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The effects of audit committee ties and industry expertise on investor judgments—Extending Source Credibility Theory

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ABSTRACT

Personal ties (e.g., belonging to the same country club) and/or professional ties (e.g., serving on boards together) between the CEO and audit committee members can potentially impair members' objectivity. Additionally, prior research indicates that audit committee member industry expertise enhances financial reporting quality. In an experiment with 342 reasonably informed investors, we find, as hypothesized by Source Credibility Theory (SCT), personal ties negatively impact investors' assessments of audit committee independence more than professional ties, and industry expertise enhances assessments of competence. We also find investors assess audit committees with no ties and industry expertise (personal ties and no industry expertise) as the most (least) effective and indicate the highest (lowest) likelihood of investing. Further, extending SCT we find the incremental positive effect of industry expertise is greater when there are personal ties than when there are no ties. In a path model, competence and independence assessments directly affect each other, and in turn affect assessments of audit committee effectiveness and investment decisions. Finally, in a second experiment we find reasonably informed investors recognize variations in the nature of personal ties and that industry expertise attenuates the effect of advisory ties but not close friendship ties.

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1. Introduction

The purpose of this study is to examine the effects of audit committee members' ties to the CEO and industry expertise on investors' assessments of the independence and effectiveness of the audit committee and on investment decisions. Ties to the CEO are important since prior research suggests that it is imperative to distinguish between the "substance" and the "form" of the independence of corporate governance parties (Carcello, Hermanson, & Ye, 2011; Carcello, Neal, Palmrose, & Scholz, 2011; Cohen, Krishnamoorthy, & Wright, 2008). That is, boards and committees may appear to be independent, but, in fact, they may not be truly objective. For instance, under current regulations (e.g., SOX 2002), members of the audit committee may not be considered independent if they have any material economic affiliation with the company or its management. However, members can have personal ties (e.g., belonging to the same country club) and/or professional ties (e.g., having served on boards together) with the CEO or other members of top management that could substantively impair audit committee members' objectivity (Cohen et al., 2008; Guedj & Barnea, 2007; Westphal & Stern, 2006).[1]

Personal or professional ties are potentially problematic as demonstrated by Carcello, Neal, et al. (2011) who report that companies are more likely to have restatements when the CEO has influence over the nominations committee to appoint members to the audit committee who have personal or professional ties with the CEO. Nonetheless, current regulations do not require full disclosure of such ties.

In addition to independence, another important audit

[1] Personal ties arise from social interactions, while professional ties come from business interactions. However, we recognize that professional ties over time may eventually lead to personal ties (e.g., serving on the same board together for many years may lead to a friendship). In our study we examine personal and professional ties as orthogonal and do not consider a potential over-lapping relationship, an avenue for future research.

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committee characteristic that is likely to influence the committee's effectiveness is the competence of its members. Prior research finds that audit committee industry expertise is associated with enhanced financial reporting quality (Cohen, Hoitash, Krishnamoorthy, & Wright, 2014). However, similar to the lack of disclosure of certain ties between audit committees and management, the disclosure of industry expertise is not mandated.[2]

Although prior archival research has shown that personal ties between the CEO and audit committee members are associated with an impairment of financial reporting quality (Bruynseels & Cardinaels, 2014; Carcello, Neal, et al., 2011), it is unclear whether professional ties enhance or impair reporting quality.[3] For example, professional ties may potentially have positive effects since these ties indicate a prior working relationship with management in a professional setting. Thus, professional ties could lead to greater trust and confidence that in turn could result in audit committee members who are more willing to give honest and thoughtful feedback to management (Beasley, Carcello, Hermanson, & Neal, 2009). On the other hand, professional ties could be detrimental if such relationships impede the exercise of sound judgment due to familiarity and/or a close relationship with management. We examine the incremental effects of different types of audit committee ties on investor judgments and decisions.

Our paper also builds on a study by Rose, Rose, Norman, and Mazza (2014) that looks at how the existence and disclosure of "friendship ties" increases board member's willingness to approve cuts in R&D expenditures that would allow the CEO to achieve a bonus. In addition, they examine investor response to board actions when disclosure is made of friendship ties of the board to management. We extend the Rose et al. research by expanding the notion of ties beyond that of personal ties and by focusing on how disclosure of different types of ties and industry expertise influence investor assessments of audit committee effectiveness and investment decisions. Moreover, we provide a framework (Source Credibility Theory) for understanding the mechanisms by which investors impound the effect of ties and industry expertise on judgments about audit committee effectiveness and investment decisions.

We draw upon and extend Source Credibility Theory (Birnbaum & Stegner, 1979) to develop the theoretical framework and related expectations in this study. The theory states that the credibility of the source is paramount in determining the value of evidence provided. On behalf of investors, the audit committee provides oversight on the quality of financial information provided by management. Hence the credibility of the audit committee (the source) and the major components of credibility, source bias (or source objectivity) and source competence, are posited to affect investors' judgments about audit committee effectiveness and subsequent investment decisions.

Based on Source Credibility Theory, we hypothesize that investors will assess higher audit committee independence when there are professional ties than personal ties, since members with professional ties are more likely to be objective to preserve their professional reputation. Further, personal ties are more likely to be associated with a closer, social allegiance to the CEO than professional ties (Westphal, 1999). We also hypothesize that investors will indicate the highest (lowest) level of overall audit committee effectiveness and likelihood of investment when the audit committee has no ties to the CEO and has industry expertise (personal ties to the CEO and no industry expertise). Finally, we extend Source Credibility Theory by considering circumstances where trade-offs between independence and competence are viable and warranted. We posit that industry expertise will attenuate concerns about independence emanating from personal ties.

To examine our hypotheses, we conduct two experiments. In Experiment 1, we employ a 3 x 2 between-participants, full-factorial experiment with 342 reasonably informed investors in which we vary disclosure regarding the type of ties between the audit committee and the CEO (no ties, professional ties, and personal ties) and the industry expertise (mention, no mention) of the audit committee. Our experiment triangulates with prior archival studies. However, the use of an experimental approach allows us to control the disclosure of the nature of ties and industry expertise. In contrast, archival research relies on currently mandated disclosures that are often incomplete and/or inconsistent with respect to ties between audit committee members and management as well as members' industry expertise. Further, archival research generally looks at main effects while in an experiment we are able to examine interaction effects. We are also able to control extraneous variables such as company size, industry, growth, and profitability. Finally, we are able to test the boundary conditions of how industry expertise may influence investors' perceptions of the effectiveness and independence of audit committees with variations in professional and personal ties. Accordingly, an experiment provides an opportunity to make causal inferences about the effects of ties and industry expertise on investor judgments, not only for conditions that exist in practice today, but also for scenarios that have implications for future regulation and practice.

Experiment 1 results are consistent with our expectations. Investors assessed audit committees with members who have personal ties to the CEO to be less independent than those with professional ties. Further, competence was assessed as greater when members had industry expertise. Investors also assessed audit committees to be most (least) effective and were most (least) likely to invest when members have no ties and industry expertise (personal ties and no industry expertise). Of note, leveraging Source Credibility Theory we explore the relative importance investors place on the components underlying credibility and find that the positive incremental effects of industry expertise are greater when there are personal ties than when there are no ties. In other words, the negative effects of personal ties are less pronounced when industry expertise is present. This result is likely because investors perceive that audit committee members with personal ties are likely appointed to the audit committee because of their industry expertise and not solely because of personal connections with management. In essence, audit committee members who have personal ties with management but who also have industry expertise are bringing a substantive skill set to the process that are perceived as enhancing the overall monitoring effectiveness of the audit committee. Lastly, a path model that indicates competence and independence perceptions directly affect each other with the effect of competence on independence greater than that of independence on competence.

[2] To place the current research in context, the impact of ***auditor*** independence and industry expertise on investors' judgments have been examined in previous studies. Prior research has found that investors place significant reliance on auditor characteristics (e.g., auditor independence: Krishnamurthy, Zhou, and Zhou (2006); auditor industry knowledge: Knechel, Naiker, and Pacheco (2007)). In contrast, the focus of the current study is on ***audit committee*** characteristics (personal or professional ties to management and industry expertise).

[3] In an archival study, Bruynseels and Cardinaels (2014) distinguish between two broad types of personal ties: "friendship ties" and "advice networks". The former relates to non-professional associations (e.g., joint memberships in leisure clubs and charities), and the latter to similar employment and education backgrounds. They posit and find that friendship ties are associated with a decrease in both financial reporting quality and auditor oversight. This association is consistent with the idea that close personal relationships impair independence, while advice networks do not appear to have a negative impact. In the current study, we employ a controlled experiment to explore the nature and differential effects on investor judgments of the two broad categories of ties documented in Bruynseels and Cardinaels (2014).

Experiment 2 builds on Experiment 1 to examine whether the type of personal tie impacts the judgments of 137 reasonably informed investors. Specifically, we manipulated the nature of personal ties as either close friends with the CEO (i.e., a friendship) or active membership along with the CEO of an alumni association whose purpose is to provide advice and support in fund raising for a university (i.e., an advisory tie). All other manipulations, including that of industry expertise, remained the same as in Experiment 1. The dependent variables collected were also the same. Our novel finding in Experiment 2 is that friendship ties have a more adverse effect than advisory ties on investors' perceptions of audit committee effectiveness and propensity to invest, but only when the audit committee has industry expertise. Collectively, the findings of Experiment 2 suggest that reasonably informed investors recognize variations in the nature of personal ties and that industry expertise attenuates the influence of advisory ties but not close friendship ties. This finding contributes and extends our understanding of the manner in which attributes in Source Credibility Theory (i.e., independence and competence) interact in affecting investor judgments and decisions.

The findings provide a number of important contributions. From a public policy perspective, our results suggest that knowledge about ties between the audit committee and the CEO and about the industry expertise of the audit committee are relevant to investors in assessing the effectiveness of the committee and in making investment judgments. Since this information is not currently mandated or fully disclosed in publicly available documents, regulators and boards should consider proposals to require or at a minimum encourage additional disclosures about these individual characteristics of audit committee members to investors. Further, our results suggest in appointing audit committee members, boards and nominating committees should explicitly consider both the nature of any ties and the industry expertise of potential audit committee members to ensure the committee reflects the "substance" of independence and competence valued by investors.

We also make a number of important contributions from a research methods perspective. First, by using a controlled experiment, we complement prior archival research (Bruynseels & Cardinaels, 2014) that looks at associations of ties with various measures of financial reporting quality with our focus on the impact of ties on individual investors' judgments and investment decisions. We also explore whether knowledge of industry expertise affects the judgments and decisions of reasonably informed investors. The results of our study suggest that investors impound knowledge of industry expertise of audit committees in investment judgments and decisions. This complements the archival study of Cohen et al. (2014) who found associations between audit committee industry expertise and financial reporting quality.

Moreover, our study contributes to psychology-based accounting research by extending Source Credibility Theory. Specifically we examine circumstances where there are trade-offs between independence and competence and we find that the substantial concerns about independence stemming from personal ties are attenuated when audit committee members have industry expertise. Thus, the audit committee member is viewed as "bringing something to the table" and personal ties are not viewed as detrimental as when members appear to be appointed solely for their personal ties with management (Beasley et al., 2009). Finally, investors differentiate between different types of personal ties in assessing audit committee effectiveness.

2. Theory and research hypotheses

2.1. Source Credibility Theory

In the psychology and the judgment and decision-making literatures, the perceived credibility of an information source has been found to be a major determinant of the effectiveness of a communication (McGarry & Hendrick, 1974).[4] Source Credibility Theory (SCT) posits that individuals evaluate credibility based on three constructs: source bias; source expertise; and judge bias (Birnbaum & Stegner, 1979). Employing this theory, we investigate the role of the audit committee in monitoring financial reporting credibility. Importantly, as will be discussed, SCT does not predict the effects of interactions between credibility constructs. We extend SCT by looking at the interaction between source bias and source expertise that, as will be discussed, is particularly relevant to the audit committee setting.

Regulatory bodies throughout the world have enacted requirements concerning the crucial role played by the audit committee in overseeing financial reporting (e.g., FRC (2016, para 80) to provide confidence to investors that the financial information provided by management and audited by the company's independent accountants has passed scrutiny and oversight by the audit committee and hence can be relied upon by stakeholders. For instance, SEC rules (Securities & Exchange Commission, 2000) have required that the audit committee include a report in the proxy statement indicating whether the committee has reviewed and discussed the audited financial reports with management and the auditors, and whether the audit committee has recommended to the board that the audited financial statements be included in the company's Form 10-K filings with the SEC. In the United Kingdom, the Financial Reporting Council, which sets Corporate Governance and Stewardship codes, highlights the importance of an independent audit committee in providing financial reporting and internal control oversight, and in protecting the interests of the stockholders (Financial Reporting Council 2016). Further, the Australian Securities Exchange (ASX) requires listed companies to describe in financial reports their corporate governance policies and practices, which identify the roles of the audit committee in overseeing financial reporting and auditing (ASX Corporate Governance Council, 2014, p. 6).

Consistent with Source Credibility Theory, prior accounting research has documented that investors pay attention to the source of information and are sensitive to incentives that may potentially bias information (e.g., Hirst, Koonce, & Simko, 1995). Specifically, we predict that personal ties between the CEO and the audit committee will negatively influence assessments of audit committee independence to a greater extent than professional ties. Further, Source Credibility Theory (Birnbaum & Stegner, 1979) predicts that both independence and competence will, in turn, affect assessments of overall audit committee effectiveness.[5] In the

[4] Individuals use credibility as a source cue and as a cognitive heuristic to formulate judgments (Chaiken & Maheswaran, 1994), to determine attitudes and attitude changes (Petty & Cacioppo, 1986) and to make decisions (Birnbaum & Mellers, 1983). The importance of credibility as a heuristic has been observed in psychology (see Hovland, Janis, & Kelley, 1953 and Anderson, 1971 for seminal work) and in accounting with respect to auditors (see, for example, Hirst, 1994; Reimers & Fennema, 1999), financial analysts (Hirst et al., 1995) and investors (see for example, Hirst, Koonce, & Miller, 1999; Mercer, 2004; Mercer, 2005).

[5] Unlike other settings (e.g., political affiliation of the decision maker or judge), investor bias is less relevant in the context of the current study. One area where investor's bias may come into play is if they are investing for social responsibility purposes (Barnea, Heinkel, & Kraus, 2013; Simnett, Vanstraelen, & Chua, 2009), but the context of the case used in the study does not have consequences for socially responsible investing. Accordingly, we do not manipulate investor bias in this study and its effects, if any, are randomized.

sections that follow, our expectations are further developed as specific directional hypotheses.

2.2. Independence

The board of directors of a listed company is charged with the responsibility of ensuring that designated "independent" directors meet the definition of "independence" as set forth by regulations and the stock exchanges. For example, the Financial Reporting Council (FRC, 2016, para 9) prohibits material economic ties between management and the board when determining whether a member is considered to have "independent" status. Further, in defining "independence", Section 10C(a)(3) of the Securities Exchange Act of 1934 requires stock exchanges to consider all relevant factors including a director's source of compensation from the company and any other affiliation with the company or its affiliate/subsidiary that could impair the director's ability to act in an independent manner(Securities & Exchange Commission, 2012).[6] For instance, one concern is whether independence is impaired when companies provide AC members with compensation that includes equity shares or even equity options (Bierstaker, Cohen, Hermanson, & DeZoort, 2012; Campbell, Hansen, Simon, & Smith, 2015; Keune & Johnstone, 2015).

Nonetheless, the existence of ties between audit committee members and management occurs frequently and is not prohibited. For instance, Beasley, Carcello, Hermanson, and Lapides (2000) find that approximately one-third of audit committee members interviewed stated they had personal ties to management or other board members at the time they were nominated for membership to the board. One reason that these individuals are brought on to the audit committee is because of the skills they are bringing to the table. As Beasley, Carcello, Hermanson and Neal state (2009, 109), "It appears that in many organizations, the strategy for selecting an audit committee chair is to approach an accounting expert who is well known by someone on the board or in management." Further, Westphal and Stern (2006) report that CEOs routinely recommend their friends for membership to boards.

As noted, prior research suggests that it is important to distinguish between the "substance" and "form" of the independence of board committees (Carcello, Hermanson, & Ye, 2011, b; Cohen et al., 2008). Personal ties are potentially problematic as evidenced by the archival findings by Carcello, Neal, et al. (2011) that companies are more likely to have restatements when the CEO has influence through personal or professional ties over the nominations committee that selected audit committee members. Further, a survey by PWC (PricewaterhouseCoopers, 2014) reveals that investors view a close relationship between the CEO and board members as an impediment to the effective composition and functioning of the board.

Prior archival research (Chidambaran, Kedia, & Prabhala, 2010; Dey & Liu, 2011) addresses the extent to which professional or personal networks are associated with board decision making, and Rose et al. (2014) experimentally investigate the impact of disclosure of "friendship" ties (i.e., whether an audit committee member is a friend of the CEO) on investors' evaluation of the appropriateness of real earnings management through a specific operating decision (R&D expenditures). However, the Rose et al. study did not examine how investors interpret the impact of ties on assessments of audit committee effectiveness, nor did it examine disclosure of the industry expertise of audit committees. Moreover, that study did not draw a distinction between personal and professional ties. Thus, we are not aware of any research that examines how investor *knowledge* of ties (personal, professional or none) that audit committee members have with management affects *investor's* judgments regarding the independence and effectiveness of the audit committee nor the effect of such information on ultimate stock investment decisions, the focus of the current study.

Prior research has also examined how personal and professional ties affect management and board decisions. For example, relying on managerial power theory, Hoitash (2011) in an archival study, reports that in companies in which compensation committees have personal ties to management, management's compensation is higher than in cases where no personal ties exist. This finding suggests that even in instances where regulation requires compliance with formal economic independence requirements, management may circumvent these regulations by using their influence to have friends and colleagues appointed to important committees of the board that result in rewarding management with compensation that exceeds what their performance warrants (Bebchuk & Fried, 2004). Further, managerial power theory (Bebchuk & Fried, 2004) suggests that managers will use their power to help place allies and friends on the board who will accede to management's wishes even though the board complies with all regulatory requirements concerning expertise and independence. Finally, Bruynseels and Cardinaels (2014) report that financial reporting quality is negatively associated with personal ties but not by professional ties.

Thus, the potential exists that financial reporting quality may be compromised if the board or, especially the audit committee, given its direct oversight role, is populated with individuals with personal ties who may be aligned with management's interests or with individuals with close professional ties. For example, Hwang and Kim (2009) find a positive association between the existence of personal ties between the CEO and members of the audit committee and the level of earnings management. Specifically, they report that the greater the incidence of personal ties between management and the audit committee, the greater the magnitude of abnormal accruals.

2.2.1. Impact of personal and professional ties on assessments of independence

We expect that ties will influence investors' judgments about audit committee independence, given that perceptions of a source's bias are influenced by the source's interests (Walster, Aronson, & Abrahams, 1966) and incentives (Birnbaum & Stegner, 1979). First, an audit committee that has members with ties to management may not engage in active questioning at meetings, an action that Gendron, Bédard, and Gosselin (2004) state is an essential characteristic of an effective audit committee. Second, if management and audit committee members are connected through ties, management may have more power in negotiations with auditors over financial statement issues, since the audit committee may be more likely to side with management rather than the auditor if a dispute arises. In fact, Cohen, Gaynor, Krishnamoorthy, and Wright (2011) experimentally find that auditors are more willing to stand resolute in disputes with management if they perceive an audit committee to be substantively independent as opposed to an audit committee that is under management's influence through professional or personal ties.

Reasonably informed investors are expected to distinguish between the types of ties (personal or professional) that audit committee members have with management when evaluating audit

[6] An illustration in practice of the director independence standards of Applied Industrial Technologies, a NYSE company, is stated as: "For a director to be considered independent, the Board of Directors must determine that the director does not have a material relationship with Applied, either directly or as a partner, shareholder, or officer of an organization that has a relationship with Applied. In each case, the Board will broadly consider all relevant facts and circumstances, including the director's commercial, industrial, banking, consulting, legal, accounting, charitable, and familial relationships." (Applied Industrial Technologies, 2018).

committee independence. Although professional ties may impair an audit committee members' independence from management due to prior association, such ties also offer potential, offsetting benefits. Management and audit committee members may have developed a business relationship, leading to trust and confidence and a good working rapport where members may be willing to be candid (Beasley et al., 2009; Bruynseels & Cardinaels, 2014; Hoitash, 2011). Moreover, while Bruynseels and Cardinaels (2014) found a negative association between friendship ties and financial reporting quality, no such negative association was present when there were ties through an "advice network", analogous to professional ties. Hence, audit committee members who have professional ties may be perceived by investors as being primarily appointed because of their professional reputation and, thus, may be perceived to be more independent and thereby less likely to improperly acquiesce to management than those with personal ties. Preserving their professional reputation to serve on other audit committees or boards in the future will also be paramount (Khoo, Lim, & Monroe, 2020).

In contrast, personal ties have the potential to negatively influence the perceived independence of an audit committee member, and personal ties are more likely to induce closer bonding and allegiance than professional ties (Cohen et al., 2008; Westphal, 1999) since such ties may be the sole reason for the audit committee member's appointment to the board.[7] These expectations lead to our first hypothesis.

H1. Investors will assess audit committees with members who have personal ties to the CEO to be less independent than audit committees with members who have professional ties to the CEO.

2.3. Competence

2.3.1. Impact of industry expertise on assessments of competence

As discussed, in addition to independence, Source Credibility Theory predicts that credibility is also influenced by perceived competence. Thus, reasonably informed investors are expected to value audit committee members possessing various types of expertise, including financial and industry expertise. A European Union Directive (EU) (2014, article 39) identifies the importance of having an accounting or auditing expert on the audit committee. Sarbanes-Oxley (2002) also mandates disclosure about the presence of a financial expert on the audit committee or an explanation of why such expertise is not present (SEC 2003), and research has documented a positive association between the appointment of a financial expert on the audit committee and favorable stock market reaction (e.g., DeFond, Hann, & Hu, 2005).

Unlike financial expertise, there are no regulatory requirements that industry expertise on the audit committee be disclosed to investors; yet research has found that this form of expertise is associated with higher financial reporting quality. In an archival study, Cohen et al. (2014) report an association that is consistent with the idea that audit committee members with industry expertise incrementally enhance financial reporting quality over members with only accounting financial expertise.

Industry expertise is important because the accuracy of accounting estimates (e.g., warranties) is dependent upon strong knowledge of a company's business operations and the industry in which it operates (e.g., warranty obligations, product portfolio, inventory obsolescence, expected warranty costs). Further, industry expertise enhances the ability to effectively assess a company's business health and strategy, affecting the accuracy of going concern judgments. Appropriate internal controls are also linked to the nature of a company's business operations within its industry setting (Arens, Elder, & Beasley, 2015). Finally, prior research finds that application of specific accounting standards and practices such as those related to revenue recognition vary for different industries (Beasley et al., 2000, 2010).

It is clear that regulators and other stakeholders view industry expertise to be an important attribute for audit committee members (FRC, 2016, para 15). Thus, from a Source Credibility Theory perspective, industry expertise of the audit committee relates to a source's (the audit committee's) competence and will be favorably valued by investors. These expectations lead to the following hypothesis:

H2. Investors will assess audit committees with members who have industry ties to be more competent than audit committees with members who do not have industry ties.

2.4. Audit committee effectiveness

Source Credibility Theory predicts that both independence and competence (source bias and source competence) jointly influence the perceived credibility and overall effectiveness of a source such as the audit committee. As expected, prior research has found that sources that are high on both independence and competence are perceived as more credible than those that are weak on either or both of these dimensions (Schulman & Worrall, 1970; Warren, 1969; Whittaker & Meade, 1968). In this study, we examine boundary conditions where audit committees with members who have no ties to the CEO (i.e., no source bias) and who also have industry expertise (i.e., presence of source competence) are posited to be perceived by investors as the most effective, while audit committees with members who have both personal ties to the CEO and no industry expertise will be seen as the least effective. These expectations lead to the following contrast hypothesis.

H3. Investors' will assess the overall effectiveness of the audit committee to be the highest (lowest) when the audit committee has no ties to the CEO and has industry expertise (personal ties to the CEO and has no industry expertise).

2.5. Investment decisions

Beyond investor assessments of the effectiveness of audit committees, it is also important to understand if personal and professional ties and industry expertise are of sufficient concern that they ultimately impact investment choices, i.e., a decision effect. Similar to investor assessments of audit committee effectiveness, we predict that both audit committee independence and competence will jointly affect investment decisions. Specifically, Source Credibility Theory would predict that, ceteris paribus, investors will view the absence of any ties (i.e., no source bias) and the presence of industry expertise (i.e., a high level of source competence) as the most favorable with respect to their decision to invest.[8] Conversely, Source

[7] Personal ties can also have positive, functional effects on investors' assessment of audit committee effectiveness and investment judgments. For instance, when personal ties result from a larger ecosystem (e.g., education at certain universities or membership in specific community organizations) where strong intellectual pursuits and/or greater ethical behavior are emphasized, such ties can have a positive effect on the oversight provided by members with personal ties. However, the context we examine in Experiment 1 is one where personal ties are narrower and in a dyad (individuals who are classmates in college), rather than in personal contexts that are larger and go beyond the dyad. In Experiment 2 we examine the effects of different types of personal ties.

[8] In a subsequent section we discuss a path model in which we outline the mechanisms in which assessments of audit committee independence and competence are ultimately expected to affect investment decisions through assessments of audit committee effectiveness and the credibility of financial reports.

Credibility Theory predicts that the presence of personal ties and the absence of industry expertise will be viewed as the least favorable set of factors with respect to their investment decision. These expectations lead to the following hypothesis.

H4. Investors' will be most (least) likely to invest in companies when audit committee members have no ties and have industry expertise (personal ties and no industry expertise).

2.6. Extension of Source Credibility Theory: Effects of independence conditional on levels of competence

Source Credibility Theory does not predict whether independence or competence will dominate the other in assessments of source credibility; rather the theory treats them as orthogonal variables. We contribute to a further understanding and extension of the theory by considering circumstances that are present in the audit committee setting in which trade-offs between independence and competence are likely. Thus, while Source Credibility Theory serves as the foundation for our study, we depart from this theory and extend it to consider likely trade-offs between independence and competence. Specifically, in the absence of industry expertise, investors are expected to interpret personal ties as evidence of managerial hegemony or even cronyism.[9] However, the disclosure of industry expertise is expected to send a signal to investors that board members who have personal ties with management are appointed to the board because of their expertise, and not merely because of their ties with management. Specifically, if an AC member has industry expertise, it is reasonable to expect that the investor will believe that the AC member was appointed for their industry expertise rather than solely for personal ties with the management and will therefore assess the negative potential effects of personal ties at a lower level. This expectation is consistent with Beasley et al.'s (2009) qualitative paper that documents audit committee members often have connections with management but this may be offset by the skill set they are bringing to the committee.

Investors' assessments of the independence of audit committee members with personal ties to management are likely to vary considerably given the wide range of types of such relationships that can exist from close, personal friends to joint affiliations with associations such as university alumni or charitable groups embodying high ethical standards. In contrast, the nature of the relationship for professional ties is likely to be more narrowly defined such as professional ties of both serving as members of other board(s) (Bruynseels and Cardinaels. 2014) or having worked together in the same organization in the past. Thus, investors are likely to be particularly concerned about audit committee members' independence given the presence of personal ties.

If personal ties with management are viewed by investors in a negative light, as predicted in H1, we expect, as discussed above, that such negative effects will be less pronounced when an investor learns that the AC member has industry expertise, than when the participants are told that the AC member does not have industry expertise.

A contrary argument to what is discussed above is that investors may view industry expertise as a way for management to create the appearance of legitimacy for the appointment of audit committee members who have personal ties so as to provide them the opportunity to bias financial reporting (Cohen et al., 2008). However, given audit committee members' reputation risks and legal responsibilities (Khoo et al., 2020), we expect that investors recognize industry expertise gives a member the knowledge and accountability to confront management about questionable practices that would not be possible without this knowledge. These expectations lead to the following hypothesis:

H5. The negative effects of personal ties on assessments of audit committee effectiveness and investment decisions will be more attenuated when audit committee members have industry expertise than when they do not have industry expertise.

A summary of our hypotheses are presented in Table 1.

2.7. Path model

As depicted in the path model in Fig. 1, our hypotheses suggest that assessments of audit committee independence and competence positively influence assessments of overall audit committee effectiveness, which in turn, affects investment decisions. Accordingly, based on the archival findings of Bruynseels and Cardinaels (2014) on financial reporting quality, we expect that assessments of greater effectiveness of monitoring provided by the audit committee will enhance the perceived credibility of financial reports (i.e., reduce the level of information risk), hence increasing the likelihood of investing in the company.

3. Experiment 1

3.1. Design

To test our hypotheses, we use a 3 x 2 (ties x industry expertise) full-factorial, between-participants experiment. In the ties conditions, two (out of three) members of the audit committee have personal ties (PERS TIES) or professional ties (PROF TIES) with the CEO.[10] In the third condition, none of the audit committee members has either personal or professional ties with the CEO (NO TIES).[11] Exhibit 1 presents the manipulations for the various experimental conditions. We chose to portray the audit committee as having a majority of members (2 out of 3) with personal or professional ties to the CEO. The manipulations of personal and professional ties were based on prior literature. Given that archival research has focused on the importance of a shared educational institution (Dey & Liu, 2011), we chose to operationalize personal ties as audit committee members who had gone to the same graduate university and remained in contact as friends for over 15 years since graduation. The professional ties manipulation is based on the most common form of such an association (i.e., joint membership on other boards) as found in prior archival studies (Bruynseels & Cardinaels, 2014).

The second factor, industry expertise, is manipulated at two

[9] While, as noted, professional and personal ties are not required to be publicly disclosed, they are at least partially observable by investors due to the availability of network databases such as BoardEx.

[10] We focus on ties with the CEO rather than the CFO, since prior research has reported that it is the CEO who has the most influence on board and committee appointments (e.g., Westphal and Zajac. 1995; Westphal, 1999; and; Westphal and Stern. 2006). Bruynseels and Cardinaels (2014) in a large sample study of U.S. companies report 39% of all audit committees have personal or professional ties between the CEO and audit committee members. Further, prior research (e.g., Feng, Ge, Luo, & Shevlin, 2011) finds that the CEO and CFO work together to influence financial reporting (a "duopoly").

[11] In designing the experiment, we chose orthogonal separation of personal and professional ties in order to isolate, as clearly as possible, the distinct incremental effects of professional and personal ties. Thus, we do not investigate the effects of situations where an audit committee has both professional and personal ties. While this orthogonal separation may not always hold in practice, such separation affords an opportunity to strengthen internal validity and test the relative influence of each type of tie—a test that is not be feasible when using empirical data in archival settings.

Table 1
Research hypotheses.

Number		Test[a]	Results
Independence			
H1	Investors will assess audit committees with members who have professional ties to the CEO to be more independent than audit committees with members who have personal ties to the CEO.	PROF TIES > SOC TIES	Supported
Competence			
H2	Investors will assess audit committees with members who have industry ties to be more competent than audit committees with members who do not have industry ties.	IND EXP > NO IND EXP	Supported
Effectiveness			
H3	Investors' will assess the overall effectiveness of the audit committee to be the highest (lowest) when the audit committee has no ties to the CEO and has industry expertise (personal ties to the CEO and has no industry expertise).	NO TIES – IND EXP > All other conditions[b] TIES – NO IND EXP < All other conditions[b]	Supported Supported
Investment Decision			
H4	Investors' will be most (least) likely to invest in companies when audit committee members have no ties and have industry expertise (personal ties and no industry expertise).	NO TIES – IND EXP > All other conditions[b] TIES – NO IND EXP < All other conditions[b]	Supported Supported
Effects of Independence Conditional on Levels of Competence			
H5	The negative effects of personal ties on assessments of audit committee effectiveness and investment decisions will be attentuated when audit committee members have industry expertise than when they do not have industry expertise.	PERS TIES-IND EXP – NO TIES-IND EXP < PERS TIES-NO IND EXP – NO TIES-NO IND EXP	Effectiveness-Supported Investment Decision-Supported
H6	The negative effects of advisory (friendship) ties on assessments of audit committee effectiveness and investment decisions will be attenuated (not attenuated) when those audit committee members have industry expertise than when they do not have industry expertise.	ADVISORY TIES-NO IND EXP < NO TIES and ADVISORY TIES-IND EXP not < NO TIES FRIENDSHIP TIES-NO IND EXP < NO TIES and FRIENDSHIP TIES-IND EXP < NO TIES	Effectiveness-Supported Investment Decision-Supported

[a] NO TIES represents the condition in which no ties are present between the CEO and audit committee members. PROF TIES and PERS TIES represent the conditions wherein professional ties or personal ties are present between the CEO and audit committee members. (NO) IND EXP represent the conditions in which the audit committee has members (without) with industries expertise. ADVISORY TIES is where the audit committee members and the CEO belong to a college or community organization that gathers people of strong intellectual capacity and has a commitment to a higher purpose (e.g., an advisory tie). FRIENDSHIP TIES is where the audit committee members are close personal friends with the CEO.

[b] All other conditions" excludes the lower (TIES – NO IND EXP) and upper (NO TIES – IND EXP) conditions in these comparisons. Restated, comparisons in which NO TIES – IND EXP is expected to be greater than all other conditions, excludes the TIES – IND EXP condition. The comparisons is which TIES – NO IND EXP is expected to be less than all other conditions, excludes the NO TIES – IND EXP condition.

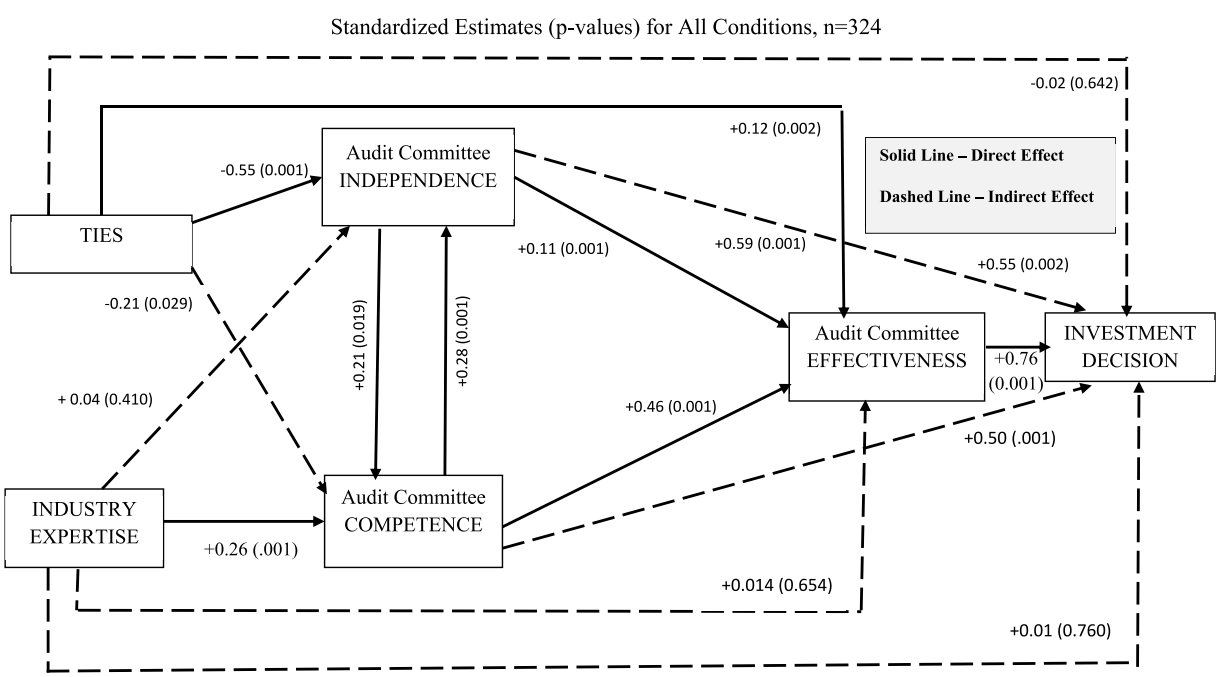

Fig. 1. Path Model.
The presence of TIES and INDUSTRY EXPERTISE are coded as a dummy variables (i.e., "1" if present, "0" otherwise). For each link, the standardized estimate of the total effect—direct plus indirect—(p-value of the link) is shown. Direct effects are represented by solid lines and indirect effects are represented by dashed lines. Overall goodness of fit measures include the Goodness of Fit (97.0%), the Comparative Fit Index (89.0%), the Normed-Fit Index (88.0%) and the Root Mean Square Error of Approximation (0.139).

levels: industry expertise mentioned or not mentioned. In the industry expertise mentioned (IND EXP) condition, participants are told that the audit committee chair and one other member of the audit committee (i.e., 2 of 3 members) have extensive industry experience serving on boards and audit committees of other public companies in the same industry. In the other condition (NO IND

EXP), no mention is made about the industry expertise of the audit committee members. In all conditions, the audit committee is comprised of three members, with the committee complying with current regulatory requirements.[12]

The order of the information on audit committee member independence and competence is held constant across conditions. Given limited participant time, this information is presented in summary form rather than the lengthy disclosures contained in proxy statements. Providing summary information about ties is consistent with prior experimental studies (e.g., Cohen et al., 2011; Rose et al., 2014).

3.2. Participants

Given the context of our study, it is important for participants to understand the role of the audit committee and have experience in making investment decisions. Further, we ask participants to make judgments requiring a high level of integrative knowledge (assess the independence and effectiveness of the audit committee and then make an investment decision). These tasks require prior investment experience and some knowledge of accounting and finance (Elliott, Hodge, Kennedy, & Pronk, 2007; Elliott, Jackson, Peecher, & White, 2014). We refer to such individuals as "reasonably informed investors". In contrast, sophisticated investors are professional investors such as analysts and broker/dealers who earn their living on investment decisions or advice. A third group are "naïve" investors, who are individuals with very limited or no investment experience and knowledge of accounting, finance, and financial statement analysis (Elliott et al., 2007). Naïve investors do not possess sufficient domain knowledge for the experimental tasks in the current study.[13]

Participants were 342 business professionals in the southeastern region of the United States. Institutional Review Board (IRB) exemption status was received at the university responsible for administration of the study. To obtain a sufficient number of participants for all of the experimental conditions it was necessary to enlist professionals at three settings: two continuing professional education conferences and one alumni-related business meeting.,[14][15] Our participants had extensive professional experience (94.1% reported having a professional certification, e.g., CPA, work experience averaging 15.9 years). Importantly, about two-thirds (66.9%) had significant personal investing experience with an average (s.d.) of 10.2 (11.2) years, with a minimum of 0 and maximum of 45 years. Of those participants who indicated "0" years of personal investing experience (n = 112), the average (s.d.) number of years of work experience was 12.6 (8.0) years, which implies that these participants most likely had, at a minimum, experience in choosing among retirement investment alternatives.[16] In all, our participants appear to have the requisite task knowledge to be deemed reasonably informed investors. Importantly, based on their knowledge of accounting and financial reporting, they have a better-than-average knowledge of the nuances of audit committee communications and responsibilities to be able to assess the effectiveness of the committee and to make integrative investment decisions.

3.3. Procedure

Conference data were collected at a two-day continuing professional education program that focused on current issues in professional accounting and did not address the topic examined in this study. Participants were instructed to complete the instrument (for one of the conditions with condition assignment randomized) during the day and return it to the conference organizers. They were further instructed to complete the instrument independently without consulting with others. Data at the business meeting were collected with similar procedures except that the instrument was completed at the conclusion of the business meeting.

Instrument packets also included a brief statement that their involvement entailed completion of a case that required a hypothetical investment decision. The information provided was in the following order: background information about the company; the industry; financial performance; the management team and management incentives; and the audit committee. The order of information was held constant across experimental conditions.

Background information informed them that the company operated in the competitive financial services industry. Excluding the past recession, the company was able to maintain steady growth. To emphasize the importance of audit committee member industry expertise, the background information indicated that this industry has specialized, unique accounting and regulatory requirements. Participants were also told that the management team was stable in recent years, had a good reputation, and faced similar incentives as others in the industry with compensation based on salary and performance metrics tied to earnings forecasts. Further, they were provided with current and prior year (unaudited) first quarter financial information that indicated a 17% increase in EPS from the prior year. Finally, they were told that the company had exceeded the consensus analyst EPS forecast for the quarter of $2.69 by a narrow margin, since the reported quarterly earnings was $2.70. This scenario was intended to create an environment that suggested incentives for management to report earnings that are sufficient to meet analysts' forecasts.

Participants were provided with information about the three members of the company's audit committee that varied according to the type of ties (either no ties, personal ties, or professional ties) two of the members had with the company's CEO; the third member had no ties to the CEO. To capture the effect of industry expertise, we either explicitly stated that the audit committee chair and another member of the audit committee had extensive

[12] For example, all audit committee members in the case are financially literate and do not have financial or business ties to the company, and one audit committee member is designated as a financial expert.

[13] In Experiment 2, we further explore the impact of personal ties on investors' judgments and decisions using executive MBA students and MBA students as participants. See Footnote 33 for a comparision of Experiment 1 and Experiment 2 results.

[14] With two exceptions, demographic data on participants did not statistically differ across experimental conditions or between the two conference settings at which data were gathered. Differences were noted between those attending the business meeting versus those at the CPE conferences in work experience (mean = 10.24 years versus 16.31, t = 3.58, d.f. = 35.62, p = 0.001) and investment experience (mean = 4.88 versus 10.66, t = 3.60, d.f. = 42.87, p = 0.001). When these variables are included as covariates in our models, only work experience is significant with respect to competence judgments. When we included administration setting as a covariate in the main AN(C)OVA models, it was insignificant. Thus, we only include work experience as a covariate in our ANCOVA in Table 3.

[15] Our mode of data collection resulted in unequal cell sizes. To compensate, all of our ANOVAs are calculated using the Type III Sum of Squares that has the "major advantage in that they are invariant with respect to the cell frequencies as long as the general form of estimability remains constant. Hence, this type of sums of squares is often considered useful for an unbalanced model with no missing cells" (IBM, 2021). In addition, all of our cell sizes are of sufficient size (i.e., >20). With respect to our t-tests, all p-values are reported assuming variances are unequal which corrects for problems with small samples.

[16] Elimination of those participants that indicated "0" investment experience does not alter support for our hypothesis with the exception of H3 regarding investment decisions, which becomes partially supported in the boundary conditions. More specifically, our p-value for the upper boundary condition declines to 0.201 from 0.001.

experience serving on the boards and audit committees of other public companies including two other companies in the same industry (i.e., in the financial services industry), or we omitted that statement. Finally, the case indicated that the audit committee met all regulatory requirements.

3.4. Dependent variables, manipulation checks, and demographic data

After reading the case facts, participants were asked, using the constructs from Source Credibility Theory of bias and competence, to assess the extent to which the audit committee: (1) was "truly independent (unbiased) of the company's CEO in ensuring the accuracy of financial reporting", and (2) "had the requisite competence (i.e., sufficient ability and knowledge) to ensure accurate financial reporting." These measures were collected on 11-point scales where the endpoints were labeled "0 - Not At All Independent (No Competence)" and "10 – Extremely Independent (Very High Competence)". Participants were then asked to assess how effective the audit committee will be in ensuring the accuracy of financial reporting as well as the credibility of the financial reports. These measures were collected on 11-point scales whereby the endpoints were labeled "0 – Not At All Effective (No Credibility)" and "10 – Extremely Effective (Very High Credibility)". Because the assessments of independence, competence, effectiveness, and credibility are highly correlated (Pearson correlation = 0.747, $p < 0.001$, Cronbach's alpha = 0.876) and load onto one construct (eigenvalues ranging from 0.738 to 0.895), in testing H2 and H3 we combine (average) the four assessments into one measure of "overall audit committee (AC) effectiveness."

The final two questions in this section of the instrument asked the participants to indicate how likely it is that they would consider the company as a potential investment and how attractive the company is as an investment. Responses were collected on 11-point scales whereby the endpoints were labeled "0 – Not At All Likely (Not At All Attractive)" and "10 – Extremely Likely (Extremely Attractive)". Since these two measures were intended to capture the same underlying construct, they are highly correlated (Pearson correlation = 0.875, $p < 0.001$, Cronbach's alpha = 0.935). Factor analysis confirms that they load on one construct (eigenvalue 0.931), and hence we combined (averaged) them into a single variable ("investment decision").

Participants were then asked to place this portion of the instrument in an envelope provided to them and were instructed not to change any of their original responses. They then proceeded to the final set of questions, where we gathered manipulation checks and demographic data.

4. Experiment 1 results

4.1. Manipulation checks

To ensure participants accurately understood our ties manipulations as intended, participants were asked if they were told that the CEO had personal ties or professional ties with members of the audit committee. We found that overall, 95% of participants responded correctly with respect to their condition, with no statistical difference in the percentage of those who answered correctly across conditions ($F = 1.01$, $p = 0.366$). With respect to industry expertise, we asked participants to indicate on an 11-point scale audit committee "knowledge of the business and the industry" (endpoints were labeled "0 –No Knowledge" and "10 –Very High Knowledge."). We found that those in the NO IND EXP conditions perceived the audit committee was less knowledgeable (mean 5.11, s.d. 1.98) than those in the IND EXP conditions (mean 7.51, s.d. 1.61, $t = 12.26$, d.f. = 318.89, $p < 0.001$), indicating that our expertise manipulation was successful. Although the results do not qualitatively change using the full sample, to be conservative we exclude those participants who failed the ties manipulation check in our tests of the hypotheses.[17] Our final sample includes 324 participants.

Table 2
Experiment 1 – Descriptive Statistics.
Mean (Standard Deviation) of Independence, Competence, Effectiveness Scores and Investment Decision (n = 324)[a,b,c,d].

		NO TIES	PROF TIES	PERS TIES
Independence	NO IND EXP	7.91 (1.68) N = 78	5.71 (2.37) N = 28	3.92 (2.44) N = 91
	IND EXP	8.21 (1.57) N = 28	5.19 (2.37) N = 78	4.95 (2.20) N = 21
Competence	NO IND EXP	6.97 (1.93)	6.29 (2.48)	6.14 (2.40)
	IND EXP	7.68 (1.74)	7.74 (1.54)	7.33 (2.13)
Effectiveness	NO IND EXP	6.81 (1.79)	6.07 (2.27)	5.21 (2.12)
	IND EXP	7.50 (1.63)	6.57 (1.89)	5.98 (2.02)
Overall AC Effectiveness	NO IND EXP	7.13 (1.62)	6.04 (2.09)	5.12 (2.00)
	IND EXP	7.72 (1.55)	6.52 (1.70)	6.06 (1.80)
Investment Decision	NO IND EXP	6.05 (1.81)	5.75 (2.55)	4.48 (2.48)
	IND EXP	6.50 (1.67)	5.72 (2.09)	5.67 (2.26)

[a] Independence (Competence) response is on an 11-point scale with endpoints labeled "0 – Not at All Independent (No Competence)".
[b] Effectiveness is the average of two variables: Audit Committee Effectiveness and Financial Reporting Credibility. Responses are on 11-point scales whereby the endpoints were labeled "0 – Not At All Effective/Credible" and "10 – Extremely Effective/Credible".
[c] Overall AC Effectiveness is the average of four variables: Independence, Competence, Audit Committee Effectiveness and Financial Reporting Credibility.
[d] Investment Decision is the average of two variables: Investment Likelihood and Investment Attractiveness. Responses are on 11-point scales whereby the endpoints were labeled "0 – Not At All Likely (Attractive)" and "10 – Extremely Likely (Attractive)".

4.2. Test of hypotheses

Table 2 provides the descriptive statistics for participants' assessments of audit committee independence, competence, effectiveness and credibility as well as the combined variables for overall AC effectiveness and investment decision for each experimental condition. H1 predicts that investors will assess audit committees with members who have personal ties to the CEO to be less independent than audit committees with members who have professional ties to the CEO. In Panel B of Table 3, we compare the independence assessments for the PERS TIES (mean 4.12, s.d. 2.42) to the PROF TIES conditions (mean 5.33, s.d. 2.37) and find them to be significantly different in the expected direction ($t = -3.74$, d.f. = 215.8, $p < 0.001$). Thus, H1 is supported.[18]

H2 predicts that investors will assess audit committee members with industry expertise as more competent than those without industry expertise. As reported in Panel C, across TIES conditions, we find the mean competence score for those with industry expertise (mean 7.67, s.d. 1.69) is significantly greater ($t = 5.32$, d.f. 315.11, $p < 0.001$) than those without industry expertise (mean 6.49, s.d. 2.26). These results are also robust within each TIES condition as the competence scores within the NO TIES ($t = 1.78$, d.f. 52.51, $p = 0.041$), the PROF TIES ($t = 2.92$, d.f. 34.79, $p = 0.003$),

[17] Three participants were eliminated due to missing data. Inclusion of those participants failing the manipulation check provides support for all hypotheses at conventional levels ($p = 0.05$). See the tables in the supplemental online materials for results using the full sample using the 339 participants with complete data.

[18] Although not hypothesized, Panel B also reports the results of comparing NO TIES to PROF TIES ($p < 0.001$, two-tailed) and NO TIES to PERS TIES ($p < 0.001$).

Table 3
Experiment 1- Tests of Hypotheses 1 through 5.

Panel A: Results of Two-Way ANOVA and Independent T-tests Examining the Effect of Ties and Industry Expertise on Overall Audit Committee Effectiveness

Source	SS	Df	MS	F-statistic	p-value
Ties	142.46	1	142.46	43.37	0.000
Industry Expertise	42.29	1	42.29	12.88	0.000
Ties x Industry Expertise	3.54	1	3.54	1.08	0.300
Error	1051.15	320	3.29		

Panel B: Results of Independent T-tests on Independence (H1)

Planned Comparisons	Hypothesis	*t*-test	*p*-value[a]
PROF TIES > PERS TIES (5.33 v 4.12)	H1	3.74	0.001
Post Hoc Comparisons			
NO TIES v PROF TIES (8.00 v 5.33)	n/a	9.48	0.001
NO TIES v PERS TIES (8.00 v 4.12)	n/a	13.86	0.001

Panel C: Results of Independent T-tests on Competence (H2)

Planned Comparisons	**Hypothesis**	***t*-test**	***p*-value[a]**
OVERALL: IND EXP > NO IND EXP (7.67 v 6.49)	H2	5.32	0.001
NO TIES: IND EXP > NO IND EXP (7.68 v 6.97)	H2	1.78	0.041
PROF TIES: IND EXP > NO IND EXP (7.74 v 6.29)	H2	2.92	0.003
PERS TIES: IND EXP > NO IND EXP (7.74 v 6.29)	H2	2.25	0.016

Panel D: Results of Planned Contrasts on Overall Audit Committee Effectiveness (H3)

Planned Contrasts – Effectiveness	Hypothesis	Weights	*t*-test	*p*-value[a]
NO TIES–IND EXP > NO TIES-NO IND EXP/PROF TIES-IND EXP/PROF TIES-NO IND EXP/PERS TIES-IND EXP	H3 Upper Boundary	+4, −1, −1, −1, −1	3.89	0.001
PERS TIES–NO IND EXP < NO TIES-NO IND EXP/PROF TIES-IND EXP/PROF TIES-NO IND EXP/PERS TIES-IND EXP	H3 Lower Boundary	−4, +1, +1, +1,+1	5.05	0.001

Results of Independent T-tests (p-values) Comparing Boundary Condition to Other Conditions for Effectiveness

Boundary Condition	**Test**	**NO TIES-NO IND EXP**	**PROF TIES-NO IND EXP**	**PROF TIES-IND EXP**	**PERS TIES-IND EXP**
NO TIES-IND EXP	>	1.71 (0.048)	3.44 (0.001)	3.45 (0.001)	3.18 (0.002)
PERS TIES-NO IND EXP	<	7.26 (0.001)	1.92 (0.031)	4.95 (0.001)	2.23 (0.016)

Panel E: Results of Two-Way ANCOVA and Independent T-tests examining the Effect of Ties and Industry Expertise on Investment Decisions (H4)

Source	SS	Df	MS	F-statistic	p-value
Ties	5.22	1	5.22	2.29	0.132
Industry Expertise	0.12	1	0.12	0.05	0.820
Ties x Industry Expertise	0.05	1	0.05	0.02	0.887
Overall AC Effectiveness	800.65	1	800.65	350.59	0.000
Error	728.50	319	2.28		

Planned Contrasts – Investment Decision	Hypothesis	Contrast Weights	*t*-test	*p*-value[a]
NO TIES–IND EXP > NO TIES-NO IND EXP/PROF TIES-IND EXP/PROF TIES-NO IND EXP/PERS TIES-IND EXP	H4 Upper Boundary	+4, −1, −1, −1, −1	1.91	0.031
PERS TIES–NO IND EXP < NO TIES-NO IND EXP/PROF TIES-IND EXP/PROF TIES-NO IND EXP/PERS TIES-IND EXP	H4 Lower Boundary	−4, +1, +1, +1,+1	4.10	0.001

Results of Independent *t*-test (p-values) Comparing Boundary Condition to Other Conditions for Investment Decision

Boundary Condition	Test	NO TIES-NO IND EXP	PROF TIES-NO IND EXP	PROF TIES-IND EXP	PERS TIES-IND EXP
NO TIES-IND EXP	>	1.71 (0.125)	1.30 (0.100)	2.12 (0.019)	1.43 (0.081)
PERS TIES-NO IND EXP	<	4.61 (0.001)	2.15 (0.019)	3.17 (0.001)	1.97 (0.026)

Panel F: Results of Contrast Tests on Audit Committee Effectiveness and Investment Decisions (H5)

Planned Contrasts – Effectiveness/Investment Decision	Hypothesis	Contrast Weights	*t*-test	*p*-value[a]
PERS TIES-IND EXP – NO TIES-IND EXP < PERS TIES-NO IND EXP – NO TIES-NO IND EXP	H5 Effectiveness	−1, +2, −2, +1	5.40	0.001
PERS TIES-IND EXP – NO TIES-IND EXP < PERS TIES-NO IND EXP – NO TIES-NO IND EXP	H5 Investment Decision	−1, +2, −2, +1	3.25	0.001

[a] All p-values for planned (post hoc) tests are one-tailed (two-tailed).

and PERS TIES (t = 2.25, d.f. 32.79, p = 0.016) also support H2.

Panel A of Table 3 reports the results of a two-way ANOVA with ties and industry expertise as our independent variables and overall AC effectiveness as our dependent variable. H3 predicts that investors will assess the overall effectiveness of the audit committees to be the highest (lowest) when members have no ties and industry expertise (personal ties and no industry expertise). To test this hypothesis, we first examine the upper boundary condition by comparing the NO TIES-IND EXP condition to all other conditions (except the PERS TIES-NO IND EXP condition where we expect the lowest effectiveness score) using contrast tests (weights +4, −1, −1, −1, −1).[19] We then examine the lower boundary condition in which we compare the PERS TIES-NO IND EXP condition to all other conditions (except the NO TIES-IND EXP condition where we expect the highest overall effectiveness score) using contrast tests (weights −4, +1, +1, +1, +1).

Following Guggenmos, Piercey, and Agoglia (2018), we first visually note that the means associated with the contrast coding fit the predicted pattern.[20] Second, as reported in Table 3, Panel D we evaluate the statistical significance of the contrast and find that it is significant for the upper boundary (t = 3.89, d.f. = 42.79, p < 0.001) and the lower boundary (t = 5.05, d.f. = 154.26, p < 0.001). Finally, we evaluate the significance of the residual between-cells variance and find that it is significant (F = 3.091, d.f. = 4, p = 0.017) in violation of the contrast tests.[21] Thus, we also perform independent t-tests on the boundary cells to examine, for each cell, whether the upper (lower) boundary cell is in fact greater (smaller) than all other individual cells. We find that the mean overall effectiveness for the NO TIES-IND EXP (PERS TIES-NO IND EXP) condition is greater (smaller) than each of the other conditions. In all, H3 is supported.

In line with H3 above, H4 predicts that investors will be the most (least) likely to invest when members have no ties and industry expertise (personal ties and no expertise). To test this hypothesis, we first consider the upper boundary condition by comparing the NO TIES-IND EXP condition to all other conditions (except the PERS TIES-NO IND EXP condition where we expect the least favorable investment decision) using contrast tests (weights +4, −1, −1, −1, −1). Second, we examine the lower boundary condition in which we compare the PERS TIES-NO IND EXP condition to all other conditions (except the NO TIES-IND EXP condition where we expect the highest investment decision) using contrast tests derived from our expectations (weights −4, +1, +1, +1, +1). We note that the data visually fits the predicted pattern. Next we find as reported in Table 3, Panel E, that the mean investment decision for the NO TIES-IND EXP (mean 6.50, s.d. 1.67) is significantly greater than the mean investment decision of the other (NO TIES-NO IND EXP, PROF TIES-NO IND EXP, PROF TIES-IND EXP, PERS TIES-IND EXP) conditions (mean 5.85, s.d. 2.09, untabulated, t = 1.91, d.f. = 47.33, p = 0.031). Further, we find that the mean investment decision score for the PERS TIES-NO IND EXP (mean 4.48, s.d. 2.48) is significantly lower than the mean investment scores of the other (NO TIES-NO IND EXP, PROF TIES-NO IND EXP, PROF TIES-IND EXP, PERS TIES-IND EXP) conditions (mean 5.85, s.d. 2.09, untabulated, t = 4.10, d.f. = 152.07, p < 0.001).[22] We then evaluate the significance of the residual between-cells variance and find that it is not significant (F = 0.554, d.f. = 3, p = 0.646).[23] Finally, we perform independent t-tests comparing the boundary condition with each of the other conditions. We find that the mean for the PERS TIES-NO IND EXP is significantly smaller than the mean for each of the other conditions. However, we find that the NO TIES-IND EXP, while on average is greater than the other conditions, is not individually greater at conventional levels than the NO TIES-NO IND EXP condition (p = 0.125) nor the PROF TIES-NO IND EXP condition (p = 0.100) and is marginally greater than the PERS TIES-IND EXP condition (p = 0.081). One possible explanation for this finding is that investors may not be overly concerned about audit committee members' competence, unless there are "red flags" that lead them to question it some way (e.g., personal ties). This presumption of competence may be driven by regulatory requirements (e.g., AC must be independent and have financial expertise), as well as the nomination/recruitment process that is intended to identify only well-qualified individuals to serve on the board and audit committees of public companies. Overall, we find general support for H4.

4.3. Extension of Source Credibility Theory: Effects of independence conditional on levels of competence

As discussed, it is unclear from Source Credibility Theory which factor, independence or competence, will dominate investors' judgments. However, as discussed, industry expertise likely conveys legitimacy and justification for the appointment of an audit committee member with ties.[24] Thus, H5 predicts the negative effects of personal ties on assessments of audit committee effectiveness and investment decisions will be less pronounced when audit committee members have industry expertise than when they do not have industry expertise. To test this hypothesis, we examine the difference between the PERS TIES-IND EXP and NO TIES-IND EXP conditions (i.e., PERS TIES-IND EXP minus NO TIES-IND EXP, mean −1.55) to the difference between PERS TIES-NO IND EXP and NO TIES-NO IND EXP conditions (i.e., PERS -TIES-NO IND EXP minus NO TIES-NO IND EXP, mean −1.95). To examine this "difference in differences" measure we use a contrast test.[25] In accordance with Guggenmos et al. (2018), we visually observe the expected pattern and find as reported in Table 3, Panel F that the difference between the IND EXP conditions (PERS TIES − NO TIES) is statistically less

[19] We exclude the personal ties/no industry expertise condition in the contrast tests since we expected this condition to generate the lowest assessments by investors. In other words, our exclusion of personal ties/no industry expertise condition is motivated by performing a contrast that is more conservative, and one that is more likely to bias against finding the hypothesized results. We excluded no ties/industry expertise for analogous reasons. As a robustness check, we also conducted contrast tests by including the personal ties/no industry expertise and no ties/industry expertise conditions, and consistent with our expectations, the results were indeed stronger for both the lower bound condition (t = 6.30, d.f. 167.78, p < 0.001) and the upper bound condition (t = 6.80, d.f. 335, p < 0.001) than when these conditions were excluded.

[20] We have included graphs demonstrating visual fit in the supplemental online materials.

[21] The contrast variance residual, q^2, is 66.63% for the upper boundary and 68.18% for the lower boundary. Note that this metric does not hinge on statistical significance and is not affected by sample size (Guggenmos et al., 2018).

[22] As a robustness check, we also conducted contrast tests by including the personal ties/no industry expertise and no ties/industry expertise conditions, and consistent with our expectation, the results were indeed stronger (t = 5.13, d.f. = 158.05 p < 0.001) than when these conditions were excluded.

[23] The contrast variance residual, q^2, is 82.43% for the upper boundary and 38.53% for the lower boundary.

[24] Consistent with H5, the presence of personal ties can influence assessments of competence as well as assessments of independence and that the presence of industry expertise can also impact assessments of independence as well as competence. For example, when personal ties exist, we find that industry expertise positively influences (t = 1.730, d.f., = 118, p = 0.071, two-tailed) assessments of independence. We do not see a similar result when professional ties exist. One potential explanation is that professional ties are viewed by investors as relationships that occur more organically in the business world, and hence may be viewed as having a lower level of threat to independence compared with personal ties. While we explore and test these relationships in our path model, we do not have direct evidence of the causes that may be driving the differential effects of industry expertise on personal vs. professional ties. Future research is needed to explore this issue in greater depth.

[25] The contrast weights used were +2 (NO TIES-IND EXP), +1 (NO TIES-NO IND EXP), −1 (PERS TIES-IND EXP), −2 (PERS TIES-NO IND EXP).

than the difference between the respective NO IND EXP conditions ($t = 5.40$, d.f. $= 142.10$, $p < 0.001$, one-tailed). For the level of investment, we also find that this measure is statistically significant ($t = 3.25$, d.f. 137.05, $p < 0.001$, one-tailed) such that the IND-EXP difference (mean 1.67) is less than that of the NO IND EXP difference (mean 3.14).[26] [27] Collectively, the findings support H5.

Support for H5 indicates that the negative effects of personal ties are muted when the audit committee members have industry expertise versus when there is no industry expertise. This result is consistent with investors perceiving the appointment of the members was due to industry expertise (competence) and not just because they have personal ties with the CEO.

4.4. Path model findings

To further explore Source Credibility Theory, Fig. 1 shows the results of our path model that includes independence and competence (Goodness of Fit = 97.0%, Comparative Fit Index = 89.0%, the Normed-Fit Index = 88.0%, Root Mean Square Error of Approximation = 0.139).[28] We use the path model to consider the indirect and direct relationships among the exogenous and endogenous variables for our final sample where we include all six experimental conditions.[29] We posit that the presence of TIES directly (negatively) affects assessments of audit committee independence, which in turn (positively) affects assessments of audit committee effectiveness. Further, we posit that audit committee IND EXP affects (positively) assessments of audit competence, which in turn influences (positively) assessments of audit committee effectiveness.

As indicated in the path model findings, we find a negative direct effect of ties on independence (standardized estimates (s.e.) $= -0.55$, $p = 0.001$). Further, we find a positive direct effect of industry expertise on competence (s.e. = 0.26, $p = 0.001$) and positive direct effects of independence (s.e. = 0.11, $p = 0.001$) and competence (s.e. 0.46, $p = 0.001$) on audit committee effectiveness. We also find a direct positive effect of audit committee effectiveness on the investment decision (s.e. 0.75, $p = 0.001$). Interestingly, we also find that competence and independence perceptions directly (positively) affect each other, providing corroborating evidence supporting H5. This finding is particularly interesting given that Source Credibility Theory only speaks to the joint effect of these perceptions on source credibility but not to how the two may influence each other. As discussed previously, we contribute to the understanding of the theory and we extend the theory by explicitly considering the interactions between source bias and source competence.[30]

5. Experiment 2: Extension of Source Credibility Theory

As previously noted, Source Credibility Theory treats independence and competence as orthogonal factors for the determination of source credibility. However, Experiment 1 indicates investors have serious concerns about audit committee independence when personal ties are present between members of the audit committee and the CEO, but these concerns are attenuated when competence, as reflected by industry expertise, is present.

In Experiment 2 we further examine personal ties as the nature of such ties may vary considerably. For instance, a personal tie may be between two close personal friends (e.g., a friendship tie) or alternatively go beyond to include many people such as membership in college or community organizations that tend to gather people of strong intellectual capacity and have a commitment to a higher purpose (e.g., an advisory tie). With a friendship tie, the level of fidelity and allegiance to the CEO is likely to be perceived by investors as a threat to an audit committee member's independence and have a resulting negative effect on oversight, while an advisory tie can provide a common foundation with a neutral or even a positive effect on oversight (e.g., good rapport, working together toward a constructive, positive goal). This distinction is consistent with Bruynseels and Cardinaels (2014), who found a negative association between friendship ties and financial reporting quality, but such a negative association was not present or was muted with advisory ties.

An appointment of an audit committee member with friendship ties can be viewed by investors as solely based on the CEO's demand for allegiance and loyalty, while for advisory ties, investors may be open to entertaining the possibility that the appointment was made for legitimate, professional reasons. When investors are weighing such a possibility, the positive impact of competence can attenuate the potential negative impact of independence concerns from advisory ties (similar to H5 and the related findings in Experiment 1). On the other hand, friendship ties are expected to create such a strong independence concern that competence is unlikely to attenuate this concern due to the allegiance and affiliation of close friends. These expectations are reflected in our final hypothesis.

H6. The negative effects of ***advisory*** (***friendship***) personal ties on assessments of audit committee effectiveness and investment decisions will be attenuated (not attenuated) when audit committee members have industry expertise than when they do not have industry expertise.

5.1. Design

Using a 2 x 2 + 1 between-participants experiment, we examine the impact of different types of personal ties and industry experience on investors' judgments and decisions. Personal ties are manipulated similar to Experiment 1, except that two audit committee members are either (1) "close personal friends" with the CEO or (2) active members of an alumni association "raising money for the university" along with the CEO. The former condition is referred to as FRIENDSHIP ties, while the latter is referred to as ADVISORY ties since the association is linked to participation in an

[26] The overall effectiveness and investment decision contrast variance residuals, q^2, are 24.39% and 53.87%, respectively.

[27] To further explore the importance of industry expertise in the presence of personal ties, we compare (untabulated) the assessments made in the PERS TIES-IND EXP condition to that of the PERS TIES-NO IND EXP condition to see if industry expertise can bolster perceived overall effectiveness and likelihood to invest even when personal ties are present. We find that both overall effectiveness ($t = 2.23$, d.f. $= 33.18$, $p = 0.016$) and the likelihood to invest ($t = 1.97$, d.f. $= 31.23$, $p = 0.029$) are significantly higher for the PERS TIES- IND EXP condition than for the PERS TIES-No IND EXP condition. These results reinforce the finding that industry expertise reduces some of the perceived concerns associated with personal ties. Of note, investment judgments are not statistically different when comparing the NO TIES-NO IND EXP to the PERS TIES-IND EXP condition, suggesting they are viewed as essentially equivalent ($t = 0.74$, d.f. 27.11, $p = 0.463$, two-tailed).

[28] While no specific cut-offs exist regarding what is a "good fit", Parry (2019) provides the following criteria: Goodness of Fit $\geq$0.95%, Comparative Fit Index $\geq$90%, the Normed-Fit Index $\geq$95%, Root Mean Square Error of Approximation $\leq$0.08.

[29] To calculate the effects, 2000 bootstrap samples were performed with bias-corrected confidence intervals set at 95%. All p-values are two-tailed.

[30] A path model with the four dependent measures of independence, competence, effectiveness, and credibility collapsed into one variable "overall audit committee effectiveness" (Goodness of Fit = 98.3%, Comparative Fit Index = 93.2%, the Normed-Fit Index = 92.9%, Root Mean Square Error of Approximation = 0.175) that shows a direct negative relationship between ties and audit committee overall effectiveness (s.e. -0.27, $p = 0.001$), a direct positive relationship between industry expertise and effectiveness (s.e., $+0.17$, $p = 0.001$), and a direct positive relationship between effectiveness and investment decision (s.e. + 0.75, $p = 0.001$).

alumni association whose purpose is to provide advice and support in fund-raising. Industry expertise is manipulated (IND EXP/NO IND EXP) in the same manner as in Experiment 1. The fifth condition is identical to the NO TIES-NO IND EXP condition in Experiment 1 and serves as a baseline.

5.2. Participants

We solicited 168 MBAs and EMBAs as proxies for "reasonably informed investors". On average, our participants had 2.8 years of work experience, had taken 5.5 accounting courses, had performed financial statement analysis 17.3 times, and had invested 26.4 times.[31][32] Participants were offered extra credit by their instructor to participate in the experiment and completed the instrument online.

5.3. Dependent variables, manipulation checks, and demographic data

The dependent variables were the same as in Experiment 1 and were collected in the same manner. Thus, we collected assessments of audit committee independence, competence, and effectiveness and asked about an investment decision.[33] Participants were also asked manipulation check questions and demographic questions including those related to experience with investing activities, financial statement analysis, and accounting coursework.

5.4. Manipulation checks

To evaluate our personal ties manipulation, participants in the two ties conditions were asked whether they were told that the CEO had stayed in contact with the two audit committee members as "active members of the university alumni association" (ADVISORY ties) or as "close personal friends" (FRIENDSHIP ties). We find that 91% in the ADVISORY ties condition correctly responded to the question but only 65% of those in the FRIENDSHIP ties responded correctly. Since we are unable to determine what caused the significant difference in correct responses across ties conditions ($F = 14.03$, $p < 0.001$), we eliminate all participants that did not pass the ties manipulation check.[34] With respect to industry expertise, based on responses on a 11-point Likert scale, we found that those in the NO IND EXP conditions assessed the audit committee as less knowledgeable (mean 7.26) than those in the IND EXP conditions (mean 8.29, $F = 7.40$, $p = 0.007$), indicating that our industry expertise manipulation was successful. Although the results do not qualitatively change using the full sample,[35] to be conservative we exclude those participants who failed the ties manipulation check in our tests of the hypotheses. Our final sample includes 138 participants.

5.5. Descriptives and planned tests

Panel A of Table 4 reports descriptive statistics for the five experimental conditions. To see if our H1 results replicate, we re-examine whether personal ties negatively impact independence assessments. Comparing the independence assessments of those in the NO TIES condition (mean = 8.22) to the average of the independence perceptions in both the ADVISORY ties and FRIENDSHIP ties groups (mean = 5.12, s.d. 2.35), we find once again support for H1 ($t = 8.07$, d.f. 78.10, $p < 0.001$, untabulated). We also compare the overall independence score for ADVISORY ties (mean = 5.16, s.d. 2.32) to FRIENDSHIP ties (mean = 5.07, s.d. 2.42) and find that they are not significantly different ($t = 0.19$, d.f. 92.77, $p = 0.848$, two-tailed). Thus, consistent with Experiment 1, personal ties are associated with reduced assessments of independence; the type of personal tie did not differentially impact independence perceptions. Also consistent with Experiment 1, we find support for H2 (untabulated) in that assessments of competence for those with industry expertise (mean = 8.52, s.d. 2.14) were significantly greater ($t = 2.62$, d.f. 92.35, $p = 0.010$, two tailed) than for those without industry expertise (mean = 7.50, s.d. 2.20). Also in support of H2, we find that these results are robust for ADVISORY ties ($t = 2.31$, d.f. 54.26, $p = 0.025$, two-tailed); however, interestingly, we find that for FRIENDSHIP ties, competence perceptions are not different ($t = 0.05$, d.f. 42.99, $p = 0.956$, two-tailed) for those with industry expertise versus those without industry expertise (8.17 versus 8.14). The lack of recognition of greater expertise may be because investors are unconvinced that appointment of an audit committee member with friendship ties is the result of a desire to bring on board someone who will apply this expertise to monitor management's financial reporting.

Panel B reports the results of a two-way ANCOVA for investment decisions with overall effectiveness as a covariate, indicating a significant main effect for both type of personal tie ($F = 3.05$, $p = 0.051$) and industry expertise ($F = 3.97$, $p = 0.048$). In Panel C, we find that the means for effectiveness ($t = 0.20$, d.f. 45.23, $p = 0.845$) and investment ($t = 1.33$, df 49.37, $p = 0.095$) do not differ significantly between the two personal ties conditions in the NO IND EXP conditions. In the presence of IND EXP, we find that while the means for effectiveness ($t = 1.21$, df 40.68, $p = 0.117$) are not significantly different, the means for investment are significantly greater for ADVISORY ties than for FRIENDSHIP ties ($t = 1.85$, df 42.26, $p = 0.036$). Thus, investors do not differentiate between types of personal ties when audit committee members do not also have industry expertise, yet investors do differentiate in their investment decisions when industry expertise is present.

Further, as reported in Panel C, we find that when comparing within the ADVISORY ties conditions (and across the industry expertise conditions) (i.e., row means), the means in the IND EXP condition for both effectiveness (mean = 7.18) and investment (mean = 6.91) are significantly greater than their respective means in the NO IND EXP conditions (effectiveness: mean = 6.28, $t = 1.95$, d.f. 54.25, $p = 0.028$); investment: mean = 5.72, $t = 2.09$, d.f. 54.60, $p = 0.021$). However, for FRIENDSHIP ties, the means for effectiveness and investment decision do not differ across the IND EXP conditions (effectiveness: $t = 0.26$, d.f., $p = 0.400$; investment: $t = 1.40$, d.f. 42.99, $p = 0.084$). Collectively, these findings suggests a more nuanced effect for industry expertise when different types of personal ties are present.

The purpose of H6 is to extend the results of H5 in Experiment 1 where we find that a negative effect of independence can be attenuated by the positive impact of competence. Specifically, we

[31] None of the demographics differed statistically across conditions.

[32] Because the NO TIES-NO IND EXP condition is identical across experiments, we compare the means for our main dependent variables from Experiment 1 using business professionals to those in Experiment 2 using (E)MBAs. We find no significant differences for perceptions of independence ($p = 0.631$), competence ($p = 0.555$) and investment decision ($p = 0.140$). However, the mean response for overall effectiveness was significantly higher for our Experiment 2 participants than our Experiment 1 participants ($p = 0.018$). Based on these findings, we posit that the assessments of the business professionals and of the (E)MBA students are consistent with each other.

[33] As in Experiment 1, audit committee effectiveness and financial statement credibility were averaged into one measure of effectiveness (Cronbach's alpha = 0.847) and investment likelihood and investment attractiveness were summed to one measure of the investment decision (Cronbach's alpha = 0.911).

[34] In Experiment 1, our pass rate was 95% across all conditions. We believe that the difference in manipulation response rates across experiments might be due to the more subtle differences in the personal ties manipulations in Experiment 2.

[35] See supplemental online materials for the tables replicated with the full sample.

Table 4
Experiment 2 results (n = 138).
Panel A: Mean (Standard Deviation) of Independence, Competence, Effectiveness Scores and Investment Decision.[a].

PERSONAL TIES		NO TIES	ADVISORY	FRIENDSHIP
Independence	NO IND EXP	8.22 (1.84)	5.00 (2.41)	4.91 (2.39)
		N = 36	N = 34	N = 22
	IND EXP		5.39 (2.21)	5.22 (2.49)
			N = 23	N = 23
Competence	NO IND EXP	7.06 (1.85)	7.56 (2.44)	8.14 (2.25)
	IND EXP		8.87 (1.84)	8.17 (2.39)
Effectiveness	NO IND EXP	7.76 (1.65)	6.28 (2.24)	6.25 (2.19)
	IND EXP		7.24 (1.78)	6.39 (2.11)
Overall AC Effectiveness	NO IND EXP	7.70 (1.45)	6.28 (2.00)	6.39 (1.98)
	IND EXP		7.18 (1.45)	6.54 (2.05)
Investment Decision	NO IND EXP	6.69 (1.76)	5.72 (2.49)	4.89 (2.16)
	IND EXP		6.91 (1.82)	5.80 (2.23)

Panel B: Results of Two-Way ANCOVA examining the Effects of Personal Tie Type and Industry Expertise on Investment Decisions

Source	SS	Df	MS	F-statistic	*p*-value[b]
Personal Tie Type	15.66	2	7.83	3.05	0.051
Industry Expertise	10.18	1	10.18	3.97	0.048
Tie x Industry Expertise	.06	1	0.06	0.22	0.643
Overall AC Effectiveness	254.41	1	254.41	399.21	0.000
Error	338.49	132	2.56		

Panel C: Means and Results of Comparisons of No Ties to Advisory Ties and No Ties to Friendship Ties on Effectiveness and Investment Decisions (H6)

		No Ties vs. Advisory Ties	No Ties vs. Friendship Ties
		t-test (*p*-value[c])	*t*-test (*p*-value[b])
Overall AC Effectiveness	NO IND EXP	3.39 (0.001)	2.70 (0.001)
	IND EXP	1.82 (0.038)	2.36 (0.024)
Investment Decision	NO IND EXP	1.89 (0.033)	3.31 (0.002)
	IND EXP	0.33 (0.372)	1.62 (0.114)

Panel D: Means and Results of Comparisons of Advisory Ties to Friendship Ties on Effectiveness and Investment Decisions (H6)

		Advisory	Friendship	Column *t*-test (p-value)[c]
Overall AC Effectiveness	NO IND EXP	6.28	6.39	0.20 (0.423)
	IND EXP	7.18	6.54	1.21 (0.117)
Row *t*-test (p-value) [c]		1.95 (0.028)	0.26 (0.400)	
Investment Decision	NO IND EXP	5.72	4.89	1.33 (0.095)
	IND EXP	6.91	5.81	1.85 (0.036)
Row *t*-test (p-value) [c]		2.09 (0.021)	1.40 (0.084)	

[a] See Table 2 for descriptions as to how the variables were collected and measured.
[b] P-values are two-tailed.
[c] P-values are one-tailed.

posit that for ADVISORY (FRIENDSHIP) ties, we would see (not see) effectiveness and investment decisions more in line with NO TIES when the audit committee has industry expertise.[36] Panel C compares the means for effectiveness and investment decisions for the NO TIES condition to each of the two personal ties conditions. We find the respective means for the NO TIES conditions (overall effectiveness 7.70, investment 6.69) are significantly greater than the ADVISORY TIES means in the absence of industry experience (effectiveness: mean 6.28, $t = 3.39$, d.f. 60.03, $p < 0.001$; investment: mean 5.72, $t = 1.88$, d.f. 59.09, $p = 0.033$); however, they are not when IND EXP exists (effectiveness: $t = 1.27$, d.f. 46.70, $p = 0.105$; investment: $t = 0.30$, d.f. 43.10, $p = 0.381$). For FRIENDSHIP ties, we find that the means for effectiveness and investment in the NO TIES are greater for all conditions, except for investment when IND EXP exists (investment: $t = 1.62$, d.f. 39.00, $p = 0.114$) conditions. In all, H6 is supported.

Collectively, the findings of the Experiment 2 suggest that reasonably informed investors recognize variations in the nature of personal ties and that industry expertise attenuates the influence of advisory ties but not close friendship ties. These results extend Source Credibility Theory in demonstrating that source competence and source bias are not independent but rather can be compensating.

6. Discussion and conclusions

Drawing on Source Credibility Theory, we employ an experiment to investigate how disclosure of ties (personal, professional and no ties) between audit committee members and the CEO and industry expertise (mentioned, not mentioned) of audit committee members affect reasonably informed investors' assessments of the independence, competence, and effectiveness of the audit committee as well as their investment decisions. The results indicate that on average the negative effects of personal ties on assessments of independence is greater than professional ties. Industry expertise also enhances assessments of audit committee competence. Further, audit committees with no ties and with industry expertise (personal ties and no industry expertise) are viewed by investors as

[36] As described, we modify our testing of H6 since in Experiment 2 our focus is on different types of personal ties and we do not have a complete factorial design (i.e., we do not have a NO TIES-IND EXP condition).

the most (least) effective, and subsequently led to the highest (lowest) assessments of audit committee effectiveness and investment decisions.

Moreover, our study advances and extends our understanding of Source Credibility Theory by positing circumstances where there are trade-offs between independence and competence. We find that the substantial concerns about independence stemming from personal ties are attenuated when audit committee members have industry expertise. This finding is consistent with the notion that when audit committee members with personal ties are appointed with industry expertise, investors view their competence as the primary reason for appointment. Thus, the audit committee member is viewed as "bringing something to the table" and personal ties are not considered as detrimental as when members appear to be appointed solely for their personal ties with management (Beasley et al., 2009). Our path model findings also reveal assessments of competence and independence affect each other with the effect of competence on independence greater than that of independence on competence. Finally, the findings of a second experiment further extend Source Credibility Theory by documenting that variations in the type of personal ties affect how trade-offs between competence and independence are acceptable (advisory ties) or are not acceptable (friendship ties).

Of note, there are some differences in the findings regarding the effect of disclosing ties in the Rose et al. (2014) study and our study. In contrast to our findings, they report disclosure of friendship ties leads to higher investor assessments of board independence and effectiveness. However, importantly, the Rose et al. study uses a different context (board versus the audit committee) with different information sets as well as different decisions and judgments than in our study. Moreover, in the Rose et al. study, the disclosure of ties can potentially serve to signal that even though there are friendship ties with the CEO, making R&D cuts to allow a CEO to reach a bonus may lead to a more productive CEO (Hermanson, Tompkins, Veliyath, & Ye, 2012; Wilkins, Hermanson, & Cohen, 2016). Finally, unlike Rose et al. (2014) we examine the impact of industry expertise, which as our findings indicate, is viewed by investors as having an important positive value even in the presence of personal ties.

Our study makes a number of important contributions that have implications for public policy, corporate governance, Source Credibility Theory, and future research. First, by using a controlled experiment, we are able to document the importance of disclosure of ties and industry expertise on investors' judgments and decisions. Prior archival research has focused on associations and on the effect of ties on financial reporting quality as well as auditor outcomes such as going concern opinions, restatements, internal control decisions and the provision of audit and nonaudit services (Bruynseels & Cardinaels, 2014). Thus, we complement archival research by focusing on individual investors' judgments and investment decisions. We are also the first behavioral study to our knowledge to examine the impact of different types of ties and industry expertise on investor judgments.

The results of our study suggest that regulators and boards may wish to strongly consider encouraging companies to provide additional disclosures regarding audit committee ties with management (both personal and professional) as well as the extent of audit committee member industry expertise. Increased disclosures will provide greater transparency for investors to assess whether the audit committee has the independence and competence to effectively monitor the financial reporting process. These disclosures could be self-reported by companies subject to regulatory review, similar to the current reporting of financial literacy and financial expertise. Moreover, a focus on underlying ties could enable boards and/or nominating committees to appoint members that better reflect the "substance" of independence and competence, rather than simply complying with the "form" of regulations now in place.

This also appears to be the first study to examine whether knowledge of industry expertise affects the judgments and decisions of reasonably informed investors. Prior archival research (Carcello, Hermanson, & Ye, 2011) has typically focused on associations with the financial expertise of audit committees but an archival study by Cohen et al. (2014) documents an association that is consistent with the idea of the incremental value of the industry expertise of audit committee members over and beyond financial expertise to enhance financial reporting quality. The results of our study suggest that investors impound knowledge of industry expertise of audit committees in investment judgments and decisions.

As in all studies, limitations exist that represent opportunities for future research. First, in our study, we examined different types of ties as independent of each other, since the focus of our study is on the incremental effects of personal vs. professional ties. However, in practice professional ties could lead to personal ties and vice-versa. A future study can evaluate how having both types of ties affects investors' evaluation of overall effectiveness of the audit committee. In this study, we provided information about ties to investors. A future study could examine the extent to which investors choose to obtain such information. To avoid the polar conditions of minority or all members with personal or professional ties, we portray an intermediate condition of a majority of members with ties to the CEO. Future studies could examine different thresholds (e.g., minority or all) to study the incremental effect on investors' judgments and decisions. We also recognize that we presented participants with a case context where industry expertise is potentially important. Future research can examine the types of industries where the industry expertise of audit committee members are more or are less important to fulfilling their role effectively. Another promising avenue for future research that would complement studies regarding the effect of audit firm and parter tenure would be to examine the effects of audit committee member tenure on investor assessments of audit committee independence and competence. Finally, in this study the importance of audit committee effectiveness may be more important because we are dealing with a setting where reported earnings are indicating an increase in profit. A future study may explore if the findings would hold if the company is reporting flat or declining g earnings. This would allow us to set boundary conditions on when ties and expertise may be more prominent to examine.

In summary, we extend prior research that suggests that strictly looking at economic independence of the audit committee is insufficient in evaluating the effectiveness of the committee and subsequent decisions that investors make (Tian, Haleblian, & Rajagopalan, 2011). The findings demonstrate that the disclosure of audit committee personal and professional ties and industry expertise have a pronounced influence on investor judgments, highlighting the important public policy and research issue of whether or not to require, or at least strongly encourage, the public dissemination of such information.

Exhibit 1 – Description of Audit Committee Members by Condition

Description of Audit Committee (Constant Across Conditions)

The Board of Directors of T.P.Reynolds consists of 12 individuals with the majority of directors considered independent in accordance with current regulations. The CEO is also the chair of the board.

Consistent with the requirements of the SEC and the Sarbanes-Oxley Act, the audit committee at T.P. Reynolds meets regularly, with all members financially literate (i.e., able to understand financial reports), none having financial or business ties to the company, and one member designated as a "financial expert." The Audit Committee (AC) has adopted a formal, written charter that is similar to other firms in the industry. According to the AC charter, members are appointed to the audit committee by the board based on the recommendation of the nominations committee.

	No Ties Conditions	Professional Ties Conditions	Personal Ties Conditions
No Industry Expertise	• The members of the audit committee have no professional ties with the CEO as they have not worked together nor have they served on any board together. • In addition, audit committee members do not have any social ties with the CEO. For instance, they have not been classmates who graduated together from a university and stayed in contact on a regular basis over many years.	• The audit committee chair and another member of the audit committee have extensive experience serving on boards **that are in different industries** (i.e., not in the financial services industry). Chris Perkins, the CEO of LGFS, also serves on two boards with these two audit committee members for over 15 years. • Although they served on the same boards in different industries (i.e., not in the financial services industry), the two members have no social ties with Chris Perkins as they have not, for instance, been classmates who graduated together from a university and stayed in contact on a regular basis over many years. • The third member of the audit committee has no current or prior social or professional ties to the CEO.	• The audit committee chair and another member of the committee were classmates in graduate school with Chris Perkins, the CEO of LGFS, at a well-regarded university and have stayed in **social** contact with each other on a regular basis since graduation over 15 years ago. • These two audit committee members have no professional ties with the CEO of LGFS, as they have not worked together nor have they served together on other boards. • The third member of the audit committee has no current or prior social or professional ties to the CEO.
Industry Expertise	*The first two bullet points same as above.* • The audit committee chair and another member of the audit committee have extensive experience serving on the boards and audit committees of other public companies including two other companies in the same industry (i.e., in the financial services industry).	• The audit committee chair and another member of the audit committee have extensive experience serving on boards **that are in the same industry** (i.e., in the financial services industry). Chris Perkins, the CEO of LGFS, also serves on two boards with these two audit committee members for over 15 years. *The last two bullet points are the same as above.*	*The first three bullet points same as above.* • The audit committee chair and another member of the audit committee have extensive experience serving on the boards and audit committees of other public companies including two other companies in the same industry (i.e., in the financial services industry).

Data availability

See supplemental online materials for the experimental instruments. Contact the authors for data availability.

Declaration of competing interest

None.

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