

## Curbing Real Earnings Management Decisions: Experimental Evidence on Pressure Effect

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### Abstract

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Prior research documented that managers are using a variety of real earnings management practices to manage earnings. We examined in a laboratory experiment which involves 51 undergraduate and master students the impact of pressure effect on operational opportunism. Our results confirmed the effect of pressure (i.e. legal consequences, financial press scrutiny and auditor scrutiny) on real earnings management decisions, showing that participants who received pressure treatment were less inclined to opportunistic behavior when compared to those who did not received pressure information. Overall, we found that pressure effect is helpful in curbing real earnings management decisions. The paper contributes to the debate on curbing operational opportunism.

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**Keywords:** Real earnings management, pressure effect, legal, financial press scrutiny, auditor scrutiny

### 1. Introduction

Managers are paid to use their discretion both to accounting and operational activities. Sometimes, when they face earnings pressure, some of them, deliberately or unconsciously use this discretion for self-serving purposes and not in the best benefit for the companies. Prior research on operational discretion documented that managers are engaging in such practices more often than it was believed (Graham et al., 2005). For instance, the empirical study conducted by Graham et al., (2005) found strong evidence that managers take real economic actions to maintain accounting appearances. Moreover, the large majority of the respondents reported that they would decrease discretionary spending on Research and development expenses, advertising and maintenance in order to meet earnings targets. As such, through the use of strategically timing and structuring transactions, this operational discretion translates into real earnings management (hereunder, REM) practices. As Schipper (1989) asserted, REM involves real operating, investment or financing decisions to manage reported earnings. In recent years, REM literature has grown (Ho et al., 2015), and was extensively documented that managers prefer using REM, since accrual-based earnings may be more likely to attract scrutiny from auditors, regulators or analysts. Given the fact that REM practices are harder to detect, a shift in earnings management behavior of companies was documented (Chen and Huang, 2013; Commerford et al., 2018).

For instance, the study conducted by Roy chowdhury (2006) or Cohen et al., (2008) examined abnormal cash flow from operations and abnormal production costs and found that those are used in order to infer earnings management. As documented in the literature, those firms engaging in manipulative practices have higher cash flow volatility and reduced financial reporting transparency, creating information asymmetry between corporate executives and market participants (Roy chowdhury 2006; Cohen and Zarowin 2010). According to prior research, there are mixed perspectives regarding the acceptability of REM (Kaplan, 2001). Overall, the large majority of previous research focused on the harmful effect of REM on long run (Kim and Sohn 2013; Vorst 2016; Bereskin et al., 2017). Despite the potentially harmful effects of REM for the firm, prior research is scarce in terms of examining mechanisms that can deter such operational opportunism (Kothari et al., 2016). This study aims to examine the impact of legal consequences, financial press and auditor scrutiny on management behavior in the context of REM.

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We postulate that those factors (which we refer to pressure effect in our study) have a negative impact on REM decisions. While prior research examined pressure causing individuals to engage in earnings management practices, this study examines whether pressure, in the form of legal consequences, financial press and auditor scrutiny, could potentially limit such behavior.

Several research hypotheses are examined in this study. First, we investigate the impact of legal pressure on managers' decisions to engage in REM practices. Second, the impact of financial press scrutiny is explored in a similar context. Finally, in order to understand the effect of auditor scrutiny on manipulative practices, we assess its impact too. The empirical evidence in this study indicates a pressure effect for all those factors in terms of curbing REM decisions.

By proving empirical evidence to our research inquires, our study offers additional insights to deepen our understanding on the ways REM practices can be limited. As such, we contribute to the literature twofold. First, we add to the most recent literature on curbing REM practices. As stated above, this stream of literature documents that REM practices are more common compared to accrual-based ones. In this respect, we contribute to the extant literature on curbing REM practices by postulating that pressure effect can limit such practices. In this regard, this study probes into the potential factors affecting managers' decisions on REM practices and provides evidence that legal, financial press and auditor scrutiny can be associated with less REM. Second, our purpose is to provide observational empirical evidence into how managers react via REM practices in a pressure context. Empirical research assessing the pressure effect on REM behavior is scarce, despite the fact that understanding these issues is critical. Thus, this study aims to fill the gap by assessing the impact of legal, financial press and auditor scrutiny (considered here as pressure effect) on REM behavior or managers.

Our empirical study employs a laboratory experiment which involves 51 accounting undergraduate and master students as participants. Our research hypotheses are tested in two scenarios: (a) no pressure is given; (b) pressure is given (legal, financial press scrutiny, auditor scrutiny). The results reveal that pressure effect has a negative effect on REM behavior. The remainder of this paper is organized as follows. Section 2 provides state of the art and hypotheses development. Section 3 describes research design, while section 4 presents the empirical results and discussion. Section 5 concludes this study by summarizing the research findings, outlining the limitations and offering the directions for future studies.

## **2. State of the art and hypotheses development**

Earnings management topic is widely spread given its significant effect on financial reporting quality. Given the fact that it is a very complex issue, many studies approached it in recent years. More recently, REM issue is highly examined as an alternative method to accrual-based earnings management, occurring when managerial discretion over operational choices influences reported accounting numbers. Specifically, previous studies focused on REM definitions, motivations, taxonomy, consequences and measurement. In addition, our paper examine if pressure effect has the potential to curb such practices.

Previous research examined the presence of REM and documents that such practices are used by managers when managing earnings (Cohen and Zarowin, 2010). Previous empirical studies documented various practices of REM as: boosting sales by increasing price discounts, accelerating their timing or offering more lenient credit terms; selling fixed assets and use the gains to avoid reporting losses, low earnings or debt covenant violations; overproduction and thereby allocating more overhead to inventory and less to cost of goods sold, which leads to lower cost of goods sold and increased operating margins; aggressively reducing discretionary expenses to improve margins when managers are likely to miss earnings targets or to avoid recording losses; stock repurchases to increase earnings per share ((Baber et al. (1991); Dechow and Sloan (1991); Bartov (1993); Bushee (1998); Bens et al., (2002); Thomas and Zhang (2002); Thomas and Inoue (2003); Cheng (2004); Hribar et al., (2006); Roychowdhury (2006); Gunny, (2010); Cohen and Zarowin (2010); Brown et al., 2015)).

As stated above, some REM practices used to achieve financial reporting goals, are more difficult to monitor by auditors, analysts or other market participants, who are struggle to estimate deviations from optimal behavior. Despite the fact that such practices are costly for the firm, managers have a preference for them, when manipulating earnings as Graham et al., (2005) documented. However, as Wilson (2013) and Cohen et al., (2008) documented empirically, the use of REM has increased post-SOX Act in USA (2002). On the other hand, the consequences of practicing REM are negative and important to be assessed.

Among them, we can cite the: decreasing reporting transparency; affecting innovation strategy of firm; lowering normal cash flow from operations at a given level of sales and maximizing production costs relative to sales; reducing firm value; overall negative impact on future cash flow of firm; lowering future margins sales (since customers may expect future discounts); excessive hiring and investment; lower future profitability. Other empirical studies suggest that the use of REM can lead to a higher cost of capital (Kim and Sohn 2013), lower return on assets (Vorst, 2016), increased stock price crash risk (Khurana et al. 2018).

Given the above consequences of practicing REM, previous research approached the need to limit such manipulative practices with different results. Among various proposed directions to be assessed, the pressure effect may have an impact on earnings management behavior. In this respect, studies like those conducted by Jones (1991) and Septiari and Maruli (2017) documented that pressure has the potential to affect decision making. Moreover, when a certain type of pressure is given, this demarche can influence the managers to be more aware and thoughtful of their actions before making any decision. As previous literature documented, pressure effect can comprise various factors as: written justification, legal consequences, financial press scrutiny, auditor scrutiny, sanctions, stress or others (Curley et al., 1986; Farmer et al., 1987; Ashton, 1990; Allmon et al., 2000; Elias, 2002; Selart and Johansen, 2011; Craft, 2013).

The managers' decision-making process is highly complex. Previous research approached the various factors affecting it and summarized a large taxonomy summarized in: work environment, government / legal environment, social environment, professional environment, personal environment and individual attributes (Bommer et al., 1987). All categories above comprised a wide range of factors influencing the managers' decisions when they are confronting ethical dilemmas. Despite the fact that previous research documented that above various factors have an influence on the process of decision-making, the magnitude of the influence is scarcely documented. However, above taxonomy cannot be considered exhaustive, neither their patterns of possible interaction among them is not well known. As such, the influence of various factors is open to discussion and more research, and also the way the decision-makers assess opportunistic operating decisions.

For instance, the Perceptual Deterrence Theory posit that when considering whether to engage in an illegal or unethical activity, decision-makers will simultaneously consider both the perceived likelihood of being caught and the expected punishment (Nagin and Pogarsky, 2001). According to Perceptual Deterrence Theory, both the likelihood of detection and the potential punishment work in tandem to achieve deterrence, and that significant deterrence occurs when both factors are present (Evans et al. 2015; Ritchey and Nicholson-Crotty, 2011). Therefore, when considering limiting such operational opportunism, it is important to identify potential sources of detection and punishment and assess whether and how such sources can work together to achieve effective curbing of REM. Using above theory as our theoretical framework, we examine if factors like legal consequences, financial press scrutiny and auditor scrutiny can contribute to curbing of opportunistic operating decisions through their ability to detect and penalize such practices.

Moreover, we intend to investigate how managers behave in certain situations, and which factors play a role in a decision-making process and moral reasoning in which they are involved. When approaching discussions regarding the legal consequences and especially, requirements to justify the decisions made, usually to the large majority of individuals this task can raise their awareness that the practices approached (e.g. earnings management) can be illegal (Septiari and Maruli, 2017). Further, since illegal activities are associated with a strong social stigma, people can be force to comply with the moral behind the law as Bommer et al., (1987) asserted.

Further, we acknowledge the fact that REM practices are not considered illegal, yet we still expect our participants to use similar reasoning when deciding whether to engage in such opportunistic behavior that can be regarded as an ethical issue.

Financial press scrutiny can have a similar impact as legal pressure in terms of increasing awareness of individuals. Such external parties could potentially deter opportunistic behavior of managers by penalizing management for using REM. Extensive prior research has documented the role of financial press in analyzing managers operating and accounting choices, despite the fact that they have difficulty detecting REM (Dichev et al. 2013). Further, it is widely accepted that auditors perceive REM as aggressive (Commerford et al., 2018). Moreover, prior research documented that increased auditor scrutiny, through additional inquiry and testing, has the potential to reduce managers' likelihood of making aggressive accounting choices (Chen et al., 2012).

However, prior research has not considered the extent to which auditor scrutiny might also deter managers' REM, given the fact that they are not expected to pass judgment on the quality of managers' operating decisions, nor is there explicit regulatory guidance requiring auditors to do so (Commerford et al. 2016). Nevertheless, prior research indicates that it is not uncommon for auditors to detect the use of REM through the normal course of their audit (Commerford et al. 2016) but they are limited in how they can respond to such behavior. As the empirical study conducted by Commerford et al., (2018) documented, when auditors observe REM, their altered perceptions about management can cascade, affecting how they respond to management estimates in unrelated financial statement accounts. Also, the presence of REM can cause auditors to proposed larger audit adjustments (Commerford et al., 2018).

Summarizing, three main forms of pressure were applied in this study, as: legal consequences, financial press scrutiny and auditor scrutiny. Based on above, three hypotheses were developed as following:

*H1: Participants who received legal consequences information are less inclined to REM behavior compared to participants who did not received such information.*

*H2: Participants who received financial press scrutiny information are less inclined to REM behavior compared to participants who did not received such information.*

*H3: Participants who received auditor scrutiny information are less inclined to REM behavior compared to participants who did not received such information.*

As stated above, the independent variable tested in our study comprises the Pressure effect (pressure / no pressure). In this respect, our study uses the hypotheses of H1 to H3 to test the direct effect of each of the three variables on operational opportunism.

### 3. Research design

For the purpose of this study, a laboratory experiment was developed in order to test the research hypotheses above using students as participants. Despite the limits involved when using students as substitutes of managers, previous empirical studies assessing earnings management used this path (Greenfield et al., 2008; Shawver and Clements, 2014). The experiment was conducted in two steps. First, each participant was randomly assigned to one of the two groups. Group 1 comprised 28 participants who received the pressure treatment while Group 2 comprised 30 participants with no pressure treatment. In this stage, the participants were asked to complete specific tasks regarding the requirements of the study. Seven of the participants could not proceed the required tasks and were excluded from the experiment. However, this study conducted statistical test on the groups which include and exclude participants who failed the required tasks. In this respect, independent sample t-test shows no difference is found in REM behavior (*mean difference = 0.91, p>0.05*). Similar results were obtained of the hypotheses testing. The task required comprised questions related to understanding of the earnings management scenarios correctly. This step was necessary in order to be able to assess if the participants fully understand their tasks and are able to conduct the experiment. At the end of the first stage, Group 1 comprised 24 participants while Group 2 comprised 27 participants. The answers given remained anonymous. The participants had voluntarily participated in the experiment.

In the second stage, each participant received a case study adapted after Bruns and Merchant (1990), comprising questions related to six REM scenarios. This research instrument was used due to its extensive use in the previous literature assessing the ethicality of such practices, giving us the possibility to compare our results to a large number of previous empirical studies conducted in many countries. Similarly, like in the instrument developed by Bruns and Merchant (1990) we informed our participants that this instrument refer to a \$1 billion Company consisting of different divisions which has a January-December fiscal year. Each division has a turnover of \$100 million and net profits before taxation of \$12 million. In the first page we comprised the information regarding a short description of a variety of actions that individuals have taken.

As stated above, six REM scenarios were used, as following: (1) paint ahead of schedule; (2) defer discretionary expenses to meet quarterly budget; (3) defer discretionary expenses to meet annual budget; (4) credit that has more liberal terms to reach budget target; (5) work overtime to reach budget target; (6) sell excess assesst to reach budget target. Participants were asked to rate their choice from *strongly oppose* to *strongly support*. The rate of choices was based on a 7-point Likert scale. Participants from Group 1 where asked to rate their answers according to three main pressure treatments: legal consequence, financial press scrutiny and auditor scrutiny.

The pressure treatment was received before they selected their choices, in term of additional information of legal consequences, extensive financial press scrutiny and auditor scrutiny. No additional information regarding ethical behavior was given, neither explanations regarding moral orientation in general in order not to bias the ratings or influence the participants in any way. This decision was taken, after conducting a short pilot test before the experiment who comprised moral orientation assessments and observed that such references reduce the effectiveness of the pressure treatment. Several additional manipulation checks were comprised in the last stage of the experiment in order to assess if the participants from the treatment group are aware of the risks involved when earnings management practices are under financial press scrutiny and auditor scrutiny.

Our results indicated that all participants understood the tasks and answered the questions correctly. Our study uses the hypotheses from H1 to H3 to test the direct effect of pressure factors (i.e. legal, financial press scrutiny and auditor scrutiny) on earnings management. Besides the pilot test previously conducted, our study used 6 interviews with accounting practitioners specialized in different industries and with different ranges of experience in order to assess the validity of our research instrument.

#### 4. Results and discussion

Participants who received information on the legal consequences of the decision, financial media scrutiny and auditor scrutiny for their decision tend to oppose more strongly to REM scenarios compared to the participants who did not received any information at all regarding the pressure factors used in this empirical study. Since this study aims to assess the effect of three pressure factors on REM behavior of managers, we used six REM scenarios adapted after Bruns and Merchant (1990) as stated above. The participants of this study were 51 accounting undergraduate (56.7%) and master students (43.3%) in a business school in Cluj County, Romania. As shown in Table 1, almost 68.7% of the respondents were female, while 31.3% were male. In general, there are more females than males who graduate from business schools in Romania. Further, only 35% of the respondents have working experience in the accounting field, among which 27.5 % worked for less than 5 years (with an average work experience of 1.6 years) and 7.8 % more than 5 years. In terms of age, 90% of the participants aged from 21-30 years. All participants were considered as having a strong background in accounting field, as such were considered suitable for the purpose of this experiment. In general, there are much more females than males, aged from 21-30 years, undergraduate with no working experience. Demographic information of the final sample is disclosed below, in Table 1:

**Table 1. Demographic profile of the respondents**

Item	Characteristics	Percentage (%)
<b>Gender</b>	Male	31.3
	Female	68.7
<b>Age group</b>	Below 20 years	5.9
	21 to 30 years	90.2
	31 to 40 years	3.9
<b>Work experience</b>	Less than 5 years	27.5
	More than 5 years	7.8
	No working experience	64.7
<b>Qualification</b>	Undergraduate	56.7
	Master	43.3
<b>Total</b>	51	100

Source: Author's projection

In table 2, the REM behavior was assessed using a 7-point Likert scale, as stated above. The results shown in the table below, disclose a mean response for the group with no pressure treatment of 4.77 (S.D. = 1.25) while the mean response for the three groups with pressure treatment is significantly lower. The data was collected from the respondents and analyzed using the analysis of variance (ANOVA). The results of the ANOVA analysis is disclosed in Table 2, below:

**Table 2. Mean, standard deviation and results of ANOVA for REM behavior**

<b>Panel A. Mean and Standard Deviation for Pressure factors</b>		
No pressure	Mean	4.77
	S.D.	(1.25)
Pressure factor 1: Legal consequences	Mean	2.62
	S.D.	(1.49)
Pressure factor 2: Financial press scrutiny	Mean	4.29
	S.D.	(1,27)
Pressure factor 3: Auditor scrutiny	Mean	2.95
	S.D.	(1.38)
<b>Panel B. Results of ANOVA</b>		
Source	F	Sig.
Pressure	14.68	0.000

Source: Author`s projection

From the hypotheses formulated for this study, H1 posits that when legal consequence pressure lacks, participants tend to be more inclined to REM, compared to participants who received legal consequence information. The results shown in Table 2 confirm the significant main effect of legal consequences pressure, showing that participants who received pressure treatment were less inclined to REM behavior when compared to participants who did not received legal consequences pressure treatment ( $M_{\text{No pressure}} = 4.77$ , S.D. = 1,25 versus  $M_{\text{legal pressure}} = 2.62$ , S.D. = 1.49). Hypothesis 2 predicts the effects of financial press scrutiny pressure on earnings management behavior. The results shown in Table 2 confirm the effect of this pressure factor, showing that participants who received pressure treatment were less inclined to REM behavior when compared to those who did not received financial press scrutiny information ( $M_{\text{fin press pressure}} = 4.29$ , S.D. = 1.27). H3 formulated in this study posits that when auditor scrutiny pressure factor lacks, participants tend to manage earnings, compared to participants who received auditor scrutiny information. Similar results were obtained as in the case of legal consequences pressure factor ( $M_{\text{auditor scrutiny pressure}} = 2.95$ , S.D. = 1.38). Overall, the results shown in Table 2 document that participants who felt pressured with information about legal consequences of REM behavior, financial press scrutiny or auditor scrutiny were less likely to engage in REM practices when compared to participants who did not receive such information.

Our study confirms that pressure factors, as those assessed above, can have the potential to impact the decision-making process in REM context. As can be observed from the results shown in Table 2, participants who received pressure information in regard of legal, financial press and auditor scrutiny, are less inclined to accept REM practices.

## 5. Conclusions

Generally, REM practices as accrual-based earnings management decisions are not considered acceptable, since are often regarded as unethical actions with harmful impact on long run (Kim and Sohn 2013; Vorst 2016; Bereskin et al., 2017). As such, the accuracy and consistency of the decision making of managers are on constant scrutiny, especially in situations where managers are subject to multiple forces. Our experiment assessed the impact of three factors (considered pressure factors) on REM behavior: legal consequence, financial press scrutiny and auditor scrutiny. In this regard we used two groups of participants. One of the groups received information on legal consequences of REM decisions, financial press and auditor scrutiny in the context of REM. The other group didn't received any information on pressure. Our results document that participants who received information on the legal consequences of the decision, financial media scrutiny and auditor scrutiny for their decision tend to oppose more strongly to REM scenarios compared to the participants who did not received any information at all regarding the pressure factors used in this empirical study. Overall, when pressure factors are present, participants are less inclined to REM behavior, concluding that such factors have the potential for curbing REM. The empirical results obtained can be of interest in terms of examining factors that has the potential to curb managers` behavior to engage in manipulative practices. Our results can be of interest for both regulators and practitioners or researchers, in terms of awareness of the factors that may impact managers` decision making process. In terms of limits of our study, the most important one results in using students as participants of this study.

On the other hand, the use of students as proxy had been used by previous studies although some of them may not have the necessary experience of an accounting professional. However, four limits are important to consider when assessing the results presented in this study. First, the legalistic view of students may explain some of our results. Also, the fact that the large majority of our participants are young females can also bias our results if we were to consider the results documented by Freeman and Giefink (1979). The authors of this study found that younger ages females tend to be more advanced in terms of moral reasoning. On the other hand, more recent studies didn't find any differences between male and females' legalistic view. Second, the fact that students have limited working experience can also explain part of our results. Third, the social desirability bias can be present given the fact that earnings management surveys are usually sensitive to such bias. Fourth, the limited number of participants in our study can be considered as one of the most important limit of this study.

Future studies can use accounting professionals or business managers as their participants in their experiments and also can increase the sample. Also, future studies can use quantitative approaches to confirm or infirm the results documented in this study. Future research can use surveys of managers about their attitudes toward various pressure factors and assess their perceptions about the circumstances unethical behavior within organizations can be limited. More emphasis should be placed on case studies where understanding particular decision making, can lead to a higher and better understanding of general causes behind ethical and unethical behavior of managers. Since the large majority of research concerning the behavior of managers is conducted in academia, there is little relevance toward ethics in the real world, as such further research should be conducted in more applied settings. Further, since various factors comprised in both environmental and individual level can influence decisions, it does not assume that such factors are sufficient conditions for particular behavior. As such, more research is needed on assessing the large variety of factors influencing individuals' ethical and unethical behavior and the differences that cause this change. Since the decision-making dynamics of individuals faces multiple choices, such process is considered highly complex. Moreover, current research on ethical and unethical behavior within organizations is scarce in understanding, assessing and examining in detail the curbing of operational opportunism. Overall, more research is needed on assessing the ways in which multiple factors enter into the underlying decision process of REM behavior.

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