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# Partner Rotation or Extended Rotations? The Effect of Confirmation Bias and Motivated Reasoning Bias on Objectivity and Independence: A Framework

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## Abstract

We propose a two-dimensional audit rotation framework on auditors' rotation that contributes to the discussion on the potential impact of alternatives to strengthen and maintain unbiased attitude, objectivity, and independence. According to the conceptual outlines of this framework, auditors' objectivity and independence might be enhanced by dealing with *confirmation bias* and *motivated reasoning bias*. In this study, we outline and propose potential academic inquiries that could be addressed and tested under this framework. We draw upon research on accounting, auditing, psychology, and economics to discuss the potential consequences of different audit rotation alternates on auditors' objectivity and independency. A framework is proposed with two-dimensional effects: confirmation bias and motivated reasoning bias. The research implications of the framework indicate that, to varying degrees, various audit rotation arrangement alternatives to the current partner-only rotation mandate in the U.S. could potentially enhance auditors' objectivity and independency by mitigating confirmation bias and motivated reasoning bias, thus producing more objective and independent audit opinions. This study fills the void in the literature by providing a two-dimensional framework to the current literature of audit rotation for categorizing and comparing different audit rotation alternatives. The framework also enables us to shed light on the relative efficacy of different rotation arrangements on auditors' objectivity and independence.

**Keywords:** audit rotation, confirmation bias, motivated reasoning bias, firm rotation, accounting research, auditing research, objectivity, independence

## Introduction

Independence is one of the most important characteristics of auditing profession. External auditors are hired to provide an unbiased and objective assurance on the truthfulness and accuracy of an entity's financial reports. In addition, auditors are required to express their opinion on management's assertions about the effectiveness of internal control for issuers. Both academic and applied research have argued auditors' independence as being one of the fundamental reasons for

the existence of external auditing because services performed by external auditors somewhat equate to the services of firm's internal auditors (Moore, Tetlock, Tanlu, & Bazerman, 2006). Failure to issue objective opinion on financial reporting at Enron, WorldCom, Qwest, Adelphia, Tyco and so on, in the early 2000s has led critics to blame the auditors for potential negligence and corruption.

This theoretical exploration proposes a two-dimensional audit rotation model that can enhance auditors' objectivity and independence. In this model, we propose that one dimension clearly reflects auditors' potential susceptibility to confirmation bias. The other dimension is identified with auditor's susceptibility for motivated reasoning bias. The resulting quadrant creates an organizational framework that outlines the classification (a total of four categories) of the currently existing and possible future framework of audit rotation arrangements.

The final framework comprising four quadrants in the proposed model facilitate the categorization of the four existing and proposed audit rotation arrangements, and discusses the potential implications of these arrangements on auditors' objectivity and independence.

Prior research (Bazerman, Moore, Tetlock, & Tanlu, 2006; Bhattacharjee, Maletta, & Moreno, 2007; Moore et al., 2006) indicates existence of some cognitive, social, and institutional attributes in the current auditing structure. Those attributes can influence auditors' decisions without them realizing that conflicts of interest might occur without their conscious intention to indulge in corruption. The three threats to independence present in the current auditing system include managers hiring and firing auditors, auditors siding with clients' financial and other narratives, and auditors providing non-audit services to the client (Moore et al., 2006). As such, auditors who are susceptible to motivated reasoning bias are prompted to exploit ambiguity in reporting standards and align their judgments and decisions with the management's preference (Kadous, Kennedy, & Peecher, 2003; Kunda, 1990).

In addition to motivated reasoning bias noted above, we also argue that in some instances, auditors may act in a biased manner with existing clients resorting to prior evidence, judgments, and opinions. This type of bias is further reinforced by the tendency of returning auditors to either repeatedly search for confirming evidence or interpret the ambiguous evidence in favor of prior opinions issued rather than react to small but important changes entailed by new evidence. In social psychology, the propensity of individuals to preferentially select and overweight evidence confirming previous knowledge is known as *confirmation bias* (Klayman, 1995; Rabin & Schrag, 1999). Furthermore, under certain circumstances, when people generally find confirmation of their prior hypotheses to be rewarding (for example, if the previously accepted accounting treatment coincides with the client's preference), they will tend to adopt behaviors that produce more of the same outcomes (Klayman, 1995). This type of behavior leads to further erosion and impairment of objectivity and independence in audit engagements.

The sequential nature of audit engagements and eventuality of audit opinions is an important feature in practice, but most of the previous research has considered only the sequential nature of individual audit tasks (e.g., Ashton & Ashton, 1988; Bhattacharjee et al., 2007; Cushing & Loebbecke, 1986; Gibbins, 1984;). To date, only a few studies (Jeffrey, 1992; Tan, 1995) have focused on the fact that audit engagements themselves are sequential; most auditors are involved in repeat engagements and the same auditors participate in the audit of the same clients year after year. Tan (1995) investigates how audit decision process is affected by the conclusion recorded in prior years' working paper and reveals that the expectations formed ahead of evaluation of

evidence that are either positive or negative significantly affect the judgments on a going-concern task. Similarly, in a study regarding audit of bank loans, Jeffrey (1992) finds that personal involvement in sequential loan evaluations encourages the auditor to make a judgment of loan collectability that is consistent with their previous judgment.

The proposed model utilizes existing *four-dimensional* audit rotation arrangements that have been traditionally practiced in the U.S. Our study also addresses the ever-present issues of auditors' objectivity and independence. Thus, we present different approaches of directly addressing confirmation and motivated reasoning biases under alternative audit arrangements. The four-dimensional model proposed in this study incorporates traditional *partner-only* rotation approach. We also propose three additional rotation alternatives developed by utilizing models from prior research published by various practitioners, regulators, and academic scholars. Our proposed model comprises: a) partner-only rotation (mandatory after the passage of the Sarbanes-Oxley Act [SOX] of 2002); b) mandatory staff rotation (American Institute of Certified Public Accountants [AICPA] Cohen Commission, 1978; Nelson, 2006); c) mandatory firm rotation without a fixed-period contract (Bazerman, Morgan, & Loewenstein, 1997; Orin, 2008); and d) mandatory firm rotation with a fixed-period contract (Bazerman et al., 2006; Moore et al., 2006).

As it appears, this academic research is the first of its kind that systematically addresses, in a single study, the implications of confirmation bias and motivated reasoning bias on the objectivity and independence of audit judgment under the context of various audit rotation arrangements. Specifically, we argue that the typical sequential auditing nature and economic pressure to keep the client as characterized in the current auditing environment might have placed auditors under the influence of confirmation bias and motivated reasoning bias without them consciously realizing the negative impacts that may occur. The proposed audit rotation reforms, to varying degrees, have the potential to meliorate the problems associated with the two biases.

More specifically, through the lens of the proposed framework, academic literature seems to indicate that auditors working under the current partner-only rotation arrangement, who use their own prior working papers in repeat engagements, are susceptible to both confirmation bias and motivated reasoning bias in the latter years of audit. Staff rotation arrangement alleviates but does not eliminate the influence of the confirmation bias when subsequent auditors inherit working papers generated by their peer auditors within the same firm. In contrast, it is suggested that auditors under the firm rotation arrangement could make more objective judgments without the influence of previously held propositions, albeit they still bear the pressure to keep the client. Firm rotation with a fixed-period contract arrangement can further meliorate the client's influence. Consequently, the model suggests that a combination of firm rotation with a fixed-period contract, by muting both confirmation bias and motivated reasoning bias, could potentially produce the most objective and independent audit opinions.

## **Background of Audit Rotation**

Periodic rotation of audit partners has been introduced in many jurisdictions around the world. Firms either initiate auditors' rotations on their own or are mandatorily required to do so. In the U.S., SOX 2002 requires the external lead and concurring audit partners to rotate after five years. Consequently, lead partners would be subject to a five-year *time-out* or *cool-off* period upon rotating out (Section 203). The subject of audit partner rotation has received wide attention from researchers worldwide. However, the efficacy of audit partner rotation has received mixed reviews. For example, utilizing relevant data from Australia, Carey and Simnett (2006) discovered that long

partner tenure observations are associated with few occurrences of issuing a going-concern opinion and increased occurrences of just beating (missing) earnings benchmarks. This precedent supports the notion that long audit partner tenure deteriorates audit quality. Likewise, in a more recent study, supporting partner rotation, Lennox, Wu, and Zhang (2014) document a significantly higher frequency of audit adjustments during the departing partner's final year of tenure and during the incoming partner's first year of tenure. However, contrary to the concern leading to the partner rotation mandate, some studies show that longer partner tenure appears to improve audit quality (Cahan & Sun, 2015; Geiger & Raghunandan, 2002; Manry, Mock, & Turner, 2008). Still, there are other studies providing results that do not support or dispute the relationship between auditor tenure and audit quality (i.e., Knechel & Vanstraelen, 2007).

Although the effectiveness of the mandatory partner rotation remains uncertain, some researchers have concluded that to truly reinforce the independence of the public accountants, SOX should either be expanded to mandate rotation of audit personnel and partners instead (AICPA Cohen Commission, 1978) or require audit firm rotation (Orin, 2008; U.S. General Accounting Office, 2003; U.S. Senate, 1976; Zeff, 2003). Others (Moore et al., 2006) advocate fixing the hiring of an audit firm for a certain period in an effort to alleviate a firm's pressure of keeping clients—a starting point of conflict of interest that is referred to as *firm rotation with a fixed-period*.

However, critics of extended rotation allege that audit failure rate is much higher in the early years of audit relationship due to the lack of client-specific information and experience with the clients (George, 2004). Further, in countries where audit firm rotation has been adopted and subsequently dropped, such rotation improves the perception of independence and objectivity but is detrimental to the audit quality (Cameran, Merlotti, & Di Vincenzo, 2005).

Despite its importance and potential contribution to the current debate, very few studies have provided a framework to help standard setters and researchers to assess the relative benefits and costs of different audit rotation options. This study aims to fill this void and proposes a theoretical framework to shed light on the question about how the different proposed audit rotation initiatives impact auditors' objectivity and independence. In addition, specific research opportunities are suggested for future studies in this area.

### **Audit Rotation Framework**

Focusing on individual auditors, we provide a two-dimensional framework (see Figure 1 and Table 1). One dimension represents the degree to which auditors are susceptible to confirmation bias. The other dimension is the degree to which auditors are susceptible to motivated reasoning bias. Each possible types of bias will be discussed further below. The four existing and proposed audit rotation possibilities are presented in Figure 1 according to the two dimensions. As shown in the upper quadrants of Figure 1, starting from the right (left), auditors under the current partner-only rotation (firm rotation) are presumably subject to confirmation bias to the greatest (least) extent. Moreover, among the four initiatives, only one audit arrangement crosses into the lower quadrant (firm rotation with a fixed-period contract) as it is posited to reduce motivated reasoning bias. The predominance of the upper quadrant suggests that most of the current and proposed audit rotation options fail to provide a mechanism mitigating the effect caused by motivated reasoning bias.

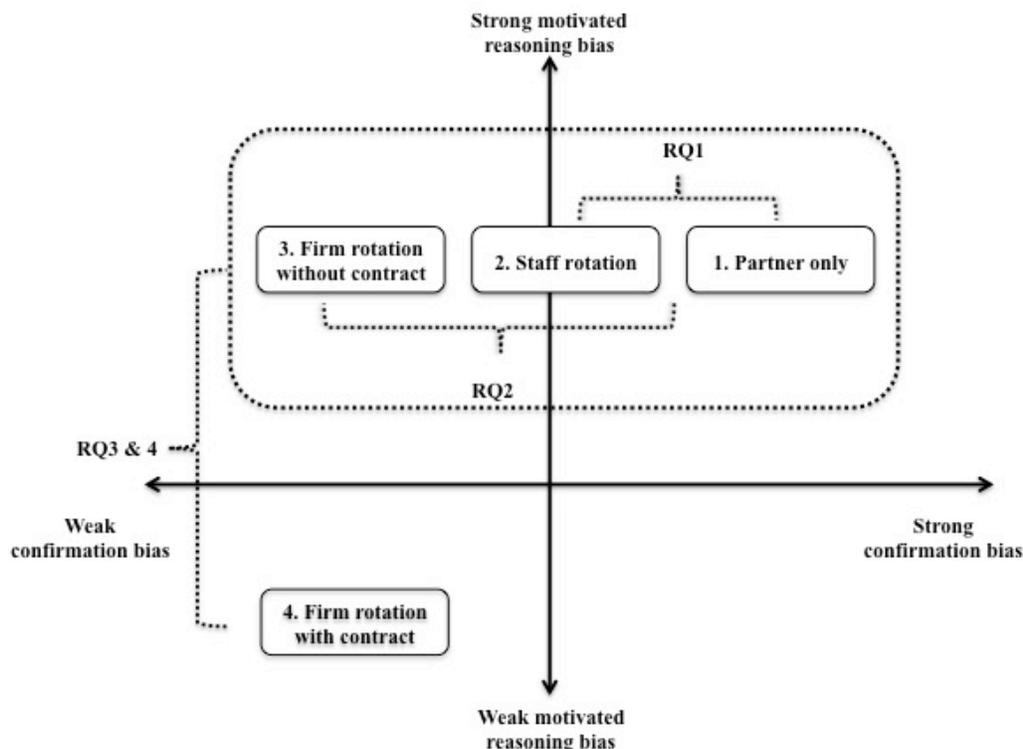


Figure 1. Audit rotation framework.

Table 1. Framework to Predict the Effect of Various Audit Rotation Arrangements on Auditors’ Objectivity and Independence

Bias	1. Partner-Only	2. Staff Rotation	3. Firm Rotation without Contract	4. Firm Rotation with Contract
Confirmation	Strong Presence	Weak Presence	Absence	Absence
Motivated Reasoning	Strong Presence	Strong Presence	Strong Presence	Weak Presence
Objectivity and Independence	Lowest	Lower	Higher	Highest

Our research implications of the framework advocate that different audit rotation arrangements will have different implications on auditors’ susceptibility to the two biases, and further, on their professional objectivity and independence. Auditors under the current rotation mandate are unlikely to overcome confirmation bias and motivated reasoning bias. Instead, the other proposed audit rotation arrangements have the potential to alleviate the two biases to varying degrees.

Particularly, staff auditors under the current partner-only rotation policy continue to use their own self-generated working papers in the following years and are likely to be susceptible to client-preferred accounting and auditing treatments (referred to as *partner-only*). Staff rotation arrangement alleviates but not eliminates the influence of the confirmation bias when subsequent auditors inherit working papers generated by their colleagues within the same firm (referred to as *staff rotation*). In contrast, the auditors under the firm rotation arrangement should be able to make increasingly objective judgments without the influence of confirmation bias as they start a new audit assignment (referred to as *firm rotation without contract*). However, these auditors are also exposed to motivated reasoning bias. The combination of firm rotation and fixed-period

arrangement, by muting both confirmation and motivated reasoning biases, is predicted to produce the most objective and independent audit opinion (referred to as *firm rotation with contract*).

It is important to stress that consistent with the decomposition of the independence by Farmer, Rittenberg, and Trompeter (1987), the objectivity in this study represents independent mental attitude and is identified as a psychological component of audit independence. In general, auditors are considered objective and independent if they can firmly hold their opinion against the management's desires and preferences of the audit outcome. Aside from the implication of auditor rotation on objectivity and independence, it has also been acknowledged that enhanced objectivity and independence may not necessarily lead to higher audit quality, especially for a firm with specific industry practice. However, the focus of this study is on objectivity and independence, leaving issues pursuant to other implications of audit rotation for future research.

### **Confirmation Bias**

The confirmation bias theory suggests that people have a cognitive bias that leads them to misinterpret new information as supporting previously held hypotheses, which further induces overconfidence on their previous beliefs (Rabin & Schrag, 1999). In an even worse situation, once a strong hypothesis is formed, people simply stop being attentive to relevant new information that contradicts or supports their hypotheses, which is also called anchoring effect. To illustrate, when investors are convinced that one stock is more lucrative than another, they may simply shut down to more opportunities or information to help them become better informed. However, in an auditing setup, auditors do not have the option to stop collecting evidence; thus, this effect is not in the interest of the current study. The most striking evidence for such confirmation bias is a series of experiments demonstrating how providing the same ambiguous information to people who differ in their initial beliefs on some topics can move their beliefs farther apart. A plethora of psychological research has documented the persuasiveness of this confirmation bias and its consequences. According to these studies, first, humans are generally prone to confirmation bias, under the influence of which people selectively favor evidence supportive of the persistent belief and scrutinize evidence against it. Second, when people suffer from confirmation bias, further collection of evidence with mixed signals can only exacerbate the bias by the biased interpretation of evidence, leading to near certainty in the current hypotheses, a phenomenon called *overconfidence*. Related to this, a study done as early as 1951 on stereotype formation by Wyatt and Campbell (1951) explicitly states that "experience per se without reality-testing or verification may often be a liability, bringing reduced objectivity" (p. 499). Moreover, Perkins (1981) citing Wyatt and Campbell's study (1951), points out that fresh thinkers may be better at seeing solution to problems, because they are not overwhelmed by the *interference* of old hypotheses.

According to Rabin and Schrag (1999), confirmation bias and overconfidence arise when people must interpret ambiguous evidence; when people must interpret statistical evidence to assess the correlation between phenomena that are separated by time; or when people selectively collect or scrutinize evidence. Since these variations of circumstances are quite common in auditing environment, therefore, not surprisingly, confirmation bias in auditing systems can produce unintended outcomes on evaluation of evidence (Birnberg & Shield, 1984; Libby, 1981).

Earlier, audit-judgment research focusing on the influence of confirmation bias generated mixed results with respect to the predicted presence of confirmation bias in audit environment. For example, Kida (1984) examined whether auditors who were assigned to either a failure- or viability-hypothesis condition would attend to more confirmation evidence, disconfirmatory

evidence, or equal amounts of both when testing a hypothesis with regard to the viability of the client firm. The results did not provide strong support for confirmation bias. Similarly, Trotman and Sng (1989) wrote on auditors' information search strategy in sequential judgment processes and in the presence of cue-diagnostic information. The results again provided very little support for confirmation bias. Auditor subjects in both studies engaged in conservative strategy in judgment making process. However, we consider three experimental characteristics in prior studies that may contribute to the failure to find support for confirmation bias. First, the subjects in the task were given a hypothesis without knowing the source of the hypothesis. This approach, in practice, is very important when auditors evaluate subsequent evidence (Bamber, 1983; Cohen & Kida, 1989; Joyce & Biddle, 1981). Second, there was no control group in these two prior studies. As a result, it is hard to understand what information auditors attended to without the previously formed hypothesis. Lastly, the implications for auditors of poor audit judgment in the going-concern task tested in the two studies are potentially very substantial (e.g., legal liability), resulting in the overarching conservatism effect.

More recently, Tan (1995) amended the first issue identified by asking the self-generated audit group to actually provide prior judgment and inherited group to use prior judgment on a going-concern task. His results confirmed the existence of confirmation bias on memory recall but not on the audit judgment. In addition, studying an audit of bank loans, Jeffrey (1992) found that personal involvement in sequential loan evaluations encourages auditors to make a judgment of loan collectability that is consistent with their previous judgment. Taken together, evidence supporting confirmation bias started to emerge in the literature. This study advocates for future research to use a more common assignment that incorporates a specific auditing contextual features wherein auditors clearly know the source of evidence and all possible audit rotation arrangements are represented. This kind of academic investigation would complement prior research on the effectiveness of audit rotation initiatives.

Psychology research repeatedly confirmed that individuals engaged in generating their own hypotheses are more likely to search for confirming evidence and to measure information cues in a manner that supports their hypotheses (Klayman, 1995). Accordingly, auditors who are assigned to the same engagement or the same client year after year are particularly susceptible to confirmation bias. This is so because audit opinions formed in the early years of engagement through evidence collection and observation will gradually become salient, and as a result, will work as an inhibitor to auditors' ability to overturn the molded beliefs even after the situations surrounding the engagement have changed. By contrast, the negativities associated with confirmation bias and further overconfidence will be less severe if auditors are required to rotate off the current repeating engagement periodically. Research has shown that asymmetries exist between self-perception and perception to others. In particular, people make more dispositional inferences about others than about themselves (Jones & Nisbett, 1972) and see others as more vulnerable to cognitive and motivated reasoning biases (Pronin, Gilovich, & Ross, 2004). Therefore, successive auditors who are newly assigned to a client are less committed to others' beliefs than to their own beliefs. As a result, they would be less susceptible to confirmation bias and less likely to succumb to the previously formed opinions. Therefore, future research can investigate – *Research Question 1: Would audit judgments be more objective and independent under staff rotation arrangement than under the current partner-only rotation mandate?* (see Figure 1 and Table 1)

Although auditors' rotation arrangement could potentially alleviate the influence of confirmation bias, yet auditors are not expected to be immune from some sort of bias. Especially when

subsequent auditors inherit working papers generated by their peer auditors within the same firm. The successive auditors may still commit to the inherited hypothesis since the credibility of the previous hypothesis source is high (Smith & Kida, 1991). Earlier research finds that a particular source of information may also contribute in explaining why people behave differently in search and measurement of evidence when given the same hypotheses (Lerner & Tetlock, 1999; Petty & Wegener, 1998). It is reasonable to state that when auditors are equipped with working papers from their colleagues of the same peer firm, their subsequent auditing work will more likely to be preoccupied by the professionally documented procedures or findings. Consistently, prior research suggests that auditors with access to the complete set of working papers are more likely to assume conclusions reached in previous years are generally good predictors of current year's findings (Kreutzfeldt & Wallace, 1986).

However, those auditors who inherit prior-year working papers for new clients under mandatory rotation requirements face different predicament. Researchers argue that new firm may not make the same pledges with respect to prior opinions issued. After a company employs a new auditing firm, it would have both a financial and legal incentive to disclose or correct, rather than confirm, any inappropriate accounting treatments inherited from a predecessor firm (Orin, 2008). In addition, the unavailability of the prior-year working papers provides less opportunity for confirmation bias to affect auditors because they need to gather their own evidence and form their own opinions toward the new client. Therefore, auditors who take over the client for the first time are less likely to be influenced by a simple opinion rendered by other firms and have more incentives to put more efforts to establish their own hypotheses and may engage searching for conflicting evidence with the certified opinion if they believe the firm was previously poorly audited (Orin, 2008). Therefore, the following research question is posed – *Research Question 2: Would audit judgments be more objective and independent under firm rotation than under partner-only or staff rotation arrangement?* (see Figure 1 and Table 1)

### **Motivated Reasoning Bias**

Traditional economic theories assume that decision makers rationally process information to be able to make optimal opinions, unaffected by what people prefer to believe in (e.g., Ferraro, Pfeffer, & Sutton, 2005). Prior social science research on the impact of motivated reasoning and self-serving bias suggests that individual references can indeed influence the processing of information and thus their final decisions. In particular, human beings tend to concentrate on evidence that support the conclusion they favor (Ditto, Munro, Apanovitch, Scepansky, & Lockhart, 2003; Kunda, 1990) and provide conflicting evidence to additional cynical scrutiny (Gilovich, 1991). Furthermore, academic literature on motivated reasoning supports the notion that individuals' goals influence their decision process and judgments (Kunda, 1990; 1999).

Extensive research in accounting field also finds evidence of motivated reasoning bias and its influence among auditors, investors, tax professionals, and others. For example, audit seniors tend to select client-preferred techniques and attempt to exploit existing ambiguity in financial accounting standards to justify the utilization of those techniques (Hackenbrack & Nelson, 1996). Thus, experienced auditors incline to make inventory write-down recommendations in order to accommodate stated client preferences (Haynes, Jenkins, & Nutt, 1998). Hales (2007) also states that directional preferences directly impact how information is processed by individual investors. More specifically, investors are motivated to unconditionally agree with information suggesting that they might make money on their investment. Cloyd and Spilker (1999) reveals that tax professionals' information searches emphasized cases with conclusions consistent with the clients'

desired outcome over cases conflicting with the clients' desired outcome. Most pertinent to the interest of this study, Bazerman et al. (1997) argue that auditors suffer from an unconscious self-serving bias and thus cannot conduct impartial audits (also see Moore et al., 2006). The bias results from auditors repeated close interactions with the clients' management and their limited and distant interactions with investors. As argued, unconscious bias is particularly problematic as economic sanctions are less likely to ameliorate it.

Moore et al. (2006) were the first to provide a possible solution to counteract motivated reasoning bias. More specifically, they argue that an audit firm's pressure to keep the clients is a starting point of conflict of interest. Thus, they advocate fixing the hiring of audit firm to a certain period, that is, firm rotation with a fixed-period contract. In other words, audit firm will be hired for a certain period followed by a mandatory audit firm rotation. Although some raise concerns associated with this arrangement, such as less competition (Arel, Brody, & Pany, 2005), still this audit rotation policy has the potential to directly address the concerns resulting from the influence of audit clients. In line with the ideas offered by Moore et al. (2006), the third research question is as follows – *Research Question 3: Would audit judgments be more objective and independent under firm rotation with a fixed-period contract arrangement than under the other three arrangements?* (see Figure 1 and Table 1)

Drawing upon a prior study (Kadous et al., 2003), future research can use goal commitment as an indicator of motivation since it is measured by a refined and validated scale by Klein, Wesson, Hollenbeck, Wright, and DeShon (2001). The Klein et al. (2001) scale requires participants to indicate their level of agreement with five items for each goal on five-point Likert scales. The five items are: “a) I think this is a good goal to shoot for; b) I am strongly committed to pursuing this goal; c) It is hard to take this goal seriously; d) Quite frankly, I don't care if I achieve this goal or not; and e) It would not have taken much to make me abandon this goal” (Klein et al., 2001, p. 34). Utilizing this scale, future research could answer the following question – *Research Question 4: Would auditor bonded with a fixed-period contract devote less goal commitment than auditors under the other three arrangements?* (see Figure 1 and Table 1)

## Conclusions, Limitations, and Implications

In general, prior studies (AICPA Cohen Commission, 1978; Orin, 2008; U.S. General Accounting Office, 2003; U.S. Senate, 1976; Zeff, 2003) identified various audit rotation initiatives. However, to date, not a single framework is available in the current literature that can help us categorize the fundamental differences between those alternatives and highlight clearly identifiable advantages and disadvantages. The current study fills this void in the literature by providing a two-dimensional framework for future researchers to present and test their hypotheses about the efficacy of each audit rotation possibility. When positioning each audit arrangement according to the two dimensions, the research implications of the framework suggest that auditing staff working under the current partner-only rotation arrangement, who use their own prior working papers in repeat engagements, are susceptible to both confirmation bias and motivated reasoning bias in the following years of audit. Staff rotation arrangement lessens but does not eliminate the influence of confirmation bias when subsequent auditors inherit working papers from their peer auditors within the same firm. In contrast, auditors under firm rotation arrangement, who are less affected by confirmation bias, make increasingly objective judgments, albeit with the existence of motivated reasoning bias. Fix-period audit arrangement can further alleviate the effect of motivated reasoning bias. As a result, firm rotation coupled with a fixed-period contract, by muting both cognitive bias

and motivated reasoning bias, can potentially produce the most objective and independent audit opinions.

Our study should be of interest to researchers as they can examine the proposed research questions as identified in the study. Audit simulations, analytical theory (models), and experimental research methods are all well suited to provide insight and empirical evidence about the potential institutional changes. Further, researchers can also propose additional dimensions to the current framework or add other audit rotation variations based on the two dimensions presented in this study. For example, other important impacts of extended audit rotation that merit future research include implementation cost, audit quality, audit fees, economic power, and limited choice of audit firms (Arel et al., 2005; George, 2004; Nelson, 2006). These considerations are equally critical when it comes to evaluating the practical implications of rotation policies.

This study contributes to the international debate over the potential consequences of different audit rotation alternatives. The framework provided in this study enables regulators to form expectations on the relative efficacies of different rotation initiatives. This study might also be of interest to regulators who want to establish effective auditing procedures to promote skeptical attitude towards prior year working paper. According to psychology research, for bias correction, people should be motivated and be able to search for potential biases, the source of bias, and have or generate a theory regarding the direction and magnitude of the bias (Petty & Wegener, 1993; Wegener & Petty, 1995; 1997).

This study has certain limitations. First, given that the current study focuses on cognitive and motivated reasoning biases, by not examining other factors, the net effect of various rotations remains uncertain. In addition, issues related to the cost-and-benefit evaluation are not addressed in this investigation but are significant for the decision-making process necessitating a final switch from the current partner-only rotation. In a letter to the Securities and Exchange Commission (SEC) on January 9, 2003, AICPA pointed out that it recognized the importance of a *fresh set of eyes* but maintained that the benefit must be balanced with the cost of continuity and *institutional knowledge* (AICPA, 2003). Not surprisingly, for example, some studies argue that firm rotation may result in uneven audit quality across the rotation period, higher audit fees as a result of less competition (Arel et al., 2005), and decreased likelihood for management and auditors to openly communicate with each other (Nelson, 2006).

Second, the current study did not discuss the role of reviewer that would come into play in the correction of confirmation bias. Review awareness can raise the reviewee's vigilance and also reduce the consistency effect from prior audit involvement (Tan, 1995). Moreover, with the dynamic nature of staffing in public accounting firms, the changing reviewers may also help reduce the influence of confirmation bias even if the staff auditors are in repeat engagement.

Third, the answers to the research questions presented in the current model might be varied depending on other personal, task, and environmental factors. For example, studies have shown that experience and training can affect the reasoning and hypothesis development (for a review, see Klayman, 1995). Likewise, Smith and Kida (1991) conducted a meta-analysis of studies of various cognitive biases among professional auditors and found that confirmation biases were absent when experienced auditors were given problems of a sort that they solved frequently while biases reappeared when the auditors were presented with problems from domains in which they had little practice. Future research can investigate additional factors that might moderate the

relationship between a given audit rotation arrangement and professional objectiveness and independence.

Fourth, with respect to firm rotation, we did not address the possibility of new firm contacting prior audit firm to gain information about the new client. Furthermore, reaching out to the predecessor audit firm might create an expectation as a result, especially when the successor audit firm puts trust on the work done by the preceding firm. This will annul the intended benefit of firm rotation arrangement.

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