

# **A Cascading Effect: How Do Audit Rotation Rules Affect Loan Officers' Perceptions and Decisions for Nonpublic Companies?**

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*This study examines whether the existence and type of audit rotation (no rotation, partner or firm) influences loan officers' perceptions of auditor independence, financial statement reliability and decisions of extending a loan involving nonpublic companies. In an experiment utilizing 122 loan officers, I find that loan officers are more confident the audited financial statements are free from intentional misstatement (omissions) when there is Partner or Firm Rotation compared to No Rotation. Additionally, I find that loan officers are more likely to approve a loan when there is Partner Rotation compared to No Rotation or Firm Rotation.*

## **INTRODUCTION**

This study examines whether the existence and type of audit rotation (no rotation, partner or firm) influences loan officers' perceptions of auditor independence (hereafter, independence), financial statement reliability (hereafter, reliability) and decisions of extending a loan involving nonpublic companies. This study is motivated by the potential cascading effect of public companies' standards on nonpublic companies. Although audit rotation compliance is not mandatory for nonpublic companies, compliance may be voluntarily based on best practice principles or required compliance by third party (investors, lenders, insurers, etc.).

An experiment conducted with 122 loan officers are used for several reasons. First, the American Institute of Certified Public Accountants (AICPA), which is an organization of CPAs, recommends that behavioral studies should ask typical users of financial statements such as loan officers to be participants when it relates to perceptions of independence (Orren, 1997). Second, prior studies used loan officers when examining perceptions of independence (Lavin, 1976; Lavin & Libby, 1977; Shockley, 1981; McKinley, Pany, & Reckers, 1985; Lowe & Pany, 1999; Daniels & Booker, 2011). Third, loan officers are participants because they often use audited financial statements of nonpublic companies when evaluating requests for funds. Accordingly, bank loan officers have a vested interest in issues that may affect independence, reliability, and loan decisions.

First, I test whether loan officers' perceptions of independence differ when there is No Rotation, Partner Rotation or Firm Rotation implemented for a nonpublic company. Second, I test whether loan officers' perceptions of reliability are different when the different levels of rotation are implemented. Third, I test whether the loan officers' decision of extending a line of credit varies under the different rotation conditions.

The results suggest loan officers' perceptions of independence does not differ among the type of audit rotation. However, loan officers' perceptions of reliability (relating to the intentional measure) are

enhanced by partner and firm rotations. Additionally, the results suggest that loan decisions are more likely approved when there is partner rotation compared to firm rotation or no audit rotation.

The results have significant research, practice and policy implications. The research implications include the extension of the audit rotation and nonpublic company literatures by providing evidence that the existence and type of audit rotation impacts loan officers' perceptions and decisions involving nonpublic companies. The practice and policy implications include the consideration of regulators and nonpublic companies to evaluate the need to implement partner or firm rotation to improve external users' perceptions and decisions.

The remainder of the paper is structured as follows. The next section provides background and hypotheses development. The third section provides the research methodology. The next section provides the results and implications. The last section provides the limitations, future research opportunities, research, practice and policy implications and the conclusion.

## **BACKGROUND AND HYPOTHESES DEVELOPMENT**

### **Firm Rotation**

Competing views on the impact of firm rotation dates back to the 1930s (The Question of Changing Auditors, 1967). Opponents believe that the potential benefits of firm rotation will not outweigh the costs (audit, training, etc.). In addition, opponents believe that firm rotation decreases industry knowledge which decreases audit quality. However, proponents believe that the presence of firm rotation ends the long-term relationship between the client and the auditor which enhances independence and audit quality. Additionally, advocates argue that firm rotation reduces management pressures (GAO, 2003), reduces audit failures and allows for more conservative accounting practices (OCA, 1994, 53). Imhoff (2003) states that firm rotation allows auditors to stand up to the client when an accounting dispute arises. In addition, he notes that cost is not a sufficient justification against rotation because costs will be transferred to the shareholders who will more than likely pay for knowing that the audit opinion of the financial statements is from an independent auditor. Furthermore, he states that audit rotation positively impacts competitive bidding and produce higher quality audits (Imhoff, 2003).

Archival studies examining firm rotation have found mixed results. Some prior studies show that there is a relationship between longer audit firm tenure and lower audit quality (DeAngelo, 1981; Deis & Giroux, 1992; O'Keefe, King & Gaver, 1994; Raghunathan, Lewis, & Evans, 1994). However, other studies find that audit quality increases when there is a long audit firm and client relationship (Geiger & Raghunandan, 2002; Myers, Myers & Omer, 2003; Carcello & Nagy, 2004; Mansi, Maxwell, & Miller, 2004; Ghosh & Moon, 2005; Jenkins & Velury, 2008; Chen, Lin, & Lin, 2008; Ruiz-Barbadillo, Gomez-Aguilar, & Carrera, 2009; Cameran, Francis, Marra, & Pettinicchio, 2015). When examining large private companies in Belgium, Knechel and Vanstraelen (2007) find that long term audit firm tenure and short term audit firm tenure have no effect on audit quality. Johnson, Khurana, and Reynolds (2002) and Blouin, Grein, and Rountree (2007) find mixed results related to audit firm tenure and audit quality. However, Kramer, Georgakopoulos, Sotiropoulos and Vasileiou (2011) and Kwon, Lim, and Simnett (2014) find that audit quality does not increase with audit firm tenure. In a governmental setting, Elder, Lowensohn, and Reck (2015) find that firm rotation provides higher audit quality. One study finds that the benefits (improved auditor independence) of audit firm rotation outweigh the costs (Gietzmann and Sen, 2006). Corbella, Florio, Gotti, and Manstrolia (2015) find that firm rotation improves audit quality for non-Big 4 audited companies. Moreover, audit fees decreased after the audit firm rotated for Big 4 audited companies and remain the same for non-Big 4 audited companies (Corbella et al., 2015). Imhoff (2003) notes that most archival studies examining audit quality and audit failures are in an environment that does require mandatory firm rotation. Furthermore, he states that the audit failure may be due to poorly trained auditors, the effect of low-balling or any other confounding effects.

The PCAOB and many commenters suggest that research should be conducted to gain insight on the impact of implementing mandatory firm rotation. Since firm rotation is not mandatory, researchers have to examine the effect of implementing firm rotation on the perception of independence. Kaplan and

Mauldin (2008) find that there is no difference between partner and firm rotation's impact on perceptions of independence. Other experimental studies find that firm rotation increases perceptions of independence (Dopuch, King, & Schwartz, 2001; Jennings, Pany, & Reckers, 2006; Arel, Brody, & Pany, 2006; Gates, Lowe, & Reckers, 2007; Daniels & Booker, 2011). In a laboratory experiment, Dopuch et al. (2001) find that mandatory firm rotation increases auditors' independence. Jennings et al. (2006) find that judges' perceptions of auditor independence is enhanced and auditors are perceived less liable when there is firm rotation. In addition, Arel et al. (2006) find that auditors are more likely to modify audit reports when there is firm rotation compared to no audit rotation. Gates et al. (2007) find that firm rotation provided greater confidence in company earnings than partner or no audit rotation conditions. Furthermore, Daniels and Booker (2011) find that firm rotation is perceived to increase independence but firm rotation did not have an effect on audit quality. Bowlin, Hobson, and Piercey (2015) find that auditor rotation increases audit quality when the auditor is not skeptical but decreases audit quality when the auditor is skeptical. Moreover, Wang and Tuttle (2009) find that the audit firm is willing to negotiate in favor of the client to maintain the long-term relationship. This is similar to Imhoff (2003) finding that audit firms have an economic bond with their clients to ensure profits from future audits.

### **Partner Rotation**

To alleviate the discussion of firm rotation in the U.S., the enactment of SOX requires partner rotation which requires the lead audit partner or engagement partner to rotate after five years to enhance independence and audit quality and to restore public confidence (GAO, 2003, 11).

Studies examining partner rotation use partner tenure as a proxy. Bedard and Johnstone (2010) find that planned engagement hours are not significantly different between long-term and short-term tenures. However, Manry, Mock, and Turner (2008) find that partner tenure increases audit quality. Likewise, Litt, Sharma, Simpson, and Tanyi (2014) find that audit partner rotation lowers audit quality. Several non-U.S. studies find that longer partner tenure reduces audit quality (Hamilton, Ruddock, Stokes & Taylor, 2005; Carey & Simnett, 2006; Fargher, Lee, & Mande, 2008). On the other hand, other non-U.S. studies find that longer partner tenure does not reduce audit quality (Chen et al., 2008; Chi, Huang, Liao, & Xie, 2009). Similar to firm rotation archival studies, partner rotation studies do not have available data to examine audit rotation and its relationship to independence and audit quality. However, several studies (which examine countries that require partner rotation) find that mandatory partner rotation improves audit quality (Monroe & Hossain 2013; Lennox, Wu, & Zhang, 2014; Bandyopadhyay, Chen, & Yu, 2014). This study provides empirical evidence concerning this phenomenon.

### **Hypotheses Development**

The objective of this study is to examine whether the existence and type of audit rotation influences loan officers' perceptions and decisions for nonpublic companies? When investigating independence, the AICPA recommends examining 1) perceptions of independence, 2) perceptions of reliability, and 3) a discretionary decision made by financial statement users (Orren, 1997). Most prior experimental studies find that firm rotation provides greater independence than partner rotation on perceptions from auditors (Dopuch et al., 2001; Arel et al., 2006; Wang & Tuttle, 2009), investors (Gates et al., 2007), judges (Jennings et al., 2006), and loan officers (Daniels & Booker, 2011). Since partner and firm rotations are not required regarding nonpublic companies, the baseline rotation condition is no audit rotation. In situations in which more independence is perceived, more reliability is perceived, which should increase decisions of a loan approval (Pany & Reckers, 1983; McKinley, Pany, & Reckers, 1985; Lowe & Pany, 1995; Lowe, Geiger, & Pany, 1999).

The following hypotheses examine perceptions of independence, perceptions of reliability, and decisions of extending a loan. Given prior results of similar studies, I developed the following hypotheses:

- H1:** Loan officers perceive the **a)** auditor to be more independent, **b)** audited financial statements to be more accurate and reliable, and **c)** are more likely to extend a loan when there is partner rotation vs. no rotation.

- H2:** Loan officers perceive the **a)** auditor to be more independent, **b)** audited financial statements to be more accurate and reliable, and **c)** are more likely to extend a loan when there is firm rotation vs. no rotation.
- H3:** Loan officers perceive the **a)** auditor to be more independent, **b)** audited financial statements to be more accurate and reliable, and **c)** are more likely to extend a loan when there is firm rotation vs. partner rotation.

## RESEARCH METHODOLOGY

### Experimental Case

The scenario of the experimental case is adapted from DeZoort and Taylor (2009) conducted by the AICPA. Each participant received the same case except for the difference in manipulated variable, audit rotation. The case involves a nonpublic company that is a privately held tool manufacturer, Wilson's Tools & Supply Company (hereafter, Wilson). The company sells to distributors and select retailers. This is the company's 10<sup>th</sup> year in business. The company employs 60 people. In addition, the financial health and growth of the company continues to be stable in recent years. Background research indicates that the company is an average (medium) risk company with effective internal controls over financial reporting and competent management and directors. The same regional CPA firm rendered an unqualified audit opinion for the past five years (2008-2012). Early in 2013, the company submits an application to a bank to refinance a \$1.5 million line of credit. A summary of 2012 audited annual financial information is provided to the loan officers.

### *Independent Variable*

The independent variable, audit rotation, is manipulated on three levels. The first level of manipulation is no audit rotation (no partner or firm rotation policy). The case material for this level of audit rotation indicates that the audit firm will continue to audit the company as long as both are satisfied with the business relationship. Accordingly, the same audit firm will provide the 2013 audit with no major changes anticipated in the audit engagement team.

Partner rotation, the second level of manipulation, consists of the nonpublic client requiring a rotation of the audit partner every five years. This is similar to SOX provisions for public companies and prior studies (Jennings et al., 2006; Kaplan and Mauldin, 2008). The case material for this level of audit rotation indicates that the company is to retain its CPA firm as long as both it and the CPA firm are satisfied with the business relationship. Accordingly, the company retains the CPA firm again next year to provide audit and selected non audit-services. In accordance with the firm policy, top audit engagement personnel, including the audit partner (responsible for the entire audit) and engagement review partner (responsible for a relatively brief overall audit-end review) will both be replaced because they have served in their roles the maximum of five years. Because many balances carry over from one year to the next, the current partners are well aware that next year's replacement partners will review in detail many of this year's working papers as part of its 2013 audit.

The third level of manipulation is firm rotation which the nonpublic client rotates their audit firm every five years. This is consistent with prior studies (Jennings et al., 2006; Kaplan and Mauldin, 2008). The case material for this level of audit rotation indicates that the company is to retain its CPA firm for a maximum of five years. Since this is the last year, Wilson engages a different CPA firm to perform next year's audit. Because many balances carry over from one year to the next, the current partners are well aware that next year's replacement CPA firm will review in detail many of this year's working papers as part of its 2013 audit. The loan officers are randomly assigned to one of the three case versions which is consistent with between-subjects experiments.

### *Dependent Variables*

I develop the dependent variables according to the recommendations of Orren (1997). The first dependent variable is independence. The first research question asks participants "How confident are you

that the CPA firm is independent in performing the audit?" The participants indicate their confidence on an 11-point Likert scale. The scale ranges from no confidence (0) to extreme confidence (10). This question measures how loan officers' perceive the auditor's independence.

The second dependent variable is reliability. This variable measures participants' level of confidence in the reliability of the financial statement. Similar to Lowe et al. (1999), I ask two questions to gain this perception. First, participants indicate "how confident they are that the audited financial statements are free from *unintentional* misstatements of omissions?" Second, participants indicate "how confident they are that the audited financial statements are free from *intentional* misstatements or omissions?" The participants indicate their confidence on an 11-point Likert scale. The scale ranges from no confidence (0) to extreme confidence (10). These questions measure how financial statement users perceive reliability of the audited financial statements.

The third dependent variable focuses on loan decisions. I ask the participants two questions: 1) A dichotomous question about the decision to extend the loan and 2) the probability of extending the loan, which is similar to Schneider and Church (2008). The participants assume that their financial institution does not restrict them on the size of the loan that they may grant and that their institution is not limited in the amount of the funds that it has available to lend. The first question asks participants to "decide if they would approve the loan to the nonpublic company?" The participants respond by selecting "yes" or "no". The second question asks participants to provide the probability that they would extend the loan at a reasonable rate of interest as determined by their financial institution. The participants assess the probability on a 0% to 100% scale, similar to Schneider and Church (2008).

### **Participants**

Hugo Dunhill provided the names and addresses of loan officers. Consistent with prior studies using loan officers (i.e. Lowe et al. 1999; Daniels and Booker 2011), the participants received the experimental case by mail. Twelve hundred (1200) loan officers are randomly selected from the Hugo Dunhill mailing list. The entire population is randomly assigned one of the three versions of the experimental case. Responses for ninety-eight (98) participants are received. Approximately six weeks later, participants who did not respond to the first mailing received a second request. After the second mailing, responses for fifty-seven (57) participants are received. A total of one hundred fifty-five (155) responses are received from the first and second mailings before adjusting for unusable responses.

## **RESULTS AND IMPLICATIONS**

### **Manipulation Check**

Of the 131 responses received, two (2) instruments are incomplete. Out of the 129 completed responses, seven (7) participants failed the manipulation check. The manipulation check question assessed the effectiveness of the audit rotation manipulation. I instruct participants to identify who would perform the upcoming year audit: 1) the current CPA firm with the same audit partner, 2) the current CPA firm with a different audit partner, or 3) a different CPA firm. The manipulation pass rate is 95 percent. The seven participants that failed the manipulation check are excluded. After adjusting for the unusable responses, the adjusted response rate is 10.40%. Table 1 provides a summary of the response rate for 122 participants completing the experiment. Comparisons of early and late respondents indicate no significant differences except under condition 3 (firm rotation;  $p < .05$ ). Under the firm rotation condition, responses to the confidence of the audited financial statements being free from intentional misstatement rendered a mean of 9.33 (early respondents) and 7.75 (late respondents). This difference may contribute to the results of the Firm Rotation condition compared to No Rotation and Partner Rotation conditions.

**TABLE 1**  
**RESPONSE RATE SUMMARY FOR BETWEEN-SUBJECTS EXPERIMENT**

|                                    | Participants | Percentage     |
|------------------------------------|--------------|----------------|
| Total Mailed                       | 1200         | 100.0%         |
| Responses Received                 | 155          | 12.9%          |
| Undeliverable (Returned) Responses | 24           | 2.0%           |
| Incomplete Responses               | <u>2</u>     | <u>0.2%</u>    |
| Total Complete Responses           | 129          | *11.0%         |
| Failed Manipulation Check          | 7            | 0.6%           |
| Complete and Usable Responses      | <u>122</u>   | <u>**10.4%</u> |

\*Response rate is calculated as follows:  $[129 / (1200 - 24 - 2)]$ .

\*\*Response rate is calculated as follows:  $[(129 - 7) / (1200 - 24 - 2)]$ .

### Demographics

Table 2 summarizes the demographic information for the participants in the experiment. The participants are fairly evenly distributed among the three groups: 1) No Rotation (Group 1), 2) Partner Rotation (Group 2) and 3) Firm Rotation (Group 3). Using Chi-Square test, significant differences exist between the groups relating to loan experience. Further Chi-Square results show that Group 3 is significantly different from Group 1 and Group 2. To ensure that these differences did not bias the results, analysis of covariance (ANCOVA) is conducted with experience as a covariate. Experience is not significant and experimental results are consistent.

A majority of the participants (85.12%) are over the age of 46. In addition, over eighty-six percent (86.89%) of the participants have over seven years of loan experience. Less than thirty-five percent of the participants (34.94%) report some type of professional certification. A majority of the participants (90.76%) are male. Over seventy-three percent (73.77%) of participants report their current title as vice president or president of the bank. However, approximately two-thirds (67.20%) of the participants devote more than fifty percent of their job to approve loans. Additionally, over eighty-one percent (81.82%) of the participants represents banks with assets of more than one hundred million. Over eighty-nine percent (89.17%) of participants report a 5 or higher on the 11-point Likert scale anchored at 0 for "Not Knowledgeable at All" to 10 for "Very Knowledgeable" relating to their level of knowledge of auditing. Ninety-five percent (95%) of the participants hold a bachelor degree or higher, with 34.17% holding a master degree and 3.33% holding a doctorate degree. The demographic information shows that the participants are generally well-educated individuals who are experienced loan officers qualified to answer the experiment.

### Independence

In Table 3, it is interesting to note that the means increase from No Rotation (7.200) to Partner Rotation (7.500) and from Partner Rotation (7.500) to Firm Rotation (7.545). However, the between-subjects' ANOVA results fail to find support that loan officers are more confident that the auditor is independent when there is partner or firm rotation compared to no rotation ( $F = .463$ ,  $df = 2$ ,  $p = .630$ ). There is not a significant difference between loan officers' perceptions of independence as it relates to the existence and type of audit rotation implemented. These results are consistent with one prior experimental study that examines audit rotation (Kaplan and Mauldin, 2008). Hypotheses 1a, 2a, and 3a are not supported.

According to Taylor, DeZoort, Munn, and Thomas (2003), there is confusion and controversy surrounding independence which is due to definitional, operational and implementation inconsistencies. These inconsistencies may contribute to loan officers' responses to how audit rotation affects

independence. Additionally, Taylor et al. (2003) propose a framework of auditor reliability over independence.

**TABLE 2**  
**DEMOGRAPHIC INFORMATION FOR PARTICIPANTS**

| Rotation Condition <sup>a</sup>    | <b>Group 1<br/>NR</b> | <b>Group 2<br/>PR</b> | <b>Group 3<br/>FR</b> | <b>Total<br/>Count<sup>b</sup></b> | <b>Total<br/>Percent</b> |
|------------------------------------|-----------------------|-----------------------|-----------------------|------------------------------------|--------------------------|
| Group Size                         | 50                    | 28                    | 44                    | 122                                | 100.00%                  |
| Age                                |                       |                       |                       |                                    |                          |
| Under 26                           | 0.00%                 | 3.57%                 | 4.65%                 | 3                                  | 2.48%                    |
| 26-35                              | 6.00%                 | 0.00%                 | 4.65%                 | 5                                  | 4.13%                    |
| 36-45                              | 14.00%                | 0.00%                 | 6.98%                 | 10                                 | 8.26%                    |
| 46-55                              | 38.00%                | 50.00%                | 34.88%                | 48                                 | 39.67%                   |
| 56-65                              | 34.00%                | 46.43%                | 39.54%                | 47                                 | 38.84%                   |
| <u>Over 65</u>                     | <u>8.00%</u>          | <u>0.00%</u>          | <u>9.30%</u>          | <u>8</u>                           | <u>6.61%</u>             |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>121</b>                         | <b>100.00%</b>           |
| Loan Experience                    |                       |                       |                       |                                    |                          |
| Less than 1 year                   | 0.00%                 | 3.57%                 | 9.09%                 | 5                                  | 4.09%                    |
| 1-3 years                          | 2.00%                 | 0.00%                 | 6.82%                 | 4                                  | 3.28%                    |
| 4-6 years                          | 12.00%                | 3.57%                 | 0.00%                 | 7                                  | 5.74%                    |
| 7-9 years                          | 8.00%                 | 0.00%                 | 0.00%                 | 4                                  | 3.28%                    |
| 10-15 years                        | 2.00%                 | 0.00%                 | 11.36%                | 6                                  | 4.92%                    |
| <u>Over 15 years</u>               | <u>76.00%</u>         | <u>92.86%</u>         | <u>72.73%</u>         | <u>96</u>                          | <u>78.69%</u>            |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>122</b>                         | <b>100.00%</b>           |
| Professional Certification         |                       |                       |                       |                                    |                          |
| Yes                                | 41.67%                | 31.25%                | 29.03%                | 29                                 | 34.94%                   |
| <u>No</u>                          | <u>58.33%</u>         | <u>68.75%</u>         | <u>70.97%</u>         | <u>54</u>                          | <u>65.06%</u>            |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>83</b>                          | <b>100.00%</b>           |
| Gender                             |                       |                       |                       |                                    |                          |
| Male                               | 94.00%                | 92.86%                | 85.37%                | 108                                | 90.76%                   |
| <u>Female</u>                      | <u>6.00%</u>          | <u>7.14%</u>          | <u>14.63%</u>         | <u>11</u>                          | <u>9.24%</u>             |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>119</b>                         | <b>90.8%9%9.2%</b>       |
| Percent of Job<br>Devoted to Loans |                       |                       |                       |                                    |                          |
| Below 50%                          | 36.00%                | 25.00%                | 34.10%                | 40                                 | 32.80%                   |
| 50-69%                             | 14.00%                | 28.57%                | 6.82%                 | 18                                 | 14.75%                   |
| 70-79%                             | 12.00%                | 14.29%                | 18.18%                | 18                                 | 14.75%                   |
| 80-89%                             | 16.00%                | 10.71%                | 20.45%                | 20                                 | 16.39%                   |
| <u>Over 90%</u>                    | <u>22.00%</u>         | <u>21.43%</u>         | <u>20.45%</u>         | <u>26</u>                          | <u>21.31%</u>            |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>122</b>                         | <b>100.00%</b>           |
| Asset Size                         |                       |                       |                       |                                    |                          |
| Less than 100 million              | 14.00%                | 10.71%                | 27.91%                | 22                                 | 18.18%                   |
| 100 million – 1 billion            | 62.00%                | 71.43%                | 51.16%                | 73                                 | 60.33%                   |
| Over 1 billion – 10 billion        | 16.00%                | 17.86%                | 18.60%                | 21                                 | 17.36%                   |
| <u>Over 10 billion</u>             | <u>8.00%</u>          | <u>0.00%</u>          | <u>2.33%</u>          | <u>5</u>                           | <u>4.13%</u>             |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>121</b>                         | <b>100.00%</b>           |

**TABLE 2 (CONTINUED)**

| Rotation Condition <sup>a</sup>    | <b>Group 1<br/>NR</b> | <b>Group 2<br/>PR</b> | <b>Group 3<br/>FR</b> | <b>Total<br/>Count<sup>b</sup></b> | <b>Total<br/>Percent</b> |
|------------------------------------|-----------------------|-----------------------|-----------------------|------------------------------------|--------------------------|
| Group Size                         | 50                    | 28                    | 44                    | 122                                | 100.00%                  |
| Knowledge of Auditing <sup>c</sup> |                       |                       |                       |                                    |                          |
| 0                                  | 0.00%                 | 0.00%                 | 2.33%                 | 1                                  | 0.83%                    |
| 1                                  | 2.00%                 | 0.00%                 | 0.00%                 | 1                                  | 0.83%                    |
| 2                                  | 4.00%                 | 0.00%                 | 0.00%                 | 2                                  | 1.67%                    |
| 3                                  | 2.00%                 | 3.70%                 | 11.63%                | 7                                  | 5.83%                    |
| 4                                  | 2.00%                 | 0.00%                 | 2.33%                 | 2                                  | 1.67%                    |
| 5                                  | 14.00%                | 7.41%                 | 6.98%                 | 12                                 | 10.00%                   |
| 6                                  | 10.00%                | 14.81%                | 11.63%                | 14                                 | 11.67%                   |
| 7                                  | 14.00%                | 37.04%                | 18.60%                | 25                                 | 20.83%                   |
| 8                                  | 20.00%                | 7.41%                 | 23.26%                | 22                                 | 18.33%                   |
| 9                                  | 24.00%                | 22.22%                | 11.63%                | 23                                 | 19.17%                   |
| <u>10</u>                          | <u>8.00%</u>          | <u>7.41%</u>          | <u>11.63%</u>         | <u>11</u>                          | <u>9.17%</u>             |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>120</b>                         | <b>100.00%</b>           |
| Title                              |                       |                       |                       |                                    |                          |
| President/CEO                      | 48.00%                | 53.57%                | 31.82%                | 53                                 | 43.44%                   |
| Vice President                     | 32.00%                | 35.71%                | 25.00%                | 37                                 | 30.33%                   |
| Loan Officer                       | 6.00%                 | 3.57%                 | 11.36%                | 9                                  | 7.38%                    |
| Credit Analyst                     | 0.00%                 | 3.57%                 | 4.55%                 | 3                                  | 2.46%                    |
| <u>Other</u>                       | <u>14.00%</u>         | <u>3.57%</u>          | <u>27.27%</u>         | <u>20</u>                          | <u>16.39%</u>            |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>122</b>                         | <b>100.00%</b>           |
| Highest Degree Earned              |                       |                       |                       |                                    |                          |
| High School                        | 2.00%                 | 7.41%                 | 2.33%                 | 4                                  | 3.33%                    |
| Associates                         | 0.00%                 | 0.00%                 | 4.65%                 | 2                                  | 1.67%                    |
| Bachelors                          | 52.00%                | 51.85%                | 67.44%                | 69                                 | 57.50%                   |
| Masters                            | 40.00%                | 40.74%                | 23.25%                | 41                                 | 34.17%                   |
| <u>Doctorate</u>                   | <u>6.00%</u>          | <u>0.00%</u>          | <u>2.33%</u>          | <u>4</u>                           | <u>3.33%</u>             |
| <b>TOTAL</b>                       | <b>100.00%</b>        | <b>100.00%</b>        | <b>100.00%</b>        | <b>120</b>                         | <b>100.00%</b>           |

<sup>a</sup>The rotation conditions are: 1) NR-No Rotation, 2) PR-Partner Rotation, and 3) FR-Firm Rotation.

<sup>b</sup>The totals differ by categories due to participants not responding to all of the requested demographic information.

<sup>c</sup>Knowledge of Auditing is measured on a scale of 0 for “Not Knowledgeable at All” to 10 for “Very Knowledgeable”.



**TABLE 3**  
**HYPOTHESIS 1A, 2A, AND 3A**  
**PERCEPTIONS OF INDEPENDENCE WHEN AUDIT ROTATION IS IMPLEMENTED<sup>A</sup>**

| <u>Group</u>   | Independence <sup>b</sup><br>Mean<br>( <u>Standard Deviation</u> ) |
|--|--|
| No Rotation (NR)   | 7.200<br>(1.990)<br>n = 50   |
| Partner Rotation (PR)  | 7.500<br>(1.644)<br>n = 28   |
| Firm Rotation (FR)   | 7.545<br>(1.836)<br>n = 44   |
| Overall  | 7.393<br>(1.852)<br>n = 122  |
| Significance of overall differences across groups <sup>c</sup> | p = .630   |

<sup>a</sup>Participants are asked “How confident are you that Lee CPA Group is independent in performing the 2012 audit?”

<sup>b</sup>Measured on an 11-point Likert Scale anchored on 0 for No Confidence to 10 for Extreme Confidence.

<sup>c</sup>Significance of overall differences in means across groups are assessed using Analysis of Variance (ANOVA); F-statistic (with 2 degrees of freedom) = .463.

### Reliability

In Table 4 Panel A, it is interesting to note that the means increase from No Rotation (7.080) to Partner Rotation (7.107) and from Partner Rotation (7.107) to Firm Rotation (7.455) for the *unintentional* measure. However, the ANOVA results indicate that *unintentional* misstatement measure is not significant ( $F = .546$ ,  $df = 2$ ,  $p = .581$ ). For the *intentional* misstatement measure, the means are 7.400, 8.179, and 8.182 for No Rotation, Partner Rotation and Firm Rotation conditions, respectively. The ANOVA results indicate that *intentional* misstatement measure is significant ( $F = 3.378$ ,  $df = 2$ ,  $p = .037$ ). Relative to the *unintentional* measure, hypotheses 1b, 2b, and 3b are not supported. Of the two measures of reliability, *intentional* misstatements would seem to be of greater concern. Relative to the *intentional* measure, the results suggest that a change in audit rotation policy does increase loan officers’ perception of reliability.

Table 4 Panel B provides a post hoc analysis to determine which groups are significantly different for the *intentional* misstatement measure. The results show that there is a marginally significant difference between loan officers’ perception of reliability when implementing partner rotation compared to no audit rotation ( $p = .067$ , one-tailed). In addition, the results show that there is a significant difference between loan officers’ perception of reliability when implementing firm rotation compared to no audit rotation ( $p = .036$ , one-tailed). In other words, loan officers perceive the financial statements to be more accurate and reliable when there is firm rotation or partner rotation compared to no rotation. Relative to the intentional measure, Hypotheses 1b and 2b are supported. Hypothesis 3b is not supported by the intentional misstatement measure. The results suggest that a change in audit rotation policy from No Rotation to Partner Rotation and from No Rotation to Firm Rotation does increase loan officers’ perception of reliability.

**TABLE 4**  
**HYPOTHESIS 1B, 2B, AND 3B**  
**PERCEPTIONS OF RELIABILITY WHEN AUDIT ROTATION IS IMPLEMENTED<sup>A</sup>**

**Panel A: Mean Confidence by Condition**

| <u>Group</u> <sup>+</sup>                  | Reliability <sup>b</sup>                     |                         |
|--|--|-------------------------|
|  | <u>Unintentional</u>                         | <u>Intentional</u>      |
|  | <u>Mean</u><br>( <u>Standard Deviation</u> ) |                         |
| No Rotation (NR)                           | 7.080 (1.771)                                | 7.400 (1.874)           |
| Partner Rotation (PR)                      | 7.107 (2.042)                                | 8.179 (1.278)           |
| Firm Rotation (FR)                         | 7.455 (1.823)                                | 8.182 (1.529)           |
| Significance of overall differences across | F= .546 p = .581                             | F=3.378 p = <b>.037</b> |

**Panel B: Scheffe Test of Multiple Comparison-Intentional**

Pairwise Differences<sup>c</sup>

|                |          |                 |
|----------------|----------|-----------------|
| H1b: NR vs. PR | p = .499 | <b>p = .067</b> |
| H2b: NR vs. FR | p = .331 | <b>p = .036</b> |
| H3b: PR vs. FR | p = .371 | p = .500        |

<sup>+</sup>The same number of participants who responded to the independence question responded to these questions. Please refer to Table 3.

<sup>a</sup>Participants are asked “How confident are you that the 2012 audited financial statements are free from unintentional misstatements or omissions?” Next, participants are asked “How confident are you that the 2012 audited financial statements are free from intentional misstatements or omissions?”

<sup>b</sup>Reliability is a variable that is measured by two components: 1) unintentional and 2) intentional misstatements or omissions. The variables are measured on an 11-point Likert scale anchored at 0 for No Confidence to 10 for Extreme Confidence.

<sup>c</sup>P-values are one-tailed. Significant results are in bold.

**Loan Decisions**

In Table 5 Panel A, the approval measure, the percentages are 61.9%, 90.5%, and 70.6% for no rotation, partner rotation and firm rotation conditions, respectively. The Chi-Square results indicate the approval measure is marginally significant ( $X = 5.573$ ,  $df = 2$ ,  $p = .062$ ). For the probability measure, it is interesting to note that the means increase from No Rotation (56.53%) to Partner Rotation (58.46%) and from Partner Rotation (58.46%) to Firm Rotation (58.81%). However, the ANOVA results indicate that the probability measure is not significant ( $F = .092$ ,  $df = 2$ ,  $p = .912$ ).

It is important to note that the loan officers are asked a dichotomous question (yes or no) and a nondichotomous question (probability) about extending a loan. The results suggest that when loan officers have to make a “yes” or “no” decision about extending a loan, the type of audit rotation implemented matters. The results suggest that a change in audit rotation policy does increase loan officers’ decision to extend a loan. Relative to the probability measure, hypotheses 1c, 2c, and 3c are not supported. When bank loan officers are asked to provide the probability of extending a loan, their decisions do not differ based on the type of rotation implemented. However, if bank loan officers chose to answer “yes” to the dichotomous question to approve the loan when they could have skipped it as 23 bank loan officers who were indecisive about the loan decision did, this is a good indication that they will definitely approve the loan regardless of the probability that they indicated.

**TABLE 5**  
**HYPOTHESIS 1C, 2C, AND 3C**  
**LOAN DECISIONS WHEN AUDIT ROTATION IS IMPLEMENTED<sup>A</sup>**

**Panel A: Mean Confidence by Condition**

| <u>Group</u>                               | Loan Decisions   |   |
|--|--|---|
|  | <u>Percentage</u><br><u>Approving Loan<sup>b</sup></u> | <u>Probability to</u><br><u>Extend Line of Credit<sup>c</sup></u> |
|  | <u>Mean (Standard Deviation)</u>                       |   |
| No Rotation (NR)                           | 61.9%<br>n = 42  | 56.53% (29.34)<br>n = 49  |
| Partner Rotation (PR)                      | 90.5%<br>n = 21  | 58.46% (24.93)<br>n = 26  |
| Firm Rotation (FR)                         | 70.6%<br>n = 31  | 58.81% (24.81)<br>n = 42  |
| Significance of overall differences across | X=5.573 <b>p = .062</b>                                | F=.092 p = .912   |

**Panel B: Scheffe Test of Multiple Comparison-Percentage Approving Loan**

Pairwise Differences<sup>d</sup>

|                |                 |          |
|----------------|-----------------|----------|
| H1c: NR vs. PR | <b>p = .009</b> | p = .479 |
| H2c: NR vs. FR | p = .214        | p = .461 |
| H3c: PR vs. FR | <b>p = .042</b> | p = .500 |

<sup>a</sup>Participants are asked “Should the bank approve the loan for Wilson’s Tools & Supply Company?” Next, participants are asked “What is the probability that you would extend the \$1.5 million line of credit to Wilson at a reasonable rate of interest as determined by your financial institution?”

<sup>b</sup>Percentage of loan officers who would approve a loan (versus not approve) based on their specific case.

<sup>c</sup>Probability of extending the line of credit based on each loan officers specific case. Measured on a scale of 0% to 100%.

<sup>d</sup>P-values are one-tailed. Significant results are in bold.

Table 5 Panel B provides a post hoc analysis to determine which groups are significantly different for the loan approval measure. The results show that loan officers are more likely extend a loan when there is partner rotation compared to no rotation ( $p = .009$ ) and partner rotation compared to firm rotation ( $p = .042$ ). Further analyses were conducted using bank loan officers with over 15 years of experience and bank loan officers who reported 5 or greater on a scale from 0 to 10 on their knowledge of auditing. Further analysis using bank loan officers with over 15 years of experience revealed that there is not a significant difference between bank loan officers’ likelihood to extend a loan between partner and firm rotation conditions ( $X = 1.317$ ,  $df = 1$ ,  $p = .126$ ). Further analysis using bank loan officers who reported 5 or greater on a scale from 0 to 10 on their knowledge of auditing revealed that there is not a significant difference between bank loan officers’ likelihood to extend a loan between partner and firm rotation conditions ( $X = 1.532$ ,  $df = 1$ ,  $p = .108$ ). This is the opposite direction of Hypothesis 3c. Relative to the “yes” or “no” loan approval decision, Hypotheses 2c and 3c are not supported. Hypothesis 1c is supported by the loan approval measure but not by the probability measure. The results suggest that loan officers are more likely extend a loan when there is partner rotation compared to no rotation or firm rotation. Based on the percentage of approving a loan, loan officers would approve a loan when there is partner rotation

(90.5%), firm rotation (70.6%) and then no rotation (61.9%). The nonparametric alternative tests, Kruskal-Wallis test and Friedman Test for one-way ANOVA provide consistent results.

## **LIMITATIONS, FUTURE RESEARCH, IMPLICATIONS, AND CONCLUSIONS**

This study utilizes an experiment in order to gain loan officers' perception of auditor independence and financial statement reliability and loan decisions relating to audit rotation. This study finds that the loan officers' perceptions of independence are not affected by the type of audit rotation implemented for a nonpublic company. This suggests that nonpublic companies may need to consider whether voluntarily implementing partner rotation or firm rotation would enhance financial statement users' perception of independence. The results indicate that the loan officers' perceptions of reliability are affected by the type of audit rotation implemented when analyzing the intentional misstatement measure but not the unintentional misstatement measure. This suggests that nonpublic companies may need to consider voluntarily implementing partner rotation to enhance financial statement users' perception of reliability. Loan officers' likelihood to extend a loan is not affected by the type of audit rotation; however, loan officers' decision to approve a loan is affected by the type of audit rotation implemented. This suggests that nonpublic companies may need to consider voluntarily implementing partner rotation to enhance financial statement users' loan decisions.

One limitation of this research is that experiments cannot include all the factors a loan officer may face or need to make a loan decision. The experiment utilizes a case by DeZoort and Taylor (2009) that finds the case is deemed realistic by loan officers. To keep the instruments at a reasonable length, some factors may have been omitted that are relevant to the loan approval process. Future research should include other factors relevant to a loan decision process that may not have been included. Another limitation is the generalization of the results of this study. The results are exclusive to the loan officers who responded to this instrument. Future research should use other financial statement users to gain their perceptions relating to audit rotation.

Future research should explore how audit rotation may affect other perceptions (objectivity, professional skepticism, etc.) of financial statement users. This study only examines one independent variable, audit rotation. Future research should examine if audit rotation in conjunction with another independent variable (i.e. client importance) affects financial statement users' perceptions and decisions. This study does not focus on the different sizes of a nonpublic company. Future research should explore how the size of a nonpublic company affects the implementation of auditing standards. Furthermore, the costs associated with these implementations should be explored. Additional research is needed to determine whether external users' (loan officers, insurers, investors') perceptions and decisions for nonpublic companies are based on the auditing standards of public companies.

The results of this study contribute to various research literature streams. First, the study contributes to the literature relating to nonpublic companies. There is a limited amount of literature examining how a phenomena affect the nonpublic environment. This study contributes by examining how audit rotation affect perceptions and decisions related to a nonpublic environment. Second, this study contributes to the audit rotation literature. Overall, experimental studies examining audit rotation have found audit rotation to enhance perceptions. This study finds that partner rotation impacts loan decisions and perceptions of financial statement reliability for nonpublic companies.

This study provides research, practice and policy implications. This study provides research implications by updating and extending the audit rotation and nonpublic company literatures. This study provides empirical evidence that the type of audit rotation impacts loan officers' perceptions and decisions for nonpublic companies. Furthermore, this study provides practice and policy implications by providing empirical evidence to regulators to determine whether a nonpublic company should implement partner or firm rotation to enhance financial statement users' perception of independence, reliability and decisions. Lastly, nonpublic companies can use this research to determine whether to voluntarily implement partner or firm rotation policies to provide confidence to external users (investors, insurers, lenders, etc.) about the auditor, financial statements and their decisions.

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