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The Effect of Firm Location on Earnings Quality

Steve A. Garner, Tennessee Tech University

Abstract

This study examines the effect of geographic factors on firms' earnings quality. Specifically, this research investigates whether and how earnings quality differs between remotely located firms and firms that are headquartered in large metropolitan areas. Prior research suggests that the geographic location of a firm's headquarters might be associated with a number of factors, including corporate dividend payout policy and regulatory enforcement from the SEC. This research finds that earnings quality of U.S. firms that are centrally located is higher than earnings quality of remotely located firms. Further, results from the study suggest that, across a wide range of measures, accounting data for remotely located firms show more evidence of earnings management, less evidence of timely loss recognition and a lower association with share price. This study contributes to accounting literature related to the influence of dispersed geography on earnings quality of U.S. firms. Results from this study could be valuable to investors, regulators, and other outsiders.

Introduction

My study examines the effect of geographic factors on firms' earnings quality. Specifically, I investigate whether and how earnings quality differs between remotely located firms and firms that are headquartered in large metropolitan areas.

Geographic location affects a broad set of economic behaviors. Recent research finds that closer geographic proximity between economic agents is generally associated with lower information asymmetry and lower monitoring costs (Ivkovic and Weisbenner 2005; Kedia and Rajgopal 2011). DeFond et al. (2011) shows that audit firms are less likely to issue a going concern audit report when the engagement office is farther away from an SEC regional office. John et al. (2011) investigates the impact of geography on corporate dividend behavior and finds that remotely located firms pay higher dividends. Studies have also found that geographical location affects audit quality (Choi et al. 2012; Lopez & Rich, 2017) and enforcement actions by the Securities and Exchange Commission (Kedia and Rajgopal, 2011). My study will contribute to this growing stream of literature by showing how geographic location affects earnings quality.

To investigate this question, I first divide firms into centrally located (e.g., headquartered in a large metropolitan area) and remotely located firms using Compustat to determine locations of corporate headquarters. Following Loughran and Schultz (2005), firms are classified as centrally located if they are headquartered in one of the ten largest metropolitan areas based on population size reported in the most recent U.S. census. I then examine whether centrally located firms exhibit less earnings management, more timely loss recognition, and higher value relevance than remotely located firms. I

include a wide range of measures because of the inherent difficulty with measuring earnings quality. I match firms based on sales growth, industry and year, and control for several factors including size and leverage (Lang et al., 2006).

The remainder of this study is organized as follows. Section 2 discusses the background and hypothesis. Section 3 discusses sample selection and empirical approach. Section 4 discusses the descriptive statistics and empirical analyses. Section 5 concludes.

Background and Hypothesis Development

Geography

Investor Preference for Locally Headquartered Firms

Prior research shows well-documented gains from international diversification (Eldor et al. 1988; DeSantis and Gerard 1997). Despite this, investors in international markets strongly exhibit prefer domestic equity. Although the U.S. equity market comprised less than 48 percent of the global equity market at the time, French and Poterba (1991) document that U.S. equity traders allocated approximately 94 percent of their funds to domestic securities. This phenomenon is called the "home bias puzzle," and exists where investors appear to invest only in their home country while ignoring investment opportunities elsewhere.

Although many obstacles to foreign investment have substantially diminished in recent years, the propensity to invest in one's home country remains strong (Coval and Moskowitz 1999). Two explanations that have been put forth to explain this propensity are (1) the existence of national boundaries (a distinguishing feature of cross-border investing) and (2) investors' preference for geographic proximity. Under the first explanation, when capital crosses monetary and political boundaries, differences in regulation, culture, and taxation, exchange rate fluctuation, and sovereign risk make investment opportunities more difficult to evaluate (Brennan and Cao 1997).

The second explanation for the home bias puzzle focuses on investors' preference for geographic proximity, defined as the distance between the firm and the investor. If geographic proximity drives investor preference, it should affect both international and domestic investment decisions. Coval and Moskowitz (1999) examine the effect of geographic proximity by analyzing the investment portfolio choice within the U.S. domestic economy, avoiding confounding factors due to political and monetary boundaries, and show that the preference for investing close to home applies to portfolios of domestic stocks. Specifically, they find that U.S. investment managers strongly prefer locally headquartered firms. Huang et al. (2019) document that investors are more familiar with urban firms and that more investors have readily available access to the soft information of urban firms, when comparted to rural firms.

In a study of Spanish hotels, Parte-Esteban and Garcia (2014) show that internationalization and location, among other factors and firm characteristics, impact earnings quality in a private firm setting. Ivkovic and Weisbenneer (2005), using data on the investments from a large number of individual investors made though a discount broker, find that households strongly prefer for local investments. These preferences

for nearby investments suggest that investors value locally available information and the accompanying ability to observe management decisions.

Geographic Location and Firm Oversight

In spite of technological advances, distance has been shown to affect information available to those outside the firm (John 2011). Recent research has examined the relation between location of U.S. firms and the ability to monitor and manage firm activity. Consistent with the geography of Securities and Exchange Commission (SEC) enforcement influencing incentives and behavior, Kedia and Rajgopal (2011) show that difference in firms' information sets concerning SEC enforcement and constraints (which are partially affected by geographic proximity) affect their tendencies to adopt aggressive accounting practices. Specifically, they find that firms located closer to the SEC and in areas with greater past SEC enforcement activity are less likely to restate their financial statements, and that the SEC is more likely to investigate firms located closer to its offices. DeFond et al. (2011) examine how the geography of SEC enforcement affects auditors' reporting incentives and show that auditors are more likely to issue a going concern report when their engagement office is located closer to an SEC regional office.

On the other hand, in a study of U.S. municipalities, Lopez and Rich (2017) find that geographic distance, measured as the driving distance between U.S. municipalities and their external auditors, is positively associated with the disclosure of internal control exceptions, suggesting that audit rigor is greater for geographically distant clients. Asthana et al. (2015) find that U.S.-listed foreign companies are: more likely to hire a U.S-based (rather than home country-based) Big N auditor when proportion of income earned outside the home country is higher, less likely when these client firms are larger, and less likely when the level of investor protection in the home country is higher.

Lerner (1995) examines firm location in the context of venture capitalist oversight. He argues that the cost of oversight increases with distance and finds that geographic proximity is an important determinant of the likelihood of venture investor board membership. Location also affects Chief Executive Officer (CEO) power, board compensation, and auditor choice (Francis et al. 2007; Kynazeva et al. 2010; Garner et al. 2019). John et al. (2011) investigate the impact of geography on corporate dividend behavior and find that remotely located firms pay higher dividends than firms that are headquartered in large metropolitan areas. Abdelsalam et al. (2021) show that the degree of religiosity in the corporate headquarters' country has a significantly positive impact on earnings quality.

In my study, I examine whether earnings quality differs between remotely located firms and firms that are headquartered in large metropolitan areas. I argue that remotely located firms are relatively less accessible to outside investors. Thus, investors are less able to access firms, view managerial activity, and demand high quality earnings from remotely located firms. If investor demand for high quality earnings is relatively low for remotely located firms, I hypothesize that earnings quality among these firms will be lower relative to firms that are centrally located. To proxy for distance from the investor, I follow Loughran and Schultz (2005) and use consolidated metropolitan statistical areas according to the U.S. census (detailed in the sample selection section).

Measures of Earnings Quality

Following Lang et al. (2006) and Barth et al. (2008), my empirical proxies for earnings quality are earnings management, timely loss recognition, and value relevance. I assume, consistent with the predictions in Barth et al. (2008) and other studies, that firms with higher quality earnings will exhibit less earnings management, more timely loss recognition, and higher value relevance of equity book value and earnings. One advantage of using several metrics is that they should present a more complete picture of a firm's earnings quality than only one or two.

I examine two measures of earnings management: earnings smoothing and managing toward positive earnings. I will use a single measure for earnings smoothing (variability of change in net income) and a single measure for managing earnings towards a target (frequency of small positive net income). Regarding earnings management, I expect the earnings of centrally headquartered firms to be less managed than remotely located firms' earnings because centrally located firms have more oversight from outsiders (e.g. investors). Prior research suggests that firms with less earnings smoothing exhibit more earnings variability (Ball and Shivakumar 2005; Lang et al. 2006). Hence, I expect that centrally headquartered firms will exhibit more variable earnings than remotely located firms. To test my prediction, I use the variability of change in net income to measure earnings variability.

My second measure of earnings management is managing earnings towards an earnings target. Consistent with prior research, my proxy for managing towards positive earnings will be the relative frequency of small positive net income realizations (Burgstahler 1997; Leuz et al. 2003). This proxy assumes that management prefers to report small positive net income rather than negative net income. Thus, I predict that remotely headquartered firms will report small positive net income relatively more frequently than centrally headquartered firms.

Regarding timely loss recognition, I assume higher quality earnings will result in a higher frequency of large losses. Prior research suggests that one characteristic of higher quality earnings is that large losses are recognized as they occur rather than being deferred to future periods. In relation to earnings smoothing, if earnings are smoothed, large losses should be relatively rare. Hence, I predict that centrally headquartered firms will report large losses relatively more frequently than remotely headquartered firms.

Finally, regarding value relevance, I assume that firms with higher quality earnings will show a stronger correlation between stock prices and earnings and equity book value because higher quality earnings better reflect a firm's underlying economic conditions (Barth et al. 2001). Higher quality earnings are less associated with opportunistic managerial discretion (Leuz et al. 2003). Thus, I predict that centrally headquartered firms will exhibit higher value relevance of net income and equity book value than remotely headquartered firms.

There are, however, several plausible reasons for making opposite predictions for several of the metrics. For example, Healy (1985) suggests that managers may use discretion in ways that could result in higher earnings variability, such as "big baths." A higher frequency of large losses could also indicate "big bath" earnings management.

Hence, remotely located firms could have more discretion to use this form of earnings management and thus could have higher earnings variability and report large losses more frequency.

Hypotheses

I argue that the relative cost for outsiders to observe managerial actions declines with distance, all else equal. Although technological advances have partly lowered geographic barriers in recent years, the quality of information provided by managers is often difficult to observe or verify over long distances. The decreased visibility of managerial decisions at remotely located firms is expected to amplify the manager-shareholder agency conflict and provide earnings management opportunities. As a result, remotely located firms are expected to have more earnings management activity than centrally located firms with similar characteristics, resulting in lower earnings quality. My hypotheses are:

H1: Earnings variability is lower for firms that are remotely located relative to firms that are headquartered in large metropolitan areas.

H2: Small positive net income is reported more frequently for firms that are remotely located relative to firms that are headquartered in large metropolitan areas.

H3: Large losses are reported more frequently for firms that are remotely located relative to firms that are headquartered in large metropolitan areas.

H4: Value relevance is lower for firms that are remotely located relative to firms that are headquartered in large metropolitan areas.

Sample Selection and Empirical Approach

Sample Selection

Sample is comprised of 592 company-years from 2008 to 2012. Accounting Standard Update 2012-02 (FASB, 2012) modified the procedure for testing impairment, and this could potentially impact earnings management. Thus, I limit sample selection to years on or before 2012. The first step in the sample selection is to obtain headquarter location for every firm in the Compustat database for the year 2012. To classify firms as remotely or centrally located, I follow a number of authors, including Coval and Moskowitz (1999), Loughran and Shultz (2005), and Seasholes and Zhu (2010), and use a firm's headquarters as a proxy for its location.

Because there are significantly fewer remotely located firms than centrally located firms, I first find firms from the database which are remotely located before identifying the matched centrally located firms. Following Loughran and Shultz (2005), a firm is defined as remotely located if its headquarters are 100 miles or more from the center of one of the 58 U.S. metropolitan areas of one million or more people. Out of the 7153 firms for which Compustat location data were available, I find 158 firms that meet the definition of remotely located firms.

I then compare the remotely located firms with a sample of centrally located firms, matched on industry and growth. Following Loughran and Shultz (2005), a firm is defined as centrally located if the company headquarters is in one of the ten largest metropolitan areas of the United States according to the 2010 census. These include

New York City, Los Angeles, Chicago, Houston, Philadelphia, Miami, Washington-Baltimore, Boston, Dallas, and Atlanta, and their suburbs. Thus, firms which are headquartered in Skokie, Illinois, a suburb of Chicago, or Hoboken, New Jersey, a suburb of New York City, are included in the centrally located sample. Because I require an exact industry match for each firm in the remote sample, I find only 128 centrally located firms that are industry matches for the remotely located sample. Several remote firms, for example, are agricultural firms and do not have a central firm counterpart in that industry.

Because this study investigates two distinct geographic groups – central and remote – of companies, a concern may surface that other factors correlated with the headquarters location could affect the characteristics of accounting data. As a result, this study incorporates a sample selection procedure that matches on industry and past sales growth. Following a matching procedure utilized by Lang et al. (2006), central and remote firms are matched on industry (two-digit SIC code) and sales growth. I compare the 128 remotely located firms with the centrally 128 located firms, matched on industry and growth. The final sample comprises 592 firm-year observations for which Form 10-K, CRSP, Compustat, and AuditAnalytic data were available over the period 2008 through 2012. The many firms unclassified by the above procedure as either centrally or remotely located are excluded from my analysis.

Research Methods

I incorporate a matching procedure and determine differences in earnings quality between the two sample groups. The variables and research methodologies for measuring earnings quality in this study, discussed below, closely follow Lang et al. (2006). My focus in determining measures is on earnings quality differences between remotely located firms and firms that are headquartered in large metropolitan areas.

Because firms choose their headquarters locations, it is important to control for other factors that might be correlated with the location decision and therefore might affect the characteristics of accounting data. As a result, I use a matched sample of remote and centrally located company groups based on past sales growth and industry. Following Lang et al. (2006), I match first on industry (two-digit SIC code) such that every firm is matched exactly on industry. Next, I select the closest firm in terms of sales growth over the previous two years. Matching on industry and growth is reasonable because the characteristics of earnings, properties of accruals and associations with share price are likely a function of industry and growth, while matching on year should mitigate the macroeconomic effects on earnings.

Although my matching procedures mitigate the confounding effects of growth, industry, and year, other effects likely remain. Thus, following Lang et al. (2003) and Barth et al. (2008), I include control variables including firm size, leverage, asset turnover control, and the frequency of equity issuance.

Earnings Management

As discussed in section 2, I use two earnings management metrics – one for earnings smoothing and one for managing towards a target. Following Lang et al. (2003) and Barth et al. (2008), my earnings variability metric is the variance of the residuals from

the change in net income on variables identified in prior research as controls for these factors (Ashbaugh 2001; Lang et al. 2003; and Tarca 2004). My variability metric pools across all firms, i, and all time periods, t, following Lang et al. (2006):

$$\Delta NIit = \beta 0 + \beta 1SIZEit + \beta 2EISSUEit + \beta 3LEVit + \beta 4DISSUEit + \beta 5TURNit + \beta 6CFit + \beta 7AUDit + \varepsilon it \quad (1)$$

where:

ΔNI = the change in net income scaled by total assets;

SIZE = the natural logarithm of end of year market value of equity;

EISSUE = percent change in common stock;

LEV = end of year total liabilities divided by end of year equity book value;

DISSUE = percentage of change in total liabilities;

TURN = sales divided by end of year total assets;

CF = annual net cash flow from operating activities divided by end of year total assets;

AUD = an indicator variable that equals one if the firm's auditor is PwC, KPMG, Arthur Andersen, E&Y, or D&T, and zero otherwise;

i = subscript designating firm;

t = subscript designating year.

I use Compustat data for the following variables: SIZE, EISSUE, LEV, DISSUE, TURN, and CF. I collect auditor data (AUD) from AuditAnalytics. For this analysis, I simply compare variability in net income change for the two groups and do not use regression estimation.

My metric for managing towards small positive earnings is the coefficient of small positive net income, SPOS. I measure the coefficient of SPOS by estimating a regression of an indicator variable, CENTLOC(0,1), set to one for a centrally headquartered firms and zero for remotely located firms:

$$CENTLOC(0,1)it = \beta 0 + \beta 1SPOSit + \beta 2SIZEit + \beta 3EISSUEit + \beta 4LEVit + \beta 5DISSUEit + \beta 6TURNit + \beta 7CFit + \beta 8AUDit + \varepsilon it \quad (2)$$

Following Lang et al. (2006), SPOS is an indicator variable set for one for observations for which annual net income scaled by total assets is between 0 and 0.01 and set to zero otherwise. A negative coefficient on SPOS indicates that remotely located firms manage earnings towards small positive amounts more frequently than do centrally headquartered firms. To control for other factors, I base my inferences on the coefficient on SPOS rather than directly comparing centrally and remotely located firms' percentages of small positive net income.

Burgstahler and Dichev (1997), Lang et al. (2003), Barth et al. (2008), and Abdelsalam et al. (2016) also test small positive earnings by setting SPOS as the dependent variable, making CENTLOC the independent variable of interest. Accordingly, I modify equation 2 with the switching of these two variables:

$$SPOS(0,1)it = \beta0 + \beta1CENTLOCit + \beta2SIZEit + \beta3EISSUEit + \beta4LEVit + \beta5DISSUEit + \beta6TURNit + \beta7CFit + \beta8AUDit + \varepsilon it \quad (3)$$

Timely Loss Recognition

Following Lang et al. (2003) and Barth et al. (2008), I measure timely loss recognition as the coefficient on large negative net income, LNEG:

$$CENTLOC(0,1)it = \beta0 + \beta1LNEGit + \beta2SIZEit + \beta3EISSUEit + \beta4LEVit + \beta5DISSUEit + \beta6TURNit + \beta7CFit + \beta8AUDit + \varepsilon it \quad (4)$$

LNEG is an indicator variable set to one for observations for which annual net income scaled by total assets is less than -0.20 and set to zero otherwise. A negative coefficient indicates that remotely located firms are less likely to report large negative earnings. Again, I include controls to mitigate the effects of other economic factors.

Value Relevance

To measure value relevance, I consider the adjusted R^2 from a regression of stock price on earnings and equity book value. Following Lang et al. (2006), to ensure accounting information is in the public domain I regress the stock price, P, as of six months after year-end on equity book value per share, BVEPS, and net income per share, NIPS, separately for centrally and remotely located firms. I obtain stock price information from the CRSP database. The value relevance metric is the adjusted R^2 value from the regression given by equation (4).

$$Pit = \beta0 + \beta1BVEPSit + \beta2NIPSit + \varepsilon it \quad (5)$$

Consistent with higher quality earnings better reflecting a firm's underlying economic conditions (Barth et al. 2001), I expect that accounting data are more informative if they exhibit a higher correlation with share price.

Sample Description and Empirical Analyses

Sample Description

Table 1 details the firm breakdown by industry, and Table 2 provides descriptive statistics for selected variables used in the empirical analyses. Table 2 is divided into two panels based on whether the variable is a test or control variable. Panel A presents descriptive statistics for primary regression variables used to find earnings quality for the various procedures, and panel B provides descriptive statistics for regression variables used to control for other firm characteristics. Not surprisingly, given the matching criteria, the two samples are similar in firm size.

Table 1: Number of Sample Firms by Industry Group		
SIC Code	Industry Group	Number of Firms
1	Agricultural Production - Crops	2
10	Metal Mining	14
13	Oil and Gas Extraction	10
22	Textile Mill Products	2
24	Lumber and Wood Products	4
26	Paper and Allied Products	6
28	Chemicals and Allied Products	14
29	Petroleum and Coal Products	2
32	Stone, Clay, Glass, and Concrete Products	2
33	Primary Metal Industries	2
34	Fabricated Metal Products	2
35	Industrial Machinery & Equipment	6
36	Electronic & Other Electric Equipment	4
37	Transportation Equipment	2
38	Instruments & Related Products	4
40	Railroad Transportation	2
42	Trucking and Warehousing	8
44	Water Transportation	2
45	Transportation By Air	8
48	Communications	14
49	Electric, Gas & Sanitary Services	42
50	Wholesale Trade - Durable Goods	2
59	Miscellaneous Retail	2
60	Depository Institutions	32
61	Nondepository Credit Institutions	2
62	Security & Commodity Brokers, Dealers, Exchanges & Services	2
63	Insurance Carriers	10
65	Real Estate	4
67	Holding and Other Investment Offices	26
70	Hotels And Other Lodging Places	2
73	Business Services	14
79	Amusement And Recreation Services	2
80	Health Services	2
87	Engineering, Accounting, Research, and Management Services	2
99	Nonclassifiable Establishments	4
	Total Sample Firms	256

Table 2: Descriptive Statistics						
	Central (N=296 firm years)			Remote (N=296 firm years)		
Panel A: Test Variables						
Variable	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**
∆NI	0.033	0.000	1.161	0.010	-0.001	0.862
SPOS	0.195	0.000	0.397	0.180	0.000	0.384
LNEG	0.084	0.000	0.278	0.069	0.000	0.253
P	23.363	15.040	22.602	19.323	14.300	19.023
BVEPS	14.737	10.196	13.747	12.835	11.816	10.956
NIPS	0.583	0.606	2.667	0.811	0.903	3.273
Panel B: Control Variables						
Variable	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**
SIZE	6.872	6.816	2.278	6.134	6.138	1.873
EISSUE	0.209	0.005	1.238	0.123	0.006	0.647
LEV	2.774	2.174	3.975	4.011	2.110	7.083
DISSUE	0.068	-0.002	0.447	0.500	0.042	5.931
TURN	0.865	0.312	1.909	0.529	0.337	0.565
CF	0.022	0.035	0.157	0.027	0.055	0.526
AUD	0.740	1.000	0.439	0.636	1.000	0.482
See the appendix for a definition of each variable						

Empirical Analyses

Tables 3-6 present my results for earnings smoothing, managing toward earnings targets, timely loss recognition and stock price associations.

Earnings Smoothing Results

I report the results for earnings smoothing in Table 3. In terms of the primary relations of interest, the tests of net income variability, consistent with H1, suggest that earnings are less volatile for the remotely located firms than for the centrally located firms, after controlling for other factors. The variability of net income is significantly greater for the centrally located firms (1.361) than for the remotely located firms (0.752), and this difference (one-sided test) is statistically significant at the 0.01 level.

Table 3: Variability of Net Income of remotely located vs. matched centrally located firms *N* = 592			
Measure	Prediction	**Remote firms**	**Central firms**
Variability of ΔNI	Remote < Central	**0.752**	**1.361***
*Significantly different between remote and central firms at the 0.01 level			

Coefficient estimates						
Dependent Variable	Independent variables					
Earnings Smoothing	Size	Equity Issuance	Leverage	Debt Issuance	Asset Turnover	Cash Flows
ΔNI for remote	0.036	0.000	0.001	-0.110	0.209*	-1.163*
ΔNI for central	0.002	0.047	-0.004	0.003	-0.124	0.977*

Managing Towards Earnings Targets Results

The preceding results suggest that remotely located U.S firms are more likely to smooth earnings than are centrally located U.S. firms. A related question is how such accruals management might affect the resulting distribution of earnings. Table 4 presents the results from the regression analysis of small positive NI. Consistent with the descriptive results in Table 2, the proportion of small positive earnings is slightly greater for centrally located firms than for remotely located firms. Contrary to my prediction, this result suggests that remotely located firms are not more likely to manage earnings towards positive targets than are centrally located firms. Thus, H2 is not supported. However, the estimate is not significantly significant (p-value > 0.30 for both SPOS and CENTLOC variables in panels A and B, respectively).

Timely Loss Recognition Results

The finding in Table 5 relates to timely loss recognition. The significantly positive coefficient on LNEG, 0.140, indicates that, incremental to effects associated with my control variables, centrally located firms recognize large losses more frequently than remotely located firms. H3 is supported. This result is generally consistent with more timely loss recognition for the centrally located firms, as are the results for the frequency of large negative earnings observations. The incidence of large negative earnings is significantly lower for the remotely located firms, suggesting that remotely located firms smooth earnings by delaying the effects of large negative outcomes relative to centrally located firms.

Table 4: Small Positive Net Income of remotely located vs. matched centrally located firms *N* = 592								
Dependent Variable	Independent Variables							
Panel A: Dependent Variable = CENTLOC(0,1)								
Location DV	**Small Positive NI**	Size	Equity Issuance	Leverage	Debt Issuance	Asset Turnover	Cash Flows	Auditor
0 for remote, 1 for central	**0.053**	0.038*	0	0	-0.004	0.043*	-0.054	0.035
Panel B: Dependent Variable = SPOS(0,1)								
Small Positive NI DV	**Location**	**Size**	**Equity Issuance**	**Leverage**	**Debt Issuance**	**Asset Turnover**	**Cash Flows**	**Auditor**
1 if NI/TA is between 0 and 0.01, 0 otherwise	**0.32**	0.009	0	0.001	-0.003	-0.045*	0.019	-0.085
*Coefficient estimates significantly different from zero at the 0.01 level								

Table 5: Large Negative Net Income of remotely located vs. matched centrally located firms N = 592								
Dependent Variable	Independent Variables							
Location DV	**Large Negative NI**	**Size**	**Equity Issuance**	**Leverage**	**Debt Issuance**	**Asset Turnover**	**Cash Flows**	**Auditor**
0 for remote, 1 for central	**0.140****	0.042*	0.000	0.000	-0.004	0.041*	-0.020	0.026
*,**Coefficient estimates significantly different from zero at the 0.01 and 0.05 levels, respectively								

Value Relevance Results

My final test assesses the degree of association between accounting data and stock prices. Table 6 reports the results for the value relevance test. Regressions of stock price on net income and equity book value for centrally and remotely located firms reveal that the adjusted R^2 value for centrally located firms is slightly greater than that for remotely located firms, 38.56% versus 38.20%. However, this difference is insignificant at the 0.10 level. Although the finding is not statistically significant, the premise of H4 is nonetheless supported because the results suggest that accounting data are slightly more relevant for centrally located firms than for remotely located firms.

Table 6: Value Relevance of remotely located vs. matched centrally located firms N = 592			
Measure	Prediction	**Remote firms**	**Central firms**
Adjusted R^2 from equation 4	Remote < Central	**0.382**	**0.386**
Coefficient estimates			
Dependent Variable	Independent variables		
Association of stock prices with accounting data	BVPS	NIPS	
Price for remote	0.779*	1.770*	
Price for central	0.667*	2.812*	
*,**Coefficient estimates significantly different from zero at the 0.01 and 0.05 levels, respectively			

Conclusion

This paper examines the impact of firm location on earnings quality of U.S. firms. Prior research suggests that the geographic location of a firm's headquarters might be associated with a number of factors, including corporate dividend payout policy and regulatory enforcement from the SEC. Generally, I find that earnings quality of U.S. firms that are centrally located is higher than earnings quality of remotely located firms. My results suggest that, across a wide range of measures, accounting data for remotely located firms show more evidence of earnings management, less evidence of timely loss recognition and a lower association with share price. To my knowledge, no previous study has investigated the relation between firm location and the earnings quality of U.S. firms. Results from this study could be valuable to investors, regulators, and other outsiders.

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Appendix

Description of Variables

The table below summarizes the variables used in the models and empirical analyses.

Variables	Description
ΔNI	Change in annual earnings (NI), where earnings is scaled by end-of-year total assets (TA).
SPOS	Indicator that equals 1 for observations with annual earnings (NI) scaled by total assets (TA) between 0.00 and 0.01.
LNEG	Indicator that equals 1 for observations with annual earnings (NI) scaled by total assets (TA) less than −0.20.
P	Stock price as of six months after fiscal year-end.
BVEPS	Book value of equity per share, where book value equity (CEQ) is divided by the number of shares outstanding (CSHO).
NIPS	Net income per share, where net income (NI) is divided by the number of shares outstanding (CSHO).
SIZE	A nature logarithm of a firm's total assets.
EISSUE	The annual percentage change in common stock.
LEV	End-of-year total liabilities (TL) divided by end-of-year book value of equity (CEQ).
DISSUE	Annual percentage change in total liabilities.
TURN	Sales divided by end-of-year total assets.
CF	Annual net cash flow from operating activities, scaled by end-of-year total assets.
AUD	1 if the firm is audited by Deloitte & Touche, Ernst & Young, KPMG, or PricewaterhouseCoopers (AU) and 0 otherwise.

Notes

i. In this study, a firm is defined as "remotely located" if its headquarters are 100 miles or more from the center of one of the 58 U.S. metropolitan areas of one million or more people.

ii. Loughran and Schultz (2005) used the ten largest consolidated metropolitan statistical areas according to the 2000 census: New York City, Los Angeles, Chicago, Washington-Baltimore, San Francisco, Philadelphia, Boston, Detroit, Dallas, and Houston. I will use the 2010 census (discussed in the sample selection section).

iii. Computational details are provided in Section 4.

iv. According to Healy and Wahlen (1999), "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting practices." In this study, I focus on the aspect of earnings quality associated with financial reporting decisions.

v. Remotely located firms are less scrutinized by the SEC (Kedia and Rajgopal 2011), and these firms' headquarters are less accessible to outside investors. For example, a manager at a remotely located firm could make reporting decisions that inflate earnings (and thereby reduce earnings quality), whereas a manager at a centrally located might hesitate to make similar reporting decisions because investors can more easily access the firm's headquarters. Easier access to the headquarters provides higher visibility and more oversight to investors.

vi. Most remotely located firms that I find are located in: parts of New England and upstate New York; Appalachia; most of Alabama, Mississippi, and Arkansas; parts of Georgia and South Carolina, Northern Minnesota and Wisconsin; parts of the Rocky Mountain states; eastern Washington and Oregon; western and southern Texas; and all of Alaska and Hawaii.

vii. For example, firms headquartered within 100 miles of Louisville are dropped from the sample.