

Impact of Headquarters Relocation on the Operating Performance of the Firm

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Communities often compete fiercely for corporate headquarters relocations. Although headquarters relocations affect both the losing and winning communities, the authors investigate only the impact of corporate headquarters relocation on the subsequent financial performance of the firm. Prior research using event study methodology suggests that headquarters relocation announcements, when controlling for motivation of relocation, significantly affect short-term stock market reactions. Unlike previous research in this area, the authors use an industry-matched-firm comparison and investigate the impact of relocation on select performance indicators over a 6-year period surrounding the relocation. Using a sample of 167 corporate headquarters relocations during the 1990s, they find little evidence of improved operating performance after headquarters relocation. They also test for the influence of distance as a factor and find that the distance relocated has no significant impact.

Keywords: *headquarters relocation; office location; economic development*

The relocation of a corporate headquarters is a significant event in the life history of any company. Unlike the relocation of individual employees, headquarters relocation affects the whole business operation. Research suggests that relocation can have a direct impact on shareholder wealth over the short term (Alli, Ramirez, & Yung, 1991; Chan, Gau, & Wang, 1995; Ghosh, Rodriguez, & Sirmans, 1995) and can affect commercial real estate markets (Manning, Rodriguez, & Ghosh, 1999; O'Mara, 1999). Moreover, from an economic development perspective, corporate headquarters relocation has a major impact on both the sending and receiving communities (Eisenberg & Friedland, 1990). For the sending community, the loss of a major corporate presence often is akin to losing a sports franchise (Katz, 2002). The bruising of civic pride can surpass the loss of a relatively small number of jobs. For the receiving community, there is the direct impact of new, often high-paying jobs as well as spillover effects for the services sector. Also, headquarters contribute to the community through community leadership and corporate philanthropy (Klier & Testa, 2001). Aside from direct economic benefits, there is a signaling effect to other businesses that the community is willing to do what it takes to land a major corporate relocation (Garcia-Mila & McGuire, 2002).

If corporate headquarters relocation, as often justified by management, improves some aspect of the business operating environment, either through direct and indirect cost reduction or revenue

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enhancement, one could argue that this event should manifest itself in some measurable aspect of subsequent business performance. If relocations have a significant impact on operating performance, then operating measures such as the return on assets (ROA) or return on equity (ROE) should systematically increase or decrease after the relocation for some period of time. On the other hand, if relocations have no impact on performance, or at most only a secondary effect on performance, then these measures should not be significantly different after the relocation. The purpose of our study is to empirically examine the operating performances of relocating firms. In short, does headquarters relocation matter?

This research contributes to the literature in several ways. First, this study differs from most of the previous literature in that we attempt to uncover the impact over a longer period of time than does standard stock market event study methodology. Second, we extend the literature by examining corporate operating performance measures other than stock market returns. Third, to minimize misspecification errors and confounding events, we employ a matched-pairs sample using industry, size, and market-to-book ratios as matching criteria (Barber & Lyon, 1997).¹ Fourth, unlike previous research, our study examines the impact of relocation while controlling for distance.

This article begins with a review of the pertinent literature, followed by a presentation of hypotheses and description of our methodology. We then present our findings and close with suggestions for further research.

LITERATURE REVIEW

Corporate relocation has been the subject of numerous studies in various disciplines. One avenue of study focuses upon the spatial characteristics of corporate headquarters by investigating the impact of transferring corporate decision making across urban areas. Early studies spawned the popular notion that the locus of corporate America was migrating away from the high-cost areas of the Northeast and Midwest to the growing regions of the South and West (Holloway & Wheeler, 1991; Semple, 1973; Semple, Green, & Martz, 1985). More recently, Klier and Testa (2002) investigated the spatial concentration of corporate headquarters. They found that over the decade of the 1990s, large metropolitan areas have maintained their shares of exchange-listed corporate headquarters of large, publicly traded companies. Shilton and Stanley (1999) examined spatial clustering at the county level using a sample of 5,189 corporate headquarters and found that 40% of all corporate headquarters are located in only 20 counties. Meyer and Green (2003) provide an analysis of headquarters in Canada as well as a more detailed review of the literature in this area. These studies provide evidence of the continued attraction of metropolitan areas as hosts to corporate headquarters.

A second perspective of corporate relocation focuses on examining the reactions of the stock market to the announced relocations. Ghosh et al. (1995) examined motivations for corporate relocations using a sample of 160 relocation announcements from 1966 to 1992. Their study investigated how stock price reactions vary according to different announced rationales for relocation and found both positive and negative reactions of shareholders, depending on the announced motivation for relocation. A positive reaction was found if the announced reason was attributed to cost savings, and, in general, a negative reaction was found if the relocation was motivated by management self-interest. Chan et al. (1995) and Manning et al. (1999) found also that the stock market responds differently based on the motivations for relocation.

Other studies have compared the operating performance of firms that relocated with firms that did not move. For example, Alli et al. (1991) undertook a comparative analysis of relocating firms with an industry control group 1 year before and after relocation. Their study compared three measures of profitability: net profit margins, operating profit margins, and ROE. They found significant negative differences between the relocating firms and their industry peers in net profit and operating profit in the year of the move and significant negative differences in net profit margin 1 year after the move. They also found significant differences in size (larger total assets) across all 3 years for relocating firms and significant negative differences in the ratio of taxes paid to sales in the year of relocation and the year after relocation. In contrast to these findings, Chan et al. (1995)

examined financial performance over a 5-year period surrounding the announcement (2 years prior to and 2 years postannouncement). They examined an industry-adjusted measure of ROE and cash flow-to-assets ratio (CF/A) and found no appreciable difference in profitability between relocating and nonrelocating firms using industry medians for comparison.

A third direction of inquiry focuses upon the drivers of corporate headquarters relocation. These studies examine decision factors that provide the rationale for relocating corporate headquarters. For example, Burns (1977) suggests that the importance of location criteria varied by the distance of corporate headquarters relocation. He found that corporate headquarters relocating from one metropolitan area to another (horizontal relocation) placed far greater importance on agglomeration factors such as access to producer services and cultural amenities. In contrast, corporate headquarters relocation within metropolitan areas (vertical relocation) emphasized the importance of lowering expense items such as taxes and rents. Burns suggests that distance is a critical factor in formulating corporate policy. O'Mara (1999) examined the location decisions of 40 companies that relocated between 1990 and 1997. She developed a typology of location decisions and identified the corresponding strategic business drivers. A clear differentiation was made in strategic drivers between relocations within the same general area and those moving to a new geographic area. Motivation for moves within the same general area were identified as wanting to achieve greater control over their surrounding site, whereas longer distance relocations were seen as cost driven or wanting to increase control over far-flung operations.

Distance of relocation has a dramatic impact upon the existing employee population (Lawson & Angle, 1998). Although it is clear that the relocating headquarters will experience disruptions to operations across all relocation scenarios, the impact on employees varies considerably based on distance of relocation. This is particularly acute in the relocation of headquarters that are human resource-intensive and derive their value added from the collective knowledge and expertise of their employees. Any disruption to personnel can be devastating to the core mission of the overall business. This disruption may be offset to some extent by the firm if it offers its key employees relocation packages or stay bonuses to lessen the impact of employee attrition.

For example, in a short-distance move the relocation is local in nature and often involves occupying new space or moving to another building in the immediate vicinity. Of course, all employees have to adjust to new surroundings, but otherwise this scenario has very little direct impact on the existing employee base other than a small change in commute patterns. Oftentimes, a local relocation is driven by changing real estate requirements such as the need to accommodate growth, to improve upon office configurations or consolidate into contiguous space, or to reduce occupancy costs.

A medium-distance move is classified as such if the relocation necessitates that employees make a significant change to their commute patterns. Many employees' commute patterns will change and time will decrease significantly, whereas other employees will have to incur significant additional commute costs, both in time and money. Furthermore, many employees may experience changes in transport mode. For example, relocations from urban centers to suburban office parks often require employees to switch from public to private transportation or may involve an additional transport mode such as an additional bus ride. These changes may cause some employee attrition owing to changes in commute patterns. Of course, the extent to which these factors come into play is based on the location of the new site relative to the existing employee residence locations. In fact, in some large metropolitan areas such as New York City or Washington, D.C., medium-distance relocation can mimic a long-distance relocation. The cost of the relocation to the firm is increased by human resource factors such as compensating those employees who decide to leave the firm as well as offering some form of commute subsidy to those employees who increase their commute substantially.

A third scenario, the long-distance relocation, has the most effect on the firm and its employees. Stroh (1999) suggests that relocation of headquarters operation is fraught with anxiety and constant upheaval. The acceptance rate of employees willing to uproot their families and relocate to a new area can be quite low. If management determines that employees are key to its operating success, it will provide attractive relocation packages. Higher attrition rates and added expenses of long-distance relocation are substantial, and businesses are very sensitive to the legal implications of relocation.

In short, the literature on corporate headquarters relocation suggests that corporate headquarters appear to cluster in a select few urban counties, the relocation decision is very complex, the motivation for relocation differs according to distance, and the impact of relocation has some short-term positive stock market wealth effect if the relocation is motivated by cost savings or revenue enhancements. Because the stock market values the relocation decision positively in many cases, it is interesting to ask whether the positive short-term gains in general are reflected in subsequently improved operating performance. Furthermore, it is interesting to note that the empirical literature, although recognizing that the drivers of relocation differ between horizontal (long-distance) and vertical (short-distance) moves, neglects the impact of distance of relocation. Our investigation seeks to overcome this shortcoming by testing for the influence of distance of relocation. We provide further evidence on these issues by examining operating performance factors using a matched-firm comparison methodology controlling for stated motivation and distance relocated.

DATA, HYPOTHESES, AND METHODOLOGY

Our study period covers the 6 years from 1993 through 1998. We obtained announcements referencing headquarters relocation using online search engines such as ProQuest Information and Learning Company and the Dow Jones Interactive database provided by Factiva, a Dow Jones & Reuters Company.²

To investigate whether operating performance improves following headquarters relocation, we compared the performance of our sample of firms to a matched sample. For each firm that relocated their headquarters between 1993 and 1998, we found a somewhat similar firm and then compared the performance of these firms and investigated the influence of their stated reasons or motivation for relocation and distance. Our final sample of relocating firms was 167.

We identified the matched firm in the following manner. If firm A announced a relocation in a particular year, all firms on Standard & Poor's *Research Insight*,³ a financial database, with the same four-digit standard industrial classification (SIC) code were examined to see which firms had book assets that were between 70% and 130% of the assets of the relocating firm. From the eligible firms, we picked the firm that had a market-to-book ratio closest to the relocating firm. The matched firms were picked from either the research file or the active file; we did not require the matched firm to survive for more than 1 year (the announcement year). In a few instances, when a suitable match could not be found with the four-digit SIC code, this process was repeated with the two-digit SIC code. Thus, firms were matched by industry, size, and market-to-book ratios. In addition, all matched firms were required not to have had a corporate relocation themselves during this 6-year period.

As indicated earlier, previous studies have found a relationship between the motivation or stated reasons for relocating and stock market reaction. Following the methodology of Chan et al. (1995), we examined each relocation announcement to obtain a stated motivation for moving. Ghosh et al. (1995) used a slightly different classification scheme. They used three broad categories of relocation motivations including cost savings, managerial preference or agency reasons, and expansion or consolidation of space. As Ghosh et al. have shown, managerial self-interests or agency-related motives could be a driving factor behind relocation. However, in our sample we were able to detect that managerial self-interest was the primary motivation in only three announcements. Therefore, in contrast to the classification scheme used by Ghosh et al., we included managerial self-interest in the "other" category.

Of our sample, 56 firms were classified as relocating for expansion purposes, 37 announcements were motivated by cost savings or operating efficiency, 18 firms were motivated by capacity reduction, 8 firms attributed relocating to facilities consolidation, 7 firms cited other reasons, and 41 announcements in our sample provided no reason for relocating. The ratios are generally consistent with those reported in Chan et al. (1995).

We operationalized distance by using the zip code centroids of the reported addresses premove and postmove. Specifically, we obtained the origin and destination location zip codes by using

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press announcements in combination with the firm's 10-K annual report filed with the Securities and Exchange Commission in the year prior to the move, and then for 3 years subsequent to the move. In those cases where there was a conflict, we used the listed business address given by the firm's 10-K report.

We used ESRI ArcView 3.2 GIS (Geographic Information System) software to calculate distances between origin and destination zip code location centroids. Based on prior discussion, we classified the sample into three groups based on distance. Short-distance relocations were defined as being 5 miles or fewer ($n = 66$). Medium-distance moves were classified as greater than 5 miles but fewer than or equal to 50 miles ($n = 58$). Long-distance relocations are considered those that relocated more than 50 miles ($n = 43$).

Although viewing the relocation as a one-time investment provided some evaluative criteria, it was important to consider whether the firm was doing better after the headquarters relocation than before the relocation. Theory suggests that this should be the case; otherwise, why incur the cost and disruption of the relocation? To measure this, we compared the relocating firm to its matched firm for indications of change over a 6-year period surrounding the relocation announcement. This test compared the relocating firm to its matched firm in Year -3 and was repeated six more times, comparing the firm to the matched firm for Years -2 , -1 , 0 , $+1$, $+2$, and $+3$. Year 0 was defined as the year in which the relocation announcement was made. Year 0 then captured the appropriate stock market effects. It should be noted that Year 0 is not necessarily the year in which the move was completed. Frequently, the move took place the following year. In these cases, Year 1 may be more appropriate for gauging whether operating performance was affected by the relocation.

We initially performed three tests (matched pairs t test, sign test, and signed rank test) on the overall sample of relocating firms, and then we repeated the univariate tests using regression analysis, controlling for stated rationale and distance. When we discuss significant results in the following sections, we generally follow a conservative approach. We required at least two of the three tests to be significant before we state that there is a significant difference.

The basic question we address in this article is whether headquarters relocation, in general, improves the operating performance of companies. In theory, relocations could have an effect on the revenues or the costs (or both) of a firm. In any case, relocations should improve the bottom line for companies. We try to gauge the impact of the relocation decision through the use of the following measures: ROA, ROE, the total return (dividends plus stock appreciation) of the relocating firm's common stock, selling and general administrative costs to sales, and the value of all taxes divided by taxable income.

One way to measure improvement is to examine the firm's ROA. This measure should capture the effects of both revenues and costs. If there has been any improvement in the operating performance of the relocating firm, whether through cost cutting or revenue enhancement, it should show up in its ROA. We also examine ROE, another common measure of a firm's performance. We expected relocation to have positive impacts on our sample.

Many studies have examined the announcement effects of relocations on the short-term market reaction using standard event methodology. We, on the other hand, wanted to investigate the longer term stock market effects. If investors in general believe there are real benefits to the moves, we should see some indication of improvement in stock returns in comparison to the matched pair. Ultimately, it becomes an empirical question as to when the market will realize these benefits.

Alternatively, if the improvements are primarily in reductions of costs such as overhead, then looking at the ratio of selling, general, and administrative expenses to sales should be able to detect these improvements. If a firm were looking to reduce its costs from the headquarters move, we would expect to see a decline in this ratio.

Finally, we investigated whether firms improve their tax environment or get tax breaks as a result of their moves. Generally, it is expected that if a firm moves its headquarters from one tax jurisdiction to another because of tax considerations, then the move should be to a lower tax jurisdiction or a locality that is offering significant tax incentives. However, in practice there is often the phenomenon of a firm's moving within its current locale but receiving additional incentives for staying. Therefore, in investigating effects of headquarters relocation on effective tax rates, we expected to see a significant decline in effective tax rates if tax burden was a major consideration in

the relocation decision. If everything remained the same but the state and/or local government gave tax breaks, the ratio of total taxes to pretax income would be expected to decrease.

As indicated earlier, prior research has shown that motivation for relocation has significant impact on shareholder returns surrounding the time of the relocation announcement. If the stated motivation for relocation is cost reductions or revenue enhancements (expansion), there is significant positive short-term effect. Based on previous findings (Chan et al., 1995; Manning et al., 1999), we expected relocations motivated by cost savings or revenue enhancements over the longer time period of our investigation to show positive improvements in our indicators.

In Table 1, we summarize our main hypotheses. These hypotheses are based on the theory that firms should not relocate unless they expect positive benefits. We assumed the effective tax rate would decrease, despite the expected increase in income. Our hypotheses assumed these benefits would hold for all three types of distance moves, though not necessarily to the same degree.

Furthermore, we hypothesized that our predictions would be the same for different motivations with the exception of the other or agency motivation. In this case, we were unable to state an expected prediction because the classification "other" covers a wide spectrum of motivations.

We tested for the impacts of distance and motivation by employing three univariate tests as discussed earlier. Our analysis differs from those conducted in previous studies in that we examined the firm's relative performance over the 6 years surrounding the relocation announcement compared to its matched-firm counterpart. We also undertook a cross-sectional regression analysis on our performance measures. The dependent variable in our model is the cumulative difference over Years +1 to +3 in the firm's performance relative to that of its matched counterpart for our various performance indicators. The main independent variables are dummy variables for distance and motivation. We also included debt as a control variable. Given that long-term performance data may be highly skewed as well as kurtopic, we ran our regression models using both ordinary least squares (OLS) and a bootstrapping technique as suggested by Kothari and Warner (1997). In doing so, we addressed biases in both the measure of abnormal performance and the standard deviation calculated. The procedure first estimated the regression of the differenced performance variables. The technique then used the errors from these regressions to construct a bootstrap distribution of the differenced performance measures by randomly sampling the errors. The errors are then used in simulating the estimated regressions, and the resulting coefficient estimates are sampled over 10,000 simulations. From the runs of the sample coefficients, a sample distribution was obtained.

RESULTS

Table 2 provides some descriptive statistics for the sample of relocating firms (movers) and for the matched control firms. The numbers represent the median and (mean) for each sample. For example, the median of the assets in Year -3 for the movers is \$334 (in millions), whereas the median of the matched-firm control group is \$237 (in millions). The sales numbers are defined similarly. As expected, there is very little difference in the medians between the relocating sample and the matched sample for the sales and asset numbers. The two samples also exhibit similar debt structures.

The results of the statistical tests for the entire sample of the 167 firms are reported in Table 3. The maximum number of observations is 167, but frequently the number is less than that due to missing observations from *Research Insight*. This is not a problem because there are enough observations to have a sufficient sample size. Recall that in our matching criteria, we required the matched firm to have financial data in *Research Insight* for only the year of the announced relocation. If the comparison firm had missing data in any of the other comparative years, the comparison for that year or years was eliminated.

Using our indicators and univariate test statistics, we find the results in Table 3 suggest that headquarters relocation is an insignificant event. The results are very consistent across all five measures throughout the 6-year period.

Consistent with the earlier studies, we examined our sample by controlling for stated rationale for relocation. Although the univariate tests are not presented in this article,⁴ our results also

TABLE 1
Predictions After Headquarters Relocations Relative to the Matched Pair

<i>Test</i>	<i>Overall</i>	<i>Short Distance</i>	<i>Medium Distance</i>	<i>Long Distance</i>
Total return on common stock	Increase	Increase	Increase	Increase
Return on assets	Increase	Increase	Increase	Increase
Return on equity	Increase	Increase	Increase	Increase
Effective total tax rate	Decrease	Decrease	Decrease	Decrease
Selling and general and administrative expenses	Decrease	Decrease	Decrease	Decrease

TABLE 2
Descriptive Statistics—Median and (Mean)

<i>Variable</i>	<i>Sample</i>	<i>Year -3</i>	<i>Year -2</i>	<i>Year -1</i>	<i>Year 0</i>	<i>Year +1</i>	<i>Year +2</i>	<i>Year +3</i>
Assets (\$MM)	Movers	334 (6,965)	264 (6,444)	309 (6,929)	336 (7,652)	470 (8,597)	530 (9,393)	867 (10266)
	Industry match	237 (5,489)	251 (5,565)	350 (7,465)	452 (9,718)	518 (10,775)	620 (11,788)	799 (6,309)
Sales (\$MM)	Movers	354 (4,273)	266 (4,053)	313 (4,166)	353 (4,297)	407 (4,763)	466 (5,030)	770 (6,309)
	Industry match	221 (2,806)	244 (2,789)	306 (2,926)	325 (3,395)	414 (3,942)	488 (4,489)	680 (4,243)
Return on equity	Movers	0.13 (0.21)	0.12 (0.27)	0.11 (0.18)	0.12 (0.14)	0.11 (-0.13)	0.12 (0.07)	0.10 (-0.31)
	Industry match	0.12 (1.85)	0.12 (0.12)	0.12 (0.07)	0.10 (0.06)	0.10 (-0.03)	0.10 (-2.58)	0.11 (0.09)
Return on assets	Movers	0.04 (0.00)	0.04 (0.02)	0.04 (0.01)	0.04 (0.02)	0.03 (-0.02)	0.03 (-0.05)	0.03 (-0.03)
	Industry match	0.04 (0.03)	0.04 (0.02)	0.05 (0.01)	0.04 (0.02)	0.04 (0.00)	0.04 (-0.03)	0.05 (-0.01)
Total returns	Movers	0.18 (0.24)	0.13 (0.22)	0.21 (0.23)	0.12 (0.21)	0.09 (0.23)	0.04 (0.36)	-0.02 (0.26)
	Industry match	0.26 (0.69)	0.22 (0.37)	0.16 (0.33)	0.05 (0.18)	0.07 (0.47)	0.05 (0.16)	-0.08 (0.11)
Total debt/ total assets	Movers	0.21 (0.26)	0.19 (0.23)	0.19 (0.21)	0.21 (0.23)	0.23 (0.24)	0.22 (0.25)	0.22 (0.25)
	Industry match	0.24 (0.23)	0.20 (0.21)	0.16 (0.20)	0.17 (0.20)	0.17 (0.21)	0.16 (0.22)	0.17 (0.22)

suggest that the stated rationale for headquarters relocation, whether to increase revenues or reduce costs, had no significant impact on our indicators over the longer time period of our investigation. This finding contrasts with the previous research findings suggesting that the market responds to the stated motive for relocation.

The same univariate procedure was used to test for the impact of distance. The results, although again not reported, generally do not show any significant impact across our three distance categories. In short, the weight of the evidence indicates that relocation distance is not a significant factor using these indicators and tests.

To further analyze our data, we undertook a cross-sectional regression analysis of our sample data using three performance indicators. The results are shown in Table 4. Recall that each dependent variable is the 3-year cumulative difference between relocating firms and their counterparts for Years +1 to +3. The explanatory variables included in the model are dummy variables for short (< 5 miles) and medium (> 5 < 50 miles) distance⁵ as well as dummy variables for stated reasons. We introduced average debt as a control variable when examining firm performance.

TABLE 3
Matched Pairs Test

<i>Variable</i>	<i>t Test</i>	<i>Sign Test</i>	<i>Sign Rank</i>
Total return on common stock			
Firm vs. industry match Year -3	-1.42	-7.0	-194.5
Firm vs. industry match Year -2	-1.86	-3.5	-348.5
Firm vs. industry match Year -1	-1.13	3.0	-109.0
Firm vs. industry match Year 0	0.57	3.5	538.5
Firm vs. industry match Year +1	-1.15	-0.5	-198.0
Firm vs. industry match Year +2	1.01	7.5	536.5
Firm vs. industry match Year +3	0.79	2.5	-46.5
Return on assets			
Firm vs. industry match Year -3	-1.40	-12.0**	-713.5**
Firm vs. industry match Year -2	-0.73	-8.5	-738.0
Firm vs. industry match Year -1	-0.40	-11.0*	-742.0
Firm vs. industry match Year 0	-0.08	-4.0	-484.5
Firm vs. industry match Year +1	-0.98	-5.0	-410.0
Firm vs. industry match Year +2	0.56	-3.5	-145.5
Firm vs. industry match Year +3	-1.02	-2.0	-284.5
Return on equity			
Firm vs. industry match Year -3	1.20	5.0	88.5
Firm vs. industry match Year -2	0.84	-3.5	-135.5
Firm vs. industry match Year -1	1.19	-6.0	-249.0
Firm vs. industry match Year 0	1.60	-5.0	356.5
Firm vs. industry match Year +1	-0.54	5.0	615.5
Firm vs. industry match Year +2	1.00	6.5	376.5
Firm vs. industry match Year +3	-0.80	-3.0	-336.5
Effective total tax rate			
Firm vs. industry match Year -3	1.87*	11.5**	631.0**
Firm vs. industry match Year -2	-0.96	-6.0	-316.5
Firm vs. industry match Year -1	-1.77*	-0.5	-311.0
Firm vs. industry match Year 0	-1.01	9.0	694.0
Firm vs. industry match Year +1	-0.12	3.0	364.5
Firm vs. industry match Year +2	1.61	2.5	300.0
Firm vs. industry match Year +3	0.28	-1.0	-67.5
Selling and general administrative expenses			
Firm vs. industry match Year -3	-0.11	2.0	49.5
Firm vs. industry match Year -2	-0.83	10.0	630.5
Firm vs. industry match Year -1	0.97	12**	1033.5**
Firm vs. industry match Year 0	0.30	10*	656.5
Firm vs. industry match Year +1	0.74	10.0*	619.5*
Firm vs. industry match Year +2	-0.67	0.0	-35.0
Firm vs. industry match Year +3	0.14	-2.0	-54.0

*Significant at .10. **Significant at .05.

The regression results indicate that with the possible exception for differences in ROA, distance moved has little impact on future relative financial performance. Firms making medium-distance moves showed a slightly significant improvement in their ROA versus nonrelocating firms, a result supported both by the OLS and bootstrapped results. However, the combined evidence from all three regressions suggests distance relocated has little to no impact on relative performance.

For the reasons given for headquarters relocation, only firms that move their headquarters as part of a general capacity reduction strategy show any significant results. Such firms exhibit significantly lower ROA, ROE, and total return based on standard error-based *t* statistics, whereas bootstrapped errors support only a lower ROA and total return versus matched firms. One possible interpretation of these findings is that these firms were weak at the time of the relocation announcement and continued to perform less than their matched counterparts. It should be noted that there are only 18 firms in this group (relocation motivated by capacity reduction), and so caution should be used in interpreting these results.

TABLE 4
Regression Results

<i>Dependent Variable</i>	<i>Difference in Return on Assets</i>			<i>Difference in Return on Equity</i>			<i>Difference in Total Return</i>		
Constant	-0.168	(0.151)	[0.144]	1.388	(0.273)***	[0.409]***	1.372	(0.968)	[0.809]
Distance 1 ^a	0.155	(0.149)	[0.142]	-0.186	(0.317)	[0.403]	-1.048	(0.953)	[0.806]
Distance 2 ^b	0.278	(0.15)*	[0.143]*	-0.064	(0.28)	[0.415]	-0.904	(0.966)	[0.816]
Business expansion	-0.124	(0.167)	[0.161]	0.244	(0.422)	[0.471]	0.296	(1.08)	[0.912]
Cost savings	0.206	(0.152)	[0.145]	0.173	(0.23)	[0.41]	-0.007	(0.978)	[0.816]
Capacity reduction	-0.396	(0.201)*	[0.191]*	-0.348	(0.197)*	[0.542]	-3.035	(1.292)**	[1.083]***
Facilities									
consolidation	-0.124	(0.204)	[0.195]	-0.064	(0.0178)	[0.608]	-0.313	(1.311)	[1.116]
Other/agency	0.108	(0.345)	[0.341]	-0.374	(0.248)	[0.844]	-1.688	(2.217)	[1.897]
Average debt	-0.919	(0.251)***	[0.245]***	-0.982	(0.5170)	[0.881]	-2.336	(1.617)	[1.385]*
R ²	.18			-.038			.035		
F statistic	2.92***			1.06			1.31		

NOTE: Standard errors are reported in parentheses and bootstrapped standard errors are reported in brackets.

a. Dependent variable in each model represents the cumulate return on assets, return on equity, or total return (buy and hold return) for the relocating firm for years +1 to +3 minus the cumulative measure for the matched nonrelocating firm during the same period.

b. Distance 1 and Distance 2 are dummy variables representing distance categories of fewer than 5 miles and greater than 5 miles and fewer than 50 miles respectively.

*Significant at .10 by the standard error. For bootstrapped standard errors, the estimated coefficient is in the upper 5% or the lower 5% of the bootstrapped distribution of the coefficient estimate. **Significant at .05 by the standard error. For bootstrapped standard errors, the estimated coefficient is in the upper 2.5% or the lower 2.5% of the bootstrapped distribution of the coefficient estimate. ***Significant at .01 by the standard error. For bootstrapped standard errors, the estimated coefficient is in the upper 0.5% or the lower 0.5% of the bootstrapped distribution of the coefficient estimate.

In summary, our regression results support our earlier findings that distance moved and stated motivation have little impact on relative performance.^{6,7}

In summary, our regression results support our earlier findings that distance moved and stated motivation have little impact on relative performance.

DISCUSSION, FURTHER RESEARCH, AND CONCLUSION

To revisit our main question: Does corporate headquarters relocation matter? From our analysis, we conclude that headquarters relocation does not have an impact upon firm performance over the time period of our investigation. Furthermore, we find no evidence that our results differ when introducing reasons for relocation with the possible exception of firms relocating to reduce capacity. This is surprising, given that prior research has found both negative and positive short-term market reactions surrounding the relocation announcement. If there are expectations for improvement in performance, they must be extremely long-range expectations. It may be the case that relocating firms are achieving some reduction in their overhead costs, but this is not translating into bottom-line increases in profitability.

To what extent does distance matter? The dividing of the sample by the distance moved did not result in any significant findings for short-, medium-, or long-distance location. Again, these findings are surprising, because earlier studies by Burns (1977) and O'Mara (1999) suggest that relocations have different distance drivers.

Clearly, corporate headquarters relocation is a very complex decision. However, this decision can be considered less important because a relocation decision has little impact on long-term operation of the firm. Whereas motivation for relocation can influence stock market reaction as prior research indicates, using a firm-matched-pair methodology, we have shown that motivation, other than for capacity-reducing reasons, has no significant relationship to performance measures over time. Furthermore, distance relocated does not appear to be much of a factor, either positive or negative, for firm performance over time. Although site costs that vary spatially no doubt improve the operating cost environment, it is more likely that the extent to which other factors such as human resources are affected plays a larger role in the overall impact of relocation. Corporate real estate

executives, economic developers, and their advisors would do well to add more weight to other factors when evaluating relocation options.

Several areas for further investigation are warranted. One area of interest would be to expand the sample so that results of headquarters relocations could be examined over the business cycle. One would expect that during business cycle troughs, investors might look more favorably upon relocation motivated by cost reduction, whereas moves motivated by strategy and marketing considerations might be more positively viewed in expansions.

Furthermore, previous research suggests that agglomeration economies play an important role in providing a rich environment within which command and control decisions are made (Davis & Henderson, 2003). How do the characteristics of the new location compare to the old location in terms of ancillary business activities? Does the business environment differ between the sending and receiving areas? Our ongoing research is investigating the extent to which the sending and receiving communities differ along these dimensions as well as other socioeconomic characteristics.

In short, corporate headquarters relocation research is an important and perplexing area for research.

NOTES

1. According to Barber and Lyon (1997), "Matching sample firms to control firms of similar sizes and market-to-book ratios yields test statistics that are well specified in virtually all sampling situations" (p. 343).
2. The Web sites are <http://proquest.umi.com> and <http://global.factiva.com>
3. The direct link to the online version is <http://www.compustat.com/www/>
4. Results are available upon request.
5. The third distance class (> 50 miles) is included in the constant term.
6. We experimented with variations in our basic model, and our results did not change. For example, we used actual distance in miles and distance in some regressions. In other regressions, we combined categories of reasons.
7. Our conclusions are based on "negative results" or a failure to find support for our hypotheses. We believe our conclusions are valid because we have tried to conduct a rigorous experiment designed to see if there are, in fact, benefits to headquarters relocations. We were unable to find these benefits despite using a number of different tests.

REFERENCES

- Alli, K. L., Ramirez, G. G., & Yung, K. (1991). Corporate headquarters relocation: Evidence from the capital markets. *AREUEA Journal*, 19 (4), 583-599.
- Barber, B. M., & Lyon, J. D. (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics*, 43, 341-372.
- Burns, L. S. (1977). The location of the headquarters of industrial companies: A comment. *Urban Studies*, 14, 211-214.
- Chan, H. S., Gau, G. W., & Wang, K. (1995). Stock market reaction to capital investment decisions: Evidence from business relocations. *Journal of Financial and Quantitative Analysis*, 30 (1), 81-100.
- Davis, J., & Henderson, J. V. (2003). *The agglomeration of headquarters* (Working Paper, Brown University, Providence, RI).
- Eisenberg, J. H., & Friedland, R. (1990, Fall/Winter). Corporate headquarters relocation. *Real Estate Issues*, 15, 38-41.
- Garcia-Mila, T., & McGuire, T. J. (2002). Tax incentives and the city. *Brookings-Wharton Papers on Urban Affairs*, pp. 95-132.
- Ghosh C., Rodriguez, M., & Sirmans, C. F. (1995). Gains from corporate headquarters relocations: Evidence from the stock market. *Journal of Urban Economics*, 38, 291-311.
- Holloway, S. R., & Wheeler, J. O. (1991). Corporate headquarters relocation and changes in metropolitan corporate dominance. *Economic Geography*, 67(1), 54-72.
- Katz, J. (2002, Quarter 4). Get me headquarters! *Regional Review*, 12, 9-19.
- Klier, T., & Testa, W. (2001, July). Headquarters wanted: Principals only need apply. *Chicago Fed Letter*, No. 167a, pp. 1-4.
- Klier T., & Testa, W. (2002). Location trends of large company headquarters during the 1990s. *Economic Perspectives*, 26 (2), 12-26.
- Kothari, S. P., & Warner, J. B. (1997). Measuring long-horizon security price performance. *Journal of Financial Economics*, 43, 301-339.
- Lawson, M. B., & Angle, H. L. (1998). Reflecting on a corporate relocation. *Group & Organization Management*, 23(3), 289-317.

- Manning, C., Rodriguez, M., & Ghosh, C. (1999). Devising a corporate facility location strategy to maximize shareholder wealth. *Journal of Real Estate Research*, 17(3), 321-340.
- Meyer, S. P., & Green, M. B. (2003). Headquarters in Canada: An analysis of spatial patterns. *Urban Geography*, 24(3), 232-252.
- O'Mara, M. A. (1999). Strategic drivers of location decisions for information-age companies. *Journal of Real Estate Research*, 17(3), 365-386.
- Semple, K. R. (1973). Recent trends in the spatial concentration of corporate headquarters. *Economic Geography*, 49, 309-318.
- Semple, K. R., Green, M. B., & Martz, D. J. F. (1985). Perspectives on corporate headquarters relocation in the United States. *Urban Geography*, 6(4), 370-391.
- Shilton, L., & Stanley, C. (1999). Spatial patterns of headquarters. *Journal of Real Estate Research*, 17(3), 341-364.
- Stroh, L. K. (1999). Does relocation still benefit corporations and employees? An overview of the literature. *Human Resource Management Review*, 9 (3), 279-308.