Available online at www.sciencedirect.com
ScienceDirect
J. Finan. Intermediation 17 (2008) 256–275
Journal of Financial Intermediation
www.elsevier.com/locate/jfi

Geography and acquirer returns

Vahap B. Uysal [a,*], Simi Kedia [b], Venkatesh Panchapagesan [c]

[a] *University of Oklahoma, USA*
[b] *Rutgers University, USA*
[c] *Goldman Sachs Asset Management LLC, USA*

Received 11 January 2006

Available online 17 January 2008

Abstract

We examine the impact of geographical proximity on the acquisition decisions of US public firms over the period 1990–2003. Transactions where the acquirer and target firms are located within 100 km of each other are classified as local transactions. We find that acquirer returns in local transactions are more than twice that in non-local transactions. The higher return to local acquirer is not explained by related, either horizontal or vertical, industry transactions, and appears to be related to information advantages arising from geographical proximity. These information advantages facilitate acquisition of targets that, on average, create higher overall return. The higher return to local acquirers is preserved by the use of target termination fee contracts.

1. Introduction

Several decades of research in mergers and acquisitions has documented the importance of synergies in creating value. These synergies have been shown to arise from vertical and horizontal relatedness. In this paper, we examine another potential source of synergy: geographic proximity between a bidder and a target, and its role in the creation and distribution of value in mergers and acquisitions.

Synergies from geographic proximity are likely to arise from more efficient sharing of common facilities and human capital between firms. The advantage of proximity has been docu-

* Corresponding author.
E-mail addresses: uysal@ou.edu (V.B. Uysal), skedia@rbsmail.rutgers.edu (S. Kedia), venkatesh.panchapgesan@gs.com (V. Panchapagesan).

1042-9573/$ – see front matter
doi:10.1016/j.jfi.2007.12.001

mented in takeovers in the banking industry. Cornett and Tehranian (1992), Houston and Ryngaert (1994), Houston et al. (2001) and DeLong (2001) find larger gains associated with mergers between banks that do business in the same region. Though these studies examine mergers in the banking industry during deregulation, similar synergies are likely to exist in other industries as well as in cross-industry transactions. Eckbo and Thorburn (2000) document that Canadian bidders outperform US bidders in Canada, indicating that geographical proximity also has a role to play in cross-border mergers.

Further, an increasing and diverse literature documents the role of geographic proximity in the transmission of information. Geographic proximity is associated with knowledge spillovers, resolution of information problems in bank lending, and more accurate earnings forecasts by analysts.[1] Information advantages associated with geographic proximity have also been found to explain the "local bias" observed in mutual fund investments as well as in the portfolio decisions of individual investors.[2] Geographic proximity between the acquirer and the target is likely to facilitate the transmission of *soft* information, which is difficult to codify and is often serendipitously recognized, as opposed to *hard* information that is tangible and can be easily coded, transmitted, and interpreted. For example, financial statements provide meaningful information on physical assets, whereas they are less useful in evaluating the productivity and value of knowledge-based assets like research and development. Local acquirers may have access to soft information through the interactions of their managers in social, civic, and business meetings. Transmission of information could also be facilitated by the existence of common customers, suppliers, and financial and information intermediaries such as banks and the media. Consequently, geographically proximate bidders may have access to more information about the target than distant bidders.

The existence of informed acquirers has important implications for takeovers. First, information advantages may facilitate discovery of less obvious forms of synergies. These synergies involving the acquisition and evaluation of soft information are quite distinct from the operational synergies discussed above. For example, proximity may help acquirer and target firms discover promising collaborative research and development ventures.[3] The existence of operational and information-based synergies implies that proximate deals are likely to generate higher value. Further, local acquirers should capture some of the higher value created, as these are specific to his being local. This is more likely to be the case if there are few other potential local acquirers.

Second, theoretical work like Fishman (1988) and Povel and Singh (2006) explicitly model the presence of both informed and uninformed bidders and its impact on the division of the surplus created in takeovers. In particular, this literature shows that informed acquirers earn higher rents relative to what they would earn in the absence of information asymmetry. The presence of information asymmetry between bidders implicitly reduces competition, as the uninformed bidder is more likely to be subject to the winner's curse problem. An uninformed bidder who wins the takeover contest after beating the informed bidder is more likely to have overpaid. Povel and Singh (2006) argue that these higher rents to the informed acquirer are protected by the use of deal protection devices like target termination fees.

[1] See Baum and Sorenson (2003) for a survey. Also refer to Jaffe et al. (1993), Audretsch and Feldman (1996), Petersen and Rajan (2002), Degryse and Ongena (2005), Malloy (2005) and Section 2 for a brief discussion of this literature.

[2] See Coval and Moskowitz (1999, 2001), Huberman (2001), Grinblatt and Keloharju (2001), Zhu (2002) and Ivkovich and Weisbenner (2005).

[3] Jaffe et al. (1993) find that geographic proximity facilitates collaborative research among the scientists of nearby firms. Scientists are more likely to engage in these collaborative efforts under the aegis of a single firm.

In summary, regardless of whether geographic proximity is associated with higher synergies or asymmetrically informed bidders, proximate acquirers should earn higher returns. We examine the role of geographic proximity on acquirer returns in a sample of all completed domestic transactions involving mergers and acquisitions of majority interest by a US bidder between 1990 and 2003. A bidder is classified as geographically proximate or "local" if the bidder's headquarters is located within 100 kilometers of the target firm. We find that bidders who are geographically proximate to their targets earn significantly higher returns than distant bidders. The average five-day cumulative abnormal return ($[-2, 2]$ days around announcement) is 2.37 percent for local transactions, compared to 0.90 percent for non-local transactions.

This higher acquirer return is observed in the acquisition of both public and private targets, as well as in asset purchases, and is robust to controlling for target and deal characteristics. Surprisingly, there is no evidence that local transactions are predominantly within the same industry or that local acquirers earn higher returns in same-industry deals relative to cross-industry deals. Higher synergies or reduction in local competition in same-industry local deals do not appear to explain the higher local return.[4] There is also no evidence that local deals proxy for transactions that are vertically related or that the higher return to local acquirers arises from higher synergies in vertically related transactions. In short, higher synergies in same-industry and vertical industry mergers do not appear to explain the observed return to local bidders. Other potential reasons, such as a higher probability of deal completion and lower information leakage in a local deal prior to the announcement, also fail to explain the higher return to local acquirers.

Soft information arising from geographic proximity is more valuable when the quality of the target firm's assets is difficult to measure and there is uncertainty about the extent of synergies (Coff, 1999). Consistent with this, we find higher local acquirer returns when the target is non-public, small, R&D intensive, located in a non-metro area, and has no analyst coverage. As information advantages may dissipate after the announcement of the transaction and before it is effective, we find that target termination fee contracts protect the higher return to the local acquirer, making it difficult for these higher returns to be competed away. These results substantiate the view that information advantages play an important role in explaining the higher return to local acquirers.

If local acquirers' information advantages facilitated discovery of potential synergies, local deals should be associated with higher overall returns than the average deal (Bradley et al., 1988; Lang et al., 1989) and potentially higher target returns. In contrast, if local acquirers' information advantages changed the sharing rule and allowed them to get a higher share of the value created, they should be associated with, on average, similar total returns and lower target returns than the average deal. We examine total and target returns for a subset of transactions where the target is public and find that (1) total returns are higher, and (2) target returns are not significantly different. Although target returns are not significantly higher in average local deals, we find some evidence that they are higher when local deals are associated with higher synergies.

Our results provide a new dimension to patterns of value creation in mergers and acquisitions. Though most prior literature finds that acquirers earn, on average, a zero return in their acquisitions, we document the importance of an acquirer's characteristics, in particular, its information advantages in the generation and distribution of value in these transactions. The findings complement the results of recent papers by Fuller et al. (2002) and Moeller et al. (2004) that document

[4] Local deals in the same industry, like the acquisition of a local theater chain, are likely to reduce local competition and lead to higher returns. We thank an anonymous referee for pointing this out.

that average return to acquirers is significantly positive when the targets are not publicly traded and for small acquirers, respectively.

The use of geographic proximity to capture information differences allows us to empirically document the importance of private information for takeover outcomes. We find that informed bidders are able to use their information advantages to undertake acquisitions that, on average, create more value and get a share of the surplus for themselves.

The rest of the paper is organized as follows. In Section 2, we develop the main hypothesis. We describe data in Section 3. We examine acquirer returns in Section 4 and explore target and total returns in Section 5. We extend our analysis to asset sales in Section 6 and conclude in Section 7.

2. Related literature

This paper is related to several strands of the literature. In this section, we discuss the relevant literature in order to crystallize its implications for our study. The role of proximity in reducing costs has been documented in the banking industry (Cornett and Tehranian, 1992; Houston et al., 2001; DeLong, 2001). Spiller (1985) finds a similar advantage to proximity in vertical mergers.

Aside from facilitating operational synergies, geographic proximity also has another well-documented effect, that is, of facilitating information transmission. Information advantages associated with geographic proximity have been found to explain the "local bias" observed in mutual fund investments (Coval and Moskowitz, 1999, 2001) as well as the portfolio decisions of individual investors (Huberman, 2001; Grinblatt and Keloharju, 2001; Zhu, 2002; Ivkovich and Weisbenner, 2005; Pirinsky and Wang, 2006; Feng and Seasholes, 2004; Dvorak, 2005). Studies such as Petersen and Rajan (2002) and Degryse and Ongena (2005) document the role of distance in information resolution for bank lending. In addition, Malloy (2005) reports that local equity analysts predict the future earnings of geographically proximate firms more accurately than their distant counterparts.

The information advantage of local agents in these studies suggests that geographic proximity facilitates the transmission of information that cannot be easily coded, transmitted, and interpreted, i.e., soft information. Soft information is likely to be very important in takeovers, especially in evaluating the quality of a target's knowledge-based assets (Coff, 1999). Therefore, information advantages of the local acquirer may facilitate not only the discovery but also the realization of synergies related to these assets. The existence of these synergies arising from proximity, whether operational or information-based, implies that proximate transactions will be associated with greater overall returns. Further, as proximity spurs these synergies, they cannot be obtained by a distant acquirer and so are likely to be captured by the local acquirer. This is more likely to be true if there are few other potential local acquirers.

There is another way that the information advantage of local acquirers affects takeovers. Theoretical work including Milgrom (1981), Milgrom and Weber (1982), Fishman (1988), Hirshleifer and Png (1989), and Povel and Singh (2006) studies the effect of information asymmetry between bidders in takeovers. Fishman (1988) shows that under information asymmetry, the informed bidder will make a high initial bid to deter uninformed bidders from becoming informed. Though he pays a high initial bid, he earns more than he would have if the uninformed bidder becomes informed and the takeover is completed through a standard auction. Povel and Singh (2006) find that a sequential bidding mechanism is optimal with information asymmetry. Under this mechanism, the informed bidder gets the exclusive first right to bid for the target. Though he pays a higher initial bid, he has a higher probability of winning and earns higher rents than if there were

no information asymmetry. Therefore, both the presence of synergies arising from geographic proximity and bidding under information asymmetries imply that acquirers earn higher returns in proximate transactions relative to distant transactions.

Prior literature has shown the importance of industry-level factors in determining takeover activity and the gains associated with it (Mitchell and Mulherin, 1996; Boone and Mulherin, 2000; Jensen and Ruback, 1983; Jarrell et al., 1988; Andrade et al., 2001). As industries tend to be geographically concentrated, proximate transactions could proxy for horizontal or vertical mergers. If gains from proximity are distinct from those arising from related transactions, then both related and unrelated proximate transactions should have similarly higher acquirer returns.

If the returns to proximate acquirer arise from information advantages, they should be related to proxies for information asymmetry of the target. We use several proxies including target organization, size, analyst coverage, location, and R&D intensity of the target to capture its degree of information opaqueness.

However, information advantages of proximate acquirers can dissipate after the announcement of the transaction and prior to it being effective. Povel and Singh (2006) argue that targets will use deal protection devices to commit to the original bid. Thus, the gains to a better-informed bidder are protected from an alternate bidder with a higher subsequent bid. Collectively, these suggest that higher returns to proximate acquirers should be protected by target termination fee contracts.

Though the implication of local deals for acquirer returns is unambiguous, the implications for total and target returns are less clear. If proximate deals are associated with higher synergies, then total returns are likely to be higher (Bradley et al., 1988; Lang et al., 1989). However, if proximate deals are not associated with higher synergies but with informed local acquirers, then the total returns will not be different. As the sample likely consists of both effects, i.e., higher synergies as well as informed acquirers, total returns should be somewhat higher in the overall sample. The implication for target returns is indeterminate: in the presence of higher synergies in proximate deals they are likely to be higher, and in the presence of asymmetrically informed acquirers they are likely to be lower.

3. Data

Our sample consists of all completed transactions on Securities Data Corporation's (SDC) US Mergers and Acquisitions Database from 1990 to 2003 for which the acquirer is covered under CRSP, and data on city and state of acquirer and target are available on SDC. We include only transactions that were classified as a merger or as an acquisition of majority interest. Later we also examine asset sales to test the robustness of our findings. We exclude transactions where either the acquirer or target is a foreign firm or is a financial firm or utility (SIC 6000–6999 and SIC 4900–4999). We also exclude small transactions valued at less than five million dollars and transactions by small acquirers, i.e., with market value less than five million dollars. Lower valued transactions and transactions of small acquirers are more likely to be localized and may not reflect any significant information advantages associated with geographic proximity.

We match data on the city and state of targets and acquirers reported in SDC with data from the US Census Bureau Gazetteer to get latitudes and longitudes for each acquirer and target. We then use the arc length between these two coordinates to estimate the distance between the acquirer and the target. The distance d_{12} between places 1 and 2 was estimated using the Haversine formula. With R the radius of the earth (≈ 6378 kilometers) the distance is

$$d_{12} = R \times 2 \times \arcsin\left(\min\left(1, \sqrt{a}\right)\right)$$

Table 1
Data characteristics over time

Year	Number of deals	Percentage of deals		Percentage of local deals
		with public targets	with private targets	
1990	66	56.06	36.36	28.79
1991	91	38.46	43.96	27.47
1992	128	27.34	56.25	17.97
1993	162	31.48	55.56	24.07
1994	242	39.67	46.69	18.18
1995	321	40.81	49.53	16.20
1996	370	40.27	52.70	17.57
1997	396	44.19	48.99	18.18
1998	476	50.00	43.70	17.65
1999	435	50.57	45.98	20.23
2000	449	39.64	55.90	26.50
2001	246	57.72	36.99	21.14
2002	179	48.60	45.25	19.55
2003	177	48.02	45.20	15.82
Total	3738	44.38	48.10	19.93

The table presents the distribution of mergers and acquisitions over time. Transactions are classified as local if the acquirer and target are located within 100 km of each other.

$$a = \left(\sin(dlat/2)\right)^2 + \cos(lat1) \times \cos(lat2) \times \left(\sin(dlon/2)\right)^2.$$

In the above expression $dlat = lat2 - lat1$ and $dlon = lon2 - lon1$. $lat1$ and $lon1$ are the latitude and longitude of place 1 (acquirer's location) and $lat2$ and $lon2$ are the latitude and longitude of place 2 (target location). Following Coval and Moskowitz (2001) and Malloy (2005), we classify transactions as local if the distance between the target and acquirer is less than one hundred kilometers.

The distribution of transactions and their characteristics are displayed in Table 1. In about 48% of the transactions, the targets were private firms, in 44% they were public firms, and in the remaining they were subsidiaries. In the sample, 20% of the transactions were classified as local. Geographic proximity is likely to facilitate transmission of soft information as opposed to tangible information that can be easily coded and transmitted. Consistent with this, we show later that returns in local deals are high when the target is research intensive, and soft information about its research program is important. Therefore, recent advances in information technology that facilitate a rapid increase in the amount of hard information are unlikely to impact the information advantages garnered due to proximity. This is consistent with the lack of any time trend in the fraction of local transactions observed in Table 1.

The average market value of the acquirers is $8504 million, while the median is much smaller at $622 million (Table 2). Though the average size of the local bidder is significantly larger than that of distant bidders, the medians are not significantly different. The mean relative value of the transaction, measured as the ratio of the value of the transaction to the market value of the acquirer in the year prior to the announcement of the transaction, is 0.38. The median is lower at 0.13. We do not find a significant difference in relative size of transactions across local and non-local acquirers.

About 60% of the transactions are in the same two-digit SIC as reported by SDC. The proportion of same-industry transactions is approximately the same in local and non-local mergers. About 27% of all transactions are cash-based. Transactions are classified as cash-based

Table 2
Summary statistics

	Full sample	Local	Non-local	*p*-value
Mean market value of acquirer	8504	10770	7940	*0.035***
Median market value of acquirer	622	636	621	*0.968*
Mean relative value of deal	0.379	0.397	0.375	*0.543*
Median relative value of deal	0.128	0.133	0.127	*0.595*
Fraction of deals				
Using only cash	0.270	0.205	0.287	*0.000****
Using cash and stock (hybrid)	0.278	0.275	0.279	*0.850*
Using only stock	0.452	0.520	0.434	*0.000****
Fraction of deals				
Within the same industry	0.602	0.627	0.596	*0.129*

Market value of the acquirer, in millions of dollars, is the market value in the year prior to the announcement of the deal. Relative value is the ratio of deal value to the market value of the acquirer in the year prior to the announcement of the deal. Mode of payment is classified as cash if the payment consisted of cash, debt, liabilities, or some combination of these. Mode of payment is classified as stock if the payment consisted of stock, warrants, options, or some combination of these. All other deals are classified as hybrid. Acquirer and target firms are classified as being in the same industry if they belong to the same two-digit SIC. Bidders are classified as local if they are located within 100 km of the target. *p*-values correspond to a t test for the difference in means between local and non-local transactions.

** Significance at the 5% level.

*** Idem, 1%.

if payment is made with cash, debt, liabilities, or some combination of these (Martin, 1996; Fuller et al., 2002). In our sample, 28% of transactions are hybrid, i.e., with payment made in combination of cash and common stock. Local bidders are less likely to use cash than non-local acquirers, but there is no difference in hybrid offers.[5]

4. Acquirer returns

In this section, we examine the relation between acquirer returns and local transactions. Acquirer returns are estimated as cumulative abnormal returns (CARs) for the five-day period $(-2, +2)$ around the announcement of the transaction. Since estimating market parameters does not significantly add to the precision of the event study estimates (Brown and Warner, 1985) and are also difficult to implement as acquirers in our sample are frequent bidders, we rely on market adjusted returns to calculate our CARs. The abnormal returns are given as $AR_i = r_i - r_m$, where r_i is the daily return on firm i and r_m the return on the CRSP value-weighted index.

Panel A of Table 3 displays average acquirer return for different ranges of the distance between the acquirer and target. Panel B of Table 3 reports mean and median CARs for local and non-local transactions. The average return to acquirers in local transactions is 2.37%, whereas in non-local transactions it is only 0.9 percent. The difference of 147 basis points in returns to acquirers of local versus non-local transactions is significant at the 1% level. This finding indicates that average acquirer returns in local transactions are more than twice that in non-local

[5] In addition to asymmetric information, other factors like a bidder's size and the hostility of the offer may affect a firm's decision on the method of payment. Therefore, we interpret the evidence related to the method of payment with caution.

Table 3
Distance and acquirer return

Panel A

Distance	Acquirer return	Standard error	No. obs.
0 to 25 km	0.023	0.006	510
25 to 50 km	0.032	0.016	144
50 to 75 km	0.029	0.015	66
75 to 100 km	−0.021	0.020	27
100 to 125 km	−0.005	0.024	33
125 to 150 km	0.000	0.035	36
Greater than 150 km	0.009	0.002	2922

The table displays mean acquirer returns $[-2, 2]$ days around announcement for different ranges of the distance between the acquirer and the target.

Panel B

	Mean acquirer returns (%)			Median acquirer returns (%)		
	Local	Non-local	p-value	Local	Non-local	p-value
100 km	2.365	0.896	*0.002****	0.823	0.415	*0.080**
75 km	2.532	0.869	*0.000****	0.868	0.405	*0.039***
125 km	2.243	0.911	*0.005****	0.820	0.405	*0.092**

The table displays mean and median acquirer returns $[-2, 2]$ days around the announcement of local and non-local transactions. Transactions are classified as local if the target and acquirer are within 100 km (or 75 km or 125 km) of each other. p-values correspond to a t test for difference in means (column 4) and to a z test for difference in medians (column 7).

Panel C

	Mean acquirer returns (%)			Median acquirer returns (%)		
	Local	Non-local	p-value	Local	Non-local	p-value
−10 to −3 day CAR (%)	1.9	1.2	*0.137*	1	0.4	*0.124*
Time to completion (in days)	90.9	83.5	*0.071**	73	68	*0.102*

Transactions are classified as local if the target and acquirer are located within 100 km of each other. Days-to-completion is the number of days between the announcement of the deal and the date when it is effective. p-values correspond to a t test for difference in means (column 4) and a z test for difference in medians (column 7).

Panel D

	Same-state acquisitions			Cross-state acquisition		
	Local	Non-local	p-value	Local	Non-local	p-value
Acquirer return	0.027	0.010	0.10*	−0.002	0.009	0.526
Standard error	0.006	0.008		0.019	0.002	
Number of obs.	677	256		42	2763	

Transactions are classified as local if the target and acquirer are located within 75 km of each other. Average Acquirer return is the $(-2, +2)$ day cumulative abnormal return on announcement. p-values correspond to a t test for difference in means between local and non-local acquirer returns.

* Significance at the 10% level.
** Idem, 5%.
*** Idem, 1%.

transactions. Though the median return to acquirers in local transactions is lower at 0.82%, it is still significantly higher than the 0.4% return in non-local transactions. These results show that stock prices react more favorably to the announcement of local transactions.

We examine the sensitivity of our findings to alternate definitions of local transactions. We find that if a distance of 75 km or 125 km, instead of 100 km, is used to define local transactions, the results are qualitatively similar. The mean and median returns in local deals continue to be significantly higher than that in non-local deals with these alternate cutoffs.

Panel C of Table 3 displays characteristics of local deals that might explain the higher return to acquirers in local deals. We examine if the higher acquirer return in local transactions is due to local transactions having a greater probability of success because they are announced closer to completion. We find that the days-to-completion, measured as the number of days between the date of merger announcement and the date when the transaction is completed, is actually higher for local deals than for non-local deals. Local deals are not announced closer to completion relative to non-local deals. We also do not find any evidence that local deals are associated with lower leakage of information in the pre-announcement period contributing to their higher announcement period return. The CARs over the -10 to -3 day period do not differ between local and non-local transactions.[6]

It is likely that firms prefer acquiring targets that are from the same state in order to avoid dealing with differences in states' legislation that can raise legal costs. As most of our local deals are also within-state deals, it is difficult to examine within-state and out-of-state local deals meaningfully in our sample. However, to examine if local deals are distinct from within-state deals, we examine within-state deals that are not local. As displayed in Panel D of Table 3, the average acquirer returns for within-state but non-local deals is about 1% and not statistically different from zero.[7] The local deals within-state are significantly different from these within-state non-local deals. This suggests that the significantly higher acquirer return in local deals is likely due to proximity rather than to same-state status.

The univariate evidence on higher acquirer returns in local transactions does not control for several important variables that affect acquirer returns. We follow prior literature and control for deal and acquirer characteristics. To control for mode of payment, we include a dummy for cash and hybrid deals. A non-public dummy, that takes the value one if the target is not public, is included to control for target organization. The natural logarithm of market value of the acquirer in the year prior to the announcement of the transaction is included to control for the size of the acquirer. We also control for the relative size of the transaction by including the log of the ratio of the transaction value to the market value of the acquirer. Year dummies are included to control for merger waves or other time trends in the data. Last, we include the local dummy that takes the value one when the transaction is local, i.e., when the target and acquirer firm are within 100 km of each other. As distribution of public firms affects the probability of a firm being acquired locally, we control for this by including the fraction of all public firms that were located within 100 km of the target. We control for relatedness of acquisition by including a same-industry dummy, which takes the value one if a bidder and its target share the same two-digit SIC.

[6] We also examined if there was a possibility that local deals were anticipated by the market. However, we find no difference in the price run-up of local and non-local acquirers in the 60-day, or 90-day period prior to the announcement.

[7] For the purpose of this table we have defined local deals as those where the target and acquirer are within 75 km of each other. This was done so that we have a sufficient number of within-state non-local deals. We thank an anonymous referee for pointing this out.

Table 4
OLS regressions of acquirer returns

	Full sample Model 1	Full sample (horizontal) Model 2	Full sample (vertical) Model 3
Intercept	0.049***	0.048**	0.039*
	0.001	*0.001*	*0.079*
Local	0.018***		
	0.002		
Log of frac	−0.003**	−0.003**	−0.003
	0.047	*0.046*	*0.078*
Cash	0.009**	0.009**	0.016**
	0.037	*0.036*	*0.010*
Hybrid	0.006	0.006	0.011
	0.245	*0.245*	*0.140*
Log(Relative size)	−0.004**	−0.004**	−0.005**
	0.022	*0.022*	*0.029*
Market value of acquirer (MV)	−0.008***	−0.008***	−0.009***
	0.000	*0.000*	*0.000*
Non-public	0.031***	0.031***	0.034***
	0.000	*0.000*	*0.000*
Same ind. dummy	−0.002	−0.001	
	0.590	*0.810*	
Local ∗ (Related)		0.015**	0.016*
		0.028	*0.072*
Local ∗ (1 − Related)		0.021**	0.038*
		0.032	*0.076*
Vertical ind. dummy			0.004
			0.503
N	3738	3738	1968
R-square	0.05	0.05	0.06
Year dummies	Yes	Yes	Yes

The dependent variable is the [−2, 2] days acquirer return around announcement. Relative size is the ratio of transaction value to acquirer market value. Non-public is a dummy that takes the value one if the target is a private or subsidiary firm. Mode of payment is classified as cash if the payment consisted of cash, debt, liabilities, or some combination of these. Mode of payment is classified as hybrid if the payment included cash and some combination of stock, warrants, or options. Transactions are classified as local if the acquirer and target were within 100 km of each other. Log of frac is the natural logarithm of the ratio of number of firms within 100 km to the target to the total number of firms. Same Ind. dummy takes the value of one if a bidder and its target share the same two-digit SIC. Vertical Ind. is a dummy for vertical merger. Related dummy takes the value one if transaction is a horizontal (vertical) merger in Model 2 (3). Year dummies were included but have not been displayed here for brevity. *p*-values of coefficients are in italics and are based on heteroskedastic-corrected errors.

* Significance at the 10% level.
** Idem, 5%.
*** Idem, 1%.

The estimated return to acquirers in local transactions, after controlling for other determinants of acquirer returns, is a highly significant 180 basis points (Table 4, Model 1). This estimate is in line with the higher average return to local acquirers seen in Table 3. After controlling for other factors that affect acquirer returns, in particular, target organization and acquirer size, we continue to find that the geographic proximity of bidders and targets is positively related to acquirer stock returns around merger announcements. The results on other determinants of acquirer returns are consistent with previous studies. Stock prices react more favorably to cash offers

(Travlos, 1987; Schwert, 2000), larger acquirers are associated with negative returns (Moeller et al., 2004), and acquisitions of non-public targets yield higher acquirer returns (Fuller et al., 2002).

4.1. Is it industry?

As industries tend to be geographically concentrated, local transactions could proxy for same-industry transactions. The higher return in local transactions then simply proxies for the higher synergies associated with same-industry transactions. These local deals within the same industry could also be associated with higher returns if they reduced local competition, e.g., the merger of two local movie theaters. We classify transactions as being in the same industry if the target and acquirer belong to the same two-digit SIC as reported by SDC. About 20.6% of all deals in the same two-digit SIC are local, and 18.8% of all deals in different industries are local. The difference is not significant, suggesting that local mergers are not concentrated in the same industry. There continues to be no evidence that local deals are more likely to be same-industry transactions when we use three-digit SIC codes or Fama–French industry classifications to classify transactions as being related.[8]

Further, we find no evidence that the local acquirer return is higher when the transaction is within the same industry. As seen in Model 2 of Table 4, acquirers earn higher returns in local deals regardless of whether the deal is within the same industry or across industries. We get similar results when we use three-digit SIC and Fama–French industry classifications, which are not reported for brevity. As the higher local return is not confined to same-industry transactions, neither synergies nor reduced local competition associated with same industry transactions is unlikely to account for the higher return to local acquirers.

Next we examine if local deals proxy for vertically related transactions, signifying that the higher return in these deals is due to greater synergies arising from vertical integration. We follow Fan and Goyal (2006) and Ravid and Pons (2005) and use Benchmark Input–Output Accounts to construct a measure of vertical relatedness.[9] The measure of the vertical relatedness of target and acquirer industries is $\frac{1}{2}(v_{ij} + v_{ji})$, where v_{ij} is the dollar value of industry i's output required to produce one dollar's worth of industry j's output. Consistent with prior literature, we classify the transaction as vertically related if the vertical relatedness measure exceeds 1%.

There is a somewhat higher propensity toward local deals when the target and acquirer are vertically related (23%) relative to when the target and acquirer are unrelated (18%). However, this higher incidence of local deals when targets and acquirers are vertically related does not account for the higher local return. As seen in Model 3 of Table 4, local acquirers earn a higher return regardless of whether the target and acquirer are related. Similar to the results on the same-industry transactions, we find a somewhat higher return to local acquirers when the deals are not vertically related. The findings suggest that the local return is not a proxy for related transactions.

Though we find a somewhat higher local return in unrelated transactions, both vertical and horizontal, this does not imply that unrelated transactions, on average, have higher acquirer returns. It is only in the subset of local transactions that we observe higher acquirer returns in unrelated deals. There appears to be no significant difference in related and unrelated acquirer

[8] When we use Fama–French industry classifications, about 20.4% of all same-industry deals are local and 19.2% of cross-industry deals are local. With three-digit SIC codes, 20.8% of all same industry deals are local while 19% of cross-industry deals are local.

[9] We are grateful to Avri Ravid for sharing his measure of vertical relatedness with us.

returns for the whole sample. As distant but related acquirers—both vertically and horizontally—are likely to be informed, proximity is less likely to be a source of information advantages. The fact that the local return is higher in unrelated deals, where information asymmetry is likely to be higher, is consistent with information advantages being the source of gains in local transactions.

4.2. The role of information

In this section, we examine the relation, if any, between acquirer returns and the information opacity of the target. If the documented local returns are due to information advantages, they should increase with the information asymmetry of the target. We use several proxies for the degree of information asymmetry of the target that have been developed in the prior literature. Information asymmetries between targets and acquirers are likely to be higher for private firms. Thus, the returns to local acquirers should be higher in acquisitions of private targets. Consistent with this view, we find that returns to local acquirers are significantly positive in acquiring private targets (Table 5, Model 1). However, local acquirer returns are not significantly higher when the target is a public firm (p-value of 0.16). To make sure that the insignificant return for public targets is robust, we estimate our model in the private and public sub-samples separately.[10] We find that local transactions are associated with significantly higher acquirer returns in both the private and public target sub-samples.[11] These findings suggest that information advantages might explain some of the higher return to local acquirers in the sub-sample of non-public targets.

Another proxy that we use for the degree of asymmetric information is the size of targets. Smaller firms are likely to face greater information asymmetries. As we do not have data on the size of the private firms, we use transaction value to proxy for the size of the target firm. Transactions in the top quartile of all transactions, greater than approximately $239 million, are classified as large and the remaining as small transactions. Model 2 shows that the acquirers earn about 200 basis points in local deals when the transaction value is small. For large transactions, acquirer return in local deals is positive, but is not statistically significant. The mean transaction value in the small category is about $57 million, and the mean relative value is 0.30. This suggests that small targets are acquired, on average, by smaller firms and might account for the large return to acquirers of about 2% in local deals. This implies that, on average, acquirers get about 7% of the value of the target in local deals.

Coval and Moskowitz (2001), Malloy (2005), and Loughran and Schultz (2005) find that non-metro firms are associated with greater information problems. This might be due to these firms being distant from the majority of the financial intermediaries, like banks, analysts, and market makers that are associated with reducing information asymmetries. We use the location of the target firm's headquarters to classify it as metro or non-metro. Metro firms are those that are located within 50 km from the 21 largest cities in the country.[12] All other target firms are classified as non-metro firms. As seen in Model 3, local acquirers of targets that are located in

[10] Fuller et al. (2002) report that the impact of some of the control variables, like mode of payment and relative size, differs between public and private targets. It is possible that joint estimation accounts for some of the weak results.

[11] These results are not reported for brevity. We find that the coefficient for the local dummy is 0.021 and significant at the 5% level for private targets. It is 0.015 and also significant at the 5% level for the public targets.

[12] Coval and Moskowitz (2001) classify metro firms as the 20 largest cities in the country. As our sample spans from 1990 to 2003, we use both the 1990 and 2000 census to classify the 20 largest cities. The metro cities are those that are either on the 1990 or 2000 list of the 20 largest cities. The two lists are the same with one exception. Our list of metro cities therefore includes 21 cities.

Table 5
OLS regressions of acquirer returns on target characteristics

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.048***	0.035**	0.045***	−0.034*	−0.034*	−0.032
	0.001	*0.037*	*0.002*	*0.081*	*0.091*	*0.102*
Non-public target	0.028***					
	0.000					
Local ∗ Non-public target	0.024***					
	0.005					
Local ∗ Public target	0.010					
	0.160					
Small target		0.007				
		0.320				
Local ∗ Small target		0.020***				
		0.003				
Local ∗ Large target		0.008				
		0.409				
Metro			0.005			
			0.326			
Local ∗ Metro			0.012			
			0.219			
Local ∗ Non-metro			0.022***			
			0.001			
Covered				0.003		
				0.587		
Local ∗ Covered				0.008		
				0.278		
Local ∗ Not covered				0.024*		
				0.060		
Target R&D					0.001	
					0.899	
Local ∗ Target R&D					0.019*	
					0.065	
Local ∗ (1 − Target R&D)					0.010	
					0.288	
Target Only termination fee						−0.005
						0.370
Local ∗ (Target Only termination fee)						0.018**
						0.047
Local ∗ (1 − Target Only termination fee)						0.012
						0.230
N	3738	3738	3738	1659	1659	1659
R-square	0.05	0.05	0.05	0.06	0.06	0.06
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable is the [−2, 2] days acquirer return around announcement. Local deals are those where the acquirer and target are within 100 km. Metro (Non-metro) refers to targets that are located within (outside) 50 km of the 21 largest cities as defined by the US Census. Covered (Not covered) targets are those with (without) analyst coverage according to I/B/E/S. Large (Small) target is a dummy variable which takes the value of one if target falls (does not fall) in the highest quartile in transaction value. Target R&D is a dummy which takes the value of one if target firm reports R&D expenses in the year prior to the acquisition announcement. Target only termination fee dummy is one when there exists only target but no acquirer termination fee. Other control variables are Log of relative size, log of frac, mode of payment (dummies for cash and hybrid deals), market value of acquirer, Same Ind. dummy, Non-public dummy, and year dummies. These variables are not reported for brevity. Estimation for Models 4, 5 and 6 are for public targets only. *p*-values of coefficients are in italics and are based on heteroskedastic-corrected errors.

* Significance at the 10% level. ** Idem, 5%. *** Idem, 1%.

non-metro areas earn a higher return (about 220 basis points) in their deals relative to when they acquire targets in metro areas (about 120 basis points).

To further examine the role of information, we use lack of any analyst coverage to capture potentially greater information asymmetry or lower visibility of targets. The presence of analysts is associated with a reduction in the information asymmetry between firms and markets.[13] We use the I/B/E/S summary history database to get data on the target firms that were covered by analysts. As there is no analyst coverage for private firms, we restrict our sample to cases where the target is a public firm and has the potential to be covered. About 60% of our public targets are covered.[14] Acquirers of targets that have no analyst coverage earn, on average, 240 basis points in their local deals. In contrast, bidder returns are not statistically different from zero when they acquire covered local targets (Table 5, Model 4).

Last, we try to characterize the nature of the information advantages arising from proximity. As prior research documents the importance of geographic proximity in the diffusion of knowledge and innovation (Jaffe et al., 1993; Audretsch and Feldman, 1996), information advantages in local deals might relate to target R&D programs. Further, targets with large R&D programs are likely to operate under greater information asymmetry (Aboody and Lev, 2000). We obtain the R&D expenses of target public firms from COMPUSTAT in the year prior to the acquisition announcement. We assume that firms that do not report any R&D expenses have no R&D.[15] In a subset of transactions where the target is public, and therefore data on R&D is available, we find that acquirer returns in local deals are significantly positive when the target has a R&D program (Table 5, Model 5). This finding suggests that superior information about local target R&D programs is one of the channels through which local acquirers capture higher returns.

In summary, we find that acquirer returns in local deals are increasing in the information asymmetry of the target and when the target has a R&D program. This suggests that the higher acquirer return in local transactions is at least partially associated with information advantages.[16]

4.3. Termination fees

As discussed earlier, Povel and Singh (2006) argue that higher returns to informed bidders are likely to be protected by the use of deal protection devices like termination fees. Bates and Lemmon (2003) and Officer (2003) empirically find that target termination fee contracts are used to compensate bidders for the potential of information appropriation by third parties. We examine whether the target termination fees are used in local deals to protect the higher return to local acquirers.

In our sample, target termination fees are seen in 66% of the deals where the target is public, and in only 3.5% of the deals with private targets. Therefore, we report our results only for the sub-sample with public targets. We find no significant difference in the incidence of termination fees: 62% of local deals and 67% of non-local deals have target termination fee contracts. The

[13] See Womack (1996) and Hong and Kubik (2003) for analyst's role in information generation.

[14] Our results are unchanged if we treat all private firms as being uncovered and include them in our estimation.

[15] As firms are required to report R&D expenses only if they exceed one percent of sales, this is a reasonable assumption.

[16] We also examined acquirer characteristics that might be associated with information advantages. In particular, as acquirers with high agency costs may be motivated to grow their firms beyond their optimal size to increase their power and control (Jensen, 1986; Lang et al., 1991), their acquisitions are less likely to be associated with information advantages. We use free cash in the firm and size of the acquirer to capture agency costs and find that higher return in local deals is primarily seen in the acquisitions of low agency cost acquirers.

theoretical rationale for bidder fee provision is not clear. Bates and Lemmon (2003) suggest an insurance hypothesis, i.e., bidder fee provisions may guarantee a fraction of gains to the target when breakup is costly. A small fraction of deals in the sample include bidder fee provisions. To isolate the use of target termination fee contracts protecting acquirer returns, we create a dummy that takes the value of one when the deal has only a target termination fee provision but does not have any acquirer termination fee provision. As seen in Model 6 of Table 5, we find that local deals with higher acquirer returns are accompanied by target termination fee contracts. Local deals that are not accompanied by termination fee contracts are not associated with higher returns.

5. Total and target returns

In this section, we explore the effect of geographic proximity on target and total returns. If local transactions are associated with greater synergies or information advantages, they should create higher overall value and have higher total returns (Bradley et al., 1988; Lang et al., 1989).

Analysis of total returns is restricted to a subset of transactions where the target is public and data is available on CRSP to calculate target and total returns. Abnormal return for the target is given as $AR_i = r_i - r_m$, where r_i is the daily return on the target firm i and r_m is the return on the CRSP value-weighted index. Consistent with the measurement of acquirer returns, we estimate target return over the $[-2, 2]$ period around announcement. Total return is the weighted average return to acquirers and targets, with the weights being the market value of the acquirer and target firms three days prior to the announcement of the transaction.

Total return in local transactions is significantly higher relative to distant transactions after controlling for the usual acquirer and deal characteristics (Table 6). Further, we find that the higher total returns are mostly observed when the target has an R&D program. These results suggest that local transactions, on average, create greater overall value, and information advantages, especially those related to R&D programs of targets, are at least partially responsible for the higher overall value created.

As expected, target returns in local deals are not different from those in non-local deals (Table 6, Model 3). As target returns are likely to be positive when local deals have higher overall synergies, we examine returns to the target when the potential for synergy is high, i.e., when target has an R&D program and when total returns are positive. Target returns are positive in local deals with R&D, though they are significant only at the 13% level. However, target returns in local deals with no R&D are significantly negative. We also find that target returns are higher (negative) in local deals when total returns are positive (not positive). These findings suggest that acquirers appear to gain at the expense of targets when local deals do not have higher synergies and that targets share the surplus if the local transaction is associated with higher synergies.

6. Asset sales

We examine whether a similar return to local transactions exists in other investment decisions of firms, in particular asset sales. The sample selection criterion for asset sales is similar to mergers and acquisition transactions. We include all completed asset sales on SDC from 1990 to 2003 for which the acquirer is covered under CRSP, and data on city and state of acquirer and target are available on SDC. We exclude transactions valued at less than five million and where either the acquirer or the target is a foreign firm, a financial firm, or a utility with a market

Table 6
OLS regressions of total and target returns

	Total returns		Target returns		
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	0.013	0.006	0.160***	0.101*	0.105*
	0.489	0.77	0.003	0.062	0.056
Local	0.014**		0.004		
	0.043		*0.838*		
Target R&D		0.008		0.060***	
		0.146		*0.000*	
Local ∗ Target R&D		0.018*		0.041	
		0.065		*0.135*	
Local ∗ (1 − Target R&D)		0.009		−0.041*	
		0.34		*0.051*	
High synergy					0.096***
					0.000
Local ∗ High synergy					0.042*
					0.076
Local ∗ Low synergy					−0.063***
					0.010
Log of frac	−0.005***	−0.006***	0.000	−0.004	0.002
	0.007	*0.004*	*0.956*	*0.540*	*0.669*
Cash	0.037***	0.039***	0.113***	0.126***	0.094***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*
Hybrid	0.021***	0.024***	0.000	0.019	−0.006
	0.001	*0.000*	*0.978*	*0.258*	*0.702*
Log(Relative size)	0.002	0.002	−0.010*	−0.008	−0.014***
	0.278	*0.21*	*0.058*	*0.145*	*0.010*
Market value of acquirer (MV)	−0.005***	−0.006***	0.006	0.005	0.007*
	0.000	*0.000*	*0.150*	*0.255*	*0.090*
Same ind. dummy	−0.001	0.000	0.002	0.007	0.007
	0.863	*0.969*	*0.903*	*0.639*	*0.652*
N	1544	1544	1544	1544	1544
R-square	0.06	0.06	0.07	0.09	0.11
Year dummies	Yes	Yes	Yes	Yes	Yes

In Models 1 and 2, the dependent variable is total CAR, which is the value weighted CARs of the acquirer and its target. The weights are market equity capitalizations of acquirer and target three days prior to the announcement. In Models 3, 4 and 5, the dependent variable is Target CAR, which is the [−2, 2] days target return around the announcement. Target R&D is a dummy that takes the value of one if target firm reports R&D expenses in the year prior to the acquisition announcement. Year dummies were included but have not been displayed here for brevity. High Synergy takes the value of one if the total CAR is greater than 0. Other variables are as defined in previous tables. *p*-values of coefficients are in italics and are based on heteroskedastic-corrected errors.

* Significance at the 10% level.
** Idem, 5%.
*** Idem, 1%.

value of less than five million dollars. Acquirer returns are cumulative abnormal returns over the [−2, +2] day period.

On average, acquirers earn significant positive five-day returns around the announcement of asset sales. This is consistent with prior evidence on the gains to acquirers in asset sales (Jain, 1985). The average acquirer return in non-local asset sales is 2.2 percent. This is significantly lower (at the 2% level) than the average acquirer return of 4% seen in local transactions (Table 7,

Table 7
Asset sales

Panel A: Descriptive statistics for the sample of assets sales

Fraction of transactions classified as local	16.14%
Average market value of acquirer	3724
Median market value of acquirer	372.6
Average relative value of transaction	0.24
Median relative value of transaction	0.083

Panel B

	Mean local deals	Mean non-local deals	*t* stat. for diff. in means	Median local deals	Median non-local deals	*z* stat. for diff. in medians
Acquirer returns	0.04	0.0221	2.44**	0.021	0.0134	3.44***

This table presents means and medians for transactions classified as local and non-local. Transactions are classified as local if the acquirer and target were within 100 km of each other.

Panel C

	Constant	Local	Log of frac	Cash	Hybrid	Log(RS)	MV	Same Ind.	Non-public	*N*	R^2	Year dummies
Model 1	0.069***	0.016**	0.002	−0.008	−0.006	0.014***	0.000***	−0.003	0.001	3946	0.04	Yes
	0.001	*0.014*	*0.223*	*0.311*	*0.470*	*0.000*	*0.008*	*0.492*	*0.96*			

The table results of an OLS regression where the dependent variable is the [−2, 2] days acquirer return around announcement. RS is the ratio of the value of the transaction to the market value of the acquirer at the end of the year prior to the announcement (MV). Non-public is a dummy that takes the value one if the target is a private or subsidiary firm. Mode of payment is classified as cash if the payment consisted of cash, debt, liabilities or some combination of these. Mode of payment is classified as hybrid if the payment included cash and some combination of stock, warrants or options. Transactions are classified as local if the acquirer and target were within 100 km of each other. Log of frac is the natural logarithm of the ratio of number of firms within 100 km to the target to the total number of firms. Same Ind. dummy takes the value of one if a bidder and its target share the same two-digit SIC. Year dummies were included but have not been displayed here for brevity. *p*-values of coefficients are in italics and are based on heteroskedastic-corrected errors.

** Significance at the 5% level.
*** Idem, 1%.

Panel B). The results are similar when we examine median returns. The median acquirer return in local transactions is 2.05%, which is significantly higher than the 1.33% for non-local transactions (at the 1% level). After controlling for the mode of payment, status of the target, and size of the transaction, local acquirers of asset sales continue to be associated with a significantly higher return of about 1.6 percent (Table 7, Panel C).

7. Conclusion

We find that acquirers earn significantly higher returns in their local transactions relative to their non-local transactions. This higher return to acquirers in local transactions is also economically significant: on average it is more than twice that in non-local transactions. For the subset of transactions where the target is public, we find that local transactions are associated with higher total returns. As acquirer returns in local transactions increase with the opacity of a target's information, this higher return to acquirers in local transactions is at least partially explained by information advantages arising from geographic proximity. One source of gains appears to be

information advantages related to the evaluation of target R&D programs. The higher gains to local acquirers are preserved by the use of target termination fee contracts. These findings add an important dimension—geographic proximity—to understanding how value is both created and distributed in acquisitions.

We do not find evidence that the higher acquirer return in local deals is associated with related transactions. In fact, local acquisitions happen within industries and across industries in approximately the same proportion and earn similar returns. These findings extend our knowledge of cross-industry takeovers and the role of proximity in generating value in these acquisitions.

This paper also sheds light on the role of information asymmetries in mergers and acquisitions. Despite extensive theoretical work on asymmetric information in mergers and acquisitions (Milgrom, 1981; Milgrom and Weber, 1982; Fishman, 1988; Hirshleifer and Png, 1989; Povel and Singh, 2006), the empirical literature on the role of information asymmetries is somewhat sparse due to the difficulty of capturing information differences. Using geographic proximity allows us to capture the role of information advantages in acquisitions. The results suggest that information flow across spatially constrained networks is slow. Though we find that R&D is one source of the local information advantage, the paper highlights the importance of further research that identifies the precise nature of the information advantages that arise from geographic proximity.

Acknowledgments

We thank Andres Almazan, Aydo?an Alt?, Phil Dybvig, Jarrad Harford, Jay Hartzell, Jean Helwege, Kewei Hou, Micah Officer, Christo Pirinsky, Avri Ravid, John Robinson, Rene Stulz, Anjan Thakor, Sheridan Titman, Ralph Walkling, Randall Watson, Chitru Fernando, Pradeep Yadav, Louis Ederington and Roberto Wessels. We would also like to thank seminar participants at Arkansas University, Binghampton University, Ohio State University, University of Cincinnati, University of Oklahoma, Oklahoma State University, University of Texas at Austin, University of Wisconsin, Washington University, the 15th Annual FEA Conference at USC and the Financial Research Association Meetings in Las Vegas. Most of the analysis in this paper was completed before Venkatesh Panchapagesan joined Goldman Sachs Asset Management LLC. All errors are ours.

References

Aboody, D., Lev, B., 2000. Information asymmetry, R&D and insider gains. J. Finance 55, 2747–2766.

Andrade, G., Mitchell, M., Stafford, E., 2001. New evidence and perspectives on mergers. J. Econ. Perspect. 15, 103–120.

Audretsch, D., Feldman, M., 1996. R&D spillovers and the geography of innovation and production. Amer. Econ. Rev. 86, 630–640.

Bates, T., Lemmon, M., 2003. Breaking up is hard to do? An analysis of termination fee provisions and merger outcomes. J. Finan. Econ. 69, 469–504.

Baum, J.A.C., Sorenson, O., 2003. Geography and Strategy. Elsevier, Oxford.

Boone, A., Mulherin, H., 2000. Comparing acquisitions and divestitures. J. Corp. Finance 6, 117–139.

Bradley, M., Desai, A., Kim, E.H., 1988. Synergistic gains from corporate acquisitions and their division between the shareholders of target and acquiring firms. J. Finan. Econ. 21, 3–40.

Brown, S., Warner, J., 1985. Using daily stock returns: The case of event studies. J. Finan. Econ. 14, 3–32.

Coff, R.W., 1999. How buyers cope with uncertainty when acquiring firms in knowledge-intensive industries: Caveat emptor. Organ. Science 10, 144–161.

Cornett, M., Tehranian, H., 1992. Changes in corporate performance associated with bank acquisitions. J. Finan. Econ. 31, 211–234.

Coval, J., Moskowitz, T., 1999. Home bias at home: Local equity preference in domestic portfolios. J. Finance 54, 2045–2073.
Coval, J., Moskowitz, T., 2001. The geography of investment: Informed trading and asset prices. J. Polit. Economy 109, 811–841.
Degryse, H., Ongena, S., 2005. Distance, lending relationships and competition. J. Finance 60, 231–267.
DeLong, G., 2001. Stockholder gains from focusing versus diversifying bank mergers. J. Finan. Econ. 59, 221–252.
Dvorak, T., 2005. Do domestic investors have an informational advantage? Evidence from Indonesia? J. Finance 60, 817–839.
Eckbo, E., Thorburn, K., 2000. Gains to bidder firms revisited: Domestic and foreign acquisitions in Canada. J. Finan. Quant. Anal. 35, 1–25.
Fan, J., Goyal, V., 2006. On the patterns and wealth effects of vertical mergers. J. Bus. 79, 877–902.
Feng, L., Seasholes, M., 2004. Correlated trading and location. J. Finance 59, 2117–2145.
Fishman, M.J., 1988. A theory of preemptive takeover bidding. RAND J. Econ. 19, 88–101.
Fuller, K., Netter, J., Stegemoller, M., 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. J. Finance 57, 1763–1993.
Grinblatt, M., Keloharju, M., 2001. How distance, language and culture influence stockholdings and trades? J. Finance 56, 1053–1073.
Hirshleifer, D., Png, I.P.L., 1989. Facilitation of competing bids and the price of a takeover target. Rev. Finan. Stud. 2, 587–606.
Hong, H., Kubik, J.D., 2003. Analyzing the analysts: Career concerns and biased earnings forecasts. J. Finance 58, 313–351.
Houston, J., Ryngaert, M., 1994. The overall gains from large bank mergers. J. Banking Finance 18, 1155–1176.
Houston, J., James, C., Ryngaert, M., 2001. Where do merger gains come from? Bank mergers from the perspective of insiders and outsiders. J. Finan. Econ. 60, 285–331.
Huberman, G., 2001. Familiarity breeds investment. Rev. Finan. Stud. 14, 659–680.
Ivkovich, Z., Weisbenner, S., 2005. Local does as local is: Information content of the geography of individual investors' common stock investments. J. Finance 60, 267–306.
Jaffe, A.B., Trajtenberg, M., Henderson, R., 1993. Geographic localization of knowledge spillovers as evidenced by patent citations. Quart. J. Econ. 108, 577–598.
Jain, P., 1985. The effect of voluntary sell-off announcements on shareholder wealth. J. Finance 40, 209–224.
Jarrell, G., Brickley, J., Netter, J., 1988. The market for corporate control: The empirical evidence since 1980. J. Econ. Perspect. 2, 49–68.
Jensen, M., 1986. Agency costs of free cash flow, corporate finance and takeovers. Amer. Econ. Rev. 76, 323–330.
Jensen, M., Ruback, R., 1983. The market for corporate control: The scientific evidence. J. Finan. Econ. 11, 5–50.
Lang, L., Stulz, R., Walkling, R., 1989. Managerial performance, Tobin's Q, and the gains from successful tender offers. J. Finan. Econ. 24, 137–154.
Lang, L., Stulz, R., Walkling, R., 1991. A test of free cash flow hypothesis: The case of bidder returns. J. Finan. Econ. 29, 315–335.
Loughran, T., Schultz, P., 2005. Liquidity: Urban versus rural firms. J. Finan. Econ. 78, 341–374.
Malloy, C., 2005. The geography of equity analysis. J. Finance 60, 719–755.
Martin, K., 1996. The method of payment in corporate acquisitions, investment opportunities, and management ownership. J. Finance 51, 1227–1246.
Milgrom, P.R., 1981. Rational expectations, information acquisition and competitive bidding. Econometrica 49, 921–943.
Milgrom, P.R., Weber, R.J., 1982. The value of information in a sealed-bid auction. J. Math. Econ. 10, 105–114.
Mitchell, M., Mulherin, H., 1996. The impact of industry shocks on takeover and restructuring activity. J. Finan. Econ. 41, 193–229.
Moeller, S., Schlingemann, F., Stulz, R., 2004. Firm size and the gains from acquisitions. J. Finan. Econ. 73, 201–228.
Officer, M., 2003. Termination fees in mergers and acquisitions. J. Finan. Econ. 69, 431–467.
Petersen, M., Rajan, R., 2002. Does distance still matter? The information revolution in small business lending. J. Finance 57, 2533–2570.
Povel, P., Singh, R., 2006. Takeover contests with asymmetric bidders. Rev. Finan. Stud. 19, 1399–1431.
Pirinsky, C., Wang, Q., 2006. Does corporate headquarters location matter for stock returns. J. Finance 61, 1991–2015.
Ravid, A., Pons, V., 2005. Vertical mergers. Working paper, Rutgers University.
Schwert, G.W., 2000. Hostility in takeovers: In the eyes of the beholder? J. Finance 55, 2599–2640.
Spiller, P.T., 1985. On vertical mergers. J. Law Econ. Organ. 1, 285–312.

Travlos, N., 1987. Corporate takeover bids, method of payment, and bidding firms' stock returns. J. Finance 42, 943–963.
Womack, K., 1996. Do brokerage analysts' recommendations have investment value? J. Finance 51, 137–167.
Zhu, N., 2002. The local bias of individual investors. Working paper, Yale University. October.