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12/12/18
COMPENSATION STRUCTURE IMPACT ON EXECUTIVE VALUE JUDGMENT
SHIFT RESULTING IN OCCURRENCE OF FRAUD

By
DONALD W. LUX II

A DISSERTATION

Submitted to the faculty of the Graduate School of the Creighton University in Partial
Fulfillment of the Requirements for the degree of Doctor of Business Administration

Omaha, NE
December 10, 2018
ABSTRACT

This paper examines whether executive compensation structure is a predictor of a value judgment shift facilitating fraud. The recent Disposition-based Fraud Model (DFM) theorizes that in a fraud a judgment shift occurs that results in an intentional action. Judgment shifts occur based on intertemporal rewards, which are represented by executive compensation structure comprised of salary (immediate reward) and delayed compensation in performance-based incentives. Using an archival dataset consisting of frauds identified through Securities and Exchange Commission (SEC) Accounting and Auditing Enforcement Releases (AAER), the compensation structure of executives involved in frauds was compared against the compensation structure of executives in a control group. There was a significant difference in the intertemporal rewards of the compensation structures between the two groups indicating that compensation structure presented intertemporal choices leading to a judgment shift resulting in the deliberate action of fraud.
ACKNOWLEDGMENTS

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Finally, I’d like to thank my family, especially my wonderful wife Alison and my two sons, Tyler and Ryne. Without all the support and sacrifices each of you made I could not have completed this multi-year journey. Your continued belief in me provided strength in moments when self-doubt crept in. Thank you for always trusting in me, believing in me, and supporting me as I worked to make all our lives better. And to the
army of unnamed family that provided support in more indirect manners such as prayers, it made more of a difference than you realize.
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INTRODUCTION

In 2002, Congress passed the Sarbanes-Oxley Act (SOX) as a reaction to the numerous corporate accounting scandals that were being discovered. SOX outlined the responsibilities of a public corporation’s board of directors, outlined penalties for certain misconduct, and empowered the Securities and Exchange Commission (SEC) to create regulations regarding public corporation compliance. It specifically identified corporate fraud and records tampering as criminal offenses with specific penalties. Additionally, SOX created a new agency, the Public Company Accounting Oversight Board (PCAOB), responsible for overseeing and disciplining public accounting firms particularly in respect to their auditing role. In President Bush’s speech at the signing ceremony he referred to the passage of this legislation as one of the largest reforms of American business practices since the Great Depression.

The Disposition-based Fraud Model (DFM) proposed by Raval (2018) offers a model to further understand fraud – what causes it to happen or not happen, so we can further extend the understanding of fraud. One of the key components of DFM is that a judgment shift occurs for the fraudster resulting in an intentional action.

The objective of this paper is to address one of the stated research agenda items posed with the DFM. The aim is to empirically examine if executive compensation structure shows that an executive likely made this judgment shift by choosing value of intertemporal rewards in the form of immediate compensation as an incentive for committing fraud.

Using a unique archival dataset collected of frauds with the assistance from a custom-designed bot, the compensation of the executive involved in the fraud was broken
down by intertemporal reward allowing these intertemporal rewards that may impact judgment shift to be evaluated. From frauds reported by the SEC through Accounting and Auditing Enforcement Releases (AAER), a sample of 58 post-SOX frauds involving the Chief Executive Officer (CEO) and/or Chief Financial Officer (CFO) was formed. In addition to this fraud listing, a control group of similar companies where fraud had not occurred was collected. The compensation structure of each executive in both groups is gathered from public filings to allow a comparison of the executive compensation structures via a Welch’s t-test. This comparison of the two groups shows if the two groups are statistically different, indicating that the intertemporal rewards presented by their compensation structures are different, leading to judgment shifts.

The key findings are that the fraud group and the control group are statistically significantly different for both the immediate compensation (salary) and the delayed compensation (non-salary compensation). Additionally, all components of the delayed compensation except for a bonus are statistically significantly different. Roughly two-thirds of the sample disclosed a bonus of 0 (39 of the 58 in the fraud group and 40 of the 58 in the control group) indicating it is not widely used. The other components of the delayed compensation are widely used in all cases. This indicates the compensation structure for these executives presented different intertemporal rewards that contributed to a judgment shift and intentional action.

The rest of the paper is organized as follows. Section 3 reviews the literature regarding fraud models, intertemporal choices, judgment shift, and performance-based incentives. Section 4 lays out the hypothesis development. Section 5 presents the sample, data, and methodology. Section 6 reports the results. Section 7 discusses the findings and identifies the limitations of the study. Section 8 concludes the paper.
Fraud Models

The preeminent fraud model grew out of research from D. R. Cressey in *Other People’s Money: A Study in the Social Psychology of Embezzlement* (1953). Cressey’s findings evolved into the model known as the fraud triangle (FT). One of the biggest obstacles Cressey noted in his research is that many of the hypotheses regarding fraud were problematic because they had exceptions. Only one of his hypotheses had universal validity, resulting in three characteristics of a trust violation. Cressey picked the sociological term “trust violation” over legal terms such as embezzlement and fraud because in his opinion the legal terms were unsatisfactory definitions for behavior analysis. From Cressey’s initial findings, the first characteristic of a trust violation was that the violator had a problem that was “non-sharable.” The second characteristic was the violator had knowledge of how to violate the trust. Finally, the violator rationalized their violation of trust. Over time these characteristics have become commonly known as pressure, opportunity, and rationalization, forming the FT. Cressey (1953, p. 153) himself admitted: “The theory which we have presented has few practical implications either for prevention and detection of trust violation or for treatment of apprehended offenders.” An example of these practical limitations is that the three characteristics of the FT cannot explain why fraud occurs in one circumstance but does not occur in a nearly identical circumstance. The fact that all three elements can be nearly identical, yet the resulting outcome opposite, has presented many challenges for fraud research. These challenges have resulted in many revisions to the FT. There have been proposals to adjust the components, such as Albrecht et al. (1984) proposing to replace rationalizations with personal integrity. Other proposals have attempted to change the

REVIEW OF LITERATURE
shape of the triangle, such as Wolfe and Hermanson (2004) proposing adding the actor's capability as a fourth condition, changing the shape to a diamond. The FT has served well in analyzing frauds after the fact (Hogan et al., 2008), but the limitation of its practical implications has lessened traction in empirically testing the FT (Boyle et al., 2015). Many of the defenders of the FT have mostly ignored these criticisms. (Huber, 2017)

To address the weakness in the FT, the Disposition-based Fraud Model (DFM) is proposed by Raval (2018). Overall, DFM posits that a financial fraud occurs when the disposition of the fraudster falls prey to a moral temptation leading to the stage at which a judgment shift followed by an intentional action occurs. DFM focuses on the process of the fraud instead of just the transactions of fraud, framing financial fraud as an act of indulgence. The full model is presented in Figure 1. The compromise from giving in to the moral temptation is ultimately a result of several factors such as disposition, psychological inertia, self-control, and ego depletion. These factors will not impact every actor equally as the antecedents to the moral temptation are not equal for all actors. Once the stimuli comprising the moral temptation result in a business officer falling prey to the moral temptation, the fraudster still must overcome the obstacles in place within the system to be able to commit the intentional action constituting the fraud. The obstacles in place change over time as new obstacles emerge while existing obstacles lose their effectiveness. Once a moral temptation overcomes all of the obstacles, the judgment shift occurs, and the actor will commit the intentional action of committing the fraudulent act. Following the intentional action, the fraudster will then form rationalizations for their intentional action.

*Figure 1 – Disposition-Based Fraud Model*
Intertemporal Choices

One of the key components of the DFM is that a judgment shift occurs at the time of a moral compromise. This judgment shift often involves intertemporal choices that choose taking an immediate reward over a long-term reward. Intertemporal choices can range from the mundane, for example, how much food to eat, to life-long choices, such as health or savings decisions. Beginning in 1960, Walter Mischel began researching why people yield to temptation or delay gratification. His marshmallow test offered pre-school age children the choice of one marshmallow now or two marshmallows if they were able to wait for him to return, in 15 to 20 minutes. This research was turned into a longitudinal study as he followed the subjects of this testing as the children aged. In *The Marshmallow Test* (2014), Mischel summarized the work over this extended period of time. He found that the length of time the children were able to delay their gratification indicated how the children would behave in future decisions throughout their lives. Those children who delayed their gratification scored higher on standardized college entrance exams, ranked higher on life satisfaction measures, had lower levels of divorce, and were better in many other measures of this nature. His findings show that
inter temporal choices made as preschoolers indicated life-long results, i.e., self-control is a stable characteristic.

McClure et al. (2004) conducted an experiment on participants where scans of participants’ brains using functional magnetic resonance imaging were done while the participants made binary monetary choices. Participants were presented with specific monetary amounts, ranging from $5 to $40, over varying amounts of time, ranging from the day of the experiment to 6 weeks later. McClure et al. reported that the scans showed that within intertemporal choices, two areas of the brain – the limbic system and prefrontal cortex – competed against each other when making a choice. The individual choices made were a result of the competition within these areas of the brain. Not every participant had equal ability to choose immediate rewards against long-term rewards as their individual brain behaved in different manners within these two areas of the brain. Some brains are more likely to choose immediate rewards while others are more likely to choose long-term rewards. Figner et al. (2010) extended this by finding that choosing immediate rewards was located in a specific area of the prefrontal cortex, revealing that a disruption of the left prefrontal cortex increases choosing immediate rewards.

Much of the historical research in the area of intertemporal choices assumed a discounting mechanism, but recent research has revealed a more complex account of this intertemporal decision process (Berns, et al., 2007). Berns, et al. summarize three other areas of research that also play an important role in intertemporal choices. Anticipation of a future event allowing the person to imagine pain or pleasure is one component of intertemporal choices. Self-control is another component. The person’s ability to control the tensions they experience when faced with these decisions makes up their self-control. Finally, representation is the third and final area of research summarized by Berns, et al.:
representation is how the person is instructed to mentally represent the object of the intertemporal choice. Representing an option as attractive as possible is more likely to result in an immediate choice than when that same option is represented in an unattractive manner.

**Judgment Shift**

A judgment shift occurs when resolve is abandoned for immediate rewards. Similar to Mischel’s marshmallow tests, Karniol and Miller (1983) conducted tests on children. These tests were aimed at evaluating how their judgment shifted when presented with choices of marshmallows and chewing gum where they were forced to wait for their preference of the two. Over the duration of the delay, the children devalued their preferred choice while elevating the value of the second choice, but this judgment shift occurred only when the initial valuation of the two choices was similar. In almost all cases of caving to temptation, succumbing to the urge is the result of a judgment shift (Holton, 2009). Holton identified this shift as three steps. First, their attention focused on getting a treat immediately. Second, they had a strong urge to take the secondary choice opposed to waiting for the first. Third, as they realized they were going to fail at holding off the urge for an immediate treat, their evaluation of the two options shifted so they could endorse falling to the urge.

To avoid a judgment shift, not only do the initial choices need to have dissimilar initial valuations to the decision maker, but the decision maker must also remain steadfast in their long-term orientation. Some decision makers believe that sacrifices now will result in larger reward later (Jackson et al., 2013). Long-term orientation is comprised of

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1 This is often called framing within research.
cultural values that fall into tradition and planning factors (Bearden et al., 2006). Zahra et al. (2004) find that family firms are often associated with long-term orientation as that is a dimension of family business culture. These two factors of long-term orientation ultimately lead to higher ethical values (Nevins et al., 2007).

Judgment shifts involving money are more complex than those of children that involve trivial sweets as rewards. McClure et al. (2007) show that the evaluation of long-term orientation differs between primary rewards (e.g., fruit juice or water) and secondary rewards (e.g., money rewards). Tang and Sutarso (2012) examined the relationship between monetary intelligence and unethical intentions. Monetary intelligence is defined as a person’s ability to process monetary motive, regulate money-related behaviors, and prioritize importance in personal happiness. They found that monetary intelligence was a mediating factor that turned temptation into unethical intentions. The person’s monetary intelligence will similarly have an impact on any potential judgment shift.

**Performance-Based Incentives**

It has become a common practice for companies to tie a portion of employee compensation to company performance, particularly regarding executives. This form of compensation is an attempt to solve the principal-agent problem within economic theory. The principal-agent problem arises as the principal delegates work to the agent, while the principal and agent do not have the same goal and the principal lacks the ability to verify that work (Jensen and Meckling, 1976). This practice of performance-based incentives in compensation design seems ideal because the compensation of employees and executives (agents) are more closely aligned with the goals of the ownership of the company (principals). These types of compensation give employees an incentive to
produce for the company to succeed, as they also personally benefit from company success via this compensation. However, it has been shown that fixed wage contracts produce employee mental processing of their outcomes aligned with economic theory, while performance-based contracts produce employee mental processing that is more complicated (Farrell, et al., 2014).

There are also several other examples of research that show incentives do not produce intended results. Incentives change the participants’ representation or framing of their intertemporal choices as Berns, et al. summarized. Monetary rewards reduce intrinsic motivation (Deci and Ryan, 1985). It shifts their representation from the initial “What are my duties/responsibilities?” to “What’s in my best interest?” Frey and Oberholzer-Gee (1997) found that willingness of Swiss citizens to have a toxic waste dump in their community fell in half when offered cash incentives for hosting the toxic waste dump, from roughly 50% willing to less than 25% willing. Gneezy and Rustichini (2000) found that when Israeli daycare centers began charging late fees, lateness by parents to pick their kids up increased. Once charged a late fee, the parents justified being late because they were paying for a service as opposed to inconveniencing the daycare by having to stay beyond the time being paid for. Heyman and Ariely (2004) showed that when passers-by were offered a monetary token for helping to lift a couch into a vehicle, they were less likely to help than when they were offered nothing. Each of these examples show that the incentive shifted the representation the individual perceived the choice to have.

**HYPOTHESIS**

The essence of the DFM is that a financial fraud is an intentional action from a moral compromise. For that intentional action to happen, a judgment shift must happen
when that moral temptation wins. Executive compensation structures present intertemporal rewards. The immediate reward portion of an executive compensation structure is simply their salary. That is their reward that is collected every pay period for the duration of their employment. All delayed compensation in the form of bonuses, stock options, stock grants, etc. form the long-term reward portion of executive compensation structure. These rewards are granted whenever their specified objectives are met. When these intertemporal choices of their compensation are compared by the executive, if the temptation presented to the executive through the long-term reward is framed in a manner making the long-term reward too tempting, they will make a judgment shift choosing to commit whatever action is necessary to be awarded that long-term reward.

**Hypothesis:** The intertemporal components of an executive compensation structure when a fraud occurs are different from the intertemporal components of an executive compensation structure in a similar situation where fraud did not occur.

**SAMPLE, DATA, AND METHODOLOGY**

**Sample and Data**

Prior to the passage of SOX in 2002, executive compensation was one of the driving forces behind the corporate accounting scandals. At the time, stock options were not considered a compensation expense by companies, which encouraged using these options as a major component of compensation. Using these as compensation allowed the executive to be compensated without having to indicate that the executive was receiving this compensation. Significant executive bonuses also became a common practice as a growing component of executive compensation. Stock options value being directly tied to stock price growth, which were volatile even with small earnings misses,
combined with the growing executive bonuses resulted in increased pressure on executives to ensure that earnings were met. As a result, executives had a growing pressure, due to their increasing personal financial interest, to manage earnings to meet their targets. In addition to the increased risk of accounting irregularities, the changes in executive compensation structure presented problems for executive compensation disclosure as the regulations under effect had not evolved to reflect these current practices. In 2006 the SEC revised executive compensation disclosure rules and the Dodd-Frank Act requirements in response to these practices. These changes were aimed at making complete executive compensation more transparent to the public as the changes in practice evaded previous disclosure requirements. Among the specific disclosure changes was the rule that the dollar value for all equity-based awards had to be disclosed, specifically separating stock grants and stock options. Changes in pension value and postemployment compensation also had to be included in the compensation report. Essentially, this ruling updated the disclosure requirements to ensure disclosure of the full compensation structure for executives and directors was completed. The compensation structures that had evolved were no longer able to avoid disclosure by skirting disclosure requirements. These new disclosure requirements applied to named executive officers. With this revised ruling, the definition of named executive officers was stated as CEO, CFO, and the three highest compensated executive officers other than the CEO and CFO. The changes in disclosure took effect for filings on or after December 15, 2006 including all filings for fiscal years ending on or after December 15, 2006.

According to the AAER section of the SEC website, the SEC releases AAERs when there are "financial reporting related enforcement actions concerning civil lawsuits"
brought by the Commission in federal court and notices and orders concerning the institution and/or settlement of administrative proceedings.” All AAER’s are available on the SEC’s website at https://www.sec.gov/divisions/enforce/fiactions.shtml. Since 1982 the SEC has issued these releases during (or at the conclusion of) an investigation against a company, an auditor, or a company officer for alleged accounting and/or auditing misconduct. These releases serve as public notification that an accounting irregularity, including accounting fraud, likely has occurred.2

Obtaining an exhaustive list of accounting frauds is nearly impossible. There is a lengthy list of reasons why such a comprehensive list does not exist. To build a list of frauds for this sample, AAERs served as the source. Given that the environment for fraud changed with the passage of SOX, only AAERs post SOX passage in 2002 would be considered relevant. Additionally, since the sample is concerned with executive compensation structure as an evaluation of the intertemporal choices available to executives, the timeframe was further reduced to December 15, 2006 when the executive compensation disclosure changes took effect. Previous executive compensation disclosures were able to use the previous disclosure requirements to circumvent accurate disclosure of the complete executive compensation making their inclusion in the sample problematic. With the 2006 changes to executive compensation disclosure requirements defining named executives as CEO, CFO, and three highest compensated executives, only frauds involving the CEO and/or CFO were included. The position/title of the other three disclosed executives vary by firm and do not allow for easy identification within the

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2 Often, the final determination may be different in a judgement by a court, or the charged party may settle without accepting or denying the alleged wrongdoing.
AAER of the involvement being one of these named executives. This resulted in evaluating AAERs since 2006 for inclusion in the sample.

The content of the AAERs is typically the legal proceedings brought by the SEC against the defendant. From December 15, 2006 through the creation of this sample at the end of the second quarter in 2018, there were 1,418 AAERs. The reason for the issuance of an AAER cannot be easily identified as the summary information available for each AAER is the AAER number, date of release, defendant named, and other release number for any related release. AAERs can cover a multitude of topics. They are not exclusively for accounting irregularities. For example, there will be an AAER when a certified public accountant (CPA) is banned from practicing accounting or when a lawyer is banned from practicing law before the SEC.

Rather than categorizing these AAERs manually to obtain the listing of frauds involving the CEO and/or CFO, a custom-designed bot was created to categorize them. The bot was faster and more reliable than a manual categorization. The bot would open and search each AAER for specific terms. The search terms were identified by manually looking at approximately 125 AAERs to identify the standard terminology contained in an AAER. There were three specific terms the bot searched for – CEO, CFO, and fraud. CEO was an effective search term because each AAER contained the following if a CEO was named, Chief Executive Officer (“CEO”). Similarly, CFO was effective as the AAER contained Chief Financial Officer (“CFO”) when a CFO was named. Fraud was an effective search term because every accounting irregularity AAER contained some variation of fraud within the filing. For example, fraudulent, defraud, frauds, or fraud. The bot searches were not case sensitive, so it would detect “Fraud” or even “FRAUD” the same as “fraudulent”. The bot ran for approximately 4 hours to categorize these
1,418 AAERs. The categorization from the search results is shown in Figure 2. Since our concern was a fraud involving the CEO and/or CFO, the cases of interest contained fraud and at least one of the other two search terms. These cases are outlined by a yellow border in Figure 2. Matches with only CEO and fraud accounted for 103 observations while matches with only CFO and fraud accounted for 116 observations. The were 143 observations containing all three terms. This narrowed the 1,418 AAERs down to 362 AAERs that met the intended criteria at a high level.
Each of these 362 AAERs are evaluated further to identify the cases of fraud involving the CEO and/or CFO. AAERs are often filed with a delay. For example, AAER-3683 was filed September 8, 2015 for a fraud that occurred in 2012. There may also be several AAERs for the same incident. An AAER may be filed when the charges are brought and another AAER when there is a resolution. The same fraud case may involve separate AAERs filed against the company, executive(s), accounting firm, and individual CPA. Additionally, just because an AAER contained the search terms does not mean the context holds. The AAER may not be for a fraud, or the fraud may not involve participation from the CEO and/or CFO. Further evaluation of these 362 AAERs result in 63 unique cases of fraud involving the CEO and/or CFO that occurred post December 15, 2006.
Once these 63 unique cases are identified, the next step is to obtain the executive compensation for each executive involved. These 63 fraud cases result in 83 different executives as 20 of the 63 cases involved both the CEO and the CFO. When the fraud from the AAER covered a multiple-year time span, only the first year is used as that is the only time that intertemporal choices for a judgment shift occur. Continuing the fraud for an extended period no longer involves the same intertemporal choices and judgment shift. The compensation information available via disclosure requirements could be broken down into two groups. Salary stands alone in the first group and represents all immediate compensation obtained regardless of company performance. The second group is delayed compensation that often is conditional and based on both executive performance and company performance. This second group contains six different categories as required by the executive compensation disclosure requirements:

1. Bonus
2. Stock Awards
3. Option Award
4. Non-Equity Incentive Plan Compensation
5. Change in Pension Value and Non-Qualified Deferred Compensation
6. All Other Compensation

These two groups combine to form total compensation as spelled out in the disclosure requirements. To obtain the compensation information, a two-step process is followed. First, ExecuComp is checked for each executive for the first year of the fraud. If the executive’s compensation is not found in ExecuComp, then the SEC’s EDGAR database
available on their website is used to find that compensation information in the company’s 10-K filings for that year. Of the 83 different executives, the annual compensation information for the year of the fraud is found for only 58. The other 25 did not have this information available. The company never filed financial statements for that year. Presumably, the fraud discontinued their operations before financial statement filing could happen or the fraud prevented financial statement filing under the requirements of SOX from occurring.

The next step in building this dataset was to identify a peer ("control") group. This control group needed to be comprised of executives in the same role (i.e. CEO and CFO) from similar companies where fraud did not occur. The control group would be formed of the corresponding executive’s compensation from the same year as the fraudulent company to eliminate the need to control for environmental differences and time value of money concerns regarding the compensation. The method used by Cohen, et al. (2010) was selected to form the control sample. For each of the fraud cases, a peer company on the basis of the Infront Analytics database was identified. (The Infina\networks database from Cohen, et al. has been rebranded as Infront Analytics.3) Infront Analytics identifies peers in three categories – international, regional, and domestic. Peers are matched on the basis of the company’s sector classification and size. Since this sample is comprised of United States publicly traded companies under the filing requirements of the SEC, only the domestic peer listing was used to identify the matching control. As an example, Diamond Foods Inc. is matched with Post Holdings Inc. as shown in Figure 3. Once the peer is identified via Infront Analytics, the corresponding executive compensation for the peer is obtained in the same manner as the executives involved in

3 This database is available by subscription at https://www.infrontanalytics.com.
the fraud. For example, if the fraud involved the CFO in 2009, then the 2009
compensation of the CFO of the peer company was collected. When the executive
compensation for the corresponding executive could not be found in either ExecuComp
or EDGAR, then the company next on the match of the domestic peer listing is used.
### Figure 3 — Control Group Selection Method

#### Peers of Diamond Foods Inc.

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<tr>
<th>Predefined Comparables</th>
<th>Company Data</th>
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<tbody>
<tr>
<td><strong>International Peers</strong></td>
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<tr>
<td>Shoe Foods Corp</td>
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<tr>
<td>Post Holdings Inc.</td>
<td>USA 39%</td>
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<tr>
<td>Select Harvests Ltd.</td>
<td>JPN 43%</td>
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<tr>
<td>The Hershey Company</td>
<td>USA 33%</td>
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<tr>
<td>General Mills Inc.</td>
<td>USA 32%</td>
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<td>Kraft Heinz Company</td>
<td>USA 30%</td>
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<td>Mondelez International</td>
<td>USA 30%</td>
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<tr>
<td>Pinnacle Foods Inc.</td>
<td>USA 30%</td>
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<td>Wessonan NV</td>
<td>NLD 30%</td>
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<tr>
<td>Mennenaga &amp; Co., Ltd.</td>
<td>JPN 20%</td>
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<td>Kettlekun Spirits Co.</td>
<td>JPN 29%</td>
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<td>Hup Seng Industries S.</td>
<td>USA 25%</td>
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<td>The J.M. Smucker Com.</td>
<td>USA 28%</td>
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<td>Kellogg Company</td>
<td>USA 27%</td>
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<td>PT Indofos Suisse S.A.</td>
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<th><strong>Regional Peers</strong></th>
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<td>Post Holdings Inc.</td>
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<td>General Mills Inc.</td>
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<td>Kraft Heinz Company</td>
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<td>Kellogg Company</td>
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<td>The Ham Celestial Gr.</td>
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<td>McCormick &amp; Company</td>
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<td>Flowers Foods Inc.</td>
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<td>Lancaster Colony Corp.</td>
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<td>Cosan Limited</td>
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<tr>
<td>J &amp; J Snack Foods Co.</td>
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<td>China Foods Limited</td>
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<tr>
<th><strong>Domestic Peers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Holdings Inc.</td>
</tr>
<tr>
<td>The Hershey Company</td>
</tr>
<tr>
<td>General Mills Inc.</td>
</tr>
<tr>
<td>Kraft Heinz Company</td>
</tr>
<tr>
<td>Mondelez International</td>
</tr>
<tr>
<td>Pinnacle Foods Inc.</td>
</tr>
<tr>
<td>The J.M. Smucker Com.</td>
</tr>
</tbody>
</table>
Methodology

To test the hypothesis of differing executive compensation structures for the fraud group as evidenced by AAER occurred against the control group where fraud has not occurred, a comparison of the fraud group sample against the control group must be conducted. For this analysis a Welch’s t-test was used. Welch’s t-test is appropriate if the two samples have unequal variances, unequal sample sizes, or the samples being compared are considered non-overlapping. For each of the variables in the sample, an F test is used to compare variances of the sample against the control group. Results of these tests are shown in Table 1. The test of variances showed the two groups have unequal variances for all variables, except All Other Compensation. Additionally, the control group is from similar companies, but is non-overlapping. These tests indicate the Welch’s t-test is appropriate.

Table 1 - F tests for Unequal Variances

<table>
<thead>
<tr>
<th>Variable</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Delayed Compensation</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Bonus</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Stock Awards</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Option Award</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Non-Equity Incentive Plan Compensation</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>Change in Pension Value and Non-Qualified Deferred Compensation</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>All Other Compensation</td>
<td>0.705</td>
</tr>
</tbody>
</table>

RESULTS

For the fraud group, their compensation was comprised of a mean salary of $313,692.03 that was 20.42% of the executive’s total compensation. The executive’s delayed compensation had a mean of $1,222,238.28 covering the remaining 79.58% of
compensation. The control group executive’s compensation was comprised of a mean salary of $743,404.02 that was 11.32% of total compensation. Delayed compensation for this group had a mean of $5,823,504.38 representing 88.68% of total compensation. Table 2 shows the results of the Welch’s t-tests. For both the salary and the delayed compensation, the Welch’s t-tests had a p-value less than 0.001 indicating that there is a difference in both intertemporal components of the compensation structure in companies where a fraud occurred and the non-fraud control companies.

**Table 2 - Results**

<table>
<thead>
<tr>
<th></th>
<th>Fraud Group</th>
<th></th>
<th>Control Group</th>
<th></th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>%</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Salary</td>
<td>313,692.03</td>
<td>237,433.40</td>
<td>20.42%</td>
<td>743,404.02</td>
<td>400,495.30</td>
</tr>
<tr>
<td>Delayed Compensation</td>
<td>1,222,238.28</td>
<td>2,844,296.60</td>
<td>79.58%</td>
<td>5,823,504.38</td>
<td>7,745,061.60</td>
</tr>
</tbody>
</table>

As a robustness check, the six different components of Delayed Compensation were also compared individually to examine if the difference for the delayed compensation aggregate was a result of differences between only portions of the components. In the fraud group the delayed compensation was comprised of a mean bonus of $104,628.76 (8.56%), mean stock awards of $568,269.38 (46.49%), mean option award $232,371.91 (19.01%), mean non-equity incentive plan compensation $193,754.29 (15.85%), mean change in pension value and non-qualified deferred compensation $68,528.57 (5.61%), and mean all other compensation of $54,685.36 (4.47%). For the control group these breakdowns were a mean bonus of $241,728.81 (4.15%), mean stock awards of $2,139,816.91 (36.74%), mean option award $1,011,370.29 (17.37%), mean non-equity incentive plan compensation $1,521,589.26 (26.13%), mean change in pension value and non-qualified deferred compensation $781,118.57 (13.41%), and mean all other compensation of $127,880.53 (2.20%). For
five of the six components of Delayed Compensation, the significant test results held with $p$-values below 0.01. However, for bonus there does not appear to be a statistically significant difference in the means as that Welch’s $t$-test produced a $p$-value of 0.223. These results are shown in Table 3. For the “All Other Compensation” component a Student $t$-test was conducted in place of the Welch’s $t$-test as tests for the variance of this component showed an equal variance between the two samples, making a Student $t$-test the appropriate test over Welch’s $t$-test.

Table 3 – Robustness Results

<table>
<thead>
<tr>
<th></th>
<th>Fraud Group</th>
<th>Control Group</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>%</td>
</tr>
<tr>
<td>Bonus</td>
<td>104,628.76</td>
<td>320,447.30</td>
<td>8.56%</td>
</tr>
<tr>
<td>Stock Awards</td>
<td>568,269.38</td>
<td>2,182,071.20</td>
<td>46.49%</td>
</tr>
<tr>
<td>Option Award</td>
<td>232,371.91</td>
<td>551,006.40</td>
<td>19.01%</td>
</tr>
<tr>
<td>Non-Equity Incentive Plan Compensation</td>
<td>153,754.29</td>
<td>421,561.00</td>
<td>15.85%</td>
</tr>
<tr>
<td>Change in Pension Value and Non-Qualified Deferred Compensation</td>
<td>68,528.57</td>
<td>454,690.20</td>
<td>5.61%</td>
</tr>
<tr>
<td>All Other Compensation</td>
<td>54,685.36</td>
<td>135,585.80</td>
<td>4.47%</td>
</tr>
</tbody>
</table>

DISCUSSION AND LIMITATIONS

Looking at executive salary compensation as means of intertemporal rewards that fall into judgment shifts shows there are differences in the intertemporal rewards the executives receive when fraud occurred. Both components of the executive compensation are considerably smaller in the fraud group than in the control group. Not only are the mean dollar amounts smaller, but the percentage between the intertemporal breakdown were not the same. The immediate reward of salary in the fraud group is only 42% of the salary in the control group ($313,692.03 versus $743,404.02), yet this constituted nearly double the percentage of the salary structure (20.42% versus 11.32%)! It is unknown if this lower immediate reward changes the executive’s framing of the delayed reward. It is possible that their lifestyle choices result in them framing the
delayed reward as an essential form of compensation opposed to a delayed performance-based component.

One interesting outcome from the robustness check is that in the fraud group, the first three components of the delayed compensation – bonus (8.56% versus 4.15%), stock awards (46.49% versus 36.74%), and option awards (19.01% versus 17.37%) – represent a higher percentage of delayed compensation than they do in the control group. These rewards are the most liquid of the delayed compensation components. Additionally, they present the largest opportunity for increases in value as they are primarily comprised of stock. Not only does the executive have an incentive to commit a fraud in order to meet the objectives of the compensation, but the stock price reacts positively when earnings are met and negatively when earnings are not met (Kim and Verrecchia, 1991). This reaction allows them to liquidate their holdings for higher value before the fraud is likely to be discovered increasing their personal compensation. These forms of compensation are more likely to present a temptation to the executive leading to a judgment shift due to these liquidity factors.

For the portions of the delayed compensation that are not easily liquidated and are truly longer-term compensation, the non-equity incentive plan compensation (15.85% versus 26.13%) and the change in pension value and non-qualified deferral compensation (5.61% versus 13.41%), the percentage was higher for the control group. These forms of compensation do not present the same temptation as the impact from them is not realized for considerable time. Long enough time that framing as an intertemporal choice is difficult. When the difficulty in framing reduces the temptation, a value judgment shift becomes less likely.
The only component of the delayed compensation that had no statistical significance between the two groups was bonus. One possible explanation for this particular variable having a similar mean is that roughly two-thirds of the sample have a bonus of 0 (39 of the 58 in the fraud group and 40 of the 58 in the control group). It simply was not a common enough form of compensation within the executive’s compensation structure. This was the only component that was not predominantly used.

This study includes several limitations. First, reporting of fraud brings about many limitations. It starts with not every case of financial fraud being reported. It is common that when a company detects fraud, it is handled internally rather than being prosecuted. The efforts of the company too often are aimed more at making it just quietly go away. There are other reasons that a fraud may not be reported as well. One example is if the company considers it too small to be worth cost of the process of prosecution. Companies also attempt to keep any linkage with fraud from the news because of the reputational impact that an association with fraud may have. This can extend beyond just bad publicity to actual consequences in terms of stock price. Not all of these reasons apply equally to frauds involving executives, but they do contribute to issues with the reporting of fraud.

Next, AAERs do not cover all frauds that are reported. In some cases that the SEC is involved in, the SEC reaches a settlement with the involved parties instead of prosecuting. Some of these settled cases have an AAER release and some do not. The criteria for how the disclosure of cases is handled by the SEC are not transparent. Obviously, these cases where the SEC chose not to prosecute a fraud or reached a settlement without disclosure could not be included in the sample because of a lack of an AAER. Additionally, AAERs do not apply to all companies. With the SEC releasing
AAERs and the SEC only having jurisdiction over publicly traded companies, then any fraud that occurs at a private company could not possibly be considered for this sample. These reasons contribute to the presence of a selection bias within this sample as it is impossible for any sample regarding fraud to truly represent the entire population of fraud.

Another limitation of this study is that not every fraud contained within the sample had the presence of a value judgment shift for a temporal reward. Some of these fraud cases either conducted minimal business transactions or never actually conducted business transactions. While impossible to evaluate the intentions of these executives after the fact, it appears some of the frauds prosecuted by the SEC and disclosed in the AAERs never had any intention of conducting business transactions. Without any objective measurement of how these types of frauds differed, these cases were not excluded from the sample. These cases could impact the results as it is possible for some of them the capital gained by becoming publicly traded was the fraud. For these cases, a value judgment shift for a temporal reward would be unlikely. Inclusion of these introduces a bias into the sample.

CONCLUSION

Based on the DFM, a judgment shift occurs in a fraud, leading to an intentional action. Value judgments are often based on intertemporal rewards. In this paper executive compensation structures were examined based on intertemporal rewards in the context of occurrence of fraud. Using a list of frauds involving executives obtained by AAERs issued by the SEC, the compensation structure of those executives was compared to the compensation structure of a control group of executives. The compensation structures of the two groups were significantly different from each other for both salary
(immediate compensation) and delayed compensation. This indicates that the compensation structures presented differing intertemporal rewards. This finding provides support for this component of the DFM that a judgment shift can occur as the executives are presented with differing temptations through their salary structure and make different judgments.
REFERENCES


