-Western (2017) find that intentional smoothing helps firms to avoid spurious technical default. Thus, it is likely that smoothing near debt covenant thresholds benefits both the manager's reputation and the firm's market value.
7. For example, Myers, Myers, and Skinner (2007) provide evidence that firms with extended strings of increases in earnings per share (EPS) smooth reported EPS to sustain the string and experience a price premium.
8. Although we do not argue that smooth earnings are higher quality per se, we believe that the same skills and abilities that allow a manager to report higher quality earnings—the ability to make accurate projections and judgments about the firm's future—also allow a manager to successfully smooth earnings.
9. Demski (1998), Kirschenheiter and Melumad (2002), Subramanyam (1996), and Tucker and Zarowin (2006), among others, find that managers communicate their private information about future earnings via income smoothing (i.e., signal). Our focus is broader than signaling as we also examine whether managers pull earnings in around a trend line (vs. overstate earnings to signal good future prospects).

10. As an example, a manager with more advanced notice would be better able to hasten or defer R&D expenditures, for example, by accelerating or delaying testing schedules. In contrast, if a less able manager realizes late in the reporting period that smoothing adjustments are needed, the choices will be more limited and likely costlier (e.g., offering sales discounts that would have otherwise been unnecessary).
11. The MA-Score data are available at http://faculty.washington.edu/smcvay/abilitydata.html. Dual-class share information is available from Andrew Metrick (andrew.metrick@yale.edu).
12. We exclude the firm-year (but not adjacent years) where *ACCHG_FN, AQA_FN*, or *DO_FN* are not blank.
13. For turnover occurring from 2005 onward, we identify executive turnover from Audit Analytics (based on turnover of the CEO or CFO). For all prior years, we identify turnover of the CEO or CFO from Securities and Exchange Commission (SEC) filings. Specifically, we use a program developed to extract information directly from SEC filings. The program first collects 10-K filings for all firms that file with the SEC. Then, the program identifies the signature page, and collects names and titles of the signers. We use changes in the signers from period to period to identify turnovers. We thank Jeff Tsay for his assistance in designing and conducting this procedure.
14. Quartiles are formed using all observations with sufficient data for the calculation of managerial ability. Hence, the high-ability designation is relative to the population of Compustat firms rather than our smaller sample of firms.
15. In addition, failure to consider both types of earnings management can lead to inaccurate conclusions (Zang, 2012).
16. We find similar results when we replace abnormal accruals with abnormal revenue (Stubben, 2010; untabulated).
17. Note that we do not performance match as we are using the firm as its own control following Kothari, Mizik, and Roychowdhury (2016). That is, the firm fixed effects are an alternative to performance matching that are ideal in some settings.
18. Changes in sales, property, plant, and equipment (PPE), size, and so on do not well describe some firms' normal accrual and real operating processes. As a result, these firms have consistently high or low abnormal reporting, which reflects model fit rather than earnings management. Including firm fixed effects accounts for this issue, and allows the residual to reflect abnormal reporting and real activities management relative to the firm's own average level of accruals or operating activities.
19. It is possible that our real activities manipulation measures also capture changes in employee effort. We thank Ted Christensen for highlighting this possibility. In particular, employees may work harder as they near a benchmark for psychological or economic reasons (e.g., Allen, Dechow, Pope, & Wu, 2017). This could have a similar appearance to operational earnings management as expenses would be systematically lower for a given level of revenue. As an example, employees might simply try harder to make sales when they near their quota, or stay late off the clock to finish their assigned tasks, thereby either increasing revenues or lowering expenses. To contribute to our results, this effort must vary with managerial ability, and result in both upward and downward earnings management. It is certainly possible that better managers could better motivate their employees to exert effort to meet benchmarks. It is less clear, however, why better managers would be associated with more ''slacking off'' once goals are attained, relative to other managers. Because our evidence of intentional smoothing relies heavily on downward earnings management, we do not believe that effort is a key driver of our results. Nonetheless, we acknowledge that employee effort may influence our measures of real activities manipulation.
20. We define *CFO* as operating cash flows less extraordinary items and discontinued operations reported in the Statement of Cash Flows.
21. Spurious technical default occurs when the borrower's credit risk has not increased, but the firm nevertheless enters technical default. Performance technical default occurs when the firm enters

technical default following a decline in performance that is associated with an increase in credit risk.

22. We rank the frequency of firm-years close to debt covenant thresholds and close to earnings expectations, and the frequency of firm-years with a higher likelihood of informed trade or perquisite consumption by industry and year to account for normal variation across industries and years that does not indicate the presence of increased incentives.
23. We calculate Delta following Core and Guay (2002). We consider the executive with the highest sensitivity to changes in the firm's stock price (rather than simply the CEO) because prior work provides evidence that both the CEO's and the CFO's equity incentives can affect the firm's propensity to engage in earnings management. An assumption implicit in this research design choice is that the executive with the greatest sensitivity to the firm's stock price is also the executive that leads decisions with respect to intentional smoothing.
24. We do not rank this variable by industry or year as we expect executives' preferences for greater compensation to be unconditional on the firm's industry membership or year.
25. We use the CEO's age rather than the age of the CFO or other executives due to data constraints.
26. In untabulated analyses, we include year fixed effects rather than a post–Sarbanes–Oxley Act of 2002 (SOX) indicator and similar results obtain.
27. Cameron and Miller (2015) also note that because the use of firm fixed effects may not ''fully control for cluster correlation . . . one should use cluster-robust standard errors'' (p. 330). Also, clustering standard . . . errors by firm reduces our *t* statistics suggesting that firm clustering does not bias standard errors downward in our setting. Further, our results remain and are generally stronger when we refrain from clustering by firm and when we cluster by year instead of by firm (not tabulated). In short, our results are not sensitive to how we cluster standard errors.
28. In untabulated results, we examine the association between managerial ability and the summation of the absolute value of the individual earnings management metrics in both models with and without firm fixed effects; in seven of the eight estimations, the relation between high-ability managers and the individual metrics is significantly positive. In untabulated analyses, we examine the results reported in Table 4 for a post-SOX sample (i.e., a sample of firm-years from 2003-2013), and inferences remain the same.
29. Specifically, we calculate the average ability of executives in each metropolitan statistical area (MSA) and map each MSA to a firm based on the zip code of the firm's headquarters.
30. We consider the mean of the 3-year-ahead *ROA* to avoid concerns that high-ability managers might be more able to delay costs to earnings management. We expect 3 years into the future to be sufficiently long to capture costly earnings management reversals.
31. We do not tabulate the results for the high-credit-risk subsample. The coefficient for the interaction between *High-Ability Managers* and *Tight* is not significantly different from 0 for this subsample.
32. Because the fixed effects models require both outcomes of the dependent variable for estimation when examining models with binary dependent variables (i.e., the turnover models), there are substantially fewer observations in the turnover regressions that include firm fixed effects. When we include firm fixed effects in the model, we estimate the model using a conditional logistic regression because Allison (2005, 2009) notes that this method is the least susceptible to omitted variable bias and produces consistent estimates.

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