

Related Party Transaction, Firm Performance and Institutional Ownership

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Abstract

This paper investigates the impact of related party transactions on a firm's operating performance and market-based performance, as well as the impact of institutional ownership on the use of related party transactions. Using a sample of 1218 deals from S&P1500 firms from 2007 to 2018, we propose and examine three relevant hypotheses: (a) related party transactions, especially, "Red-flag" related party transactions are negatively related to firm's operating performance, (b) related party transactions, especially, "Red-flag" related party transactions are negatively related with firm's market-based performance, (c) institutional ownership is negatively related with related party transactions.

In summary, we do not find a significant relationship between related party transactions and firm's operating performance, such as ROA, Profit Margin and COGS. As for firm's market-based performance, we found related party transactions are positively related with Tobin's-Q, but are not significantly related with 12-months buy and hold abnormal return. Finally, we do not find any significant relationship between overall institutional investors and RPTs, but we find short-horizon institutional investors reduce the use of related party transactions, but long-horizon institutional investors do not limit the use of RPTs.

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Related Party Transaction, Firm Performance and Institutional Ownership

Chapter 1. Introduction

Related party transactions (RPTs) - defined as “a transfer of resources, services, or obligations between a reporting entity and a related party, regardless of whether a price is charged.” ([SFAS 57; IAS 24](#)) - remain a controversial issue among academics and practitioners. Extant literature proposes two hypotheses, namely, (a) conflict of interests hypothesis, and (b) efficient transaction hypothesis, that govern the relationship between RPT, firm performance, and the views of institutional investors on RPT ([Lo and Wong, 2016; Kohlbeck & Mayhew, 2017; Marchini, 2018](#)).

‘Conflict of interests hypothesis’ views RPTs as more of a manipulative than a value-enhancing tool. Consistent with agency concerns, it contends that a firm’s non-arm’s length transactions with related parties promote agency problems, which might destroy firm value. RPTs might be used by insiders, such as managers and directors, as a self-dealing tool and weaken shareholders’ interests and internal governance mechanisms. In contrast, the efficient transaction hypothesis propagates that RPTs could benefit a firm if they are strategically executed. It suggests that related parties

hold private information of the firm, thus transactions conducted by those parties can efficiently fulfill the underlying economic needs of a firm and increase its value.

Although there are concerns and uncertainties about the underlying nature of related party transactions, the literature does not provide any clear empirical evidence to confirm or refute the two competing views. In other words, the effects of related party transactions remain inconclusive. Moreover, there is no publicly available large-scale database that enables us to have a systematic investigation on the relation between RPTs and firm performance – especially in the North American context ([Kohlbeck & Mayhew, 2017](#)). Another challenge is to categorize RPTs into more suspecting (“red flag”) and less suspecting (“non-red flag”) RPTs – because not all RPTs have self-fulfilling intentions. RPTs that are considered more necessary for business operations (“non-red flag” RPTs) should not have negative consequences for a firm. Again, such categorizations are not readily available, which makes any research on RPT more challenging ([Kohlbeck & Mayhew, 2017](#)).

In the midst of this debate, Securities and Exchange Commission (SEC) released enhanced disclosure requirements for executive compensation and RPTs in August 2006. The regulations require disclosure of any transaction over \$120,000 that has occurred since the last fiscal year or is currently proposed, in which the company is a participant and any related party has a direct or indirect material interest. (SEC Release Nos, 2006) The regulations were met with intense debate and drew

significant market attention. In this study, we intend to examine: How do market and institutional investors perceive RPTs in the post-2006 period?

More specifically, we will address the following research questions: (a) first, we will examine the relation between RPTs and a firm's operating performance (e.g. ROA) and market-based performance (e.g. Tobin's Q). This approach will indicate whether firms with more RPTs experience lower operating efficiency and whether market participants view RPTs negatively. (b) second, we examine the association between institutional ownership, institutional owners' investment horizon, and the propensity of a firm in getting engaged in RPTs activities. Extant literature shows that institutional owners are better informed and play a stronger monitoring role. Also, given their investment level in a firm, institutional owners have higher incentives to restrict RPTs – if these are deemed harmful for shareholders. Focus on institutional investors also has a natural advantage; while institutional investors are likely to be well-informed about the firm, they are not a party to the RPTs. Further, institutional investors can be segregated based on their investment horizons – long-term institutional investors are likely to play a greater monitoring role. For brevity, we summarize the specific research questions below:

Research Question 1: How do RPTs affect a firm's operating performance? How do different categories of RPTs affect a firm's operating performance?

Research Question 2: How do RPTs affect a firm's market-based performance? How do different categories of RPTs affect a firm's market-based performance?

Research Question 3: How does institutional ownership influence the use of RPTs? How does institutional ownership influence the use of different categories of RPTs?

Chapter 2. Literature Review and Hypothesis Development

2.1 Related party transactions: negative aspects

The literature provides two contrasting hypotheses on RPTs: "conflict of interests" and: "efficient transaction". Under the "conflict of interests" hypothesis, RPTs are generally viewed as a tool by corporate insiders, such as controlling shareholders, managers and directors, to exploit the interest of minority shareholders. "RPTs represent potential self-dealing between the company and its directors, material owners, officers, and investees, and as such most countries require some form of additional monitoring of RPTs."([Kohlbeck & Mayhew, 2017](#)) Given the financial casualties associated with RPTs predicted by the conflict of interest theory, RPTs are considered as suspicious corporate activities by stakeholders ([Chen & Chien, 2007](#)). RPTs have been generally seen as more of a manipulative tool than a

value-enhancing tool ([Lo & Wong, 2016](#)), thus signaling poor corporate governance. ([Moscariello, 2012](#); [Nekhili & Cherif, 2011](#))

[Claessens, Djankov, Fan and Lang \(2002\)](#) observe large controlling shareholders can channel corporate resources towards projects that generally benefit controlling owners but not necessarily minority owners; this also dampens firms' market valuation. [Johnson, La Porta, Lopez-de-Silanes and Shleifer \(2003\)](#) examine related loans in Mexico and point out that related loans have high default rates and lower recovery rates. Their findings suggest that RPTs are a manifestation of looting. [Gordon, Henry and Palia \(2004\)](#) examine 112 publicly-traded companies and find that industry-adjusted returns are negatively associated with RPTs and that weaker corporate governance mechanism is associated with more RPTs. [Gorden and Henry \(2005\)](#) employ a larger sample, 331 publicly traded companies in 2000 and 2001, and document that related party transactions as a factor associated with earnings management. [Cullinan, Du and Wright \(2006\)](#) examine 106 revenue misstatements during the 1997–2002 period and find that companies that granted loans to their executives are significantly more likely to misstate their financial statements. [Berkman, Cole and Fu \(2009\)](#) analyze a sample of publicly-traded Chinese firms that issued loan guarantees to their related parties and examine the relationship between related party loan guarantee and firm performance. They document that the coefficients of Tobin's Q and ROA are negatively related to related party loan

guarantees, which indicates that the net worth decreases for the firms that tunnel fund from the related party guarantees. By examining related party transactions between Chinese publicly listed firms and their controlling shareholders during 2001–2002, [Cheung, Jing, Lu, Rau and Stouraitis \(2009\)](#) mention that RPTs lead to the erosion of shareholders' wealth. Related party lending is also found as a manifestation of tunneling. ([Johnson & La Porta, 2000](#)). Using data of 1,301 publicly traded corporations in eight East Asian economies, [Ge, Drury, Fortin, Liu and Tsang \(2010\)](#) examine whether disclosures about related party transactions made by listed firms are value relevant. They compare the value of the firm after the consideration of changes of two regulations in China in terms of RPTs and document that investors discount the value of those firms engaged in related party sales transactions. [Kohlbeck and Mayhew \(2010\)](#) examine firm valuation and collect a sample of 1194 firms from S&P 500 firms in 2001. They find that RPT firms have significantly lower valuations and marginally lower subsequent returns than non-RPT firms. [Srinivasan \(2013\)](#) makes a detailed analysis of RPTs in India over the period 2009–2011 and reports that RPTs are widespread and present in most of companies. He also measures the financial performance of the companies and the results show that companies with a high volume of RPTs have lowered their performance. [Pazzoli and Venuti \(2014\)](#) use Italian listed companies from 2008 through 2011 and find a positive association between RPTs and profit manipulation. They also conclude there is no correlation between RPTs and firm performance. [Kohlbeck and Mayhew\(2017\)](#) further collect

data for S&P 1500 firms in 2001, 2004, and 2007 and classify transactions into business transactions and Tone transactions. They find that RPTs are associated with future financial re-statement and the chance of restatement of final accounts is high when a firm engages in RPTs. They also find that RPTs, especially tone RPTs, are associated with restatements, suggesting these RPTs are red flags for an increased risk of material misstatement. They further note that RPTs are associated with lower audit fees. [Elkelish \(2017\)](#) uses all listed companies in the United Arab Emirates stock market during the period 2008-2012 and finds that RPTs that reduce firm value and the transactions with the subsidiaries and associate firms are the most damaging RPTs.

Literature also suggests that RPTs are used as an alternative tool to manage earnings. Thomas, [Herrmann and Inoue \(2004\)](#) use a sample from Japanese firms over the 1985-2000 period and suggest that firms manage earnings through affiliated transactions. [Jian and Wong \(2010\)](#) use firms listed in China 1998-2002 and find that related party sales are associated with an ‘earnings increase’ of listed firms for qualification of continued listing. Their results imply that controlling shareholders employ related party sales to prop up earnings and to substitute for accrual earnings management. They provide evidence that Chinese-listed firms prop up earnings by using related sales to controlling shareholders to maintain their listed status. [Aharony et al. \(2010\)](#) further noted that related party sales are motivated to manage earnings

upward during the pre-IPO period and tunneling opportunities in the post-IPO period. Similarly, RPTs are classified as one of ten primary GAO (General Accounting Office) categories for restatements and also constitute a substantial portion of fraud cases subject to enforcement actions by the SEC. ([Wiedman & Hendricks, 2013](#); [Young & Peng, 2013](#)) Using 257 Chinese A and B shares IPOs during 1999 and 2000, [Chen, Cheng and Xiao \(2011\)](#) find that the Chinese firms' post-IPO performance deterioration is a result of operating RPTs and accruals management and that RPTs negatively affect the stock return. [Marchini, Mazz and Medioli \(2018\)](#) find RPTs are positively associated with earnings manipulations, and transactions with ultimate parents are associated with a low degree of earnings manipulations. Even though this stream research focuses on the Asian market, it shed light on the RPTs and earnings management research. In summary, under the conflict of interests hypothesis, RPTs are generally associated with poor firm performance and low firm value, and a higher degree of earnings management. ([Wang, Cho & Lin, 2019](#)) RPTs are commonly used to exploit minority shareholders' interests when corporate governance mechanisms are relatively weak.

2.2 Related party transactions: positive aspects

The efficient transaction hypothesis argues that higher transaction costs exist for trades between unrelated parties. Internal market transactions among affiliated

parties could be especially beneficial due to less information asymmetry and therefore lower transactions costs ([Coase, 1937](#); [Jorgensen & Morley, 2017](#)) Related party transactions help reduce hold-up problems, lower transaction costs, and efficiently fulfill underlying economic needs of the company and could benefit the company if they are monitored effectively. ([Fisman & Wang, 2010](#)) It is only recently that the positive side of RPTs began to be empirically documented and recent research begins to distinguish between "bad" and "good" RPTs. ([Wang et al. 2019](#))

[Kahle and Shastri \(2004\)](#) examine a sample of firms from 1996 to 2000 and document that loans to executives are made at below-market rates, and that loans related to stock and options transactions are inefficient in increasing managers' stock ownership. [Hwang and Kim \(2016\)](#) use 34 chaebol groups from 2000-2011 and find that RPTs are used as a means to financially support the firms. They further note that related party sales help to improve firm performance by increasing earnings. Chen, [Chen and Chen \(2009\)](#) study the relationship between RPTs and firm performance (TBQ and ROA) on Chinese listed companies with a sample of 763 firms. They document that the related party purchases improve firm performance. They suggest that Chinese listed companies should focus on the use of RPTs for positive purposes only and China's stock exchanges should be encouraged to scrutinize the RPTs. [Ryngaert and Thomas \(2012\)](#) examine 234 small and mid-sized U.S. firms and classify RPTs into ex-ante and ex-post RPTs. They document that ex-ante

transactions that predate the counterparty becoming a related party are not associated with firm performance and are positively associated with firm valuation. However, ex-post transactions that occur after a party becomes a related party are inversely associated with profitability, result in share price declines, and are associated with a higher likelihood of financial distress. [Habib, Jiang and Zhou \(2015\)](#) find related party sales/purchases, such as related party trades, meet the efficient contracting perspective of RPTs, thus leading to lower audit fees. In contrast, related party loans result in the opposite conclusion, such as higher audit fees. [Kohlbeck and Mayhew \(2017\)](#) separate RPTs into “tone-related” and “business-related” RPTs and find that business RPTs (tone RPTs) are associated with a lower (higher) risk of misstatements. [Downs, Ooi, Wang and Ong \(2016\)](#) use samples from Hong Kong, Malaysian and Singaporean REITs firms over the period 2003-2010 and find a positive value effect of RPTs on firm performance, while the result is driven by the RPTs acquisition. Their results suggest that managers and sponsors do not expropriate wealth from their minority shareholders through RPTs. [Wang et al. \(2019\)](#) use data in the years 1997–2016 of Taiwanese publicly traded companies and find that firms with higher similarity in industry attributes or a higher degree of vertical integration lead to higher performance through related party transactions. [Umobong \(2019\)](#) uses data from the Nigerian Stock Exchange and reports a significant positive relation between RPTs and ROE but reports an insignificant association with ROA and EPS.

2.3 Institutional ownership: negative aspects

There are two theories regarding institutional ownership. The first theory indicates that institutions would directly monitor firms in which they invest. Large shareholders have more incentive to be involved in direct monitoring activities. The other states that institutions who prefer liquidity more than concentrated ownership would not involve in corporate governance. Those institutions would express their dissatisfaction with the management by liquidating their shares ([Gillan et al., 2003](#)). Bushee's researches also indicate that not all institutional investors are not the same. Long-horizon investors and short-horizon investors may affect firm performance differently. ([Bushee, 2014](#))

“Typically institutional owners’ holdings in U.S. corporations are so large that they find it difficult to move their money from one company to another. Hence they have begun to see themselves playing a role in the decision-making process of the firm ([Finaley, 1986](#)), particularly by increasing their latent power in constraining choices of strategies. This change in institutional investors’ behavior may then affect the power relationships in a firm, and subsequently the firm’s performance.”([Chaganti R & Damanpour F, 1991; Pound, 1988](#)) proposed three hypotheses to explain the relationship between institutional ownership and firm performance: the efficient monitoring hypothesis, the conflict of interest hypothesis, and the strategic alignment

hypothesis. The efficient monitoring hypothesis suggests that institutional investors play an important role as effective monitors, which positively affects firm performance. The conflict of interest hypothesis suggests that institutional investors may not effectively monitor the firms they invest in if they have business relations with firms. Such institutional investors may collude with the management of firms for their interests. Thus, these institutional investors may adversely affect firm performance. The strategic alignment hypothesis suggests that institutional owners and managers may cooperate to expropriate the interests of other shareholders and compromise the firm performance. Both conflicts of interest hypothesis and strategic alignment hypotheses predict a negative relationship between institutional ownership and firm performance since institutional investors did not play the role of active monitors. ([Pound, 1988](#)) Some studies find evidence in support of the strategic alignment and the conflict of interest hypotheses. [Pound \(1988\)](#) uses a sample of 100 proxy contests in the U.S. from 1981 to 1985 and finds that institutional investors cooperate with insiders and managers to exploit the interests of shareholders.

[Duggal and Millar \(1999\)](#) examine acquisitions to investigate the impact of institutional ownership on corporate performance. They use data from COMPUSTAT over the period 1985-1990 and report a positive relationship between the bidder gains and institutional ownership. Their results suggest that there is no relation may exist between ownership concentration and firm performance. [Cornett, Marcus, Saunders](#)

[and Tehranian \(2003\)](#) use S&P 100 firms over the period 1993 through 2000 and find that the number of pressure-sensitive institutional investors (those with an existing or potential relationship with the firm) in a firm has no impact on the firm performance (operating cash flow returns). Their results suggest that pressure-sensitive institutional investors do not monitor the management of the firm effectively but care only about their business relationships with the firm. [Bhattacharya and Graham \(2007\)](#) use 116 firms in Finland for 2004 and find that institutional investors have adverse (negative) effects on firm performance.

2.4 Institutional ownership: positive aspects

The efficient monitoring hypothesis predicts a positive relationship between institutional ownership and firm performance because institutional investors hold an increasingly large proportion of shares, they have the incentive and resources to monitor management and protect the value of their investments. Institutional ownership could directly monitor the firm by intervening with the management, they could also exert their monitoring role indirectly by buying and selling shares. Moreover, institutional investors carefully choose their potential investment projects and undertake thorough researches before they invest. They ensure to provide scarce capital to the most efficient firms, which in turn enhances firm performance. ([Tripti & Amitabh, 2016](#)) Therefore, the Efficient monitoring hypothesis suggests that

institutional ownership plays a crucial role in monitoring and improving corporate governance. Predominant literature also shows that firms with higher ownership by foreign and independent institutions (unlike other institutions) have higher firm valuations, better operating performance, and lower capital expenditures ([Ferreira & Matos, 2008](#)).

[Brickley, lease and Smith Jr.\(1988\)](#) examine the voting pattern of institutional investors in 288 management initiated antitakeover amendments by 191 U.S. firms. They document a strong positive correlation between and the level of institutional ownership, such as mutual funds, pension funds, foundations and endowments, and the percentage of the no-votes cast if the proposal has the potential to reduce shareholders' wealth. [McConnell and Servaes \(1990\)](#) use a sample of 2266 firms in 1976 and 1986 and report a significant positive relation between Tobin's Q and the proportion of shares held by institutional investors. [Chaganti and Damanpour \(1991\)](#) use a sample of 40 pairs of companies in 40 industries from 1983 to 1985 and find that the size of stock holdings held by institutional investors is positively related to Return on Equity (ROE). [Cornett et al. \(2003\)](#) examine S&P 100 firms over the period 1993 through 2000 and find a strong positive relation between the pressure-insensitive institutional investors (those with no business relationship with the firm) and operating cash flow returns. [Cornett et al. \(2007\)](#) use a sample of 5300 institutions in 27 countries from 2000 to 2005 and found that firms held by foreign

and independent institutions are associated with higher valuations, better operating performance, and reduced capital expenditures. Their findings suggest that some (but not all) institution groups are effective monitors of the firms they invest in. [Elyasiani and Jia \(2010\)](#) use a sample of 1,532 US firms over the period 1992-2004 and find that stable shareholding of institutional investors has a positive impact on firm performance.

Plenty of evidence in support of the monitoring hypothesis has also been found in several countries. Lee and [Chunag \(2009\)](#) use a sample of listed companies in Taiwan over the period 1994 to 2003 and find that securities investment trust funds' ownership and corporate performance are positively correlated. [Thanatawee \(2014\)](#) uses a sample of 1,451 observations from 323 non-financial firms listed on the Stock Exchange of Thailand (SET) over the period 2007 to 2010 and find that a positive relationship between equity ownership and Tobin's Q. Thanatawee also finds that domestic institutional are positively associated with corporate governance and firm value (Tobin's-Q), however foreign institutional investors are inactive in monitoring the managers and may even expropriate corporate resources from minority shareholders. [Ahmad and Jusoh \(2014\)](#) use a sample of 730 Malaysian listed firms over the period 2007 to 2009 and suggest that institutional ownership can increase the share price and enhance firm performance in Malaysia. [Boone and White \(2015\)](#) use firms in Russell 1000/2000 and find that higher institutional ownership is associated

with greater management disclosure. Long-term investors were incentivized to improve management disclosures. [Tripti and Amitabh \(2016\)](#) examine the relationship between institutional ownership and firm performance for a sample of 11,136 firm-year observations from 1,392 non-financial firms listed on the BSE from 2007 to 2014 and find that institutional ownership has a positive impact on firm performance. [Lin and Fu \(2017\)](#) use a sample that includes all Chinese companies listed on the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) for the 2004–2014 period and indicate that pressure-insensitive, foreign and large institutional shareholders have greater positive effects on firm performance than pressure-sensitive, domestic, and small institutions, respectively. [Sakawa and Watanabel \(2020\)](#) use a sample of listed firms of the TOPIX500 in Japan during 2010-2016. Their findings support the monitoring role of institutional investors on a firm's performance.

2.5 Hypotheses

In light of the above discussion, we present a set of hypotheses, which will be investigated in this study. In the process, in light of [Kohlbeck & Mayhew \(2017\)](#), we also differentiate between "Red-flag" and "Non red-flag" RPTs. "Red-flag" RPTs are the related party transactions that are not essential for the core business of a firm. Below, we present the hypotheses in the context of 'conflict of interest hypothesis' of

RPTs – which predicts a negative impact on performance (lower ROA, lower profit margin, higher COGS).

Related Party Transactions and Firm Operational Performance:

Hypothesis 1a: RPTs are negatively associated with ROA.

Hypothesis 1b: “Red-flag” RPTs are negatively associated with ROA.

Hypothesis 2a: RPTs are negatively related with Profit Margin.

Hypothesis 2b: “Red-flag” RPTs are negatively related with Profit Margin.

Hypothesis 3a: RPTs are positively related with Cost of goods sold (COGS).

Hypothesis 3b: “Red-flag” RPTs are positively related with Cost of goods sold (COGS).

Related Party Transactions and Market Perception

Hypothesis 1c: RPTs are negatively related with Tobin’s-Q.

Hypothesis 1d: “Red-flag” RPTs are negatively related with Tobin’s-Q.

Hypothesis 2c: RPTs are negatively related with future buy and hold abnormal return.

Hypothesis 2d: “Red-flag” RPTs are negatively related with future buy and hold abnormal return.

Even though some researches support the ‘efficient transaction hypothesis’ in the context of RPTs, most of the studies document a negative relation between RPTs and firm performance – which supports the tenets of the ‘conflict of interest hypothesis. RPTs are usually used as an opportunistic tool to exploit minority shareholders’ interests when corporate governance mechanisms are relatively weak. [Gordon, Henry and Palia \(2004\)](#) find RPTs are negatively associated with industry-adjusted returns. They further document that RPTs (related party transactions) are associated with earnings management. [Berkman, Cole and Fu \(2009\)](#) report a negative relationship between ROA and RPT loan guarantee. [Cheung et al \(2009\)](#) also suggest related party lending is a manifestation of tunneling. In summary, RPTs are generally associated with poor firm performance and low firm value, and a higher degree of earnings management – which support the notion of ‘conflict of interest hypothesis’. Since the “Red-flag” RPTs are more likely to be driven by self-interests, in the context of ‘conflict of interest hypothesis’, we expect that “Red-flag” RPTs will have negative association with firm performance.

Next, we present the hypotheses relating institutional investors and RPTs, in light of ‘efficient monitoring hypothesis’ of institutional investors.

Institutional ownership and RPTs disclosure:

Hypothesis 4a: Overall institutional investors are negatively associated with RPTs.

Hypothesis 4b: Overall institutional investors are negatively associated with “Red-flag” RPTs.

Hypothesis 5a: Long-horizon institutional investors are negatively associated with RPTs.

Hypothesis 5b: Long-horizon institutional investors are negatively associated with “Red-flag” RPTs.

We do not propose any specific hypothesis for short-horizon institutional investors, because they might not pay adequate attention to RPTs of a firm.

The efficient monitoring hypothesis predicts a positive effect of institutional ownership on firm performance, since institutional investors dominate the board of directors, control corporate management and have the incentive and resources to monitor management and protect the value of their investments. Institutional ownership could directly monitor the firm by intervening with the management, they could also exert their monitoring role indirectly by buying and selling shares. Several

studies on institutional ownership found a positive relationship between institutional ownership and transparency, providing support towards the monitoring role of institutional ownership. Research on pressure-insensitive institutional investors, such as investment companies and independent investment advisors, have no business relationships with the firms in which they invest, therefore, are more likely to impose controls on management decisions to execute their monitoring role in corporate governance. [Matos and Ferreira \(2008\)](#) suggest that intervention by institutional investors increases the value of a firm. They also indicate that firms with higher ownership by foreign and independent institutions (unlike other institutions) have higher firm valuations, better operating performance, and lower capital expenditures. Regulations and corporate governance systems are also known as crucial determinants for institutional investment which would affect institutional investors' decisions. [Bushee et al. \(2014\)](#) indicate that institutional ownership prefers companies with better governance mechanisms because these mechanisms can reduce the risk of their undiversified investments. Institutional owners seek to invest in companies with better corporate governance practices and internal monitoring mechanisms because they believe that corporate governance can influence the transparency of disclosure and decrease costly monitoring activities ([McCahery et al., 2016](#) and [Chung & Zhang, 2011](#)). Given the predominant view in the literature that RPTs (especially that “red-flag” RPTs destroy firm value), institutional investors are not likely to prefer such activities by a firm. [Bushee et al. \(2014\)](#) further argue that between the short-horizon

and long-horizon institutional investors, the latter play an effective monitoring role. Following this argument, we contend that long-horizon institutional investors should care more about the RPT activities (and “Red-flag” RPTs) of a firm.

Chapter 3: Data and Methodology

3.1 Data

RPTs data are collected from EDGAR manually (for the period of 2007 – 2018). RPTs are reported in proxy statements (DEF 14a) labeled “Transactions with Management”, “Certain Relationships and Related Transactions”, “Director Independence” and “Related Person Transactions”. We hand-collect RPTs information for all S&P 1500 firms between 2007 and 2018. We follow the methodology of a recent study (reference??) and categorize RPTs primarily into two groups: ‘red-flag or tone’ RPTs and ‘business’ RPTs (on ‘non-red flag’ RPTs). Tone RPTs (i.e. ‘red-flag’ RPTs) typically include transactions, such as loans, guarantees, and consulting, Legal & investment Service; Overheard Reimbursement; Loans; Borrowings; Guarantees; Donation; Hiring; Non-Business, with a director, executive, or major shareholders, as the party to these transactions is in a position to benefit from such transactions. Business RPTs include leases or purchases and sales of products central to the operations of the company and are common transactions with investees

of the company. All firm specific variables are obtained from Compustat database; return data from CRSP database, and institutional investor inform Thomson Reuters institutional ownership database.

3.2 Methodology

3.2.1 RPTs and Firm Performance

Hypotheses 1 to 4 investigate the relationship between RPTs and operating performance and operating efficiency. To examine the relationship between RPTs and firm operating performance, we use ROA (return on asset), Profit Margin, COGS measures a firm's operating performance and efficiency. Those three indicators are directly related to the operation of a company and can suggest the operational performance and efficiency of a company. ROA is calculated as net income divided by total assets and it is used as a proxy for firm performance ([Becher et al. 2005](#)). Profit Margin is generally used to measure the degree to which the firm's profitability and is defined as profit (sales minus all expenses) divided by its revenue. COGS is defined as the cost of goods sold. COGS is divided by sales.

Number of RPTs refers to the total number of related party transactions in that firm-year. Value of RPTs refers to the total value of related party transactions in that firm-year. Number of Business RPTs (i.e. 'non red-flag RPTs) is the total number of

related party transactions that are closely related to the firm's core business in that firm year. Value of Business RPTs is the total value of related party transactions that are closely related to the firm's core business in that firm year. Business RPTs include leases or purchases and sales of products central to the operations of the company. To test this hypothesis, we propose the ordinary least square (OLS) regression model (with and without firm fixed effect) on a firm-year level in the following equation (All variables are described in Appendix A):

$\text{ROA} = \text{Alpha} + \beta_1 * \text{RPTs} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(1)
$\text{Profit Margin} = \text{Alpha} + \beta_1 * \text{RPTs} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(2)
$\text{COGS} = \text{Alpha} + \beta_1 * \text{RPTs} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(3)

In accordance with the existing literature, we use the following control variables:

- (1) Leverage is calculated as Leverage calculated as total debt to total assets, is a proxy for agency costs of debt.
- (2) Firm Size is defined as Log of the market value of equity to measure firm size.
- (3) Sales Growth is the percent growth in the net sales of a business from one fiscal period to another.
- (4) CEO Age is the age of CEO of the.
- (5) CEO Tenure is the length of time between the date when the person became the CEO.
- (6) Managerial Ability Score is a managerial ability score is developed by Demerjian et al. (2012)
- (7) Firm Age is calculated as the natural logarithm of Company age represented in company working duration since its establishment.
- (8) R&D Intensity is R&D Expense to revenue ratio. It measures the percentage of sales that are allocated to R&D expenditures.
- (9) Big-4 Auditor Dummy is the Big-4 auditor dummy
- (10) Female CEO Dummy is female CEO dummy
- (10) Firm Risk is calculated as the standard deviation of 'total stock returns' over the last five years.

3.2.2 RPTs and Market Based Performance

$\text{Tobin's-Q} = \text{Alpha} + \beta_1 * \text{RPTs} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(4)
$\text{BHAR} = \text{Alpha} + \beta_1 * \text{RPTs} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(5)

Tobin's Q is the market value of a company divided by its assets replacement cost. BHAR is the buy and hold abnormal return of the company (over the next twelve months). We use value-weighted index and equal-weighted index as a benchmark. Tobin's-Q and BHAR both represent the market perception of the company and are widely used to measure the market-based performance of the company.

3.2.3 RPTs and Institutional Ownership

Hypotheses 5 and 6 are trying to examine the effect of Institutional Ownership on the use of RPTs. We propose the regression equation as following (All variables are described in Appendix A):

$\text{RPTs} = \text{Alpha} + \beta_1 * \text{overall institutional ownership} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(6)
$\text{RPTs} = \text{Alpha} + \beta_1 * \text{short} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(7)
$\text{RPTs} = \text{Alpha} + \beta_1 * \text{long} + \beta_2 * \text{Leverage} + \beta_3 * \text{Firm Size} + \beta_4 * \text{Sales Growth} + \beta_5 * \text{CEO Age} + \beta_6 * \text{CEO Tenure} + \beta_7 * \text{Managerial Ability Score} + \beta_8 * \text{Female CEO Dummy} + \beta_9 * \text{Firm Age} + \beta_{10} * \text{R\&D Intensity} + \beta_{11} * \text{Big-4 Auditor Dummy} + \beta_{12} * \text{Firm Risk} + \text{Firm fixed effect} + \text{Year fixed effect}$	(8)

Chapter 4: Findings

4.1 - Descriptive statistics

Table 2 presents the descriptive statistics of the main variables used in this study. At first, we have 14620 firm-year observations, including 1218 firms. Subsequently, we drop 6294 firm-year observations due to data unavailability. Table 2 provides descriptive statistics for our sample firms, partitioned based upon the

number and value of business and non-business RPTs. We report mean, minimum, maximum, standard deviation, and the number of transactions. Values reported in Table 2 and those used in subsequent analyses are winsorized at the 1 and 99% levels. From Table 2 we further find that, among the RPTs, on average a firm has one RPTs and a majority of the RPTs are business RPTs (65.7%). The average value of non-business RPTs (i.e. Red-flag RPTs) of a firm is 2.64 million US dollar, the value of business RPTs are 5.78 million US dollar. The value of business RPTs is two times more than the value of non-business RPTs.

Insert Table 2 About Here

Table 3 (correlation matrix) suggests that Tobin's-Q, profit margin, overall institutional ownership, and short-horizon institutional ownership are negatively and significantly correlated to the number of total RPTs, number of business RPTs and value of business.

Insert Table 3 About Here

4.2 Related Party Transactions and Operating Performance

In Table 4, we present the logistic regression analysis results of the relation between RPTs and ROA. Panel A and panel B exhibit the results of non-fixed effect

regression analysis results, where robust and cluster regression are applied separately; panel C presents the results of the time-invariant firm fixed effects regression results. The non-fixed effect regressions suggest the number and value of RPTs (value and number of total RPTs, business RPTs and “Red Flag” RPTs) are significantly and negatively related to ROA. Value of “Red Flag” RPTs/ Sales is negatively related to ROA with a coefficient of -0.6031 (1% significance level). However, when the fixed effect regression is applied, we do not find any significant relation between RPTs and ROA. Our results suggest that RPTs might not be bad for firm’s performance in terms of ROA. The results do not support our hypotheses 1a and 1b and are not consist with the conflict of interests hypothesis of RPTs.

Insert Table 4 About Here

To further examine the effect of RPTs on operating performance and efficiency, we examine the relationship between profit margin and RPTs in Table 5. Panel A presents the regression results of RPTs’ impact on profit margin. Panel A suggests that value of RPTs (total value of RPTs, value of RPTs and value of “Red Flag” RPTs), and number of RPTs (total number of RPTs, number of business RPTs and number of “Red Flag” RPTs) are significantly and negatively related to profit margin. When value of RPTs (total value of RPTs, value of RPTs and value of “Red Flag” RPTs) are divided by the sale, the negative effect disappears. Moreover, when

the fixed-effect regression is applied, the negative association between RPTs and profit margin no longer exists. The fixed effect regression does not show any significant relationship between RPTs and profit margin. Results from Panel C do not support our hypotheses 2a and 2b, which predict that RPTs, especially “Red-flag” RPTs are negatively related to profit margin. The results do not support the conflict hypothesis of RPTs.

Insert Table 5 About Here

Table 6 presents the panel data OLS regressions results testing the association between RPTs and COGS. The non-fixed effect regression (Panel A) suggests that RPTs are significantly positively associated with COGS, except the value of RPTs/Sales and the value of “Red Flag” RPTs/sale. While when fixed effect regression is applied, no significant relationship between RPTs and COGS exists. The fixed effect regression suggests that business RPTs and “Red-flag” RPTs do not increase the cost of the products to the company. The result does not support our hypotheses3a and 3b which predict a negative relationship between RPTs and COGS.

Insert Table 6 About Here

As our results have shown, in general, RPTs, are not negatively associated with the firm's operating performance, in term of ROA, profit margin and COGS, which suggests that RPTs do not increase firm's cost and do not lower the firm's operating efficiency and RPTs, even "Red-flag" RPTs, do not negatively affect firm's operating performance. Our results are consistent with the findings of [Hwang and Kim \(2016\)](#) and [Chen and Chen \(2009\)](#) which suggest that RPTs help to improve firm performance. Our results do not support our hypothesis which states RPTs, especially "Red-flag" RPTs, negatively influence firm's operating performance. The results contradict the proposition of conflict hypothesis of RPTs - which suggests that RPTs are used as manipulative tools to exploit shareholders' interests.

4.3 Related Party Transactions and Market Based Performance

In this section, we further test the relation between RPTs and firm's market-based performance. Tobin's-Q and 12 months equal-weighted and value-weighted buy and hold abnormal return (BHAR) are used to measure a firm's market-based performance.

Table 7 presents the relation between RPTs and Tobin's-Q. The non-fixed effect regression (Panel A) suggests a significantly negative relationship between Tobin's-Q

and RPTs, especially business RPTs (value of business RPTs, value of business RPTs/sales and number of business RPTs). However, fixed effect regression (Panel B) suggests a positive relationship between the value of RPTs / sales and Tobin's-Q with coefficient 1.291 and 1% significant level. The fixed effect regression results do not support our hypotheses 1c and 1d, which states that RPTs are negatively related with Tobin's-Q. On the contrary, we find that RPTs are viewed positively by market participants.

Insert Table 7 About Here

In Table 8, we test the association between RPTs and buy and hold abnormal return(BHAR). We use 12 months equal-weighted and value-weighted hold abnormal return as the benchmark. The non-fixed effect regressions (Panel A and Panel B) suggest that number of RPTs and number of "Red Flag" RPTs are significantly positively associated with equal-weighted and value-weighted BHAR. However, the fixed effect regression results (Panel C) do not suggest any significant relationship between RPTs and BHAR and do not support our hypotheses 2c and 2d which state that RPTs, especially "Red-flag" RPTs, are negatively related with BHAR. The results from Table 7 and 8 suggest that RPTs do not negatively influence the company's market-based performance, in terms of Tobin's-Q and BHAR. The market

does not perceive the presence of RPTs, even “Red-flag” RPTs, as a bad sign of the firm.

Insert Table 8 About Here

4.4 Related Party Transactions and Institutional Ownership

To investigate how does institutional ownership’s perception affect the use of RPTs, we further examine the relationship of RPTs and overall institutional ownership, short-horizon institutional ownership and long-horizon institutional ownership.

Table 9 presents the relationship between RPTs and overall institutional ownership. The non-fixed effect regression results (Panel A) suggest a significantly negative relationship between overall institutional ownership and all groups of RPTs. However, fixed effect regression results (Panel B) present a significant relationship between number of “Red-flag” RPTs and overall institutional ownership. The results support our hypothesis 4b, which states that overall institutional investors are negatively associated with “Red-flag” RPTs, but do not support hypothesis 4a, which states that overall institutional investors are negatively associated with RPTs

Insert Table 9 About Here

Then we test the relationship between RPTs and short-horizon institutional ownership and long-horizon institutional ownership and present the results in In Table 10. Both non-fixed effect regression (Panel A) and fixed effect regression (Panel B) show a significantly negative relation between short-horizon institutional ownership and number of RPTs (number of total RPTs, number of business RPTs and number of “Red-flag” RPTs). We do not find any significant relationship between long-horizon institutional ownership and RPTs. The results do not support our hypotheses 5a and 5b, which predict that long-horizon institutional investors are negatively associated with RPTs(especially “Red-flag” RPTs).

The regression results suggest that the long-horizon institutional investors do not limit the use of RPTs, but the short-horizon institutional investors limit number of RPTs. Our results in the previous section suggest that RPTs do not negatively influence firm’s performance, which means RPTs - even “Red-flag” RPTs - are not harmful to a firm. The different reactions of long-horizon and short-horizon institutional investors might be due to their different perceptions of the nature of RPTs. Long-horizon institutional investors might be aware that RPTs do not reduce the firm’s performance. Therefore, they do not limit the use of RPTs. However, short-horizon institutional investors may follow the conventional wisdom and believe RPTs are harmful to the firm, so they limit the number of RPTs.

Insert Table 10 About Here

Chapter 5. Discussion and Conclusion

5.1 Findings

This paper investigates the underlying nature and effect of related party transactions. To address this question, we test the impact of RPTs on firm performance (operating performance and market-based performance) and the effect of institutional ownership on the use of RPTs. Using a sample of 1218 companies from S&P1500 listed firms during the period from 2007 to 2018, this study finds that: (1) There is no significant relationship between related party transactions and ROA. (2) There is no significant relationship between related party transactions and COGS. (3) There is no significant relationship between related party transactions and profit margin. (4) Value of RPTs/sales is positively related with Tobin's-Q. (5) There is no significant relationship between related party transactions and BHAR. (6) Only number of "Red-flag" RPTs is negatively related with overall institutional investors. (7) Short-horizon institutional investors are negatively related with the number of RPTs. (8) There is no significant relationship between long-horizon institutional investors and RPTs.

Generally speaking, our results suggest that RPTs are not significantly negatively related with firm's operating performance and market-based performance, which contradicts the conflict of interest hypothesis of RPTs. Even though, the impact of RPTs on firm performance are still not conclusive, our results suggest RPTs are not necessarily bad for the firm's performance.

We also find that short-horizon institutional investors and long-horizon institutional investors hold different views of RPTs and react oppositely. Long-horizon institutional investors might know RPTs are not harmful to a firm and sometimes benefit the firm, so they do not limit the number of RPTs. However, the short-horizon institutional investors might not conduct adequate research on the nature and the impact of RPTs, and simply believe that RPTs can be used as an opportunistic tool to exploit shareholders' wealth. Therefore, they limit the number of RPTs. We also notice that non-fixed effect regression results can be misleading because it does not consider the time-invariant firm effects.

5.2 Limitations and contribution of this study and directions for future research

This study is likely to make the following contributions to the literature: First, we develop a comprehensive and the largest dataset on RPTs (by hand-collecting RPT information on all S&P 1500 firms over 2007-2018). This enables us to provide a

holistic view and ensure the robustness of our results. Our results suggest that, in general, RPTs do not negatively influence firm's performance. Our results also highlight the perception and the impact of institutional ownership on the use of RPTs.

In this study, we considered S&P 1500 firms, excluding the financial sector, and therefore firms that were not considered in this study might show different results. The sample size to be extended to all firms listed on the New York Stock Exchange. The data of recent years, 2019 and 2020, can be included in future research to provide a more up-to-date result. In this study, we only categorize RPTs primarily into two groups: 'red-flag or tone' RPTs and 'business' RPTs. we focus on the total value and total number of business RPTs and tone RPTs ("red flag" RPTs). Future studies could focus on the classification within the business RPTs and "Red Flag" RPTs, and further investigate the underlying nature and impact of each type of RPTs, Tone RPTs typically include transactions, such as loans, guarantees, and consulting, Legal & investment Service; Overheard Reimbursement; Loans; Borrowings; Guarantees; Donation; Hiring; Non-Business, with a director, executive, or major shareholders, as the party to these transactions is in a position to benefit from such transactions. Business RPTs include leases or purchases and sales of products central to the operations of the company and are common transactions with investees of the company. Our study also suggests that fixed effect regression and non-fixed

regression may produce different results, non-fixed regression results can be misleading. This aspect can be examined further by future studies.

Appendices

Appendix A – Table 1. Variables Definition

Name	Definition
Number of RPT	Total number of related party person transactions in that firm year
Number of Business RPT	Total number of related party person transactions that closely related to firm's core business in that firm year
Number of "Red Flag" RPT	Total number of related party person transactions that are not closely related to firm's core business in that firm year. Also remarked as number of "red flag" RPTs.
Value of RPT	Total value of related party transactions in that firm year
Value of business RPT	Total value of related party transactions that are closely related to firm's core business in that firm year.
Value of "Red Flag" RPT	Total value of related party transactions that are not closely related to firm's core business in that firm year. Marked as value of "red flag" RPTs.
ROA	Accounting return on assets. ROA is used to measure the operating performance of the company
Profit Margin	Profit (sales minus all expenses) divided by its revenue. Profit margin is used to measure the operating performance of the company
COGS	Cost of goods sold. COGS are dividend by sales, is used to measure the operating performance of the company
Tobin's Q	The sum of market value of equity and the book value of debt divided by the book value of total assets, to measure market based firm value. Tobin's Q is widely used to measure firm value in the studies of ownership structure and corporate governance

BHAR	BHAR_vw is defined as the 12 months value weighted buy and hold abnormal return. BHAR_ew is defined as the 12 months equal weighted buy and hold abnormal return.
Institutional ownership	The percentage of shares outstanding owned by institutions. Higher institutional ownership is linked with greater management disclosure and causing lower information asymmetry (Boone & White, 2015). We obtain Institutional data from WRDS SEC Thomas Reuter's F13 File.
Short-term	The short-horizon institutional ownership
Long-term	The long-horizon institutional ownership
Leverage	Solvency or coverage ratio that calculates a company's leverage by comparing long term debt to assets. In other words, it measures the percentage of assets that a business would need to liquidate to pay off its long-term debt.
Firm Age	Natural logarithm of Company age represented in company working duration since its establishment.
Sales Growth	The percent growth in the net sales of a business from one fiscal period to another
CEO Age	the age of CEO of the company
CEO Tenure	The length of time between the date when the person became the CEO
Managerial Ability Score	Managerial ability score is developed by Demerjian et al. (2012)
R&D Intensity	R&D Expense to revenue ratio. It measure thepercentage of sales that is allocated to R&D expenditures
Female CEO Dummy	Female CEO Dummy
Big-4 Auditor Dummy	Big-4 Auditor Dummy
Firm Risk	Firm Risk

Table 2. Summary Statistics

This table presents the summary statistics of the variables used in the study, All variables are described in Appendix A.

Descriptive Statistics					
	Mean	Std. deviation	Minimum	Maximum	N
Number of RPTs	1.083635	1.913144	0	11	11861
Number of Tone RPTs	.6565767	1.282713	0	7	11860
number of Business RPTs	.4029511	1.015492	0	6	11860
Value of RPTs	11.01412	58.09309	0	490	11861
Value of Tone RPTs	2.636384	16.10075	0	150	11860
Value of Business RPTs	5.778134	32.55634	0	270.0765	11860
Value of RPTs/Sales	.0055223	.0276943	0	.2471043	11861
Value of Tone RPTs/Sales	.0016184	.0100116	0	.0988823	11860
Value of Business RPTs/Sales	.0027773	.0148981	0	.1346048	11860
TBQ	2.04956	1.348803	.5695716	11.6396	11861
12_months_vw_BHAR	.0393577	.4056091	-.8871992	1.84505	11680
12_months_ew_BHAR	.0400586	.3991383	-.9119191	1.767671	11680
Profit margin	1.2933	2.026771	-.8929223	14.4976	11861
cogs/sales	.5948623	.3339345	.0440049	9.339019	11861

Overall ownership percent	.8238951	.1807476	.0006621	1.100126	9850
Short term ownership_percent	.1978615	.0915069	0	.4484425	9850
Long term ownership_percent	.0211699	.0485766	0	.2903006	9850
Leverage	.1979101	.184742	0	.877537	11861
Firm Size	7.615931	1.686263	.685896	11.02878	11861
Sales Growth	.0848221	.2900094	-.7964848	3.672	11861
CEO Age	56.25849	7.21942	29	96	11861
CEO Tenure	8.482	7.124722	1	35	11861
Managerial Ability Score	.013844	.1546205	-.3040597	.686124	11861
Female CEO Dummy	.038361	.1920744	0	1	11861
Firm Age	26.07352	19.33889	0	93	11861
R&D Intensity	.0688716	.2387241	0	7.056358	11861
Big-4 Auditor Dummy	.8866875	.3169878	0	1	11861
Firm Risk	.5196526	.6450906	.0350813	5.643961	11861

Table 3. Correlation Table

This table present the pairwise correlation of the variables presented in Table 1. Below each correlation is presented the significance level (p-value). The sample consists of S&P1500 firms from 2007 to 2018.

	Number of RPTs	Number of “Red Flag” RPTs	number of Business RPTs	Value of RPTs	Value of “Red Flag” RPTs	Value of Business RPTs	Value of RPTs/Sales	Value of “Red Flag” RPTs/Sales	Value of Business RPTs/Sales
Value of RPT	1								
Value of Tone RPT	0.818***	1							
Value of Business RPT	0.737***	0.243***	1						
Value of RPT / Sale	0.416***	0.258***	0.433***	1					
Value of Tone RPT / Sales	0.339***	0.338***	0.203***	0.663***	1				
Value of Business RPT / Sales	0.415***	0.191***	0.516***	0.846***	0.291***	1			
Number of RPT	0.306***	0.171***	0.325***	0.619***	0.435***	0.527***	1		
Number of Tone RPT	0.213***	0.231***	0.100***	0.389***	0.634***	0.114***	0.677***	1	
Number of Business RPT	0.313***	0.0992***	0.435***	0.560***	0.148***	0.676***	0.784***	0.187***	1

Table 3: Correlation table (Continued)

	Number of RPTs	Number of Tone RPTs	number of Business RPTs	Value of RPTs	Value of Tone RPTs	Value of Business RPTs	Value of RPTs/Sales	Value of Tone RPTs/Sales	Value of Business RPTs/Sales	TBQ
Tobin’s-Q	-0.0386***	-0.0271**	-0.0344***	-0.0183*	0.00275	-0.0414***	0.00124	0.0213*	-0.0326***	1
12_months_vw_BHAR	0.0157	0.0152	0.00776	0.00818	0.00733	0.000202	0.0202*	0.0113	0.0146	-0.0131
12_months_ew_BHAR	0.0155	0.0143	0.00868	0.00838	0.00645	0.00109	0.0184*	0.00859	0.0127	0.0240**
Profit margin	-0.0567***	-0.0249**	-0.0721***	-0.0414***	-0.0171	-0.0504***	-0.00322	0.0164	-0.0203*	0.297***
COGS	0.0377***	0.00824	0.0598***	0.0384***	0.0113	0.0457***	0.0697***	0.0243**	0.0785***	-0.163***

Overall ownership percent	-0.171***	-0.134***	-0.144***	-0.102***	-0.0475***	-0.111***	-0.148***	-0.108***	-0.129***	0.0250*
Short term ownership_percent	-0.0997***	-0.0815***	-0.0780***	-0.0360***	-0.0137	-0.0432***	-0.0260**	-0.0240*	-0.0169	0.0323**
Long term ownership_percent	0.0182	0.0152	0.0222*	0.0098	0.0182	-0.00135	-0.00564	0.00208	-0.00566	-0.0633***
Leverage	0.0346***	0.0287**	0.0381***	0.0763***	0.0660***	0.0645***	0.0132	0.0285**	-0.00382	-0.0804***
Firm Size	0.112***	0.136***	0.0342***	0.116***	0.108***	0.0914***	-0.0817***	-0.0739***	-0.0696***	0.271***
Sales Growth	-0.00653	-0.00393	-0.00544	0.00165	0.00704	-0.00198	0.0567***	0.0394***	0.0344***	0.195***
CEO Age	0.0563***	0.0757***	0.0119	0.0104	0.0123	0.00509	-0.0162	-0.00632	-0.0177	-0.0454***
CEO Tenure	0.0457***	0.0603***	0.00968	-0.0324***	-0.013	-0.0385***	0.00285	0.0239**	-0.0125	0.0613***
Managerial Ability Score	0.0408***	0.0614***	-0.00204	0.0501***	0.0638***	0.0229*	-0.000285	0.0122	-0.0232*	0.260***
Female CEO Dummy	-0.00873	-0.0215*	0.0137	0.0151	0.00912	0.00652	0.00296	-0.00766	0.0026	-0.005
Firm Age	0.00723	0.0479***	-0.0431***	-0.0117	-0.0192*	-0.000432	-0.0905***	-0.0696***	-0.0850***	-0.0732***
R&D Intensity	-0.0617***	-0.0502***	-0.0475***	-0.0125	-0.00463	-0.0233*	0.0944***	0.0679***	0.0683***	0.180***
Big-4 Auditor Dummy	-0.0300**	-0.0157	-0.0321***	0.0387***	0.0207*	0.0363***	-0.0611***	-0.0817***	-0.0386***	-0.0288**
Firm Risk	0.00189	0.00309	0.00224	-0.000453	-0.00319	0.00179	0.0468***	0.0311***	0.0515***	-0.011

	12_months_vw_BHAR	12_months_ew_BHAR	Profit margin	COGS	Overall ownership percent	Short term ownership_percent
12_months_vw_BHAR	1					
12_months_ew_BHAR	0.968***	1				
Profit margin	0.0149	0.0193*	1			
SG&A	0.0425***	0.0388***	0.525***			
COGS	0.00558	0.000147	-0.541***	1		
Overall ownership percent	-0.102***	-0.0952***	0.0335***	-0.0214*	1	
Short term ownership_percent	-0.0625***	-0.0477***	0.0861***	-0.0263**	0.482***	1
Long term ownership_percent	-0.000428	-0.00256	-0.0108	0.0648***	0.0490***	-0.154***

	12_months_vw_BH AR	12_months_ew_BH AR	Profit margin	COGS	Overall ownership percent	Short term ownership_percent	Long term ownership_percent
Leverage	-0.0213*	-0.00907	-0.0830***	0.0774***	0.0677***	0.0287**	0.0676***
Firm Size	-0.108***	-0.0687***	0.104***	-0.133***	0.171***	-0.0672***	-0.0891***
Sales Growth	-0.0454***	-0.0318***	0.150***	-0.0774***	0.0171	0.116***	-0.0318**
CEO Age	-0.0294**	-0.013	-0.0769***	0.0577***	-0.0452***	-0.0538***	-0.0216*
CEO Tenure	0.00795	0.0115	0.0187*	-0.0351***	-0.0711***	-0.0503***	-0.0730***
Managerial Ability Score	0.00485	0.00144	0.508***	-0.283***	0.00263	0.0281**	-0.0265**
Female CEO Dummy	-0.00251	0.00215	-0.0339***	0.00428	-0.0271**	-0.0122	0.0633***
Firm Age	-0.0321***	-0.0193*	-0.126***	0.0463***	-0.0901***	-0.180***	0.00343
R&D Intensity	0.0260**	0.0213*	0.126***	0.492***	-0.0320**	0.0217*	0.0374***
Big-4 Auditor Dummy	-0.0111	-0.0142	-0.0287**	0.0187*	0.189***	0.0367***	0.0125
Firm Risk	-0.00319	-0.0016	0.0253**	0.0260**	-0.0768***	0.124***	0.0226*

Table 4. Related Party Transactions and ROA

Table 4 presents results based on the panel data logistic regressions that examine the effects of the RPTs on ROA. The dependent variable in this regression is ROA which is the accounting return on assets. ROA is used to measure the operating performance of the company. RPTs are the main independent variable of interest. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measures the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A									
OLS Regression VARIABLES	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
Value of RPT	0.0001*** (0.000)								
Value of Tone RPT		-0.0003*** (0.000)							
Value of Business RPT			-0.0002*** (0.000)						
Value of RPT / Sale				-0.1825*** (0.043)					
Value of Tone RPT / Sales					-0.6031*** (0.148)				
Value of Business RPT / Sales						-0.1253** (0.051)			
Number of RPT							-0.0038*** (0.000)		
Number of Tone RPT								-0.0063*** (0.001)	
Number of Business RPT									-0.0029*** (0.001)
Leverage	-0.0474*** (0.007)	-0.0479*** (0.007)	-0.0479*** (0.007)	-0.0483*** (0.007)	-0.0474*** (0.007)	-0.0491*** (0.007)	-0.0488*** (0.007)	-0.0489*** (0.007)	-0.0488*** (0.007)
Firm Size	0.0247*** (0.001)	0.0246*** (0.001)	0.0246*** (0.001)	0.0241*** (0.001)	0.0240*** (0.001)	0.0242*** (0.001)	0.0249*** (0.001)	0.0250*** (0.001)	0.0244*** (0.001)
Sales Growth	0.0391*** (0.006)	0.0392*** (0.006)	0.0393*** (0.006)	0.0402*** (0.006)	0.0399*** (0.006)	0.0396*** (0.006)	0.0392*** (0.006)	0.0391*** (0.006)	0.0394*** (0.006)
CEO Age	-0.0003*** (0.000)	-0.0003*** (0.000)	-0.0004*** (0.000)	-0.0004*** (0.000)	-0.0004*** (0.000)	-0.0004*** (0.000)	-0.0003** (0.000)	-0.0003** (0.000)	-0.0004*** (0.000)
CEO Tenure	0.0007***	0.0007***	0.0007***	0.0007***	0.0008***	0.0007***	0.0008***	0.0008***	0.0007***

	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Managerial Ability Score	0.0989***	0.0992***	0.0979***	0.0978***	0.0984***	0.0974***	0.0979***	0.0989***	0.0973***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Female CEO Dummy	0.0020	0.0017	0.0016	0.0018	0.0015	0.0015	0.0006	-0.0000	0.0015
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Firm Age	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	-0.1877***	-0.1876***	-0.1879***	-0.1862***	-0.1865***	-0.1874***	-0.1883***	-0.1884***	-0.1879***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Big-4 Auditor Dummy	-0.0103***	-0.0105***	-0.0102***	-0.0108***	-0.0113***	-0.0103***	-0.0119***	-0.0117***	-0.0107***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Firm Risk	-0.0042**	-0.0043**	-0.0042**	-0.0043**	-0.0043**	-0.0043**	-0.0040**	-0.0038**	-0.0043**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-0.0171	-0.0153	-0.0167	-0.0117	-0.0100	-0.0137	-0.0140	-0.0146	-0.0143
	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)	(0.017)	(0.016)	(0.016)	(0.017)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.383	0.382	0.382	0.382	0.382	0.380	0.384	0.384	0.380

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel B

OLS Regression									
VARIABLES	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
Value of RPT	-0.0001***								
	(0.000)								
Value of Tone RPT		-0.0003***							
		(0.000)							
Value of Business RPT			-0.0002***						
			(0.000)						

Value of RPT / Sale					-0.1825***				
					(0.055)				
Value of Tone RPT / Sales						-0.6031***			
						(0.183)			
Value of Business RPT / Sales							-0.1253**		
							(0.061)		
Number of RPT								-0.0038***	
								(0.001)	
Number of Tone RPT									-0.0063***
									(0.001)
Number of Business RPT									-0.0029**
									(0.001)
Leverage	-0.0474***	-0.0479***	-0.0479***	-0.0483***	-0.0474***	-0.0491***	-0.0488***	-0.0489***	-0.0488***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Firm Size	0.0247***	0.0246***	0.0246***	0.0241***	0.0240***	0.0242***	0.0249***	0.0250***	0.0244***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Sales Growth	0.0391***	0.0392***	0.0393***	0.0402***	0.0399***	0.0396***	0.0392***	0.0391***	0.0394***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
CEO Age	-0.0003	-0.0003	-0.0004	-0.0004	-0.0004	-0.0004	-0.0003	-0.0003	-0.0004
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO Tenure	0.0007**	0.0007**	0.0007**	0.0007**	0.0008**	0.0007**	0.0008**	0.0008***	0.0007**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Managerial Ability Score	0.0989***	0.0992***	0.0979***	0.0978***	0.0984***	0.0974***	0.0979***	0.0989***	0.0973***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Female CEO Dummy	0.0020	0.0017	0.0016	0.0018	0.0015	0.0015	0.0006	-0.0000	0.0015
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Firm Age	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***	-0.0003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	-0.1877***	-0.1876***	-0.1879***	-0.1862***	-0.1865***	-0.1874***	-0.1883***	-0.1884***	-0.1879***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Big-4 Auditor Dummy	-0.0103	-0.0105	-0.0102	-0.0108	-0.0113	-0.0103	-0.0119	-0.0117	-0.0107
	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)
Firm Risk	-0.0042	-0.0043	-0.0042	-0.0043	-0.0043	-0.0043	-0.0040	-0.0038	-0.0043
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	-0.0171	-0.0153	-0.0167	-0.0117	-0.0100	-0.0137	-0.0140	-0.0146	-0.0143

	(0.029)	(0.029)	(0.030)	(0.029)	(0.029)	(0.030)	(0.028)	(0.028)	(0.030)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.383	0.382	0.382	0.382	0.382	0.380	0.384	0.384	0.380
Robust standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.10									

Panel C									
Fixed Effect OLS Regression									
VARIABLES	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
Value of RPT	0.0000 (0.000)								
Value of Tone RPT		0.0001 (0.000)							
Value of Business RPT			0.0000 (0.000)						
Value of RPT / Sale				0.0176 (0.061)					
Value of Tone RPT / Sales					0.0734 (0.150)				
Value of Business RPT / Sales						0.0545 (0.104)			
Number of RPT							-0.0001 (0.001)		
Number of Tone RPT								-0.0014 (0.001)	
Number of Business RPT									0.0014 (0.001)
Leverage	-0.0405*** (0.012)	-0.0407*** (0.012)	-0.0405*** (0.012)	-0.0406*** (0.012)	-0.0407*** (0.012)	-0.0405*** (0.012)	-0.0406*** (0.012)	-0.0407*** (0.012)	-0.0406*** (0.012)

Firm Size	0.0506*** (0.003)	0.0506*** (0.003)	0.0506*** (0.003)	0.0506*** (0.003)	0.0507*** (0.003)	0.0506*** (0.003)	0.0506*** (0.003)	0.0507*** (0.003)	0.0506*** (0.003)
Sales Growth	0.0368*** (0.006)	0.0368*** (0.006)	0.0367*** (0.006)	0.0367*** (0.006)	0.0367*** (0.006)	0.0367*** (0.006)	0.0367*** (0.006)	0.0367*** (0.006)	0.0368*** (0.006)
CEO Age	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)	0.0002 (0.000)
CEO Tenure	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	-0.0001 (0.000)
Managerial Ability Score	0.1575*** (0.013)	0.1574*** (0.013)	0.1574*** (0.013)	0.1574*** (0.013)	0.1575*** (0.013)	0.1574*** (0.013)	0.1573*** (0.013)	0.1573*** (0.013)	0.1574*** (0.013)
Female CEO Dummy	0.0038 (0.005)	0.0039 (0.005)	0.0039 (0.005)	0.0038 (0.005)	0.0039 (0.005)	0.0038 (0.005)	0.0039 (0.005)	0.0038 (0.005)	0.0039 (0.005)
Firm Age	-0.0008** (0.000)	-0.0008** (0.000)	-0.0008* (0.000)	-0.0008* (0.000)	-0.0008** (0.000)	-0.0008* (0.000)	-0.0008* (0.000)	-0.0008** (0.000)	-0.0008* (0.000)
R&D Intensity	-0.1364*** (0.016)	-0.1364*** (0.016)	-0.1365*** (0.016)	-0.1364*** (0.016)	-0.1365*** (0.016)	-0.1364*** (0.016)	-0.1365*** (0.016)	-0.1364*** (0.016)	-0.1364*** (0.016)
Big-4 Auditor Dummy	-0.0293*** (0.006)	-0.0294*** (0.006)	-0.0294*** (0.006)	-0.0294*** (0.006)	-0.0295*** (0.006)	-0.0295*** (0.006)	-0.0294*** (0.006)	-0.0296*** (0.006)	-0.0294*** (0.006)
Firm Risk	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)	0.0068*** (0.002)
Constant	-0.2608*** (0.024)	-0.2601*** (0.024)	-0.2613*** (0.024)	-0.2611*** (0.024)	-0.2611*** (0.024)	-0.2614*** (0.024)	-0.2610*** (0.024)	-0.2609*** (0.024)	-0.2617*** (0.024)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.727	0.727	0.727	0.727	0.727	0.727	0.727	0.727	0.727

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Table 5. Related Party Transactions and Profit Margin

Table 5 presents results based on the panel data logistic regressions that examine the effects of the RPTs on profit margin. The dependent variable in this regression is profit margin which is generally used to measure the degree to which the firm's profitability and is defined as profit (sales minus all expenses) divided by its revenue. profit margin is used to measure the operating performance of the company. RPTs are the main independent variable of interest. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A									
OLS Regression									
VARIABLES	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin
Value of RPT	-0.0019*** (0.001)								
Value of Tone RPT		-0.0061*** (0.002)							
Value of Business RPT			-0.0026*** (0.001)						
Value of RPT / Sale				-2.1331* (1.269)					
Value of Tone RPT / Sales					-3.8968 (3.804)				
Value of Business RPT / Sales						-2.7758 (1.748)			
Number of RPT							-0.0452*** (0.014)		
Number of Tone RPT								-0.0610*** (0.022)	
Number of Business RPT									-0.0641*** (0.022)
Leverage	-0.1162	-0.1240	-0.1281	-0.1371	-0.1364	-0.1468	-0.1432	-0.1451	-0.1408

	(0.175)	(0.175)	(0.175)	(0.175)	(0.176)	(0.175)	(0.175)	(0.175)	(0.175)
Firm Size	0.0103	0.0088	0.0072	0.0003	0.0012	0.0015	0.0103	0.0101	0.0052
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.028)	(0.027)
Sales Growth	0.0591	0.0598	0.0620	0.0728	0.0671	0.0678	0.0610	0.0607	0.0633
	(0.155)	(0.155)	(0.155)	(0.153)	(0.155)	(0.154)	(0.155)	(0.156)	(0.155)
CEO Age	-0.0074	-0.0075	-0.0076	-0.0078	-0.0078	-0.0077	-0.0074	-0.0072	-0.0078
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
CEO Tenure	0.0038	0.0042	0.0039	0.0043	0.0045	0.0043	0.0047	0.0048	0.0045
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Managerial Ability Score	5.8075***	5.8140***	5.7893***	5.7865***	5.7896***	5.7797***	5.7880***	5.7969***	5.7776***
	(0.459)	(0.459)	(0.460)	(0.460)	(0.460)	(0.461)	(0.461)	(0.461)	(0.460)
Female CEO Dummy	-0.0941	-0.0984	-0.1009	-0.0995	-0.1034	-0.1017	-0.1139	-0.1177	-0.1019
	(0.107)	(0.107)	(0.107)	(0.108)	(0.108)	(0.108)	(0.108)	(0.108)	(0.108)
Firm Age	-0.0084***	-0.0083***	-0.0082***	-0.0082***	-0.0081***	-0.0081***	-0.0081***	-0.0080***	-0.0082***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
R&D Intensity	-0.5264**	-0.5244**	-0.5298**	-0.5105**	-0.5206**	-0.5195**	-0.5346**	-0.5348**	-0.5306**
	(0.216)	(0.216)	(0.216)	(0.215)	(0.215)	(0.216)	(0.215)	(0.215)	(0.215)
Big-4 Auditor Dummy	-0.0002	-0.0029	0.0017	-0.0045	-0.0054	-0.0002	-0.0180	-0.0123	-0.0100
	(0.114)	(0.115)	(0.115)	(0.115)	(0.115)	(0.115)	(0.115)	(0.115)	(0.115)
Firm Risk	-0.0052	-0.0064	-0.0053	-0.0064	-0.0072	-0.0058	-0.0033	-0.0024	-0.0066
	(0.033)	(0.033)	(0.033)	(0.032)	(0.033)	(0.032)	(0.032)	(0.032)	(0.033)
Constant	1.6156***	1.6448***	1.6268***	1.6945***	1.6914***	1.6770***	1.6671***	1.6610***	1.6630***
	(0.429)	(0.428)	(0.434)	(0.435)	(0.436)	(0.436)	(0.433)	(0.434)	(0.436)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,861	11,860	11,860	11,861	11,860	11,860	11,861	11,860	11,860
R-squared	0.460	0.460	0.459	0.458	0.458	0.458	0.459	0.459	0.458
Robust standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.10									

Panel B

Fixed Effect OLS Regression

VARIABLES	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin	Profit Margin
Value of RPT	0.0000 (0.000)								
Value of Tone RPT		0.0005 (0.001)							
Value of Business RPT			-0.0003 (0.000)						
Value of RPT / Sale				0.1227 (0.782)					
Value of Tone RPT / Sales					1.2937 (1.680)				
Value of Business RPT / Sales						-0.7741 (1.185)			
Number of RPT							-0.0032 (0.007)		
Number of Tone RPT								0.0064 (0.011)	
Number of Business RPT									-0.0224* (0.012)
Leverage	-0.3367** (0.169)	-0.3383** (0.169)	-0.3389** (0.169)	-0.3369** (0.169)	-0.3392** (0.169)	-0.3384** (0.169)	-0.3371** (0.169)	-0.3368** (0.169)	-0.3378** (0.169)
Firm Size	0.1217*** (0.023)	0.1217*** (0.023)	0.1218*** (0.023)	0.1219*** (0.023)	0.1227*** (0.023)	0.1217*** (0.023)	0.1219*** (0.023)	0.1215*** (0.023)	0.1219*** (0.023)
Sales Growth	-0.0764 (0.096)	-0.0760 (0.096)	-0.0763 (0.096)	-0.0765 (0.096)	-0.0771 (0.096)	-0.0768 (0.096)	-0.0767 (0.096)	-0.0763 (0.096)	-0.0775 (0.096)
CEO Age	0.0056** (0.003)	0.0055** (0.003)	0.0056** (0.003)	0.0056** (0.002)	0.0056** (0.003)	0.0055** (0.002)	0.0056** (0.003)	0.0056** (0.002)	0.0056** (0.003)
CEO Tenure	-0.0068** (0.003)	-0.0068** (0.003)	-0.0068** (0.003)	-0.0068** (0.003)	-0.0068** (0.003)	-0.0068** (0.003)	-0.0068** (0.003)	-0.0069** (0.003)	-0.0069** (0.003)
Managerial Ability Score	2.5761*** (0.191)	2.5762*** (0.191)	2.5739*** (0.191)	2.5762*** (0.191)	2.5783*** (0.191)	2.5751*** (0.191)	2.5754*** (0.191)	2.5758*** (0.191)	2.5735*** (0.191)
Female CEO Dummy	-0.0738** (0.034)	-0.0739** (0.034)	-0.0726** (0.034)	-0.0740** (0.034)	-0.0735** (0.034)	-0.0725** (0.034)	-0.0740** (0.034)	-0.0732** (0.034)	-0.0736** (0.034)

Firm Age	-0.0000 (0.002)	-0.0002 (0.002)	-0.0000 (0.002)	-0.0000 (0.002)	-0.0003 (0.002)	0.0000 (0.002)	-0.0000 (0.002)	0.0000 (0.002)	-0.0001 (0.002)
R&D Intensity	-0.9909*** (0.239)	-0.9905*** (0.239)	-0.9916*** (0.239)	-0.9908*** (0.239)	-0.9922*** (0.240)	-0.9918*** (0.239)	-0.9912*** (0.239)	-0.9913*** (0.239)	-0.9922*** (0.239)
Big-4 Auditor Dummy	-0.1161 (0.094)	-0.1161 (0.094)	-0.1165 (0.094)	-0.1164 (0.094)	-0.1170 (0.094)	-0.1155 (0.094)	-0.1167 (0.094)	-0.1153 (0.094)	-0.1161 (0.094)
Firm Risk	0.0225 (0.020)	0.0227 (0.020)	0.0224 (0.020)	0.0226 (0.020)	0.0230 (0.020)	0.0222 (0.020)	0.0224 (0.020)	0.0225 (0.020)	0.0221 (0.020)
Constant	0.4162* (0.242)	0.4240* (0.242)	0.4186* (0.243)	0.4151* (0.243)	0.4169* (0.243)	0.4178* (0.242)	0.4181* (0.243)	0.4131* (0.243)	0.4226* (0.242)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,861	11,860	11,860	11,861	11,860	11,860	11,861	11,860	11,860
R-squared	0.874	0.874	0.874	0.874	0.874	0.874	0.874	0.874	0.874

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Table 6. Related Party Transactions and COGS

Table 6 presents results based on the panel data logistic regressions that examine the effect of the RPTs on COGS. COGS is defined as cost of goods sold. COGS are divided by sales, is used to measure the operating performance of the company. RPTs are the main independent variable of interest. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A

OLS Regression VARIABLES	COGS	COGS	COGS	COGS	COGS	COGS	COGS	COGS	COGS
Value of RPT	0.0003*** (0.000)								
Value of Tone RPT		0.0006*** (0.000)							
Value of Business RPT			0.0005*** (0.000)						
Value of RPT / Sale				0.3622** (0.176)					
Value of Tone RPT / Sales					0.1088 (0.447)				
Value of Business RPT / Sales						0.8974*** (0.304)			
Number of RPT							0.0091*** (0.002)		
Number of Tone RPT								0.0117*** (0.003)	
Number of Business RPT									0.0135*** (0.003)
Leverage	0.0724*** (0.026)	0.0746*** (0.026)	0.0733*** (0.026)	0.0751*** (0.026)	0.0766*** (0.026)	0.0767*** (0.026)	0.0760*** (0.026)	0.0765*** (0.026)	0.0755*** (0.026)
Firm Size	-0.0111*** (0.004)	-0.0106*** (0.004)	-0.0108*** (0.004)	-0.0096*** (0.004)	-0.0099*** (0.004)	-0.0096*** (0.004)	-0.0115*** (0.004)	-0.0114*** (0.004)	-0.0105*** (0.004)
Sales Growth	-0.0325** (0.015)	-0.0328** (0.015)	-0.0329** (0.015)	-0.0347** (0.015)	-0.0333** (0.016)	-0.0345** (0.015)	-0.0327** (0.015)	-0.0326** (0.015)	-0.0331** (0.015)
CEO Age	0.0030*** (0.001)	0.0030*** (0.001)	0.0030*** (0.001)	0.0030*** (0.001)	0.0030*** (0.001)	0.0030*** (0.001)	0.0030*** (0.001)	0.0029*** (0.001)	0.0030*** (0.001)
CEO Tenure	-0.0025*** (0.001)	-0.0026*** (0.001)	-0.0025*** (0.001)	-0.0026*** (0.001)	-0.0026*** (0.001)	-0.0025*** (0.001)	-0.0026*** (0.001)	-0.0027*** (0.001)	-0.0026*** (0.001)
Managerial Ability Score	-0.5469*** (0.044)	-0.5465*** (0.044)	-0.5444*** (0.044)	-0.5439*** (0.044)	-0.5437*** (0.044)	-0.5420*** (0.044)	-0.5442*** (0.044)	-0.5459*** (0.044)	-0.5421*** (0.044)
Female CEO Dummy	-0.0039	-0.0031	-0.0030	-0.0032	-0.0025	-0.0032	-0.0005	0.0002	-0.0029

	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Firm Age	0.0009***	0.0008***	0.0009***	0.0008***	0.0008***	0.0009***	0.0008***	0.0008***	0.0009***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	0.9348***	0.9347***	0.9353***	0.9320***	0.9350***	0.9321***	0.9363***	0.9363***	0.9355***
	(0.098)	(0.098)	(0.098)	(0.097)	(0.099)	(0.097)	(0.098)	(0.098)	(0.098)
Big-4 Auditor Dummy	0.0076	0.0078	0.0074	0.0084	0.0075	0.0080	0.0113	0.0101	0.0099
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Firm Risk	0.0042	0.0044	0.0042	0.0044	0.0045	0.0041	0.0038	0.0036	0.0044
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	0.5537***	0.5488***	0.5537***	0.5416***	0.5461***	0.5426***	0.5461***	0.5474***	0.5470***
	(0.102)	(0.102)	(0.102)	(0.103)	(0.103)	(0.103)	(0.102)	(0.102)	(0.103)
Year fixed effect	-0.0171	-0.0153	-0.0167	-0.0117	-0.0100	-0.0137	-0.0140	-0.0146	-0.0143
Industry fixed effect	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)	(0.017)	(0.016)	(0.016)	(0.017)
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.574	0.573	0.574	0.573	0.572	0.574	0.574	0.574	0.574

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel B

Fixed Effect OLS Regression VARIABLES	COGS	COGS	COGS	COGS	COGS	COGS	COGS	COGS	COGS
Value of RPT	-0.0000 (0.000)								
Value of Tone RPT		-0.0002 (0.000)							
Value of Business RPT			-0.0000 (0.000)						
Value of RPT / Sale				-0.2226 (0.138)					
Value of Tone RPT / Sales					-0.3486 (0.321)				

Value of Business RPT / Sales						-0.3500			
						(0.286)			
Number of RPT							-0.0030*		
							(0.002)		
Number of Tone RPT								-0.0011	
								(0.002)	
Number of Business RPT									-0.0068**
									(0.003)
Leverage	0.0867***	0.0872***	0.0868***	0.0868***	0.0874***	0.0863***	0.0866***	0.0868***	0.0866***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Firm Size	-0.0179***	-0.0179***	-0.0180***	-0.0182***	-0.0182***	-0.0180***	-0.0178***	-0.0179***	-0.0180***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Sales Growth	-0.0405***	-0.0406***	-0.0404***	-0.0404***	-0.0403**	-0.0406***	-0.0407***	-0.0405***	-0.0408***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
CEO Age	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO Tenure	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Managerial Ability Score	-0.3522***	-0.3522***	-0.3521***	-0.3528***	-0.3527***	-0.3523***	-0.3524***	-0.3520***	-0.3526***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Female CEO Dummy	0.0066	0.0066	0.0066	0.0071	0.0065	0.0071	0.0063	0.0065	0.0066
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Firm Age	-0.0006*	-0.0005	-0.0006*	-0.0006	-0.0005	-0.0006*	-0.0006*	-0.0006*	-0.0006*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	1.0116***	1.0115***	1.0117***	1.0110***	1.0120***	1.0114***	1.0116***	1.0117***	1.0114***
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Big-4 Auditor Dummy	0.0258	0.0259	0.0259	0.0263	0.0261	0.0262	0.0254	0.0257	0.0259
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Firm Risk	-0.0009	-0.0009	-0.0009	-0.0011	-0.0010	-0.0010	-0.0009	-0.0009	-0.0010
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	0.6282***	0.6259***	0.6289***	0.6296***	0.6282***	0.6302***	0.6307***	0.6291***	0.6312***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Firm fixed effect

Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.854	0.854	0.854	0.854	0.854	0.854	0.854	0.854	0.854

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Table 7. Related Party Transactions and Tobin's-Q

Table 7 presents results based on the panel data logistic regressions that examine the effects of the RPTs on Tobin's-Q. Tobin's-Q is defined as the sum of market value of equity and the book value of debt divided by the book value of total assets, is used to measure the market based performance of the company. RPTs are the main independent variable of interest. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A									
OLS Regression									
VARIABLES	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q
Value of RPT	-0.0013*** (0.000)								
Value of Tone RPT		-0.0027* (0.002)							
Value of Business RPT			-0.0029*** (0.000)						
Value of RPT / Sale				-0.6431 (0.895)					

Value of Tone RPT / Sales					1.6487				
					(2.818)				
Value of Business RPT / Sales						-3.5388***			
						(1.000)			
Number of RPT							-0.0519***		
							(0.010)		
Number of Tone RPT								-0.0721***	
								(0.015)	
Number of Business RPT									-0.0535***
									(0.018)
Leverage	-0.5514**	-0.5615***	-0.5508**	-0.5697***	-0.5765***	-0.5711***	-0.5683***	-0.5691***	-0.5663***
	(0.216)	(0.217)	(0.217)	(0.216)	(0.215)	(0.217)	(0.217)	(0.217)	(0.217)
Firm Size	0.2416***	0.2390***	0.2413***	0.2356***	0.2369***	0.2349***	0.2451***	0.2451***	0.2385***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Sales Growth	0.5186***	0.5199***	0.5198***	0.5245***	0.5202***	0.5268***	0.5187***	0.5180***	0.5213***
	(0.082)	(0.082)	(0.082)	(0.081)	(0.082)	(0.080)	(0.082)	(0.082)	(0.082)
CEO Age	-0.0132***	-0.0133***	-0.0132***	-0.0134***	-0.0134***	-0.0134***	-0.0130***	-0.0127***	-0.0134***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
CEO Tenure	0.0152***	0.0155***	0.0150***	0.0156***	0.0156***	0.0154***	0.0160***	0.0160***	0.0157***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Managerial Ability Score	1.1727***	1.1700***	1.1622***	1.1575***	1.1548***	1.1509***	1.1607***	1.1716***	1.1512***
	(0.202)	(0.202)	(0.202)	(0.203)	(0.203)	(0.202)	(0.201)	(0.202)	(0.203)
Female CEO Dummy	-0.0124	-0.0167	-0.0161	-0.0178	-0.0192	-0.0165	-0.0307	-0.0356	-0.0175
	(0.115)	(0.115)	(0.116)	(0.115)	(0.115)	(0.116)	(0.115)	(0.115)	(0.115)
Firm Age	-0.0083***	-0.0082***	-0.0082***	-0.0081***	-0.0080***	-0.0082***	-0.0082***	-0.0080***	-0.0082***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
R&D Intensity	0.5869***	0.5869***	0.5841***	0.5905***	0.5811***	0.5971***	0.5787***	0.5782***	0.5836***
	(0.198)	(0.198)	(0.197)	(0.194)	(0.198)	(0.192)	(0.196)	(0.196)	(0.198)
Big-4 Auditor Dummy	-0.3116***	-0.3121***	-0.3102***	-0.3120***	-0.3069***	-0.3127***	-0.3330***	-0.3268***	-0.3200***
	(0.094)	(0.094)	(0.093)	(0.093)	(0.093)	(0.094)	(0.093)	(0.093)	(0.093)
Firm Risk	0.0411	0.0402	0.0418	0.0401	0.0400	0.0415	0.0441	0.0454	0.0402
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Constant	1.0796***	1.1052***	1.0733***	1.1223***	1.1019***	1.1304***	1.1167***	1.1102***	1.1129***
	(0.305)	(0.305)	(0.310)	(0.312)	(0.316)	(0.311)	(0.296)	(0.296)	(0.311)

Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.294	0.292	0.296	0.292	0.292	0.293	0.296	0.296	0.293

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

Panel B

Fixed Effect OLS Regression VARIABLES	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q	Tobin's-Q
Value of RPT	0.0003 (0.000)								
Value of Tone RPT		0.0012* (0.001)							
Value of Business RPT			-0.0002 (0.000)						
Value of RPT / Sale				1.2909*** (0.418)					
Value of Tone RPT / Sales					2.7886** (1.101)				
Value of Business RPT / Sales						1.0150 (0.654)			
Number of RPT							-0.0010 (0.006)		
Number of Tone RPT								0.0133 (0.009)	
Number of Business RPT									-0.0192** (0.010)
Leverage	0.0549 (0.114)	0.0505 (0.114)	0.0519 (0.114)	0.0534 (0.114)	0.0488 (0.114)	0.0549 (0.114)	0.0534 (0.114)	0.0539 (0.114)	0.0527 (0.114)
Firm Size	0.6975*** (0.023)	0.6974*** (0.023)	0.6977*** (0.023)	0.6991*** (0.023)	0.6995*** (0.023)	0.6979*** (0.023)	0.6977*** (0.023)	0.6970*** (0.023)	0.6978*** (0.023)

Sales Growth	0.0781 (0.053)	0.0788 (0.053)	0.0778 (0.053)	0.0775 (0.053)	0.0764 (0.053)	0.0781 (0.053)	0.0776 (0.053)	0.0781 (0.053)	0.0768 (0.053)
CEO Age	-0.0010 (0.002)	-0.0010 (0.002)	-0.0010 (0.002)	-0.0009 (0.002)	-0.0010 (0.002)	-0.0009 (0.002)	-0.0010 (0.002)	-0.0010 (0.002)	-0.0009 (0.002)
CEO Tenure	0.0024 (0.002)	0.0025 (0.002)	0.0024 (0.002)	0.0024 (0.002)	0.0024 (0.002)	0.0024 (0.002)	0.0025 (0.002)	0.0023 (0.002)	0.0024 (0.002)
Managerial Ability Score	0.6894*** (0.102)	0.6879*** (0.102)	0.6853*** (0.102)	0.6910*** (0.102)	0.6923*** (0.102)	0.6874*** (0.102)	0.6866*** (0.102)	0.6869*** (0.102)	0.6848*** (0.102)
Female CEO Dummy	-0.0067 (0.049)	-0.0061 (0.049)	-0.0047 (0.050)	-0.0090 (0.049)	-0.0051 (0.050)	-0.0071 (0.050)	-0.0056 (0.050)	-0.0046 (0.050)	-0.0054 (0.050)
Firm Age	-0.0019 (0.004)	-0.0023 (0.004)	-0.0018 (0.004)	-0.0021 (0.004)	-0.0023 (0.004)	-0.0018 (0.004)	-0.0018 (0.004)	-0.0017 (0.004)	-0.0018 (0.004)
R&D Intensity	0.0662 (0.109)	0.0660 (0.109)	0.0641 (0.109)	0.0683 (0.108)	0.0620 (0.110)	0.0653 (0.109)	0.0644 (0.109)	0.0641 (0.109)	0.0636 (0.109)
Big-4 Auditor Dummy	-0.2470*** (0.062)	-0.2478*** (0.062)	-0.2482*** (0.062)	-0.2504*** (0.062)	-0.2497*** (0.062)	-0.2489*** (0.062)	-0.2481*** (0.062)	-0.2461*** (0.062)	-0.2479*** (0.062)
Firm Risk	0.0072 (0.015)	0.0077 (0.015)	0.0070 (0.015)	0.0084 (0.015)	0.0082 (0.015)	0.0074 (0.015)	0.0070 (0.015)	0.0071 (0.015)	0.0067 (0.015)
Constant	-3.0723*** (0.236)	-3.0556*** (0.235)	-3.0740*** (0.237)	-3.0828*** (0.236)	-3.0724*** (0.235)	-3.0810*** (0.236)	-3.0753*** (0.237)	-3.0805*** (0.236)	-3.0703*** (0.237)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,862	11,861	11,861	11,862	11,861	11,861	11,862	11,861	11,861
R-squared	0.789	0.789	0.789	0.789	0.789	0.789	0.789	0.789	0.789

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Table 8. RPTs and Buy and Hold Abnormal Return

Table 8 presents results based on the panel data logistic regressions that examine the effects of the RPTs on BHAR. BHAR is the dependent variables. BHAR_vw is defined as the 12 months value weighted buy and hold abnormal return. BHAR_ew is defined as the 12 months equal weighted buy and hold abnormal return. RPTs are the main independent variable of interest. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. (All variables are described in Appendix A).

Panel A										
OLS Regression										
VARIABLES	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw
Value of RPT	0.0001**									
	(0.000)									
Value of Tone RPT		0.0004**								
		(0.000)								
Value of Business RPT			0.0001							
			(0.000)							
Value of RPT / Sale				0.2605						
				(0.200)						
Value of Tone RPT / Sales					0.2744					
					(0.577)					
Value of Business RPT / Sales						0.3437				
						(0.339)				
Number of RPT							0.0059***			
							(0.002)			
Number of Tone RPT								0.0083***		
								(0.003)		
Number of Business RPT									0.0065*	
									(0.003)	
Leverage	0.0493**	0.0501**	0.0509**	0.0502**	0.0509**	0.0516**	0.0510**	0.0515**	0.0511**	
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	
Firm Size	-0.0223***	-0.0222***	-0.0219***	-0.0214***	-0.0216***	-0.0216***	-0.0227***	-0.0228***	-0.0220***	

	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Sales Growth	-0.0491***	-0.0492***	-0.0494***	-0.0505***	-0.0497***	-0.0499***	-0.0491***	-0.0490***	-0.0494***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
CEO Age	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0009	-0.0008
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO Tenure	0.0005	0.0005	0.0005	0.0005	0.0004	0.0005	0.0004	0.0004	0.0004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Managerial Ability Score	0.0837***	0.0832***	0.0851***	0.0850***	0.0849***	0.0859***	0.0848***	0.0836***	0.0860***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Female CEO Dummy	-0.0044	-0.0041	-0.0038	-0.0042	-0.0037	-0.0040	-0.0023	-0.0017	-0.0039
	(0.022)	(0.023)	(0.022)	(0.022)	(0.023)	(0.022)	(0.023)	(0.023)	(0.023)
Firm Age	0.0001	0.0001	0.0000	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	0.0048	0.0046	0.0050	0.0027	0.0043	0.0037	0.0057	0.0057	0.0051
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Big-4 Auditor Dummy	0.0127	0.0129	0.0126	0.0133	0.0131	0.0128	0.0152	0.0146	0.0138
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Firm Risk	-0.0148**	-0.0147**	-0.0148**	-0.0148**	-0.0147**	-0.0148**	-0.0152**	-0.0153**	-0.0147**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	0.1784***	0.1764***	0.1768***	0.1712***	0.1731***	0.1734***	0.1752***	0.1759***	0.1757***
	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)	(0.054)	(0.054)	(0.052)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,681	11,680	11,680	11,681	11,680	11,680	11,681	11,680	11,680
R-squared	0.063	0.063	0.063	0.063	0.063	0.063	0.064	0.064	0.063

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel B

OLS Regression

VARIABLES	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw
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Value of RPT	0.0001*								
	(0.000)								
Value of Tone RPT		0.0004**							
		(0.000)							
Value of Business RPT			0.0001						
			(0.000)						
Value of RPT / Sale				0.2497					
				(0.201)					
Value of Tone RPT / Sales					0.2443				
					(0.569)				
Value of Business RPT / Sales						0.3349			
						(0.349)			
Number of RPT							0.0060***		
							(0.002)		
Number of Tone RPT								0.0084***	
								(0.003)	
Number of Business RPT									0.0068**
									(0.003)
Leverage	0.0491*	0.0499**	0.0506**	0.0499**	0.0506**	0.0513**	0.0507**	0.0512**	0.0507**
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Firm Size	-0.0219***	-0.0218***	-0.0216***	-0.0211***	-0.0213***	-0.0213***	-0.0224***	-0.0225***	-0.0217***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Sales Growth	-0.0473**	-0.0474**	-0.0476**	-0.0487**	-0.0478**	-0.0481**	-0.0473**	-0.0472**	-0.0476**
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
CEO Age	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0008	-0.0007
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO Tenure	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Managerial Ability Score	0.0839***	0.0835***	0.0852***	0.0851***	0.0851***	0.0860***	0.0848***	0.0836***	0.0861***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Female CEO Dummy	-0.0029	-0.0026	-0.0024	-0.0027	-0.0023	-0.0025	-0.0008	-0.0002	-0.0025
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Firm Age	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	0.0044	0.0042	0.0046	0.0024	0.0040	0.0034	0.0053	0.0053	0.0047

	(0.018)	(0.018)	(0.018)	(0.019)	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)
Big-4 Auditor Dummy	0.0114	0.0116	0.0113	0.0120	0.0118	0.0116	0.0139	0.0133	0.0126
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Firm Risk	-0.0148**	-0.0147**	-0.0148**	-0.0148**	-0.0147**	-0.0148**	-0.0152**	-0.0153**	-0.0147**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	0.2173***	0.2154***	0.2157***	0.2104***	0.2124***	0.2125***	0.2144***	0.2150***	0.2148***
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.056)	(0.056)	(0.054)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,681	11,680	11,680	11,681	11,680	11,680	11,681	11,680	11,680
R-squared	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.028	0.027

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

Panel C

Fixed Effect OLS Regression VARIABLES	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw	BHAR_vw
Value of RPT	0.0000 (0.000)								
Value of Tone RPT		0.0002 (0.000)							
Value of Business RPT			-0.0001 (0.000)						
Value of RPT / Sale				0.2891 (0.249)					
Value of Tone RPT / Sales					0.1461 (0.598)				
Value of Business RPT / Sales						0.3550 (0.458)			
Number of RPT							0.0040 (0.004)		

Number of Tone RPT								0.0079	
								(0.005)	
Number of Business RPT									-0.0012
									(0.006)
Leverage	-0.0343	-0.0347	-0.0347	-0.0344	-0.0345	-0.0336	-0.0343	-0.0340	-0.0343
	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)
Firm Size	-0.2777***	-0.2779***	-0.2779***	-0.2773***	-0.2778***	-0.2778***	-0.2780***	-0.2783***	-0.2779***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Sales Growth	-0.0282	-0.0280	-0.0282	-0.0283	-0.0283	-0.0281	-0.0279	-0.0280	-0.0283
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
CEO Age	0.0021*	0.0021*	0.0021*	0.0022*	0.0021*	0.0022*	0.0021*	0.0021*	0.0021*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO Tenure	-0.0015	-0.0015	-0.0015	-0.0015	-0.0015	-0.0015	-0.0015	-0.0015	-0.0015
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Managerial Ability Score	-0.0704*	-0.0704*	-0.0709*	-0.0698*	-0.0703*	-0.0704*	-0.0703*	-0.0705*	-0.0707*
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Female CEO Dummy	0.0384	0.0385	0.0387	0.0378	0.0386	0.0380	0.0389	0.0391	0.0385
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Firm Age	0.0012	0.0012	0.0013	0.0012	0.0012	0.0012	0.0013	0.0013	0.0013
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
R&D Intensity	-0.0594*	-0.0595*	-0.0598*	-0.0588*	-0.0598*	-0.0594*	-0.0596*	-0.0599*	-0.0598*
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Big-4 Auditor Dummy	-0.0623	-0.0623	-0.0624	-0.0631	-0.0625	-0.0627	-0.0617	-0.0611	-0.0623
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Firm Risk	-0.0257**	-0.0257**	-0.0258**	-0.0254**	-0.0257**	-0.0256**	-0.0257**	-0.0257**	-0.0258**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Constant	2.0661***	2.0702***	2.0676***	2.0640***	2.0671***	2.0652***	2.0627***	2.0654***	2.0673***
	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,681	11,680	11,680	11,681	11,680	11,680	11,681	11,680	11,680
R-squared	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel D

Fixed Effects OLS Regression

VARIABLES	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew	BHAR_ew
Value of RPT	0.0000 (0.000)								
Value of Tone RPT		0.0001 (0.000)							
Value of Business RPT			-0.0001 (0.000)						
Value of RPT / Sale				0.2536 (0.251)					
Value of Tone RPT / Sales					0.0866 (0.597)				
Value of Business RPT / Sales						0.3093 (0.467)			
Number of RPT							0.0038 (0.004)		
Number of Tone RPT								0.0075 (0.005)	
Number of Business RPT									-0.0011 (0.006)
Leverage	-0.0283 (0.049)	-0.0285 (0.049)	-0.0288 (0.049)	-0.0283 (0.049)	-0.0284 (0.049)	-0.0276 (0.049)	-0.0282 (0.049)	-0.0280 (0.049)	-0.0283 (0.049)
Firm Size	-0.2725*** (0.011)	-0.2726*** (0.011)	-0.2726*** (0.011)	-0.2721*** (0.011)	-0.2725*** (0.011)	-0.2725*** (0.011)	-0.2727*** (0.011)	-0.2730*** (0.011)	-0.2726*** (0.011)
Sales Growth	-0.0280 (0.020)	-0.0279 (0.020)	-0.0279 (0.020)	-0.0280 (0.020)	-0.0280 (0.020)	-0.0279 (0.020)	-0.0277 (0.020)	-0.0278 (0.020)	-0.0280 (0.020)
CEO Age	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)	0.0022* (0.001)
CEO Tenure	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)	-0.0015 (0.001)

Managerial Ability Score	-0.0692*	-0.0692*	-0.0698*	-0.0686*	-0.0691*	-0.0691*	-0.0690*	-0.0692*	-0.0694*
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Female CEO Dummy	0.0440	0.0440	0.0444	0.0434	0.0441	0.0436	0.0444	0.0446	0.0441
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Firm Age	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0015	0.0015	0.0014
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
R&D Intensity	-0.0597*	-0.0597*	-0.0600*	-0.0590*	-0.0599*	-0.0596*	-0.0597*	-0.0601*	-0.0599*
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Big-4 Auditor Dummy	-0.0605	-0.0605	-0.0606	-0.0612	-0.0606	-0.0608	-0.0599	-0.0593	-0.0605
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Firm Risk	-0.0283***	-0.0282***	-0.0283***	-0.0280***	-0.0283***	-0.0282***	-0.0282***	-0.0283***	-0.0283***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Constant	2.0901***	2.0932***	2.0921***	2.0885***	2.0912***	2.0896***	2.0871***	2.0896***	2.0914***
	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,681	11,680	11,680	11,681	11,680	11,680	11,681	11,680	11,680
R-squared	0.236	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

Table 9. RPTs and Overall Institutional Ownership

Table 9 presents results based on the panel data logistic regressions that examine the effects of the Overall Institutional Ownership on RPTs. RPTs are the main dependent variable of interest. Overall Institutional Ownership is the dependent variable. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated

using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A									
OLS Regression									
VARIABLES	Value of RPT	Value of "Red Flag" RPT	Value of Business RPT	Value of RPT / Sale	Value of "Red Flag" RPT /Sales	Value of Business RPT /Sales	Number of RPT	Number of "Red Flag" RPT	Number of Business RPT
Overall Institutional ownership	-39.6170*** (11.770)	-5.1876*** (1.870)	22.7651*** (7.036)	-0.0206*** (0.006)	-0.0046*** (0.002)	-0.0102*** (0.004)	-2.0282*** (0.310)	-1.0378*** (0.197)	-0.9155*** (0.161)
Leverage	16.3402* (8.762)	4.1404** (1.733)	7.1655 (5.062)	0.0071* (0.004)	0.0035*** (0.001)	0.0011 (0.002)	0.3076 (0.262)	0.1636 (0.151)	0.2080 (0.152)
Firm Size	5.2248*** (1.026)	1.2451*** (0.284)	2.3406*** (0.551)	-0.0006* (0.000)	-0.0002** (0.000)	-0.0002 (0.000)	0.2332*** (0.038)	0.1640*** (0.026)	0.0610*** (0.018)
Sales Growth	-2.7945 (2.415)	-0.9360 (0.766)	-0.8715 (1.261)	0.0026 (0.002)	0.0003 (0.001)	0.0007 (0.001)	-0.0995 (0.069)	-0.0670 (0.050)	-0.0190 (0.039)
CEO Age	0.1960 (0.195)	0.0525 (0.041)	0.0773 (0.118)	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)	0.0093 (0.006)	0.0109** (0.004)	-0.0005 (0.003)
CEO Tenure	-0.3582** (0.182)	-0.0432 (0.055)	-0.2321** (0.098)	-0.0001 (0.000)	0.0000 (0.000)	-0.0001 (0.000)	0.0044 (0.007)	0.0039 (0.004)	0.0006 (0.004)
Managerial Ability Score	9.4317 (9.888)	4.5219* (2.628)	0.7771 (5.209)	-0.0006 (0.004)	0.0007 (0.001)	-0.0016 (0.002)	-0.0474 (0.357)	0.1550 (0.255)	-0.1685 (0.145)
Female CEO Dummy	2.1302 (5.608)	0.0829 (1.180)	0.4586 (3.284)	0.0007 (0.003)	-0.0004 (0.001)	0.0002 (0.001)	-0.2854 (0.181)	-0.2429* (0.125)	-0.0111 (0.109)
Firm Age	-0.2860*** (0.084)	-0.0711*** (0.018)	-0.1186** (0.054)	-0.0001*** (0.000)	-0.0000*** (0.000)	-0.0001*** (0.000)	-0.0077*** (0.003)	-0.0022 (0.002)	-0.0051*** (0.001)
R&D Intensity	1.1650 (3.205)	0.8703 (1.024)	-0.7866 (1.587)	0.0054 (0.003)	0.0027** (0.001)	0.0006 (0.002)	-0.1933* (0.103)	-0.0994 (0.076)	-0.0821* (0.047)
Big-4 Auditor Dummy	1.7663 (2.573)	-0.4682 (0.611)	1.7469 (1.543)	-0.0013 (0.002)	-0.0017** (0.001)	0.0004 (0.001)	-0.2571* (0.137)	-0.1373 (0.091)	-0.1070 (0.074)
Firm Risk	0.3359 (1.224)	0.0270 (0.279)	0.2272 (0.684)	0.0006 (0.001)	0.0001 (0.000)	0.0005 (0.001)	0.0794 (0.057)	0.0821* (0.045)	-0.0020 (0.023)
Constant	-5.7930	-1.0294	-2.2836	0.0244***	0.0092***	0.0102***	1.0358	0.3213	0.5195*

	(14.097)	(4.635)	(7.748)	(0.006)	(0.003)	(0.004)	(0.725)	(0.558)	(0.284)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,850	9,849	9,849	9,850	9,849	9,849	9,850	9,849	9,849
R-squared	0.079	0.055	0.079	0.058	0.043	0.052	0.122	0.109	0.088

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel B

Fixed Effect OLS Regression									
VARIABLES	Value of RPT	Value of "Red Flag" RPT	Value of Business RPT	Value of RPT /Sale	Value of "Red Flag" RPT /Sales	Value of Business RPT/Sales	Number of RPT	Number of "Red Flag" RPT	Number of Business RPT
Overall Institutional ownership	-7.0135 (6.812)	-1.9889 (2.001)	-4.9687 (3.567)	-0.0089** (0.004)	-0.0036** (0.002)	-0.0029 (0.002)	-0.3271** (0.160)	-0.3029*** (0.111)	-0.0754 (0.094)
Leverage	-9.9388* (5.789)	2.4530 (1.835)	-7.8673*** (2.745)	-0.0017 (0.003)	0.0008 (0.001)	-0.0025** (0.001)	-0.0598 (0.130)	-0.0324 (0.087)	-0.0343 (0.076)
Firm Size	0.5484 (1.224)	0.2716 (0.415)	-0.0757 (0.592)	-0.0014* (0.001)	-0.0007** (0.000)	-0.0003 (0.000)	0.0857*** (0.030)	0.0882*** (0.022)	0.0043 (0.016)
Sales Growth	-2.0922 (2.212)	-1.1580 (0.755)	0.4452 (0.862)	-0.0005 (0.002)	-0.0001 (0.001)	-0.0005 (0.001)	-0.1492** (0.063)	-0.0610 (0.049)	-0.0742** (0.031)
CEO Age	0.1760 (0.144)	0.0959** (0.045)	0.0117 (0.080)	0.0001 (0.000)	0.0000* (0.000)	0.0000 (0.000)	0.0021 (0.004)	0.0036 (0.003)	0.0010 (0.002)
CEO Tenure	-0.0667 (0.131)	-0.0255 (0.045)	0.0036 (0.067)	-0.0001 (0.000)	0.0000 (0.000)	-0.0001** (0.000)	0.0070* (0.004)	0.0073*** (0.003)	-0.0016 (0.002)
Managerial Ability Score	-7.8690 (7.582)	-0.3036 (1.842)	-5.7218 (4.148)	-0.0015 (0.003)	-0.0010 (0.001)	0.0003 (0.001)	-0.0764 (0.143)	-0.0164 (0.095)	-0.0529 (0.084)
Female CEO Dummy	5.2385 (5.601)	0.5872 (2.185)	5.0553* (2.763)	0.0034* (0.002)	-0.0001 (0.001)	0.0019* (0.001)	-0.0888 (0.102)	-0.0507 (0.078)	-0.0061 (0.057)
Firm Age	1.1339 (1.185)	1.1102* (0.632)	-0.3118 (0.436)	0.0004 (0.000)	0.0005* (0.000)	-0.0001 (0.000)	0.0087 (0.016)	0.0079 (0.012)	-0.0028 (0.008)
R&D Intensity	-7.9670* (1.185)	-2.0726 (0.632)	-1.3016 (0.436)	-0.0048 (0.000)	0.0020 (0.000)	-0.0026 (0.000)	-0.0371 (0.016)	0.0511 (0.012)	-0.0771 (0.008)

	(4.078)	(1.292)	(1.790)	(0.007)	(0.001)	(0.004)	(0.089)	(0.060)	(0.051)
Big-4 Auditor Dummy	-4.0340	0.0353	-1.5875	0.0020	0.0006	0.0010	-0.1618	-0.1500*	0.0072
	(3.828)	(0.444)	(2.402)	(0.003)	(0.001)	(0.002)	(0.111)	(0.083)	(0.047)
Firm Risk	-0.0242	-0.5283	0.3722	0.0000	-0.0002	0.0001	0.0060	0.0181	-0.0121
	(0.717)	(0.447)	(0.376)	(0.001)	(0.000)	(0.000)	(0.027)	(0.022)	(0.011)
Constant	-27.8892	-38.7870*	22.3461	0.0043	-0.0095	0.0102	0.2470	-0.2726	0.4661
	(39.113)	(20.146)	(15.352)	(0.014)	(0.010)	(0.008)	(0.587)	(0.445)	(0.306)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,850	9,849	9,849	9,850	9,849	9,849	9,850	9,849	9,849
R-squared	0.079	0.055	0.079	0.058	0.043	0.052	0.122	0.109	0.088

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

Table 10. RPTs and Long-horizon Institutional Ownership

Table 10 presents results based on the panel data logistic regressions that examine the effects of the Long-term and Short-term Institutional Ownership on RPTs. RPTs are the main dependent variable of interest. Long refers to long-horizon institutional investors and Short refers to short-horizon institutional investors. Leverage is defined as the total debt to total assets, is a proxy for agency costs of debt. Firm Size is defined as Log of market value of equity. Sales growth is the percent growth in the net sales of a business from one fiscal period to another. CEO age is the age of CEO. CEO tenure is the length of time that the CEO has this position. Managerial Ability Score is managerial ability score is developed by Demerjian et al. (2012) Firm age is calculated as the natural logarithm of Company age represented in company working duration since its establishment. R&D Intensity is R&D Expense to revenue ratio. It measure the percentage of sales that is allocated to R&D expenditures. Big 4 is big-4 auditor dummy. Female gender is female CEO dummy. Firm Risk is the standard deviations of stock return, computed over the prior 5 years. The model is estimated using all S&P 1500 firms over the entire sample period 2007 to 2018. Corresponding p-values from Huber-White robust standard errors are reported in brackets. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. All variables are described in Appendix A.

Panel A									
OLS Regression									
VARIABLES	Value of	Value of	Value of	Value of	Value of	Value of	Number of	Number of	Number of

	RPT	"Red Flag" RPT	Business RPT	RPT / Sale	"Red Flag" RPT /Sales	Business RPT /Sales	RPT	"Red Flag" RPT	Business RPT
Short term	-19.1788 (14.647)	-0.2162 (3.595)	-13.8360* (8.341)	-0.0160** (0.008)	-0.0040 (0.002)	-0.0065 (0.004)	-1.9417*** (0.489)	-0.8352*** (0.315)	-1.0143*** (0.254)
long term	8.1036 (19.337)	6.1806 (5.925)	-4.2937 (10.555)	-0.0150* (0.008)	-0.0037 (0.003)	-0.0058 (0.005)	0.8557 (0.896)	0.6753 (0.617)	0.3033 (0.557)
Leverage	14.9523* (8.930)	3.8221** (1.734)	6.5884 (5.157)	0.0069 (0.004)	0.0035*** (0.001)	0.0010 (0.002)	0.2414 (0.264)	0.1226 (0.154)	0.1817 (0.151)
Firm Size	4.3122*** (0.882)	1.1526*** (0.255)	1.7734*** (0.473)	-0.0012*** (0.000)	-0.0004*** (0.000)	-0.0005** (0.000)	0.1846*** (0.037)	0.1406*** (0.025)	0.0383** (0.018)
Sales Growth	-2.4273 (2.451)	-0.9229 (0.801)	-0.6340 (1.271)	0.0028 (0.002)	0.0004 (0.001)	0.0008 (0.001)	-0.0499 (0.073)	-0.0447 (0.052)	0.0069 (0.039)
CEO Age	0.2210 (0.201)	0.0558 (0.042)	0.0919 (0.122)	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)	0.0104 (0.006)	0.0114** (0.004)	-0.0000 (0.003)
CEO Tenure	-0.3390* (0.179)	-0.0367 (0.053)	-0.2270** (0.098)	-0.0001 (0.000)	0.0000 (0.000)	-0.0001 (0.000)	0.0049 (0.007)	0.0044 (0.004)	0.0007 (0.004)
Managerial Ability Score	12.1142 (10.114)	4.8122* (2.726)	2.4081 (5.260)	0.0010 (0.004)	0.0010 (0.001)	-0.0008 (0.002)	0.1010 (0.367)	0.2273 (0.259)	-0.0992 (0.151)
Female CEO Dummy	2.2435 (5.811)	0.0304 (1.193)	0.6472 (3.376)	0.0010 (0.003)	-0.0003 (0.001)	0.0004 (0.001)	-0.2911 (0.183)	-0.2486** (0.126)	-0.0131 (0.110)
Firm Age	-0.2331*** (0.079)	-0.0630*** (0.018)	-0.0896* (0.050)	-0.0001*** (0.000)	-0.0000*** (0.000)	-0.0001*** (0.000)	-0.0057** (0.003)	-0.0010 (0.002)	-0.0043*** (0.001)
R&D Intensity	1.7421 (3.253)	0.9124 (1.041)	-0.3917 (1.607)	0.0059* (0.004)	0.0028** (0.001)	0.0008 (0.002)	-0.1712 (0.117)	-0.0894 (0.083)	-0.0719 (0.051)
Big-4 Auditor Dummy	-0.8235 (2.392)	-0.8801 (0.628)	0.3580 (1.417)	-0.0024 (0.002)	-0.0020** (0.001)	-0.0002 (0.001)	-0.3691*** (0.143)	-0.1992** (0.094)	-0.1540** (0.075)
Firm Risk	1.1462 (1.401)	0.1022 (0.314)	0.7296 (0.755)	0.0011 (0.001)	0.0002 (0.000)	0.0007 (0.001)	0.1349** (0.063)	0.1083** (0.049)	0.0250 (0.025)
Constant	-26.7537* (15.776)	-4.5282 (5.011)	-13.2810 (8.412)	0.0157** (0.006)	0.0074*** (0.003)	0.0055 (0.004)	0.1595 (0.719)	-0.1739 (0.558)	0.1588 (0.279)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Observations	9,850	9,849	9,849	9,850	9,849	9,849	9,850	9,849	9,849
R-squared	0.067	0.052	0.067	0.044	0.038	0.040	0.100	0.095	0.073

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Panel B

Fixed Effect OLS Regression

VARIABLES	Value of RPT	Value of "Red Flag" RPT	Value of Business RPT	Value of RPT / Sale	Value of "Red Flag" RPT /Sales	Value of Business RPT /Sales	Number of RPT	Number of "Red Flag" RPT	Number of Business RPT
Short term	5.3030 (7.848)	3.6016 (2.662)	-4.9501 (4.015)	-0.0016 (0.005)	-0.0004 (0.002)	-0.0014 (0.002)	-0.6384*** (0.208)	-0.4305*** (0.149)	-0.3274*** (0.112)
long term	34.6485 (21.104)	10.0320 (7.587)	9.7941 (8.033)	-0.0062 (0.008)	-0.0008 (0.004)	-0.0011 (0.004)	0.5396 (0.496)	0.2271 (0.337)	0.3183 (0.298)
Leverage	-9.6151* (5.787)	2.6017 (1.839)	-7.8886*** (2.755)	-0.0015 (0.003)	0.0009 (0.001)	-0.0025* (0.001)	-0.0698 (0.130)	-0.0376 (0.087)	-0.0413 (0.076)
Firm Size	0.1227 (1.116)	0.1024 (0.394)	-0.2303 (0.542)	-0.0019*** (0.001)	-0.0009*** (0.000)	-0.0004 (0.000)	0.0825*** (0.029)	0.0803*** (0.021)	0.0086 (0.015)
Sales Growth	-1.9690 (2.201)	-1.1658 (0.755)	0.6675 (0.853)	-0.0003 (0.002)	-0.0000 (0.001)	-0.0004 (0.001)	-0.1284** (0.063)	-0.0459 (0.050)	-0.0651** (0.031)
CEO Age	0.1541 (0.143)	0.0884** (0.044)	0.0080 (0.080)	0.0001 (0.000)	0.0000* (0.000)	0.0000 (0.000)	0.0021 (0.004)	0.0036 (0.003)	0.0010 (0.002)
CEO Tenure	-0.0323 (0.130)	-0.0138 (0.045)	0.0111 (0.067)	-0.0001 (0.000)	0.0000 (0.000)	-0.0001** (0.000)	0.0071* (0.004)	0.0074*** (0.003)	-0.0016 (0.002)
Managerial Ability Score	-7.2844 (7.585)	-0.1020 (1.847)	-5.5754 (4.129)	-0.0014 (0.003)	-0.0009 (0.001)	0.0003 (0.001)	-0.0727 (0.143)	-0.0128 (0.095)	-0.0534 (0.083)
Female CEO Dummy	5.2359 (5.599)	0.6153 (2.186)	4.9979* (2.753)	0.0035* (0.002)	-0.0001 (0.001)	0.0020* (0.001)	-0.0965 (0.103)	-0.0544 (0.078)	-0.0113 (0.057)
Firm Age	1.1219 (1.185)	1.1051* (0.633)	-0.3149 (0.436)	0.0004 (0.000)	0.0005* (0.000)	-0.0001 (0.000)	0.0087 (0.016)	0.0078 (0.012)	-0.0026 (0.008)
R&D Intensity	-7.9993** (4.070)	-2.0994 (1.287)	-1.2452 (1.793)	-0.0047 (0.007)	0.0021 (0.002)	-0.0026 (0.004)	-0.0308 (0.089)	0.0558 (0.060)	-0.0742 (0.051)
Big-4 Auditor Dummy	-4.1717	0.0056	-1.7363	0.0017	0.0005	0.0009	-0.1730	-0.1600*	0.0040

	(3.787)	(0.448)	(2.384)	(0.003)	(0.001)	(0.002)	(0.111)	(0.083)	(0.047)
Firm Risk	0.0548	-0.5121	0.4345	0.0001	-0.0002	0.0001	0.0109	0.0218	-0.0101
	(0.722)	(0.446)	(0.385)	(0.001)	(0.000)	(0.000)	(0.027)	(0.022)	(0.011)
Constant	-30.7942	-39.5953**	20.7011	0.0022	-0.0104	0.0095	0.1389	-0.3616	0.4326
	(39.213)	(20.183)	(15.416)	(0.014)	(0.010)	(0.008)	(0.588)	(0.445)	(0.307)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,850	9,849	9,849	9,850	9,849	9,849	9,850	9,849	9,849
R-squared	0.608	0.456	0.673	0.553	0.384	0.634	0.751	0.730	0.728

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

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