

**FIRM BOUNDARIES AND AUDIT QUALITY: EVIDENCE FROM
INDIAN BUSINESS GROUPS**

*A Doctoral Dissertation Submitted in Partial Fulfilment of the Requirements for the
Award of the degree of*

**DOCTOR OF PHILOSOPHY
IN
MANAGEMENT**

BY

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DECLARATION

I, Moturi Sairam, hereby declare that this thesis entitled “***Firm Boundaries and Audit Quality: Evidence from Indian Business Groups***” in fulfillment of the requirements for the award of the Degree of Doctor of Philosophy in Management Studies, is the outcome of an original study, free of plagiarism, undertaken by me, under the supervision of Prof. Vijaya Bhaskar Marisetty, Professor, School of Management Studies, University of Hyderabad.

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Below are the details of Publications, Conferences & Coursework pursued during my Ph.D.:

A. Journal Publication

Marisetty, V. B., & Moturi Sairam. (2022). Boundaries of the Firm and Real Earnings Management. *Journal of International Accounting, Auditing and Taxation (Forthcoming)*, Elsevier. [ABS-3 Level Journal]

B. Conferences

- a. Presented a paper on “Firm Boundaries and Real Earnings Management” in the 12th Doctoral Thesis Conference jointly organised by ICFAI Business School, Hyderabad and IGIDR, Mumbai on 18th April 2019 at ICFAI Business School, Hyderabad.
- b. Presented a paper on “Bankruptcy Prediction of Corporates: Traditional vs Machine Learning Models” in Digits conference organized by Woxsen University, Hyderabad on 27th and 28th November 2020.
- c. Presented a paper on “Investigating the relationship between operating costs and firm profitability using longitudinal data from Indian hotels” joint work with Vinay Ch in International Conference on Calibration of Accounting Tools in the Changing Global Scenario organised by Pondicherry University in association with ACCA and ICSSR-SRC, March 18-19, 2019.
- d. Attended 3rd JAAF India Symposium jointly held in association with the Journal of Accounting, Auditing and Finance (JAAF), Indian Institute of Management (IIM)- Ahmedabad, IIM- Bangalore, and IIM- Calcutta. Centre for Monitoring Indian Economy (CMIE), January 7-9, 2019, held at Indian School of Business, Hyderabad.
- e. Attended 12th ISB Accounting Research Conference Hyderabad, December 17-18, 2018 held at Indian School of Business, Hyderabad.

C. Workshops

- a. Attended “IIMA Doctoral Scholars’ School” 2019 (DSS 2019) conducted by Indian Institute of Management, Ahmedabad, India in September 2019.
- b. Attended 4-day Workshop on “Advanced Econometrics for Research in Social Sciences” Using R conducted by School of Management Studies, University of Hyderabad, from March 29 to April 1, 2019.
- c. Attended Faculty Development Program (FDP) on “Statistical Model Building Using R” conducted by School of Management Studies, University of Hyderabad, India from March 4th to March 6th, 2018.
- d. Attended 10-day Research Methodology Workshop cum Quality Improvement Program for Ph.D. Scholars sponsored by Indian Council of Social Science Research (ICSSR) organized by Department of Commerce, Pondicherry University, Puducherry, India from January 29 to February 07, 2018.
- e. Attended a course work (3 Credits) on Foundations on Basic Empirical Research Methods from December 24th 2016 to 3rd January 2017 held at Indian Institute of Management-Kozhikode.
- f. Attended Faculty Development Program (FDP) on Microsoft Excel Applications in Finance organized by School of Management Studies, University of Hyderabad, India in March 2017.

Course Work Completion Certificate

Further, the student has passed the following courses towards the fulfillment of the coursework requirement for PhD:

Course Code	Name	Credits	Pass / Fail
1. MB-561	Statistics for Business Analytics	3	Pass
2. BA-806	Logistics and Supply Chain Management	3	Pass
3. EG-825	Academic Writing for Doctoral Students	4	Pass
4. Core course	Research Methodology	4	Pass
5. BA-805	Service Operations Management	3	Pass

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DEDICATION

This dissertation is lovingly dedicated to my family and my supervisor Prof. Vijaya Bhaskar Marisetty. Without the support, encouragement, tolerance and sacrifice of my wife Bhavani, grandmother Krishnavenamma, father Satyanarayana and mother Durga, this would not have been possible. Everything I am, I owe to them and dedicate this work to them.

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ABSTRACT

This thesis tries to understand accounting and auditing practices from Indian companies perspective. Unlike most of the western economies, firms in India are affiliated to large business groups with complex cross holdings between them. Several researchers have shown that earnings management is harmful to firms and audit rotation helps for better governance. However, these practices may not hold in the Indian setting as firm boundaries are blurred with complex inter-firm relationships as they share common controlling shareholders. In such a setting, we have to revisit existing studies and find evidence that might be counter intuitive to our conventional wisdom. Our objective in this thesis to test new alternative hypothesis on the implications of accounting and auditing practices followed by business group affiliated firms in India. In particular, the thesis focuses on real earnings management to understand accounting practices and audit rotation for understanding auditing practices. The thesis is structured as two major studies that explore these two dimensions.

While Real Earnings Management (REM) is increasingly becoming the more popular method of earnings management than Accruals based Earnings Management (AEM) (Cohen et al., 2008; Commerford et al., 2018). Our study 1 of the thesis shows that when a firm's organizational structure has extended boundaries with other firms, the benefits of REM can outweigh the costs. We use family business groups that extend firm boundaries with other affiliated firms, for testing our conjecture. Using a large dataset of 11417 firm-year observations of Indian firms, we show that REM is significantly higher in business group affiliated firms compared to standalone firms. Further, intra-group transactions, in the form of purchases, sales, and cash flows from operating activities, contribute to higher REM activities. More importantly, when group affiliated firms engage in intragroup transactions and report higher REM, mainly in the form of abnormal production, they

experience an increase in their future profitability and a decrease in their cost of equity.

Understanding the motive for extended auditor tenure is difficult as it is simultaneously determined by auditor familiarity and the corresponding switching costs to the firm. Our study 2 attempts to disentangle this by exploring the motive of auditor tenure in business groups, where auditor familiarity can be extended by transferring the auditor to another affiliated business group firms, with no impact on the switching costs. Using 8363 firm-year observations for the period 2003 to 2019 of Indian business group firms. After controlling for non-audit services and auditor tenure, we show that an increase in Auditor concentration, which measured extended auditor tenure, reduces audit quality. We find that even mandatory auditor rotation law is not effective in improving audit quality as business groups reshuffle their auditor portfolio to reappoint existing auditors in other business group affiliated firms. Further, we find that business groups that extend the auditor tenure through reappointments engage in higher intra-group transactions and have poorer audit quality. Our studies have implications for various stakeholders viz., promoters of business group founders, regulators, investors in business groups and other international markets with similar business group structures. One important outcome of our research is that regulations aimed at bringing better governance in firms may not always be suitable unless regulators understand the dynamics of the organisational structure of business entities.

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LIST OF ABBREVIATIONS

AC	Auditor Concentration
AEM	Accruals Earnings Management
AIC	Akaike Information Criterion
AICPA	American Institute of Certified Public Accountants
AQMM	Audit Quality Maturity Model
ASA	Automotive Stampings & Assemblies Ltd
BEA	Bureau of Economic Analysis
BG	Business Group
BIC	Bayesian information Criterion
BSE	Bombay Stock Exchange
CAQ	Centre for Audit Quality
CMIE	Centre for Monitoring Indian Economy
COE	Cost of Equity
DiD	Difference in Difference
EU	European Union
GAAP	Generally Accepted Accounting Principles
GAO	Government Accountability Office
HERF	Herfindahl Index

ICAI	Institute of Chartered Accountants of India
MRTP	Monopolies and Restrictive Trade Practices Act
NIC	National Industrial Classification Code
PCAOB	Public Companies Accounting oversight board
R&D	Research and Development
REM	Real Earnings Management
RPTs	Related Party Transactions
UK	United Kingdom
UNCTAD	United Nations Compact for Trade and Development
US	United States

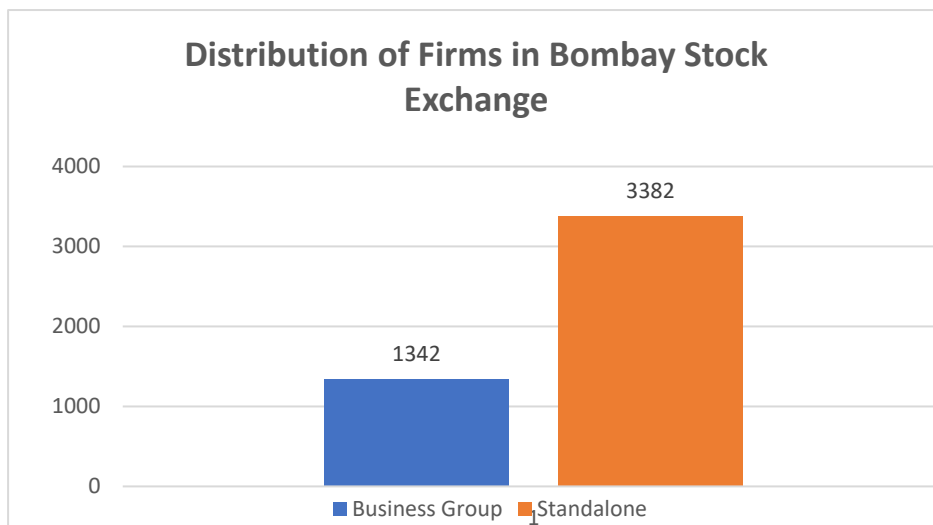
CHAPTER 1

INTRODUCTION

1.1 Business Groups in India

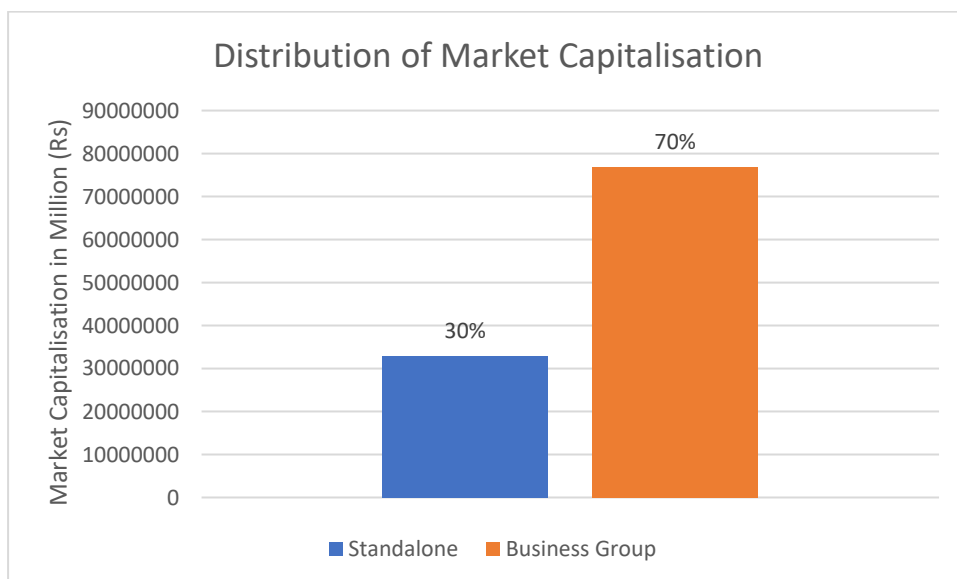
India's family Business groups (BG) have a market capitalization of over \$839 billion, ranking third among the globe with most family-owned businesses (Klerk et al., 2018). Most BG in India are family dominated, and their affiliates are spread across various verticals. In many countries of the world, BGs are ubiquitous. For instance, Keiretsu in Japan, Chaebols in South Korea, oligarchs in Russia. Coordination in BGs involves an intricate network of processes, such as multiple and reciprocal equity, commercial relationships, debt, and affiliations among top management (Carney et al., 2011). The flexibility of related parties extends not only to accruals but also to cash-based transactions among the connected firms (Jian & Wong, 2010). The below bar chart represents the distribution of business group (BG) affiliated firms and standalone firms listed on the Bombay Stock Exchange (BSE). Out of 4724 firms listed in BSE, 1342 (28%) firms are BG affiliated firms. Business groups hold a market capitalisation of above 70% of the total market capitalisation of BSE listed firms as of 2020, shown in Figure 1.2.

Figure 1.1: Distribution of Firms in the Bombay Stock Exchange



Source: CMIE prowess IQ data base (2020)

Figure 1.2: Market Capitalisation of Business Group and Standalone firms in BSE



Source: CMIE prowess IQ data base (2020)

BGs are organized as affiliated firms to ensure shared ownership and support when an affiliate faces financial trouble and are linked with each other through the cross-holding mechanism. Cross-shareholding permits the exchange of information and resources and enables the firm to exercise control and cross-monitor each other (Lincoln et al., 1996). The following Figure 1.3 shows the cross holdings among the affiliates in Tata Group in the year 2017. The figure depicts the equity ownership pattern of major Tata group affiliates. It is evident from Figure 1.3

that mainly Tata sons Ltd, Tata Industries, and Tata Investment Corporation Ltd. hold the majority of the shares of Tata group. Cross holdings make ownership structures complex. For instance, as shown in the figure, Tata Sons have a direct investment of 28% in Indian Hotels. However, it indirectly owns Indian Hotels through a cross-holding structure by investing in Indian Hotels through Tata Chemicals, where Tata Sons owns 19.35% of Tata Chemicals, and in turn, Tata Chemicals owns 0.90% of Indian Hotels. This complex holding structure allows the major holding company, Tata Sons, to have indirect control over Indian Hotels (apart from its direct control). With this kind of extended organisational structure, the Indian business group affiliated firms can have the edge over their standalone companies in terms of internal financing and scale of economies. Unlike standalone firms accounting for BG affiliated firms will be different owing to their intra-group transactions. This structural flexibility offers BGs to engage in intra-group transactions, which can facilitate earnings management. This study focuses on how the organisational structure of BG affiliated firms facilitates them to engage in earnings management. We also study how the familiarity of auditors affects the audit quality of the firms affiliated to BGs.

[illegible]

4

1.2 Earnings Management and Auditor Familiarity

“Management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds are generally termed as Real Earnings Management (REM)” (Roychowdhury, 2006). They usually take place through higher discounts to increase sales, more relaxed credit terms, lowering the cost of goods sold through increased production, and reduced discretionary expenses coupled with lesser cash inflows. Owing to REM's flexibility, by meeting the short-run earning targets, managers are willing to adopt it though it is detrimental to the value of the firm in the long-run, as REM leads to real and significant economic losses (Roychowdhury, 2006). Existing studies have identified various mechanisms through which REM takes place in firms and mainly attribute such activities to managerial myopia or opportunistic behaviour. Familiarity of an auditor with the client is the other way round that lets the firms engage in earnings management. Auditor familiarity with the client is necessary for understanding the client's business to conduct an effective and efficient audit (Bamber and Iyer, 2007). Due to a shortage of client-specific knowledge resulting from shorter tenure and initial audit engagements, the likelihood of financial restatements increases (Johnson et al., 2002; Stanley et al., 2007; Bell et al., 2015), the importance of familiarity with the client. However, the empirical literature is divided on whether auditors compromise with longer tenure in the same firm. On the one hand, several works show that such familiarity can lead to compromised financial disclosures, impaired audit quality, and auditor independence (Singer and Zhang, 2018; Chi and Huang, 2005). On the other hand, there are an equal number of works that show increasing tenure will not compromise audit quality (Carcello and Nagy, 2004; Gul et al., 2009; Corbella et al., 2015; Myers et al., 2015). It is hard to establish causality as auditor tenure in many countries is an endogenous decision of the management. In addition to that auditor's tenure can be simultaneously determined by switching costs and familiarity.

In this work, we bring a new dimension to REM literature. Given its flexibility and complexity, REM can be of strategic interest in certain organizational structures, especially BGs, that dominate the Asian business landscape. One might have heard about India's famous business houses, Tata, Birla, Reliance, and Jindal. They operate in multiple industry verticals operated mostly by family ownership. BG affiliated firms are ubiquitous in the world of the corporate landscape. Most of the Fortune 500 firms, the top 2,000 R&D firms listed by the Industrial R&D Investment Scoreboard (European commission, 2011), as well as the top 100 largest multinational enterprises listed by United Nations Compact for Trade and Development (UNCTAD) (2011) can be included under the category of a domestic or cross-border BG affiliated firms. In terms of trade flows, a reading of the US BEA (Bureau of Economic Analysis) (2012) data, along with the dimension of BGs, reveals that multinational BGs account for at least 75% of total US trade.

Our major conjecture is that firms that evolve as large BGs with several horizontal and vertically integrated affiliated firms have a significant advantage in engaging in real activities across affiliated related parties due to their relatively lower frictions (Singhal & Zhu, 2013). Simultaneously, their coinsurance mechanism through BG affiliation mitigates their collective bankruptcy risk (Gopalan et al., 2007). Hence, there is a possibility that their costs of manipulating real activities could be lower than the costs of adverse financial health. Therefore, they would engage in higher REMs (due to lower costs) when compared to standalone firms. In other words, firms can potentially exploit their competitive advantage associated with their boundaries while choosing the method of earnings management.

We contribute by extending this line of thought on how the boundaries of a firm facilitate its engagement in REM activities. Zang (2012) looked at the “*costs of both accruals earnings management (AEM), REM*” and found that firms choose between these two methods of manipulation as substitutes. According to Zang (2012), REM is constricted by firms’

competitive strength in the industry, financial health, institutional investor scrutiny, and the immediate tax consequences of manipulation. AEM gets restricted by the presence of high-quality auditors, increased scrutiny of accounting regulators, and firms' accounting flexibility. For instance, if auditor and regulatory scrutiny costs are high compared to bankruptcy risk or financial health, firms prefer REM against AEM and vice versa. In other words, the firm strategizes the method of manipulation based on its own costs benefit analysis determined by the internal and external environment.

Recently, Srivastava (2019) showed that most of the observable REMs are simply a cross-sectional variation of firm-level competitive advantages. We extend this line of thought by understanding whether the BG structure provides a distinctive advantage for the affiliated firms and reduces the costs of their earnings management. We exploit the organisational structural variation in the Indian market to throw more light on the strategic dimension of REM activities. BGs dominate the Indian market with many affiliated firms with extensive Related Party Transactions (RPTs). As a control group, the Indian market also has many competing standalone firms that do not have any RPTs with other firms. Unlike in the United States market (where the majority of the studies are based), this rich set of variations in the organisational structure can help understand how firms' boundaries can motivate REM engagement. The evolution of firm boundaries in a BG is mainly due to exogenous external institutional voids in the economy, where firms pool together to share resources for competition and survival (Khanna & Palepu, 1997). The affiliated firms share resources through real activities called RPTs. These transactions may include sales, purchases, and loans between affiliated firms. Such strategic REMs can either benefit controlling owners due to their private benefits of controlling or benefit the whole affiliated firms for better survival (Khanna & Yafeh, 2007). We use the exogenous shock of The Competition Amendment Act, 2007, which states, "*No enterprise or group shall abuse its dominant position.*" This Act came into effect from

September 2007, intending to reduce the abuse of dominant position by group firms. It acts as a restriction for BG affiliated firms to engage in REM. Since we expect that the BG firms are using their structural advantage by engaging in higher RPTs with their affiliated firms could be treated as an abuse of their dominant position. We test whether REM induced by RPTs decreased post the implementation of the Act.

In this work, we examine the role of auditor familiarity in BGs that are ubiquitous in several jurisdictions. Unlike standalone firms, in BGs, the source of familiarity need not come from non-audit services and audit tenure but from the auditor's appointment to other firms affiliated to the same BG. Contrary to the existing studies that mainly focus on standalone firms' auditor familiarity, BGs with several affiliated firms can keep their switching costs constant with the choice to reappoint existing auditors by sustaining their familiarity. It allows us to disentangle and attribute the auditor rotation decision more to familiarity than switching costs.

BGs can decide to extend the auditor's tenure even if mandatory rotation law is imposed, as the affiliated firms are legally separate entities. This setting helps us examine the role of familiarity and simultaneously trace the effect of familiarity on audit quality. To test this question, we propose a new auditor familiarity measure that captures Auditor Concentration (AC) in each BG as a percentage of independent affiliated firms that belong to a particular BG engaging the same auditor. AC can additionally explain the cross-sectional variation in audit quality along with the widely used auditor familiarity measures, namely, auditor's non-audit services and auditor tenure. Unlike the existing measures, this measure of familiarity allows us to observe auditors' extended familiarity with the client. We further exploit the mandatory auditor rotation law enacted in India to establish a causal link between familiarity and audit quality by keeping switching costs constant.

Our work is closely related to Srivastava's (2019) work, where the author argues that firms within an industry differ in their competitive strategies due to different business models. Hence, abnormal real activities may not always be attributed to manipulation. We show that, even after accounting for cross-sectional variation in firm-level competitive strategies, firm boundaries explain why companies engage in seemingly costly REM using the Srivastava (2019) model. On the other hand, our results suggest that regulators in these countries should be wary of the BGs opportunistic behaviour that can persist even with mandatory auditor rotation law. The regulators have to find an alternative mechanism to safeguard the minority shareholders' interest in BGs. Our work has practical relevance, mainly for countries with BG entities.

1.3 Auditor Rotation regulations in India

India introduced mandatory rotation of auditors with effect from 1st April 2014 for those companies whose auditor completed two five-year terms. Further, the act has given three years of transition time for the firms to abide by the regulation. Section 139 (2) of the Companies Act 2013 deals with the rules regarding the rotation of auditors and states that in case of an audit firm, cannot be appointed for more than two consecutive five-year terms or if it is an individual auditor who cannot be appointed for more than five years consecutively. The act's provisions kept a five-year cooling-off period for the reappointment of the exiting auditor. In India, the expected benefit of reduced familiarity of the auditor with the client in practice is questionable due to its relatively weaker regulatory and institutional framework.

1.4 Research Gaps

The existing works in earnings management mainly focus on western economies, particularly developed nations. The earlier research is scarce, especially on the earnings management practices of BG affiliated firms which are widely popular in the eastern part of

the world. There is limited research on how BGs operate with their extended boundaries with their affiliated firms in terms of related party transactions and engage in earnings management. Recently, Srivastava (2019) showed that most of the observable REMs are simply a cross-sectional variation of firm-level competitive advantages. We expand this line of thought by understanding whether the BG structure provides a distinctive advantage for the BG affiliated firms and reduces the costs of their earnings management. We exploit the organisational structural variation in the Indian market to throw more light on the strategic dimension of REM activities. Contrary to the existing studies (Bell et al., 2015; Johnson et al., 2002; Stanley et al., 2007), which mainly focus on standalone firms' auditor familiarity in terms of tenure, audit, and non-audit fees. This study focusses on BGs with several affiliated firms' choice to reappoint existing auditors by sustaining their familiarity, which is a novel research gap.

1.5 Research Questions

The following research questions were identified based on the gaps from an extensive literature review. The literature review is detailed in Chapter 2.

BG affiliated firms are structured in a varied manner compared to standalone firms. They ensure shared ownership and assist when an affiliate faces financial hurdles and is linked through the cross-holding mechanism, a distinctive feature that separates them from standalone firms. This unique structure can provide them with more opportunistic ways of manipulating earnings.

RQ1: Do BG affiliated firms engage more in earnings manipulation than standalone firms?

The existing literature is mixed on why BG affiliation could lead to higher adoption of earnings management practices (Kim and Yi, 2006; Khanna and Yafeh, 2005; Jian and Wong,

2010). Gopalan et al. (2007) found that affiliation adds value due to access to internal capital markets; however, it can destroy value due to potential expropriation by the BG's controlling owners (Gopalan et al., 2007). In this study, we investigate the potential reason behind the differences between standalone and BG affiliated firms adopting earnings management practices. Specifically understanding the motives of BG affiliated firms.

BG affiliation is beneficial for the firms operating in emerging markets as they reduce agency problems (Ferris et al., 1995) and uncertainty for affiliates by providing internal capital markets by enhancing the value of affiliated firms by filling institutional voids that are common in emerging markets (Khanna & Palepu, 1997; You et al., 2007; Carney et al., 2011).

RQ2: Whether the organisational structure of BG affiliated firms facilitate earnings management?

The Cross-holding structure among BG affiliated firms amplifies the related party transactions (RPTs) among BG affiliated firms (Muttakin et al., 2017) which in turn can increase REM. RPTs are self-dealing transactions between the company and its directors, managers, or affiliates.

RQ3: What is the role of auditor familiarity in BG affiliated firms on audit quality?

Familiarity with the management and client is crucial for an auditor to plan and execute the audit effectively. The longer the tenure higher will be the familiarity of the auditor, which allows auditors to identify themselves with the client's management (Quick & Schmidt, 2018). Auditors who identify themselves with the client are highly likely to accede to their favoured position (Bamber and Iyer, 2007). Hence, auditor familiarity in a BG is an extended concept that we try to understand in this study.

Understanding the motive for extended auditor tenure is difficult as it is simultaneously determined by auditor familiarity and the corresponding switching costs to the firm. In this

study, we attempt to disentangle this by exploring the motive of auditor tenure in BGs, where auditor familiarity can be extended by transferring the auditor to another affiliated BG firm without impacting the switching costs.

1.6 Research Objectives

1. To understand the methods of earnings management practices in BGs and Standalone companies.
2. Examine organizational structure's role in BG affiliated firms in facilitating earnings management.
3. To explore and analyse the role of auditor familiarity in BG affiliated firms.

1.7 Major Findings

Using 11417 firm-year observations over 14 years and following the modified Roychowdhury (2006) REM estimation method, as proposed by Srivastava (2019), we examine the extent of REM activities among Indian firms. We also examine how a firm's structural advantage can facilitate REM activities. On average, we found that BG affiliated firms' engagement in REM activities is higher and more significant compared to standalone firms. We also find that the higher REM engagement among BG affiliated firms comes from the abnormal production-based real activity and cash flow from operating activities. Further, significant engagement in intra-group transactions or RPTs explains the cross-sectional variation in the REM activities among BG affiliated firms. Finally, through abnormal production, REM increases the affiliated firms' profitability and lowers the equity cost. To address the potential endogeneity issue, we exploit an exogenous change in the structure of BGs due to the Competition (Amendment) Act, of 2007. The Act aims to dismantle group

structure to reduce BGs' possible abuse due to their dominant position in product markets. We find that in the post-implementation era of The Competition Amendment Act, 2007, REM associated with the structural advantage of BGs to engage in RPTs reduces. This result clearly implies that structural advantage for BGs can be strategically facilitated through REM activities.

We use discretionary accruals as our proxy for audit quality, consistent with previous studies (McNichols, 2002; Kothari et al., 2005; Cohen et al., 2008; Gul et al., 2009). Our main findings with respect to auditor familiarity and audit quality are as follows: a) After controlling for existing measures of auditor familiarity, namely, auditor tenure and non-audit services, we find that auditor concentration explains audit quality. The higher the auditor concentration in a BG, the lower is the audit quality; b) The probability of reappointing auditors is higher in those groups where the audit quality is lower; c) The BG affiliated firms that reappoint auditors generally have poor financial performance; and d) Our Difference-in-Differences result shows that these results persist even after the imposition of mandatory auditor rotation law by the Indian government. The results hold after conducting several robustness checks. In summary, we show that auditor familiarity can reduce audit quality, and weaker firms engage in reappointments and compromise on audit quality. Our results support Bamber and Iyer (2007), who state that frequent interactions of auditors with the client's management lead to increased familiarity making the auditors acquiesce to management's preferred positions. Similar findings were made by Chi and Huang (2005), who stated that as auditor familiarity increases, earnings quality reduces. Our evidence also corroborates with AICPA's (American Institute of Certified Public Accountants) view on familiarity as a potential threat that could adversely affect auditor performance (Wilson, McNellis, Latham, 2017).

1.8 Research Hypotheses

To empirically investigate our three research objectives mentioned in this study, the following hypotheses are developed with the help of a review of the literature. Only the hypotheses are mentioned in this section; the literature support for the logical development of hypotheses is presented in Chapter 2, Review of Literature.

H1. BG affiliated firms, on average, exhibit higher REM compared to standalone firms.

H2. BG affiliated firms with higher RPTs will engage in higher REM.

H3. BG affiliated firms that engage in REM should have a lower cost of equity and higher future profitability.

H4: In the case of BG affiliated firms, an increase in auditor concentration reduces audit quality.

H5: Mandatory Rotation of auditor increases audit quality among BG affiliated firms.

1.9 Thesis Structure

This study comprises of 5 Chapters and is organised as follows:

Chapter 1 (Introduction): Chapter 1 deals with the introduction of the main elements of the thesis. It starts with explaining the background of the research in question and the motivation of the study, research questions, and objectives. It ends with an outline of how the thesis is organised.

Chapter 2 (Review of Literature and Hypotheses Development): This chapter reviews the literature and hypotheses development of our two studies. The first study delves into the review

of literature on earnings management, focusing on the structural advantages of BG affiliated firms to engage in earnings management, related party transactions, and hypotheses development. This chapter also presents a small case study on ASA Ltd., part of the TATA business group showing the intensity of related party transactions in terms of related party purchases and sales. The second study reviews the literature on auditor familiarity and auditor reappointments and the development of hypotheses.

Chapter 3 (Data, Methodology, and Results Study 1): This chapter discusses the data, variables used, and methodology, the regression equations used to test the hypotheses of our study 1, which deals with firm boundaries and real earnings management. This chapter further presents the presentation and discussion of results pertaining to the study.

Chapter 4 (Data, Methodology, and Results Study 2): This chapter discusses the data, variables used, methodology, and regression equations used to test the hypotheses of our study 2 on auditor familiarity and audit quality. This chapter further presents the presentation and discussion of results pertaining to the study.

Chapter 5 (Summary and Conclusion): This chapter summarises the main findings of the current study, the suggestions in line with the findings, and a conclusion. Besides that, this chapter discusses the scope for further research.

CHAPTER 2

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

This chapter first reviews the literature showing the differences between real and accrual earnings management. Next, it discusses about how the boundaries of a BG affiliated firms can help them engage in REM. Further, with the help of a small case study of a Tata Group Affiliated firm, we show how BG affiliated firms engage in REM. It is later followed by a review of the literature on our study 2, focusing on auditor familiarity, mandatory rotation of auditor, and audit quality.

2.0 Study 1: Review of Literature

2.1 Real Earnings Management versus Accruals Earnings Management

Among various alternatives to manage earnings, the two important methods of manipulation are AEM and REM (Gunny, 2010). Real activities manipulation will take place through increasing sales by offering bigger discounts or more liberal credit terms, lowering cost of goods sold by higher production, and reduced discretionary expenses, which will eventually lead to their abnormal levels (Roychowdhury, 2006), which are within the ambit of GAAP. Existing studies examined real activities manipulation involving a drastic reduction in advertising expenditure (Cohen & Zarowin, 2010), stock repurchases to meet analyst forecasts (Hribar, 2006), manipulating the timing of the sale of profitable assets (Bartov, 1993), manager's discretion in the reduction of sale prices (Jackson & Wilcox, 2000), derivative hedging and accrual management (Pincus & Rajgopal, 2002), debt-equity swaps (Hand, 1989) and securitization of assets having cash flows during the quarter end to alter financial results (Dechow & Shakespear, 2009). AEM usually takes place towards the flag end of the financial year. It appears to have an impact on the quantity of accounting accruals and, consequently, reported earnings. There is no direct effect of AEM on cash flows, and is restricted by auditors'

scrutiny (Becker et al., 1998; Choi et al., 2018). According to Gunny (2010), REM is costly due to economic consequences, yet contends that applying REM's short-term benefits outperforms the costs if earnings targets are met. Alternatively, AEM heightens the risk of cash flows available to the firm, which can partly be avoided using REM. Pappas et al. (2019) contend that firms that adopt REM will have stronger incentives to manipulate. However, Kim and Sohn (2013) report that such short-termism costs get reflected by an increase in the cost of equity.

In summary, the literature suggests that, compared to AEM, REM can be more costly in the long run. However, firms engage more in REM for short-term benefits due to opportunistic managerial behaviour. Kim and Yi (2006) advise that examining group-level financial reporting behaviour could give more insights into BG's financial reporting. Our study tries to extend the REM literature by showcasing REM as a strategic mechanism to ensure the long-run survival of firms that are interconnected through extended boundaries of BG affiliation.

2.2 Boundaries of the firm and Real Earnings Management

Firm boundaries literature is dominated by Transaction Cost Economics (TCE), which argues that business houses internalize those vulnerable transactions to market opportunism (Williamson, 1975; Klein et al., 1978). The logic of TCE is that firms conduct internal activities if the cost of managing them externally exceeds the cost of managing them under the same hierarchical structure of enterprise (Argyres & Zenger, 2010). The literature argues that firms organize their activities internally or through external markets to strategically position themselves and organize efficiently (Afuah, 2003). BG affiliation is potentially beneficial for firms in emerging markets. It helps reduce the costs of diversification into different ventures, though beneficial group affiliation raises conflict of interest among the

majority (family) and minority shareholders (Khanna & Palepu, 2000). The boundaries of a BG affiliated firm extend into “*several legally independent firms that are connected through formal ownership and social interactions and allow their member firms to drive their efforts in the product and/or input markets*” (Khanna & Rivkin, 2001; Khanna & Yafeh, 2007). Coordination in BGs is based on a more complex network of mechanisms, such as multiple and reciprocal equity, debt, commercial relationships and affiliations between top managers (Carney et al., 2011). The flexibility of related parties extends to accruals and cash-based transactions among the connected firms (Jian & Wong, 2010). Kim and Yi (2006) document that BG affiliated firms tend to engage more in earnings manipulation by providing opportunities and incentives for controlling shareholders than independent, standalone firms. Kim and Yi (2006) called for further insights into the financial reporting behaviour of BG affiliated firms. For instance, Bae and Jeong (2007) show that BGs in Korea show poor earnings quality due to poor governance structure. Existing research presents competing views on the costs and benefits derived from BG firm affiliation.

On the one hand, affiliation adds value due to access to internal capital markets; however, it can destroy value due to potential expropriation by the BG's controlling owners (Gopalan et al., 2007). The relevance of the timing of the related party transactions is discussed by Jia et al. (2013), who claim that loan-based RPTs take place when the unlisted controlling owner is in a financial crisis. The non-loan based RPTs, i.e., transactions in terms of purchases and sales among related parties, occur when the listed firm is facing negative profits. Helaly et al. (2018) state that RPTs can help manipulate real activities and have a positive relationship with REM. Chittoor et al. (2012) argue that BG affiliated firms “*serve to reduce risks by smoothing out income flows and reallocating resources among firms belonging to the same BG.*” In summary, REM costs are relatively lower for BG affiliated firms.

2.3 Structure of Indian BGs and Related Party Transactions

Indian BGs are organized as affiliates to ensure shared ownership and provide assistance when an affiliate faces financial hurdle and are linked with each other via cross-holding mechanism. Cross-shareholding facilitates the exchange of information and resources, enables firms to exert control, and cross-monitor each other (Lincoln et al., 1996). BG affiliation benefits firms in emerging markets as it reduces agency problems (Ferris et al., 1995). They reduce uncertainty for affiliates by providing internal capital markets and enhance the value of affiliated firms by filling institutional voids that are common in emerging markets (Khanna & Palepu, 1997; You et al., 2007; Carney et al., 2011). BGs are ubiquitous in many parts of the world. For instance, Keiretsu in Japan, Chaebols in South Korea, and oligarchs in Russia. Figure 1.3 shows the cross holdings among the Tata Group affiliates in 2017. The figure depicts the equity ownership pattern of major Tata group affiliates. It is evident from Figure 1.3 that mainly Tata sons Ltd, Tata Industries, and Tata Investment Corporation Ltd. hold the majority of the shares of Tata group. Cross holdings make ownership structures complex. For instance, as shown in figure 1.3, Tata Sons have a direct investment of 28% in Indian Hotels. However, it indirectly owns Indian Hotels through a cross-holding structure by investing in Indian Hotels through Tata Chemicals, where Tata Sons owns 19.35% of Tata Chemicals, and in turn, Tata Chemicals owns 0.90% of Indian Hotels. This complex holding structure allows the major holding company, Tata Sons, to have indirect control over Indian Hotels (apart from its direct control). Several researchers have shown evidence on the negative externalities of complex cross-holding structures of BGs. Their cross-holding structures provide opportunities for the BG affiliates the flexibility to take part in earnings management compared to standalone firms (Jian & Wong, 2010). Group affiliated firms offer higher incentives to managers for manipulating earnings than standalone firms, as they allow tunnelling profits from one affiliated firm to another (Jian & Wong, 2004; Liu & Lu, 2007). Though the affiliates in BGs

operate as independent entities, there is a wedge between control rights and cash flow rights (Kim & Yi, 2006). This incentivizes controlling shareholders to divert the resources for their personal benefits (Bertrand et al., 2002). As each affiliated firm is a separate legal entity and not a subsidiary of the parent company, the non-family investor's losses increase with actions motivated by the controlling owner's private benefits. Cross holdings have the potential to amplify the RPTs among BG affiliated firms (Muttakin et al., 2017). RPTs are "*self-dealing transactions between the company and its directors, managers,*" or affiliates (Helaly et al., 2018). Prior literature on RPTs claims that firms opportunistically use RPTs to avoid losses and mask their reported earnings (Aharony et al., 2010; Chien & Hsu, 2011). Ryngaert and Thomas (2012) found that RPTs increase the likelihood of a firm entering into financial distress, resulting in delisting its securities and a likely decrease in the market price of shares. It is further supported by Gordon et al. (2004), who find that companies disclosing RPTs subsequently show lower returns on stocks.

RPTs are considered an expropriation tool, although they can also be used for legitimate corporate and commercial goals to improve asset use and resource allocation (Ryngaert & Thomas, 2012; Helaly et al., 2018). Existing literature on REM shows that firms engage in REM largely by cutting down their discretionary expenses (Graham et al., 2005; Roychowdhury, 2006; Francis et al., 2016). In the case of BGs, REM can happen in other ways too. For instance, inter-corporate transactions (RPTs), including related party purchases and sales. For instance, BGs have the incentive to engage in REM through abnormal production.

In contrast, the REM in a standalone firm can happen through discretionary expenses. In the next section, we highlight this through a case study on Tata group, one of the largest BGs in India. Given that BGs are ubiquitous in many parts of the world (Guillen, 2000), our findings are not limited to India and are generalizable to several other jurisdictions that BGs dominate.

2.3.1 REM in Indian Business Groups – A short case study

We demonstrate with an example from our sample data on how BG structure facilitates REM activities. We use one group affiliated firm, Automotive Stampings & Assemblies Ltd (ASA) belongs to one of India's oldest, largest, and highly reputed BG -TATA group, with a market capitalization of around 160 billion USD (as of 31st March 2019). ASA manufactures steel sheets used in the automotive industry. It is important to note that TATA group has both steel manufacturing (TATA Steel Ltd) and automobile manufacturing firms (TATA Motors Ltd). Hence, ASA plays a crucial role in its vertical integration strategy. In other words, the survival of ASA is crucial for the TATA group. As reported in Table 1.1, in the year 2016, ASA reported a massive loss of Indian Rupees 208 million. Given its severity for the overall group ecosystem, ASA sales to intragroup firms increased from 0.19% (in the year 2016) to 77.74% (in the year 2017). ASA also recorded a significant increase in its abnormal production (a proxy for REM) from 2.73% to 27.20% for the same period. Likewise, intragroup purchases significantly increased for the same period. All these abnormal RPTs resulted in a significant decrease in ASA loss from Indian Rupees 208 million to 28.7 million. On the one hand, this can be considered managerial short-termism as ASA manages earnings through real activities; however, on the other hand, the survival of ASA is a critical strategic component for the whole BG's well-being. Given that all BG affiliated firms are interdependent for the group's survival, it is hard to argue whether REM in the TATA group is driven by the group's short-term managerial opportunism or long-term strategic interests. In either case, it is clear that there are significant incentives associated with REM activities in BGs.

Table 1.1: A Case Study of REM in Tata Group

Year	<i>Purchases</i>			<i>Sales</i>			<i>Abnormal</i>	<i>PAT</i>	<i>Net purchases</i>
	<i>Total</i>		<i>Industry</i>	<i>Total</i>	<i>RP</i>	<i>Industry</i>			
		<i>RP</i>			<i>Sales</i>		<i>Production</i>	<i>In Rs.</i>	<i>In Rs.</i>
	<i>In Rs.</i> <i>Millions</i>	<i>Purchases</i> <i>(%)</i>	<i>(%)</i>	<i>In Rs.</i> <i>Millions</i>	<i>(%)</i>	<i>(%)</i>	<i>(%)</i>	<i>Millions</i>	<i>Millions</i>
2015	0.5	0.02	8.27	19.3	0.60	8.27	19.60	-231.70	-18.80
2016	0.7	0.03	18.39	6.00	0.20	8.94	2.73	-208.00	-5.30
2017	474.1	16.77	19.13	2243.70	77.74	9.86	27.20	-28.70	-1769.60
2018	404.4	12.00	15.12	2293.00	67.52	10.37	2.30	-465.60	-1888.60

Source: CMIE prowess IQ data base (2020)

Notes: This table presents the case study of Automotive Stampings & Assemblies Ltd (ASA), a Tata Group affiliated firm. The total in the Purchases column represents the total related party purchases and total column in sales represents the total related party sales for the corresponding year. Related party purchases are expressed as a percentage of total COGS and Related party Sales are expressed as a percentage of total sales. For variable descriptions, please refer to Appendix A.

2.3.2 Hypotheses Development: Study 1

In summary, BG affiliated firms are more likely to engage in REM as the benefits of REM are likely to be higher than the costs. The cost associated with REM occurs in the future when REM results in sales or profitability decline. We argue that BG affiliated firms are better equipped to offset the costs than standalone firms through intra-group related party transactions. The lower cost of REM among BG firms leads to the prediction that they can engage in higher REM on average. The lower costs and risk for BG affiliated firms should be reflected in the reduced cost of equity and corresponding improvement in the affiliated firms' future profitability. The above discussion merits further investigation with the following testable hypotheses.

H1. BG affiliated firms, on an average, exhibit higher REM compared to standalone firms.

H2. BG affiliated firms with higher RPTs will engage in higher REM.

H3. BG affiliated firms that engage in REM should have a lower cost of equity and higher future profitability.

2.4 Role of The Competition Amendment Act, 2007

In India, Competition Act, 2002 replaced the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act). The Competition Act came into effect from October 13th, 2003. The preamble of the Competition Act states that this Act is to “*establish a commission to prevent anti-competitive practices, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in markets in India.*” Section 4 clause (1) of the Act states, “*No enterprise or group shall abuse its dominant position.*” It means that no business enterprise shall abuse its dominant position to gain an undue advantage in the market. Section 5 clause (b) of the Act defines groups as follows; “*group means two or more enterprises which, directly or indirectly, are in a position to control the management or affairs of an enterprise.*”

Indian BG affiliated firms are largely owned by family ownership, which falls under this category where the holding BG controls and manages affairs of the affiliated firm.

This setting helps us to measure the effect of The Competition Amendment Act, 2007 on the BG affiliated firms, wherein their affiliation structure allows them to engage in RPTs through REM. With the Act's passage, the affiliated firms' structural advantage will get threatened and restrict their access to affiliated firms that extend their support in need. In this line of thought, we expect that post implementation of The Competition Amendment Act, 2007, will reduce REM among BG affiliated firms. Thus, the Act provides a setting to establish a causal relationship between the firm's structure and REM.

2.5 Study 2: Review of Literature

2.5.1 Auditor Familiarity: Auditor Tenure and Auditor Concentration

Familiarity with the management and client is crucial for an auditor to plan and execute the audit effectively. The longer the tenure higher will be the familiarity of an auditor with the client. Though, longer audit tenure allows auditors to identify themselves with the client's management (Quick & Schmidt, 2018). Existing research argues in favour of and against the tenure of auditors and audit quality. On the one side, literature provides evidence that longer auditor tenure does not deter audit quality and shows that the shorter tenure makes auditor compromise on audit quality (Geiger & Raghunandan, 2002; Gul et al., 2007; Myers et al., 2003). Auditor familiarity gets further support from the literature on common auditors, which claims a reduction in information asymmetry and reduced financial misreporting and restatements in case of merger and acquisition deals and reduced transaction costs, which is valuable when the two companies being supplier and customer has the same auditor (Cai et al., 2016; Dhaliwal et al., 2017).

On the contrary, Chi and Huang (2005) note a reduction in audit quality with the excessive familiarity of an auditor with the client. Davis et al. (2007) show that audit quality is lower in the early and later years of audit tenure. Chu et al. (2018) present that when the auditor's litigation risk is higher, audit quality gets impaired with the tenure of the auditor. It further gets support from Chu et al. (2012), who claim that extended tenure is negatively associated with audit quality.

In summary, existing literature supports the argument that non-audit service provision and auditor tenure can affect audit quality. Hence, researchers widely use these two measures to capture auditor familiarity. However, the literature did not look into the important aspect of familiarity which arises between the client and auditor in the form of the reappointment of existing auditors to the affiliated firms belonging to the same BG. In this study, we focus on showing the variation of familiarity by capturing the existing auditor's appointment or reappointment of a previously retired auditor to the BG's affiliated firms. Most of the Fortune 500 firms, the top 2,000 R&D firms listed by the Industrial R&D Investment Scoreboard (European commission, 2011), as well as the top 100 largest multinational enterprises listed by United Nations Compact for Trade and Development (UNCTAD) (2011) can be included under the category of a domestic or cross-border BG affiliated firms. In terms of trade flows, a reading of the US BEA (Bureau of Economic Analysis) (2012) data, along the dimension of BG, reveals that at least 75% of total US trade can be linked to firms organized as multinational BG.

2.6 Auditor Familiarity in Business Groups

A typical BG consists of several legally independent firms diversified into unrelated industries and interconnected through a complex web of cross-holdings by the controlling owners - typically business families (Khanna & Palepu, 2000; Khanna & Yafeh, 2007). Khanna and Rivkin (2001) define BG as “*firms which though legally independent, are bound together*

by a constellation of formal and informal ties and are accustomed to taking coordinated action.” BGs are different from conglomerates in terms of their structure. Coordination in BGs involves an intricate web of processes, such as multiple and reciprocal equities, debt, and commercial relationships and affiliations between top management (Gerlach, 1992; Granovetter, 2010; Carney et al., 2011). In contrast, “*conglomerates coordinate through the unified internal control of a portfolio of firms*” (Davis et al., 1994). It is found from the literature that BG affiliation is beneficial for firms in emerging markets as they reduce agency problems (Ferris et al., (1995), uncertainty for affiliates by providing internal capital markets, and enhances the value of affiliate firms by filling institutional voids created by markets (Khanna & Palepu, 1997; You et al., 2007, Carney et al., 2011). However, the non-arm’s length transactions among the BG affiliated firms may not be in the interest of investors (Morck & Yeung, 2003).

The intragroup transactions (RPTs) between BG affiliated firms establish a familiarity for auditors of each individual affiliated firm. However, the familiarity would be more significant if the same auditor audits many affiliated firms. Auditors who identify themselves with the client are more likely to accede to their client's preferred position (Bamber and Iyer, 2007). Hence, auditor familiarity in a BG is an extended concept. Auditor's exit from one of the affiliated firms to get appointed in another affiliated firm will not significantly impact auditor familiarity. The BG will not be worried about the switching costs if auditors are reappointed within the same BG. How many affiliated firms are connected through same auditor is a better measure of familiarity. Likewise, the auditor's tenure gets extended even if they exit one of the affiliated firms to join another.

We propose Auditor Concentration- AC as a new measure to capture auditor familiarity, along with audit tenure, and non-audit services as the other two established measures of familiarity. We define AC as a percentage of firms audited by the same auditor affiliated to the

same BG in a given year. Our rationale for introducing a new measure of auditor familiarity is the limitations of the existing established methods that are noisy in signaling familiarity in the auditing literature. AC can help understand the motive behind maintaining familiarity allowing auditors to play musical chairs among the affiliated firms by keeping switching costs constant.

The Companies Act 2013 does not restrict auditors from auditing multiple companies affiliated with the same BG. This BGs' structure offers a choice to either extend their auditor tenure or reappoint the existing auditors to their affiliated firms to maintain the same level of familiarity (AC). Although higher familiarity enhances the efficiency of auditors by offering them better access to client's operations, the major externality of such auditor familiarity in BGs setting is that auditors can facilitate controlling owners to benefit from intragroup transactions (Bertrand et al., 2002; Johl et al., 2016; Khanna & Palepu, 2000). It is consistent with the familiarity threat defined by AICPA (2015), which states “*due to a long or close relationship with a person or an employing organization, a member (auditor) will become too sympathetic to their interests or too accepting of the person's work or employing organization's product or service.*” AICPA further noted that although familiarity with the client is not always negative, it is a risk that should be reviewed with appropriate quality controls. In summary, the BG's appointment of a common auditor for its affiliated firms has the potential to reduce the frictions associated with expropriation and thus reduce auditor independence and audit quality. With the above discussion, we present our hypothesis as follows:

H4: In the case of BG affiliated firms, an increase in auditor concentration reduces audit quality.

2.7 Auditor Rotation: Auditor Reappointments and Audit Quality

Due to the potential impact auditor's economic bonding is on the client, regulators globally have considered the rotation of auditors as a possible way to weaken the auditor's

independence (Bleibtreu, 2018). The literature presents mixed views regarding the effect of mandatory rotation of auditors on audit quality. Though the rotation of auditors is not new, only a few countries have adopted it. The critics of auditor rotation claim that it can be challenging for a new auditor to understand a client's operations in a limited time and failure of audits are more likely during the initial years of audit engagement (Stanley & DeZoort, 2007; Davis et al., 2009; Gul et al., 2009; Causholli & Bell, 2015). Audit firms strongly opposed introducing audit firm rotation, citing a decline in audit quality with the fear of losing expertise associated with the client (Myers et al., 2003; PWC, 2011). The recent study by Gipper, Hail, and Leuz (2020) found no change in audit quality post-mandatory rotation of audit partner and does not bring expected fresh look benefits. It is further supported by the recent archival evidence that documents auditor firm rotation disrupts (lowers) audit quality post the rotation of auditor (Bell et al., 2015b; Dodgson et al., 2020).

While the advocates of mandatory rotation of audit firm points out that rotation of audit firms brings a fresh perspective to the financial statements, which will likely uncover possible misstatement and questionable accounting practices, which helps in increasing audit quality (Crabtree et al., 2006; Quick & Schmidt, 2018). Corbella et al. (2015) found empirical evidence that mandatory auditor firm rotation increases audit quality post-rotation, particularly among firms audited by non-big4 audit firms. Lennox et al. (2014) study based on a chinese sample by using audit adjustments as a proxy for audit quality shows that rotation of audit partner improves audit quality with more adjustments being undertaken during the incoming partner first year of engagement and outgoing partner last years of engagement. This study shows that mandatory audit partner rotation brings in a fresh perspective to the audit engagement by improving audit quality. This can answer why the GAO (Government Accountability Office) and PCAOB recommended that the SEC consider the mandatory rotation of auditors as a means to enhance audit quality (PCAOB, 2011; GAO, 2003). Jennings, Pany & Reckers(2006) report

that audit firm rotation enhances auditor independence regardless of the compliance level of corporate governance basing on an experimental study conducted on judges. Recently Horton et al. (2020) found an incremental improvement in audit quality with audit partner rotation compared to audit firm rotation. The literature on common auditors lends its support to the reappointment of existing auditors as they reduce information asymmetry between the firms having the same auditors and minimizes financial restatements and misreporting (Cai et al., 2016). Dhaliwal et al. (2017) document that sharing the same auditor by the supplier and customer lowers the transaction costs and has similarities in their financial statements. The recent study by Francis and Wang (2021) highlights the role of common auditors in lowering the cost of borrowing of a firm when the lender and the borrower have the same auditor.

However, neither the supporters nor the opponents of mandatory auditor firm rotation can bring clear evidence on the effect of audit firm's mandatory rotation on audit quality (Bleibtreu, 2019). The majority of the existing studies mainly used data about the mandatory rotation of audit partner, voluntary auditor rotation, or the collapse of Arthur Andersen but not reflect audit firm rotation as a way to assess the impact of auditor familiarity on auditor rotation and audit quality (Geiger & Raghunandan, 2002; Carcello & Nagy, 2004; Chi & Huang, 2005; Davis et al., 2009; Gul et al., 2007). The recent study conducted by Cameran et al. (2015) in Italy on the mandatory rotation of audit firm on earnings quality using absolute value of abnormal working capital accruals as a proxy shows that mandatory rotation of audit firm does not improve accruals quality of the firm. The existing studies present a mixed and inconsistent evidence on the impact of mandatory audit firm rotation on audit quality. At the same time, existing research on the mandatory rotation of auditors' regime did not account for the choice setting, allowing BGs to reappoint an existing auditor to their affiliated firms. This choice of reappointment provides an alternative way of extending the overall tenure of an auditor. This will help reveal the ulterior motive of a BG affiliated firms; otherwise, it is not possible to test

in the US context where the factors attributing to auditor retention are endogenous, and the choice of reappointment is not available due to the presence of switching costs.

India's BG setting allows the reappointment of existing auditors, keeping the switching costs to the clients (BG affiliated firms) and the auditors' learning costs constant. However, we posit that the reappointment of existing auditors can reduce audit quality due to the non-reduction of familiarity of the auditor associated with the client via higher auditor concentration. In this study, we bring in the reappointment of an existing or a retired auditor to the affiliated firms in the BG, which can shed some light on the centralized power BGs hold on its affiliated firms by reappointing the retired or existing auditor to its affiliated firms. We believe that auditors' reappointment among BG affiliated firms is not random but a strategic move to establish familiarity with the auditor, which reduces audit quality. Basing on the above discussion, we hypothesize as follows.

H5: Mandatory Rotation of auditor does not have an effect on audit quality among BGs affiliated firms.

2.8 Auditor Rotation Regulations

Regulators regard auditors' mandatory rotation as a potential tool of increasing auditor independence by addressing auditor familiarity with the client. However, only a few countries are keen on introducing the mandatory rotation of audit firms. In contrast, the mandatory rotation of audit partners seems to be commonly accepted across many countries worldwide (Cameran et al., 2015). The European Union (EU) directive on statutory audit of annual accounts states the main objective of rotation of auditors is to “*enhance integrity, objectivity, responsibility, transparency, and reliability of statutory auditors and audit firms carrying out statutory audits of public-interest entities, contributing to the quality of statutory audits in the*

Union, thus to the smooth functioning of the internal market, while achieving a high level of consumer and investor protection” (Tysiac, 2014; European Parliament and European Counsel, 2014). EU, United Kingdom (UK), and India are the latest countries that adopt the mandatory rotation of audit firm rule. EU adopted the rule of mandatory rotation of audit firm in the year 2014. It was enacted on 17th June 2016 (Cameran et al., 2015). The regulation prescribes that the engagement of an audit firm should not exceed ten years. Member states can extend the overall period of statutory audit to twenty years where there is a public tendering process, and in the case of a Joint audit, the period can extend to a maximum of twenty-four years (Köhler et al., 2016). The UK introduced the rule of mandatory rotation of firm from 01st January 2015 with a maximum period of ten years that auditors can get engaged in statutory audit. Italy way back in 1975 introduced mandatory rotation of auditors for all listed firms way back in 1975 and restricted audit term for a maximum tenure of 9 years. The literature shows mixed evidence on the improvement of audit quality following auditors' mandatory rotation. For instance, studies by Chen et al. (2008), Manry et al. (2008) indicating an increase in audit quality and studies by Litt et al. (2014) and Cameran et al. (2015) shows decrease in audit quality whereas Chi et al. (2009) shows no change in audit quality post the mandatory rotation of audit partner. In 2011 PCAOB in the United States (US) suggested that audit firms' mandatory rotation would be the best way to grant higher skepticism levels (PCAOB, 2011). However, the US Congress ruled out the efforts to introduce auditors' mandatory rotation of audit firm after the strong opposition but continue to follow lead audit partners' mandatory rotation (Dodgson et al. 2020; Singer & Zhang, 2018). Along with the US, New Zealand, Hong Kong, Australia, Canada, and Malaysia considered and rejected the requirement of mandatory audit firm rotation (Harber & Maroun, 2020).

In this study, we considered Indian sample for conducting our research on audit familiarity. Almost half of the Indian listed firms have average auditor tenure of more than ten

years (IIAS, 2014). For instance, prominent BG affiliated firms like Hindalco Industries and Reliance industries have the same audit firm of more than 50 years and 35 years, respectively. Cognizant of the negative externalities associated with long auditor tenure; Indian government implemented mandatory rotation of auditors. The regulators expect mandatory rotation of auditors to increase the audit market's dynamism, intensify competition between audit firms, and mitigate the problems arising from a high concentration of few existing auditors (Bleibtreu, 2018). India introduced auditors' mandatory rotation with effect from 1st April 2014 for those companies whose auditor completed two five-year terms. Further, the act has given the audit firms three years of transition time to comply with the regulation. Section 139 of the Companies Act, 2013 deals with the rules regarding the rotation of auditors and states that in case of audit firm, it cannot be appointed for more than two consecutive five-year terms or if it is an individual auditor who cannot be appointed for more than five years consecutively. The act's provisions kept a five-year cooling-off period for the reappointment of the exiting auditor. In India, the expected benefit of reduced familiarity of the auditor with the client in practice is questionable due to its relatively weaker regulatory and institutional framework. As discussed in the previous section, auditor rotation can limit a BG's ability to increase its auditor concentration, leading to higher audit quality. However, the BG structure can overcome this limitation by reshuffling the auditors of their affiliated firms.

Given that affiliated firms are independent legal entities, a retired auditor can be reappointed in another BG affiliated firm due to mandatory rotation law. There is a higher probability of such reshuffling if controlling owners believe it is in their interest. As discussed earlier, there is strong evidence of controlling owners expropriating the wealth of minority shareholders (Bertrand et al., 2002; Bae et al., 2002). In other words, auditor reappointment can prevent the reduction of group-level AC, even with auditor rotation.

The mandatory auditor rotation regulation in India allows us to capture exogenous variation in audit quality, which can explain the motive behind auditor familiarity with the client by keeping the switching costs constant among the firms. Thereby, we can establish a causal link between auditor rotation, familiarity, and audit quality. For BGs, if auditor rotation reduces AC, the entry of new auditors reduces the number of existing auditorships. On the other hand, if rotation does not reduce the auditor's concentration, it implies that BGs' motive is to appoint auditors familiar with the client, explaining the lower audit quality associated with auditor familiarity.

CHAPTER 3

STUDY 1 - FIRM BOUNDARIES AND REAL EARNINGS MANAGEMENT

This chapter focuses on how the boundaries of a firm influence the practices of earnings manipulation of the firm. There are two types of business organisations BGs and standalone firms. BG are organized as affiliates to ensure common ownership and provide support when an affiliate faces financial difficulty and is linked through the cross-holding mechanism. BG affiliation is beneficial for the firms in emerging markets as they reduce agency problems (Ferris et al., 1995), uncertainty for affiliates by providing internal capital markets, and enhance the value of affiliated firms by filling institutional voids that are common in emerging markets (Khanna & Palepu, 1997; You et al., 2007; Carney et al., 2011). Whereas standalone firms on the other hand operates as individual entities and do not have extended firm boundaries compared to BG affiliated firms. BG affiliated firms have extended boundaries with significant intragroup real activities among the affiliated firms. Study 1 explores our research objectives 1 and 2 by understanding and exploring how the firm boundaries allow BG affiliated firms to engage in earnings manipulation compared to standalone firms.

3.1 Data

India's family BGs have a market capitalisation of over \$839 billion, ranking third among the globe with most family-owned businesses (Klerk et al., 2018). Most BGs in India are family dominated and their affiliates spread across various verticals. Based on the controlling shareholder, the Prowess database identifies companies into Private (foreign) companies, Private (Indian), Government sector (State or Central), and foreign and joint sectors. Private (Indian) firms are further categorized into standalone and BG affiliated firms. This classification of group affiliation was previously used in earlier studies (Khanna and

Palepu, 2000; Bertrand et al., 2002; Gopalan et al., 2007). This classification of group affiliation is not based on equity ownership but on regular monitoring of companies' announcements and qualitative understanding of individual firms' group-wise behaviour (Gopalan et al., 2007).

We use firms listed on the BSE for our study. A total of 4724 firms are listed in BSE as per CMIE, Prowess IQ® database as of July 2018. Of the total listed firms, 30% (1443) have BG affiliation. Table 3.1 provides details of our sample selection process. Consistent with the existing literature, first, we excluded the firms operating in financial services (990 firms). Following that, we excluded firms that did not have sales values available for a maximum of two years during our sample period of 18 years, from 2000 to 2017, leaving us with 2271 distinct firms. In the next step, we excluded 1235 firms with the missing values for our variables of interest and those that do not have at least twenty firms in each NIC (National Industrial Classification) code. Our final sample consists of 11417 firm-year observations representing 1036 unique firms. The prowess database provides ownership group classification for all the listed firms. We classified the sample into BG affiliated firms and standalone firms based on the classification provided by the Prowess IQ database. Out of the total sample, there are 441 unique BG affiliated firms with 5189 firm years and 595 distinctive, standalone firms with 6228 firm-year observations. We collected RPTs data of BG affiliated firms on sales, purchases, loans given and taken, which lowered the sample size to 3644 firm-year observations consisting of 360 BG affiliated firms belonging to 236 unique BGs.

Table 3.1: Sample Selection- Study 1

S.no	Description	Sample
1	BSE listed firms as per Prowess IQ database as on July 2018	4724
2	Exclusion of Firms operating in financial services industry	990
3	Sales data collected for years 2000 to 2017	3734
4	Elimination of firms for which Sales Data not available for 2 years	1463
5	Balance (3-4)	2271
6	Firms for which data is missing	1235
7	Firms having at least 20 firm year observations in each 2-digit NIC code and year	1036
8	BG affiliated firms	441
9	Standalone Firms	595
10	Total Firm year observations from 2003 to 2017	11417
11	BG affiliated firms firm year observations	5189
12	Standalone firms firm year observations	6228

Notes: This table explains the sample selection criteria for the sample period 2000 to 2017.

3.2 Methodology

3.2.1 Measurement of Real Earnings Management

We use the Srivastava (2019) method, which is an improvement to Roychowdhury's (2006) REM model to examine the manipulation of real activities viz., abnormal production, abnormal cash flow from operations and abnormal discretionary expenses. Srivastava (2019), in addition to Roychowdhury's (2006) list of variables, namely, abnormal production, cash flow from operations, discretionary expenses, adds firm market capitalization, return on assets (ROA), market to book ratio (*MTB*), and past expenditures and future sales, as additional control variables. These additional variables are used to control for cross-sectional variations in firms' competitive strategies. Srivastava (2019) argues that abnormal values can be due to variations in firm life cycle stages, and sometimes such abnormalities can be mistakenly identified as REM activities.

Similar to Roychowdhury (2006), we use Fama and Macbeth's (1973) regression procedure with a 2-digit National Industry classification Code (*NIC*). “ $PROD_t$ is the sum of the cost of goods sold in year t and the change in inventory from $t-1$ to t ”; “ $ASSETS_{t-1}$ is the total assets in year $t-1$; $SALES_{t-1}$ is the net sales in year t ”; and “ $\Delta SALES_t$ is the change in net sales from year $t-1$ to t ”. $PROD_{t-1}$ is the previous year sum of cost of goods sold plus change in inventory. CFO_t is the sum of cash flow from operations from cash flow statements. CFO_{t-1} is lag of firm's cash flow from operations. $DISC_t$ “is the sum of research and development, advertising, and SG&A (Sales, General and Administrative) expenses including travel expenses.” $DISC_{t-1}$ is the lag value of discretionary expenses. The five new variables that were included in the modified REM model by Srivastava (2019) include MTB , ROA , $SALES_{t+1}/ASSETS_{t-1}$ and $LNSIZE$ refers to the logarithmic value of market capitalization of a firm for the period t . MTB refers to the market to book ratio obtained from the prowest database for the period t . $ASSETS_{t-1}$ refers to the total assets in year $t-1$; $SALES_t$ is the net sales in year t , and $\Delta SALES_t$ is the change in net sales from year $t-1$ to t . Equations (3.1), (3.2), (3.3) and (3.4) are estimated cross-sectionally for each industry-year with at least 25 observations to calculate normal levels of production, cash flow from operations, discretionary expenses, and accruals, where the industry is defined using two-digit NIC code taken from Prowess IQ database. The full descriptions of the variables used in the study 1 are given in Appendix A.

$$\begin{aligned}
\frac{PROD_t}{ASSETS_{t-1}} = & \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{t-1}} \right) + \beta_2 \left(\frac{SALES_t}{ASSETS_{t-1}} \right) + \beta_3 \left(\frac{\Delta SALES_t}{ASSETS_{t-1}} \right) \\
& + \beta_4 \left(\frac{\Delta SALES_{t-1}}{ASSETS_{t-1}} \right) + \beta_5 (LNSIZE)_t + \beta_6 (MTB)_t + \beta_7 (ROA)_{t-1} \\
& + \beta_8 \left(\frac{\Delta SALES_{t+1}}{ASSETS_{t-1}} \right) + \beta_9 \left(\frac{PROD_{t-1}}{ASSETS_{t-1}} \right) + \varepsilon_t
\end{aligned}
\tag{3.1}$$

$$\begin{aligned}
\frac{CFO_t}{ASSETS_{t-1}} = & \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{t-1}} \right) + \beta_2 \left(\frac{SALES_t}{ASSETS_{t-1}} \right) + \beta_3 \left(\frac{\Delta SALES_t}{ASSETS_{t-1}} \right) \\
& + \beta_4 (LNSIZE)_t + \beta_5 (MTB)_t + \beta_6 (ROA)_{t-1} + \beta_7 \left(\frac{\Delta SALES_{t+1}}{ASSETS_{t-1}} \right) \\
& + \beta_8 \left(\frac{CFO_{t-1}}{ASSETS_{t-1}} \right) + \varepsilon_t
\end{aligned}
\tag{3.2}$$

$$\begin{aligned}
\frac{DISC_t}{ASSETS_{t-1}} = & \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{t-1}} \right) + \beta_2 \left(\frac{SALES_t}{ASSETS_{t-1}} \right) + \beta_3 (LNSIZE)_t + \beta_4 (MTB)_t \\
& + \beta_5 (ROA)_{t-1} + \beta_6 \left(\frac{\Delta SALES_{t+1}}{ASSETS_{t-1}} \right) + \beta_7 \left(\frac{DISC_{t-1}}{ASSETS_{t-1}} \right) + \varepsilon_t
\end{aligned}
\tag{3.3}$$

3.2.2 Measuring Accruals Earnings Management

We use discretionary accruals to proxy for accrual-based earnings management. Discretionary accruals are the difference between firm's actual accruals and the normal level of accruals (Helaly et al., 2018). We estimate the same using modified Jones model adjusted for performance by including Return on Assets (ROA) as an explanatory variable (Kothari et al., 2005; Kim et al., 2012).

$$\begin{aligned}
\frac{ACCRUALS_t}{ASSETS_{t-1}} = & \beta_0 + \beta_1 \left(\frac{1}{ASSETS_{t-1}} \right) + \beta_2 \left(\frac{\Delta REV_t}{ASSETS_{t-1}} - \frac{\Delta REC_t}{ASSETS_{t-1}} \right) + \beta_3 \left(\frac{PPE_t}{ASSETS_{t-1}} \right) \\
& + \beta_4 (ROA)_{t-1} + \varepsilon_t
\end{aligned}
\tag{3.4}$$

Where $ACCRUALS_t$ is calculated as earnings before interest and taxes minus operating cash flows reported in period t. ΔREC_t is net receivables in year t less net receivables in year

t-1. ΔREV_t is net sales in year t less net sales in year t-1, and PPE_t is the “gross property, plant, and equipment” at period t. $ASSETS_{t-1}$ refers to total assets in year t-1. ΔROA_{t-1} refers to lagged value of return on assets.

3.3 Results and Discussion

3.3.1 Descriptive statistics

Table 3.2 reports the descriptive statistics of the total sample and compares the differences between BG affiliated firms with standalone firms at the mean level. Around 42% (58%) of the sample consists of BG affiliated (standalone) firms. This table also presents the mean and median differences of BG affiliated and standalone firms. Though the standalone firms are higher in number, BG affiliated firms are on average, larger in terms of sales, net income, and market capitalization. The average inventory turnover is higher for standalone firms than BG affiliated firms, indicating that standalone firms are more efficient than BG affiliated firms. The average market to book (*MTB*) ratio is higher for BG affiliated firms compared to standalone firms. It is consistent with the extant literature on BG affiliation value, as reported by Khanna and Palepu (1997). Overall, there are considerable differences between BG affiliated firms and standalone firms.

Table 3.2: Descriptive Statistics

	GROUP				STANDALONE		DIFFERENCES IN	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
MARKETCAP (IN MN)	15674.24	510.01	25996.10	1481.40	6959.60	205.30	19036.50****	1276.10****
							(-11.13)	(0.01)
MTB	1.90	0.87	2.20	1.04	1.64	0.76	0.56****	0.28****
							(-5.65)	(0.01)
ASSETS (IN MN)	13224.71	1750.20	23875.70	4717.90	4232.20	775.40	19643.50****	3942.50****
							(-16.92)	(0.01)
SALES (IN MN)	9683.74	1803.50	16894.20	4499.20	3596.00	817.30	13298.20****	3681.90****
							(-19.63)	(0.01)
NETINCOME (IN MN)	683.95	40.90	3013.60	539.50	654.06	84.85	2359.54	454.65****
							(-15.76)	(0.01)
ACCRUALS (IN MN)	655.07	46.30	1116.01	138.90	265.92	20.55	850.09****	118.35****
							(-11.72)	(0.01)
PROD	6868.48	1375.68	11946.10	3263.20	2581.46	621.24	9364.64****	2641.96****
							(-19.41)	(0.01)
SALES/ASSETS	1.11	1.01	1.03	0.92	1.17	1.07	-0.14****	-0.15****
							(-10.67)	(0.01)
NETINCOME/ASSETS (%)	15.23	13.42	13.48	12.61	12.91	11.74	0.57	0.87****
							(-1.13)	(0.01)
CFO/ASSETS (%)	7.30	6.80	7.77	7.37	6.79	6.23	0.98****	1.14****
							(-2.73)	(0.01)

<i>ACCRUALS/ASSETS (%)</i>	4.28	4.22	4.25	4.35	3.92	3.93	0.33 (-0.62)	0.42*** (0.01)
<i>PROD/ASSETS (%)</i>	83.94	73.57	77.40	66.81	89.47	79.49	-12.07*** (-10.94)	-12.68*** (0.01)
<i>DISC/ASSETS (%)</i>	5.62	3.87	5.82	3.83	5.46	3.91	0.36*** (-2.68)	-0.08 (0.65)
<i>INST (%)</i>	43.86	45.54	44.93	45.97	42.97	45.20	1.96*** (-5.80)	0.77*** (0.01)
<i>INV_RATIO (TIMES)</i>	12.74	7.12	10.39	6.73	14.74	7.54	4.35*** (-3.58)	-0.81*** (0.01)
<i>No. of Firms</i>	1036		441		595			
<i>N</i>	11417		5470		6481			

Notes: This table presents the descriptive statistics for 11417 firm year observations for the years 2003 to 2016 comparing the BG affiliated firms (441) and standalone firms (595). The numbers in parentheses are t-statistics from t-tests for the differences in means, and p-values from Wilcoxon tests for the differences in medians. The numbers for mean and median were expressed in million Indian rupees. *** denotes significance at the $p < 0.01$ level. For full variable descriptions, please refer to Appendix A.

3.3.2 Regression Results

Table 3.3 reports the regression coefficients based on regression models described in Equations (3.1) to (3.4), respectively. The results provide “normal level” or average estimates of cash flow from operations, production, discretionary expenses, and accruals of all firms in the sample. These estimates are required to calculate abnormal values of the four dependent variables to estimate a given firm's REM and accruals level. Consistent with Roychowdhury (2006) and Srivastava (2019), the explanatory power of the models is quite high, with the average adjusted R^2 across industry years is 96% for production costs and 85% for discretionary expenses.

Table 3.3: REM Estimation Regression Results

	(1) $CFO_t /$ $ASSETS_{t-1}$	(2) $PROD_t /$ $ASSETS_{t-1}$	(3) $DISC_t /$ $ASSETS_{t-1}$	(4) $ACCRUALS_t /$ $ASSETS_{t-1}$
<i>INTERCEPT</i>	0.019 (0.33)	0.003 (0.97)	-0.015 (0.87)	0.042* (1.85)
$1/ASSETS_{t-1}$	-0.889 (-0.23)	2.664 (-0.04)	0.53 (0.30)	-5.326 (-0.67)
$SALES_t / ASSETS_{t-1}$	0.030 (0.56)	0.192** (2.27)	0.009 (0.82)	- -
$\Delta SALES_t / ASSETS_{t-1}$	-0.017 (0.03)	0.534*** (6.03)	- -	- -
$\Delta SALES_{t-1} / ASSETS_{t-1}$	- -	0.017 (0.35)	- -	- -
$\Delta REV_t - \Delta REC_t$	- -	- -	- -	0.076 (1.39)
$PPE_t / ASSETS_{t-1}$	- -	- -	- -	0.011 (0.17)
$LNSIZE_t$	0.001 (0.10)	-0.001 (-0.30)	0.001 (0.69)	- -
ROA_{t-1}	0.262 (1.42)	-0.086 (-0.55)	-0.014 (-0.25)	- -

<i>MTB_t</i>	0.002	-0.001	0.001	-
	(0.32)	(-0.56)	(0.18)	-
<i>SALES_{t+1}/ASSETS_{t-1}</i>	-0.014	0.013	0.002	-
	(-0.48)	(0.28)	(0.32)	-
<i>CFO_{t-1}</i>	0.116	-	-	-
	(0.74)	-	-	-
<i>PROD_{t-1}</i>	-	0.761***	-	-
	-	(7.79)	-	-
<i>DISC_{t-1}</i>	-	-	0.991***	-
	-	-	(19.19)	-
<i>N</i>	11417	11417	11417	11417
<i>ADJUSTED R²</i>	0.22	0.96	0.85	0.07

Notes: This table presents the model to measure normal levels of REM indicators cash flow from operations, production, discretionary expenses, and accruals using the regression equation models of Srivastava (2019). There are 155 separate industry-years over 2003–2016. To measure normal levels of operational activities, regressions were estimated every industry and year over a sample period of fourteen years from 2003 to 2016 including 11417 firm years comprising of 441 BG affiliated firms and 595 standalone firms consisting of 1036 firms. The table also reports the mean R² (across industry-years) for each of these regressions. t values “are reported in the parentheses and are Significant at ‘***’ 0.01 ‘**’ 0.05 ‘*’ 0.1”. For variable descriptions, please refer to Appendix A.

Table 3.4 presents the univariate correlations among abnormal variables: absolute values of production, cash flow from operations, discretionary expenses, and accruals and their relationship with sales and net income as a percentage of total assets, cash flow from operations (CFO). It is found that accruals have a strong negative correlation coefficient (-47%) with CFO, which is consistent with Roychowdhury (2006). This implies that increase in accruals reduces CFO. Net income is found to be positively correlated with accruals (48%) and has low correlation with CFO (25%), which usually is expected to be high. This indicates that most of the sales generated are credit sales. The correlation coefficient among abnormal discretionary expenses and abnormal production costs is negative (-16%). This indicates that REM and AEM are substitutes (Zang, 2012). Likewise, the correlation coefficient between *ABN_ACCRUALS* and *ABN_CFO* is also negative (-15%), indicating that higher the accruals, lower the cash flow availability from operations. This result is similar to Roychowdhury (2006).

Table 3.4: Correlation Matrix among Key Variables

	<i>SALES</i>	<i>NETINCOME</i>	<i>CFO</i>	<i>ACCRUALS</i>	<i>PROD</i>	<i>DISC</i>	<i>ABN_CFO</i>	<i>ABN_PROD</i>	<i>ABN_DISC</i>
<i>NETINCOME</i>	0.27***	1.00							
<i>CFO</i>	0.05***	0.25***	1.00						
<i>ACCRUALS</i>	0.09***	0.48***	-0.47***	1.00					
<i>PROD</i>	0.97***	0.16***	0.01	0.04***	1.00				
<i>DISC</i>	0.34***	0.21***	0.07***	0.10***	0.21***	1.00			
<i>ABN_CFO</i>	-0.94***	-0.12***	0.23***	-0.17***	-	-0.24***	1.00		
					0.96***				
<i>ABN_PROD</i>	0.01	-0.14***	-0.11***	-0.06***	0.12***	-0.18***	-0.03***	1.00	
<i>ABN_DISC</i>	0.01	0.03***	0.01	0.03***	-	0.34***	0.01	-0.16***	1.00
					0.04***				
<i>ABN_ACCRUALS</i>	0.01***	0.30***	-0.51***	0.83***	-0.02*	0.06***	-0.15***	-0.06***	0.01

Notes: This table reports the results of Pearson correlation coefficients among the main variables predicted over fourteen years from 2003 to 2016, comprising a sample of 11417 firm-year observations, including BG affiliated firms and standalone firms. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively. For variable descriptions, please refer to Appendix A.

3.3.3 BGs and Real Earnings Management

We use the following regression equation to test our first hypothesis (H1) that BG affiliated firms have significantly higher REM compared to standalone firms.

$$Y_t = \beta_0 + \beta_1(GROUPSTAND)_t + \beta_2(ABN_ACCRUALS)_t + \beta_3(SIZE)_t + \beta_4(PROMHOL)_t + \beta_5(MTB)_{t-1} + \beta_6(LNRDEXP)_t + \beta_7(AGE)_t + \beta_8(BIG4)_t + \varepsilon_t \quad (3.5)$$

$$ABN_ACCRUALS_t = \beta_0 + \beta_1(GROUPSTAND)_t + \beta_2(REM_STD)_t + \beta_3(SIZE)_t + \beta_4(PROMHOL)_t + \beta_5(MTB)_{t-1} + \beta_6(LNRDEXP)_t + \beta_7(AGE)_t + \beta_8(BIG4)_t + \varepsilon_t \quad (3.6)$$

Where, the dependent variable Y_t represents any one of the three methods of REM namely, abnormal production (ABN_PROD), abnormal CFO (ABN_CFO), abnormal discretionary expenses (ABN_DISC) calculated following Srivastava (2019). $ABN_ACCRUALS$ refers to signed values of abnormal accruals calculated using modified Jones model adjusted for performance following Kim et al. (2012). Table 3.5 presents the results in four columns, where each column uses a different measure of REM and AEM as the dependent variable, namely, ABN_PROD , ABN_CFO , ABN_DISC , $ABN_ACCRUALS$. $GROUPSTAND$ is a dummy variable takes the value 1 if the firm is affiliated to a BG (taken from CMIE-Prowess IQ Data base) or takes the value 0. We control for accruals using $ABN_ACCRUALS$ as a control variable in Equation (3.5) and control for REM in Equation (3.6) using REM_STD which refers to the sum of standardized values of three measures of REM viz., ABN_PROD , ABN_CFO and ABN_DISC following Chi et al. (2011). Following Roychowdhury (2006), we control for MTB, refers to the Market to Book ratio. $SIZE$ is the log value of the market value of equity. $PROMHOL$ refers to promoters holding measured as a deviation from industry level year

mean. *AGE* is the logarithmic value of the number of years from the company's date of incorporation. *LNRDEXP*¹, refers to the logarithmic value of research and development expenses. *BIG4*, refers to audit quality, takes value 1 if the firms are audited by a big 4 auditor or takes the value of 0. The affiliation of a firm to the BG remains constant across years. We did not consider net income variable as it is expected to be endogenous and the consequence of the accounting manipulation correlated with REM. Table 3.5 presents the cross-sectional regression coefficients over the period 2003-2016, using Fama and Macbeth's (1973) regression procedure for each industry and year. The t statistics reported in the parentheses are calculated using standard errors corrected for auto correlation using Newey-west procedure.

Column 1 of Table 3.5, with *ABN_PROD* as the dependent variable, has a positive coefficient (0.005, t = 2.22) for the *GROUPSTAND* dummy variable. This indicates that BG affiliated firms, compared to standalone firms, have higher production costs and are more prone to REM, which supports our Hypothesis H1. This finding is consistent with Razzaque, Ali and Mather (2016) who find that family-owned firms engage in higher REM compared to that of non-family firms. Column 4 of Table 3.5 shows that, with *ABN_ACRUALS* as the dependent variable, the *GROUPSTAND* dummy variable shows no significance, indicating no change in accruals management among BG affiliated firms. Our results are not consistent with the extant literature (Graham et al., 2005), as discretionary accruals are not found to be the main vehicle for REM activities instead, abnormal production is found to be the main vehicle of REM. However, REM activity in the extant literature mainly explores standalone firms, unlike our study focusing on BG affiliated firms. The flexibility offered by BG structure facilitates REM through intra-group transactions, i.e., RPT purchases and sales, which can encourage firms to

¹ With respect to *ABN_DISC*, in the regression Equation (5), we exclude *LNRDEXP* as it forms part of discretionary expenses.

engage in abnormal production for facilitating intra-group activity through RPTs. Our results in Table 3.6 supports this conjecture where REM coefficient is positive and significant indicating higher levels of REM when RPTs among BG affiliated firms are higher.

In summary, no change in discretionary accruals and high abnormal production costs indicate that BG affiliated firms engage more in REM activities than standalone firms. When regressed on *ABN_CFO*, the *GROUPSTAND* dummy has a positive coefficient (0.152, $t = 7.38$) for indicating higher abnormal cash flows among BG affiliated firms. Overall, our results support Hypothesis H1. To check the robustness of our results, we re-run Equation (3.5) by matching BG and standalone firms based on the size, growth, leverage, profitability, and industry using Sales, Market to Book Ratio (*MTB*), Return on Assets (*ROA*), Debt to Equity Ratio and 2-digit NIC code, with the help of propensity score matching model. The matched sample consists of 10941 firm-year observations consisting of 986 unique firms comprising of 442 BG affiliated firms and 545 standalone firms. The results with the matched sample are presented in table 3.6. The results are qualitatively similar to that of main results in Table 6, indicating that BG affiliated firms engage in higher REM compared to that of matched standalone firms.

Table 3.5: Determinants of Real Earnings Management

	(1)	(2)	(3)	(4)
	<i>ABN_PROD</i>	<i>ABN_CFO</i>	<i>ABN_DISC</i>	<i>ABN_ACCRUALS</i>
<i>INTERCEPT</i>	0.041*** (3.62)	-1.614*** (-12.83)	0.003 (1.29)	-0.025*** (-2.61)
<i>GROUPSTAND_t</i>	0.005** (2.22)	0.152*** (7.38)	0.001 (0.94)	-0.002 (-0.88)
<i>ABN_ACCRUALS_t</i>	-0.106*** (-7.77)	-0.547*** (-4.08)	0.001 (0.21)	- -
<i>REM_STD_t</i>	- -	- -	- -	-0.005*** (-7.09)
<i>SIZE_{t-1}</i>	0.003*** (4.85)	0.070*** (11.59)	-0.001 (-0.87)	0.002**** (2.70)
<i>PROMHOL_t</i>	-0.001*** (-4.13)	-0.003*** (-5.36)	0.001 (0.80)	0.001 (1.45)
<i>MTB_{t-1}</i>	0.001 (0.56)	-0.021*** (-3.41)	-0.001 (-0.80)	0.001 (0.77)
<i>RDEXP_t</i>	-0.005*** (-4.54)	-0.044** (-3.18)	- -	0.001 (0.88)
<i>AGE_t</i>	-0.012*** (-4.33)	0.063*** (2.70)	-0.001 (-1.39)	0.006*** (2.65)
<i>BIG4_t</i>	0.002 (0.84)	-0.001 (-0.15)	-0.001* (-1.96)	0.009*** (3.57)
<i>INDFE</i>	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES
<i>N</i>	11417	11417	11417	11417
<i>ADJUSTED R²</i>	0.02	0.15	0.01	0.02

Notes: This table presents the model to measure abnormal levels of REM viz., *ABN_CFO*, *ABN_PROD*, *ABN_DISC* and *ABN_ACCRUALS* using regression Equations (3.5 and 3.6). To measure abnormal levels of operational activities Fama & Macbeth (1973) regressions were used and reported in the table over a sample period of fourteen years from 2003 to 2016 includes 11417 firm year observations of 595 standalone and 441 BG affiliated firms consisting of 1036 firms. t values are reported in the parentheses” are calculated using standard errors corrected for auto correlation using Newey west procedure” and are Significant at ‘****’ 0.01 ‘***’ 0.05 ‘*’ 0.1. The regressions “include industry and year fixed effects”. For variable descriptions, please refer to Appendix A.

Table 3.6: Real Earnings Management with Matched Sample

	(1)	(2)	(3)	(4)
	<i>ABN_PROD</i>	<i>ABN_CFO</i>	<i>ABN_DISC</i>	<i>ABN_ACCRUALS</i>
<i>GROUPSTAND_t</i>	0.004*	0.153***	0.002	-0.001
	(1.91)	(7.24)	(0.70)	(-0.33)
<i>ABN_ACCRUALS_t</i>	-0.107***	-0.510***	0.002	-
	(-7.30)	(-3.46)	(0.70)	-
<i>REM_STD_t</i>	-	-	-	-0.005***
	-	-	-	(-6.24)
<i>SIZE_{t-1}</i>	0.002***	0.070***	-0.001	0.001*
	(4.12)	(10.71)	(-0.87)	(1.89)
<i>MTB_{t-1}</i>	0.001	-0.021***	-0.001	0.001
	(0.31)	(-3.36)	(-0.04)	(0.76)
<i>RDEXP_t</i>	-0.005***	-0.038**	-	0.002
	(-4.55)	(-2.49)	-	(1.36)
<i>AGE_t</i>	-0.013***	0.070**	-0.001*	0.006**
	(-4.61)	(2.84)	(-1.77)	(2.75)
<i>BIG4_t</i>	0.002	0.004	-0.001*	0.009***
	(0.91)	(0.04)	(-1.92)	(3.62)
<i>CONSTANT</i>	0.047***	-1.641***	0.003	-0.027***
	(4.04)	(-12.77)	(1.13)	(-2.70)
IND FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
N	10420	10420	10420	10420
Adjusted R^2	0.01	0.13	0.01	0.01

Notes: This table presents the model to measure abnormal levels of REM viz., Abnormal CFO, Abnormal Production, Abnormal Discretionary expenses, and Abnormal Accruals using regression Equation (3.5-3.6). To measure abnormal levels of operational activities Fama and Macbeth (1973) regressions were used and reported in the table over a sample period of fourteen years from 2003 to 2016 with a matched sample including 10420 firm year observations of 442 standalone and 545 BG affiliated firms consisting of 986 firms. t values are reported in the parentheses “are calculated using standard errors corrected for auto correlation using Newey west procedure” and are Significant at “***” 0.01 “**” 0.05 “*” 0.1. The regressions “include industry and year fixed effects. For variable descriptions, please refer to Appendix.

3.3.4 BGs, Related Party Transactions, and REM

To test our Hypothesis, H2, that REM is positively correlated with RPTs of a given BG affiliated firm, we use the following regression equation.

$$Y_t = \beta_0 + \beta_1(NE TPURCHASES)_t + \beta_2(RP LOAN)_t + \beta_3(ABN_{ACCRUALS})_t + \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_8(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \beta_9(PROMHOL)_t + \beta_{10}(LNAGE)_t + \beta_{11}(LNRDEXP)_t + \beta_{12}(BIG4)_t + \beta_{13}(HERF)_t + \varepsilon_t \quad (3.7)$$

$$ABN_{ACCRUALS_t} = \beta_0 + \beta_1(NE TPURCHASES)_t + \beta_2(RP LOAN)_t + \beta_3(REM_{STD})_t + \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_8(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \beta_9(PROMHOL)_t + \beta_{10}(LNAGE)_t + \beta_{11}(LNRDEXP)_t + \beta_{12}(BIG4)_t + \beta_{13}(HERF)_t + \varepsilon_t \quad (3.8)$$

Where Y_t is equal to ABN_PROD , ABN_CFO , and ABN_DISC in period t . Table 3.7 presents the results of regression Equations (3.7) and (3.8) for different dependent variables viz., ABN_PROD , ABN_CFO , ABN_DISC , and measure of accruals, i.e., $ABN_ACCRUALS$ whose name appears at the top of the corresponding column. $SIZE$, MFG , MTB , CL , $INVREC$, $BIG4$ are same as defined earlier, $RPLOAN$ refers to the net of related party loans given scaled by the lag of total assets for the period t . $PROMHOL$ refers to promoters holding measured as a deviation from industry level year mean. $INST$ refers to “percentage of outstanding shares owned by institutional owners, expressed as deviation from the corresponding industry-year mean”. $HERF$ refers to Herfindahl index, which measures the concentration level of BG affiliated firms in an industry. $HERF$ is calculated as follows: $HERF = \sum_{i=1}^N [s_i/S]^2$. Higher $HERF$ refers to the higher concentration of BG in an industry. Here N refers to the number of firms in an industry. s_i refers

to the sales of a BG affiliated firm at period t . S refers to total sum of sales of the industry for period t . We use *NETPURCHASES* to capture net related party transactions of each BG affiliated firm. This variable is constructed by taking the difference between the cumulative value of all purchases and all sales within-group firms. The related party purchases and related party sales are scaled by the lag of total assets. A positive (negative) *NETPURCHASES* implies more purchases through related party transactions by a BG affiliated firm compared to sales. The positive coefficient (0.008, $t=2.10$) for *NETPURCHASES*, when regressed on *ABN_PROD*, is significant, which implies that BG affiliated firms have higher abnormal production when they have more RPTs. In other words, RPTs facilitates REM in the form of abnormal production. We find that the coefficient for *RPLOAN* is significant and negative (-0.042, $t = - 3.86$) when regressed on *ABN_CFO*. It implies that the loans given to the related parties lower cash flows from operating activities. A positive coefficient (0.067, $t = 2.23$) on *RPLOAN* when regressed on *ABN_PROD* shows that higher the loans to related parties higher is the REM through abnormal production. Whereas related party loans decrease engagement in abnormal discretionary expenses which indicates that higher related party loans lowers the REM via discretionary expenses. These results, in general, indicate that REM increases with intra-group transactions mainly through abnormal production and, thus, lends support to our Hypothesis H2.

Table 3.7: REM and Related Party Transactions

	(1)	(2)	(3)	(4)
	<i>ABN_PROD</i>	<i>ABN_CFO</i>	<i>ABN_DISC</i>	<i>ABN_ACCRUALS</i>
<i>NETPURCHASES_t</i>	0.008** (2.10)	0.001 (0.58)	0.001 (0.95)	-0.002 (-0.51)
<i>RPLOAN_t</i>	0.067** (2.23)	-0.042*** (-3.86)	-0.039*** (-3.58)	-0.032 (-1.14)
<i>ABN_ACCRUALS_t</i>	-0.084*** (-5.01)	0.001 (0.082)	0.001 (0.139)	- -
<i>REM_STD_t</i>	- -	- -	- -	-0.014*** (-16.13)
<i>MTB_{t-1}</i>	0.001 (-0.71)	0.001 (0.402)	0.001 (0.44)	0.001 (-1.19)
<i>CL_t</i>	0.026*** (2.97)	-0.002 (-0.75)	-0.002 (-0.58)	-0.032*** (-3.68)
<i>INVREC_{t-1}</i>	0.001*** (-4.23)	0.001* (-1.75)	0.001 (-1.365)	0.001 (1.03)
<i>INST_t</i>	0.001* (1.66)	0.001** (2.17)	0.001** (2.085)	0.001 (1.05)
<i>SIZE_{t-1}</i>	0.001 (0.69)	-0.001*** (-3.05)	0.001 (-0.676)	0.001 (0.15)
<i>PROMHOL_t</i>	0.001 (0.90)	0.001** (2.05)	0.001* (1.85)	0.001 (1.14)
<i>AGE_t</i>	-0.008** (-2.53)	-0.001 (-1.15)	-0.001 (-0.55)	0.007** (2.01)
<i>RDEXP_t</i>	-0.002** (-2.01)	0.001*** (4.53)	- -	0.001 (1.62)
<i>BIG4</i>	0.005* (1.62)	-0.001 (-0.31)	-0.001 (-0.31)	0.006** (1.95)

	(1.83)	(-1.00)	(-1.21)	(2.14)
<i>HERF</i>	0.002	-0.003	-0.003	0.014**
	(0.39)	(-1.14)	(-1.08)	(2.31)
<i>CONSTANT</i>	0.032**	0.010	0.006	-0.026
	(2.05)	(1.57)	(1.02)	(-1.64)
<i>INDFE</i>	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES
<i>N</i>	3366	3366	3366	3366
<i>ADJUSTED R²</i>	0.01	0.01	0.01	0.09

Notes: This table presents our main results on the relationship between real activities manipulation and RPTs using *NETPURCHASES* as a key explanatory variable, which is the difference between related party sales and related party purchases for the BG affiliated firms. The fixed effect regressions model was used to estimate the regression Equation (3.7-3.8) over a period of fourteen years from 2003 to 2016 with a total sample of 3366 firm-year observations consisting of 360 BG affiliated firms. t values “are reported in the parentheses and are Significant at ‘***’ 0.01 ‘**’ 0.05 ‘*’ 0.1”. The regressions include industry and year fixed effects. For variable descriptions, please refer to Appendix A.

3.3.5 REM, RPTs and Firm Performance

If BG firms are more likely to engage in REM compared to standalone firms, the benefits of REM must be higher for the former set of firms, and the costs of REM must be lower. A rupee/dollar of REM is likely to generate the same benefit for both BG firms and standalone firms, other things remaining constant. The costs associated with REM results in reducing their cost of equity due to possible future profitability associated with REM's benefits.

To test our Hypothesis H3 prediction, whether BG affiliated firms REM is having a positive effect on their future profitability, we regressed REM at period t-1 and its interaction with RPTs on profitability at period t. We considered Return on Assets (ROA) as a proxy to measure profitability. The following three equations use three different forms of REM: abnormal production, abnormal cash flows, and abnormal discretionary expenses, respectively.

$$Y_t = \beta_0 + \beta_1(ABN_PROD)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_PROD)_{t-1} + \beta_3(RPT)_{t-1} + \beta_4(SIZE)_t + \beta_5(MTB)_t + \beta_6(AGE)_t + \beta_7(RDEXP)_t + \beta_8(DEBTEQUITY)_t + \beta_9(PROMHOL)_t + \beta_{10}(BIG4)_t + \varepsilon_t \quad (3.9)$$

$$Y_t = \beta_0 + \beta_1(ABN_CFO)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_CFO)_{t-1} + \beta_3(RPT)_{t-1} + \beta_4(SIZE)_t + \beta_5(MTB)_t + \beta_6(AGE)_t + \beta_7(RDEXP)_t + \beta_8(DEBTEQUITY)_t + \beta_9(PROMHOL)_t + \beta_{10}(BIG4)_t + \varepsilon_t \quad (3.10)$$

$$Y_t = \beta_0 + \beta_1(ABN_DISC)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_DISC)_{t-1} + \beta_3(RPT)_{t-1} + \beta_4(SIZE)_t + \beta_5(MTB)_t + \beta_6(AGE)_t + \beta_7(DEBTEQUITY)_t + \beta_8(PROMHOL)_t + \beta_9(BIG4)_t + \varepsilon_t$$

(3.11)

$$Y_t = \beta_0 + \beta_1(REM_STD)_{t-1} * (RPT)_{t-1} + \beta_2(REM_STD)_{t-1} + \beta_3(RPT)_{t-1} + \\ \beta_4(SIZE)_t + \beta_5(MTB)_t + \beta_6(AGE)_t + \beta_7(DEBTEQUITY)_t + \beta_8(PROMHOL)_t + \\ \beta_9(BIG4)_t + \varepsilon_t$$

(3.12)

$$Y_t = \beta_0 + \beta_1(ABN_ACCRUALS)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_ACCRUALS)_{t-1} + \\ \beta_3(RPT)_{t-1} + \beta_4(SIZE)_t + \beta_5(MTB)_{t-1} + \beta_6(AGE)_t + \\ \beta_7(RDEXP)_t + \beta_8(DEBTEQUITY)_t + \beta_9(PROMHOL)_t + \beta_{10}(BIG4)_t + \varepsilon_t$$

(3.13)

Where Y_t is equal to ROA at period t , we have considered REM at period $t-1$ as the current year profitability gets affected by the previous year REM . RPT_{t-1} refers to the sum of related party transactions, viz., related party revenues and expenses, related party receivables and payables, related party loans given and taken, scaled by lagged total assets of the BG affiliated firms at period $t-1$. Table 3.8 presents the results of Equations (3.9), (3.10), (3.11), and (3.12) in four columns, where each column uses a different measure of earnings management as the key explanatory variable, namely, ABN_PROD , ABN_CFO , ABN_DISC and $ABN_ACCRUALS$. As shown in the table, abnormal production-based REM - ABN_PROD_{t-1} when interacted with RPT supports our Hypothesis H3 that an increase in REM , coupled with $RPTs$, leads to higher future profitability in BG affiliated firms (5.219, $t=4.15$). This is consistent with the results reported in Table 3.8, which shows BG affiliated firms use abnormal production as the main vehicle for their REM activities. The results indicate that abnormal production on its own reduces the future profitability (-18.036, $t= -9.92$) the positive significant coefficient for $RPTs$ (0.558, $t= 5.16$) and positive interaction effect indicate that abnormal production aimed at supplying goods within BG affiliated firms is the main reason

for the positive effect behind abnormal production-based REM. The same result does not hold for REM through abnormal discretionary expenses where *RPTs* interacted by discretionary expenses shows lower *ROA* indicating higher discretionary expenses leads to lower *ROA*. This result shows the reason behind BG affiliated firms opting for abnormal production based REM.

Table 3.8: REM, RPTs and Firm Performance

	(1)	(2)	(3)	(4)	(5)
	ROA	ROA	ROA	ROA	ROA
$ABN_PROD_{t-1} * RPT_{t-1}$	5.219*** (4.15)	-	-		-
$ABN_CFO_{t-1} * RPT_{t-1}$	-	7.258** (2.05)	-		-
$ABN_DISC_{t-1} * RPT_{t-1}$	-	-	-22.253*** (-4.49)		-
$REM_STD_{t-1} * RPT_{t-1}$				0.263* (1.72)	
$ABN_ACCRUALS_{t-1} * RPT_{t-1}$	-	-	-	-	-2.883*** (-3.68)
ABN_PROD_{t-1}	-18.036*** (-9.92)	-	-	-	-
ABN_CFO_{t-1}	-	12.441*** (6.25)	-	-	-
ABN_DISC_{t-1}	-	-	5.899 (1.03)	-	-
REM_STD_{t-1}				-0.171* (-1.67)	-
$ABN_ACCRUALS_{t-1}$	-	-	-	-	6.801*** (3.60)
RPT_{t-1}	0.558*** (5.16)	0.197*** (4.09)	0.807*** (5.16)	0.147*** (4.27)	0.851*** (4.25)
$SIZE_t$	1.597*** (18.80)	1.569*** (18.38)	1.714*** (24.04)	1.715*** (23.93)	1.445*** (16.30)
MTB_t	0.038 (1.30)	0.040 (1.37)	0.045 (1.50)	0.047 (1.57)	0.040 (1.32)
AGE_t	-2.052*** (-5.52)	-1.963*** (-5.25)	- (-3.91)	- (-4.13)	-1.295*** (-3.39)
$RDEXP_t$	0.209** (2.46)	0.228*** (2.66)	-	-	0.378*** (4.79)
$DEBTEQUITY_t$	-0.043*** (-6.18)	-0.043*** (-6.14)	- (-6.10)	- (-6.07)	-0.043*** (-5.83)
$PROMHOL_t$	0.072*** (7.91)	0.075*** (8.15)	0.073*** (7.84)	0.073*** (7.81)	0.077*** (8.20)
$BIG4_t$	-0.653** (-2.04)	-0.603* (-1.87)	-0.634* (-1.95)	-0.611* (-1.87)	-0.841** (-2.46)
CONSTANT	3.352** (2.07)	3.027* (1.86)	2.069 (1.33)	2.467 (1.58)	1.168 (0.72)

<i>INDFE</i>	YES	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES	YES
<i>N</i>	3582	3582	3582	3460	3582
<i>ADJUSTED R²</i>	0.24	0.24	0.19	0.19	0.19

Notes: This table presents our results on the relationship between profitability (*ROA*) and REM at t-1 as key explanatory variables. The regression Equations (3.9-3.13) are estimated over a period of fourteen years from 2003 to 2016 with a total sample of 3582 firm-year observations belonging to 360 BG affiliated firms. t values “are reported in the parentheses and are Significant at ‘***’ 0.01 ‘**’ 0.05 ‘*’ 0.1”. The regressions include industry and year fixed effects. For variable descriptions, please refer to Appendix A.

3.3.6 The Effect of Intragroup Activities on Cost of Equity

Kim and Sohn (2013) show that REM is positively correlated with the cost of equity (*COE*). They argue that a higher cost of equity is mainly attributed to the noise in cash flows associated with REM activities. In our case, if REM benefits BG affiliated firms, then it should reflect through a potential economic benefit. We revisit Kim and Sohn's (2013) argument in the context of BGs. Suppose intragroup transactions are aimed at improving firm survival. In that case, they have the potential to reduce the cost of equity when REM is high. On the other hand, if REM aims to expropriate resources by controlling owner-managers, then it should be the opposite. We explore which of these two contrasting outcomes hold in our data. We use Easton (2004) model to obtain the firm-level implied cost of equity capital, calculated as follows.

$$P_t = \frac{FEPS_{t+2} + r_{ES} DPS_{t+1} - FEPS_{t+1}}{r_{ES}^2} \quad (3.14)$$

Where P_t is share price on the 30th of September of year t, DPS_{t+1} refers to dividend for year t, which is assumed that $DPS_{t+1} = DPS_0$. $FEPS_{t+1}$ refers to earnings per share for year t plus the average growth rate of the company. $FEPS_{t+2}$ is obtained by adding growth rate to

estimated *FEPS* at year $t+1$. R_{ES} refers to the estimate of the cost of equity/expected rate of return estimated using optimization function.

Using the below Equations (3.15), (3.16), (3.17), (3.18) and (3.19) we estimate the impact of REM^2 on the corresponding BG affiliated firm's cost of equity. Where Y_t takes the value of implied *COE* estimated using Easton (2004) method as discussed earlier. We have not included *RDEXP* in Equation (3.17) as it forms part of discretionary expenses and is correlated with discretionary expenses.

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(ABN_PROD)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_PROD)_{t-1} + \beta_3(RPT)_{t-1} + \\
& \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_7(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \\
& \beta_9(PROMHOL)_t + \beta_{10}(AGE)_t + \beta_{11}(RDEXP)_t + \beta_{12}(DEBTEQUITY)_t + \\
& \beta_{13}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.15}$$

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(ABN_CFO)_{t-1} * (RPT)_{t-1} + \beta_2ABN_CFO_{t-1} + \beta_3(RPT)_{t-1} + \\
& \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_7(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \\
& \beta_9(PROMHOL)_t + \beta_{10}(AGE)_t + \beta_{11}(RDEXP)_t + \beta_{12}(DEBTEQUITY)_t + \\
& \beta_{13}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.16}$$

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(ABN_DISC)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_DISC)_{t-1} + \beta_3(RPT)_{t-1} + \\
& \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_7(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \\
& \beta_9(PROMHOL)_t + \beta_{10}(AGE)_t + \beta_{11}(DEBTEQUITY)_t + \beta_{12}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.17}$$

² We haven't considered *NETPURCHASES* in the regression equation because it is already form part in *REM* proxies.

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(ABN_ACCRUALS)_{t-1} * (RPT)_{t-1} + \beta_2(ABN_ACCRUALS)_{t-1} + \\
& \beta_3(RPT)_{t-1} + \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_7(INST)_{t-1} + \\
& \beta_8(SIZE)_{t-1} + \beta_9(PROMHOL)_t + \beta_{10}(AGE)_t + \beta_{11}(RDEXP)_t + \\
& \beta_{12}(DEBTEQUITY)_t + \beta_{13}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.18}$$

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(REM_STD)_{t-1} * (RPT)_{t-1} + \beta_2(REM_STD)_{t-1} + \beta_3(RPT)_{t-1} + \\
& \beta_4(MTB)_{t-1} + \beta_5(CL)_t + \beta_6(INVREC)_{t-1} + \beta_7(INST)_{t-1} + \beta_8(SIZE)_{t-1} + \\
& \beta_9(PROMHOL)_t + \beta_{10}(AGE)_t + \beta_{11}(RDEXP)_t + \beta_{12}(DEBTEQUITY)_t + \\
& \beta_{13}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.19}$$

Table 3.9 presents the results of the regression Equations (3.15-3.19) in five columns, where each column uses a different measure of earnings management at period t-1 as the key explanatory variable namely, ABN_PROD_{t-1} , ABN_CFO_{t-1} , ABN_DISC_{t-1} , REM_STD and $ABN_ACCRUALS$. When regressed with COE , ABN_PROD_{t-1} shows a significant negative coefficient (-1.102, t= -3.44), which indicates that higher REM facilitated by abnormal production reduces cost of equity. This result is consistent with the recent study of Joni, Ahmed & Hamilton (2019) who find that cost of capital is lower for BG affiliated firms. The lower cost of equity by engaging in REM through abnormal production could be because it reduces the frictions among BG affiliated firms and is perceived as an advantage by the market. On the contrary, ABN_CFO_{t-1} shows a positive coefficient (1.192, t= 3.55) when regressed on COE indicating that markets perceive manipulation of cash flows as negative and impose penalty with higher cost of equity are consistent with the findings of Kim and Sohn (2013). This result implies that firms need to consider the trade-off between the kind of REM they must resort to by keeping COE under consideration (Pappas et al., 2019). We note that engaging in RPTs via

abnormal production is a special case for BG affiliated firms. RPTs plays the role of prominent transactions for the BGs. In the case of BG affiliated firms, the prediction of REM is through *ABN_PROD* but not from the perspective of discretionary expenses. Table 3.9 shows that REM through *ABN_PROD* is decreasing *COE*, where we do not find any impact of discretionary expenses on *COE*. However, we do not find any impact on the *COE* when REM is interacted by RPTs showing RPTs does not play a crucial role in the determination of *COE*. In summary, higher production through RPTs can potentially reduce the cost of equity of BG affiliated firms, which shows that BG's structural advantage helps them raise capital at a cheaper cost. This evidence supports our Hypothesis H3.

Table 3.9: Real Earnings Management and Cost of Equity

	(1)	(2)	(3)	(4)	(5)
	COE	COE	COE	COE	COE
$ABN_PROD_{t-1} * RPT_{t-1}$	-0.052	-	-	-	-
	(-0.15)	-	-	-	-
$ABN_CFO_{t-1} * RPT_{t-1}$	-	-0.364	-	-	-
	-	(-0.65)	-	-	-
$ABN_DISC_{t-1} * RPT_{t-1}$	-	-	1.187	-	-
	-	-	(0.51)	-	-
$ABN_ACCRUALS_{t-1} * RPT_{t-1}$	-	-	-	0.072	-
	-	-	-	(0.20)	-
$REM_STD_{t-1} * RPT_{t-1}$	-	-	-	-	-0.021
	-	-	-	-	(-0.79)
ABN_PROD_{t-1}	-1.102***	-	-	-	-
	(-3.44)	-	-	-	-
ABN_CFO_{t-1}	-	1.192***	-	-	-
	-	(3.55)	-	-	-
ABN_DISC_{t-1}	-	-	1.375	-	-
	-	-	(1.36)	-	-
$ABN_ACCRUALS_{t-1}$	-	-	-	0.221	-
	-	-	-	(0.69)	-
REM_STD_{t-1}	-	-	-	-	0.014

	-	-	-	-	(0.84)
RPT_{t-1}	0.094*** (2.86)	0.082*** (2.69)	0.087*** (2.71)	0.084*** (2.73)	0.091*** (2.99)
MTB_{t-1}	0.003 (0.37)	0.003 (0.40)	0.003 (0.38)	0.004 (0.61)	0.003 (0.43)
CL_t	-0.609*** (-2.89)	-0.675*** (-3.20)	-0.545*** (-2.58)	-0.588*** (-2.68)	- 0.633*** (-3.00)
$INVREC_{t-1}$	-0.004** (-2.01)	-0.004 (-1.64)	-0.004** (-2.10)	-0.006*** (-2.62)	-0.005** (-2.51)
$INST_{t-1}$	-0.003 (-0.92)	-0.003 (-0.91)	-0.004 (-1.02)	-0.004 (-1.15)	-0.003 (-0.91)
$SIZE_{t-1}$	0.014 (0.94)	0.013 (0.84)	0.057*** (4.35)	0.007 (0.43)	0.009 (0.62)
$PROMHOL_t$	-0.003 (-0.69)	-0.002 (-0.66)	-0.004 (-0.95)	-0.004 (-1.03)	-0.002 (-0.63)
AGE_t	-0.029 (-0.47)	-0.019 (-0.31)	0.018 (0.29)	-0.005 (-0.07)	-0.026 (-0.42)
$RDEXP_t$	0.078*** (5.59)	0.080*** (5.72)	- -	0.073*** (5.01)	0.082*** (5.86)
$DEBTEQUITY_t$	0.002 (1.32)	0.002 (1.37)	0.002 (1.13)	0.002 (1.14)	0.002 (1.19)
$BIG4_t$	-0.243*** (-4.61)	-0.239*** (-4.53)	-0.263*** (-4.97)	-0.254*** (-4.55)	- 0.241*** (-4.55)

<i>CONSTANT</i>	1.521***	1.493***	1.429***	1.464***	1.521***
	(6.09)	(5.98)	(5.70)	(5.67)	(6.08)
<i>INDFE</i>	YES	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES	YES
<i>N</i>	3070	3070	3070	2947	3070
<i>ADJUSTED R²</i>	0.07	0.07	0.06	0.05	0.06

Notes: This table presents our results on the relationship between real activities manipulation (*ABN_PROD*), (*ABN_CFO*), and (*ABN_DISC*) as key explanatory variables separately regressed on cost of equity calculated using Easton method (2004). Regression Equations (3.15-3.19) were estimated over a period of fourteen years from 2003 to 2016 with a total sample of 3070 firm-year observations consisting of 381 BG affiliated firms. t values “are reported in the parentheses and are Significant at ‘***’ 0.01 ‘**’ 0.05 ‘*’ 0.1”. The regressions include industry and year fixed effects. For variable descriptions, please refer to Appendix A.

In order to capture the joint effect of benefits (*ROA*) and costs (*COE*) on REM we run logistic regression Equation (3.20) in Table 3.10 using REM dummy (Y_t) viz., *ABN_PROD_DUM*, *ABN_CFO_DUM*, *ABN_DISC_DUM* and *STD_REM_DUM*. Where *ABN_PROD_DUM* takes the value 1 if the *ABN_PROD* is higher than the industry median otherwise takes the value. In the same vein, *ABN_CFO_DUM* takes the value 1 if the *ABN_CFO* is higher than the industry median otherwise takes the value 0; *ABN_DISC_DUM* takes the value 1 if the abnormal production is higher than the industry median otherwise takes the value 0; *STD_REM_DUM* takes the value 1 if the *STD_REM* is higher than industry median otherwise takes the value 0. Y_t takes any one of the four REM_DUMMY variables. In order to check for model goodness of fit, we presented Akaike Information Criterion (AIC), Bayesian information criterion (BIC), and log-likelihood (LOG.LIK) in the regression table 3.10.

$$\begin{aligned}
Y_t = & \beta_0 + \beta_1(ROA)_t * (COE)_t + \beta_2(ROA)_t + \beta_3(COE)_t + \beta_4(SIZE)_t + \beta_5(MTB)_t + \\
& \beta_6(AGE)_t + \beta_7(RDEXP)_t + \beta_8(PROMHOL)_t + \beta_9(DEBTEQUITY)_t + \\
& \beta_{10}(BIG4)_t + \varepsilon_t
\end{aligned}
\tag{3.20}$$

Here in the above regression the key independent variables of interest is the interaction term and variables *ROA* and *COE*. The results indicate that the interaction term *ROA*COE* shows positive and significant relationship with *ABN_PROD_DUM* indicating that 1 unit change in *ROA*COE* leads to increase in REM through *ABN_PROD_DUM* by 0.008. This shows that both *ROA* and *COE* leads to increased level of abnormal production in BG affiliated firms. It is also found that coefficients of *ROA* and *COE* are negative when regressed on *ABN_PROD_DUM* and positive when regressed on *ABN_CFO_DUM*, indicating trade-off of *ROA* and *COE* on REM. For BG affiliated firms, the joint effect matters more than individual effects. Lower cost of equity will increase production; however, it does not mean that a higher

profitable firm produces more. It is important to note that ROA tends to be low at higher production levels due to additional investments in fixed assets required for higher production. On the other hand, firms that have lower *COE* are more profitable, and hence, the joint effect of *COE* and *ROA* matters for higher REM.

Table 3.10: REM Cost and Benefits

	(1) <i>ABN_PROD_DUM</i>	(2) <i>ABN_CFO_DUM</i>	(3) <i>ABN_DISC_DUM</i>	(4) <i>STD_REM_DUM</i>
<i>ROA_t* COE_t</i>	0.008** (2.53)	-0.001 (-0.41)	0.001 (0.45)	0.002 (0.79)
<i>ROA_t</i>	-0.060*** (-5.32)	0.031*** (2.79)	-0.001 (-0.11)	-0.008 (-0.79)
<i>COE_t</i>	-0.080*** (-3.03)	0.071*** (2.68)	-0.018 (-0.70)	-0.013 (-0.49)
<i>SIZE_t</i>	0.086*** (4.08)	-0.022 (-1.07)	-0.042** (-2.35)	0.013 (0.60)
<i>MTB_t</i>	0.014 (1.23)	-0.008 (-0.71)	0.002 (0.198)	0.007 (0.65)
<i>AGE_t</i>	-0.231*** (-2.73)	-0.117 (-1.39)	0.059 (0.70)	-0.219*** (-2.62)
<i>RDEXP_t</i>	-0.039** (-1.96)	0.008 (0.40)	- -	0.032 (1.60)
<i>PROMHOL_t</i>	0.004* (1.74)	-0.001 (-0.35)	-0.003 (-1.40)	-0.001 (-0.28)
<i>DEBTEQUITY_t</i>	0.007* (1.67)	-0.002 (-0.81)	0.002 (0.88)	0.003 (1.23)
<i>BIG4_t</i>	0.088 (1.18)	-0.133* (-1.80)	-0.138* (-1.87)	-0.160** (-2.16)
<i>CONSTANT</i>	0.685* (1.86)	0.290 (0.79)	0.167 (0.46)	0.601* (1.66)
<i>INDFE</i>	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES
<i>N</i>	3582	3582	3582	3582
<i>AIC</i>	5999.2	6042.7	6061.2	6074.2
<i>BIC</i>	6197.1	6240.6	6252.7	6272.0
<i>LOG.LIK.</i>	-2968.60	-2990.36	-3000.59	-3006.07

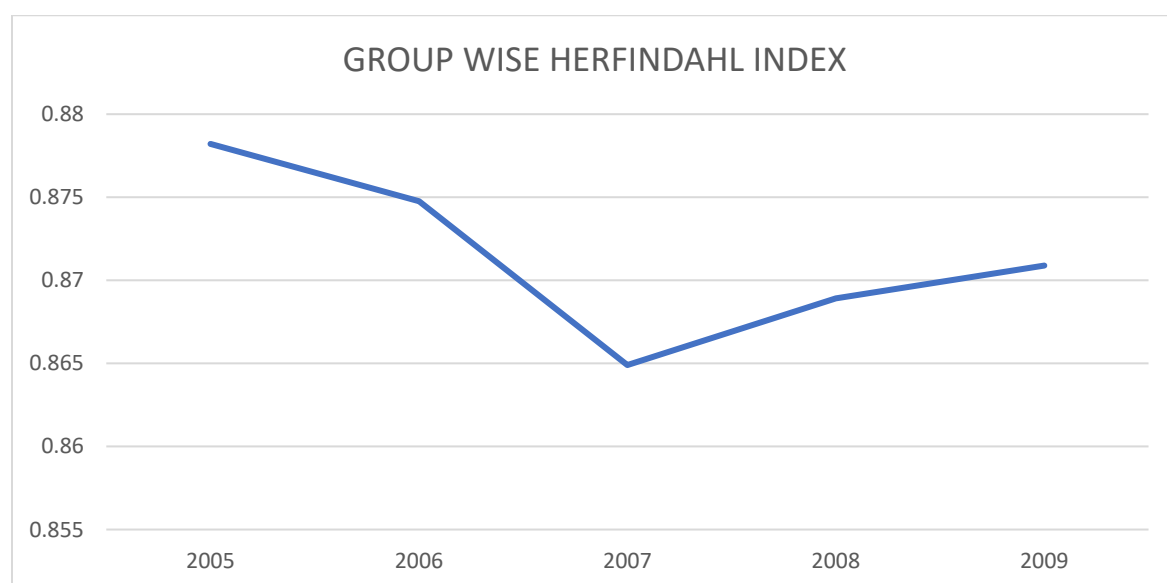
Notes: This table presents our logistic regression results on the relationship between real activities manipulation by using *COE* and *ROA* as key dependent variables separately regressed on (*ABN_PROD_DUM*), (*ABN_CFO_DUM*), (*ABN_DISC_DUM*) and (*STD_REM_DUM*). Regression Equation (3.20) was estimated over a period of fourteen years from 2003 to 2016 with a total sample of 4369 firm-year observations consisting of 360 BG affiliated firms. t values “are reported in the parentheses and are Significant at ‘****’ 0.01 ‘***’ 0.05 ‘**’ 0.1”. The regressions include industry and year fixed effects. For variable descriptions, please refer to Appendix A.

3.4 Robustness checks

3.4.1 Endogeneity tests: Effect of The Competition Amendment Act, 2007 on Earnings Management

We follow Section 4, clause (1) of The Competition Amendment Act, 2007, which came into effect from October 2007. Given that the Act aims to dismantle BGs' structural advantages that lead to a dominant position, we expect the Act to limit the extent of REM facilitated through RPTs. To measure competitiveness among the BG affiliated firms, we calculated Herfindahl index³ at the group level. Figure 3.1 presents the Herfindahl index's graphical representation, which depicts a sharp decrease in the competitiveness of BG affiliated firms in 2007, indicating the Act's effectiveness.

Figure 3.1: Group wise Herfindahl Index



Source: CMIE prowess IQ data base (2020)

Notes: This graph depicts the Herfindahl index of BG affiliated firms over the year 2005 to 2009. x-axis reports the year and y-axis reports the Herfindahl index calculated at the BG level.

³ Herfindahl index is a standard tool to measure the concentration and potential market power of firms in a market which is calculated as $H = \sum_{i=1}^N s_i^2$, where s_i is the market share of firm i in the market, and N is the number of firms. H ranges in value from $\frac{1}{N}$ to 1, where a small index represents a competitive industry with no dominant firms, while a large index value indicates a market with a dominant player(s) (Chu et al., 2018).

We use Difference in Difference (DiD) Regression model to check the exogenous effect of the Competition (Amendment) Act, 2007 on RPTs induced earnings management with the help of Equation (3.16). We use the *TIMEDUM* variable, which captures the year before and after the Competition (Amendment) Act, 2007 and the interaction of *TIMEDUM*NETPURCHASES* dummy to check whether the Act's implementation reduced REM facilitated by RPTs among the BG affiliated firms. *TIMEDUM* takes the value 0 if the year is 2006 and 1 otherwise. Table 3.11 presents the DiD results of BG affiliated firms for which the REM is above the median level. The results indicate a reduction in the REM by bearing negative coefficients for the interaction term *TIMEDUM*NETPURCHASES* when regressed on the *ABN_PROD_t* which shows a negative coefficient (-0.082, t=-2.03) for the interaction term *TIMEDUM*NETPURCHASES* when regressed on *ABN_PROD*. We further found negative coefficients on *ABN_CFO*, *ABN_DISC* and *ABN_ACCRUALS*. It indicates that post-enactment of the Act, we witness a reduction in RPTs based REM engagement among the BG affiliated firms. However, we could not find any significant result when we use the total sample in Table 3.12 indicating that firms who are engaging in the above median level of abnormal production are decreasing post the implementation of The Competition Amendment Act, 2007. Consistent with our previous results, we do not find any relation with accrual-based earnings management. Overall, these results indicate that the provisions of The Competition Amendment Act, 2007, decreased the competitiveness of the BG affiliated firms by reducing the extent of REM through RPTs.

Table 3.11: Earnings Management and The Competition Amendment Act, 2007 (Above Median)

	(1) <i>ABN_PROD</i>	(2) <i>ABN_CFO</i>	(3) <i>ABN_DISC</i>	(4) <i>ABN_ACCRUALS</i>
<i>TIMEDUM</i>	-0.006 (-0.47)	0.048 (0.79)	0.001 (0.03)	-0.055 (-1.37)
<i>TIMEDUM*NETPURCHASES_t</i>	-0.082** (-2.03)	-0.632** (-2.40)	-0.003* (-1.74)	-0.082** (-2.25)
<i>NETPURCHASES_t</i>	0.042 (1.49)	0.252* (1.82)	0.005 (0.80)	0.036* (1.68)
<i>ABN_ACCRUALS_t</i>	-0.167* (-1.91)	-1.195*** (-2.66)	-0.011 (-0.59)	- -
<i>REM_STD_t</i>	- -	- -	- -	-0.007*** (-3.15)
<i>SIZE_{t-1}</i>	-0.001 (-0.05)	0.110*** (4.98)	-0.001 (-0.24)	0.001 (0.50)
<i>MTB_t</i>	-0.002 (-0.72)	- (-2.89)	0.001 (1.28)	0.001 (0.53)
<i>RDEXP_t</i>	-0.015 (-1.34)	-0.041 (-0.79)	- -	-0.001 (-0.22)
<i>AGE_t</i>	0.004 (0.25)	0.243** (2.99)	0.002 (0.53)	0.014 (1.47)
<i>BIG4_t</i>	0.006 (0.42)	0.174** (2.47)	-0.005 (-1.51)	-0.001 (-0.15)
<i>PROMHOL</i>	0.001 (0.72)	0.002 (1.21)	0.001 (0.41)	0.001* (1.67)
<i>CONSTANT</i>	0.021 (0.29)	-2.325*** (-6.61)	0.001 (0.03)	-0.055 (-1.37)
<i>INDFE</i>	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES
<i>Adjusted R²</i>	0.01	0.24	0.02	0.05

Notes: This table presents the DiD model to measure the effect of Competition (Amendment) Act, 2007 on abnormal levels of REM viz., Abnormal CFO, Abnormal Production, Abnormal Discretionary expenses and Abnormal Accruals using regression Equations (3.16) and (3.17). The sample covers the REM if BG affiliated firms above the median level for a period of two years i.e., 2006 and 2008. t values are reported in the parentheses are Significant at ‘***’ 0.01 ‘**’ 0.05 ‘*’ 0.1. The regressions include industry fixed effects. For variable descriptions, please refer to Appendix A.

Table 3.12: Earnings Management and The Competition Amendment Act, 2007

	(1)	(2)	(3)	(4)
	<i>ABN_PROD</i>	<i>ABN_CFO</i>	<i>ABN_DISC</i>	<i>ABN_ACCRUALS</i>
<i>TIMEDUM</i>	-0.004 (-0.48)	0.034 (0.59)	-0.002 (-0.94)	-0.010 (-1.41)
<i>TIMEDUM*NETPURCHASES_t</i>	-0.058* (-1.96)	-0.090 (-0.52)	-0.007 (-1.02)	-0.029 (-1.32)
<i>NETPURCHASES_t</i>	0.040 (1.79)	0.194 (1.47)	0.004 (0.86)	0.039** (2.33)
<i>ABN_ACCRUALS_t</i>	-0.177** (-2.63)	-0.830** (-2.12)	-0.002 (-0.12)	- -
<i>REM_STD_t</i>	- -	- -	- -	-0.008*** (-3.10)
<i>SIZE_{t-1}</i>	-0.001 (-0.72)	0.143*** (6.68)	-0.001 (-0.15)	0.004* (1.66)
<i>MTB_t</i>	-0.002 (-0.82)	- (-3.32)	0.001 (1.52)	0.001 (0.42)
<i>RDEXP_t</i>	-0.011 (-1.31)	-0.075 (-1.49)	- -	-0.011* (-1.76)
<i>AGE_t</i>	-0.004 (-0.35)	0.154* (1.95)	-0.001 (-0.05)	0.012** (2.20)
<i>BIG4_t</i>	0.002 (0.22)	0.068 (1.04)	-0.004 (-1.51)	-0.003 (-0.36)
<i>PROMHOL</i>	0.001 (0.24)	0.002 (1.12)	0.001 (0.42)	0.001 (0.96)
<i>CONSTANT</i>	0.043 (0.75)	-2.105*** (-6.25)	0.003 (0.22)	-0.077* (-1.82)
<i>INDFE</i>	YES	YES	YES	YES
<i>YEARFE</i>	YES	YES	YES	YES
<i>Adjusted R²</i>	0.01	0.23	0.01	0.03

Notes: This table presents the DiD model to measure the effect of The Competition Amendment Act, 2007 on abnormal levels of REM viz., Abnormal CFO, Abnormal Production, Abnormal Discretionary expenses, and Abnormal Accruals using regression Equations (3.16) and (3.17). The sample covers a period of two years i.e., 2006 and 2008 consisting of 446 firm year observations covering 253 BG affiliated firms. t values are reported in the parentheses are Significant at '***' 0.01 '**' 0.05 '*' 0.1. The regressions include industry fixed effects. For variable descriptions, please refer to Appendix A.

CHAPTER 4

STUDY 2: AUDITOR FAMILIARITY AND AUDIT QUALITY IN BUSINESS GROUPS

Familiarity with the management and client is crucial for an auditor to plan and execute the audit effectively. The longer the tenure higher will be the familiarity of auditor with the client. Though, longer audit tenure allows auditors to identify themselves with the client's management (Quick & Schmidt, 2018). Understanding the motive for extended auditor tenure is difficult as it is simultaneously determined by auditor familiarity and the corresponding switching costs to the firm. In this study we attempt to disentangle this by exploring the motive of auditor tenure in BGs, where auditor familiarity can be extended by transferring the auditor to another affiliated BG firms, with no impact on the switching costs. We focus on showing the variation of familiarity by capturing the existing auditor's appointment or reappointment of a previously retired auditor to the BG's affiliated firms. This study explores and analyzes auditor familiarity's role in BG affiliated firms, which is our research objective 3.

4.1 Data

We use the Prowess IQ database of CMIE, a popular database to gather financial, audit, and related party transactions-related information, which is used extensively in prior studies (Bertrand et al., 2002; Johl et al., 2016; Khanna and Palepu, 2000). We collect our data for the sample period for the years 2002 till 2019 to incorporate auditing regulation requirements and allow a sufficient period. We started with 4809 firms listed in the BSE as per CMIE, Prowess IQ database as of August 2018. Table 4.1 shows how we arrived at our final sample. Our first filter is on firms operating in banking and financial services, which consists of 1020 firms. Later we eliminated firms (101) owned by respective central and state governments and excluded private foreign entities (113). Further, we removed those firms (650), which are

incorporated after the year 2002, and eliminated those firms (1461), which do not have sales values available for a minimum of 2 years of our sample period between the years 2002 - 2019. These filter rules leave us with 1464 unique firms. Later we eliminated those firms (132) that do not have information regarding variables used for the study and excluded (108) those 2-digit NIC industries with less than ten firms each year. Among the 1224 firms there are 561 unique BG affiliated firms consisting of 8363 firm-year observations.

Table 4.1: Sample Selection - Study 2

Description	Firms	Firm Years
1 BSE listed firms in Prowess as on March 2020	4809	81753
2 Financial and Banking services firms	-1020	-17340
3 Firms owned by central and state governments	-101	-1717
4 Firms owned by foreign private people	-113	-1921
5 Firms incorporated and listed after the year 2002	-650	-11050
6 Firms do not have sales information for at least two years	-1461	-24387
7 Balance firms	1464	24888
8 Firms with missing data of key variables used in the study	-132	-2244
9 NIC having less than ten firms in a year	-108	-1836
10 Observations missing for calculating Accrual measures	-	4127
10 Firms considered for the final sample	1224	16681
11 Unique BG affiliated firms out of 1224 firms	561	
12 BG affiliated Firm year observations from 2003 to 2019	8363	

Notes: This table explains the sample selection criteria for the sample period 2003 to 2019.

4.2 Methodology

This section presents various empirical models that aim to understand the determinants of audit and non-audit fee services charged by the auditors of Indian firms, determinants of audit quality, and test our proposed hypotheses.

4.2.1 Measure of Audit Quality

Consistent with the prior studies, we use discretionary accruals as our proxy for audit quality. We employ a “cross-sectional version of the modified Jones model due to its superior specification and less restrictive data requirements” (Kim et al., 2012). Following Kothari et al. (2005), we include return on assets (*ROA*) of the previous year as an independent variable in the estimation model to control for the effect of performance on measured discretionary accruals. Following Becker, DeFond, Jambalvo, and Subramanyam (1998), Kothari et al. (2005) and Kim et al. (2012), we use the residuals from the annual cross-sectional industry regression model as estimates of firm *i*’s discretionary accruals. Specifically, we estimate the following regression to calculate discretionary accruals.

$$Accruals_{it} / (A_{it-1}) = b_0 + b_1(1/A_{it-1}) + b_2(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1} + b_3(PPE_t / A_{it-1}) + b_4(ROA_{it-1}) + u \quad (4.1)$$

Where $Accruals_{it}$ refers to total accruals for a firm *i* in year *t*. $Accruals$ are calculated as net income minus operating cash flows reported. A_{it-1} refers to the lag of total assets. ΔREV_{it} refers to a change in net revenues in year *t* from year *t*-1. ΔREC_{it} refers to change in net receivables in year *t* from year *t*-1 and PPE_t refers to the “gross value of property, plant, and equipment” at period *t*. We use the absolute value of discretionary accruals ($AB_ACCRUALS$) for our main analyses, as a proxy for audit quality that can involve either income-increasing or income-decreasing accruals (Klein, 2002). Consistent with prior literature for calculating accruals, we ensure at least ten firms in each industry and year (Kim et al., 2012).

To ensure that the empirical test results reported in this study are robust we additionally use four alternative models of accruals used in the literature. First, we used the Dechow and

Dichev model suggested by McNichols (2002) to calculate the abnormal values of accruals with the help of the following equation.

$$\Delta WC_t = \alpha + b_1(CFO)_{t-1} + b_2(CFO)_t + b_3(CFO)_{t+1} + b_4(\Delta SALES)_t + b_5(PPE)_t + u \quad (4.2)$$

ΔWC_t is the change in working capital from year t-1 to t taken from cash flow statement. CFO_{t-1} , CFO_t , CFO_{t+1} are “cash flows from operations in year t-1, t and t+1” respectively. All the variables in Equation (4.2) are scaled by a company’s total assets at the end of year t-1. We use 3 year standard deviation of the residuals in Equation (4.2) as a measure of audit quality. Higher the standard deviation of the residuals implies lower the audit quality and refer this model as *DICHEV*.

Thirdly, we followed the model used by Cohen, Dey and Lys (2008) with the help of the following equation.

$$\frac{ACCRUALS_{it}}{A_{t-1}} = k_{1t} \frac{1}{A_{t-1}} + k_2 \frac{\Delta SALES_{it}}{A_{t-1}} + k_3 \frac{PPE_{it}}{A_{t-1}} + u \quad (4.3)$$

Where $ACCRUALS_{it}$ refers to net income before tax and extra-ordinary items minus cash flow operations. A_{t-1} refers to total assets at period t-1.

The coefficients in equation (4.3) are used to estimate firm specific normal levels of accruals (NA_{it}) for our sample of firms.

$$\frac{ACCRUALS_{it}}{A_{t-1}} = \hat{k}_1 \frac{1}{A_{t-1}} + \hat{k}_2 \frac{(\Delta SALES_{it} - \Delta REC_{it})}{A_{t-1}} + \hat{k}_3 \frac{PPE_{it}}{A_{t-1}} + u \quad (4.4)$$

We calculate the absolute values of discretionary accruals as a proxy for audit quality and refer it as *ABS_COHEN*.

Finally, we used the accruals model followed by Gul et al. (2009) based on the model suggested by Ball and Shiva kumar (2006) with a slight modification of including components of growth and cash flows as an alternative measure of audit quality. We use the below model for each of the two-digit NIC industry groups to estimate discretionary accruals given by the residual term.

$$\begin{aligned} ACCRUALS_t = & b_0 + b_1(CFO)_t + b_2(CFO)_{t-1} + b_3(CFO)_{t+1} + b_4(\Delta SALES)_t + \\ & b_5(PPE)_t + b_6(ROA)_{t-1} + b_7(\Delta CFO)_t + b_8(DUM\Delta CFO)_t + b_9(\Delta CFO)_t * \\ & (DUM\Delta CFO)_t + u \end{aligned} \quad (4.5)$$

Where $ACCRUALS_t$ refers to net income before tax and extraordinary items minus cash flow operations. ΔCFO_t refers to change in cash flows from period t-1 to t. $DUM\Delta CFO_t$ is a dummy variable that takes the value 1 if there is a negative change in operating cash flows; otherwise, it takes 0. All the variables used in the above equation are scaled by average total assets. We refer the accruals calculated in this model as AB_GUL .

4.2.2 The relationship between Auditor Concentration and Audit Quality

We use Equation (4.6) to test our hypothesis H_4 , that tests the relationship between familiarity and audit quality considering $ACCR$ as a proxy for audit quality and AC as a key explanatory variable which measures auditor's familiarity with the client using data of BG affiliated firms.

$$\begin{aligned} ACCR_{it} = & b_0 + b_1(LNAF)_{it} + b_2(LNNAF)_{it} + b_3(NAFR)_{it} + b_4(AC)_t + b_5(AUDSPEC)_t + \\ & b_6(GCL_{IMP})_t + b_7((MTB)_{it-1} + b_8(SIZE)_{it} + b_9(ROA)_{it} + b_{10}(CURR_{RATIO})_{it} + b_{11} \\ & (LACCRUALS)_{it} + b_{12}(CFO)_{it} + b_{13}(LOSS)_{it} + b_{14}(LEV)_{it} + b_{15}(INVREC)_{it} + b_{16}(BIG4)_{it} + \\ & b_{17}(TENURE)_{it} + b_{18}(PROMHOL)_{it} + b_{19}(MERGER)_{it} + b_{20}(EQFIN)_{it} + u \end{aligned} \quad (4.6)$$

Where $LNAF$ refers to Natural log of the audit fee paid to the auditor by firm i in year t . $LNNAF$

refers to Natural log of the Non-audit fee, which is the sum of fees paid to auditor for law and tax services provided to the firm i in year t . *NAFR* refers to the ratio of non-audit fee to the total auditors fee paid by the firm i in year t . *GROUPSTAND* refers to 1 if the firm affiliated to a BG; otherwise takes 0. *AUDSPEC* refers to sum of the sales of clients audited by the auditor in that industry year divided by total sales of all firms in an industry year following (Lim and Tan, 2008). *GCL_IMP* refers to *GCL_IMP* is arrived by dividing the total auditor fees of BG at period t with the auditor fees earned by the auditor in period t . *MTB* refers to “ratio of the market value of equity to book value of equity at the beginning of the year” of firm i in year t . *SIZE* refers to Natural log of the market capitalization of firm i in year t . *ROA* refers to Operating income after depreciation scaled by total assets at the beginning of the year. *CURR_RATIO* refers to Current assets divided by current liabilities of firm i in year t . *CFO* refers to Cash flow from operations scaled by total assets at the beginning of the year of firm i in year t . *LOSS* refers to 1 if the net income of the firm i falls below zero in year t ; otherwise, 0. *LEV* refers to Total liabilities divided by the total equity of firm i in year t . *INVREC* refers to Sum of inventories and receivables of the firm scaled by lag total assets of firm i in year t . *BIG4* refers to 1 if the firm gets audited by an audit firm i by big4 network auditor in year t ; otherwise, 0. *TENURE* refers to No. of years auditor audited the financial statements in the sample period of firm i in year t . *PROMHOL* refers to Percentage of outstanding shares owned by the promoters of firm i in year t . *MERGER* refers to 1 if firm i engage in merger or acquisitions in period t ; otherwise, 0. *EQFIN* refers to 1 if firm’s equity shares outstanding increased by 10 percent of firm i in year t compared to period $t-1$; otherwise, 0. Industry and year fixed effects were considered while estimating the equation. Where *ACCR* refers to any of the four accrual models used in study as mentioned and their respective accrual model names appear in the column heading of the respective table. *LACCRUALS* refers to the lag of accruals of firm i at year t used as an additional control variable following earlier studies (Ashbaug,

Lafond and Mayhew, 2003). Where AC refers to the total number of the BG affiliated firms audited by the auditor divided by the total number of affiliated firms in that BG, we expect AC to have a positive coefficient indicating higher the AC , the lower will be the audit quality. Other variables and their respective descriptions are defined earlier and are available in appendix B. Our primary test variables are AC in Equation (4.6). Equation (4.6) helps us to understand the relationship between audit quality and familiarity of the auditor with the client.

4.2.3 The relationship between Auditor Familiarity and Auditor Rotation

We use Equation (4.8) to test the hypothesis related to the effect of mandatory auditor rotation on audit quality. We partitioned the data in two sets, i.e., before the auditor's mandatory rotation that came into force (2011-14) that, is pre-period, and after the mandatory rotation regime came into effect (2015-18) is post-period. We chose data of those firms eligible for rotation and went for auditor rotation during the years 2015-2018, i.e., post the implementation of the auditor rotation regime and their corresponding data for years 2011-2014 as part of our treatment sample. We chose those firms not eligible for rotation but rotated their auditors during the years 2015-18 and their corresponding data for years 2011-14 as our control sample. The total sample includes 272 BG affiliated firms, including 45 control firms. We estimate the following regression equations to test our hypothesis H5.

$$\begin{aligned}
 ACCR_t = & \alpha + b_1(TD)_t + b_2(TREAT)_{it} + b_3(TD)_t * (AC)_t * (TREAT)_{it} + b_4(TD)_t * (AC)_t + \\
 & b_5(LNAF)_{it} + b_6(LNNAF)_{it} + b_7(NAFR)_{it} + b_8(AC)_t + b_9(AUDSPEC)_t + b_{10}(MTB)_{it-1} + \\
 & b_{11}(ROA)_{it} + b_{12}(CURR_{RATIO})_{it} + b_{13}(LACCRUALS)_{it} + b_{14}(CFO)_{it} + b_{15}(LOSS)_{it} + \\
 & b_{16}(LEV)_{it} + b_{17}(INVREC)_{it} + b_{18}(BIG4)_{it} + b_{19}(PROMHOL)_{it} + b_{20}(MERGER)_{it} + \\
 & b_{21}(EQFIN)_{it} + u
 \end{aligned}
 \tag{4.7}$$

Where *TD* refers to time dummy, which takes the value of one in the year of auditor rotation and beyond and zero for years before auditor rotation. *TREAT* takes the value one if the firm rotated the auditor in between 2015-2018 for the period 2015 to 2018 otherwise takes the value of zero. *TD*AC*TREAT* is our key explanatory variable that captures the auditor's post-rotation impact on audit quality. Other variables in the regression are the same as defined earlier and their descriptions are provided in appendix 1. We predict negative coefficients on *TD*AC*TREAT* indicating that firms subjected to auditors' mandatory rotation led to increased audit quality. Thus, this research design measures the average change in audit quality from the pre- to post-rotation periods for firms that rotated their auditors and compares it with the change of similar firms in the same period.

4.2.4 The relationship between Auditor Reappointment and Audit Quality

We use a logistic regression model to test the relationship between auditor reappointments among the BG affiliated firms and the effect of these reappointments on audit quality at the overall BG level with Equations (4.8), and (4.9). The total sample includes 131 BGs of 34 BGs who went for reappointment of their existing auditors in their affiliated firms and 97 BGs that did not go for reappointments. We run separate regressions for measuring the effect of audit quality on the reappointment of auditors with Equation (4.8) and the effect of reappointments on the performance BG using *GTOBINQ* with Equation (4.9). We estimate the following logistic regression equations to test this relationship.

$$\begin{aligned}
 AUD_{REAPPOINT_t} = & \alpha + b_1(GACCR)_t + b_2(GLNAF)_t + b_3(GLNNAF)_t + b_4(GNAFR)_t + \\
 & b_5(GAUDSPEC)_t + b_6(GCLIMP)_t + b_7(GSIZE)_t + b_8((GTENURE)_t + b_9 (GPROMHOL)_t + \\
 & b_{10} (GLOSS)_t + b_{11} (GMERGER)_t + b_{12} (GEQFIN)_t + u
 \end{aligned}
 \tag{4.8}$$

$$\begin{aligned}
GTOBINQ_t = & \alpha + b_1(AUD_REAPPOINT)_t + b_2(GLNAF)_t + b_3(GLNNAF)_t + b_4(GNAFR)_t + \\
& b_5(GAUDSPEC)_t + b_6(GCL_IMP)_t + b_7(GSIZE)_t + b_8((GTENURE)_t + b_9 (GPROMHOL)_t + \\
& b_{10} (GLOSS)_t + b_{11} (GMERGER)_t + b_{12} (GEQFIN)_t + u
\end{aligned}
\tag{4.9}$$

Where *AUD_REAPPOINT* is a dummy variable that takes the value of 1 if the BG went for reappointment of its existing or retired auditor to its affiliated companies; otherwise takes the value 0. *GACCR* refers to any of the four accrual models used in the study aggregated at the BG level. *GRPT* refers to the logarithmic value of the sum of related party transactions of the BG. *GLNAF* refers to the natural logarithm of the audit fee paid by the BG to the auditors for period t. *GLNNAF* refers to the natural logarithm of the non-audit fee paid by the BG to the auditors for period t. *GNAFR* refers to the ratio of group-level non-audit fee to total audit fees. *GAUDSPEC* is a dummy variable which takes the value 1 if the *AUDSPEC* is above the median *AUDSPEC* of BG in year t otherwise takes the value 0.

GCL_IMP is arrived by dividing the total auditor fees of BG at period t with the auditor fees earned by the auditor in period t. *GSIZE* refers to the natural logarithm of the sum of the market capitalization of the BG for the period t. *GTENURE* refers to the average number of years auditors audit the financial statements in the sample period at period t. *GPROMHOL* refers to the percentage of average outstanding shares owned by promoters in the BG. *GLOSS* takes the value 1 if a company in a BG reports a loss during that year; otherwise takes the value 0. *GMERGER* would take the value 1 if a company in a BG went for a merger or acquisition year; otherwise takes the value 0. *GEQFIN* takes the value 1 if an affiliated firm in the BG's equity shares outstanding increased by 10 percent in period t compared to period t-1; otherwise takes the value 0. *GTOBINQ* refers to the sum of market capitalisation of BG firms scaled by the sum of the total assets of the BG firms. The regression equations (4.8) and (4.9) account

for year fixed effects and size fixed effects at group level dividing the groups based on the *GSIZE* by dividing them into ten deciles. We expect that the coefficient on *GACCR* will be positive and significant, indicating that lower the audit quality higher the probability of reappointments. We expect that coefficient on *AUD_REAPPOINT* in regression equation (4.9) when regressed on *GTOBINQ*, firms reappointing their existing auditors will have lower valuation.

4.3 Results and Discussion

4.3.1 Auditor Concentration and Audit Quality

Table 4.2 presents the regression Equation (4.6) results to measure the effect of *AC* on abnormal levels of accruals (*ACCR*). Each Column represents a separate accrual model to measure audit quality. This table uses data of only BG affiliated firms for the analysis. *AC* shows a positive and significant coefficient when regressed on *ACCR* while controlling for other variables, including existing familiarity measures, namely, non-audit services, client Importance and auditor tenure. The results show that higher the *AC*, the higher are the accruals; indicating familiarity by having the same auditor for many affiliated firms of the same BG is reducing audit quality. This result supports our hypothesis H4. Consistent with the existing literature (Frankel, Johnson and Nelson, 2002; Lisic et al., 2019) our results on non-audit services and audit quality show mixed evidence depicting higher the non-audit fees, lower is the audit quality and on the other hand we found that higher the *NAFR*, higher is the audit quality indicating that bigger the portion of non-audit fees in the total auditors fee increases audit quality among the BG affiliated firms. BG affiliated firms being larger clients likely buy more non audit services due to the presence of complex transactions. Unlike the existing research indicating higher audit quality with the presence of *BIG4* auditors we found a positive

coefficient on *BIG4* when regressed on accruals. From the observation of control variables, we find that on an average, only 27 percent of BG affiliated firms are audited by *BIG4* auditors. It is also observed that larger firms whose accruals are high in the normal course of their operations are appointing *BIG4* auditors. So, while interpreting the coefficient on *BIG4* we should be cautious. The negative coefficient on *TENURE* is consistent with earlier studies (Chen et al., 2008), indicating higher audit quality when the client gets audited for the longer duration.

Table 4.2: Familiarity and Audit Quality

	(1) <i>AB_ACCRUALS</i>	(2) <i>DICHEV</i>
<i>LNAF</i>	-0.0365*** (-5.57)	-0.0310*** (-5.15)
<i>LNNAF</i>	0.0231** (3.03)	0.0140* (1.99)
<i>NAFR</i>	-0.0285*** (-4.03)	-0.0108 (-1.73)
<i>AC</i>	0.0001** (2.62)	0.0001** (2.64)
<i>AUDSPEC</i>	-0.0118 (-1.64)	-0.0107 (-1.59)
<i>GCL_IMP</i>	0.0028 (1.15)	-0.0017 (-0.79)
<i>MTB</i>	0.0001 (0.77)	0.0006** (3.18)
<i>SIZE</i>	0.0025 (1.27)	0.0064*** (3.49)
<i>ROA</i>	0.0064 (0.45)	0.0405** (3.15)
<i>CURR_RATIO</i>	0.0001 (0.45)	0.0001 (0.64)
<i>LACCRUALS</i>	0.0287*** (4.18)	0.0018 (0.32)

<i>CFO</i>	-0.0144* (-2.05)	0.0048 (0.81)
<i>LOSS</i>	0.0163*** (4.85)	0.0076* (2.32)
<i>LEV</i>	-0.0000 (-0.46)	-0.0003** (-3.10)
<i>INVREC</i>	0.0366*** (8.19)	-0.0089* (-2.27)
<i>BIG4</i>	0.0086** (3.29)	0.0142*** (5.90)
<i>TENURE</i>	-0.0046* (-2.50)	-0.0047** (-2.59)
<i>PROMHOL</i>	0.0000 (0.21)	0.0002** (2.67)
<i>MERGER</i>	0.0074 (1.68)	0.0049 (1.26)
<i>EQFIN</i>	0.0074** (2.78)	0.0044 (1.87)
<i>CONS</i>	0.1162 (1.63)	0.0428*** (3.74)
<i>N</i>	6899	4739
<i>R²</i>	0.07	0.08

Notes: This table presents the model to measure the impact of auditor concentration as a key explanatory variable on absolute values of Accruals as a dependent over a sample period of fifteen years from 2003 to 2018 which includes 6899 firm years comprising of 556 BG affiliated firms. t values reported are Significant at ***, **, * indicate significance at 0.01, 0.05, and 0.10 respectively. Industry and year fixed effects were considered while estimating regressions.

4.3.2 Auditor Rotation and Audit Quality

Table 4.3 presents the regression Equation (4.7) results, which explores the relationship between auditor rotation and audit quality for BG affiliated firms. To reduce potential endogeneity between auditor rotation and auditor quality relationship, we use an exogenous

shock, where the Indian government has made auditor rotation mandatory after two five-year terms of tenure, effective from 1st April 2014. Here, the time dummy- *TD* takes value 1 for the post mandatory rotation period and *TREAT* dummy that takes value 1 for firms affected by the law and rotated their auditors. We find no significance on the interaction term, *TD*AC*TREAT*, that captures the effect of law and *AC* on treated firms audit quality, indicating that auditor concentration effect on audit quality remains the same in the pre and post periods. It indicates that the mandatory rotation of auditors cannot explain the variation in audit quality of the BG affiliated firms. This is surprising as the whole purpose of change in auditors is to improve auditor independence and corresponding improvement in audit quality. However, the results are consistent with Gipper et al. (2020), who found no improvement in audit quality post-mandatory rotation of auditors. Existing research stressed on the impact of auditors' mandatory rotation on audit quality from the regulatory angle but could not emphasize on the role of maintaining familiarity with the previous auditor post-mandatory rotation. On average, we expect *AC* to come down mechanically due to mandatory auditor rotation law as several BG affiliated firms, that are affected by the law would appoint new auditors and thereby, their *AC* should come down. We investigate the plausible reason for this anomaly.

Table 4.3: Auditor Rotation and Audit Quality

	(1) <i>AB_ACCRUALS</i>	(2) <i>DICHEV</i>
<i>TD*AC*TREAT</i>	0.0000 (0.38)	0.0001 (0.59)
<i>TD*TREAT</i>	0.0057 (0.65)	-0.0184* (-1.77)
<i>TD</i>	-0.0059 (-1.00)	0.0092 (1.35)
<i>TREAT</i>	-0.0123** (-2.45)	-0.0011 (-0.22)
<i>LNAF</i>	-0.0071 (-0.74)	-0.0332** (-3.13)

<i>LNNAF</i>	-0.0113 (-1.07)	0.0126 (1.05)
<i>NAFR</i>	-0.0031 (-0.29)	-0.0006 (-0.05)
<i>AC</i>	0.0001 (1.06)	0.0001 (1.42)
<i>AUDSPEC</i>	-0.0296*** (-2.70)	0.0022 (0.18)
<i>CL_IMP</i>	-0.0004 (-0.11)	-0.0084** (-2.12)
<i>PBYB</i>	0.0009 (1.47)	0.0027*** (3.60)
<i>SIZE</i>	0.0021 (0.66)	0.0060 (1.74)
<i>ROA</i>	-0.0660*** (-2.80)	-0.0230 (-0.87)
<i>CURR_RATIO</i>	-0.0007 (-1.34)	-0.0001 (-0.14)
<i>LACCRUALS</i>	0.0264** (1.96)	0.0213 (1.40)
<i>CFO</i>	0.1040*** (7.79)	-0.0103 (-0.71)
<i>LOSS</i>	0.0115** (2.28)	0.0020 (0.35)
<i>LEV</i>	-0.0004 (-1.24)	-0.0006 (-1.84)
<i>INVREC</i>	0.0358*** (4.88)	0.0029 (0.35)
<i>BIG4</i>	0.0094** (2.12)	0.0145*** (2.84)
<i>PROMHOL</i>	-0.0000 (-0.17)	0.0005** (2.83)
<i>MERGER</i>	-0.0090	0.0012

	(-1.10)	(0.13)
<i>EQFINAN</i>	-0.0028 (-0.62)	0.0129** (2.57)
<i>CONS</i>	0.0683*** (3.30)	0.0037 (0.17)
<i>N</i>	1798	1215
<i>R</i> ²	0.11	0.12

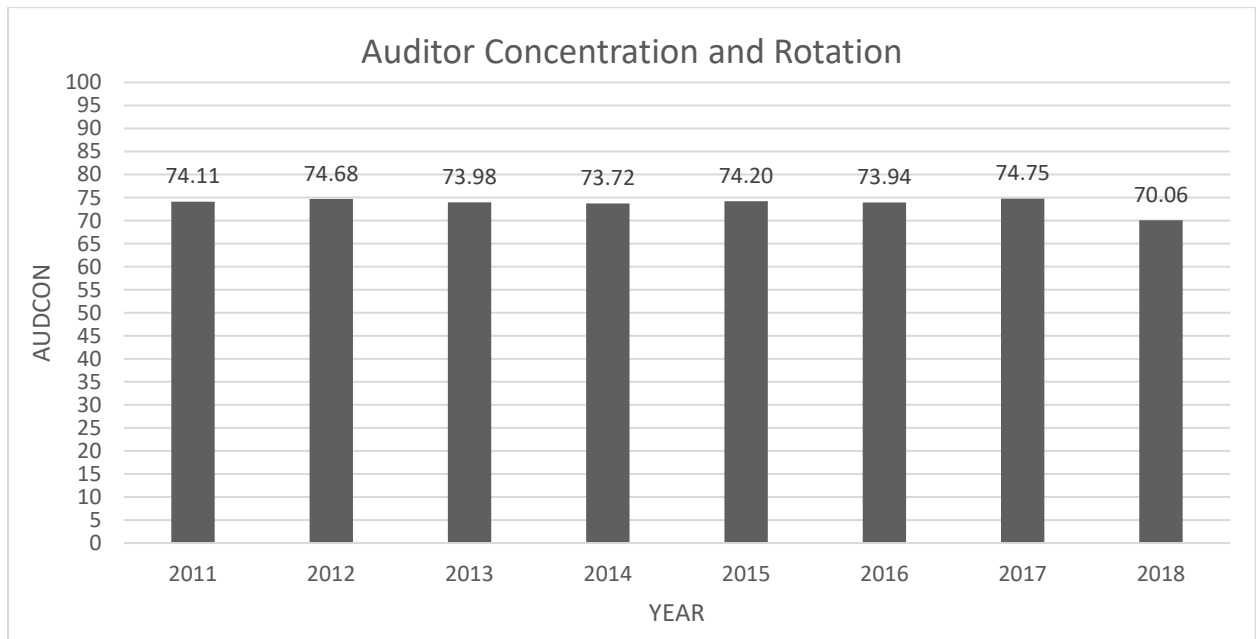
Notes: This table presents the DiD results to measure the impact of auditor rotation using *TD*AC*TREAT* as a key explanatory variable on the absolute values of accruals as dependent variables over a sample period of eight years from 2011 to 2018 and which firms eligible for rotation rotated their auditors which includes 1798 firm years comprising of 260 BG affiliated firms (including 45 control firms who are not eligible but rotated) which rotated their auditors during the period 2015-2018. The data considered in this regression for Pre-Period is from 2011-14, Post Period 2015-18. t values reported are Significant at ***, **, * indicate significance at 1, 5 and 10 percent respectively. Industry fixed effects were considered while estimating regressions. For variable descriptions, please refer to Appendix B.

Before we report systematic evidence for the whole sample on the plausible reason for no-effect of auditor rotation, for better understanding, we present one BG data for deeper insights on how BG's AC may not change due to rotation law. Table 4.4 illustrates the effect of AC on audit quality by using an Indian BG -Lakshmi group, which has six affiliated firms. In the year 2017 two firms out of six affiliated firms of Lakshmi group are eligible for auditor rotation. As shown in the table, out of these six firms, three firms (i.e., 50%) are audited by Krishna Moorthy & Co and two firms (33.33%) are audited by N R Doraiswami & Co and one firm (16.67%) is audited by Subbchar & Srinivasan. In the year 2018, after the rotation, the weight of Subbchar and Srinivasan in Lakshmi group auditor portfolio increased to 50% from 16.67% due to reappointment of Subbchar and Srinivasan for other group affiliated firms. Auditor concentration got reshuffled from N R Doraiswami & Co to Subbchar and Srinivasan. The reshuffling activities ensured same AC of 38.89% in both pre and post-mandatory auditor rotation law period. This example provides insights into why AC may not change in the post-rotation period. Also, this example can help to understand why mandatory auditor rotation law has no effect on audit quality in BG affiliated firms.

It is also observed that the new auditor (Subbachar and Srinivasan) is appointed for two new audit engagements of the firm affiliated to the Lakshmi group, indicating that the auditor appointment is not random. This is consistent with Dodgson et al. (2020) finding that auditor appointment is not a one-time discrete event. To generalize the results of Lakshmi group for the total sample, we graphically present time series data on the level of AC. Figure 4.1 depicts the average auditor concentration of BG affiliated firms over the years 2011-2018. As shown in figure 4.1, the auditor concentration for the BG affiliated firms is hanging around 74% (except in 2018⁴) and it is visible that post mandatory rotation of auditor regime does not decrease AC (year 2015 onwards). However, figure 4.2 presents the same data, grouping them as before and after the rotation law period. As shown in figure 4.3, the average AC of the total BG sample was 74.12 %. Post rotation period, the average AC is at 73.24, a mere decrease of around 1% due to the law change. This evidence supports our hypothesis H5 showing that auditor rotation may not improve audit quality in BG affiliated firms as BGs maintain the same level of AC by engaging the common auditor across multiple affiliated firms by playing musical chairs there by maintaining higher familiarity with the auditors.

⁴ Although AC decreased to 70% in the year 2018, it is the year in which maximum number of rotations (344 auditor rotations) happened which shows that there is no big fall in auditor concentration in the post period of auditors' rotation.

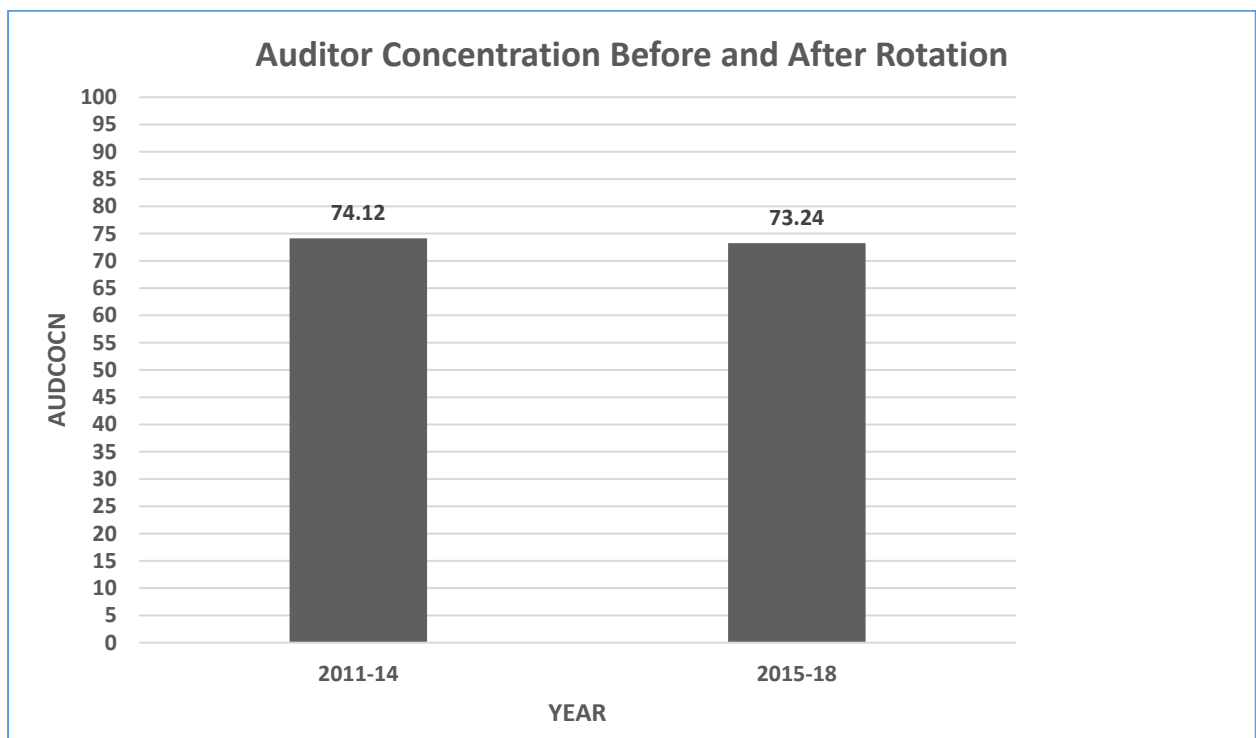
Figure 4.1: Auditor Concentration and Auditor Rotation



Source: CMIE prowess IQ data base (2020)

Figure 1 presents the average auditor concentration over the years 2011 -2018 of BG affiliated firms. The X-axis represents the Year, and the Y-axis represents auditor concentration.

Figure 4.2: Auditor Concentration Before and After Rotation



Source: CMIE prowess IQ data base (2020)

This figure presents the average auditor concentration of BG affiliated firms over the years 2011 -2014 prior to mandatory rotation of auditors and years 2015-2018 represent auditor concentration post regime. The X-axis represents the Year, and the Y-axis represents the Auditor concentration.

Table 4.4: Illustration on Auditor Concentration

<u>COMPANY NAME</u>	<u>ELIG</u>	<u>ROT</u>	<u>NEW AUDITOR</u>	<u>OLD AUDITOR</u>	<u>YEAR</u>	<u>AUDCONC</u> <u>2018</u>	<u>AUDCONC</u> <u>2017</u>
Lakshmi Automatic Loom Works Ltd.	0	YES	SUBBACHAR & SRINIVASAN	N R DORAISWAMI & CO.	2018	50.00	33.33
Lakshmi Electrical Control Systems Ltd.	1	YES	SUBBACHAR & SRINIVASAN	N R DORAISWAMI & CO.	2018	50.00	33.33
Lakshmi Machine Works Ltd.	0	NO	S KRISHNAMOORTHY & CO.	S KRISHNAMOORTHY & CO.	2018	33.33	50.00
Lakshmi Mills Co. Ltd.	0	YES	M S JAGANNATHAN & VISVANATHAN	SUBBACHAR & SRINIVASAN	2018	16.67	16.67
Rajshree Sugars & Chemicals Ltd.	0	NO	S KRISHNAMOORTHY & CO.	S KRISHNAMOORTHY & CO.	2018	33.33	50.00
Super Sales India Ltd.	1	YES	SUBBACHAR & SRINIVASAN	S KRISHNAMOORTHY & CO.	2018	50.00	50.00
Average auditor Concentration						38.89	38.89

This table presents the example of Lakshmi Group, which has six affiliated firms with diversified operations. It shows the rotation of auditors and the percentage of auditor concentration before and after rotation of auditors. ELIG= 1 if the company is eligible for rotation in 2018 otherwise, 0; ROT= YES if the company rotated in the year 2018; AC = The total number of BG affiliated firms audited by the auditor divided by the total number of affiliated firms in that BG;

Source: CMIE prowess IQ data base (2020)

4.3.3 Auditor Reappointments and Audit Quality

Table 4.5 presents the results of Equations (4.8) and (4.9), which test the relationship between the auditor's reappointment on audit quality at the BG level. Being familiar with the auditor could be beneficial for the firm as it brings expertise, or it can turn out to be bad by increasing the complacency of an auditor with the client. We found that group-level measures of audit quality, when regressed on *AUD_REAPPOINT*, shows a positive and significant coefficient, indicating that when the aggregate accruals of BGs are high, there is a higher probability of reappointing the existing auditor to their affiliated firms by the BGs. This result disentangles the attribution problem associated with the retention of auditors by the client for a longer tenure. The positive coefficient on group level accruals indicates that it is the familiarity that is motivating the clients to reappoint an existing or retired auditor to their affiliated firms. The result also indicates that the BG's lower audit quality leads to higher familiarity with the auditor. Further appointment of retired auditors to other affiliated firms defeats the purpose of the mandatory rotation of auditor, mainly introduced to reduce vested interest among the auditors and the client. Following the Satyam scandal in 2009 Government of India wanted to take quick steps to improve audit quality and imposed mandatory auditor rotation in rush and as an ill-thought response without considering the actual benefit that the law can bring in (Narayanaswamy & Raghunandan, 2019). When United states House of representatives resisted and banned the mandatory audit firm rotation bill, European Union still implemented the mandatory rotation rule from the year 2016 (U.S. House of Representatives, 2013; European Parliament and European Counsel, 2014). It is possibly indicating that regulators believe in improvement in audit quality through mandatory rotation.

Our results also found that aggregate BG level non-audit fees (*GLNNAF*) indicating higher familiarity with the client increase auditor reappointments' probability. This finding is

consistent with the notion that non-audit services' provision increases familiarity, reducing audit quality (Hay et al., 2006; PCAOB, 2011). The possible alternative explanation for the reappointment of the previous auditor is the expertise auditors possess in auditing the affiliated companies of a group that is hard to replace, which is evident from the positive coefficient on *GAUDSPEC* when regressed on *AUD_REAPPOINT*.

These results support our DiD results showing that auditor rotation does not improve audit quality. Auditors' reappointment increases auditor familiarity with the client and does not bring in a fresh perspective to audit. These findings indicate that auditors' reappointment is a strategic move to retain auditor familiarity by the BG affiliated entities. Regression equation (4.9) shows the impact of reappointment effect on BGs performance using Tobin's Q as a dependent variable and the results were presented in table 4.6. We find that BGs who reappointed their existing auditors have lower valuation indicated by negative coefficient on *AUD_REAPPOINT* when regressed on Tobin's Q. It shows that investors discount the BGs who reappoints existing auditors. The results of group-level regressions indicate that though BG affiliated firms are separate entities, the centralized decision making at the top guides the affiliated firms to follow their orders while appointing the auditors. Altogether these results further contribute to the literature on whether the regulators can extend the auditor's tenure. These results bring in more understanding of tenure-based familiarity arising from the reappointment of an existing or retired auditor circumventing the mandatory rotation regulation and simultaneously retaining the familiarity associated with their auditor through higher auditor concentration though the government imposed restrictions on auditor tenure are present.

In summary, these results indicate that BGs strategize the auditor reappointments and continue their familiarity with the auditor as the appointment of auditors is not random in BG

affiliated firms as they centralize the decisions of reappointing auditors at the group level which do not have an impact on reducing familiarity with the client. This finding of the auditor's appointment is consistent with Dodgson et al. (2020), who claim audit partner rotation is not a random event.

Table 4.5: Auditor Reappointments and Audit Quality

	(1) <i>AUD_REAPPOINT</i>	(2) <i>AUD_REAPPOINT</i>
<i>GAB_ACCRUALS</i>	1.4124*** (3.97)	-
<i>GDICHEV</i>	-	3.7146*** (7.93)
<i>GLNAF</i>	0.1828 (-0.93)	0.3025 (-1.47)
<i>GLNNAF</i>	0.7289*** (3.30)	0.6527*** (2.85)
<i>GNAFR</i>	-2.0226*** (2.81)	-1.6259** (-2.18)
<i>GAUDSPEC</i>	0.4419*** (4.25)	0.4037*** (3.47)
<i>GCL_IMP</i>	-0.0904 (-0.49)	-0.1136 (-0.55)
<i>GSIZE</i>	-0.3430 (-2.08)	-0.3672* (-1.81)
<i>GTENURE</i>	0.0157 (0.62)	0.0491 (1.61)
<i>GPROMHOL</i>	-0.0070 (-0.91)	-0.0170* (-1.88)
<i>GLOSS</i>	0.3635*** (2.86)	0.3228* (2.26)
<i>GMERGER</i>	0.3296* (1.90)	0.4021** (2.10)
<i>GEQFIN</i>	0.3697*** (3.15)	0.3437** (2.65)

<i>CONS</i>	-1.6054 (-1.33)	-0.3797 (-0.24)
<i>N</i>	2078	1737
<i>PSEUDO R²</i>	0.13	0.17

Notes: This table presents the logistic regression model to measure the impact of Auditor reappointments on audit quality using count of auditor reappointments as key explanatory variable over a sample period of fifteen years from 2004 to 2018 which includes 2078 BG years comprising of 132 BG affiliated firms of which 98 groups who did not went for reappointment. t values reported are Significant at ***, **, * indicate significance at 1, 5 and 10 percent respectively. BG and year fixed effects were considered while estimating regressions. For variable descriptions, please refer to Appendix B.

4.3.4 Firm Performance and Auditor Reappointments

Table 4.6 presents firm performance results using *TOBINS'Q* as a dependent variable and auditor reappointments as an independent variable of interest. The negative coefficient on *AUD_REAPPOINT* when regressed on *TOBINS'Q* indicates that firms that are performing poorly are reappointing their existing auditors and could not be because of poor audit quality. This result can be cleanly attributed to the manager's choice of reappointing the existing auditor for BG affiliated firms whose performance is poor, whereas in previous familiarity research, it is a passive outcome of choice that other reasons may drive. This result, therefore, has regulatory implications, which is more indirect in previous research (Zang, 2012).

Table 4.6: Performance and Auditor Reappointments

	(1) <i>TOBIN'S Q</i>
<i>AUD_REAPPOINT</i>	-0.1413** (-2.52)
<i>GLNAF</i>	-0.4224*** (-6.11)
<i>GLNNAF</i>	-0.4080*** (-5.87)
<i>GNAFR</i>	-0.1765 (-1.05)

<i>GAUDSPEC</i>	0.1280** (2.55)
<i>GCL_IMP</i>	-0.6178*** (-7.22)
<i>GSIZE</i>	0.7526*** (30.79)
<i>GTENURE</i>	-0.0068 (-0.56)
<i>GPROMHOL</i>	0.0163*** (4.32)
<i>GLOSS</i>	-0.2017*** (-3.24)
<i>GMERGER</i>	-0.1082 (-1.22)
<i>GEQFIN</i>	-0.2704*** (-4.62)
<i>CONS</i>	-5.6915*** (-12.46)
<i>N</i>	2119
<i>R²</i>	0.44

Notes: This table presents the logistic regression model to measure the impact of Auditor reappointments on audit quality using count of auditor reappointments as key explanatory variable over a sample period of fifteen years from 2004 to 2018 which includes 2119 BG years comprising of 132 BG affiliated firms of which 98 groups who did not went for reappointment. t values reported are Significant at ***, **, * indicate significance at 1, 5 and 10 percent respectively. Year fixed effects d while estimating regressions. For variable descriptions, please refer to Appendix B.

4.4 Robustness Check

The preceding analysis shows the nil effect of mandatory rotation law in reducing the auditor's familiarity with the BG affiliated firms. To check for the robustness of our existing results we re-run our tables 4.2, 4.3, and Table 4.5 with alternative accrual models used by Cohen et al. (2008) and Gul et al. (2009), and the results were presented in tables 4.7. We find that these results are qualitatively similar to the existing results, with the exception that

AUDCONC is not significant with *AB_GUL* Model. In Table 4.8 we rerun the group level regressions and the results indicating that aggregate accruals of a BG affiliated firms are high, which are consistent and robust with our main results. These results indicate that there is no impact of auditor rotation law on the BG affiliated firms. BGs strategize the rotation of auditors among the affiliated firms by adhering to the law on the one hand and circumventing the regulation on the other side. We show that results are robust among the range of accrual models.

Table 4.7: Auditor Familiarity and Audit Quality

	(1) <i>AB_COHEN</i>	(2) <i>AB_GUL</i>	(3) <i>AB_COHEN</i>	(4) <i>AB_GUL</i>
<i>TD*AUDCONC*TREAT</i>	-	-	0.0001 (0.91)	-0.0000 (-0.03)
<i>TD*TREAT</i>	-	-	0.0025 (0.40)	-0.0033 (-1.04)
<i>TD</i>	-	-	-0.0050 (-0.94)	-0.0006 (-0.21)
<i>TREAT</i>	-	-	-0.0161* (-1.70)	0.0022 (0.46)
<i>LNAF</i>	-0.0350*** (-5.97)	-0.0070** (-2.55)	-0.0202** (-1.99)	-0.0093* (-1.81)
<i>LNNAF</i>	0.0123* (1.81)	0.0049 (1.55)	-0.0001 (-0.01)	0.0013 (0.23)
<i>NAFR</i>	-0.0243*** (-3.83)	-0.0055* (-1.85)	-0.0156 (-1.35)	-0.0046 (-0.79)
<i>AUDCONC</i>	0.0001** (2.40)	0.0001 (0.67)	0.0000 (0.76)	0.0000 (0.34)
<i>AUDSPEC</i>	-0.0067 (-1.02)	-0.0079** (-2.54)	-0.0306*** (-2.64)	-0.0034 (-0.59)
<i>MTB</i>	0.0000 (0.45)	0.0002*** (3.30)	0.0010 (1.53)	0.0008** (2.49)

<i>SIZE</i>	0.0061*** (3.38)	0.0002 (0.25)	0.0058 (1.78)	0.0006 (0.33)
<i>ROA</i>	0.0640*** (4.99)	0.0027 (0.45)	0.1026*** (4.09)	-0.0087 (-0.69)
<i>CURR_RATIO</i>	-0.0000 (-0.12)	-0.0001 (-0.28)	0.0008 (1.44)	0.0002 (0.58)
<i>LACCRUALS</i>	0.0278*** (4.56)	0.0066*** (2.59)	0.0096 (0.67)	0.0187*** (2.58)
<i>CFO</i>	-0.0703*** (-11.09)	0.0049 (1.63)	-0.1126*** (-7.91)	0.0001 (0.01)
<i>LOSS</i>	0.0139*** (4.61)	0.0242*** (17.82)	0.0130** (2.44)	0.0214*** (7.96)
<i>LEV</i>	-0.0000 (-0.29)	-0.0001** (-2.40)	-0.0004 (-1.10)	-0.0003* (-1.90)
<i>INVREC</i>	0.0424*** (10.66)	0.0020 (1.09)	0.0576*** (7.35)	0.0052 (1.33)
<i>BIG4</i>	0.0063** (2.79)	0.0035*** (3.79)	0.0085* (1.88)	0.0033 (1.43)
<i>TENURE</i>	-0.0010*** (-3.59)	-0.0002* (-2.23)	-	-
<i>PROMHOL</i>	0.0001 (1.05)	0.0001 (1.28)	0.0001 (0.34)	0.0000 (0.12)
<i>MERGER</i>	-0.0036 (-0.91)	0.0001 (0.14)	-0.0017 (-0.19)	-0.0016 (-0.37)
<i>EQFIN</i>	0.0083*** (3.39)	0.0012 (0.85)	-0.0031 (-0.62)	-0.0015 (-0.61)
<i>CONS</i>	0.1110* (1.77)	0.0242*** (4.70)	0.0575*** (2.60)	0.0304*** (2.73)
<i>N</i>	6475	6290	1828	1803
<i>R²</i>	0.12	0.08	0.13	0.08

Notes: This table presents the DiD results to measure the impact of auditor rotation using *TD*AC*TREAT* as a key explanatory variable on the absolute values of accruals as dependent variables over a sample period of eight years from 2011 to 2018 and which firms eligible for rotation rotated their auditors which includes 1974 firm years comprising of 260 BG affiliated firms (including 45 control firms who are not eligible but rotated) which rotated their auditors during the period 2015-2018. The data considered in this regression for Pre-Period is from 2011-14, Post Period 2015-18. t values reported

are Significant at ***, **, * indicate significance at 1, 5 and 10 percent respectively. Industry fixed effects were considered while estimating regressions. For variable descriptions, please refer to Appendix B.

Table 4.8: Auditor Reappointments and Audit Quality Robustness Check

	(1) <i>AUD_REAPPOINT</i>	(2) <i>AUD_REAPPOINT</i>
<i>GAB_COHEN</i>	1.4329*** (4.37)	
<i>GAB_GUL</i>		5.7678*** (6.65)
<i>GLNAF</i>	-0.1727 (-0.89)	-0.1156 (-0.63)
<i>GLNNAF</i>	0.6890*** (3.15)	0.4925** (2.42)
<i>GNAFR</i>	-1.8665** (-2.57)	-1.2550* (-1.88)
<i>GAUDSPEC</i>	0.4353*** (4.18)	0.4128*** (3.82)
<i>GCL_IMP</i>	-0.0927 (-0.50)	-0.0729 (-0.38)
<i>GSIZE</i>	-0.3763** (-2.27)	-0.3199* (-1.83)
<i>GTENURE</i>	0.0160 (0.63)	0.0378 (1.44)
<i>GPROMHOL</i>	-0.0079 (-1.01)	-0.0057 (-0.69)
<i>GLOSS</i>	0.3434*** (2.69)	0.1670 (1.20)
<i>GMERGER</i>	0.3269* (1.88)	0.3017 (1.64)
<i>GEQFIN</i>	0.3571** (3.03)	0.4313*** (3.54)
<i>CONS</i>	-1.4267 (-1.18)	-1.9287 (-1.42)
<i>N</i>	2074	1957
<i>PSEUDO R²</i>	0.13	0.14

Notes: This table presents the logistic regression model to measure the impact of Auditor reappointments on audit quality using count of auditor reappointments as key explanatory variable over a sample period of fifteen years from 2004 to 2018 which includes 2207 BG years comprising of 132 BG affiliated firms of which 98 groups who did not went for reappointment. t values reported are Significant at ***, **, * indicate significance

at 1, 5 and 10 percent respectively. BG and year fixed effects were considered while estimating regressions. For variable descriptions, please refer to Appendix B.

CHAPTER 5

CONCLUSION

This chapter is the thesis's closing chapter, which summarizes the research and discusses the study's academic relevance and practical implications. It ends with a note on the limitation and scope for further studies in this area of research.

5.1 Summary and Discussion

We attempt to understand firms' economic rationale while engaging in REM, where manipulation benefits may outweigh the costs in study 1. More specifically, we focus on how firms' boundaries can facilitate REM, using BG affiliated firms as a plausible candidate for such manipulation. We argue that BG affiliated firms have extended boundaries with significant intragroup real activities among the affiliated firms. Such an environment facilitates fewer frictions and provides coinsurance for long-term survival. Hence, their extended boundaries help them engage more in REM than similar standalone firms. We test this hypothesis on a large sample of 11417 firm-year observations over 14 years. We find that BG affiliated firms engage more in REM compared to standalone firms. In addition to that, BG RPTs between affiliated firms facilitate REM. Our results indicate that abnormal production is the most significant means of managing real earnings in BG affiliated firms among various channels of real activities manipulation. Abnormal production-based REM reduces affiliated firms' cost of equity and improves their future profitability. We also document that The Competition Amendment Act, 2007 reduced BG affiliated firms' competitiveness by limiting their structural advantage to engage in REM through RPTs. In summary, our research provides new evidence on the importance of firm boundaries while interpreting the harmful effects of REM.

In study 2, we disentangle the attribution problem unattended in the previous literature by identifying the possible reason for extended auditor tenure. Using the exogenous effect of mandatory auditor rotation law that keeps the auditor switching costs constant for the clients, we provide evidence on the motive behind the firms' extension of auditor tenure. We explore the relationship between auditor familiarity and audit quality with the BG's unique organizational structure of several affiliated firms with a common controlling owner that allows them to appoint the same auditor across the majority of the affiliated firms helps in explaining the client's motive. This study brings in more understanding of tenure-based familiarity arising from an existing or retired auditor's reappointment when the choice of reappointment is available to the client. The choice-based setting of maintaining familiarity is not available for standalone firms. We propose *AC* as a new proxy to measure auditor familiarity, capturing the percentage of affiliated firms audited by the same auditor.

Using 8363 firm-year observations for the period 2003 to 2019, we find that, consistent with our conjecture, after controlling for non-audit fees, auditor tenure, and related party transactions, auditor reappointment explains the cross-sectional variation in audit quality. Our study addresses the attribution problem associated with extended auditor familiarity and audit quality. It is found that the probability of auditor reappointments are higher when there is lower audit quality and higher RPTs among the BG affiliated firms. We also report that the higher the auditor concentration, the lower is the audit quality. Later, we explore whether auditor rotation can potentially reduce auditor concentration in a BG and improve audit quality. Our results around the mandatory auditor rotation policy show that the overall auditor concentration remains unaffected by the mandatory auditor rotation law, which negatively impacts the overall audit quality of BGs.

Our research calls for regulatory action on improving corporate governance in BGs. One major implication of our study is that familiarity can rise from various channels; regulators should consider all the possible channels while enforcing newer regulations for their effective implementation. The regulators should think before bringing in regulations of western market practices to regulate eastern markets (with a different philosophy for business) as they may not always yield the fruitful results expected.

5.2 Academic Relevance

This study contributes to the literature in several ways. First, we study how the extended boundaries of a firm help them in engaging in earnings management. Our study 1 brings out how BG affiliated firms engage in earnings management practices using REM. It also highlights the channel of BG affiliated firms to engage in REM using related party transactions. Further it shows that through abnormal production the BG affiliated firms engage in earnings management. Earlier studies show that firms engage more in AEM to manipulate earnings (Graham et al., 2005). This study attempts to understand firms' economic rationale while engaging in REM, where manipulation benefits may outweigh the costs of BG affiliated firms. We further found that higher production through RPTs can potentially reduce the cost of equity of BG affiliated firms, which shows that the BG's structural advantage helps them raise capital at a cheaper cost. This indicates that despite being connoted negatively, REM can reduce the cost of equity of the BG affiliated firms which will benefit the investors and the firm.

Secondly, our study 2 examines the role of auditor familiarity in BGs that are ubiquitous in several jurisdictions. It explores the relationship between auditor familiarity, auditor rotation, and audit quality. In this study we extend the existing literature by reducing the attribution problem associated between auditor familiarity and audit quality. It finds that familiarity drives the client to reappoint an existing auditor while keeping the switching costs

constant. We contribute to the literature by proposing a new auditor familiarity measure that captures Auditor Concentration (AC) in each BG as a percentage of independent affiliated firms that belong to a particular BG engaging the same auditor. This new measure observes variations in auditor familiarity with the client. We found that Auditor concentration keeps the auditor's familiarity intact with the client by allowing them to exercise their choice of retaining the same auditor for the BG's affiliated firms, which helps us to understand the motive behind familiarity. Further this study provides new evidence that the firms reappointing the existing auditors are not complex firms, that worry about the higher switching costs associated with reappointments. Rather, they are poor performing firms, and such decisions can be attributed to opportunistic managerial behavior by the BG affiliated firms. Our study 2 used wide accruals earnings management methods from the literature to check for the robustness of the achieved results. The results were found to be robust among the range of accrual models.

5.3 Practical Implications

This study has practical implications for the regulators of the country. Particularly to the Ministry of Corporate affairs (MCA) and the Institute of Chartered Accountants of India (ICAI). Study 1 of the thesis found that The Competition Amendment Act, 2007 reduced BG affiliated firms' competitiveness by limiting their structural advantage to engage in REM through RPTs. Further Study 1 provides new evidence on the importance of firm boundaries while interpreting the harmful effects of REM.

Regulators regard auditors' mandatory rotation as a potential tool of increasing auditor independence by addressing auditor familiarity with the client. However, only a few countries are keen on introducing the mandatory rotation of audit firms. Among the few India is one of the countries which has implemented the rule of mandatory rotation of auditor with effect from 1st April 2004. However, whether the expected benefit of reduced familiarity of the auditor

with the client in practice is questionable due to its relatively weaker regulatory and institutional framework. Our Study 2 focused on the question of interest whether the mandatory rotation of auditor brought in any increase in audit quality, particularly among Indian BG affiliated firms. Auditor rotation can limit BG's ability to increase its auditor concentration, leading to higher audit quality. However, the BG structure can overcome this limitation by reshuffling the auditors of their affiliated firms. Given that affiliated firms are independent legal entities, a retired auditor can be reappointed in another BG affiliated firm due to mandatory rotation law. There is a higher probability of such reshuffling if controlling owners believe that it is in their interest. Study 2 found that the probability of auditor reappointments is higher when there is lower audit quality and higher RPTs among the BG affiliated firms.

Our results around mandatory auditor rotation policy show that the overall auditor concentration remains unaffected by the mandatory auditor rotation law, which negatively impacts the overall audit quality of BGs. Our research calls for regulatory attention on improving corporate governance in BG affiliated firms. Though this study is conducted in India the implications can be generalized to the nations with BG structure as they are ubiquitous in several parts of the world.

5.4 Limitations and scope for further research

This Study is conducted in India and the laws concerning corporate governance-related matters are still evolving. It is known from the literature that India has institutional Voids in implementing the laws (Khanna & Palepu, 1997). This study considered the sample of listed companies on Bombay stock Exchange (BSE). This study does not take in to account the unlisted or privately held companies which are also playing key role in the economy. Future research can consider the unlisted firms sample and compare them with listed companies in

terms of their earnings management practices and auditor familiarity.

Further, the assessment of the recently released Audit Quality Maturity Model (AQMM) version 1.0 by the Centre for Audit Quality (CAQ) of the Institute of Chartered Accountants of India (ICAI) can be an interesting study to conduct. This model is applicable for audit firms from 1st April, 2023. It requires the audit firms to assess the current level of their audit quality maturity to identify areas where improvisation is needed. The scores assessed by the audit firm and the level arrived by the audit firms need to be reviewed by a Peer Reviewer under the Peer Review Mechanism of ICAI, which is later hosted in the public domain. Currently, nearly 2000 audit firms in India fall under the purview of AQMM. Future research can focus on assessing the improved benefits of this model in improving audit quality.

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Appendix A. Variable Description: Study -1

Variable Name	Variable Description
<i>ABN_ACCRUALS</i>	A measure of accruals earnings management that uses discretionary accruals adjusted for firm performance (Kim et al., 2012)
<i>ABN_CFO</i>	Signed value of Cash flow from operations measured as deviations from the predicted values from the corresponding industry-year regression following Srivastava (2019)

<i>ABN_CFO_DUM</i>	<i>ABN_CFO_DUM</i> takes the value 1 if the <i>ABN_CFO</i> is higher than industry median otherwise takes the value 0
<i>ABN_DISC</i>	Signed value of Discretionary expenses measured as deviations from the predicted values from the corresponding industry-year regression following Srivastava (2019)
<i>ABN_DISC_DUM</i>	<i>ABN_DISC_DUM</i> takes the value 1 if the <i>ABN_DISC</i> is higher than industry median otherwise takes the value 0
<i>ABN_PROD</i>	Signed value of Production measured as deviations from the predicted values from the corresponding industry-year regression following Srivastava (2019)
<i>ABN_PROD_DUM</i>	<i>ABN_PROD_DUM</i> takes the value 1 if the <i>ABN_PROD</i> is higher than industry median otherwise takes the value
<i>ACCRUALS</i>	Net Income – Cash flow from operations
<i>AGE</i>	<i>AGE</i> is the logarithm value of years from the date of incorporation to the year 2016
<i>AIC</i>	Akaike information criterion
<i>ASSETS</i>	Total assets of the firm at period t
<i>BIC</i>	Bayesian information criterion
<i>BIG4</i>	BIG4 is a dummy variable which equals to 1 if the firms get audited by a big 4 auditor or takes the value 0 otherwise
<i>CFO</i>	Cash flow from operations at period t
<i>CL</i>	Current liabilities excluding short-term debt excluding short-term debt, scaled by total assets and expressed as deviation from the corresponding industry-year mean
<i>COE</i>	Cost of equity is calculated by using Easton (2004) model
<i>COGS</i>	Cost of goods sold as measured by CMIE Prowess IQ Data base
<i>DEBTEQUITY</i>	Debt equity ratio is arrived by dividing the total liabilities by the total equity
<i>DISC</i>	DISC means discretionary expenses which can be arrived as follows; R&D + Advertising + Selling, General and Administrative expenses + Travel Expenses ; as long as SG&A is available, advertising and R&D are set to zero if they are missing scaled by total assets
<i>GROUPSTAND</i>	A dummy variable takes the value 1 if the firm is affiliated to a BG or takes the value 0 otherwise

<i>HERF</i>	HERF refers to Herfindahl index which is calculated to measure the level of concentration of BG affiliated firms in an industry following Chu et al. (2018)
<i>INDFE</i>	Industry Fixed Effects
<i>INST</i>	Percentage of outstanding shares owned by institutional owners of a firm for the period t, expressed as deviation from the corresponding industry-year mean
<i>INST %</i>	Percentage of outstanding shares owned by institutional owners of a firm for the period t
<i>INV_RATIO (TIMES)</i>	$(COGS) / ((\text{Beginning inventory} + \text{Ending inventory}) / 2)$
<i>INVREC</i>	The sum of industry-year adjusted inventories and receivables as a percentage of total assets, and expressed as deviation from the corresponding industry-year mean
<i>LOG.LIK.</i>	Log likelihood to measure the goodness of fit of the model.
<i>LNSIZE</i>	<i>LNSIZE</i> refers to the logarithmic value of market capitalization of a firm for the period t following Srivastava (2019) model of REM
<i>MARKETCAP</i>	Market value of equity
<i>MTB</i>	The ratio of Market value of equity to the Book value of equity, expressed as deviation from the corresponding industry-year mean
<i>N</i>	No. of firm year observations
<i>NETINCOME</i>	Profit Before Interest, Taxes, Depreciation and Amortization scaled by lagged total assets.
<i>NETPURCHASES</i>	Net of Related party Sales and Purchases scaled by lag total assets
<i>PPE</i>	Property, plant and equipment
<i>PROD</i>	<i>PROD</i> can be arrived by adding <i>COGS</i> + change in inventory
<i>PROMHOL</i>	Percentage of outstanding shares owned by promoters, expressed as deviation from the corresponding industry-year mean
<i>RDEXP</i>	<i>RDEXP</i> refers to the logarithmic value of research and development expenses spent by the firm at period t
<i>ΔREC</i>	<i>ΔREC</i> is net receivables in year t less net receivables in year t-1
<i>REM_STD</i>	<i>REM_STD</i> which refers to the sum of standardized values of three measures of REM viz, <i>ABN_PROD</i> , <i>ABN_CFO</i> and <i>ABN_DISC</i> following Chi et al. (2011)

<i>ΔREV</i>	<i>ΔREV</i> is the net sales in year <i>t</i> less net sales in year <i>t</i> -1
<i>RPLOAN</i>	Net of related party loans given scaled by lag total assets among the BG affiliated firms
<i>RPT</i>	RPT refers to the sum of related party transactions viz, related party revenues and expenses, related party receivables and payables, related party loans given and taken scaled by lag total assets among the BG affiliated firms
<i>SALES</i>	Sales refers sales of the firm for period <i>t</i>
<i>ΔSALES</i>	Change in sales in year <i>t</i> less net sales in year <i>t</i> -1
<i>SIZE</i>	Logarithmic value of market capitalisation, expressed as deviation from the corresponding industry-year mean
<i>STD_REM_DUM</i>	<i>STD_REM_DUM</i> takes the value 1 if the <i>STD_REM</i> is higher than industry median otherwise takes the value 0
<i>TIMEDUM</i>	A dummy variable takes value 1 if the year is 2006 or takes the value 0 otherwise
<i>YEARFE</i>	Year Fixed effects

Appendix B. Variables Description: Study -2

Variable Name	Variable Description
<i>LNAF</i>	Natural log of the audit fee paid to the auditor by firm <i>i</i> in year <i>t</i> .
<i>LNNAF</i>	Natural log of the Non-audit fee, which is the sum of fees paid to auditor for law and tax services provided to the firm <i>i</i> in year <i>t</i> .
<i>NAFR</i>	Ratio of non-audit fee to total auditors fee paid by the firm <i>i</i> in year <i>t</i> .

ROA	Lag of Return on assets, defined as operating income after depreciation scaled by total assets at the beginning of the year.
SIZE	Natural log of the market capitalization of firm i in year t .
MTB	Ratio of the market value of equity to book value of equity at the beginning of the year of firm i in year t .
CFO	Cash flow from operations scaled by total assets at the beginning of the year of firm i in year t .
AB_ACCRUALS	Accruals refers to absolute values of residuals calculated using modified jones model 1995 with performance-adjusted lagged ROA following Kim and Park (2012). $Accruals_{it} / (A_{it-1}) = \alpha + \beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta REC_{it}) / A_{it-1} + \beta_3 (PPE_t / A_{it-1}) + \beta_4 (ROA_{it-1}) + \varepsilon_t$
DICHEV	Three years standard deviation of the Accruals residuals were calculated using Dechow and Dichev model suggested by McNichols (2002). $\Delta WC_t = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta SALES_t + \beta_5 PPE_t + u$
AB_COHEN	Absolute values of discretionary accruals as a proxy for audit quality following Cohen Dey and Lys (2008) with the given equation. $\frac{ACCRUALS_{it}}{A_{t-1}} = k_{1t} \frac{1}{A_{t-1}} + k_2 \frac{\Delta SALES_{it}}{A_{t-1}} + k_3 \frac{PPE_{it}}{A_{t-1}} + u$ The coefficients in above equation are used to estimate firm specific normal levels of accruals (NA_{it}) for our sample of firms. $\frac{ACCRUALS_{it}}{A_{t-1}} = \hat{k}_1 \frac{1}{A_{t-1}} + \hat{k}_2 \frac{(\Delta SALES_{it} - \Delta REC_{it})}{A_{t-1}} + \hat{k}_3 \frac{PPE_{it}}{A_{t-1}} + u$
AB_GUL	Absolute values of discretionary accruals calculated using Gul, Fung and Jaggi (2009) which is based on the model suggested by Ball and Shiva kumar (2006) with a slight modification of including components of growth and cash flows as an alternative measure of audit quality. $ACCRUALS_t = b_0 + b_1 CFO_t + b_2 CFO_{t-1} + b_3 CFO_{t+1} + b_4 \Delta SALES_t + b_5 PPE_t + b_6 ROA_{t-1} + b_7 \Delta CFO_t + b_8 DUM \Delta CFO_t + b_9 \Delta CFO_t * DUM \Delta CFO_t + u$

<i>AUDSPEC</i>	<i>AUDSPEC</i> is calculated as sum of the sales of clients audited by auditor in that industry year divided by total sales of all firms in an industry year calculated following Lim and tan (2008).
<i>CL_IMP</i>	<i>CL_IMP</i> refers to client importance which is calculated as the percentage of revenue from the client for that year compared to the total revenue of the auditor for that particular year.
<i>AC</i>	<i>AC</i> refers to the total number of BG affiliated firms audited by the auditor divided by the total number of affiliated firms in that BG.
<i>RPT</i>	<i>RPT</i> takes the value of 1 if firm reports related party transactions, otherwise takes the value of 0.
<i>LACCRUALS</i>	Lagged values of Accruals scaled by lag total assets of firm <i>i</i> in year <i>t</i> .
<i>TENURE</i>	No. of years auditor audited the financial statements in the sample period of firm <i>i</i> in year <i>t</i> .
<i>INVREC</i>	Sum of inventories and receivables of the firm scaled by lag total assets of firm <i>i</i> in year <i>t</i> .
<i>CURR_RATIO</i>	Current assets divided by current liabilities of firm <i>i</i> in year <i>t</i> .
<i>DEBTEQUITY</i>	Total liabilities divided by the total equity of firm <i>i</i> in year <i>t</i> .
<i>LOSS</i>	<i>LOSS</i> is a dummy variable takes value 1 if the net income of the firm <i>i</i> falls below zero in year <i>t</i> ; otherwise, 0.
<i>BIG4</i>	<i>BIG4</i> is a dummy variable takes the value of 1 if the firm gets audited by an audit firm <i>i</i> by big4 network auditor in year <i>t</i> ; otherwise, 0.
<i>PPE</i>	Gross Property, plant and equipment scaled by total assets at the beginning of the year of firm <i>i</i> in year <i>t</i> .
<i>MERGER</i>	<i>MERGER</i> is a dummy variable which takes the value of 1 if firm <i>i</i> engage in merger or acquisitions in period <i>t</i> ; otherwise, 0.
<i>EQFIN</i>	<i>EQFIN</i> is a dummy variable which takes the value of 1 if firm's equity shares outstanding increased by 10 percent of firm <i>i</i> in year <i>t</i> compared to the previous year; otherwise, 0.

<i>TD</i>	<i>TD</i> refers to the time dummy, which takes the value of 1 in the year of auditor rotation and beyond; otherwise takes the value of 0 for the years before auditor rotation.
<i>TREAT</i>	<i>TREAT</i> takes the value of 1 if the firm <i>i</i> rotated the auditor during the period 2015-2018; otherwise, 0.
<i>AUD_REAPPOINT</i>	<i>AUD_REAPPOINT</i> takes the value 1 if the affiliated firm in a BG reappoints an existing auditor; otherwise, 0.
<i>GACCR</i>	<i>GACCR</i> refers to any of the four accrual models used in the study aggregated at the BG level.
<i>GAB_ACCRUALS</i>	<i>GAB_ACCRUALS</i> refers to the Sum of Absolute values of residuals of accruals among the affiliated firms in a BG calculated using a modified jones model adjusted for performance following Kim and Park (2012).
<i>GAB_COHEN</i>	<i>GAB_COHEN</i> refers to the sum of Absolute values of discretionary accruals among the affiliated firms in a BG calculated using Cohen et al., (2008).
<i>GDICHEV</i>	<i>GDICHEV</i> refers to the Sum of the Three-year standard deviation of the residuals among the affiliated firms in a BG using the Dechow and Dichev model suggested by McNichols (2002).
<i>GAB_GUL</i>	<i>GAB_GUL</i> refers to the Sum of absolute values of accruals among the affiliated firms in a BG calculated using Gul et al., (2009).
<i>GRPT</i>	<i>GRPT</i> refers to the Natural logarithm of the sum of related party transactions of the group.
<i>GNLAF</i>	<i>GNLAF</i> refers to the natural logarithm of the audit fees paid by the BG to the auditors for period <i>t</i> .
<i>GLNNAF</i>	<i>GLNNAF</i> refers to the natural logarithm of the non-audit fees paid by the BG to the auditors for period <i>t</i> .
<i>GNAFR</i>	<i>GNAFR</i> refers to the ratio of group level non audit fee to total audit fees.
<i>GCL_IMP</i>	<i>GCL_IMP</i> refers to average of client importance among the BG for period <i>t</i> .
<i>GSIZE</i>	<i>GSIZE</i> refers to the natural logarithm of the sum of the market capitalization of the BG firm for the period <i>t</i> .

<i>GTENURE</i>	<i>GTENURE</i> refers to average of no. of years an auditor audits the financial statements in the sample period at period t .
<i>GAUDSPEC</i>	<i>GAUDSPEC</i> is a dummy variable which takes the value 1 if the auditor specialisation is above the median <i>AUDSPEC</i> of BG in year t otherwise takes the value 0.
<i>PROMHOL</i>	Percentage of outstanding shares owned by the promoters of firm i in year t .
<i>GPROMHOL</i>	<i>GPROMHOL</i> refers to percentage of average outstanding shares owned by promoters in the BG in period t .
<i>GLOSS</i>	<i>GLOSS</i> takes the value 1 if any affiliated firm in the BG reports negative net income and takes the value of 0 otherwise in period t .
<i>GMERGER</i>	<i>GMERGER</i> takes the value 1 if a company in a BG went for a merger or acquisition in year t ; otherwise, 0.
<i>GEQFIN</i>	<i>GEQFIN</i> takes the value 1 if an affiliated firm in the BG's equity shares outstanding increased by 10 percent in period t compared to period $t-1$ or takes the value 0 otherwise.

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