

# Real Earnings Management: Insights for Financial Professionals

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## EXECUTIVE SUMMARY

Real earnings management (REM) has become a much more common method of manipulating financial results. It is important for financial professionals to understand what REM research is telling us and how to respond to REM or the risk of REM.

**R**eal earnings management (REM) involves altering transactions to meet financial reporting targets. Companies may cut expenses such as research and development (R&D) or advertising, reduce prices to increase sales, or reduce cost of goods sold by overproducing inventory. REM, which has increased in popularity in the period following the Sarbanes-Oxley Act of 2002 (SOX), has been the focus of significant academic research attention.

As REM has become more common, it is important for financial professionals to understand what REM research tells us and how to respond to REM or the risk of REM. In this article, we review selected studies and identify key themes in four areas: REM fundamentals, REM and managers, REM and auditors, and REM consequences (see the appendix).<sup>1</sup> Based on this body of research, we developed implications for financial professionals who are in a wide range of roles and may observe REM—or feel pressured to participate in REM.

## REM FUNDAMENTALS

REM is a way that managers can mislead financial statement users by altering *transactions*, such as cutting advertising or

R&D, or temporarily cutting selling prices, to achieve financial reporting outcomes. REM differs from accruals-based earnings management (AEM), which alters accounting *estimates*, such as when a company overstates the collectibility of receivables, overstates the valuation of inventory, or understates the future costs of product warranties. In the extreme, managers might commit fraud to mislead investors when they materially manipulate accounting figures, record fictitious transactions, or use other methods. REM often is viewed as a “softer” method to manipulate financial results, as it does not involve manipulating estimates or committing fraud.

Sugata Roychowdhury defined REM, which he refers to as “real activities manipulation,” as:

...departures from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations. These departures do not necessarily contribute to firm value even though they enable managers to meet reporting goals. Certain real activities manipulation methods, such as price discounts and reduction of discretionary expenditures, are possibly optimal actions in certain economic circumstances. However, if managers engage in these activities more extensively than is normal given their economic circumstances, with the objective of meeting/beating an earnings target, they are engaging in real activities manipulation...<sup>2</sup>

Thus, Roychowdhury is focused on REM as “departures from normal” operations that are motivated not by a business purpose but rather by the desire to mislead financial statement users into believing that a financial target has been met under normal conditions. Management’s motive is key: If the intent is to achieve a financial reporting outcome, then normal business decisions begin to look much more like REM.

The following example illustrates the spirit of REM. Suppose a golfer always plays from the blue tees and typically shoots in the low 80s. While his friends are on vacation, he plays two rounds of golf from the white tees, which are closer to the green, making the golf

course shorter and much easier. It is not clear whether he played the white tees to shoot a better score or to use his short irons for practice.

When his friends return, they are amazed to hear that he has shot two rounds in the low 70s, and he does not mention which tees he played. The friends assume that he shot in the low 70s under normal conditions hitting from the blue tees, but they have been misled by his silence. This is similar to a company that meets or beats its profit targets but only because management cancelled all maintenance and advertising expenditures in the fourth quarter with no clear, transparent disclosure to investors about *how* the targets were met.<sup>3</sup>

By contrast, an example of AEM or even fraud would involve inaccurately reporting the score. Perhaps a golfer records a double bogey (two over par on a hole) only when the actual score is higher, or the golfer loses her ball and does not even complete the hole but still records a double bogey. AEM and fraud differ by their degree of misstatement, but both involve inaccurately reporting the score itself, not just hiding the context around the recorded score (white tees vs. blue tees) as in REM.

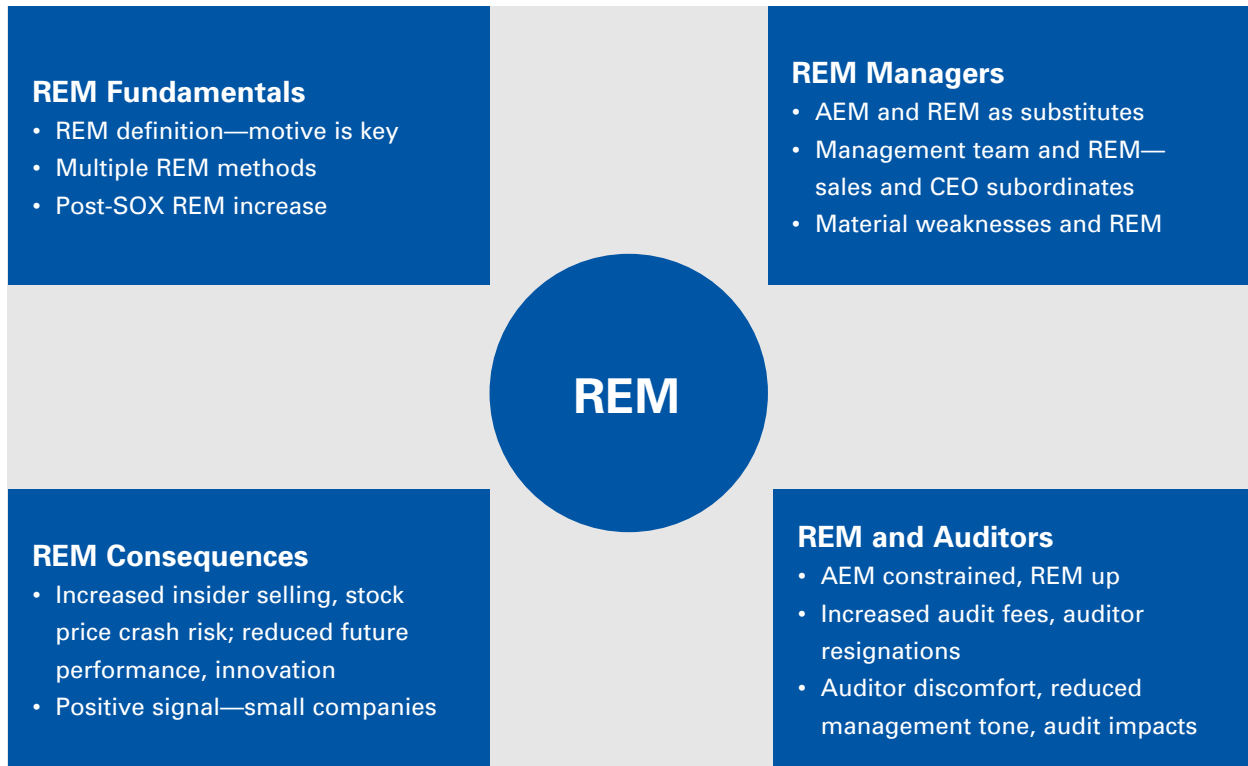
In his analysis, Roychowdhury found “...evidence suggesting price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins” as REM methods.<sup>4</sup> Thus, managers can employ a variety of REM methods to achieve financial reporting outcomes.

Daniel A. Cohen, Aiysha Dey, and Thomas Z. Lys highlighted a significant upward shift in REM from the pre-SOX period to the post-SOX period.<sup>5</sup> In the periods leading up to the passage of SOX, AEM was quite prevalent and increasing; but after SOX became law, REM became much more prevalent with the incidence of AEM significantly reduced. Cohen, et al., speculate that the increase in REM in the post-SOX period was because REM is more difficult for others to detect.

Overall, the key themes of these studies are (see Figure 1):

- The definition of REM highlights the importance of management’s motive—to meet a financial target vs. to enhance operations.

**Figure 1: REM Research Themes**



- There are multiple REM methods, including cost cutting, sales price reductions, and inventory overproduction.
- After SOX was enacted, REM increased significantly and became a key method to manipulate financial results.

#### **REM AND MANAGERS**

Ilia D. Dichev, John R. Graham, Campbell R. Harvey, and Shiva Rajgopal interviewed and surveyed CFOs to build on prior work by Graham, Harvey, and Rajgopal that documented financial executives' willingness to engage in certain types of value-decreasing REM to meet earnings targets.<sup>6</sup> Dichev, et al., found that financial executives believe that analysts have difficulty differentiating REM from business decisions. Such difficulty may make REM an appealing method to manipulate financial results.

Amy Y. Zang examined how managers may jointly use AEM and REM to manipulate financial results.<sup>7</sup> She found evidence that managers use AEM and

REM as substitutes based on how costly they are, and that the level of AEM, which can be done after year-end, is adjusted based on the results of REM, which must be done during the year.

Michael J. Ahearne, Jeffrey P. Boichuk, Craig J. Chapman, and Thomas J. Steenburgh surveyed sales executives about the pressure they face to engage in REM.<sup>8</sup> The authors found that providing cash flow incentives to make REM beneficial for sales personnel and greater relative power in the finance function (relative to the sales function) are associated with using sales to achieve REM. Evidence shows that such REM is more common in the United States and in public companies.

Qiang Cheng, Jimmy Lee, and Terry J. Shevlin explored the relation between companies' internal governance and the extent of REM.<sup>9</sup> They found that REM is reduced when subordinates to the CEO have longer time horizons with the company (greater incentive to focus on long-term value) and when their relative compensation is higher (greater influence and

ability to monitor the CEO). Thus, it appeared that subordinates to the CEO may be able to reduce REM in certain situations. The authors also conducted additional analyses to document conditions under which strong internal governance has a greater or lesser influence on reducing REM.

Tuukka Jarvinen and Emma-Riikka Myllymaki found that companies with material weaknesses in internal control were more likely to engage in REM, especially overproducing inventory and reducing discretionary expenses.<sup>10</sup> Thus, companies with weak controls also appeared to be prone to REM.

Overall, key themes of these studies are:

- REM and AEM are used as substitutes for each other.
- Within the management team, cash flow incentives for sales personnel and greater finance function power are associated with greater sales-related REM, and CEO subordinates appear to mitigate REM more when they have longer time horizons and greater relative pay.
- Material weaknesses in internal control and REM go together.

## REM AND AUDITORS

Wuchun Chi, Ling Lei Lisic, and Mikhail Pevzner examined the association between audit quality (based on industry experts, audit fees, and large audit firms) and REM.<sup>11</sup> They found that when auditors constrain management's use of AEM, management uses more REM to meet targets, an unintended consequence given the higher cost of REM.

Adam Greiner, Mark J. Kohlbeck, and Thomas J. Smith examined the relation between audit fees and REM and found that current and future fees are positively associated with some types of aggressive REM.<sup>12</sup> The link between REM and audit fees appears to be driven by greater audit effort and risk in the presence of REM.

Yongtae Kim and Myung Seok Park examined the effect that REM has on auditors' willingness to retain clients.<sup>13</sup> The authors found that certain types of REM are associated with auditor resignations. In addition, auditors are quite sensitive to REM that allows clients to just meet or beat their benchmarks. Finally,

companies that use REM tend to replace their auditor with a smaller auditor and continue to engage in aggressive REM after changing auditors.

Benjamin P. Commerford, Dana R. Hermanson, Richard W. Houston, and Michael F. Peters conducted interviews with experienced auditors and found that REM causes auditor discomfort, as auditors are concerned that REM indicates poor management tone and possibly is a signal of other forms of manipulation beyond REM.<sup>14</sup> Auditors may respond to REM by altering the audit in many ways and might even resign from the engagement.

Commerford, Richard C. Hatfield, and Houston examined how the presence of REM affects experienced auditors' judgments about unrelated audit issues. They found that when management uses REM, auditors perceive management actions to be aggressive and propose larger audit adjustments in unrelated audit areas.<sup>15</sup> Thus, the presence of REM leads to auditors being more vigilant about issues unrelated to REM.

Commerford, Hermanson, Houston, and Peters investigated auditors' response to ambiguity about whether management's actions reflected normal business decisions or REM.<sup>16</sup> If REM is clearly present, then auditors reduced their management tone assessments, were more likely to address the issue with the audit committee, and were less likely to continue serving the client. When it is unclear whether the actions are REM or normal business decisions, auditors respond negatively only when the client beats the earnings target. Auditors' assessment of management's tone—a people issue—appeared to be the driver of auditors' response to REM.

Overall, the key themes of these studies are:

- When auditors constrain AEM, there is more REM.
- REM is associated with higher audit fees and greater risk of auditor resignation.
- REM causes auditor discomfort, which negatively affects auditors' management tone assessments. As a result, auditors are more vigilant in unrelated areas of the audit, are more likely to discuss the issue with the audit committee, and are more likely to resign from the engagement.

## REM CONSEQUENCES

Two early studies reached conflicting conclusions about the consequences of REM. Sanjeev Bhojraj, Paul Hribar, Marc Picconi, and John McInnis found that when companies cut expenditures in order to meet forecasts (i.e., REM), insider trading and stock issuances increased the following year, suggesting that managers behaved myopically.<sup>17</sup> In contrast, Katherine A. Gunny reported that companies where managers used REM to meet a benchmark subsequently outperformed companies where managers did not use REM and just met or missed a benchmark.<sup>18</sup>

Brooke D. Beyer, Sandeep M. Nabar, and Eric T. Rapley reconciled these conflicting results. They found that the positive link between REM and future profits (the Gunny study) applies only to companies with high uncertainty, more costly REM, and less pressure to meet earning targets—typically small companies.<sup>19</sup> Bhojraj, et al., had a sample of large companies while Gunny had a more diverse sample. Thus, Gunny found evidence of small company managers using REM to signal future profitability, but Bhojraj, et al., found that managers at large companies behave myopically when using REM.

Patrick Vorst provided evidence that an abnormal investment cut that a company later reverses serves as a robust measure of REM and that future company performance suffers with increases in such reversals. In addition, Vorst found that the negative effects of REM depend on the incentive for REM, as well as on REM's benefits and costs.<sup>20</sup>

Frederick L. Bereskin, Po-Hsuan Hsu, and Wendy Rotenberg argued that R&D cuts to meet earnings benchmarks are more costly for the company than R&D cuts for operational reasons. They found that when managers cut R&D to meet earnings targets, future innovation suffers significantly with fewer patents, etc.<sup>21</sup> Thus, such REM harms future innovation.

Inder K. Khurana, Raynolde Pereira, and Eliza (Xia) Zhang considered whether REM impacts the company's stock price crash risk. The authors found evidence that companies using REM to smooth earnings have greater risk of stock price crashes. They attributed this to REM smoothing allowing managers to "...withhold bad news, keep poor-performing proj-

ects, conceal resource diversion, and engage in ineffective risk management, which increases crash risk."<sup>22</sup>

Overall, the key themes of these studies are:

- In many cases, there is evidence of negative consequences of REM: subsequent increases in insider selling, stock issuance, and stock price crash risk, as well as reduced future operating performance and innovation.
- Smaller companies may use REM to signal their strong future performance.

## IMPLICATIONS FOR FINANCIAL PROFESSIONALS

These findings have many implications for financial professionals in a wide range of roles who may observe REM or feel pressured to participate in REM. Depending on their role, financial professionals may be well positioned to have discussions with audit committee members, senior managers, internal auditors, or external auditors if REM issues become apparent.

### *Motive and Rationalization*

When it comes to distinguishing REM from normal business decisions, management's motive is key. If the reason for the decision is solely to meet the analysts' consensus earnings forecast, then the action is REM. If the motivation behind the decision is to improve operations, then it is a business decision and not REM. A key question for management is "Why are we/you doing this?"<sup>23</sup> Financial professionals can pose this question to management, which can make this question a standard part of pre-decision discussions to self-regulate.

It is also important for managers to avoid rationalization on this issue. Specifically, if the motive behind a decision truly was to beat a target, then managers need to beware of creating a business purpose rationale later and getting themselves to believe it. REM's murkiness provides a way for managers to justify behavior that really is earnings manipulation.

### *Disclosure*

In situations that may be close to REM or morph into REM, it is important to ensure that the company's disclosures are adequate to inform users about what is behind the numbers. Financial professionals need

to consider whether companies clearly disclose deviations from normal business activities to investors. For example, if the company cuts all plant maintenance costs in the fourth quarter to beat a target, and this had never been done in the company's history, then a vague disclosure indicating simply that "management engaged in some cost control measures" is unlikely to be informative to investors. The reality is that the company beat its target only because it deferred all fourth-quarter maintenance on the plant. In our view, the cut in plant maintenance costs is a very unusual situation that may lead to future operational problems, so the company should disclose it.

### *REM and AEM in Tandem*

Financial professionals need to recognize that management has different "dials to turn" at various times in order to manage earnings. A company must do REM during the fiscal year, while a company can do AEM after the period, during the adjusting and closing process. Further, because a company does REM during the year, it is possible for management to engage in REM and still miss a target (what management thought would be enough REM turned out not to be enough). In such a case, management may resort to AEM at the end of the period to make up the difference. Also, if the company shifts to an auditor who constrains AEM, then financial professionals need to be alert for a spike in REM. Overall, we encourage financial professionals to consider the risk of REM and AEM in tandem.

### *Management Team Dynamics*

Management team dynamics can affect the incidence of REM in a company. Specifically, greater CEO power or finance team power can increase the chances of REM, as can tying sales personnel compensation to cash flow. Understanding how the management team functions (including who holds the power) and how the company compensates sales personnel is important in assessing the risk of REM. Further, accountants can engage in AEM alone and in secret by simply changing estimates, while REM may involve a greater number of parties and higher visibility within the company when there is an effort to cut expenditures or overpro-

duce inventory. Overall, it is important to consider the people involved, their power, and their incentives as part of assessing REM risk.

### *Control Weaknesses*

Research indicates that material weaknesses in internal control are correlated with REM. Financial professionals should consider the potential for REM when they see evidence of internal control problems, and managers should appreciate that an environment of weak controls may be ripe for allowing others to engage in REM. Overall, we often see that accounting problems in one area point to accounting problems in other areas, especially if the underlying root cause is weak controls that include a poor tone at the top. We, therefore, encourage financial professionals not to view control weaknesses in isolation but rather to ask, "What else may be going on now that we have identified this control weakness?"

### *Auditor Reaction*

Research is quite clear that auditors respond negatively to REM, largely because REM is a sign of management's poor character. Thus, although REM is not illegal or even necessarily a violation of Generally Accepted Accounting Principles, using REM will typically cause the auditor to view management as less ethical and trustworthy and more focused on doing whatever it takes to beat targets.

When auditors have such negative perceptions of management, they tend to respond with higher audit fees, a tougher posture on audit issues, and a greater likelihood to take concerns to the audit committee or resign from the engagement. Thus, we encourage financial professionals to appreciate that REM can be costly from an "auditor relations" standpoint in addition to other REM costs.

### *Costs of REM*

Except for some smaller companies and those with constrained information environments, the consequences of REM typically are negative. This is in large part because REM involves decisions that affect cash flows with the rationale for the decisions not to maximize company value but rather to beat a target. We see this

sacrifice of value due to REM in increased insider selling, stock issuance, and stock price crash risk, as well as reduced future operating performance and innovation.

It is critical for financial professionals to understand that REM typically is not costless. Rather, because it involves altering actual transactions, this form of manipulation can affect the long-run value of the business. Financial professionals can ask “Is this really what we want to do? Is beating this target worth it?”

### KNOW THE RISKS

Research on REM has expanded greatly in recent years, and the results of this research provide important insights into REM and its consequences. We synthesized key findings from four areas of REM research (REM fundamentals, REM and managers, REM and auditors, and REM consequences) and then developed implications for financial professionals. Specifically, we believe that financial professionals need to carefully focus on these REM issues: motive and rationalization, disclosure, REM and AEM in tandem, management team dynamics, control weaknesses, auditor reaction, and costs of REM. As REM has become a much more common method to manipulate financial information, we encourage all financial market participants to know the risks and costs of REM. ■

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### ENDNOTES

- 1 We judgmentally selected the limited number of papers included in our analysis based on our knowledge of the literature and a number of online searches. We primarily focus on papers published in leading North American accounting journals from 2006 to 2019, and we focus on the core REM-related results in each study. In our discussion, we adapt some phrasing from the original studies.
- 2 Sugata Roychowdhury, “Earnings Management through Real Activities Manipulation,” *Journal of Accounting and Economics*, December 2006, pp. 335-370.
- 3 Adding to the “murkiness” of REM is that it is not directly addressed in auditing standards to any significant extent (see Benjamin Commerford, Dana Hermanson, Richard Houston, and Michael Peters, “Real Earnings Management: A Threat to Auditor Comfort?” *Auditing: A Journal of Practice & Theory*, February 2016, pp. 39-56).
- 4 Roychowdhury, 2006.
- 5 Cohen, Dey, and Lys, 2008.
- 6 Ilija D. Dichev, John R. Graham, Campbell R. Harvey, and Shiva Rajgopal, “Earnings quality: Evidence from the field,” *Journal of Accounting and Economics*, December 2013, pp. 1-33. The earlier study was John R. Graham, Campbell R. Harvey, and Shiva Rajgopal, “The Economic Implications of Corporate Financial Reporting,” *Journal of Accounting and Economics*, December 2005, pp. 3-73.
- 7 Amy Y. Zang, “Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management,” *The Accounting Review*, March 2012, pp. 675-703.
- 8 Michael J. Ahearn, Jeffrey P. Boichuk, Craig J. Chapman, and Thomas J. Steenburgh, “Real Earnings Management in Sales,” *Journal of Accounting Research*, December 2016, pp. 1,233-1,266.
- 9 Qiang Cheng, Jimmy Lee, and Terry J. Shevlin, “Internal Governance and Real Earnings Management,” *The Accounting Review*, July 2016, pp. 1,051-1,085.
- 10 Tuukka Jarvinen and Emma-Riikka Myllymaki, “Real Earnings Management before and after Reporting SOX 404 Material Weaknesses,” *Accounting Horizons*, October 2015, pp. 119-141.
- 11 Wuchun Chi, Ling Lei Lisc, and Mikhail Pevzner, “Is Enhanced Audit Quality Associated with Greater Real Earnings Management?” *Accounting Horizons*, December 2011, pp. 315-335.
- 12 Adam Greiner, Mark J. Kohlbeck, and Thomas J. Smith, “The Relationship Between Aggressive Real Earnings Management and Current and Future Audit Fees,” *Auditing: A Journal of Practice & Theory*, July 2016, pp. 85-107.
- 13 Yongtae Kim and Myung Seok Park, “Real Activities Manipulation and Auditors’ Client-retention Decisions,” *The Accounting Review*, January 2014, pp. 367-401.
- 14 Benjamin P. Commerford, Dana R. Hermanson, Richard W. Houston, and Michael F. Peters, “Real Earnings Management: A Threat to Auditor Comfort?” *Auditing: A Journal of Practice & Theory*, February 2016, pp. 39-56.
- 15 Benjamin P. Commerford, Richard C. Hatfield, and Richard W. Houston, “The Effect of Real Earnings Management on Auditor Scrutiny of Managements’ Other Financial Reporting Decisions,” *The Accounting Review*, January 2018, pp. 145-163.

- 16 Benjamin P. Commerford, Dana R. Hermanson, Richard W. Houston, and Michael F. Peters, "Auditor Sensitivity to Real Earnings Management: The Importance of Ambiguity and Earnings Context," *Contemporary Accounting Research*, Summer 2019, pp. 1,055-1,076.
- 17 Sanjeev Bhojraj, Paul Hribar, Marc Picconi, and John McInnis, "Making Sense of Cents: An Examination of Firms That Marginally Miss or Beat Analyst Forecasts," *The Journal of Finance*, October 2009, pp. 2,361-2,388.
- 18 Katherine A. Gunny, "The Relation Between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks," *Contemporary Accounting Research*, Fall 2010, pp. 855-888.
- 19 Brooke D. Beyer, Sandeep M. Nabar, and Eric T. Rapley, "Real Earnings Management by Benchmark-Beating Firms: Implications for Future Profitability," *Accounting Horizons*, December 2018, pp. 59-84.
- 20 Patrick Vorst, "Real Earnings Management and Long-Term Operating Performance: The Role of Reversals in Discretionary Investment Cuts," *The Accounting Review*, July 2016, pp. 1,219-1,256.
- 21 Frederick L. Bereskin, Po-Hsuan Hsu, and Wendy Rotenberg, "The Real Effects of Real Earnings Management: Evidence from Innovation," *Contemporary Accounting Research*, Spring 2018, pp. 525-557.
- 22 Inder K. Khurana, Raynolde Pereira, and Eliza (Xia) Zhang, "Is Real Earnings Smoothing Harmful? Evidence from Firm-Specific Stock Price Crash Risk," *Contemporary Accounting Research*, Spring 2018, pp. 558-587.
- 23 The authors thank Larry Rittenberg for highlighting the importance of this question.

## Appendix: Selected Literature on REM

Study	Selected Quotes
<b>REM Fundamentals</b>	
Sugata Roychowdhury, "Earnings Management through Real Activities Manipulation," <i>Journal of Accounting and Economics</i> , December 2006, pp. 335-370.	I find evidence consistent with managers manipulating real activities to avoid reporting annual losses. Specifically, I find evidence suggesting price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins.
Daniel A. Cohen, Aiysha Dey, and Thomas Z. Lys, "Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods," <i>The Accounting Review</i> , May 2008, pp. 757-787.	We document that accrual-based earnings management increased steadily from 1987 until the passage of the Sarbanes-Oxley Act (SOX) in 2002, followed by a significant decline after the passage of SOX. Conversely, the level of real earnings management activities declined prior to SOX and increased significantly after the passage of SOX, suggesting that firms switched from accrual-based to real earnings management methods after the passage of SOX.
<b>REM and Managers</b>	
Ilia D. Dichev, John R. Graham, Campbell R. Harvey, and Shiva Rajgopal, "Earnings quality: Evidence from the field," <i>Journal of Accounting and Economics</i> , December 2013, pp. 1-33.	CFOs think that earnings are often managed using real actions such as cutting R&D, maintenance expenses and marketing expenditures and these cuts are value-decreasing (Graham et al., 2005). However, empirically distinguishing between business-driven economic reasons to cut spending vs. opportunistic cuts aimed at hitting earnings targets is difficult for an outside analyst.
Amy Y. Zang, "Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management," <i>The Accounting Review</i> , March 2012, pp. 675-703.	I study whether managers use real activities manipulation and accrual-based earnings management as substitutes in managing earnings. I find that managers trade off the two earnings management methods based on their relative costs and that managers adjust the level of accrual-based earnings management according to the level of real activities manipulation realized.



## Appendix: Selected Literature on REM (continued)

Study	Selected Quotes
Amy Y. Zang, "Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management," <i>The Accounting Review</i> , March 2012, pp. 675-703.	I study whether managers use real activities manipulation and accrual-based earnings management as substitutes in managing earnings. I find that managers trade off the two earnings management methods based on their relative costs and that managers adjust the level of accrual-based earnings management according to the level of real activities manipulation realized.
Michael J. Aharne, Jeffrey P. Boichuk, Craig J. Chapman, and Thomas J. Steenburgh, "Real Earnings Management in Sales," <i>Journal of Accounting Research</i> , December 2016, pp. 1,233-1,266.	We surveyed 1,638 sales executives across 40 countries regarding their companies' likelihood of asking sales to perform real earnings management (REM) actions when earnings pressure exists... We find that companies have a greater propensity to engage in REM when: (1) sales personnel receive cash-flow incentives, (2) finance functions make REM-related decisions, (3) companies are publicly traded, and (4) operations are conducted in the United States.
Qiang Cheng, Jimmy Lee, and Terry J. Shevlin, "Internal Governance and Real Earnings Management," <i>The Accounting Review</i> , July 2016, pp. 1,051-1,085.	Using the number of years to retirement to capture key subordinate executives' horizon incentives and using their compensation relative to CEO compensation to capture their influence within the firm, we find that the extent of real earnings management decreases with key subordinate executives' horizon and influence.
Tuukka Jarvinen and Emma-Riikka Myllymaki, "Real Earnings Management before and after Reporting SOX 404 Material Weaknesses," <i>Accounting Horizons</i> , October 2015, pp. 119-141.	...compared to companies with effective internal controls, companies with existing material weaknesses in their internal controls engage in more manipulation of real activities (particularly inventory overproduction)... Moreover, we find evidence suggesting that companies employ real earnings management (overproduction and reduction of discretionary expenses) after disclosing previous year's material weaknesses.
<b>REM and Auditors</b>	
Wuchun Chi, Ling Lei Lisic, and Mikhail Pevzner, "Is Enhanced Audit Quality Associated with Greater Real Earnings Management?" <i>Accounting Horizons</i> , December 2011, pp. 315-335, <a href="http://bit.ly/3j2ajmW">bit.ly/3j2ajmW</a> .	We examine whether firms resort to real earnings management when their ability to manage accruals is constrained by higher quality auditors. In settings involving strong upward earnings management incentives, i.e., for firms that meet or just beat earnings benchmarks and firms that issue seasoned equities, we find that city-level auditor industry expertise and audit fees are associated with higher levels of real earnings management. We find similar, albeit weaker, results for the Big N auditors.
Adam Greiner, Mark J. Kohlbeck, and Thomas J. Smith, "The Relationship Between Aggressive Real Earnings Management and Current and Future Audit Fees," <i>Auditing: A Journal of Practice &amp; Theory</i> , July 2016, pp. 85-107.	We find that, with the exception of abnormal reductions in SG&A, aggressive income-increasing REM is positively associated with both current and future audit fees. Additional analyses provide evidence consistent with increased effort combined with increased risk contributing to the current pricing effect, with increased business risk primarily driving the future pricing effect.
Yongtae Kim and Myung Seok Park, "Real Activities Manipulation and Auditors' Client-retention Decisions," <i>The Accounting Review</i> , January 2014, pp. 367-401.	We find that, with the exception of RAM [i.e., REM] through overproduction, clients' opportunistic operating decisions are positively associated with the likelihood of auditor resignations. We also provide evidence that auditors are especially sensitive to clients' RAM to just meet or beat earnings benchmarks in their client-retention decisions. In addition, we find that clients whose auditors resign from engagements tend to hire smaller auditors and these clients engage in RAM more aggressively.

## Appendix: Selected Literature on REM (continued)

Study	Selected Quotes
Benjamin P. Commerford, Dana R. Hermanson, Richard W. Houston, and Michael F. Peters, "Real Earnings Management: A Threat to Auditor Comfort?" <i>Auditing: A Journal of Practice &amp; Theory</i> , February 2016, pp. 39-56.	Most of the interviewees have concerns about REM (i.e., it threatens comfort), largely because they believe that it is indicative of management's desire to meet short-term targets (i.e., poor management tone), and that it may signal the use of other, less acceptable earnings management methods (i.e., accruals-based earnings management) to meet those targets. Interviewees respond to the discomfort caused by REM in many ways, including engaging in discussions with the client, increasing skepticism, and altering audit procedures and risk assessments. Auditors may even go as far as resigning from an engagement because of REM.
Benjamin P. Commerford, Richard C. Hatfield, and Richard W. Houston, "The Effect of Real Earnings Management on Auditor Scrutiny of Management's Other Financial Reporting Decisions," <i>The Accounting Review</i> , January 2018, pp. 145-163.	...we predict and find that when management uses REM, auditors are more restrictive of management's subjective estimates, making it more difficult for management to use income-increasing AEM... Using a serial mediation model, we find that when auditors observe REM, they perceive these operating decisions as aggressive, leading them to perceive management as aggressive, ultimately causing greater proposed adjustments on an unrelated audit difference.
Benjamin P. Commerford, Dana R. Hermanson, Richard W. Houston, and Michael F. Peters, "Auditor Sensitivity to Real Earnings Management: The Importance of Ambiguity and Earnings Context," <i>Contemporary Accounting Research</i> , Summer 2019, pp. 1,055-1,076.	...firms reducing discretionary expenditures to beat forecasts have significantly greater equity issuances and insider selling in the following year, consistent with managers understanding the myopic nature of their actions. Our results confirm survey evidence suggesting managers engage in myopic behavior to beat benchmarks.
<b>REM Consequences</b>	
Sanjeev Bhojraj, Paul Hribar, Marc Picconi, and John McInnis, "Making Sense of Cents: An Examination of Firms That Marginally Miss or Beat Analyst Forecasts," <i>The Journal of Finance</i> , October 2009, pp. 2,361-2,388.	...firms reducing discretionary expenditures to beat forecasts have significantly greater equity issuances and insider selling in the following year, consistent with managers understanding the myopic nature of their actions. Our results confirm survey evidence suggesting managers engage in myopic behavior to beat benchmarks.
Katherine A. Gunny, "The Relation Between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks," <i>Contemporary Accounting Research</i> , Fall 2010, pp. 855-888.	...I find firms engaging in RM to just meet earnings benchmarks have relatively better subsequent performance than firms that do not engage in RM and miss or just meet the benchmarks.

## Appendix: Selected Literature on REM (continued)

Study	Selected Quotes
<p>Brooke D. Beyer, Sandeep M. Nabar, and Eric T. Rapley, "Real Earnings Management by Benchmark-Beating Firms: Implications for Future Profitability," <i>Accounting Horizons</i>, December 2018, pp. 59-84.</p>	<p>...we find the positive relation between REM and future profitability is limited to firms that have less robust information environments (measured with stock return volatility, bid/ask spread, and analysts following), more costly REM (measured with market share and financial health), and fewer incentives to meet short-term earnings benchmarks (measured with market-to-book ratio, transient investors, and seasoned equity offering). In supplementary analysis, we note that Bhojraj et al. (2009) restrict their sample to relatively large firms, whereas Gunny's (2010) sample includes both large and small firms... We find that small firms use REM to signal positive future performance, but large firms do not.</p>
<p>Patrick Vorst, "Real Earnings Management and Long-Term Operating Performance: The Role of Reversals in Discretionary Investment Cuts," <i>The Accounting Review</i>, July 2016, pp. 1,219-1,256.</p>	<p>I find that a reversal of an abnormal cut in discretionary investments in the year after the cut has taken place is indicative of REM. I further find that, on average, reversing cuts are associated with lower future operating performance, but that such results vary significantly depending on the various incentives to engage in REM, as well as other factors that affect its associated costs and benefits.</p>
<p>Frederick L. Bereskin, Po-Hsuan Hsu, and Wendy Rotenberg, "The Real Effects of Real Earnings Management: Evidence from Innovation," <i>Contemporary Accounting Research</i>, Spring 2018, pp. 525-557.</p>	<p>We find that R&amp;D cuts related to earnings management lead to fewer patents, less influential patent output, and lower innovative efficiency compared to other R&amp;D cuts. Our results thus suggest that real earnings management may obstruct firms' technological progress and highlight the potential costs of managerial manipulation of R&amp;D expenditures to alter reported earnings.</p>
<p>Inder K. Khurana, Raynolde Pereira, and Eliza (Xia) Zhang, "Is Real Earnings Smoothing Harmful? Evidence from Firm-Specific Stock Price Crash Risk," <i>Contemporary Accounting Research</i>, Spring 2018, pp. 558-587.</p>	<p>...we find real earnings smoothing to be positively associated with firm-specific stock price crash risk. This finding is consistent with the view that real earnings smoothing helps managers withhold bad news, keep poor-performing projects, conceal resource diversion, and engage in ineffective risk management, which increases crash risk.</p>