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# The Geography of REIT Investment in Audit Services

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We examine the geographic component of investment in audit services in the REIT industry. As REIT firms have strong incentive for information transparency and maintain high audit quality, we expect that geographic distance, as a proxy for information flow, among REIT firms, their auditor, and the Securities and Exchange Commission (SEC) offices have effects on the audit and non-audit fees paid by REIT firms. We find that: 1) REIT firms pay more audit and non-audit fees to their auditor when their headquarters are located closer to the SEC offices; 2) REIT firms pay higher audit and non-audit fees when the office of their auditor is closer to the SEC, 3) REIT firms pay higher audit and non-audit fees when the office of their auditor is located closer to their headquarters, and 4) REIT firms that are close to both the SEC and their auditor pay the highest fees for both audit and non-audit services. The results are consistent with our expectation that REIT firms desire high quality audit services and are willing to pay higher fees for them. Also, the REIT industry may enjoy the knowledge spillovers between the audit and non-audit sides and the industry specialization of their auditor.

**Keywords**

REIT, Audit Fees, Non-Audit Fees, Geography, Information Asymmetry

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# 1. Introduction

Real estate investment trust (REIT) firms have strong incentives to improve their financial reporting quality and mitigate information asymmetry in the market in order to obtain/maintain lower costs of capital. To maintain REIT status, REIT firms must distribute at least 90 percent[1] of their taxable income to their shareholders. Therefore, REIT firms with few retained earnings are frequent visitors to the external capital markets. Figure 1 shows the initial public offering (IPO) activities in the REIT industry compared to those in the non-REIT firms. Figures 2 and 3 show the percentage changes in total liability and number of shares outstanding in the REIT industry compared to the non-REIT firms.[2] Thus, their auditors constantly play a crucial role in the event of seasoned equity issuance or debt borrowing. Also, the special tax status of REIT firms presents a unique opportunity for the increasing role of auditors in the industry.[3] Danielsen et al. (2009) find that REIT firms with an over-investment in audit services are rewarded by the market with higher stock liquidity (as measured by bid-ask spread). Their evidence suggests that REIT audit fees are related to market transparency. Danielsen et al. (2014) find consistent and similar results.

In this research, we investigate the geographic proximity effects on investment in audit services (including both audit and non-audit fees) by REIT firms. We study REIT investment in audit services because there is limited literature on the audit fees paid by the REIT industry even though the role of auditors is important to REIT firms. We examine the geographic components among REIT firms, their auditor and SEC offices in relation to audit services because geographic proximity has been recently established as a proxy for information asymmetry/transparency. For example, Kedia and Rajgopal (2011) examine the geographic distance between firms and SEC offices; DeFond et al. (2011) test the geographic proximity between auditors and SEC offices on the independence of the auditors; and Choi et al. (2012) study the audit service quality by investigating the geographic proximity between firms and their auditor. Our research effort here extends and complements the existing literature on audit services in the REIT industry by examining all three geographic components (i.e. distance between REIT firms and SEC offices, distance between REIT firms and auditors, and distance between auditors and SEC offices).

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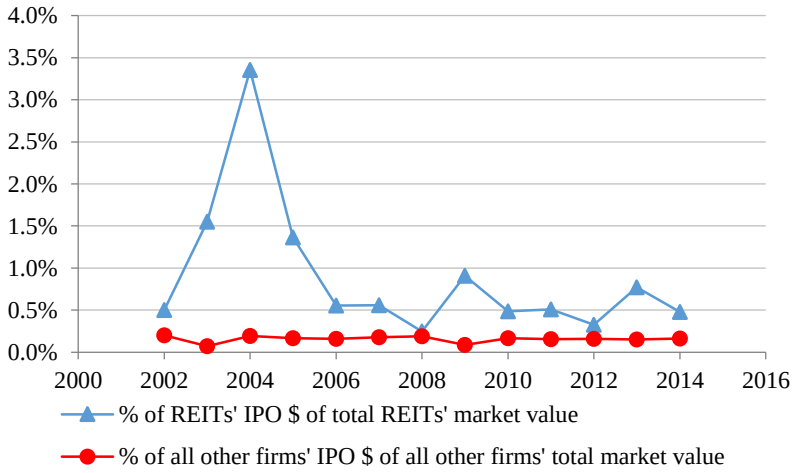
[1] The REIT Modernization Act (RMA) of 1999 reduces the minimum percentage of distribution from 95 to 90 percent.

[2] We use Figures 2 and 3 to show rough estimations in debt issuances and seasoned equity offerings in the REIT industry. We acknowledge that there are many factors that contribute to the level of changes in liability and shares outstanding. These two figures are only used to show some evidence in the differences between the REIT industry and other industries.

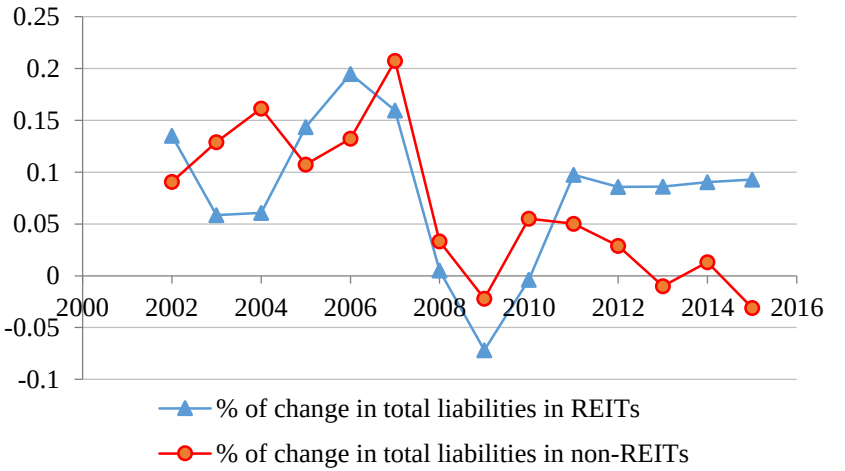
[3] Please see the industry interview of Jennifer Weiss published in 2011 on the NAREIT website: https://www.reit.com/news/articles/audits-reits-increasing

**Figure 1** **Percentage of IPO of REIT Firm Relative to Total Market Value of REIT Firm Compared to Percentage of All IPOs of Non-REIT Firms to Their Total Market Value.**



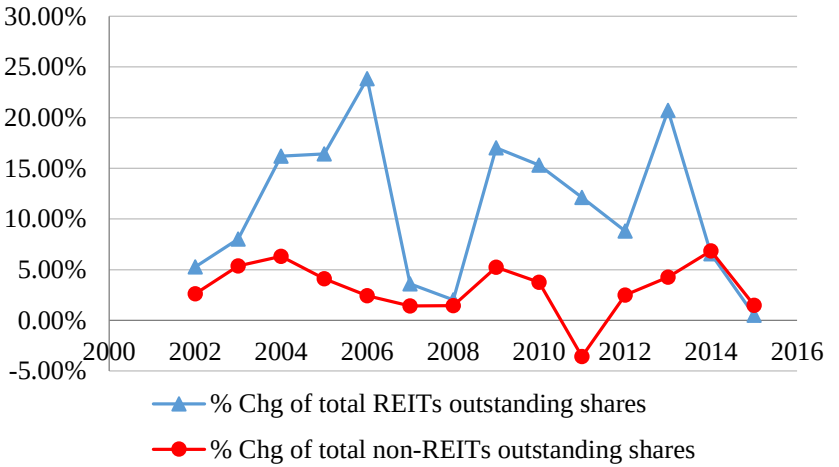

***Sources:*** IPO data of non-REIT firms obtained from Jay Ritter's website (https://site.warrington.ufl.edu/ritter/files/2017/08/IPOs2016Statistics.pdf). Total market value of non-REIT firms obtained from CRSP.

**Figure 2** **Comparison between Percentage of Change in Total Liability in REIT Firm and Percentage of Change in Total Liability in Non-REIT Firms.**




***Source:*** COMPUSTAT.

**Figure 3 Comparison between Percentage of Change in Total Outstanding Shares of REIT Firm and Percentage of Change in Total Outstanding Shares of Non-REIT Firms.**




***Source:*** CRSP.

After we control for audit fee determinants suggested by Whisenant et al. (2003) [WSR thereafter], our empirical results are threefold. First, we find that REIT firms pay higher audit fees to their auditor when the headquarters of the REIT firms are located closer to the SEC offices. As suggested by Kedia and Rajgopal (2011), the SEC tends to investigate firms that are located closer to its offices. REIT firms that are closer to SEC offices, thus, are subject to higher likelihood of investigation. These REIT firms pay more to their auditor to maintain and improve the financial reporting quality. We also find that REIT firms pay less non-audit fees when their headquarters are located farther away from the SEC offices. Firms located farther away from SEC offices are perceived to be more likely to misreport (Kedia and Rajgopal, 2011). Our result suggests that these REIT firms want to mitigate this negative perception by reducing investment in non-audit services provided by auditors.

Second, we find that REIT firms pay higher audit and non-audit fees when their auditor's engagement office is located closer to the SEC offices. One possible explanation is that auditors who are closer to SEC offices may have informational advantage and better grasp of the ambiguity of the regulation rules (Kedia and Rajgopal, 2011). Thus, REIT firms that want higher quality audit services will pay more to obtain the services of these auditors. Another explanation is that audit efforts increase audit fees, and reduce expected litigation losses (Simunic, 1980). Auditors are more likely to detect material misstatements and satisfy audit standards, and therefore mitigate audit risks

when they are located closer to the SEC offices. This theory is also consistent with the empirical findings in Kedia and Rajgopal (2011).

The finding with non-audit fees[4] seems to tell a "knowledge spillover" story. Lim and Tan (2008) show that industry specialist auditors are more likely to benefit from knowledge spillovers from the provision of non-audit services. They find evidence that audit quality increases with the level of non-audit services acquired from industry-specialist auditors compared to non-specialist auditors. Hence, we argue that REIT firms pay higher non-audit fees for the industry specialization of auditors because the REIT industry is a unique and highly-regulated industry. Alternatively, we argue that REIT firms may benefit from the knowledge spillover[5] between the audit and non-audit sides of the auditors because of their complex business activities.

Third, we show that REIT firms pay higher audit and non-audit fees when their auditor's engagement office is closer to the headquarters of the REIT firm. This is an interesting result, which contradicts the finding in Jensen et al. (2015). Choi et al. (2012) suggest that "local" auditors have informational advantage on REIT firms over "non-local" auditors. Thus, these "local" auditors provide higher quality services than non-"local" auditors. As Choi et al. (2010) have found a significantly positive relationship between audit quality and audit fees, we find our results in line with their stories. We believe that our result on the distance between REIT firms and their auditor reveals the trade-off between information advantage and audit service quality. Jensen et al. (2015) suggest that the information advantage of auditors who are closer to their clients reduce the cost of monitoring and audit fees, while Choi et al. (2010) find that firms are willing to pay more for better audit quality. As modeled in Simunic (1980), audit fees are a function of trade-off between auditor quality (auditor effort) and auditor litigation risk. Our results suggest that, in the REIT industry, the importance of audit quality outweighs the reduced cost of monitoring from the

[4] Empirical findings in the literature do not always agree on the negative perception of non-audit fees in that non-audit fees compromise auditor independence. For example, Lai and Krishnan (2009) find that investors regard non-audit services related to financial information systems (FIS) as value-adding activities. They show that the market value of equity is greater for firms that purchase FIS-related services from their incumbent auditors relative to firms that do not. Ghosh et al. (2009) find no evidence of a relation between perceived auditor independence and the non-audit fee ratio. Zaman et al. (2011) find a significantly positive relation between non-audit fees and audit committee effectiveness, especially for larger clients. They suggest that larger clients tend to purchase non-audit services due to the complexity of their business activities.

[5] Krishnan and Yu (2011) show that a significantly negative relation between audit and non-audit fees suggests that knowledge spillover flows between the audit and non-audit sides. In Section 4, we show that the audit fees and predicted non-audit fees are significantly negatively correlated in a two-stage regression analysis. This evidence indicates that REIT auditors are likely to have knowledge spillover between their audit and non-audit sides.

information advantage of the auditors. The reduced cost of monitoring may in turn result in increasing the litigation risk of auditors.

Our research contributes to a rich body of literature on the effects of geographic proximity on investor or firm behavior (e.g., Coval and Moskowitz, 2001; Lambson et al., 2004; Malloy, 2005; Pirinsky and Wang, 2006; Imazeki and Gallimore, 2009; Kedia and Rajgopal, 2009; Das, 2011; Kedia and Rajgopal, 2011; DeFond et al., 2011; and Choi et al. 2012). To the best of our knowledge, our research effort is the first to examine the relation between geographic location and audit service fees in the REIT industry. We wish to shed light on the relation between physical location and REIT firm behaviors.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and develops the hypotheses. Section 3 presents the research methodology and describes the data sample. Section 4 reports and discusses the empirical results. Section 5 concludes.

## 2. Literature Review

### 2.1 Geographic Proximity

During the past two decades, a rich body of literature has paid a great deal of attention to the geographic component in investments and firm behavior. Geographic proximity is considered to be a proxy for soft information and information flow in financial markets. Initially, the focus was on geographic proximity and investor/individual behavior (e.g. Coval and Moskowitz, 1999; Grinblatt and Keloharju, 2001; Feng and Seasholes, 2004; Malloy, 2005; Ivkovic and Weisbenner, 2005; Pool et al., 2012). As time progressed, the focus of the finance literature has expanded to the effects of firm geographic locations on firm stock returns, firm characteristics and corporate behavior (e.g. Loughran and Schultz, 2005; Pirinsky and Wang, 2006; Kang and Kim, 2008; Kedia and Rajgopal, 2009; Becker et al., 2011; John et al., 2011; Garcia and Norli, 2012).

Spatial distance and geographic factors have long been included in real estate and urban economic studies, especially in housing markets (e.g., Rosen, 1979; Cromwell, 1992; Meen, 1999; Glaeser et al., 2008; Harding et al. 2009; Zhu et al., 2013). For the REIT industry, Capozza and Seguin (1999) examine the diversification effects within the industry. They study diversification in both property type and geography. However, in their research, they find that property type diversification is greater than geographic diversification. Diversified property types reduce the value of REIT firms due to higher administrative expenses. Adams et al. (2015) study the risk spillovers among U.S. REIT firms and find evidence for the impact of geographic proximity. They show that the exposure of a REIT firm to risk spillovers is mainly determined by geographic distance. As the distance between the properties of REIT firms increases, risk

spillovers decrease quickly and remain at a low level for distances greater than 250 miles.

All in all, these research studies indicate that the geographic component is an important factor when we study both investor and firm behavior as geography is related to the agency problem and information asymmetry. Physical distance represents the information flow. With a short distance, the information flow is fast and easy, and there is less information asymmetry. With longer distances, the information flow is slow and difficult, and there are severe information asymmetry problems.

## 2.2 Geographic Proximity among Firms, Auditors, and SEC offices

This section focuses on the related literature on the geographic effects of audit services. Jensen et al. (2015) examine the geography of U.S. auditors. Specifically, they study the geographic distances between firms and their auditor. They document a direct link between distance and audit fees: the latter are positively related to the former. They suggest that local auditors have informational advantage over remote auditors. Thus, these local auditors have lower monitoring costs, and in turn, charge lower fees. They also find that audit quality (as measured by the absolute magnitude of abnormal accruals) is negatively associated with distance.

Similarly, Choi et al. (2012) also study the geographic proximity between firms and auditors. They use accrual-based earnings quality as a proxy for audit quality. Consistent with the findings in Jensen et al. (2015), they show that local auditors (those located within 100 kilometers of the headquarters of their clients or in the same metropolitan statistical area (MSA) provide higher quality audit services than non-local auditors. They make the same suggestion that local auditors have informational advantage over non-local ones.

Kedia and Rajgopal (2011) focus on the geography of SEC enforcement. They study violations in the financial reporting of firms and find that firms located close to the SEC and in areas with greater SEC enforcement activity are less likely to restate their financial statements. Firms that restate their financial statements are considered to be potential violators in financial reporting. In their research, the distance between a firm and the SEC is estimated as the distance between the county in which the firm is located in and the nearest SEC office address. They also find that the SEC tends to investigate firms that are located closer to its offices.

DeFond et al. (2011) take into account the distance between auditors and the SEC offices when they study the geography of SEC enforcement. They are particularly interested in the auditor reporting of their financially distressed clients. By measuring the likelihood of issuing going-concern reports for these distressed clients, the authors are able to quantify the independence of auditors.

They find that both Big-4 and non-Big-4 auditors are likely to issue going-concern reports for clients who are located farther away from an SEC office. This finding is consistent with Kedia and Rajgopal (2011) in that firms located farther away from the SEC are more likely to misreport. Therefore, auditors for these firms tend to issue going-concern opinions for self-preservation in case of fallout.

Moreover, they show that non-Big-4 auditors are less likely to issue going-concern reports for their distressed clients when the auditor's engagement office is farther away from an SEC office. This result is also consistent with Kedia and Rajgopal (2011) in that the SEC is more likely to investigate firms that are closer to its offices. Therefore, auditors who are located farther from the SEC have lower risk of investigation. Thus, they have more incentive to compromise their independence by not issuing going-concern reports.

## 2.3 Audit and Non-Audit Fees

### 2.3.1 Audit Fees and Audit Quality

Palmrose (1986) provides evidence that large auditors earn higher fees in part by providing higher quality of audit service. Lennox (1990) studies the role of audit fees and auditor reputation in audit service. Bar-Yosef and Sarath (2005) build a model in which audit fees serve as a screening mechanism. Auditors want to avoid low-quality clients by setting up higher audit fees. The market perception of audit quality is particularly valuable to firms that are going public (e.g., Beatty, 1989; Firth and Liau-Tan, 1998). Beatty (1989) finds that the premium that a firm pays for registration audit is consistent with its signal of information transparency for IPOs. Choi et al. (2010) suggest that audit quality (measured by unsigned abnormal accruals) is significantly positively related to audit fees after controlling for audit firm size and industry expertise. Therefore, it is reasonable for us to infer that higher audit fees are associated with higher quality of audit service.

### 2.3.2 Non-Audit Fees and Audit Quality

Auditing firms perform both audit and non-audit services for their clients. The latter include management consulting, tax advice, human resources consulting, etc. However, some of the non-audit services may be considered as a potential conflict of interest. Since the adoption of the Sarbanes-Oxley Act, the non-audit services that an audit firm can provide to its audit clients have been significantly restricted. However, they are not eliminated. Therefore, auditors continue to perform non-audit services for their clients by following regulations.

There has been a long continuous debate on whether non-audit fees affect auditor independence and auditing quality. Historically, some argue that non-audit fees compromise the independence of auditors (e.g., Frankel et al., 2002;

Ferguson et al., 2004; Gore et al., 2001). However, Ashbaugh et al. (2003) challenge the findings of Frankel et al. (2002) because they find no statistically significant association between firms meeting analyst forecasts and auditor fees. Antel et al. (2006) do not find such a positive correlation between non-audit fees and abnormal accruals either. They find the opposite. They show that non-audit fees reduce abnormal accruals. They find evidence consistent with knowledge spillovers between auditing and non-auditing services. Their results are robust with data from both the U.S. and U.K

Subsequently, research has shown that the impact of non-audit fees on audit quality and transparency may differ, depending on numerous auditor and client characteristics (e.g., Lim and Tan, 2008; Ghosh et al, 2009; Lai and Krishnan, 2009; Zaman et al. 2011; Lim et al., 2013). Knowledge spillovers between non-audit and audit services give auditors greater insights into their clients. Although the concept itself is not new (see, for example, Cohen Commission (1978) and Simunic (1984)), it is not until recent times that we have more empirical studies to show evidence of knowledge spillovers between auditing and non-auditing services.

Krishnan and Yu (2011) support this notion and indicate that some of the auditor and client characteristics (e.g., Big-4 auditors, long auditor tenure, large clients, extent of tax services, and client importance) induce significant knowledge spillovers. Koh et al. (2013) find evidence to support knowledge spillovers and reputation theories. They show that non-audit services are associated with lower earnings management and higher earnings informativeness.

### 2.3.3 REIT Investment in Audit Services

According to IRS regulatory rules, REIT firms must distribute at least 90 percent of their taxable income to shareholders. Therefore, REIT firms with few retained earnings must frequently visit the external capital markets to raise capital. Thus, their auditor constantly plays a crucial role in the event of seasoned equity issuance or debt borrowing. REIT firms have strong incentives to improve their financial reporting quality and mitigate information asymmetry in the market in order to obtain lower costs of capital. Also, the REIT industry has special tax situations as a "pass-through" investment vehicle. Thus, examining the audit and non-audit fees within the REIT industry may yield specific results that indicate the importance of the role of auditors in the REIT industry.

Danielsen et al. (2009) specifically study audit fees and market transparency in the REIT industry. They follow the same methodology as in WSR (2003) and obtain over-investments in audit and non-audit fees. Then, they link the over-investments in the services of the auditors with the stock liquidity of the REIT firm. They find that REIT firms that over-invest in audit fees are rewarded by

a narrowing bid-ask spread from the stock market. However, REIT firms that over-invest in non-audit fees are penalized by a widening bid-ask spread from the stock market. Danielsen et al. (2014) find similar results.

## 2.4 Hypothesis Development

Upon reviewing the related literature on geographic proximity and audit fees, and given that REIT firms have unusually high incentive to seek high-quality audit services, we develop the following hypotheses on audit and non-audit fees.

Our main underlying assumptions are that: 1) there is a connection between geographic distance and audit quality, and 2) geographic proximity is related to information asymmetry. If REIT firms desire high audit quality, they would pay high fees for the service. Therefore, before we go into the hypotheses related to audit fees, we would like to suggest two hypotheses related to these underlying assumptions:

*H1: Auditors who are located closer to SEC offices provide higher quality audit services.*

*H2: Information asymmetry is more severe when geographic distance is greater.*

The SEC is more likely to investigate firms that are closer to its offices. REIT firms would like high quality audit services, and high quality services may be associated with high audit fees. Firms that are located farther away from the SEC have greater tendency to misreport. REIT firms, which have strong incentive for information transparency, do not wish to be penalized even more by purchasing non-audit services. Therefore, we hypothesize:

*H3: REIT firms that are located closer to the SEC pay more in audit fees than those that are located farther away from the SEC. REIT firms that are located farther from the SEC pay less in non-audit fees.*

Auditors who are closer to the SEC may be subject to more scrutiny from the SEC and also have "soft" information on SEC regulations. Thus, they may have a good reputation in the market for providing high-quality audit reports. Also, they may want to screen out low-quality clients. The REIT industry is a specialized unique industry that may require industry specialization of auditors. Also, the REIT industry usually has relatively high institutional ownership. Add in the complexities of real estate business operations, REIT firms may benefit from knowledge spillovers between the audit and non-audit sides. Thus, we hypothesize:

*H4: REIT firms pay higher audit and non-audit fees to auditors who are located closer to the SEC.*

Jensen et al. (2015) suggest that information advantage reduces the cost of monitoring and find that firms pay lower audit fees if they are located closer to their auditor. On the other hand, auditors who are closer to firms show higher audit quality (Choi et al. 2012). Choi et al. (2010) show that audit quality and audit fees are positively correlated. Therefore, there is a trade-off between reducing the cost of monitoring and increasing audit quality. Thus, we hypothesize:

*H5: REIT firms pay higher (lower) audit and non-audit fees to auditors who are located closer to their headquarters if increasing audit quality is valued more (less) than the reduced cost of monitoring in the REIT industry*.

# 3. Data and Methodology

## 3.1 Distance Measurement

Our initial sample is obtained from the Audit Analytics database for a thirteen-year period from 2001-2013. We use the headquarter locations to proxy for the locations of REIT firms as the corporate headquarters are the center of information exchange (e.g., Davis and Henderson, 2008; Pirinsky and Wang, 2006). We obtain street-level addresses (including street name, city, state, and zip code) of the headquarters of the REIT firms in the Audit Opinion File of the Audit Analytics database. However, the Audit Analytics database only provides the cities, not the street addresses, of the auditor's engagement offices. Thus, we manually search for the street-level addresses of the auditor's engagement offices on the website of the corresponding auditors[6]. We use the SEC website[7] to identify the street addresses of the regional and national offices, following Kedia and Rajgopal (2011) and DeFond et al. (2011). The SEC national office is in Washington, DC and regional offices are located in Atlanta, GA; Boston, MA; Chicago, IL; Denver, CO; Fort Worth, TX; Los Angeles, LA; Miami, FL; New York, NY; Philadelphia, PA; Salt Lake City, UT and San Francisco, CA.

Next, we use the geocoding service from Texas A&M University[8] to obtain the latitude and longitude of each street address for the headquarters of the REIT firm, and auditor and SEC offices. We use the new GEODIST function of the SAS to calculate the distance in miles. The GEODIST function is based on the Vincenty formula[9], which is considered to have millimeter accuracy[10].

[6] If the city of the engagement office no long exists on the website of the auditor, we use the latitude and longitude of the city center to approximate the location of the engagement office.

[7] Please refer to http://www.sec.gov/contact/addresses.htm for their addresses.

[8] We thank Texas A&M University for providing this service. https://geoservices.tamu.edu/

[9] The Vincenty formula can be found in Vincenty (1975).

[10] http://www.ga.gov.au/geodesy/datums/vincenty_direct.jsp

Our distance measure is more accurate than those in the previous literature as we use the street addresses to pinpoint each location instead of the zip code, city, county or MSA level of the locations. We calculate the distances between the headquarters of a REIT firm and all 12 SEC offices. We use the minimum of those 12 distances as the distance between the specific REIT firm and SEC (*LNREITSECDIST*). Similarly, we use the minimum of the 12 distances as the distance between the specific auditor's engagement office and SEC (*LNAUDITSECDIST*). We calculate the distance between the headquarters of a REIT firm and its corresponding auditor office (*LNREITAUDITDIST*). All the distances used in our empirical analysis are in natural logarithm.

Furthermore, following Coval and Moskowitz (2001), Malloy (2005) and Kedia and Rajgopal (2011), we create distance dummy variables: *REITSECDUMMY* is equal to 1 if the distance between a REIT firm and SEC is greater than 28 miles[11], and 0 otherwise; AUDITSECDUMMY is equal to 1 if the distance between the office of an auditor and SEC is greater than 28 miles, and 0 otherwise; and *REITAUDITDUMMY* is equal to 1 if the distance between a REIT firm and the office of its auditor is greater than 28 miles, and 0 otherwise.

### 3.2 Research Design

Our main research design closely follows that of WSR (2003). In their research, the authors propose that audit and non-audit fees are jointly determined. They find that total assets, number of employees and segments, inventory, Big-5 auditor, previously reported negative net income, return volatility, restatements, and foreign operations are all positively related to audit fees. Corporate liquidity, return on assets (ROA), initial reporting, book-to-market ratio (BM), stock returns, and changes in bankruptcy probability are negatively related to audit fees. Total assets, number of segments and employees, institutional ownership, Big-5 auditor, foreign operation, sales growth, return volatility, extraordinary items, and issuing new equity or debt are all positively related to non-audit fees. Total debt, corporate liquidity, ROA, initial reporting, BM, changes in bankruptcy probability, restatements, and stock returns negatively determine non-audit fees. We will use the same framework as in WSR (2003) to analyze REIT audit and non-audit fees.

#### 3.2.1 OLS Model for Audit Fees

Closely following WSR (2003)[12], we adopt the following OLS regression to link the audit fees of auditors with the proximity of REIT firms to the SEC

[11] The use of 28 miles as the cut-off point is due to the median of the distance between REITs and SEC offices in Table 1.

[12] While we closely follow their framework, we make some adjustments to the models to fit the REIT industry. For example, we exclude the inventory variable in their model

offices and their auditor, and other control variables for operation complexity, firm size, risk, performance as well as other firm and auditor characteristics of REIT firms.

For audit fees, we have:

$$\begin{aligned} LNAUDIT = {} & \alpha_0 + \beta_1 DISTANCEMEASURES + \beta_2 LNTA \\ & + \beta_3 SQEMPLS + \beta_4 LEV + \beta_5 ROA + \beta_6 IO \\ & + \beta_7 INITIAL + \beta_8 BIG4 + \beta_9 FOROPS + \beta_{10} LOSS \\ & + \beta_{11} REVGRO + \beta_{12} BM + \beta_{13} XDOPS \\ & + \beta_{14} RESTATES + \beta_{15} RET + \beta_{16} LAG \\ & + \beta_{17} PROPTYPE + \varepsilon \end{aligned} \tag{1}$$

For non-audit fees, we have:

$$\begin{aligned} LNNAF = {} & \gamma_0 + \gamma_1 DISTANCEMEASURES + \gamma_2 LNTA \\ & + \gamma_3 SQEMPLS + \gamma_4 LEV + \gamma_5 ROA + \gamma_6 IO + \gamma_7 INITIAL \\ & + \gamma_8 BIG4 + \gamma_9 FOROPS + \gamma_{10} LOSS + \gamma_{11} REVGRO \\ & + \gamma_{12} BM + \gamma_{13} XDOPS + \gamma_{14} RESTATES + \gamma_{15} RET \\ & + \gamma_{16} LAG + \gamma_{18} PROPTYPE + \varepsilon \end{aligned} \tag{2}$$

Variables are defined in Appendix.

Our distance measures in the model include the following variables: *LNREITSECDIST* (*REITSECDUMMY*), *LNAUDITSECDIST* (*AUDITSECDUMMY*) or *LNREITAUDITDIST* (*REITAUDITDUMMY*), which are defined in the previous section. The distance measures in the model are our main variables of interest. If we observe a significantly negative coefficient on distance measures, then it is consistent with the notion that higher auditor fees are associated with information advantage and higher reporting quality.

We include the *LNTA* to control for firm size. The *REVGRO*, *SQEMPLS* and *FOROPS* are included to control for client complexity in business operations. We include the *ROA*, *BM*, *LEV*, *LOSS* and *RET* to control for client performance and risk, following WSR (2003). Reporting lags (LAG) as documented in Gul (1999) are positively associated with audit fees. As suggested by DeAngelo (1981), Big 4 auditors provide higher quality audits than non-Big 4 auditors and charge a higher fee premium (Francis et al. 2005). We include *BIG4* to control for auditor reputation. DeAngelo (1981) document that auditors typically charge less and discount audit fees because of low-bailing at the time of the

because REIT firms typically do not have inventory. Also we exclude the ratio between current assets and current liabilities because many REIT firms do not report their current assets. Therefore, our methodology framework is very similar to their framework but with some variations.

initial engagement of the auditors, therefore we include *INITIAL* to control for this effect. As in WSR (2003), we include *IO*, *RESTATES*, and *XDOPS* for institutional ownership, restatements, and extraordinary items or discontinued operations, respectively. Institutional ownership (*IO*) is an important control variable, especially in REIT studies, because U.S. REIT firms have a fairly high percentage in institutional holdings (Packer, Riddiough, and Shek, 2014). The model also includes dummies for year and property as the control variables. We control for property type because different property types are associated with different risk factors and different cycles (Evans and Mueller, 2016). The definitions of all the variables are provided in the Appendix.

### 3.2.2 Two-Stage Regression Models

WSR (2003) document evidence that audit and non-audit fees are jointly determined, and failure to control for the simultaneous determination of audit and non-audit fees leads to biased estimations. For the simultaneous-equation specification, we use an instrumental variable approach (two-stage least squares, 2SLS). Instead of using the actual value of the *LNNAF (LNAUDIT)*, we regress *LNNAF (LNAUDIT)* onto the exogenous fee determinants. The fitted value of $LNNAF^P$ *(*$LNAUDIT^P$*)*, which is independent of the error term, is used as an instrumental variable in the second stage.

The audit fee model is as follows:
Stage 1:

$$LNNAF = \delta_0 + \delta_1 DISTANCEMEASURE + \delta_2 DETERMINANTS + \tau \quad (3a)$$

From Model (3a), we save the predicted values of the non-audit fees ($LNNAF^P$) and then use the predicated values in the next stage.
Stage 2:

$$LNAUDIT = \delta_0 + \delta_1 LNNAF^P + \delta_2 DISTANCEMEASURE + \delta_3 DETERMINANTS + \tau \quad (3b)$$

Similarly, we have the non-audit fee model as follows:
Stage 1:

$$LNAUDIT = \gamma_0 + \gamma_1 DISTANCEMEASURE + \gamma_2 DETERMINANTS + \sigma \quad (4a)$$

From Model (4a), we save the predicted values of audit fees ($LNAUDIT^P$) and then use the predicated values in the next stage.

Stage 2:

$$LNNAF = \gamma_0 + \gamma_1 LNAUDIT^{p} + \gamma_2 DISTANCEMEASURE + \gamma DETERMINANTS + \sigma \quad (4b)$$

In accordance with WSR (2003), we specify the determinant variables that are conjectured to be unique in their direct influence on audit fees to avoid creating a singular covariance matrix in the second stage of the estimation of the fee equations. The reporting lag is unique to audit fees as shown in Gul (1999). Thus, *LAG* is excluded from the non-audit fee model.

### 3.3 Data Sample

Our sample selection process starts with the Audit Opinion File of the Audit Analytics database for 2001 to 2013. Our year coverage starts from 2001 because it is the year when the SEC required public firms to disclose audit and non-audit fees in proxy statements.

We merge the initial file which has the distance calculations with the Audit Fee File from the Audit Analytics database to obtain non-missing audit fee information. We obtain financial statement variables including segment data from Compustat, institutional holdings from the Thomson Reuters Institutional Holdings File, and stock return and price data from the Center for Research in Security Places (CRSP) database. We remove the observations with missing data and outliers with respect to all continuous variables in the extreme 1 percentile of their respective distributions. We also remove the observations with distance between the auditor's engagement and SEC offices and the distance between the headquarters of a REIT firm and the SEC office in the extreme 1 percentile of their respective distributions. This step eliminates the REIT firms or their auditors who are located outside of the continental U.S. (i.e. Hawaii and Alaska). After the data selection procedure, the final sample yields 1,482 firm year observations. The final sample consists of 135 REIT firms in 28 continental states of the U.S.

## 4. Main Results

### 4.1 Sample Description

Table 1 shows the summary statistics of the entire sample for the period from January 2001 to December 2013. The mean (median) value of the audit fees is 1,043,000 (684,000) U.S. dollars. The mean (median) value of the non-audit fees is 460,000 (158,136) U.S. dollars. The mean (median) value of *REITSECDIST* (i.e. the distance between a REIT firm and the SEC) is 115.063 (27.940) miles. The mean (median) value of *AUDITSECDIST* (i.e. the distance

between an auditor's engagement office and the SEC) is 106.982 (11.884) miles. The mean (median) value of *LNREITAUDITDIST* (i.e. the distance between a REIT firm and its auditor's engagement office) is 91.386 (11.337) miles. As it is evident that the raw data distribution is skewed, we use the natural logarithm forms of audit fees (*LNAUDIT*), non-audit fees (*LNNAF*), and all three distances in our empirical analysis from now on. Detailed definitions of the variable are described in the previous section and elaborated in the Appendix.

We choose the median value of the distance between a REIT firm and the SEC as the cut-off point to partition our sample. [13] To show the differences of the mean value in terms of audit and non-audit fees between distance measures that are farther away than 28 miles and less than 28 miles away, we perform T-tests on the variable means between these two groups of firms among REITs, their auditors and SEC. Table 2 shows the t-test results. We report the pooled t-statistics (assuming equal variance) and the Satterthwaite t-statistics (assuming unequal variance situations).

Panel A is based on the distance between the REIT firms and SECs. The natural logarithm of the audit and non-audit fees is significantly lower for firms that are located 28 miles farther away from the nearest SEC office. Those firms are observed to be smaller in size, have a lower BM, shorter reporting lags and less auditor industry expertise. Panel B is based on the distance between the auditor of a REIT firm and the SEC. Both audit and non-audit fees paid by REIT firms with an auditor who is located 28 miles farther away from the nearest SEC office are significantly lower than those with an auditor who is located less than 28 miles from the nearest SEC office. With the former, REIT firms have significantly lower total assets, ROA, institutional ownership, revenue growth and auditor industry expertise. They also have significantly higher leverage and BM, longer reporting lag and higher bid-ask spread. Panel C is based on the distance between REIT firms and their auditor. Both audit and non-audit fees are significantly lower for REIT firms with an auditor who is 28 miles farther away from their headquarters. We also find that these firms have lower leverage and BM. Their auditors lack industry expertise. These firms are also smaller in size and have higher bid-ask spread.

## 4.2 Geographic Distance, Audit Quality, and Information Asymmetry

Before we examine the audit and non-audit fee models proposed in the earlier sections, we would like to test our first and second hypotheses (H1 and H2) which are related to audit quality and information asymmetry. We use auditor industry expertise at the national level to measure audit quality (*MKTSHARE*), which is based on the auditor's annual market share of audit fees within the same industry (Ferguson et al., 2003; Hogan and Jeter, 1999; Francis et al.,

[13] We also use 50 miles and 100 miles as the cut-off points to partition our sample. The results are similar to the use of 28 miles.

2005; Reichelt and Wang, 2010). The study by Neal and Riley (2004) emphasize that "The firms with the largest market shares have developed the largest knowledge base within that particular industry and significant market shares within an industry reflect significant investments by audit firms in developing industry-specific audit technologies with the expected benefits being increased economies of scale and improved audit quality." The previous literature indicates that auditor industry expertise based on national clientele is associated with higher-quality audits as evidenced by fewer abnormal accruals and a higher market valuation of earnings (Balsam et al., 2003).

**Table 1 Summary Statistics**

(Sample Period: 2001 to 2013)

| Variable | N | Mean | Std Dev | Q1 | Median | Q3 |
|---|---|---|---|---|---|---|
| *LNAUDIT* | 1,482 | 13.025 | 2.189 | 12.661 | 13.435 | 13.903 |
| *LNNAF* | 1,482 | 10.926 | 3.743 | 10.558 | 11.971 | 12.895 |
| *AUDIT* (USD in 000s) | 1,482 | 1,043 | 1,423 | 315,328 | 683.767 | 1,095,000 |
| *NAF* (USD in 000s) | 1,482 | 460 | 1,004 | 38,482 | 158,136 | 398,276 |
| *LNREITSECDIST* | 1,482 | 3.440 | 2.020 | 2.184 | 3.330 | 5.414 |
| *LNAUDITSECDIST* | 1,482 | 2.712 | 2.502 | 1.171 | 2.475 | 5.353 |
| *LNREITAUDITDIST* | 1,482 | 2.016 | 2.835 | 1.459 | 2.428 | 3.154 |
| *REITSECDIST* | 1,482 | 115.063 | 149.066 | 8.881 | 27.940 | 224.619 |
| *AUDITSECDIST* | 1,482 | 106.982 | 155.572 | 3.224 | 11.884 | 211.289 |
| *REITAUDITDIST* | 1,482 | 91.386 | 313.134 | 4.300 | 11.337 | 23.432 |
| *LNTA* | 1,482 | 7.391 | 1.352 | 6.638 | 7.499 | 8.272 |
| *SQEMPLS* | 1,482 | 30.819 | 54.908 | 6.481 | 16.000 | 33.045 |
| *LEV* | 1,482 | 0.585 | 0.198 | 0.485 | 0.578 | 0.679 |
| *ROA* | 1,482 | 0.050 | 0.057 | 0.028 | 0.047 | 0.066 |
| *IO* | 1,482 | 0.638 | 0.308 | 0.415 | 0.719 | 0.879 |
| *INITIAL* | 1,482 | 0.196 | 0.397 | 0 | 0 | 0 |
| *BIG4* | 1,482 | 0.792 | 0.406 | 1 | 1 | 1 |
| *FOROPS* | 1,482 | 0.103 | 0.304 | 0 | 0 | 0 |
| *LOSS* | 1,482 | 0.253 | 0.435 | 0 | 0 | 1 |
| *REVGRO* | 1,482 | 0.126 | 0.318 | -0.001 | 0.067 | 0.158 |
| *BM* | 1,482 | 0.646 | 0.605 | 0.356 | 0.535 | 0.736 |
| *XDOPS* | 1,482 | 0.676 | 0.468 | 0 | 1 | 1 |
| *RESTATES* | 1,482 | 0.131 | 0.337 | 0 | 0 | 0 |
| *RET* | 1,482 | 0.125 | 0.356 | -0.058 | 0.125 | 0.303 |
| *LAG* | 1,482 | 50.331 | 17.660 | 38.000 | 48.000 | 57.000 |
| *MKTSHARE* | 1,482 | 0.207 | 0.126 | 0.118 | 0.205 | 0.333 |
| *SPREAD* | 1,482 | 0.002 | 0.003 | 0.000 | 0.000 | 0.001 |

***Note:*** Please refer to Appendix for definition of variables

**Table 2 Comparisons of Distance among REIT Firms, Their Auditor and SEC Greater and Less than 28 Miles**

**Panel A Comparison between REIT firms and SEC Greater and Less than 28 Miles**

| Variable | >=28 Miles (709) | <28 Miles (N=773) | Difference of the Mean Value | Pooled T | Satterthwaite T |
|---|---|---|---|---|---|
| *LNAUDIT* | 12.871 | 13.167 | -0.295 | -2.60*** | -2.59*** |
| *LNNAF* | 10.560 | 11.261 | -0.701 | -3.62*** | -3.61*** |
| *LNTA* | 7.235 | 7.533 | -0.300 | -4.27*** | -4.26*** |
| *SQEMPLS* | 33.658 | 28.235 | 5.422 | 1.89* | 1.90* |
| *LEV* | 0.580 | 0.590 | -0.010 | -0.96 | -0.97 |
| *ROA* | 0.049 | 0.050 | -0.001 | -0.34 | -0.35 |
| *IO* | 0.647 | 0.629 | 0.018 | 1.11 | 1.12 |
| *REVGRO* | 0.135 | 0.118 | 0.017 | 1.02 | 1.01 |
| *BM* | 0.531 | 0.751 | -0.221 | -7.13*** | -7.34*** |
| *RET* | 0.120 | 0.130 | -0.011 | -0.59 | -0.60 |
| *LAG* | 48.805 | 51.730 | -2.924 | -3.19*** | -3.19*** |
| *MKTSHARE* | 0.194 | 0.218 | -0.024 | -3.66*** | -3.66*** |
| *SPREAD* | 0.002 | 0.002 | 0.000 | 0.67 | 0.67 |

***(Continued…)***

*(Table 2 Continued)*

**Panel B Comparison between Auditor of REIT Firms and SEC Greater and Less than 28 Miles**

| Variable | >=28 Miles (N=657) | <28 Miles (N=825) | Difference of the Mean Value | Pooled T | Satterthwaite T |
|---|---|---|---|---|---|
| *LNAUDIT* | 12.754 | 13.242 | -0.488 | -4.29*** | -4.21*** |
| *LNNAF* | 10.224 | 11.485 | -1.261 | -6.38*** | 6.53*** |
| *LNTA* | 7.238 | 7.512 | -0.275 | -3.91*** | -3.89*** |
| *SQEMPLS* | 28.774 | 32.433 | -3.660 | -1.36 | -1.27 |
| *LEV* | 0.602 | 0.571 | 0.030 | 2.94*** | 3.04*** |
| *ROA* | 0.045 | 0.054 | -0.009 | -3.08*** | -3.27*** |
| *IO* | 0.585 | 0.680 | -0.095 | -6.00*** | -5.91*** |
| *REVGRO* | 0.106 | 0.143 | -0.037 | -2.24*** | -2.26*** |
| *BM* | 0.694 | 0.608 | 0.086 | 2.76*** | 2.65*** |
| *RET* | 0.119 | 0.130 | -0.011 | -0.58 | -0.58 |
| *LAG* | 52.257 | 48.796 | 3.461 | 3.76*** | 3.61*** |
| *MKTSHARE* | 0.179 | 0.229 | -0.050 | -7.69*** | -7.69*** |
| *SPREAD* | 0.002 | 0.001 | 0.001 | 5.84*** | 5.35*** |

***(Continued…)***

***(Table 2 Continued)***

**Panel C: Comparison between REIT Firms and Their Auditor Greater and Less than 28 Miles**

| Variable | >= 28 Miles (N=343) | < 28 Miles (N=1,139) | Difference of the Mean Value | Pooled T | Satterthwaite T |
|---|---|---|---|---|---|
| *LNAUDIT* | 12.511 | 13.180 | -0.669 | -5.01*** | -4.13*** |
| *LNNAF* | 10.103 | 11.173 | -1.070 | -4.67*** | -4.42*** |
| *LNTA* | 7.072 | 7.487 | -0.415 | -5.02*** | -5.23*** |
| *SQEMPLS* | 31.661 | 30.566 | 1.096 | 0.32 | 0.30 |
| *LEV* | 0.547 | 0.596 | -0.050 | -4.08*** | -4.17*** |
| *ROA* | 0.051 | 0.049 | 0.002 | 0.51 | 0.54 |
| *IO* | 0.651 | 0.634 | 0.017 | 0.90 | 0.92 |
| *REVGRO* | 0.134 | 0.124 | 0.010 | 0.52 | 0.48 |
| *BM* | 0.569 | 0.669 | -0.100 | -2.69*** | -3.65*** |
| *RET* | 0.137 | 0.122 | 0.015 | 0.70 | 0.68 |
| *LAG* | 49.405 | 50.609 | -1.204 | -1.11 | -1.29 |
| *MKTSHARE* | 0.188 | 0.212 | -0.024 | 3.13*** | 3.10*** |
| *SPREAD* | 0.002 | 0.001 | 0.001 | 3.12*** | 4.72*** |

***Note:*** Differences in distance among REIT firms, their auditor, and SEC in terms of audit fees, non-audit fees and firm characteristics. Both pooled t-value (assuming equal variance) and Satterthwaite t-value (assuming unequal variance) are reported.
Definition of variables can be found in the Appendix. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance

As for information asymmetry (or market transparency), we use effective bid-ask spread as a proxy. Bid-ask spread has been traditionally considered as a measure of transaction costs. In turn, it has become an effective measurement for information asymmetry (Amihud and Mendelson, 1986; Wei et al., 1995). Higher bid-ask spread is interpreted as lower stock liquidity and higher degree of information asymmetry. *SPREAD* is calculated as the annual average of the daily closing bid-ask spread as a percentage of the daily mid-point.

Table 3 presents the regression results on the relationship between auditor industry expertise (*MKTSHARE*) and audit and non-audit fees after controlling for the distance between the auditor of the REIT firm and SEC office. It also presents the regression results on the relationship between market transparency (SPREAD) and audit and non-audit fees. The first two columns in Table 3 are the regression results for auditor industry expertise. The coefficients on the distance variables (*LNAUDITSECDIST* and *AUDITSECDUMMY*) are significantly negative (-0.002 and -0.0023). These results indicate that the auditors who are located farther away from the SEC offices have less national industry expertise, and therefore provide lower audit quality. The last two columns in Table 3 are the regression results for market transparency. The coefficients on the distance variables (*LNAUDITSECDIST* and *AUDITSECDUMMY*) are significantly positive (0.188 and 0.789) at the 1 percent level. These results suggest that the auditors who are located farther away from the SEC offices have higher bid-ask spread (higher levels of information asymmetry).

**Table 3 Auditor Industry Expertise, Market Transparency and Audit Fees, Non-Audit Fees and the Distance between REIT Firm Auditor and SEC Offices (OLS)**

| Variable | *MKTSHARE* | *MKTSHARE* | *SPREAD* | *SPREAD* |
|---|---|---|---|---|
| *Intercept* | 0.081** | 0.093*** | -12.231*** | -12.489*** |
| | (2.20) | (2.54) | (-7.01) | (-7.16) |
| *LNAUDITSECDIST* | -0.002** | | 0.188*** | |
| | (-2.31) | | (3.59) | |
| *AUDITSECDUMMY* | | -0.023*** | | 0.789*** |
| | | (-4.62) | | (2.91) |
| *LNAUDIT* | -0.002 | -0.002 | -0.239*** | -0.234*** |
| | (-0.90) | (-1.01) | (-2.72) | (-2.68) |
| *LNNAF* | -0.001* | -0.002** | -0.060 | -0.061 |
| | (-1.77) | (-2.12) | (-1.31) | (-1.34) |
| *LNTA* | 0.016*** | 0.017*** | 1.388*** | 1.399*** |
| | (6.01) | (6.11) | (7.57) | (7.63) |
| *SQEMPLS* | 0.000*** | 0.000*** | -0.040*** | -0.041*** |
| | (8.03) | (7.86) | (-16.17) | (16.30) |

***(Continued…)***

***(Table 3 Continued)***

| Variable | *MKTSHARE* | *MKTSHARE* | *SPREAD* | *SPREAD* |
|---|---|---|---|---|
| *LEV* | -0.107*** | -0.102*** | 1.607** | 1.613* |
| | (-8.11) | (-7.84) | (1.89) | (1.88) |
| *ROA* | 0.186*** | 0.161*** | 1.962 | 1.305 |
| | (3.93) | (3.43) | (0.49) | (0.32) |
| *IO* | 0.005 | 0.004 | -3.488*** | -3.462*** |
| | (0.39) | (0.29) | (-4.36) | (-4.33) |
| *INITIAL* | 0.004 | 0.002 | -0.131 | -0.149 |
| | (0.51) | (0.28) | (-0.30) | (-0.34) |
| *BIG4* | 0.164*** | 0.162*** | -0.869** | -0.904** |
| | (19.75) | (19.20) | (-2.08) | (-2.16) |
| *FOROPS* | -0.055*** | -0.055*** | -2.696*** | -2.597*** |
| | (-6.59) | (-6.79) | (-4.78) | (-4.58) |
| *LOSS* | 0.004 | 0.004 | -1.136** | -1.146** |
| | (0.63) | (0.68) | (-2.56) | (-2.58) |
| *REVGRO* | 0.030*** | 0.030*** | -0.946* | -0.937 |
| | (3.43) | (3.42) | (-1.63) | (-1.61) |
| *BM* | -0.008** | -0.008** | 0.189 | 0.229 |
| | (-2.55) | (-2.45) | (0.40) | (0.49) |
| *XDOPS* | -0.010* | -0.010* | 1.221*** | 1.207*** |
| | (-1.76) | (-1.77) | (3.64) | (3.59) |
| *RESTATES* | -0.010 | -0.008 | -0.072 | -0.066 |
| | (-1.44) | (-1.18) | (-0.16) | (-0.14) |
| *RET* | 0.003 | 0.003 | 1.627** | 1.663*** |
| | (0.49) | (0.43) | (2.53) | (2.59) |
| *LAG* | -0.000 | -0.000 | 0.014 | 0.015 |
| | (-0.11) | (-0.23) | (1.09) | (1.16) |
| Protype | | YES | | |
| Year | | YES | | |
| N | 1,482 | 1,482 | 1,482 | 1,482 |
| RSQ | 49.26% | 49.82% | 61.64% | 61.57% |

***Note:*** OLS regression results on relationship between auditor industry expertise and market transparency and audit fees, non-audit fees after controlling the distance between REIT auditor and SEC office. Dependent variables are auditor industry market share and bid-ask spread. Independent variables are audit fees, non-audit fees, distance variables between auditor and SEC offices and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm.

Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

### 4.3 Audit Fee OLS Models

Danielsen et al. (2009, 2014) suggest that over-investment in audit fees infers a higher level of transparency, lower level of information asymmetry in the capital markets and better bid-ask spread. We intend to analyze the differences in audit and non-audit fees when the distance between the SEC and REIT firm is less than or farther than 28 miles, if any. Equations (1) and (2) are applied here to test our third hypothesis (H3). Variables that measure corporate liquidity are introduced and defined in the previous section and in the Appendix. Table 4 presents the OLS regression results from different model specifications from Equations (1) and (2). Year fixed effects and property type are controlled in the analysis. The t-statistics are estimated by using standard errors clustered by firm.

**Table 4 Audit Fees, Non-Audit Fees, and Distance between REIT firm and SEC Offices (OLS)**

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 9.847*** | 9.770*** | 10.654*** | 10.483*** |
| | | (19.27) | (20.01) | (10.18) | (10.01) |
| *LNREITSECDIST* | - | -0.056*** | | -0.173*** | |
| | | (-3.33) | | (-4.08) | |
| *REITSECDUMMY* | - | | -0.187** | | -0.629*** |
| | | | (-2.18) | | (-3.14) |
| *LNTA* | + | 0.265*** | 0.261*** | 0.150 | 0.135 |
| | | (4.52) | (4.48) | (1.55) | (1.38) |
| *SQEMPLS* | + | 0.005*** | 0.005*** | 0.008*** | 0.008*** |
| | | (8.74) | (8.87) | (6.23) | (6.41) |
| *LEV* | + | -0.291 | -0.306 | 0.321 | 0.278 |
| | | (-1.17) | (-1.22) | (0.62) | (0.54) |
| *ROA* | - | 0.648 | 0.519 | -0.782 | -1.238 |
| | | (0.76) | (0.59) | (-0.48) | (-0.74) |
| *IO* | + | 1.079*** | 1.123*** | 2.204*** | 2.347*** |
| | | (3.93) | (4.11) | (4.55) | (4.89) |
| *INITIAL* | - | -0.357** | -0.342** | -1.349*** | -1.301*** |
| | | (-2.14) | (-2.06) | (-4.24) | (-4.09) |
| *BIG4* | + | 1.160*** | 1.166*** | 0.238 | 0.249 |
| | | (5.13) | (5.12) | (0.79) | (0.83) |
| *FOROPS* | + | 0.330*** | 0.350*** | 0.875*** | 0.927*** |
| | | (3.27) | (3.50) | (2.70) | (2.90) |
| *LOSS* | + | 0.174 | 0.175 | -0.085 | -0.084 |
| | | (1.42) | (1.43) | (-0.32) | (-0.32) |
| *REVGRO* | ? | -0.546* | -0.527* | 0.501** | 0.563** |
| | | (-1.79) | (-1.73) | (1.97) | (2.23) |

***(Continued…)***

***(Table 4 Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *BM* | - | -0.229** | -0.231** | -0.415* | -0.428* |
| | | (-1.98) | (-2.01) | (-1.63) | (-1.67) |
| *XDOPS* | + | -0.099 | -0.101 | -0.056 | -0.066 |
| | | (-1.09) | (-1.12) | (-0.26) | (-0.31) |
| *RESTATES* | + | 0.502*** | 0.495*** | -0.420 | -0.439 |
| | | (5.01) | (4.97) | (-1.46) | (-1.52) |
| *RET* | - | -0.087 | -0.081 | -0.098 | -0.081 |
| | | (-0.49) | (-0.45) | (-0.27) | (-0.22) |
| *LAG* | + | -0.001 | -0.002 | -0.002 | -0.003 |
| | | (-0.40) | (-0.49) | (-0.15) | (-0.26) |
| Protype | | YES | | | |
| Year | | YES | | | |
| N | | 1,482 | 1,482 | 1,482 | 1,482 |
| RSQ | | 34.92% | 34.85% | 19.30% | 19.13% |

***Note:*** OLS regression results on effects of distance between REIT firm and SEC on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between REIT firm and SEC offices and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm.
Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

The findings from Table 4 show that the coefficients on *LNREITSECDIST* and *REITSECDUMMY* are significantly negative. This confirms that REIT firms that are located closer to SEC offices pay more in audit fees than those that are farther away. This is because the SEC tends to investigate firms that are closer in proximity (Kedia and Rajgopal, 2011). Choi et al. (2010) suggest a strong positive relation between audit and audit quality. Therefore, REIT firms pay more to their auditor to maintain reporting quality and increase information transparency, which is consistent with the findings in Danielsen et al. (2009, 2014). We also find that REIT firms pay more to their auditor when they are large in size, have more employees and concentrated institutional ownership, use reputable Big 4 auditors, have foreign operations and restate their earnings other than accounting changes. The results also indicate that REIT firms that pay less to their auditor when their auditor's engagement is in the initial two years and these firms have higher BM and revenue growth.

The last two columns in Table 4 report that coefficients on *LNREITSECDIST* and *REITSECDUMMY* are significantly negative. This shows that REIT firms that are located farther away from the SEC offices pay less non-audit fees than

those in closer proximity. One possible explanation is that REIT firms that are located farther away from the SEC do not want to be punished more for information asymmetry associated with purchasing non-audit services. These firms want to mitigate the negative perception of misreporting by reducing investment in non-audit fees. We also find that REIT firms pay more non-audit fees when they have more employees, more concentrated institutional ownership, foreign operations and positive revenue growth. The results also indicate that REIT firms pay less non-audit fees when their auditor's engagement is in the initial two years and when they have a higher BM.

Table 5 presents the OLS regression results from different model specifications from Equations (1) and (2) to test H4. Table 5 shows that, in general, the distance between the auditors of the REIT firms and the nearest SEC office are negatively related to audit and non-audit fees paid by the REIT firms. Both distance measures in the regressions are significantly negative.

**Table 5 Audit Fees, Non-Audit Fees, and Distance between Auditors and SEC Offices (OLS)**

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 9.634*** | 9.677*** | 10.272*** | 10.363*** |
| | | (19.08) | (18.71) | (10.00) | (10.24) |
| *LNAUDITSECDIST* | - | -0.026* | | -0.134*** | |
| | | (-1.86) | | (-3.91) | |
| *AUDITSECDUMMY* | - | | -0.202** | | -0.893*** |
| | | | (-2.27) | | (-5.09) |
| *LNTA* | + | 0.270*** | 0.272*** | 0.164* | 0.171* |
| | | (4.61) | (4.65) | (1.68) | (1.76) |
| *SQEMPLS* | + | 0.005*** | 0.005*** | 0.008*** | 0.007*** |
| | | (8.61) | (8.46) | (6.18) | (5.72) |
| *LEV* | + | -0.288 | -0.256 | 0.403 | 0.516 |
| | | (-1.18) | (-1.07) | (0.77) | (0.99) |
| *ROA* | - | 0.695 | 0.483 | -0.739 | -1.642 |
| | | (0.83) | (0.57) | (-0.46) | (-1.02) |
| *IO* | + | 1.076*** | 1.064*** | 2.154*** | 2.116*** |
| | | (3.92) | (3.95) | (4.42) | (4.39) |
| *INITIAL* | - | -0.361** | -0.370** | -1.374*** | -1.412** |
| | | (-2.17) | (-2.23) | (-4.33) | (-4.45) |
| *BIG4* | + | 1.186*** | 1.168*** | 0.300 | 0.229 |
| | | (5.17) | (5.05) | (1.00) | (0.76) |
| *FOROPS* | + | 0.368*** | 0.366*** | 0.930*** | 0.945*** |
| | | (3.70) | (3.73) | (2.89) | (2.93) |
| *LOSS* | + | 0.187 | 0.188 | -0.038 | -0.038 |
| | | (1.52) | (1.52) | (-0.14) | (-0.14) |
| *REVGRO* | ? | -0.535* | -0.538* | 0.523* | 0.513* |
| | | (-1.75) | (-1.76) | (2.07) | (2.01) |

***(Continued…)***

***(Table 5 Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *BM* | - | -0.209* | -0.203* | -0.365 | -0.333 |
| | | (-1.83) | (-1.80) | (-1.44) | (-1.32) |
| *XDOPS* | + | -0.093 | -0.094 | -0.032 | -0.037 |
| | | (-1.03) | (-1.03) | (-0.15) | (-0.97) |
| *RESTATES* | + | 0.492*** | 0.503*** | -0.427 | -0.385 |
| | | (4.92) | (4.99) | (-1.50) | (-1.34) |
| *RET* | - | -0.077 | -0.078 | -0.090 | -0.085 |
| | | (-0.44) | (-0.44) | (-0.25) | (-0.24) |
| *LAG* | + | -0.001 | -0.001 | -0.002 | -0.002 |
| | | (-0.38) | (-0.41) | (-0.21) | (-0.23) |
| Protype | | | YES | | |
| Year | | | YES | | |
| N | | 1,482 | 1,482 | 1,482 | 1,482 |
| RSQ | | 34.78% | 34.89% | 19.28% | 19.83% |

***Note:*** OLS regression results on effects of distance between auditors and SEC on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between auditors and SEC offices and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm.
Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

Our evidence from Table 6 indicates that auditors who are closer to the SEC may have regulatory information advantage over distant auditors (Kedia and Rajgopal, 2011). They charge higher audit fees due to informational advantage or are exposed to higher litigation risk in that they may be subject to more scrutiny from the SEC. Another possible explanation is that these auditors set up high audit fees to screen out low-quality clients for self-protection. This finding is consistent with DeFond et al. (2011) and Kedia and Rajgopal (2011). They find that auditors who are closer to an SEC regional office are more likely to issue going-concern reports because SEC offices are more likely to issue Accounting and Auditing Enforcement Releases. They attribute their findings to the reasoning that auditors who are in closer proximity to the SEC offices are likely to be both better informed about SEC enforcement, and more aware of the consequences of compromising their independence, relative to auditors who are farther away.

We find that REIT firms pay more in non-audit fees to an auditor who is closer to the SEC. We argue that they pay higher non-audit fees for the industry specialization of their auditor because the REIT industry is a unique and highly-regulated industry (Lim and Tan, 2008). Another possible explanation is that REIT firms have complex business activities. REIT firms may benefit from the

knowledge spillover[14] between the audit and non-audit sides of the auditors. All control variables have similar signs and significance level as indicated in Table 4.

Table 6 presents the OLS regression results from different model specifications from Equations (1) and (2) to test H5. Table 6 shows that, in general, the distance between REIT firms and their auditor are negatively related to audit and non-audit fees paid by the REIT firms. All distance measures in the regressions are significantly negative at the 1 percent level. The coefficients on the control variables show similar signs and significance levels comparable to those in previous tables.

**Table 6 Audit Fees, Non-Audit Fees, and the Distance between REIT Firms and Auditors (OLS)**

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 9.591*** | 9.911*** | 9.671*** | 10.225*** |
| | | (20.00) | (20.55) | (9.43) | (9.99) |
| *LNREITAUDITDIST* | ? | -0.080*** | | -0.091*** | |
| | | (-4.78) | | (-3.25) | |
| *REITAUDITDUMMY* | ? | | -0.516*** | | -0.824*** |
| | | | (-4.06) | | (-3.69) |
| *LNTA* | + | 0.274*** | 0.243*** | 0.174* | 0.126 |
| | | (4.71) | (4.13) | (1.79) | (1.28) |
| *SQEMPLS* | + | 0.005*** | 0.006*** | 0.007*** | 0.008*** |
| | | (8.87) | (9.46) | (5.85) | (6.53) |
| *LEV* | + | -0.400* | -0.417* | 0.135 | 0.073 |
| | | (-1.66) | (-1.72) | (0.26) | (0.14) |
| *ROA* | - | 0.998 | 0.749 | -0.187 | -0.471 |
| | | (1.17) | (0.88) | (-0.11) | (-0.29) |
| *IO* | + | 1.095*** | 1.187*** | 2.256*** | 2.402*** |
| | | (4.03) | (4.31) | (4.62) | (4.92) |
| *INITIAL* | - | -0.277* | -0.292* | -1.253*** | -1.241*** |
| | | (-1.67) | (-1.77) | (-3.95) | (-3.97) |
| *BIG4* | + | 1.217*** | 1.168*** | 0.372 | 0.305 |
| | | (5.35) | (5.20) | (1.22) | (1.01) |
| *FOROPS* | + | 0.312*** | 0.348*** | 0.993*** | 1.010*** |
| | | (3.06) | (3.52) | (3.06) | (3.15) |

***(Continued…)***

[14] Krishnan and Yu (2011) show that a significantly negative relation between audit and non-audit fees suggest that knowledge spillover flows between the audit and non-audit sides. In Section 4, we show that the audit fees and predicted non-audit fees are significantly negatively correlated in a two-stage regression analysis. This evidence indicates that the REIT auditors are likely to have knowledge spillover between their audit and non-audit sides.

***(Table 6 Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *LOSS* | + | 0.167 | 0.165 | -0.077 | -0.087 |
| | | (1.36) | (1.36) | (-0.29) | (-0.33) |
| *REVGRO* | ? | -0.554* | -0.554* | 0.529** | 0.517** |
| | | (-1.86) | (-1.84) | (2.11) | (2.07) |
| *BM* | - | -0.189* | -0.219* | -0.322 | -0.362 |
| | | (-1.69) | (-1.95) | (-1.24) | (-1.40) |
| *XDOPS* | + | -0.116 | -0.115 | -0.071 | -0.079 |
| | | (-1.29) | (-1.27) | (-0.34) | (-0.37) |
| *RESTATES* | + | 0.497*** | 0.500*** | -0.468* | -0.456 |
| | | (4.95) | (5.01) | (-1.63) | (-1.59) |
| *RET* | - | -0.050 | -0.055 | -0.012 | -0.013 |
| | | (-0.28) | (-0.31) | (-0.03) | (-0.04) |
| *LAG* | + | 0.001 | -0.001 | 0.002 | -0.001 |
| | | (0.36) | (-0.45) | (0.20) | (-0.09) |
| Protype | | YES | | | |
| Year | | YES | | | |
| N | | 1,482 | 1,482 | 1,482 | 1,482 |
| RSQ | | 35.70% | 35.60% | 19.00% | 19.36% |

***Note:*** OLS regression results on the effects of distance between REIT firms and auditor on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between REIT firm and office of their auditor and other control variables. We control for both property type and year fixed effects.

P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. T-values are reported in parentheses. Definition of variables can be found in the Appendix. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

The interesting results in this study contradict the findings in Jensen et al. (2015). We show that better audit quality outweighs reduced monitoring costs from information advantage in the REIT industry. Auditors who are closer to their REIT clients provide higher quality audit services, thus reducing the audit risks for the REIT firms. This finding is consistent with the results in Choi et al. (2012) in that local auditors develop information advantage from the business risks of their clients. They suggest that local auditors are better at monitoring their clients and mitigating opportunistic earnings management. Choi et al. (2010) document evidence that audit fees are significantly positively related to audit quality. Therefore, given the unusually high incentive for high quality audit services from REIT firms, it is reasonable to find that REIT firms are willing to pay higher audit fees to their local auditor.

### 4.4 Audit Fee Two-Stage Estimations

WSR (2003) indicated that audit and non-audit fees are jointly determined. They suggest that failure to control for the simultaneous determination of audit and non-audit fees leads to biased estimations. Therefore, to disentangle the interaction between audit and non-audit fees, we perform two-stage regression analyses. Table 7 reports the two-stage regression results on audit fees from Equation (3b) with non-audit fees as the endogenous variable. The instrumental variables are *LNTA, SQEMPLS, LEV, ROA, IO, INITIAL, BIG4, FOROPS, LOSS, REVGRO, BM, XDOPS, RESTATES* and *RET*. We control for both year fixed effects and property type in the regression analysis.

**Table 7 Audit Fees and Geographic Distance (2SLS, Non-Audit Fees as Endogenous Variable)**

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|
| *Intercept* | ? | 13.791*** | 13.355*** | 13.128*** |
| | | (12.99) | (13.13) | (13.59) |
| *LNREITSECDIST* | - | -0.120*** | | |
| | | (-5.30) | | |
| *LNAUDITSECDIST* | - | | -0.075*** | |
| | | | (-3.88) | |
| *LNREITAUDITDIST* | ? | | | -0.114*** |
| | | | | (-6.66) |
| $LNNAF^{P}$ | ? | -0.370*** | -0.362*** | -0.366*** |
| | | (-3.69) | (-3.68) | (-3.63) |
| *LNTA* | + | 0.321*** | 0.330*** | 0.338 |
| | | (5.14) | (5.26) | (5.37) |
| *SQEMPLS* | + | 0.008*** | 0.008*** | 0.008*** |
| | | (8.46) | (8.41) | (8.39) |
| *LEV* | + | -0.172 | -0.142 | -0.351 |
| | | (-0.68) | (-0.57) | (-1.45) |
| *ROA* | - | 0.358 | 0.427 | 0.930 |
| | | (0.42) | (0.51) | (1.09) |
| *IO* | + | 1.895*** | 1.856*** | 1.920*** |
| | | (5.77) | (5.75) | (5.82) |
| *INITIAL* | - | -0.856*** | -0.858*** | -0.735*** |
| | | (-3.58) | (-3.59) | (-3.15) |
| *BIG4* | + | 1.248*** | 1.294*** | 1.353*** |
| | | (5.67) | (5.82) | (6.18) |
| *FOROPS* | + | 0.654*** | 0.705*** | 0.676*** |
| | | (4.96) | (5.38) | (4.77) |
| *LOSS* | + | 0.143 | 0.173 | 0.138 |
| | | (1.15) | (1.40) | (1.12) |

***(Continued…)***

***(Table 7 Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|
| *REVGRO* | ? | -0.361 | -0.345 | -0.360 |
| | | (-1.14) | (-1.09) | (-1.16) |
| *BM* | - | -0.382*** | -0.341*** | -0.307*** |
| | | (-3.28) | (-2.99) | (-2.73) |
| *XDOPS* | + | -0.120 | -0.105 | -0.142 |
| | | (-1.31) | (-1.16) | (-1.58) |
| *RESTATES* | + | 0.346*** | 0.337*** | 0.326*** |
| | | (3.13) | (3.06) | (2.87) |
| *RET* | - | -0.124 | -0.110 | -0.054 |
| | | (-0.71) | (-0.63) | (-0.31) |
| *LAG* | + | -0.002 | -0.002 | 0.002 |
| | | (-0.58) | (-0.63) | (0.61) |
| Protype | | | YES | |
| Year | | | YES | |
| N | | 1,482 | 1,482 | 1,482 |
| RSQ | | 34.92% | 35.79% | 35.70% |

***Note:*** 2SLS regression results on audit fees from the second-stage regression (Equation (3b)). In the first-stage regression, we regress LNNAF onto the exogenous fee determinants. The fitted value of LNNAF, which is independent of the error term, is used as an instrumental variable in the second stage. We control for both property type and year fixed effects in the second stage.
P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. T-values are reported in parentheses. Definition of variables can be found in the Appendix. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance

Table 7 shows that the coefficients on *LNREITSECDIST*, *LNAUDITSECDIST* and *LNREITAUDITDIST* are -0.120, -0.075 and -0.114, respectively, which are statistically and significantly negative. Our result confirms our prediction and is consistent with our previous findings from the OLS regressions. We also find that the coefficients on $LNNAF^{p}$ are significantly negative at the 1 percent level after estimating simultaneously the audit and non-audit fee equations. The evidence is consistent with non-audit fees having a direct influence on the determination of audit fees. This evidence indicates that the REIT auditors are likely to have knowledge spillover between their audit and non-audit sides.

Table 8 reports the two-stage regression results on non-audit fees from Equation (4b) with audit fees as the endogenous variable. The instrumental variables are *LNTA, SQEMPLS, LEV, ROA, IO, INITIAL, BIG4, FOROPS, LOSS, REVGRO,*

*BM*, *XDOPS*, *RESTATES*, *RET*, and *LAG*. We control for year fixed effects and property type in the regression analysis.

Table 8 shows that the coefficients on *LNREITSECDIST*, *LNAUDITSECDIST* and *LNREITAUDITDIST* are -0.323, -0.206 and -0.311, respectively, which are significantly negative at the 1 percent level. Our result confirms our prediction and is consistent with our previous findings from the OLS regressions. We also find that the coefficients on $LNAUDIT^{P}$ are significantly negative at the 1 percent level after estimating simultaneously the audit and non-audit fee equations. The evidence is consistent with audit fees having a direct influence on the determination of non-audit fees.

**Table 8 Non-Audit Fees and Geographic Distance (2SLS, Audit Fees as Endogenous Variable)**

| Variable | Predicted Sign | *LNNAF* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|
| *Intercept* | ? | 37.256*** | 36.867*** | 35.895*** |
| | | (6.61) | (6.66) | (6.45) |
| *LNREITSECDIST* | - | -0.323*** | | |
| | | (-6.15) | | |
| *LNAUDITSECDIST* | - | | -0.206*** | |
| | | | (-5.46) | |
| *LNREITAUDITDIST* | ? | | | -0.311*** |
| | | | | (-5.53) |
| $LNAUDIT^{P}$ | ? | -2.701*** | -2.761*** | -2.734*** |
| | | (-4.76) | (-4.84) | (-4.74) |
| *LNTA* | + | 0.866*** | 0.910*** | 0.924*** |
| | | (4.68) | (4.82) | (4.79) |
| *SQEMPLS* | + | 0.022*** | 0.022*** | 0.021*** |
| | | (6.67) | (6.75) | (6.55) |
| *LEV* | + | -0.465 | -0.391 | -0.959* |
| | | (-0.84) | (-0.70) | (-1.63) |
| *ROA* | - | 0.967 | 1.179 | 2.543 |
| | | (0.58) | (0.70) | (1.43) |
| *IO* | + | 5.118*** | 5.124*** | 5.249*** |
| | | (6.03) | (6.03) | (6.04) |
| *INITIAL* | - | -2.312*** | -2.370*** | -2.010*** |
| | | (-6.59) | (-6.73) | (-6.05) |
| *BIG4* | + | 3.372*** | 3.573*** | 3.699*** |
| | | (4.67) | (4.85) | (4.85) |
| *FOROPS* | + | 1.766*** | 1.945*** | 1.847*** |
| | | (4.57) | (4.90) | (4.85) |
| *LOSS* | + | 0.386 | 0.477 | 0.378 |
| | | (1.29) | (1.57) | (1.27) |

***(Continued…)***

***(Table 8 Continued)***

| Variable | Predicted Sign | *LNNAF* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|
| *REVGRO* | ? | -0.975** | -0.954** | -0.985** |
| | | (-2.36) | (-2.33) | (-2.35) |
| *BM* | - | -1.032*** | -0.941*** | -0.839*** |
| | | (-3.40) | (-3.17) | (-2.82) |
| *XDOPS* | + | -0.323 | -0.290 | -0.387* |
| | | (-1.54) | (-1.38) | (-1.84) |
| *RESTATES* | + | 0.935** | 0.930** | 0.891** |
| | | (2.36) | (2.38) | (2.24) |
| *RET* | - | -0.334 | -0.303 | -0.149 |
| | | (-0.89) | (-0.81) | (-0.40) |
| Protype | | | YES | |
| Year | | | YES | |
| N | | 1,482 | 1,482 | 1,482 |
| RSQ | | 19.30% | 19.28% | 19.00% |

***Note:*** 2SLS regression results on non-audit fees from the second-stage regression (Equation (4b)). In the first-stage regression, we regress LNAUDIT onto the exogenous fee determinants. The fitted value of LNAUDIT, which is independent of the error term, is used as an instrumental variable in the second stage regression. We control for both property type and year fixed effects in the second stage. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm.
Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

### 4.5 Robustness Checks

#### 4.5.1 Grouping by Distance

Thus far, we have used three distances in our empirical analysis: distance between REIT firms and the SEC, distance between auditors and the SEC, as well as distance between REIT firms and auditors. The following analysis intends to examine how the two distances that concern REIT firms (i.e. distance between REIT firms and the SEC, and distance between REIT firms and their auditor) interact with each other, and their effects on the audit and non-audit fees. We create dummy variables to classify REIT firms into the distance quadrant so that our empirical analysis is straightforward, as shown in Table 9.

*D1* is a dummy variable that is equal to 1 if the distance between a REIT firm and the SEC is less than 28 miles and the distance between a REIT firm and its auditor is less than 28 miles, and 0 otherwise. *D2* is a dummy variable that is equal to 1 if the distance between a REIT firm and the SEC is less than 28 miles and the distance between a REIT firm and its auditor is greater or equal to 28

miles, and 0 otherwise. *D3* is a dummy variable that is equal to 1 if the distance between a REIT firm and the SEC is greater than or equal to 28 miles and the distance between a REIT firm and its auditor is less than 28 miles, and 0 otherwise. *D4* is a dummy variable that is equal to 1 if the distance between a REIT firm and the SEC is greater than or equal to 28 miles and the distance between a REIT firm and its auditor is greater than or equal to 28 miles, and 0 otherwise.

**Table 9 Illustration of Distance Quadrant**

| REIT Firm Distance Quadrant | | | |
|---|---|---|---|
| | From Auditor | | |
| From the SEC | <28 miles | <28 miles<br>D1 (N=720) | >=28 miles<br>D2 (N=53) |
| | >=28 miles | D3 (N=419) | D4 (N=290) |

***Note:*** Definitions of four dummy variables (D1, D2, D3, and D4). D1 is a dummy variable that is equal to 1 if the distance between REIT firms and the SEC is less than 28 miles and the distance between REIT firms and their auditor is less than 28 miles, and 0 otherwise. D2 is a dummy variable that equal to 1 if the distance between REIT firms and the SEC is less than 28 miles and the distance between REIT firms and their auditor is greater than or equal to 28 miles, and 0 otherwise. D3 is a dummy variable that is equal to 1 if the distance between REIT firms and the SEC is greater than or equal to 28 miles and the distance between REIT firms and their auditor is less than 28 miles, and 0 otherwise. D4 is a dummy variable that is equal to 1 if the distance between REIT firms and the SEC is greater than or equal to 28 miles and the distance between REIT firms and their auditor is greater than or equal to 28 miles, and 0 otherwise.

Table 10 reports the results when the dummy variables are included in the regressions. The REIT firms in the *D4* quadrant (i.e. those that are farther away from both the SEC and their auditor) are the reference case. The coefficient on *D1* in the regression on audit fees is 0.601, which is significantly positive at the 1 percent level, thus indicating that auditors charge the highest audit fees to REIT clients when they are located within a 28 mile radius from the SEC offices and their auditor. When *D1*, *D2* and *D3* are included, the coefficient on D1 in the regression of non-audit fees is 1.093, which is significantly positive at the 1 percent level, thus indicating that non-audit fees are the highest when the REIT firms are located within a 28 mile radius from the SEC offices and their auditor as well.

### 4.5.2 Grouping by BM

Table 11 presents the OLS regression results on the effects of high versus low BM and distance variables on audit fees. The dependent variables are audit fees. The independent variables are the distance variables among the REIT firms, their auditor office and their relevant distance to the SEC and other control

variables. We separate our sample into high and low BM groups based on the median value of the distribution of the BM in each year. We control for both property type and year fixed effects. Panel A presents the OLS regression results on the effects of the high BM subgroup and distance variable on audit fees. Only *LNREITAUDITDIST* has a marginally and significantly negative coefficient, which indicates that greater distance means lower audit fees. Panel B presents the OLS regression results on the effects of the low BM subgroup and distance variables on audit fees. All of the distance variables other than *AUDITSECDUMMY* have significantly negative coefficients in all six regressions. These results indicate that higher growth firms (low BM subgroup) have higher incentive for higher market transparency through quality audit services.

**Table 10 Audit Fees, Non-Audit Fees, and Geographic Distance Dummies (OLS)**

| Variable | Predicted Sign | *LNAUDIT* | *LNNAF* |
|---|---|---|---|
| *Intercept* | ? | 9.263*** | 9.599*** |
| | | (18.96) | (9.29) |
| *D1* | ? | 0.601*** | 1.093*** |
| | | (3.91) | (4.22) |
| *D2* | ? | 0.745*** | 0.564 |
| | | (3.85) | (1.07) |
| *D3* | ? | 0.699*** | 0.697** |
| | | (4.43) | (2.54) |
| *LNTA* | + | 0.238*** | 0.110 |
| | | (4.08) | (1.12) |
| *SQEMPLS* | + | 0.006*** | 0.008*** |
| | | (9.86) | (6.79) |
| *LEV* | + | -0.375 | 0.147 |
| | | (-1.51) | (0.28) |
| *ROA* | - | 0.711 | -0.983 |
| | | (0.80) | (-0.59) |
| *IO* | + | 1.182*** | 2.431*** |
| | | (4.33) | (5.02) |
| *INITIAL* | - | -0.267* | -1.230*** |
| | | (-1.63) | (-3.89) |
| *BIG4* | + | 1.155*** | 0.246 |
| | | (5.13) | (0.82) |
| *FOROPS* | + | 0.369*** | 0.921*** |
| | | (3.69) | (2.88) |
| *LOSS* | + | 0.157 | -0.099 |
| | | (1.30) | (-0.38) |
| *REVGRO* | ? | -0.562* | 0.526** |
| | | (-1.89) | (2.10) |

***(Continued…)***

***(Table 10 Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNNAF* |
|---|---|---|---|
| *BM* | - | -0.224** | -0.418 |
| | | (-1.96) | (-1.62) |
| *XDOPS* | + | -0.139 | -0.088 |
| | | (-1.53) | (-0.42) |
| *RESTATES* | + | 0.514*** | -0.427 |
| | | (5.13) | (-1.48) |
| *RET* | - | -0.060 | -0.051 |
| | | (-0.34) | (-0.14) |
| *LAG* | + | -0.001 | -0.003 |
| | | (-0.50) | (-0.25) |
| Protype | | YES | |
| Year | | YES | |
| N | | 1,482 | 1,482 |
| RSQ | | 35.96% | 19.59% |

***Note:*** OLS regression results on audit and non-audit fees including dummy variables of distance between REIT firms and their auditor and the distance between REIT firms and SEC offices. D1, D2, and D3 are defined in Table 9. D4 (i.e. a REIT firm is at least 28 miles away from the SEC and its auditor) is the reference case in the regression. We control for both property type and year fixed effects in the regressions.

P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

### 4.5.3 Subperiod Analysis

Both the Sarbanes-Oxley and Dodd-Frank increase the importance of financial transparency and accuracy in financial reporting. Table 12 provides a sub-period analysis. We include two dummy variables: *SOX* and *DODD*. SOX is 1 if the fiscal year-end is after July 30$^{th}$ 2002, and 0 otherwise. *DODD* is 1 if the fiscal year-end is after July 21$^{st}$ 2010, and 0 otherwise. The results in Table 12 show statistically significant negative coefficients on all distance variables, which is consistent with previous findings. We find insignificant coefficients on SOX but statistically significant coefficients on DOSS in all six regressions. These indicate that post-Dodd-Frank regulation period, the audit fees are significantly higher than the pre-Dodd-Frank period.

**Table 11 Subgroup Analysis of High and Low BM**

**Panel A High BM Group**

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *Intercept* | 9.070*** | 9.187*** | 9.136*** | 9.212*** | 9.170*** | 9.264*** |
| | (23.66) | (24.73) | (22.83) | (21.46) | (24.22) | (24.55) |
| *LNREITSECDIST* | 0.013 | | | | | |
| | (0.69) | | | | | |
| *REITSECDUMMY* | | -0.016 | | | | |
| | | (-0.16) | | | | |
| *LNAUDITSECDIST* | | | 0.004 | | | |
| | | | (0.28) | | | |
| *AUDITSECDUMMY* | | | | -0.035 | | |
| | | | | (-0.42) | | |
| *LNREITAUDITDIST* | | | | | -0.012* | |
| | | | | | (-1.87) | |
| *REITAUDITDUMMY* | | | | | | -0.163 |
| | | | | | | (-1.43) |
| *LNTA* | 0.354*** | 0.351*** | 0.352*** | 0.351*** | 0.351*** | 0.342*** |
| | (5.70) | (5.63) | (5.62) | (5.56) | (5.62) | (5.32) |
| *SQEMPLS* | 0.004*** | 0.004*** | 0.004*** | 0.004*** | 0.004*** | 0.005*** |
| | (7.24) | (7.29) | (7.23) | (7.24) | (7.33) | (7.40) |
| *LEV* | -0.062 | -0.043 | -0.051 | -0.040 | -0.053 | -0.068 |
| | (-0.31) | (-0.21) | (-0.27) | (-0.21) | (-0.28) | (-0.37) |
| *ROA* | 0.736 | 0.638 | 0.687 | 0.607 | 0.696 | 0.653 |
| | (1.22) | (0.97) | (1.17) | (1.00) | (1.20) | (1.13) |

***(Continued…)***

***(Panel A Continued)***

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *IO* | 0.841** | 0.833** | 0.841** | 0.824*** | 0.832** | 0.881*** |
| | (2.57) | (2.58) | (2.53) | (2.59) | (2.58) | (2.59) |
| *INITIAL* | -0.461** | -0.461** | -0.460** | -0.464** | -0.448** | -0.450** |
| | (-2.02) | (-2.01) | (-2.02) | (-2.05) | (-1.97) | (-1.97) |
| *BIG4* | 0.416** | 0.409* | 0.411** | 0.412** | 0.420** | 0.405** |
| | (2.02) | (1.96) | (2.00) | (2.01) | (2.05) | (1.97) |
| *FOROPS* | 0.363*** | 0.347*** | 0.355*** | 0.345*** | 0.340*** | 0.338*** |
| | (4.30) | (4.29) | (4.10) | (4.10) | (4.13) | (4.22) |
| *LOSS* | 0.019 | 0.021 | 0.019 | 0.026 | 0.018 | 0.025 |
| | (0.20) | (0.23) | (0.21) | (0.29) | (0.19) | (0.27) |
| *REVGRO* | 0.143 | 0.135 | 0.138 | 0.132 | 0.124 | 0.132 |
| | (0.97) | (0.94) | (0.95) | (0.94) | (0.87) | (0.92) |
| *XDOPS* | -0.020 | -0.024 | -0.023 | -0.025 | -0.025 | -0.034 |
| | (-0.23) | (-0.29) | (-0.27) | (-0.28) | (-0.29) | (-0.40) |
| *RESTATES* | 0.360*** | 0.363*** | 0.362*** | 0.364*** | 0.365*** | 0.371*** |
| | (3.00) | (3.05) | (2.97) | (3.01) | (2.98) | (3.06) |
| *RET* | 0.166 | 0.153 | 0.157 | 0.151 | 0.154 | 0.150 |
| | (0.78) | (0.72) | (0.76) | (0.74) | (0.74) | (0.72) |
| *LAG* | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 |
| | (-0.92) | (-1.01) | (-0.98) | (-1.01) | (-0.93) | (-1.01) |
| Protype | | | YES | | | |
| Year | | | YES | | | |
| N | 744 | 744 | 744 | 744 | 744 | 744 |
| RSQ | 50.51% | 50.49% | 50.50% | 50.50% | 50.54% | 50.67% |

**Panel B Low BM Group**

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *Intercept* | 10.055*** | 9.869*** | 9.634*** | 9.542*** | 9.784*** | 10.181*** |
| | (12.78) | (12.80) | (12.09) | (11.92) | (12.58) | (12.85) |
| *LNREITSECDIST* | -0.135*** | | | | | |
| | (-4.28) | | | | | |
| *REITSECDUMMY* | | -0.396*** | | | | |
| | | (-2.97) | | | | |
| *LNAUDITSECDIST* | | | -0.060** | | | |
| | | | (-1.96) | | | |
| *AUDITSECDUMMY* | | | | -0.281 | | |
| | | | | (-1.59) | | |
| *LNREITAUDITDIST* | | | | | -0.183*** | |
| | | | | | (-4.57) | |
| *REITAUDITDUMMY* | | | | | | -0.846*** |
| | | | | | | (-3.86) |
| *LNTA* | 0.128 | 0.121 | 0.141 | 0.155 | 0.176* | 0.102 |
| | (1.29) | (1.24) | (1.41) | (1.55) | (1.78) | (1.01) |
| *SQEMPLS* | 0.009*** | 0.009*** | 0.008*** | 0.008*** | 0.005*** | 0.008*** |
| | (5.02) | (5.36) | (4.95) | (5.01) | (2.73) | (5.03) |
| *LEV* | -0.354 | -0.507 | -0.327 | -0.340 | -0.700 | -0.735 |
| | (-0.52) | (-0.75) | (-0.49) | (-0.52) | (-1.07) | (-1.11) |
| *ROA* | 3.090 | 2.409 | 2.161 | 1.789 | 3.316 | 2.705 |
| | (0.80) | (0.62) | (0.56) | (0.46) | (0.81) | (0.70) |
| *IO* | 0.987** | 1.073** | 0.979** | 0.945** | 1.001** | 1.068** |
| | (2.33) | (2.52) | (2.29) | (2.26) | (2.43) | (2.55) |
| *INITIAL* | -0.245 | -0.215 | -0.284 | -0.288 | -0.155 | -0.140 |
| | (-1.05) | (-0.93) | (-1.21) | (-1.22) | (-0.66) | (-0.60) |

***(Continued…)***

***(Panel B Continued)***

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *BIG4* | 1.976*** | 2.018*** | 2.033*** | 2.007*** | 1.987*** | 2.025*** |
| | (4.60) | (4.67) | (4.59) | (4.41) | (4.88) | (4.81) |
| *FOROPS* | 0.447** | 0.512** | 0.554** | 0.568*** | 0.429* | 0.557** |
| | (2.03) | (2.32) | (2.57) | (2.64) | (1.83) | (2.55) |
| *LOSS* | 0.263 | 0.263 | 0.297 | 0.285 | 0.274 | 0.222 |
| | (1.34) | (1.35) | (1.50) | (1.45) | (1.42) | (1.14) |
| *REVGRO* | -0.810** | -0.787** | -0.795** | -0.790** | -0.828** | -0.849** |
| | (-2.15) | (-2.08) | (-2.07) | (-2.06) | (-2.30) | (-2.30) |
| *XDOPS* | -0.117 | -0.120 | -0.123 | -0.114 | -0.218 | -0.162 |
| | (-0.75) | (-0.77) | (-0.79) | (-0.73) | (-1.41) | (-1.04) |
| *RESTATES* | 0.807*** | 0.776*** | 0.785*** | 0.778*** | 0.791*** | 0.767*** |
| | (4.18) | (4.06) | (4.08) | (4.07) | (4.15) | (4.08) |
| *RET* | -0.170 | -0.168 | -0.168 | -0.164 | -0.085 | -0.102 |
| | (-0.69) | (-0.67) | (-0.68) | (-0.66) | (-0.35) | (-0.41) |
| *LAG* | 0.003 | 0.003 | 0.003 | 0.006 | 0.005 | 0.002 |
| | (0.78) | (0.61) | (0.69) | (0.79) | (1.26) | (0.42) |
| Protype | YES | | | | | |
| Year | YES | | | | | |
| N | 738 | 738 | 738 | 738 | 738 | 738 |
| RSQ | 31.56% | 31.23% | 31.06% | 31.05% | 33.31% | 32.44% |

***Note:*** Panel A (Panel B) presents OLS regression results on the effects of high (low) BM subgroup and distance variables on audit fees. The dependent variable is audit fees. The independent variables are the distance variables among REIT firms, office of their auditor and their relevant distance to SEC and other control variables. We separate our sample into high and low BM groups based on the median value of BM distribution in each year. High (Low) BM subgroup only include firm years with a high (low) BM, and with low BM respectively. We control for both property type and year fixed effects.

P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

**Table 12 Subgroup Analysis by Including SOX and Dodd-Frank Dummies**

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *Intercept* | 9.740*** | 9.669*** | 9.533*** | 9.571*** | 9.501*** | 9.812*** |
| | (19.19) | (19.93) | (19.00) | (18.57) | (20.01) | (20.05) |
| *LNREITSECDIST* | -0.053*** | | | | | |
| | (-3.07) | | | | | |
| *REITSECDUMMY* | | -0.178** | | | | |
| | | (-2.04) | | | | |
| *LNAUDITSECDIST* | | | -0.024* | | | |
| | | | (-1.63) | | | |
| *AUDITSECDUMMY* | | | | -0.184** | | |
| | | | | (-1.99) | | |
| *LNREITAUDITDIST* | | | | | -0.079*** | |
| | | | | | (-4.68) | |
| *REITAUDITDUMMY* | | | | | | -0.505*** |
| | | | | | | (-3.92) |
| *LNTA* | 0.270*** | 0.266*** | 0.275*** | 0.276*** | 0.278*** | 0.248*** |
| | (4.66) | (4.62) | (4.76) | (4.79) | (4.84) | (4.27) |
| *SQEMPLS* | 0.005*** | 0.005*** | 0.006*** | 0.005*** | 0.005*** | 0.005*** |
| | (8.12) | (8.23) | (8.04) | (7.90) | (8.21) | (8.69) |
| *LEV* | -0.243 | -0.257 | -0.243 | -0.215 | -0.346 | -0.362 |
| | (-0.97) | (-1.02) | (-0.98) | (-0.89) | (-1.43) | (-1.47) |

***(Continued…)***

***(Table 12 Continued)***

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *ROA* | 0.435 | 0.313 | 0.490 | 0.301 | 0.775 | 0.523 |
| | (0.51) | (0.35) | (0.57) | (0.35) | (0.90) | (0.61) |
| *IO* | 1.147*** | 1.187*** | 1.141*** | 1.129*** | 1.173*** | 1.262*** |
| | (4.57) | (4.77) | (4.54) | (4.58) | (4.74) | (5.00) |
| *INITIAL* | -0.380** | -0.367** | -0.383** | -0.391** | -0.305* | -0.319* |
| | (-2.27) | (-2.19) | (-2.28) | (-2.33) | (-1.82) | (-1.91) |
| *BIG4* | 1.162*** | 1.167*** | 1.187*** | 1.171*** | 1.213*** | 1.166*** |
| | (5.13) | (5.13) | (5.18) | (5.06) | (5.34) | (5.20) |
| *FOROPS* | 0.338*** | 0.358*** | 0.376*** | 0.374*** | 0.318*** | 0.354*** |
| | (3.38) | (3.59) | (3.83) | (3.86) | (3.14) | (3.61) |
| *LOSS* | 0.166 | 0.166 | 0.178 | 0.179 | 0.158 | 0.156 |
| | (1.33) | (1.34) | (1.43) | (1.43) | (1.28) | (1.27) |
| *REVGRO* | -0.506* | -0.488* | -0.494* | -0.495* | -0.515* | -0.515* |
| | (-1.68) | (-1.63) | (-1.64) | (-1.64) | (-1.79) | (-1.74) |
| *BM* | -0.235** | -0.237** | -0.218* | -0.214* | -0.197* | -0.225** |
| | (-2.08) | (-2.10) | (-1.95) | (-1.93) | (-1.79) | (-2.04) |
| *XDOPS* | -0.087 | -0.090 | -0.081 | -0.081 | -0.104 | -0.103 |
| | (-0.92) | (-0.95) | (-0.86) | (-0.86) | (-1.12) | (-1.11) |
| *RESTATES* | 0.340*** | 0.334*** | 0.332*** | 0.341*** | 0.335*** | 0.336*** |
| | (3.66) | (3.62) | (3.57) | (3.62) | (3.59) | (3.61) |

***(Continued…)***

***(Table 12 Continued)***

| Variable | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* | *LNAUDIT* |
|---|---|---|---|---|---|---|
| *RET* | -0.172 | -0.168 | -0.162 | -0.161 | -0.146 | -0.149 |
| | (-1.38) | (-1.35) | (-1.30) | (-1.30) | (-1.18) | (-1.20) |
| *LAG* | -0.000 | -0.000 | -0.000 | -0.000 | 0.002 | -0.000 |
| | (-0.03) | (-0.13) | (-0.00) | (-0.03) | (0.72) | (-0.06) |
| *SOX* | 0.147 | 0.145 | 0.143 | 0.145 | 0.123 | 0.136 |
| | (0.96) | (0.94) | (0.93) | (0.94) | (0.79) | (0.88) |
| *DODD* | 0.192** | 0.195** | 0.191** | 0.187** | 0.207** | 0.210*** |
| | (2.35) | (2.38) | (2.35) | (2.32) | (2.55) | (2.59) |
| Protype | | | YES | | | |
| N | 1,482 | 1,482 | 1,482 | 1,482 | 1,482 | 1,482 |
| RSQ | 33.76% | 33.69% | 33.62% | 33.71% | 34.53% | 34.42% |

***Note:*** OLS regression results on the effects of regulation reforms on audit fees in REIT firms. Dependent variables are audit fees. Independent variables are the distance variables among REIT firms, office of their auditor and their relevant distance to SEC and other control variables. We separate our sample into pre SOX (before July 30th 2002) and post SOX (after July 30th 2002), and pre Dodd-Frank (before July 21st 2010 and post Dodd-Frank (after July 21st 2010) periods. We control for property type fixed effects.

P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

### 4.5.4 Controlling for Cost of living

As we observe from the locations of the SEC cities and many auditor offices, it is reasonable to infer that the fees charged by the auditors can be influenced by the cost of living in the local areas. Thus, in this section, we control for the cost of living in our analysis to see if our main results still hold. We create a proxy variable for cost of living at the MSA level. We obtain data from the American Community Surveys (ACS) for the period of 2005 to 2013. For each year, we calculate the ratio between median home price and median household income for each MSA. A higher ratio indicates higher costs of living in that metropolitan area. Next, we rank the ratios for all the MSAs each year and identify MSAs with high costs of living as the top 40[15] MSAs with high home-to-income ratios. Then, we manually search the MSAs in which the cities of the auditor offices are located and create a dummy variable (TOP40) that is equal to 1 if the auditor city is located in the MSA with a high cost-of-living, and 0 otherwise.

We reexamine the results from Tables 4, 5, and 6 with the inclusion of the TOP40 dummy variable. Since the TOP40 variable starts at 2005, we conduct the regression analysis by using the sub period sample from 2005 to 2013. Tables 13A, 13B, and 13C report the results after we control for cost of living.

From the results reported in Table 13 (A, B, and C), we can see that our main results remain significantly consistent with the findings in Tables 4 to 6. As we expected, the level of cost of living does have effects on the audit and non-audit fees charged by the auditors. However, even after controlling for this factor, our distance variables remain negative and significant.

## 5. Conclusion

In this research, we examine the geographic component of investment in audit services in the REIT industry. Geographic distance has been well recognized as a proxy for information asymmetry in the recent literature (see, for example, Coval and Moskowitz 2001, Ivkovic and Weisbenner 2005, Malloy (2005), Imazeki and Gallimore 2009, Becker et al. 2011, and John et al. 2011). Recently, several studies have focused on the distance between REIT firms and the SEC (Kedia and Rajgopal 2011), auditors and the SEC (DeFond et al., 2011), and firms and auditors (Choi et al., 2012). Our research incorporates all three distances in an empirical analysis and examines the impacts of geographic effects on the audit and non-audit fees paid by REIT firms.

[15] On average, there are about 360-380 MSAs in the U.S. Top 40 is an arbitrary selection for approximately the top 10 percentile of all the MSAs in the U.S.

After we control for audit fee determinants as suggested by WSR (2003), our empirical results are as follows. First, we find that REIT firms pay more audit and non-audit fees to their auditor when the headquarters of the REIT firms are located closer to the SEC offices. Second, we show that REIT firms pay higher audit and non-audit fees when the office of their auditor is closer to the SEC. Third, we show that REIT firms pay higher audit and non-audit fees the office of their auditor is located closer to their headquarters. Fourth, we show that REIT firms that are located within a 28-mile radius of both the SEC and their auditor pay the highest fees in both audit and non-audit services.

**Table 13 Controlling for Cost of Living: Audit Fees, Non-Audit Fees, and Distance**

***Panel A*** *Controlling for Cost of Living: Audit Fees, Non-Audit Fees, and Distance between REIT Firms and SEC Offices*

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 11.578*** | 11.294*** | 9.820*** | 9.138*** |
| | | (15.50) | (15.89) | (5.13) | (4.79) |
| *LNREITSECDIST* | - | -0.050*** | | -0.295*** | |
| | | (-2.61) | | (-4.69) | |
| *REITSECDUMMY* | - | | 0.0322 | | -0.811*** |
| | | | (0.37) | | (-2.74) |
| ***TOP40*** | + | 0.145 | 0.190* | 0.414 | 0.504* |
| | | (1.33) | (1.74) | (1.49) | (1.84) |
| *LNTA* | + | 0.016 | 0.025 | 0.328** | 0.362** |
| | | (0.16) | (0.26) | (1.99) | (2.18) |
| *SQEMPLS* | + | 0.014*** | 0.013*** | 0.030*** | 0.028*** |
| | | (4.43) | (4.44) | (4.27) | (4.08) |
| *LEV* | + | -0.603** | -0.654** | -0.473 | -0.549 |
| | | (-1.99) | (-2.12) | (-0.54) | (-0.62) |
| *ROA* | - | -0.696 | -1.412 | -0.698 | -3.039 |
| | | (-0.28) | (-0.58) | (-0.12) | (-0.53) |
| *IO* | + | 1.649*** | 1.705*** | 1.884** | 2.099*** |
| | | (4.10) | (4.26) | (2.50) | (2.79) |
| *INITIAL* | - | -0.369 | -0.404 | -1.234** | -1.185** |
| | | (-1.38) | (-1.51) | (-2.42) | (-2.27) |
| *BIG4* | + | 0.538 | 0.574 | 0.828 | 0.933* |
| | | (1.29) | (1.37) | (1.48) | (1.67) |
| *FOROPS* | + | 0.276* | 0.337** | -0.157 | -0.054 |
| | | (1.73) | (2.12) | (-0.29) | (-0.10) |
| *LOSS* | + | 0.257* | 0.271* | -0.422 | -0.398 |
| | | (1.75) | (1.86) | (-1.14) | (-1.07) |
| *REVGRO* | ? | 0.310 | 0.322 | 0.006 | 0.138 |
| | | (1.49) | (1.54) | (0.01) | (0.24) |

***(Continued…)***

***(Panel A Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *BM* | - | -0.193 | -0.173 | -0.685** | -0.678* |
| | | (-1.37) | (-1.23) | (-2.01) | (-1.98) |
| *XDOPS* | + | -0.059 | -0.081 | -0.384 | -0.472 |
| | | (-0.76) | (-1.02) | (-1.22) | (-1.49) |
| *RESTATES* | + | 0.524*** | 0.514*** | -0.459 | -0.505 |
| | | (3.58) | (3.56) | (-0.99) | (-1.08) |
| *RET* | - | -0.070 | -0.051 | -0.314 | -0.284 |
| | | (-0.24) | (-0.81) | (-0.54) | (-0.48) |
| *LAG* | + | -0.009* | -0.009* | -0.014 | -0.016 |
| | | (-1.74) | (-1.69) | (-0.79) | (-0.90) |
| Protype | | | YES | | |
| Year | | | YES | | |
| N | | 1,112 | 1,112 | 1,112 | 1,112 |
| RSQ | | 35.39% | 35.21% | 20.65% | 19.74% |

***Note:*** OLS regression results on the effects of distance between REIT firms and SEC on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between REIT firms and SEC offices and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroscedasticity and clustered by firm. We use the ratio between median home value and median household income as a proxy for cost of living at MSA level. TOP40 is equal to 1 if the auditor city is located in the top 40 MSAs with highest cost-of-living, and 0 otherwise.

Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

***Panel B*** *Controlling for Cost of Living: Audit Fees, Non-Audit Fees, and the Distance between Auditors and SEC Offices*

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 10.571*** | 10.662*** | 9.330*** | 9.562*** |
| | | (18.12) | (17.63) | (6.19) | (6.49) |
| *LNAUDITSECDIST* | - | -0.037** | | -0.095** | |
| | | (-2.37) | | (-2.08) | |
| *AUDITSECDUMMY* | - | | -0.315*** | | -0.808*** |
| | | | (-3.19) | | (-3.39) |
| ***TOP40*** | + | -0.117 | -0.168 | 0.504* | 0.372 |
| | | (-0.95) | (-1.45) | (1.87) | (1.38) |
| *LNTA* | + | 0.216*** | 0.222*** | 0.116 | 0.131 |
| | | (2.86) | (2.97) | (0.92) | (1.05) |

***(Continued…)***

***(Panel B Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *SQEMPLS* | + | 0.005*** | 0.005*** | 0.008*** | 0.008*** |
| | | (8.48) | (8.28) | (4.95) | (4.72) |
| *LEV* | + | -0.368 | -0.339 | 0.541 | 0.614 |
| | | (-1.32) | (-1.23) | (0.77) | (0.88) |
| *ROA* | - | 0.985 | 0.700 | -1.174 | -1.905 |
| | | (0.95) | (0.67) | (-0.59) | (-0.97) |
| *IO* | + | 1.177*** | 1.149*** | 2.633*** | 2.561*** |
| | | (3.51) | (3.51) | (3.94) | (3.87) |
| *INITIAL* | - | -0.438** | -0.445** | -1.602*** | -1.621*** |
| | | (-1.93) | (-1.96) | (-3.78) | (3.82) |
| *BIG4* | + | 1.241*** | 1.209*** | -0.143 | -0.225 |
| | | (4.02) | (3.89) | (-0.35) | (-0.56) |
| *FOROPS* | + | 0.221** | 0.209* | 0.787** | 0.756* |
| | | (1.96) | (1.90) | (1.96) | (1.89) |
| *LOSS* | + | 0.172 | 0.165 | -0.031 | -0.051 |
| | | (1.17) | (1.12) | (-0.10) | (-0.16) |
| *REVGRO* | ? | -0.804* | -0.809* | 0.497 | 0.485 |
| | | (-1.85) | (-1.85) | (1.36) | (1.32) |
| *BM* | - | -0.195 | -0.192 | -0.354 | -0.346 |
| | | (-1.58) | (-1.57) | (-1.26) | (-1.23) |
| *XDOPS* | + | -0.079 | -0.077 | -0.037 | -0.033 |
| | | (-0.75) | (-0.74) | (-0.14) | (-0.12) |
| *RESTATES* | + | 0.561*** | 0.573*** | -0.441 | -0.409 |
| | | (4.38) | (4.44) | (-1.11) | (-1.02) |
| *RET* | - | -0.039 | -0.036 | 0.026 | 0.033 |
| | | (-0.17) | (-0.16) | (0.06) | (0.07) |
| *LAG* | + | -0.006 | -0.006 | -0.007 | -0.007 |
| | | (-1.39) | (-1.37) | (-0.44) | (-0.45) |
| Protype | | | YES | | |
| Year | | | YES | | |
| N | | 1,112 | 1,112 | 1,112 | 1,112 |
| RSQ | | 33.37% | 33.59% | 17.35% | 17.85% |

***Note:*** OLS regression results on the effects of distance between auditors and SEC on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between auditors and SEC offices and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. We use the ratio between median home value and median household income as a proxy for cost of living at MSA level. TOP40 is equal to 1 if the auditor city is located in the top 40 MSAs with highest cost-of-living, and 0 otherwise.

Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

***Panel C*** *Controlling for Cost of Living: Audit Fees, Non-Audit Fees, and Distance between REIT Firms and Auditors*

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *Intercept* | ? | 10.404*** | 10.812*** | 8.838*** | 9.255*** |
| | | (18.24) | (19.46) | (5.92) | (6.27) |
| *LNREITAUDITDIST* | ? | -0.086*** | | -0.106*** | |
| | | (-4.37) | | (-3.37) | |
| *REITAUDITDUMMY* | ? | | -0.587*** | | -0.612** |
| | | | (-3.87) | | (-2.28) |
| ***TOP40*** | + | 0.003 | -0.033 | 0.746*** | 0.699*** |
| | | (0.02) | (-0.27) | (2.94) | (2.77) |
| *LNTA* | + | 0.218*** | 0.186** | 0.119 | 0.085 |
| | | (2.90) | (2.45) | (0.95) | (0.67) |
| *SQEMPLS* | + | 0.005*** | 0.006*** | 0.007*** | 0.008*** |
| | | (8.52) | (9.53) | (4.71) | (5.24) |
| *LEV* | + | -0.419 | -0.453 | 0.480 | 0.454 |
| | | (-1.52) | (-1.64) | (0.69) | (0.66) |
| *ROA* | - | 1.153 | 0.818 | -1.041 | -1.431 |
| | | (1.09) | (0.77) | (-0.51) | (-0.71) |
| *IO* | + | 1.204*** | 1.306*** | 2.709*** | 2.815*** |
| | | (3.66) | (3.88) | (4.06) | (4.22) |
| *INITIAL* | - | -0.362 | -0.343 | -1.501*** | -1.495*** |
| | | (1.60) | (-1.52) | (-3.51) | (-3.51) |
| *BIG4* | + | 1.273*** | 1.202*** | -0.077 | -0.153 |
| | | (4.17) | (4.00) | (-0.19) | (-0.38) |
| *FOROPS* | + | 0.206* | 0.242** | 0.835** | 0.884** |
| | | (1.79) | (2.16) | (2.09) | (2.22) |
| *LOSS* | + | 0.157 | 0.135 | -0.046 | -0.065 |
| | | (1.07) | (0.92) | (-0.15) | (-0.21) |
| *REVGRO* | ? | -0.814* | -0.826* | 0.488 | 0.478 |
| | | (-1.92) | (-1.92) | (1.35) | (1.32) |
| *BM* | - | -0.177 | -0.208* | -0.321 | -0.355 |
| | | (-1.46) | (-1.71) | (-1.13) | (-1.25) |
| *XDOPS* | + | -0.114 | -0.121 | -0.096 | -0.098 |
| | | (-1.11) | (-1.16) | (-0.36) | (-0.38) |
| *RESTATES* | + | 0.547*** | 0.561*** | -0.487 | -0.474 |
| | | (4.27) | (4.44) | (-1.22) | (-1.19) |
| *RET* | - | -0.027 | -0.037 | 0.054 | 0.044 |
| | | (-0.12) | (-0.17) | (0.12) | (0.10) |

***(Continued…)***

***(Panel C Continued)***

| Variable | Predicted Sign | *LNAUDIT* | *LNAUDIT* | *LNNAF* | *LNNAF* |
|---|---|---|---|---|---|
| *LAG* | + | -0.003 | -0.006 | -0.003 | -0.007 |
| | | (-0.77) | (-1.54) | (-0.18) | (-0.41) |
| Protype | | | YES | | |
| Year | | | YES | | |
| N | | 1,112 | 1,112 | 1,112 | 1,112 |
| RSQ | | 34.27% | 34.26% | 17.60% | 17.45% |

***Note:*** OLS regression results on the effects of distance between REIT firms and auditor on audit and non-audit fees. Dependent variables are audit fees or non-audit fees. Independent variables are the distance variables between REIT firm and office of their auditor and other control variables. We control for both property type and year fixed effects. P-values (in parentheses) are based on robust standard errors that are adjusted for heteroskedasticity and clustered by firm. We use the ratio between median home value and median household income as a proxy for cost of living at MSA level. TOP40 is equal to 1 if the auditor city is located in the top 40 MSAs with highest cost-of-living, and 0 otherwise.
Definition of variables can be found in the Appendix. T-values are reported in parentheses. *** indicates 1%-level of significance; ** indicates 5%-level of significance; and * indicates 10%-level of significance.

The results are consistent with our expectation that REIT firms desire high quality audit services and are willing to pay higher fees for them. Also, as a unique and highly regulated industry, the REIT industry may enjoy the knowledge spillovers between the audit and non-audit sides (Krishnan and Yu 2011) and/or the industry specialization of their auditors (Lim and Tan 2008). Our main results remain significant and robust even after we control for the effect of living costs in the auditor cities.

We also find that the growth potential of the REIT firms has a great impact on the audit fees that they pay. If a REIT firm has a higher BM (lower growth potential), the audit fees paid are insensitive to the geographic distance. However, if a REIT firm has a lower BM (higher growth potential), the fees are significantly sensitive to the geographic components. Additionally, we find that the Dodd-Frank Act has made all REIT firms pay more for their auditing and non-auditing services. Our future research efforts can extend to geographic proximity at the property-level and a cross-sectional analysis of REIT firm characteristics in auditor choice.

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## Appendix Variable Definition

| | |
|---|---|
| LNREITSECDIST and REITSECDUMMY | The distance is measured as the actual miles based on the longitude and latitude between office of the REIT firm and national/regional office of the SEC. We calculate the log transformation of the distance. LNREITSECDIST is the minimum distance between office of the REIT firm and national/regional office of the SEC. REITSECDUMMY is 1 if the minimum distance between office of the REIT firm and national/regional office of the SEC is greater than or equal to 28 miles; 0 otherwise. |
| LNAUDITSECDIST and AUDITSECDUMMY | The distance is measured as the actual miles based on the longitude and latitude between the auditor of the REIT firm and national/regional office of the SEC. We calculate the log transformation of the distance. LNAUDITSECDIST is the minimum distance between auditor of the REIT firm and national/regional office of the SEC . AUDITSECDUMMY is 1 if the minimum distance between auditor of the REIT firm and national/regional office of the SEC is greater than or equal to 28 miles; 0 otherwise. |
| LNREITAUDITDIST and REITAUDITDUMMY | The distance is measured as the actual miles based on the longitude and latitude between the office of the REIT firm and its auditor. We calculate the log transformation of the distance (LNREITAUDITDIST). REITAUDITDUMMY is 1 if the distance between office of the REIT firm and its auditor is greater than or equal to 28 miles; 0 otherwise. |
| D1 | The dummy variable is equal to 1 if the distance between the office of the REIT firm and SEC is less than 28 miles and the distance between the office of the REIT firm and its auditor is less than 28 miles; and 0 otherwise. |
| D2 | The dummy variable is equal to 1 if the distance between the office of the REIT firm and SEC is less than 28 miles and the distance between the office of the REIT firm and its auditor is greater than or equal to 28 miles; and 0 otherwise. |

*(Continued…)*

***(Appendix Continued)***

| | |
|---|---|
| D3 | The dummy variable is equal to 1 if the distance between the office of the REIT firm and SEC is greater than or equal to 28 miles and the distance between the office of the REIT firm and their auditor is less than 28 miles; and 0 otherwise. |
| D4 | The dummy variable is equal to 1 if the distance between office of the REIT firms and SEC is greater than or equal to 28 miles and the distance between office of the REIT firms and their auditor is greater than or equal to 28 miles as well; and 0 otherwise. |
| LNAUDIT | The log transformation of the audit fees |
| LNNAF | The log transformation of the non-audit fees |
| LNTA | The log transformation of total assets (TA) |
| SQEMPLS | The square root of the number of employees reported in 10-K |
| LEV | Total debt divided by total assets |
| ROA | Operating income after depreciation divided by total assets |
| IO | The percentage of institutional holdings at the beginning of the fiscal year |
| INITIAL | An indicator variable equal to one if the audit engagement is the initial two years; 0 otherwise. |
| BIG4 | An indicator variable equal to one when an auditor is a member of the Big 4; 0 otherwise. |
| FOROPS | An indicator variable equal to one if the REIT firm recorded a foreign sales amount or foreign income tax amount; 0 otherwise. |
| LOSS | An indicator variable equal to one if the REIT firm reports negative net income in either of the two previous fiscal years; 0 otherwise. |
| REVGRO | The growth rate in total revenue over the previous fiscal year |
| BM | The book-to market ratio |

***(Continued…)***

*(Appendix Continued)*

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|---|---|
| XDOPS | An indicator variable equal to one if the REIT firm reports extraordinary items or discontinued operation; 0 otherwise. |
| RESTATES | An indicator variable equal to one if the REIT firm restates earnings or assets for reasons other than accounting rule changes or adoption of new method; 0 otherwise. |
| RET | The stock return of a REIT firm over the current fiscal year including dividends |
| LAG | Reporting lag, defined as the number of days between fiscal year end and earnings announcement date |
| MKTSHAR | National industry expertise of auditor by auditor market share approach measured by the annual market share of audit fees of auditor within a two-digit SIC code. |
| SPREAD | The yearly average of daily bid-ask spread |
| PROTYPE | An indicator variable equal to one if the REIT firm is operating within a given property type sector, including office, retail, industrial, apartment, diversified and other properties; 0 otherwise. |
| TOP40 | Ratio between median home value and median household income as proxy for cost of living at MSA level. TOP40 is equal to 1 if the auditor city is located in the top 40 MSAs with highest cost-of-living; 0 otherwise. |