Local Return Comovement and Geographic Dispersion

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Abstract

This paper investigates the relationship between geographic dispersion and local return comovement based on firm headquarters. Using the number of different states mentioned in 10-K filings as a proxy for the geographic dispersion of a firm, we show that concentrated firms (operating in few states) exhibit greater comovement with firms headquartered in the same region than dispersed firms. We argue that comovement is exacerbated in concentrated firms as investors are more likely segment these firms based on categories. Moreover, we find the firms exhibit higher local return comovement when the peer firms located in the same area announce their earnings and lower local comovement during the month of its own annual earnings announcement, which suggests the intra-regional attention transfer.

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1. Introduction

There has been a rapid growth of research exploring comovement dynamics for stock returns[1]. Supporting the theory that equity investors exhibit a local bias, Pirinsky and Wang (2006) show that firms' stock returns co-move within geographic clusters (based on geographic headquarters). In this study, we document that inside regional nodes, firms with a lower level of geographic dispersion (i.e. more geographically concentrated) exhibit stronger local comovement than more geographically dispersed firms. Investors appear to aggregate information related to locally-focused stocks within geographical regions, leading to a lower level of information diffusion to outside regions. Within these local hubs, we find evidence of significant attention transfer between firms – earnings announcements and analyst revisions drive comovement in returns in localized peer group firms. Interestingly, these effects are particularly pronounced for firms headquartered in areas with low social capital. Together, our results shed light on the subset of firms that exhibit return comovement, showing that geographically concentrated firms are much more sensitive to the stock price movements of their local peers.

We build upon the theoretical work of Veldkamp (2006) and Peng and Xiong (2006), and the empirical literature documenting the local bias of investors (see. e.g., Grinblatt and Keloharju, 2001; Ivkovic and Weisbenner, 2005; Massa and Siminov, 2006) leads us to hypothesize that geographically local firms exhibit greater local return comovement than their dispersed counterparts for several reasons. Firstly, geographically local firms are more likely to be held by local investors. Due to their relatively high information processing costs, investors are more likely to use common information sets across multiple local stocks, leading to a greater level of comovement. Secondly, local investors exhibit category-learning behavior and limited attention. Thus, they may prefer to use market-wide or regional-level information when making their trading decisions.

[1] Return comovement has been studied around index inclusion (Barberis, Shleifer, and Wurgler, 2005; Boyer, 2011), stock splits (Green and Hwang, 2009; Kumar, Page and Spalt, 2013), and for firms with same lead underwriters (Grullon, Underwood, and Weston, 2014), firms with same active mutual fund owners (Antón and Polk, 2014), and firms sharing same sell-side analyst coverage (Muslu, Rebello, and Xu, 2014).

Using the number of different states mentioned in firms' 10-K filings for the proxy of geographic dispersion (Garcia and Norli, 2012), we find evidence from both time-series and cross-sectional regressions supporting our predictions. The estimated comovement slope of local portfolio returns for geographically local (concentrated) firms is higher than the slope for geographically dispersed firms by 0.18. These findings are also economically meaningful: a one-standard deviation increase in our geographic dispersion measure (*log(1+NSTATES)*) leads to a 17.52-percent decrease in local return comovement. Put differently, geographically local firm ranking in the bottom decile of geographic dispersion exhibits 46.78 percent higher local return comovement than geographically dispersed firm ranking in the top decile of geographic dispersion does.

Next, in order to study the attention allocation and information production within the geographic clusters, we examine the pattern of local return comovement during earnings announcements and analyst recommendation revisions. Information transfer between firms in the same industry during earnings announcement has been previously documented (see, e.g., Ramnath, 2002; Thomas and Zhang, 2008), and Drake, Jennings, Roulstone, and Thornock (2017) extend it to attention transfer via Google Search Volume Indices. We find evidence of intra-regional attention transfer: firms exhibit higher local return comovement when there is an increasing number of earnings announcements or analysts' recommendation revision of local peer firms in the same month.

The attention transfer effect is pronounced among geographically local firms. Around other local firms' earnings announcements or analysts' recommendation revisions, a given locally-focused firm exhibits a higher degree of local comovement. However, in the month of a firm's own earnings announcement, the added attention leads investors to price the stock using firm-specific information. Consequently, locally focused firms exhibit less local return comovement during their own earnings announcement month.

Moreover, we perform the sub-sample analysis by terciles of the social capital in the regions where firms are located, we find that the pattern of higher local return comovement for geographically local firms is most prominent among firms headquartered in low social capital counties. Wei and Zhang (2020) and Shao and Wang (2021) document that both retail and institutional investors in low trust (social capital) regions exhibit higher local bias, an effect we find extends to return comovement.

Additionally, we perform a series of robustness checks, and we show that our results remain robust and significant after dropping sample firms headquartered in specific regions, dropping samples in January, February and March, controlling for regional economic activities, or using alternative definitions of peer firms.

We make several contributions to literature. Firstly, we contribute to two strands of literature on stock comovement and geographic dispersion and present evidence showing the negative relationship between geographic dispersion and local return comovement, which cannot be fully explained by firm-specific fundamentals or regional economic activities. Secondly, we contribute to the literature on intra-industry information transfer by extending it to the intra-regional aspect and show the local peers' corporate events affect the return pattern of the firm itself, which suggests the intra-regional attention transfer.

The rest of this paper is organized as follows, In Section 2, we review relevant literature and develop the main hypotheses. In Section 3, we describe the data and research methodologies. In Section 4, we present and discuss the results. Lastly, Section 5 concludes the paper.

2. Relevant Literature and Hypotheses

Our research is built on several streams of literature. Firstly, the topic of stock return comovement has attracted much attention. Veldkamp (2006) models a market with high information processing costs, with rational investors only willing to purchase a subset of information for certain assets. This model then forecasts the information-driven price comovement as investors use this common information subset to price assets. Peng and Xiong (2006) provide support from the behavioral perspective, based on category-learning behavior of investors with limited attention. Such investors would prefer to evaluate the market- or industry-level information instead of firm-specific information, which, combined with investor overconfidence, consequently, leads to the excess return comovement.

Empirically, return comovement has been found around events including index inclusion (Barberis, Shleifer, and Wurgler, 2005; Boyer, 2011) and stock splits (Green and Hwang, 2009; Kumar, Page and Spalt, 2013). Moreover, stock returns tend to covary when firms share same lead underwriters in initial public offering or seasoned equity offering (Grullon, Underwood, and Weston, 2014), same active mutual fund owners (Antón and Polk, 2014), or same sell-side analyst coverage (Muslu, Rebello, and Xu, 2014). Hameed, Morck, Shen, and Yeung (2015) further support the prediction of Veldkamp (2006) with empirical evidence that firms with high analyst coverage would become "bellwether firms" helping to predict the stock performance of their industry peers with lower coverage.

Financial economists also support the attention-induced comovement of Peng and Xiong (2006) by showing the positive relationship between comovement in investor attention and return comovement (Dang, Moshirian, and Zhang, 2015; Drake, Jennings, Roulstone, and Thornock, 2017). Malceniece, Malcenieks, and Putniņš (2019) add to the comovement literature by showing high frequency trading contributes to faster market-wide information transmission and the stronger return and liquidity comovement.

A sub-stream of the literature focuses on the return covariance among geographically related firms. Pirinsky and Wang (2006) document strong return comovement of firms whose headquarters are in the same Metropolitan Statistical Area (MSA). Pirinsky and Wang (2006) also suggest that the comovement among local stocks cannot be explained by firm-level or regional economic fundamentals. Moreover, they show that the comovement effect is more pronounced for smaller firms, those with a greater share of individual investors, and for firms located regions with lower levels of financial sophistication. Kumar et al. (2013) argue that retail investors are key participants in driving comovement, particularly during period of high market-wide uncertainty (which creates more noisy signals for traders). Eun, Wang, and Xiao (2014) in a global setting find that stocks exhibit stronger comovement in countries with higher level of tightness or collectivism in their cultures, consistent with previous findings of information-induced comovement (Veldkamp, 2006; Barberis et al., 2005; Kumar et al, 2009). Additionally, Kumar, Page, and Spalt (2016) document strong comovement among lottery-like stocks (which are typically favored by retail investors) and find this is more pronounced for the firm located in regions where local investors show a stronger propensity to gamble.

The second stream of literature is related to the geographic dispersion of firms and its impact on firm performance. Using state name counts from the 10-K filings as a proxy for geographic dispersion, Garcia and Norli (2012) document stock outperformance of locally focused (concentrated) firms over geographic dispersed firms by 8.4% annually. Subsequent research has found that sell-side analysts exhibit greater levels of disagreement and more bias in earnings forecasts for geographically dispersed firms (Platikanova and Mattei, 2016). Geographically dispersed firms tend to engage in earnings management (Shi, Sun, and Luo, 2015; Platikanova and Mattei, 2016), and have worse performance in corporate social responsibility (Shi, Sun, Zhang, and Jin, 2017), implying that geographically dispersed firms exhibit higher level of information asymmetry. Additionally, using similar 10-K state name measures, Bernile, Kumar and Sulaeman (2015) argue that institutional investors can exploit this information asymmetry among firms which have economic interests in the region where institutional investors are headquartered.

Thirdly, our study is related to the local bias of investors. The phenomenon of local or home bias is widely documented by various studies (e.g., Grinblatt and Keloharju, 2001; Ivkovic and Weisbenner, 2005; Massa and Siminov, 2006), and finds that investors exhibit a strong preference to invest in stocks headquartered near to them. There is some debate as to whether local investors hold informational advantages, or they under-diversify their holdings of local stocks (Seasholes and Zhu, 2010). Moreover, using quasi-natural experiments such as regional holidays and power outages, financial economists (Shive, 2012; Jacobs and Weber, 2012) show that local investors positively contribute to the trading volume and price discovery of local stocks. Recently, Branikas, Hong and Xu (2020) use an instrumental variable approach to account for potential endogeneity of the household's location choice, and document similar patterns in local bias.

Combining three strands of literatures discussed above, we expect that investors hold a higher proportion of their investments in the firms located in the same region. Given the hypotheses of limited attention (Peng and Xiong, 2006) and costly information processing (Veldkamp, 2006), investors may price local stocks using the regional-specific information or using a common subset of information encompassing stocks in the local portfolio. Therefore, we conjecture that geographically local firms would exhibit stronger comovement with the other firms headquartered in the same region than the geographically dispersed firms, which we summarize in Hypothesis 1.

H1: Stock returns of local firms co-move more with the returns of other firms headquartered in the same region than geographically dispersed firm.

The literature on intra-industry information transfers (see, e.g., Ramnath, 2002; Thomas and Zhang, 2008; Chung, Hrazdil, and Trottier, 2015; Brochet, Kolev, and Lerman, 2018; Hann, Kim, and Zheng, 2019) documents that the earnings of a "first announcer" have an impact on the non-announcing peer firms in the same industry. Drake et al. (2017) show that the earnings announcements of peer firms in the same industry affects market attention on the firm itself, and that the attention transfer is more pronounced in the firms exhibiting higher stock comovement.

Alongside this, comovement has been shown to vary with the level of distraction among investors. Huang, Huang, and Lin (2019) show that large jackpot lotteries distract investors' attention, contributing to greater stock comovement with market-level information in Taiwan. Ehrmann and Jansen (2020) show the attention-induced stock return comovement with the national stocks when there is a FIFA World Cup match for the national team. Other local firms' corporate events are likely to be attention-grabbing for investors. Combined with the hypotheses of limited attention (Peng and Xiong, 2006) and costly information (Veldkamp, 2006), we hypothesize that intra-regional attention transfer is heightened, and that comovement with local firms is more pronounced during periods when peer firms located in the same region experience corporate events. Moreover, given the home bias of local investors, we conjecture that the attention transfer is more pronounced for local firms than geographically dispersed firms. This would lead to Hypothesis 2 and 3.

H2: A firm's return comovement with the local portfolio increases when peer firms in the same region experience corporate events.

H3: Locally-focused firms exhibit greater comovement with local portfolio when peer firms in the same region experience corporate events than geographically dispersed firm.

3. Data and Methodology

We estimate stock return comovement with a local portfolio approach, following Pirinsky and Wang (2006). Our study focuses on U.S. domestic common stocks over the period from 2001 to 2018, excluding REITs, closed-end funds, and ADRs (firms with CRSP share codes other than 10 or 11). Following previous studies (e.g., Ivkovic and Weisbenner, 2005; Pirinsky and Wang, 2006), we define the firm's location as the headquarter location. However, researchers (see, e.g., Pirinsky and Wang, 2006; Bai, Fairhurst and Serfling, 2020) point out the issue of backfilling in headquarter location from COMPUSTAT. Thus, we obtain the historical headquarters data from the column of business address in the header of 10K/Q filings[2] and define the firm's region by the Metropolitan Statistical Area (MSA) of its headquarters. Then, following Pirinsky and Wang (2006), we construct the local portfolio for each MSA, and we require each MSA to have at least 5 firms and 2 industries (by Fama-French (1997) 48 industries). The local portfolio return, $R_{i,t}^{LOC}$, for firm i in month t is the equally weighted return of the MSA portfolio based on corporate headquarters, after excluding the return of the firm i. We also calculate the equally weighted industry portfolio return, $R_{i,t}^{IND}$, for each firm i, similar to the process of estimating local portfolio return. Lastly, R_t^{MKT} is the excess return of the value-weighted market portfolio in month t.

[2] We obtain the augmented 10-X header data from the Notre Dame Software Repository for Accounting and Finance, https://sraf.nd.edu/data/augmented-10-x-header-data/.

We regress Model (1) for each firm and the coefficient, β^{LOC}, is expected to capture the degree of comovement of return on the firm with other local firms' returns in the same MSA. Hypothesis 1 predicts the higher β^{LOC} for the geographically local firms.

$$R_t = \alpha_i + \beta^{LOC} R_t^{LOC} + \beta^{MKT} R_t^{MKT} + \beta^{IND} R_t^{IND} + \varepsilon_{i,t} \quad (1)$$

We estimate the geographic dispersion by counting the number of states mentioned from the 10-K filings via the Electronic Data Gathering, Analysis, and Retrieval system (EDGAR), consistent with previous literatures (Garcia and Norli, 2012; Platikanova and Mattei, 2016). Then we use the natural logarithms of one plus the number of different states mentioned and the corresponding decile ranks as the measures of geographic dispersion used in the later regressions.

To further test Hypothesis 1 in the cross-sectional setting, we first estimate the firm-level local comovement measure, $\beta_{i,t}^{LOC}$ for each month using the daily stock returns and then regress the following Model (2). $GD_{i,t-1}$ are the lagged geographic dispersion measures including *NSTATES*, *LOG(1+NSTATES)* and *LOCAL RANK*. *NSTATES* is the number of different states mentioned in firm's 10-K filings. *LOG(1+NSTATES)* is the natural logarithm of one plus *NSTATES*. *LOCAL RANK* is the decile rank of *NSTATES* times minus one for each year-month, ranging from 0 to 1. Industry fixed effects (determined by Fama-French (1997) 48 industries) are expected to capture the unobservable time-invariant patterns in each industry and year-month fixed effects are included to capture the time trends. Standard errors are clustered by firm in the regression.

$$\beta_{i,t}^{LOC} = b_0 + b_1\, GD_{i,t-1} + \mathbf{\Gamma} * Firm - Level\ Controls_{i,t-1} + Industry\ FEs + Yearmonth\ FEs + u_{i,t} \quad (2)$$

A set of lagged control variables are included in the Model (2), consistent with Pirinsky and Wang (2006). We include a set of firm-specific variables, *AT (Total Assets), MB, ROA, DEBT, STD(EARN), TOBINQ*, *ADVERTISEMENT*, *DIV YIELD*. Then, we include variables related to stock ownership including *NUMBER OF SHAREHOLDERS* and *IO*. Additionally, *ANALYSTS* and *ANALYST DISP* are included to account for the level of information asymmetry. Table A1 provides the details of all variables used in this paper.

In order to test intra-regional attention transfer suggested in Hypothesis 2 and 3, we regress the monthly local comovement using Model (3) and (4), similar to the setting used in Drake et al. (2017). In the main regressions, we treat other firms headquartered in the same MSA as the peer firms for each observation.[3] Corporate events include annual earnings announcements and analyst recommendation revisions. Then, *PEER EA* is the natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same month. *PEER REVISION* is the natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month. *EA* is dummy variable equal to one if the firm announces its annual earnings in the same month and zero otherwise. *REVISION* is dummy variable equal to one if the firm receives the analysts' recommendation revisions in the same month and zero otherwise. Same set of control variables used in Model (2), industry and year-month fixed effects are included in Model (3) and (4). The hypothesis of attention transfer would predict the positive sign of c_2 (d_2), suggesting the earnings announcements (the revisions of analysts' recommendations) of local peers would distract attention away from the firm and lead to the increase of comovement with local stocks. Meanwhile, we predict the sign of c_1 (d_1), would be negative, which implies that the corporate events of the firm itself would attract the attention of investors who invest the local portfolio back. Consequently, the degree of local return comovement is lower during the months of corporate events

$$\beta_{i,t}^{LOC} = c_0 + c_1\, EA_{i,t} + c_2\, PEER\ EA_{i,t} + \mathbf{\Gamma} * Firm - Level\ Controls_{i,t-1} + Industry\ FEs + Yearmonth\ FEs + u_{i,t} \quad (3)$$

3 We restrict the definition of peer firms to be the firms headquartered in the same MSA and within the same Fama-French (1997) 48 industry in the robustness tests section 4.4.

$$\beta_{i,t}^{LOC} = d_0 + d_1\, REV_{i,t} + d_2\, PEER\ EV_{i,t} + \mathbf{\Gamma} * Firm - Level\ Controls_{i,t-1} + Industry\ FEs + Yearmonth\ FEs + u_{i,t} \quad (4)$$

4. Empirical Results

4.1. Time-Series Regressions

Table 1 reports the regressions of firms' daily excess returns using different models and it reports the mean statistics in year t for each group sorted by tercile of number of different states mentioned in the 10-K filings in year $t-1$. Overall, consistent with previous literature of return comovement (Pirinsky and Wang, 2006), firms exhibit significant return comovement with the return of local portfolio.

Consistent with the first hypothesis, geographically local firms have higher loadings on the return of local portfolio from Model 1 to 4[4]. Specifically, the slope of local portfolio return for geographically local firm is higher than geographically dispersed firms by 0.18 (*p-value*<0.01) in the Model 2 after controlling market and industry returns. This result is robust after accounting for the non-local portfolio returns suggested by Li and Zhao (2016) in Model 3 and 4, where *R_NLOC(EW)* is the daily return on the equally-weighted non-local portfolio of firms headquartered in the different MSAs. Moreover, Table 1 documents the shifting patterns of the comovement with the market to the comovement with local returns after sorting by firms according to their geographic dispersion. The coefficient on market return is higher for dispersed firms by 0.246 unit (*p-value* < 0.01) in Model 2. Similarly, Models 3 and 4 suggest that the geographically dispersed firms exhibit greater return comovement with non-local firms and less return comovement with local returns.

[Insert Table 1 About Here]

4.2. Firm-Month Cross Sectional Regressions

In the latter section, we examine the pattern of firms' return comovement on the monthly basis.

[4] Consistent with Pirinsky and Wang (2006), we use equally-weighted local and industry portfolios. We find our results still hold using value-weighted portfolios, which are available upon request.

Table 2 shows the descriptive statistics of main variables used in the following sections[5]. After dropping observations with missing control variables, the sample contains 177,502 firm-month observations. The average return comovement with local firms, *β(R_LOC_EW)*, is 0.124. The mean and median of number of states mentioned in the firm's 10-K filing are 12.72 and 10, respectively. All continuous variables are winsorized at 1% and 99%.

[Insert Table 2 About Here]

Table 3 reports the correlation coefficient matrix. Consistent with previous results reported in Section 4.1, the degree of local return comovement, *β(R_LOC_EW)*, is positively correlated with the geographic dispersion measure, *LOCAL RANK*, which supports the first hypothesis that geographically concentrated firms exhibit higher return comovement with the local portfolio. Furthermore, the correlation coefficients between *β(R_LOC_EW)* and *EA*, and between *β(R_LOC_EW)* and *REVISION* are -0.007 and -0.049, which suggests that firms exhibit less comovement with the local portfolio in months with earnings announcements or analysts' recommendation revisions. In contrast, the correlation coefficients between *β(R_LOC_EW)* and *PEER EA*, and between *β(R_LOC_EW)* and *PEER REVISION* are 0.014 and 0.031, which is in alignment with our second hypothesis. Return comovement with the local portfolio increases when peer firms in the same region experience corporate events since peer firms' activities may distract the attention away from the firm's investors.

[Insert Table 3 About Here]

To further test our first hypothesis, we regress firms' daily excess returns using Equation (2) and present the results in Table 4,[6] where we use alternative specifications for geographic dispersion (*NSTATES*, *LOG(1+NSTATES)* and *LOCAL RANK*) as independent variables, both with and without controls. The results presented in Table 4 support the first hypothesis that geographically concentrated

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[5] We report the descriptive statistics by the terciles of geographical dispersion in Table A2.

[6] We further report the cross-sectional regression of firm's market and industry beta on geographic dispersion in Table A3 in the Appendix. As with the pattern shown in Table 1, geographically dispersed firms have higher general return comovement ($b_{LOCAL\ RANK} = -0.068$, *p-value<0.01*) with the market.

firms exhibit greater local return comovement. The results remain robust to the alternative forms of geographic dispersion measure. Specifically, the natural logarithm of number of states mentioned in 10-Ks, *LOG(1+NSTATES)*, is negatively related to local return comovement with the coefficient of -0.037 (*p-value<0.01*) in Column (4) of Table 4. Economically speaking, the one-standard deviation increase in *LOG(1+NSTATES)* would lead to about 17.52 ($-0.037 \times 0.587/0.124$) percentage decrease in local return comovement, *β(R_LOC_EW)*. Table 4, Column (7) shows a positive relationship between *LOCAL RANK* and local return comovement ($b_{LOCAL\ RANK} = 0.058$, *p-value*<0.01) after controlling for firm specific variables, industry fixed effects and year-month fixed effects. The bottom decile (most concentrated group) of firms ranked by *NSTATES* exhibits 46.78 percent ($0.058/0.124 \times 100$) higher local return comovement than firms ranked in the top decile (most dispersed group) of *NSTATES*.

Additionally, the signs of slope estimates of firm specific variables on local beta are consistent with Pirinsky and Wang (2006). Local return comovement is more pronounced among small ($b_{AT} = -0.057$, *p-value*<0.01) and less profitable ($b_{ROA} = -0.308$, *p-value*<0.01) firms, from the estimation in Table 4, Column (7). Moreover, firms with a smaller number of shareholders and greater informational asymmetry (e.g., $b_{NUMBER\ OF\ SHAREHOLDERS} = -0.008$, $b_{ANALYSTS} = -0.068$ and $b_{ANALYST\ DISP} = 0.086$) comove more with stocks headquartered in the same MSA. Our findings align with Veldkamp (2006); smaller, less profitable firms, and those with fewer shareholders are less visible, and thus attract less attention from non-local investors. In turn, these stocks exhibit greater comovement with the local portfolio. Similarly, firms with higher information asymmetry (with fewer analysts or higher dispersion of opinion among analysts) exhibit higher information processing costs. As such, investors tend to utilize the common set of local information to price those stocks, which explains the greater local return comovement of stocks with higher informational asymmetry.

[Insert Table 4 About Here]

4.3.Tests for Intra-Regional Attention Transfer and Geographic Dispersion

In this sub-section, we test the second and third hypotheses on intra-regional attention-transfer using Equation (3) and (4). Table 5 reports the summary statistics of *RAW PEER EA* and *RAW PEER REVISION* by month and by the top 10 MSAs ranked by number of firm-month observations, respectively in Panel A and B. Since most of the sample firms announce their annual earnings in the first three months of the year, *RAW PEER EA* is strongly clustered between January and March. In contrast, recommendation revisions are evenly dispersed throughout the year. On average, there are 8.59 peer firm earning announcements in each month, and 30 peer revisions in each month. Moreover, Panel B suggests that the firms located in top 10 MSAs comprise more than half of the entire sample and firms headquartered in the New York-Newark-Jersey City, NY-NJ-PA exhibits the highest *RAW PEER EA*, equal to 25.75, and *RAW PEER REVISION*, equal to 88.67, than firms located in other Top 10 MSAs.

[Insert Table 5 About Here]

Table 6 presents the regression result of monthly local beta on *PEER EA* and *PEER REVISION*. Columns (4) and (8) show that firms exhibit higher local return comovement ($b_{PEER\ EA} = 0.027$, *p-value*<0.01; $b_{PEER\ REVISION} = 0.031$, *p-value*<0.01) when there is an increase in the number of earnings announcements or analysts' recommendation revisions of local peer firms in the same month. Economically speaking, a one-standard-deviation increase in *PEER EA* results in a 0.03-unit (0.027×1.212) increase in local return comovement, which is equivalent to 26.4-percent ($(0.027 \times 1.212)/0.124 \times\ 100$) increase in local return comovement. Similarly, Table 6, Column (8) shows that a one-standard-deviation increase in *PEER REV* would lead to a 30.4-percent ($(0.031 \times 1.217)/0.124 \times 100$) increase in local return comovement. Moreover, Column (4) of Table 6 shows that firms comove less ($b_{EA} = -0.026$, *p-value*<0.01) with the local portfolio in the month of their own earnings announcement, controlling for firm-specific control variables, and with inclusions for industry fixed year-month fixed effects.

Overall, the results in Table 6 are consistent with the second hypothesis. During the months when peer firms announce their earnings, the firm itself exhibits greater comovement with the local portfolio. This finding is consistent with peer firms' earnings announcements distracting the attention of investors away in the setting of limited attention and high information processing costs, or investors using the information from earnings announcements of other regional firms to adjust price expectation. On the other hand, the firm exhibits less local comovement during the month of its own annual earnings announcement, as investors allocate more attention to the firm to process the firm-specific information acquired from the earnings. Columns (5) to (8) of Table 6 also show the analysts' recommendation revisions would play the similar role in the context of intra-regional attention transfer.

[Insert Table 6 About Here]

Table 7 reports the regression results of monthly local return comovement on local peers' activities in the same month, separately for geographically concentrated and dispersed firms. The variable *LOCAL* is the bottom tercile group of firms ranked by *NSTATES* for each year-month and *DISP* is the top tercile group of firms ranked by *NSTATES* by each year-month. Supporting the third hypothesis, intra-regional attention transfer is prominent among geographically concentrated firms ($b_{PEER\ EA} = 0.063$, *p-value*<0.01; $b_{PEER\ REVISION} = 0.062$, *p-value*>0.1), from Table 7, Columns (1) and (3). The coefficients on *PEER EA* and *PEER REV* in the *LOCAL* sub-sample are more than twice of the estimated coefficients in the regressions on the full sample, which is shown in Table 6. The relationships between *PEER EA* or *PEER REVISION* and local beta are less significant or even negative ($b_{PEER\ EA} = -0.025$, *p-value*<0.01; $b_{PEER\ REVISION} = -0.011$, *p-value*>0.1) for geographically dispersed firms, as seen in Table 7, Columns (2) and (4).

Intuitively, this reveals the distinctive patterns of attention allocation and information production between geographic local and dispersed firms. Geographically local firms are more likely to held by a smaller set of investors, based on the limited locations of their business operations. Therefore, the corporate events of the other firms headquartered in the same MSA are more likely to distract the attention away from the investors holding the local portfolio. Investors subsequently value those stocks using the regional level information due to limited attention, which leads to comovement within the local firm portfolio.

On the other hand, geographically dispersed firms are more likely to be held by investors located in regions beyond the firm's headquarters. Therefore, peer firms in the same MSAs are less likely to be held by investors holding geographically dispersed firms. In turn, corporate events of peer firms are less influential in terms of the attention allocation and information production for geographically dispersed firms. As a result, the intra-regional attention transfer effect driven by other local peers' earnings announcements or revisions in analysts' recommendations is less influential in among the sub-sample of geographically dispersed firms.

[Insert Table 7 About Here]

4.4.Robustness Tests

We test the robustness of our results by examining the sample dropping the firms headquartered in Top 3 MSAs, New York-Newark-Jersey City, NY-NJ-PA, Boston-Cambridge-Newton, MA-NH and Chicago-Naperville-Elgin, in terms of number of firm-month observations in Table 8.[7] As is shown in Panel B of Table 5, firms located in the Top 3 MSAs comprise more than 20% of the sample. Panel A of Table 8 suggests that the negative relationship between geographic dispersion and local return comovement remains robust. Column (1) and (3) of Panel B show that geographically concentrated firms continue to exhibit greater intra-regional attention transfer after dropping the firms located in the three largest clusters. In further the robustness, reported in Table A4, we examine earnings announcements excluding those occurring in January, February, and March. Results remain materially unaltered, suggesting that the intra-regional attention transfer not simply a clustering effect in earnings

[7] We find qualitatively similar results after dropping the firms headquartered in New York-Newark-Jersey City, NY-NJ-PA and results are available upon request.

announcements.

[Insert Table 8 About Here]

As a further robustness check, we examine whether local economic conditions drives return comovement. Brockman, Liebenberg and Schutte (2010) document a countercyclical pattern of stock comovement and argue that the return comovement is low during economic expansion of increasing information production. Pirinsky and Wang (2006) document that the local comovement is more pronounced for the areas with higher number of firms, higher industry concentration and greater regional economic development. We add *NO OF FIRMS*, *INDUSTRY CONCENTRATION*, *PERSONAL INCOME*, *INVESTMENT INCOME* and *COINCIDENT INDEX*[8] as additional control variables in Table 9. The former four variables are estimated in the same approach described in Pirinsky and Wang (2006). We employ State Coincident Indexes (SCI) developed by Crone and Clayton-Matthews (2005) (utilized in many studies, e.g., Pirinsky and Wang, 2006; Amore, Schneider, and Žaldokas,2013; Smajlbegovic, 2019; Wei and Zhang, 2020) to capture current state-level economic conditions including nonfarm payroll employment, average hours worked, the unemployment rate, and real wages. Both Panels A and B of Table 9 show that our results remain statistically significant after controlling for regional economic activities and state fixed effects. We obtain results consistent with Pirinsky and Wang (2006) that local return comovement is more pronounced for the firms headquartered in the areas with more firms, higher industry concentration, higher personal income. Additionally, Column (3) of Panel A in Table 11 suggests the firms headquartered in regions with lower levels of financial sophistication exhibit higher local comovement ($b_{INVESTMENT\ INCOME} = -0.029, p - value < 0.01$), consistent with Brown et al. (2008).

[Insert Table 9 About Here]

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[8] *COINCIDENT INDEX* data is obtained from the website of the Federal Reserve Bank of Philadelphia, http://www.philadelphiafed.org/research-and-data/regional-economy/indexes/coincident.
PERSONAL INCOME and *INVESTMENT INCOME* are obtained from the Regional Economic Accounts by U.S. Bureau of Economic Analysis, https://www.bea.gov/data/economic-accounts/regional.

Additionally, we restrict the definition of peer firms to be the other firms headquartered in the same MSA *and* in the same Fama-French (1997) 48 industry (rather than just peers in the same MSA as in our original definition of peer firms). Using these alternative (stricter) *PEER* definitions, *PEER EA2* and *PEER REVISION2* we examine in Table 10 whether intra-regional information transfer effects are more pronounced among same-industry geographic peers. In terms of the economic significance, given the standard deviations of *PEER EA2* is 0.577, a one-standard-deviation increase in *PEER EA2* contributes to 34.43-percent $((0.577 \times 0.074)/0.124 \times 100)$ increase in local return comovement, which is a 30 percent increase on the effect reported in Table 6 for geographic peers only. The strengthening of the result with the stricter peer definition is consistent with investors jointly pricing similar assets within regional hubs.

[Insert Table 10 About Here]

4.5.Subsample Analysis by Social Capital

Social capital is viewed as the resource emerged from trust and social ties to encourage cooperation in society, which consequently facilitates the production of socially efficient outcomes (Coleman, 1990; Putnam, 1993, 2000; Servaes and Tamayo, 2017). There is growing literature showing the economic impacts of social capital (e.g., Guiso, Sapienza and Zingales, 2004; Jha and Cox, 2015; Hasan, Hoi, Wu and Zhang, 2017a, 2017b; Gupta, Raman and Shang, 2018; Hoi, Wu and Zhang, 2019; Huang and Shang, 2019) and firms located in the regions with high social capital exhibit lower cost of equity, lower leverage, and lower loan spreads. Furthermore, Wei and Zhang (2020) examine relationship of local bias in institutional investment and the level of social trust at both investor and firm levels. They show the institutional investors in low-trust regions exhibit higher local bias and stocks headquartered in the low-trust regions exhibit greater local institutional ownership. Additionally, Shao and Wang (2021) also find the supporting evidence from the perspective of retail investors in the Chinese markets. Consequently, we would expect the negative relationship between local return comovement and geographic dispersion is more pronounced among firms headquartered in the low-social capital areas where the local bias is higher and information production is less efficient.

We obtain the county-level social capital data developed by Rupasingha, Goetz and Freshwater (2006) from the Northeast Regional Center for Rural Development (NRCRD) of Pennsylvania State University[9]. Consistent with Hasan et al. (2017a, 2017b), we backfill the social capital measures for the missing year using the values in the preceding year with available data.[10] Then, we sort firms into terciles based on the level of social capital where the firms are located and estimate comovement for firms headquartered in these regions.

Consistent with our expectation, Table 11 we find that comovement in geographically concentrated firms is most pronounced among firms headquartered in low social capital counties. One plausible explanation is that the investors in low social capital regions exhibit lower trust and higher local bias in investment. Therefore, the geographically concentrated firms are disproportionately held by investors located in low-social-capital regions. Compounding this effect, firm-specific information production is less efficient in the low-social capital regions. Consequently, the negative relationship between geographic dispersion and local return comovement is more pronounced in the counties with low social capital.[11]

[Insert Table 11 About Here]

5. Conclusion

This paper investigates the relationship between geographic dispersion and stock return comovement with local stocks headquartered in the same region. Using the number of different states mentioned in the 10-K filings as the proxy of geographic dispersion, we find the evidence from both

[9] Social capital data is available via the following website, https://aese.psu.edu/nercrd/community/social-capital-resources.

[10] Following Jha and Cox (2015), we also perform tests using the linear interpolated social capital metrics and obtain the similar results.

[11] We perform further sub-sample analyses for local return comovement and intra-regional attention transfer for high/low social capital groups. Additional supporting evidence is presented in Tables A5 and A6, respectively. Table A5 shows that, controlling for geographic dispersion, return comovement is stronger in firms headquartered in low social capital counties. Table A6 shows that the intra-regional attention transfer is heightened for firms headquartered in low social capital counties.

time-series and cross-sectional regressions that geographically local firms exhibit greater return comovement with the local stocks whose headquarters are located in the same region. Economically speaking, the geographically local firm ranking in the bottom decile of geographic dispersion exhibits 46.78 percent higher local return comovement than geographically dispersed firm ranking in the top decile does., after controlling firm-level control variables, industry and year-month fixed effects.

Moreover, we perform additional tests to understand the attention allocation and information production within the geographic cluster and find the evidence implying the intra-regional attention transfer. Specifically, we find the evidence consistent with previous literature (e.g., Ramnath, 2002; Thomas and Zhang, 2008; Drake et al., 2017), that return comovement with local portfolio of the firm increases when peer firms in the same region experience earnings announcements or analysts' recommendation revisions. Moreover, this is more pronounced for geographically local firms. After performing the sub-sample analysis by terciles of the social capital in the regions where firms are located, we find the local return comovement for geographically local firms is more pronounced in the firms headquartered in the low social capital regions. It is consistent with Wei and Zhang (2020) and Shao and Wang (2021) that both retail and institutional investors in low trust regions exhibit higher local bias.

Notably, our results still hold after a battery of robustness checks of dropping sample firms headquartered in specific regions, dropping the observations in certain months, adding additional control variables for regional economic activities, and using alternative variables. This further supports that our findings are consistent with Veldkamp (2006)'s prediction of information-induced comovement.

Table 1 Regression of Return Comovement with Local Stocks, by Geographical Dispersion Tercile

This table reports the mean statistics for the time-series regressions of daily excess returns by the tercile of firms' geographical dispersion. Models are estimated for each firm annually. *MKTRF* is the daily excess return of the value-weighted market portfolio. *R_LOC(EW)* is the daily return on the equally-weighted local portfolio of firms headquartered in the same MSA, excluding the firm itself. *R_NLOC(EW)* is the daily return on the equally-weighted non-local portfolio of firms headquartered in the different MSAs. *R_IND(EW)* is the daily returns on equally-weighted portfolio of firms in the same industry (by Fama-French (1997) 48 industries), excluding the firm itself. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

MODEL	GD TERCILE	ALPHA	T	MKTRF	T	R_LOC(EW)	T	R_NLOC(EW)	T	R_IND(EW)	T	ADJ-R2	OBS
1	Local	0.007%	3.34	0.475	65.62	0.618	90.36	.	.	.	.	0.221	9713
1	Mid	0.003%	1.39	0.620	82.97	0.511	71.88	.	.	.	.	0.269	8095
1	Disp	0.004%	2.61	0.772	121.74	0.351	56.43	.	.	.	.	0.307	8068
	L - D			**-0.297*** **		**0.267*** **							
	T-Stats			**(-30.87)**		**(28.90)**							
2	Local	0.004%	1.85	0.147	21.45	0.254	39.37	.	.	0.687	95.03	0.251	9713
2	Mid	-0.001%	-0.28	0.282	39.20	0.193	29.80	.	.	0.637	93.47	0.308	8095
2	Disp	0.001%	0.35	0.394	62.77	0.074	13.82	.	.	0.638	106.06	0.361	8068
	L - D			**-0.246*** **		**0.180*** **				**0.049*** **			
	T-Stats			**(-26.49)**		**(21.48)**				**(5.18)**			
3	Local	-0.001%	-0.45	.	.	0.317	40.12	0.765	87.66	.	.	0.223	9713
3	Mid	-0.005%	-2.63	.	.	0.251	32.21	0.843	96.27	.	.	0.266	8095
3	Disp	-0.006%	-3.47	.	.	0.218	32.43	0.839	108.09	.	.	0.292	8068
	L - D					**0.099*** **		**-0.074*** **					
	T-Stats					**(9.53)**		**(-6.37)**					
4	Local	0.000%	-0.06	.	.	0.170	24.40	0.285	27.01	0.624	70.33	0.250	9713
4	Mid	-0.005%	-2.34	.	.	0.134	20.46	0.385	38.67	0.570	69.71	0.302	8095
4	Disp	-0.004%	-2.69	.	.	0.104	19.11	0.339	38.52	0.618	86.90	0.351	8068
	L - D					**0.065*** **		**-0.054*** **		**0.006**			
	T-Stats					**(7.39)**		**(-3.95)**		**(0.53)**			

Table 2 Descriptive Statistics

This table reports the descriptive statistics for the variables used in the cross-sectional regressions. All continuous variables are winsorized at 1% and 99%. Detail description of variables are provided in Table A1.

VARIABLES	N	MEAN	SD	P5	P25	P50	P75	P95
β(R_LOC_EW)	177,502	0.124	1.099	-1.563	-0.403	0.050	0.595	2.047
NSTATES	177,502	12.720	7.861	4.000	7.000	10.000	16.000	29.000
LOG(1+NSTATES)	177,502	2.371	0.587	1.386	1.946	2.303	2.773	3.367
LOCAL RANK	177,502	0.526	0.328	0.000	0.222	0.556	0.778	1.000
AT	177,502	7.682	1.948	4.657	6.302	7.529	8.952	11.130
MB	177,502	3.262	4.733	0.695	1.491	2.373	3.952	9.835
ROA	177,502	0.123	0.147	-0.091	0.075	0.130	0.192	0.329
DEBT	177,502	0.241	0.224	0.000	0.051	0.208	0.354	0.662
STD(EARN)	177,502	1.182	1.552	0.148	0.362	0.676	1.329	3.924
TOBINQ	177,502	2.071	1.354	0.928	1.175	1.619	2.423	4.903
ADVERTISEMENT	177,502	0.013	0.032	0.000	0.000	0.000	0.008	0.076
DIV YIELD	177,502	0.012	0.017	0.000	0.000	0.004	0.020	0.044
NUMBER OF SHAREHOLDERS	177,502	0.664	2.383	-3.124	-1.133	0.698	2.431	4.611
IO	177,502	0.762	0.207	0.338	0.651	0.799	0.909	1.038
ANALYSTS	177,502	2.217	0.672	1.099	1.609	2.197	2.773	3.296
ANALYST DISP	177,502	0.062	0.168	0.000	0.008	0.017	0.044	0.240
EA	177,502	0.084	0.277	0.000	0.000	0.000	0.000	1.000
REVISION	177,502	0.274	0.446	0.000	0.000	0.000	1.000	1.000
PEER EA	177,502	1.371	1.212	0.000	0.000	1.099	2.079	3.932
PEER REVISION	177,502	2.881	1.217	0.693	2.079	3.135	3.829	4.575

Table 3 Correlation Coefficient Matrix

This table reports the correlation coefficients for the main variables used in the cross-sectional regressions.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
β(R_LOC_EW)	(1)	1.000									
LOCAL RANK	(2)	0.073	1.000								
AT	(3)	-0.153	-0.439	1.000							
MB	(4)	-0.010	0.072	-0.040	1.000						
ROA	(5)	-0.063	-0.092	0.153	0.063	1.000					
DEBT	(6)	-0.007	-0.211	0.224	-0.028	0.070	1.000				
STD(EARN)	(7)	-0.019	-0.135	0.237	-0.071	-0.032	0.104	1.000			
TOBINQ	(8)	0.009	0.280	-0.280	0.440	0.087	-0.109	-0.149	1.000		
ADVERTISEMENT	(9)	-0.010	0.083	-0.081	0.064	0.188	-0.041	-0.090	0.157	1.000	
DIV YIELD	(10)	-0.058	-0.151	0.336	-0.062	0.076	0.106	0.012	-0.175	-0.001	1.000
NUMBER OF SHAREHOLDERS	(11)	-0.108	-0.231	0.550	0.009	0.119	0.016	0.049	-0.083	0.012	0.293
IO	(12)	-0.014	-0.085	0.148	0.021	0.179	0.067	0.119	-0.011	0.012	-0.138
ANALYSTS	(13)	-0.133	-0.196	0.643	0.114	0.189	0.078	0.075	0.105	0.064	0.103
ANALYST DISP	(14)	0.042	0.018	-0.118	-0.032	-0.170	0.043	0.103	-0.048	-0.022	-0.027
EA	(15)	-0.007	0.001	0.000	0.001	0.001	0.000	-0.001	0.001	0.000	0.000
REVISION	(16)	-0.049	-0.066	0.207	0.014	0.094	0.011	0.052	0.016	0.028	0.042
PEER EA	(17)	0.014	0.076	-0.011	0.019	-0.033	-0.039	-0.011	0.058	0.016	-0.029
PEER REVISION	(18)	0.031	0.079	-0.013	0.019	-0.031	-0.054	0.006	0.070	0.004	-0.046

Table 3 Correlation Coefficient Matrix (Continued)

		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
β(R_LOC_EW)	(1)										
LOCAL RANK	(2)										
AT	(3)										
MB	(4)										
ROA	(5)										
DEBT	(6)										
STD(EARN)	(7)										
TOBINQ	(8)										
ADVERTISEMENT	(9)										
DIV YIELD	(10)										
NUMBER OF SHAREHOLDERS	(11)	1.000									
IO	(12)	-0.092	1.000								
ANALYSTS	(13)	0.330	0.253	1.000							
ANALYST DISP	(14)	-0.079	-0.092	-0.143	1.000						
EA	(15)	0.000	-0.001	0.000	0.000	1.000					
REVISION	(16)	0.127	0.067	0.305	-0.036	0.074	1.000				
PEER EA	(17)	-0.029	0.015	0.020	0.006	0.287	0.022	1.000			
PEER REVISION	(18)	-0.044	0.033	0.046	0.016	0.020	0.057	0.585	1.000		

Table 4 Cross Sectional Regression of Local Return Comovement on Geographic Dispersion

This table reports the regressions of monthly local return comovement on geographic dispersion measures. The dependent variable, *β(R_LOC_EW)*, is the estimated coefficient of local portfolio returns at firm-month level, from Equation (1) using daily returns. *NSTATES* is the number of different states mentioned in firm's 10-K filings. *LOG(1+NSTATES)* is the natural logarithm of one plus *NSTATES*. *LOCAL RANK* is the decile rank of *NSTATES* times minus one for each year-month, ranging from 0 to 1. All independent variables are lagged and described in Table A1. Fixed effects are included in different models. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES				β(R_LOC_EW)			
NSTATES	**-0.009*** **	**-0.003*** **					
	(-8.91)	**(-2.95)**					
LOG (1+NSTATES)			**-0.127*** **	**-0.037*** **			
			(-8.95)	**(-2.85)**			
LOCAL RANK					**0.217*** **	**0.058*** **	**0.058*** **
					(8.71)	**(2.63)**	**(2.63)**
AT		-0.057***		-0.057***		-0.057***	-0.057***
		(-8.41)		(-8.29)		(-8.42)	(-8.44)
MB		-0.001		-0.001		-0.001	-0.001
		(-0.59)		(-0.56)		(-0.56)	(-0.55)
ROA		-0.312***		-0.309***		-0.308***	-0.308***
		(-5.35)		(-5.30)		(-5.28)	(-5.27)
DEBT		0.098***		0.101***		0.101***	0.102***
		(3.19)		(3.29)		(3.28)	(3.30)
STD(EARN)		-0.000		-0.000		-0.000	-0.000
		(-0.01)		(-0.02)		(-0.01)	(-0.01)
TOBINQ		-0.009		-0.009		-0.009	-0.009
		(-1.40)		(-1.49)		(-1.47)	(-1.52)
ADVERTISEMEN T		0.163		0.163		0.166	0.169
		(0.61)		(0.60)		(0.61)	(0.63)
DIV YIELD		-0.424		-0.439		-0.434	-0.401
		(-1.24)		(-1.29)		(-1.27)	(-1.17)
NUMBER OF SHAREHOLDERS		-0.008**		-0.008**		-0.008**	-0.008**
		(-2.06)		(-2.02)		(-2.02)	(-2.01)
IO		0.059*		0.061*		0.060*	0.061*
		(1.72)		(1.78)		(1.76)	(1.77)
ANALYSTS		-0.068***		-0.069***		-0.068***	-0.068***
		(-4.85)		(-4.87)		(-4.85)	(-4.85)
ANALYST DISP		0.086***		0.086***		0.086***	0.086***
		(3.08)		(3.07)		(3.06)	(3.05)
CONSTANT	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES
MONTH FE	YES	YES	YES	YES	YES	YES	NO
YEARMONTH FE	NO	NO	NO	NO	NO	NO	YES
OBSERVATIONS	177,502	177,502	177,502	177,502	177,502	177,502	177,499
ADJ-R2	0.016	0.034	0.017	0.034	0.017	0.034	0.035

Table 5 Summary Statistics for RAW PEER EA and RAW PEER REV

This table reports the summary statistics of RAW PEER EA and RAW PEER REVISION by month and the top 10 MSAs with most of the firm-month sample observations respectively in Panel A and B respectively.

Panel A: By Month

A1: RAW PEER EA

Month	Firm-Month Obs	Mean	P5	P50	P95
January	14,568	17.205	1	11	59
February	14,557	40.934	2	37	95
March	14,618	22.932	0	14	83
April	14,637	2.537	0	1	10
May	14,651	3.107	0	2	12
June	14,711	1.746	0	1	7
July	14,708	1.677	0	1	6
August	14,710	3.988	0	2	14
September	14,774	2.124	0	1	10
October	14,809	1.833	0	1	6
November	14,786	3.574	0	2	10
December	15,973	2.453	0	1	9
Total	177,502	8.586	0	2	50

A2: RAW PEER REV

Month	Firm-Month Obs	Mean	P5	P50	P95
January	14,568	43.191	2	32	137
February	14,557	31.124	1	25	91
March	14,618	27.174	1	21	78
April	14,637	30.891	1	23	92
May	14,651	29.582	1	22	94
June	14,711	24.553	1	17	78
July	14,708	33.399	1	24	101
August	14,710	29.427	1	21	90
September	14,774	26.673	1	17	85
October	14,809	37.450	1	28	113
November	14,786	31.444	1	22	93
December	15,973	23.806	1	17	74
Total	177,502	30.671	1	22	96

Panel B. By Top 10 MSAs

B1: RAW PEER EA

MSA Name	Firm-Month Obs	Mean	P5	P50	P95
New York-Newark-Jersey City, NY-NJ-PA	18,599	25.747	4	10	95
Boston-Cambridge-Newton, MA-NH	10,567	13.697	0	5	70
Chicago-Naperville-Elgin, IL-IN-WI	9,374	11.451	0	3	63
San Jose-Sunnyvale-Santa Clara, CA	8,590	12.008	1	7	45
San Francisco-Oakland-Berkeley, CA	8,389	12.938	1	3	67
Los Angeles-Long Beach-Anaheim, CA	8,387	13.674	1	5	68
Houston-The Woodlands-Sugar Land, TX	7,557	12.532	0	2	75
Dallas-Fort Worth-Arlington, TX	6,723	9.032	0	3	45
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6,105	8.283	0	3	43
Minneapolis-St. Paul-Bloomington, MN-WI	5,253	6.034	0	3	24

B2: RAW PEER REV					
MSA Name	**Firm-Month Obs**	**Mean**	**P5**	**P50**	**P95**
New York-Newark-Jersey City, NY-NJ-PA	18,599	88.666	48	86	138
Boston-Cambridge-Newton, MA-NH	10,567	39.295	22	36	66
Chicago-Naperville-Elgin, IL-IN-WI	9,374	38.352	20	36	62
San Jose-Sunnyvale-Santa Clara, CA	8,590	63.475	29	59	124
San Francisco-Oakland-Berkeley, CA	8,389	45.168	26	42	74
Los Angeles-Long Beach-Anaheim, CA	8,387	44.322	20	43	76
Houston-The Woodlands-Sugar Land, TX	7,557	58.662	30	55	99
Dallas-Fort Worth-Arlington, TX	6,723	35.703	21	32	56
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6,105	24.479	11	22	46
Minneapolis-St. Paul-Bloomington, MN-WI	5,253	21.875	7	20	39

Table 6 Tests for Attention Transfer

This table reports the regression for intra-regional attention transfer. The dependent variable, *β(R_LOC_EW)*, is the estimated coefficient of local portfolio returns at firm-month level, from Equation (1) using daily returns. *PEER EA* is the natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same month. *PEER REVISION* is the natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month. *EA* is dummy variable equal to one if the firm announces its annual earnings in the same month and zero otherwise. *REVISION* is dummy variable equal to one if the firm receives the analysts' recommendation revisions in the same month and zero otherwise. Other control variables are lagged and described in Table A1. Industry and Yearmonth fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES				β(R_LOC_EW)				
EA	**-0.026****	**-0.025****		**-0.026****				
	(-2.23)	**(-2.12)**		**(-2.23)**				
PEER EA	**0.020****		**0.026*****	**0.027*****				
	(2.33)		**(3.67)**	**(3.68)**				
REVISION					**-0.100*****	**-0.008**		**-0.009**
					(-11.34)	**(-1.13)**		**(-1.32)**
PEER REVISION					**0.026*****		**0.031*****	**0.031*****
					(3.89)		**(5.26)**	**(5.27)**
AT		-0.061***	-0.062***	-0.062***		-0.061***	-0.063***	-0.063***
		(-9.30)	(-9.37)	(-9.37)		(-9.29)	(-9.40)	(-9.39)
MB		-0.001	-0.001	-0.001		-0.001	-0.001	-0.001
		(-0.61)	(-0.59)	(-0.59)		(-0.62)	(-0.55)	(-0.56)
ROA		-0.310***	-0.304***	-0.304***		-0.309***	-0.299***	-0.298***
		(-5.29)	(-5.23)	(-5.23)		(-5.29)	(-5.18)	(-5.17)
DEBT		0.096***	0.100***	0.100***		0.096***	0.102***	0.102***
		(3.11)	(3.24)	(3.24)		(3.11)	(3.33)	(3.32)
STD(EARN)		0.000	0.000	0.000		0.000	-0.000	-0.000
		(0.04)	(0.02)	(0.02)		(0.05)	(-0.02)	(-0.01)
TOBINQ		-0.008	-0.009	-0.009		-0.008	-0.009	-0.009
		(-1.31)	(-1.42)	(-1.41)		(-1.30)	(-1.51)	(-1.50)
ADVERTISEMENT		0.188	0.144	0.144		0.189	0.125	0.127
		(0.70)	(0.55)	(0.55)		(0.71)	(0.48)	(0.49)
DIV YIELD		-0.374	-0.381	-0.380		-0.373	-0.394	-0.392
		(-1.10)	(-1.12)	(-1.12)		(-1.09)	(-1.16)	(-1.15)
NUMBER OF SHAREHOLDERS		-0.008**	-0.008*	-0.008*		-0.008**	-0.007*	-0.007*

		(-2.02)	(-1.84)	(-1.84)		(-2.02)	(-1.68)	(-1.69)
IO		0.058*	0.057*	0.056*		0.058*	0.053	0.054
		(1.70)	(1.66)	(1.66)		(1.71)	(1.58)	(1.58)
ANALYSTS		-0.067***	-0.067***	-0.067***		-0.065***	-0.069***	-0.067***
		(-4.70)	(-4.76)	(-4.76)		(-4.66)	(-4.87)	(-4.81)
ANALYST DISP		0.084***	0.082***	0.082***		0.084***	0.080***	0.080***
		(2.99)	(2.96)	(2.96)		(3.00)	(2.88)	(2.89)
CONSTANT	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	177,499	177,499	177,499	177,499	177,499	177,499	177,499	177,499
Adjusted R-squared	0.014	0.035	0.036	0.036	0.016	0.035	0.036	0.036

Table 7 Tests for Attention Transfer by Geographic Dispersion

This table reports the regression for intra-regional attention transfer by geographic dispersion. *LOCAL* is the bottom tercile group of firms ranked by *NSTATES* for each yearmonth. *DISP* is the top tercile group of firms ranked by *NSTATES* by each yearmonth. The dependent variable, *β(R_LOC_EW)*, is the estimated coefficient of local portfolio returns at firm-month level, from Equation (1) using daily returns. *PEER EA* is the natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same month. *PEER REVISION* is the natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month. *EA* is dummy variable equal to one if the firm announces its annual earnings in the same month and zero otherwise. *REVISION* is dummy variable equal to one if the firm receives the analysts' recommendation revisions in the same month and zero otherwise. Other control variables are lagged and described in Table A1. Industry and Yearmonth fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)
	LOCAL	DISP	LOCAL	DISP
VARIABLES	β(R_LOC_EW)			
EA	**-0.062*** **	**-0.000**		
	(-2.99)	**(-0.03)**		
PEER EA	**0.063*** **	**-0.025*** **		
	(5.71)	**(-2.61)**		
REVISION			**-0.002**	**-0.008**
			(-0.13)	**(-0.81)**
PEER REVISION			**0.062*** **	**-0.011**
			(7.39)	**(-1.40)**
AT	-0.060***	-0.061***	-0.061***	-0.061***
	(-5.74)	(-5.59)	(-5.89)	(-5.65)
MB	0.001	-0.000	0.001	-0.000
	(0.41)	(-0.07)	(0.48)	(-0.08)
ROA	-0.243***	-0.318***	-0.233***	-0.321***
	(-3.50)	(-2.77)	(-3.40)	(-2.79)
DEBT	0.039	0.181***	0.042	0.182***
	(0.81)	(3.50)	(0.89)	(3.53)
STD(EARN)	0.006	-0.001	0.005	-0.001
	(0.65)	(-0.22)	(0.57)	(-0.20)
TOBINQ	-0.006	-0.044***	-0.007	-0.044***
	(-0.78)	(-3.62)	(-0.87)	(-3.61)
ADVERTISEMENT	-0.016	0.181	-0.014	0.181
	(-0.05)	(0.54)	(-0.04)	(0.54)
DIV YIELD	-0.946*	-0.152	-0.873*	-0.148
	(-1.92)	(-0.28)	(-1.77)	(-0.27)
NUMBER OF SHAREHOLDERS	-0.010*	-0.002	-0.009	-0.002
	(-1.67)	(-0.32)	(-1.51)	(-0.30)
IO	0.046	-0.028	0.041	-0.031
	(0.97)	(-0.52)	(0.87)	(-0.56)
ANALYSTS	-0.019	-0.108***	-0.021	-0.106***
	(-0.82)	(-5.75)	(-0.92)	(-5.58)
ANALYST DISP	0.024	0.101**	0.017	0.102**
	(0.58)	(2.48)	(0.41)	(2.50)
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
OBSERVATIONS	68,266	54,885	68,266	54,885
ADJ-R2	0.025	0.054	0.026	0.054

Table 8 Robustness Tests: Dropping the Top 3 MSAs

This table reports the robustness tests by dropping the observations of sample firms headquartered in New York-Newark-Jersey City, NY-NJ-PA, Boston-Cambridge-Newton, MA-NH and Chicago-Naperville-Elgin, IL-IN-WI .Panel A reports the regressions of local return comovement on geographic dispersion, consistent with Table 4. Panel B reports the regressions for attention transfer, consistent with Table 7.

Panel A

	(1)	(2)	(3)
VARIABLES		β(R_LOC_EW)	
NSTATES	**-0.004*** **		
	(-4.37)		
LOG(1+NSTATES)		**-0.061*** **	
		(-4.42)	
LOCAL RANK			**0.096*** **
			(4.16)
FIRM CONTROLS	YES	YES	YES
CONSTANT	YES	YES	YES
INDUSTRY FE	YES	YES	YES
YEARMONTH FE	YES	YES	YES
OBSERVATIONS	138,962	138,962	138,962
ADJ-R2	0.029	0.030	0.029

Panel B

	(1)	(2)	(3)	(4)
	LOCAL	DISP	LOCAL	DISP
VARIABLES		β(R_LOC_EW)		
EA	**-0.052** **	**0.020**		
	(-2.31)	**(1.14)**		
PEER EA	**0.113*** **	**-0.018**		
	(9.03)	**(-1.59)**		
REVISION			**0.012**	**-0.005**
			(0.87)	**(-0.55)**
PEER REVISION			**0.087*** **	**-0.009**
			(9.28)	**(-1.03)**
FIRM CONTROLS	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
OBSERVATIONS	51,963	43,181	51,963	43,181
ADJ-R2	0.024	0.046	0.025	0.046

Table 9 Robustness Tests: Adding Regional Economic Control Variables

This table reports the robustness tests by adding additional control variables for regional economic activities. Panel A reports the regressions of local return comovement on geographic dispersion, consistent with Table 4. Panel B reports the regressions for attention transfer, consistent with Table 7. *NO OF FIRMS* is the number of firms headquartered in the same MSA, scaled by 100. *INDUSTRY CONCENTRAION* is the Herfindahl index of industry concentration (by Fama-French (1997) 48 industries) in the MSA where the firm headquartered. *COINCIDENT INDEX* is the State Coincident Indexes of regional economic level for the state where the firm headquartered, scaled by 100. *PERSONAL INCOME* is the per capita personal income for the firm headquarter's MSA, scaled by 1,000. *INVESTMENT INCOME* is the per capita personal income derived from dividends, interest, and rent for the firm headquarter's MSA, scaled by 1,000.

Panel A

	(1)	(2)	(3)
VARIABLES		β(R_LOC_EW)	
NSTATES	**-0.002****		
	(-2.13)		
LOG(1+NSTATES)		**-0.025***	
		(-1.95)	
LOCAL RANK			**0.038***
			(1.71)
NO OF FIRMS	0.027**	0.027**	0.027**
	(2.36)	(2.34)	(2.34)
INDUSTRY CONCENTRATION	0.474***	0.470***	0.471***
	(3.14)	(3.11)	(3.11)
COINCIDENT INDEX	-0.156	-0.155	-0.154
	(-1.40)	(-1.39)	(-1.38)
PERSONAL INCOME	0.010***	0.010***	0.010***
	(4.80)	(4.82)	(4.82)
INVESTMENT INCOME	-0.029***	-0.029***	-0.029***
	(-4.39)	(-4.41)	(-4.41)
FIRM CONTROLS	YES	YES	YES
CONSTANT	YES	YES	YES
INDUSTRY FE	YES	YES	YES
YEARMONTH FE	YES	YES	YES
STATE FE	YES	YES	YES
OBSERVATIONS	175,795	175,795	175,795
ADJ-R2	0.041	0.041	0.041

Panel B

	(1)	(2)	(3)	(4)
	LOCAL	DISP	LOCAL	DISP
VARIABLES		β(R_LOC_EW)		
EA	**-0.060*****	**-0.000**		
	(-2.89)	**(-0.01)**		
PEER EA	**0.033*****	**-0.007**		
	(3.40)	**(-0.93)**		
REVISION			**-0.008**	**-0.009**
			(-0.59)	**(-0.96)**
PEER REVISION			**0.076*****	**0.035****
			(5.31)	**(2.52)**
NO OF FIRMS	0.036**	-0.011	-0.015	-0.047***
	(2.02)	(-0.66)	(-0.70)	(-2.65)
INDUSTRY CONCENTRATION	0.920***	-0.181	1.092***	-0.056
	(3.84)	(-0.80)	(4.50)	(-0.23)
COINCIDENT INDEX	-0.154	-0.201	-0.072	-0.188
	(-0.76)	(-1.39)	(-0.36)	(-1.31)

PERSONAL INCOME	0.013***	0.002	0.009***	-0.000
	(5.07)	(0.52)	(3.68)	(-0.02)
INVESTMENT INCOME	-0.037***	-0.009	-0.029***	-0.006
	(-4.10)	(-0.96)	(-3.35)	(-0.70)
FIRM CONTROLS	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
STATE FE	YES	YES	YES	YES
OBSERVATIONS	67,509	54,363	67,509	54,363
ADJ-R2	0.031	0.059	0.032	0.059

Table 10 Robustness Test: Alternative PEER Measures

This table reports the robustness tests by using alternative *PEER EA* and *PEER REVISION* measures. Panel A reports the regressions of attention transfer with Table 6. Panel B reports the regressions for attention transfer by terciles of geographic dispersion, consistent with Table 7. *PEER EA2* is the natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same Fama-French (1997)-48 industry in the same month. *PEER REVISION2* is the natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same Fama-French (1997)-48 industry in the same month.

Panel A

	(1)	(2)	(3)	(4)
VARIABLES		β(R_LOC_EW)		
EA	**-0.072******	**-0.079******		
	(-4.98)	**(-5.61)**		
PEER EA2	**0.074*****	**0.085*****		
	(5.33)	**(6.73)**		
REVISION			**-0.147*****	**-0.057*****
			(-13.89)	**(-6.52)**
PEER REVISION2			**0.092*****	**0.098*****
			(6.93)	**(8.36)**
CONTROL	NO	YES	NO	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
Observations	177,499	177,499	177,499	177,499
Adjusted R-squared	0.015	0.036	0.018	0.038

Panel B

	(1)	(2)	(3)	(4)
	LOCAL	DISP	LOCAL	DISP
VARIABLES		β(R_LOC_EW)		
EA	**-0.133*****	**-0.001**		
	(-5.88)	**(-0.02)**		
PEER EA2	**0.119*****	**-0.001**		
	(7.26)	**(-0.06)**		
REVISION			**-0.055*****	**-0.026***
			(-3.69)	**(-1.75)**
PEER REVISION2			**0.125*****	**0.035***
			(8.24)	**(1.82)**
CONTROL	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
OBSERVATIONS	68,266	54,885	68,266	54,885
ADJ-R2	0.025	0.053	0.027	0.054

Table 11 Cross Sectional Regression of Local Return Comovement on Geographic Dispersion by High/Low Social Capital Groups

This table reports the regressions of monthly local return comovement on geographic dispersion measures by high and low social capital subsamples. HIGH and LOW represent the top and bottom tercile of the firms in terms of the level of social capital of their headquarters in every yearmonth. The dependent variable, *β(R_LOC_EW)*, is the estimated coefficient of local portfolio returns at firm-month level, from Equation (1) using daily returns. *NSTATES* is the number of different states mentioned in firm's 10-K filings. *LOG(1+NSTATES)* is the natural logarithm of one plus *NSTATES*. *LOCAL RANK* is the decile rank of *NSTATES* times minus one for each year-month, ranging from 0 to 1. All independent variables are lagged and described in Table A1. Fixed effects are included in different models. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	SOCIAL CAPITAL		SOCIAL CAPITAL		SOCIAL CAPITAL	
	LOW	HIGH	LOW	HIGH	LOW	HIGH
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES			β(R_LOC_EW)			
NSTATES	**-0.005*** **	**-0.001**				
	(-2.82)	**(-0.92)**				
LOG(1+NSTATES)			**-0.066*** **	**-0.006**		
			(-2.75)	**(-0.41)**		
LOCAL RANK					**0.101** **	**0.013**
					(2.38)	**(0.47)**
AT	-0.057***	-0.065***	-0.056***	-0.066***	-0.058***	-0.066***
	(-4.52)	(-6.74)	(-4.42)	(-6.80)	(-4.58)	(-6.77)
MB	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001
	(-0.79)	(-0.90)	(-0.79)	(-0.91)	(-0.80)	(-0.90)
ROA	-0.357***	-0.228**	-0.352***	-0.227**	-0.350***	-0.227**
	(-4.04)	(-2.02)	(-3.99)	(-2.01)	(-3.97)	(-2.01)
DEBT	0.104*	0.139***	0.109*	0.140***	0.107*	0.140***
	(1.86)	(3.34)	(1.95)	(3.35)	(1.91)	(3.36)
STD(EARN)	0.001	-0.004	0.001	-0.004	0.001	-0.004
	(0.12)	(-0.68)	(0.10)	(-0.67)	(0.11)	(-0.68)
TOBINQ	-0.006	-0.002	-0.007	-0.002	-0.007	-0.002
	(-0.55)	(-0.17)	(-0.63)	(-0.16)	(-0.63)	(-0.16)
ADVERTISEMENT	-0.103	-0.347	-0.096	-0.341	-0.088	-0.342
	(-0.25)	(-1.18)	(-0.23)	(-1.16)	(-0.21)	(-1.16)
DIV YIELD	-0.778	-0.544	-0.828	-0.538	-0.837	-0.538
	(-1.16)	(-1.27)	(-1.24)	(-1.25)	(-1.25)	(-1.25)
NUMBER OF SHAREHOLDERS	-0.014*	0.002	-0.014*	0.002	-0.014*	0.002
	(-1.85)	(0.30)	(-1.84)	(0.32)	(-1.84)	(0.32)
IO	0.057	0.068	0.060	0.069	0.057	0.069
	(0.92)	(1.39)	(0.96)	(1.42)	(0.92)	(1.41)
ANALYSTS	-0.050*	-0.081***	-0.050*	-0.081***	-0.048*	-0.081***
	(-1.87)	(-4.15)	(-1.86)	(-4.13)	(-1.81)	(-4.13)
ANALYST DISP	0.100**	0.116**	0.099**	0.115**	0.100**	0.115**
	(2.23)	(2.28)	(2.20)	(2.25)	(2.21)	(2.25)
CONSTANT	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES	YES	YES
Observations	59,651	58,159	59,651	58,159	59,651	58,159
Adjusted R-squared	0.040	0.041	0.040	0.041	0.040	0.041

References

Amore, M. D., Schneider, C., and Žaldokas, A. (2013). Credit supply and corporate innovation. *Journal of Financial Economics*, 109(3), 835-855.

Antón, M., and Polk, C. (2014). Connected Stocks. *Journal of Finance*, *69*(3), 1099-1127.

Bai, J., Fairhurst, D., and Serfling, M. (2020). Employment protection, investment, and firm growth. *Review of Financial Studies*, 33(2), 644-688.

Barberis, N., Shleifer, A., and Wurgler, J. (2005). Comovement. *Journal of Financial Economics*, *75*(2), 283-317.

Bernile, G., Kumar, A., and Sulaeman, J. (2015). Home away from home: Geography of information and local investors. *Review of Financial Studies*, *28*(7), 2009-2049.

Boyer, B. H. (2011). Style-Related Comovement: Fundamentals or Labels? *Journal of Finance*, *66*(1), 307-332.

Branikas, I., Hong, H., and Xu, J. (2020). Location choice, portfolio choice. *Journal of Financial Economics*, *138*(1), 74-94.

Brochet, F., Kolev, K., and Lerman, A. (2018). Information transfer and conference calls. *Review of Accounting Studies*, 23(3), 907-957.

Brockman, P., Liebenberg, I., and Schutte, M. (2010). Comovement, information production, and the business cycle. *Journal of Financial Economics*, 97(1), 107-129.

Brown, J. R., Ivković, Z., Smith, P. A., and Weisbenner, S. (2008). Neighbors matter: Causal community effects and stock market participation. *Journal of Finance*, 63(3), 1509-1531.

Chung, D. Y., Hrazdil, K., and Trottier, K. (2015). On the efficiency of intra-industry information transfers: The dilution of the overreaction anomaly. *Journal of Banking & Finance*, 60, 153-167.

Coleman, J. S. (1990). *Foundations of Social Theory*, Cambridge, MA, Harvard University Press.

Crone, T. M., and Clayton-Matthews, A. (2005). Consistent economic indexes for the 50 states. *Review of Economics and Statistics*, 87(4), 593-60

Dang, T. L., Moshirian, F., and Zhang, B. (2015). Commonality in News Around the World. *Journal of Financial Economics*, *116*(1), 82-110.

Drake, M. S., Jennings, J., Roulstone, D. T., and Thornock, J. R. (2017). The Comovement of Investor Attention. *Management Science*, *63*(9), 2847-2867.

Ehrmann, M., and Jansen, D. J. (2020). Stock return comovement when investors are distracted: more, and more homogeneous. *ECB Working Paper Series.*

Eun, C. S., Wang, L., and Xiao, S. C. (2015). Culture and R2. *Journal of Financial Economics*, *115*(2), 283-303.

Fama, E. F., and French, K. R. (1997). Industry Costs of Equity. *Journal of Financial Economics*, 43(2), 153-193.

Garcia, D., and Norli, Ø. (2012). Geographic dispersion and stock returns. *Journal of Financial*

Economics, *106*(3), 547-565.

Gompers, P., Ishii, J., and Metrick, A. (2003). Corporate Governance and Equity Prices. *Quarterly Journal of Economics*, 118(1), 107–156.

Green, T. C., and Hwang, B. H. (2009). Price-Based Return Comovement. *Journal of Financial Economics*, *93*(1), 37-50.

Grinblatt, M., and Keloharju, M. (2001). How distance, language, and culture influence stockholdings and trades. *Journal of Finance*, *56*(3), 1053-1073.

Grullon, G., Underwood, S., and Weston, J. P. (2014). Comovement and Investment Banking Networks. *Journal of Financial Economics*, *113*(1), 73-89.

Guiso, L., Sapienza, P., and Zingales, L. (2004). The Role of Social Capital in Financial Development. *American Economic Review*, 94(3), 526–556.

Gupta, A., Raman, K., and Shang, C. (2018). Social capital and the cost of equity. *Journal of Banking & Finance*, 87, 102–117.

Hameed, A., Morck, R., Shen, J., and Yeung, B. (2015). Information, Analysts, and Stock Return Comovement. *Review of Financial Studies*, 28(11), 3153-3187.

Hann, R. N., Kim, H., and Zheng, Y. (2019). Intra-industry information transfers: evidence from changes in implied volatility around earnings announcements. *Review of Accounting Studies*, 24(3), 927-971.

Hasan, I., Hoi, C. K., Wu, Q., and Zhang, H. (2017a). Social Capital and Debt Contracting: Evidence from Bank Loans and Public Bonds. *Journal of Financial and Quantitative Analysis*, 52(3), 1017–1047.

Hasan, I., Hoi, C. K., Wu, Q., and Zhang, H. (2017b). Does social capital matter in corporate decisions? Evidence from corporate tax avoidance. *Journal of Accounting Research*, 55(3), 629-668.

Hoi, C. K., Wu, Q., and Zhang, H. (2019). Does social capital mitigate agency problems? Evidence from Chief Executive Officer (CEO) compensation. *Journal of Financial Economics*, 133(2), 498–519.

Huang, K., and Shang, C. (2019). Leverage, debt maturity, and social capital. *Journal of Corporate Finance*, 54, 26–46.

Huang, S., Huang, Y., and Lin, T. C. (2019). Attention allocation and return co-movement: Evidence from repeated natural experiments. *Journal of Financial Economics*, *132*(2), 369-383.

Ivković, Z., and Weisbenner, S. (2005). Local does as local is: Information content of the geography of individual investors' common stock investments. *Journal of Finance*, *60*(1), 267-306.

Jacobs, H., and Weber, M. (2012). The trading volume impact of local bias: Evidence from a natural experiment. *Review of Finance*, *16*(4), 867-901.

Jha, A., and Cox, J. (2015). Corporate social responsibility and social capital. *Journal of Banking & Finance*, 60, 252-270.

Kaplan, S. N., and Zingales, L. (1997). Do Investment-Cash Flow Sensitivities Provide Useful

Measures of Financing Constraints? *Quarterly Journal of Economics*, 112(1), 169–215.

Kumar, A., Page, J. K., and Spalt, O. G. (2013). Investor Sentiment and Return Comovements: Evidence from Stock Splits and Headquarters Changes. *Review of Finance*, *17*(3), 921-953.

Kumar, A., Page, J. K., and Spalt, O. G. (2016). Gambling and Comovement. *Journal of Financial and Quantitative Analysis*, *51*(1), 85-111.

Li, M., & Zhao, X. (2016). Neighborhood effect on stock price comovement. *North American Journal of Economics and Finance*, 35, 1-22.

Malceniece, L., Malcenieks, K., and Putniņš, T. J. (2019). High Frequency Trading and Comovement in Financial Markets. *Journal of Financial Economics*, *134*(2), 381-399.

Massa, M., and Simonov, A. (2006). Hedging, familiarity and portfolio choice. *Review of Financial Studies*, *19*(2), 633-685.

Muslu, V., Rebello, M., and Xu, Y. (2014). Sell-Side Analyst Research and Stock Comovement. *Journal of Accounting Research*, *52*(4), 911-954.

Peng, L., and Xiong, W. (2006). Investor Attention, Overconfidence and Category Learning. *Journal of Financial Economics*, *80*(3), 563-602.

Pirinsky, C., and Wang, Q. (2006). Does Corporate Headquarters Location Matter for Stock Returns? *Journal of Finance*, *61*(4), 1991-2015.

Platikanova, P., and Mattei, M. M. (2016). Firm geographic dispersion and financial analysts' forecasts. *Journal of Banking & Finance*, *64*, 71-89.

Putnam, R. D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton, NJ, Princeton University Press.

Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*, New York, Simon and Schuster.

Ramnath, S. (2002). Investor and analyst reactions to earnings announcements of related firms: An empirical analysis. *Journal of Accounting Research*, 40(5), 1351-1376.

Rupasingha, A., Goetz, S. J., & Freshwater, D. (2006). The production of social capital in US counties. *Journal of Socio-Economics*, 35(1), 83–101.

Seasholes, M. S., and Zhu, N. (2010). Individual investors and local bias. *Journal of Finance*, *65*(5), 1987-2010.

Servaes, H., and Tamayo, A. (2017). The role of social capital in corporations: a review. *Oxford Review of Economic Policy*, 33(2), 201–220.

Shao, R., and Wang, N. (2021). Trust and local bias of individual investors. *Journal of Banking & Finance*, 133, 106273.

Shi, G., Sun, J., and Luo, R. (2015). Geographic dispersion and earnings management. *Journal of Accounting and Public Policy*, *34*(5), 490-508.

Shi, G., Sun, J., Zhang, L., and Jin, Y. (2017). Corporate social responsibility and geographic dispersion. *Journal of Accounting and Public Policy*, *36*(6), 417-428.

Shive, S. (2012). Local investors, price discovery, and market efficiency. *Journal of Financial Economics*, *104*(1), 145-161.

Smajlbegovic, E. (2019). Regional economic activity and stock returns. *Journal of Financial and Quantitative Analysis*, 54(3), 1051-1082.

Thomas, J., and Zhang, F. (2008). Overreaction to intra-industry information transfers? *Journal of Accounting Research*, 46(4), 909-940.

Wei, C., and Zhang, L. (2020). Trust and local bias. *Journal of Financial and Quantitative Analysis*, 55(7), 2211-2245.

Veldkamp, L. L. (2006). Information Markets and the Comovement of Asset Prices. *Review of Economic Studies*, *73*(3), 823-845.

Appendix

Table A1 List of Variables

Variables	Description	Source
β(R_LOC_EW)	Estimated coefficient on local portfolio return at firm-month level, estimated from Equation (1) using daily returns.	CRSP
AT	Natural logarithm of total asset (**AT**).	COMPUSTAT
MB	Market-to-book equity ratio (**PRCC_F*CSHO/CEQ**).	COMPUSTAT
ROA	Earnings before interest, taxes, depreciation, and amortization (**EBITDA**) over total assets (**AT**).	COMPUSTAT
DEBT	Total outstanding debt (**DLC+DLTT**) over total assets (**AT**).	COMPUSTAT
STD(EARN)	Standard deviation of income before extraordinary items (**IB**) per share (**CSHO**) using a five-year rolling window.	COMPUSTAT
TOBINQ	The market value of assets divided by the book value of Assets and is empirically estimated following Kaplan and Zingales (1997) and Gompers, Ishii, and Metrick (2003).	COMPUSTAT
ADVERTISEMENT	Advertising expenditure (**XAD**) over total assets (**AT**) and we set missing value to zero.	COMPUSTAT
DIV YIELD	Annual cash dividend payout (**DV**) over the market capitalization (**PRCC_F*CSHO**)	COMPUSTAT
NUMBER OF SHAREHOLDERS	Natural logarithm of the number of shareholders (**CSHR**).	COMPUSTAT
IO	The percentage of outstanding shares owned by institutional investors.	THOMSON REUTERS 13/F
ANALYSTS	Natural logarithm of one plus the number of analysts following.	I/B/E/S
ANALYST DISP	Standard deviation of earnings forecasts (**STDEV**) scaled by the absolute value of the mean earnings forecast (**MEANEST**).	I/B/E/S
NSTATES	Number of different states mentioned in firm's 10-K filings.	10-K FILINGS
LOG(1+NSTATES)	Natural logarithm of one plus the *NSTATES.*	10-K FILINGS
LOCAL RANK	Decile rank of *NSTATES* * (-1) by each year-month, ranging from 0 to 1.	10-K FILINGS
EA	Dummy variable equal to one if the firm announces its annual earnings in the same month and zero otherwise.	COMPUSTAT
REVISION	Dummy variable equal to one if the firm receives the analysts' recommendation revisions in the same month and zero otherwise.	I/B/E/S

PEER EA	Natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same month.	COMPUSTAT
RAW PEER EA	The number of annual earnings announcements for other firms headquartered in the same MSA in the same month.	COMPUSTAT
PEER EA2	Natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same Fama-French (1997)-48 industry in the same month.	COMPUSTAT
PEER REVISION	Natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month.	I/B/E/S
RAW PEER REVISION	The number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month.	I/B/E/S
PEER REVISION2	Natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same Fama-French (1997)-48 industry in the same month.	I/B/E/S
NO OF FIRMS	Number of firms headquartered in the MSA, scaled by 100.	CRSP
INDUSTRY CONCENTRATION	The Herfindahl index of industry concentration (by Fama-French (1997) 48 industries) in the MSA	CRSP
COINCIDENT INDEX	The State Coincident Indexes of regional economic level for the state where the firm headquartered, scaled by 100.	THE FEDERAL RESERVE BANK OF PHILADELPHIA
PERSONAL INCOME	Per capita personal income for the firm headquarter's MSA, scaled by 1,000.	The Regional Economic Accounts by U.S. Bureau of Economic Analysis
INVESTMENT INCOME	Per capita personal income derived from dividends, interest, and rent for the firm headquarter's MSA, scaled by 1,000.	The Regional Economic Accounts by U.S. Bureau of Economic Analysis

Table A2 Descriptive Statistics by GD Terciles

This table reports the descriptive statistics for the variables used in the cross-sectional regressions by the tercile of firms' geographical dispersion. All continuous variables are winsorized at 1% and 99%. Detail description of variables are provided in Table A1

	LOCAL				MID				DISP				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(2) - (10)
VARIABLES	**N**	**MEAN**	**MEDIAN**	**SD**	**N**	**MEAN**	**MEDIAN**	**SD**	**N**	**MEAN**	**MEDIAN**	**SD**	
β(R_LOC_EW)	68,269	0.202	0.114	1.239	54,345	0.132	0.058	1.074	54,888	0.019	-0.019	0.913	0.183
NSTATES	68,269	6.205	6.000	1.652	54,345	11.290	11.000	1.691	54,888	22.230	20.000	6.951	-16.025
LOG(1+NSTATES)	68,269	1.785	1.792	0.294	54,345	2.413	2.398	0.148	54,888	3.058	2.996	0.287	-1.273
LOCAL RANK	68,269	0.873	0.889	0.115	54,345	0.492	0.444	0.112	54,888	0.129	0.111	0.105	0.744
AT	68,269	6.823	6.675	1.783	54,345	7.658	7.494	1.726	54,888	8.775	8.732	1.805	-1.952
MB	68,269	3.619	2.731	5.324	54,345	3.290	2.357	4.698	54,888	2.790	2.089	3.867	0.829
ROA	68,269	0.103	0.130	0.191	54,345	0.141	0.137	0.128	54,888	0.131	0.124	0.087	-0.028
DEBT	68,269	0.189	0.116	0.228	54,345	0.257	0.230	0.222	54,888	0.292	0.264	0.207	-0.103
STD(EARN)	68,269	0.943	0.547	1.268	54,345	1.218	0.697	1.591	54,888	1.443	0.840	1.773	-0.500
TOBINQ	68,269	2.478	1.964	1.604	54,345	2.024	1.598	1.274	54,888	1.611	1.363	0.840	0.867
ADVERTISEMENT	68,269	0.015	0.000	0.036	54,345	0.015	0.000	0.034	54,888	0.008	0.000	0.022	0.007
DIV YIELD	68,269	0.010	0.000	0.017	54,345	0.011	0.004	0.016	54,888	0.016	0.012	0.018	-0.006
NUMBER OF SHAREHOLDERS	68,269	0.081	-0.115	2.263	54,345	0.688	0.739	2.290	54,888	1.365	1.523	2.427	-1.284
IO	68,269	0.739	0.785	0.227	54,345	0.778	0.817	0.203	54,888	0.775	0.797	0.183	-0.036
ANALYSTS	68,269	2.088	2.079	0.676	54,345	2.204	2.197	0.677	54,888	2.392	2.485	0.622	-0.304
ANALYST DISP	68,269	0.065	0.018	0.166	54,345	0.062	0.016	0.173	54,888	0.060	0.017	0.164	0.006
EA	68,269	0.084	0.000	0.277	54,345	0.084	0.000	0.277	54,888	0.083	0.000	0.275	0.001
REVISION	68,269	0.244	0.000	0.430	54,345	0.270	0.000	0.444	54,888	0.315	0.000	0.465	-0.071
PEER EA	68,269	1.484	1.386	1.221	54,345	1.323	1.099	1.204	54,888	1.278	1.099	1.197	0.206
PEER REVISION	68,269	3.005	3.332	1.224	54,345	2.804	2.996	1.225	54,888	2.802	2.944	1.186	0.203

Table A3 Cross Sectional Regression of Market and Industry Beta on Geographic Dispersion

This table reports the regressions of monthly market beta or industry beta on geographic dispersion measures. The dependent variable, *β(MKTRF)*, is the estimated coefficient of market excess returns at firm-month level, from Equation (1) using daily returns. β(R_IND_EW) is the estimated coefficient of industry returns (by Fama-French (1997) 48 industries) at firm-month level, from Equation (1) using daily returns *NSTATES* is the number of different states mentioned in firm's 10-K filings. *LOCAL RANK* is the decile rank of *NSTATES* times minus one for each year-month, ranging from 0 to 1. Same set of control variables in Table 4 are included. All independent variables are lagged and described in Table A1. Fixed effects are included in different models. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)
VARIABLES	β(MKTRF)		β(R_IND_EW)	
LOCAL RANK	**-0.068*** **	**-0.068*** **	**0.023**	**0.023**
	(-3.09)	**(-3.08)**	**(0.89)**	**(0.88)**
FIRM CONTROLS	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
MONTH FE	YES	NO	YES	NO
YEARMONTH FE	NO	YES	NO	YES
OBSERVATIONS	177,502	177,499	177,502	177,499
ADJ-R2	0.036	0.038	0.047	0.048

Table A4 Robustness Tests: Dropping Observations in January, February, and March

This table reports the robustness tests by dropping observations in January, February and March. Panel A reports the regressions of local return comovement on geographic dispersion, consistent with Table 4. Panel B reports the regressions for attention transfer, consistent with Table 7.

Panel A

	(1)	(2)	(3)
VARIABLES		β(R_LOC_EW)	
NSTATES	**-0.003*** **		
	(-3.43)		
LOG(1+NSTATES)		**-0.044*** **	
		(-3.30)	
LOCAL RANK			**0.071*** **
			(3.16)
FIRM CONTROLS	YES	YES	YES
CONSTANT	YES	YES	YES
INDUSTRY FE	YES	YES	YES
YEARMONTH FE	YES	YES	YES
OBSERVATIONS	133,756	133,756	133,756
ADJ-R2	0.036	0.036	0.036

Panel B

	(1)	(2)	(3)	(4)
	LOCAL	DISP	LOCAL	DISP
VARIABLES		β(R_LOC_EW)		
EA	**-0.054**	**-0.068***		
	(-1.25)	**(-1.65)**		
PEER EA	**0.076*** **	**-0.023** **		
	(5.78)	**(-2.17)**		
REVISION			**-0.001**	**-0.010**
			(-0.07)	**(-0.99)**
PEER REVISION			**0.063*** **	**-0.008**
			(7.42)	**(-1.03)**
FIRM CONTROLS	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES
OBSERVATIONS	51,404	41,455	51,404	41,455
ADJ-R2	0.024	0.054	0.025	0.054

Table A5 Regression of Return Comovement with Local Stocks, by Geographical Dispersion and Social Capital Terciles

This table reports the mean statistics for the time-series regressions of daily excess returns. Models are estimated for each firm annually. *MKTRF* is the daily excess return of the value-weighted market portfolio. *R_LOC(EW)* is the daily return on the equally-weighted local portfolio of firms headquartered in the same MSA, excluding the firm itself. *R_NLOC(EW)* is the daily return on the equally-weighted non-local portfolio of firms headquartered in the different MSAs. *R_IND(EW)* is the daily returns on equally-weighted portfolio of firms in the same industry (by Fama-French (1997) 48 industry), excluding the firm itself. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Model	Rank for GD	Rank for SC	ALPHA	T	MKTRF	T	R_LOC(EW)	T	R_IND(EW)	T	ADJ-R2	# of F-Y OBS
1	LOW	LOW	0.01%	2.884	0.427	37.057	0.653	61.154	.	.	0.220	3680
1	LOW	MID	0.01%	1.606	0.476	35.937	0.610	48.442	.	.	0.213	2790
1	LOW	HIGH	0.01%	1.440	0.518	39.083	0.592	46.007	.	.	0.231	3077
		L - H			**-0.091*****		**0.061*****					
					(-5.18)		**(3.63)**					
1	MID	LOW	0.01%	1.629	0.524	41.649	0.605	51.041	.	.	0.265	3025
1	MID	MID	0.00%	-0.044	0.661	48.765	0.476	36.535	.	.	0.265	2434
1	MID	HIGH	0.00%	0.496	0.689	54.515	0.445	37.374	.	.	0.275	2677
		L - H			**-0.165*****		**0.159*****					
					(-9.27)		**(9.49)**					
1	HIGH	LOW	0.01%	2.795	0.704	64.927	0.411	38.047	.	.	0.299	2923
1	HIGH	MID	0.00%	1.157	0.790	66.287	0.346	29.304	.	.	0.298	2268
1	HIGH	HIGH	0.00%	0.404	0.826	80.755	0.295	30.141	.	.	0.323	2863
		L - H			**-0.122*****		**0.116*****					
					(-8.18)		**(7.94)**					
2	LOW	LOW	0.00%	1.271	0.133	12.248	0.287	28.001	0.661	55.346	0.248	3680
2	LOW	MID	0.00%	1.106	0.136	10.577	0.248	20.882	0.698	52.682	0.242	2790
2	LOW	HIGH	0.00%	1.048	0.174	13.839	0.223	18.718	0.695	54.591	0.262	3077
		L - H			**-0.041****		**0.065*****		**-0.034***			
					(-2.47)		**(4.11)**		**(-1.95)**			
2	MID	LOW	0.00%	0.602	0.232	19.820	0.236	20.962	0.643	55.908	0.300	3025
2	MID	MID	0.00%	-0.890	0.322	24.520	0.189	16.458	0.603	50.290	0.299	2434
2	MID	HIGH	0.00%	-0.430	0.306	24.060	0.150	13.948	0.659	55.667	0.321	2677
		L - H			**-0.073*****		**0.086*****		**-0.016**			
					(-4.25)		**(5.53)**		**(-0.97)**			
2	HIGH	LOW	0.00%	1.193	0.379	35.247	0.095	9.937	0.625	61.253	0.348	2923
2	HIGH	MID	0.00%	-0.013	0.383	33.484	0.077	7.774	0.651	56.796	0.350	2268
2	HIGH	HIGH	0.00%	-0.708	0.416	39.864	0.050	6.015	0.642	65.540	0.383	2863
		L - H			**-0.037****		**0.045*****		**-0.017**			
					(-2.49)		**(3.56)**		**(-1.25)**			

Table A6 Tests for Attention Transfer by Geographic Dispersion and Social Capital

This table reports the regression for intra-regional attention transfer by geographic dispersion and social capital. *LOCAL* is the bottom tercile group of firms ranked by *NSTATES* for each yearmonth. *DISP* is the top tercile group of firms ranked by *NSTATES* by each yearmonth. *HIGH_SC* and *LOW_SC* represent the top and bottom tercile of the firms in terms of the level of social capital of their headquarters in every yearmonth. The dependent variable, *β(R_LOC_EW)*, is the estimated coefficient of local portfolio returns at firm-month level, from Equation (1) using daily returns. *PEER EA* is the natural logarithm of one plus the number of annual earnings announcements for other firms headquartered in the same MSA in the same month. *PEER REVISION* is the natural logarithm of one plus the number of analysts' recommendation revisions for other firms headquartered in the same MSA in the same month. *EA* is dummy variable equal to one if the firm announces its annual earnings in the same month and zero otherwise. *REVISION* is dummy variable equal to one if the firm receives the analysts' recommendation revisions in the same month and zero otherwise. Other control variables are lagged and described in Table A1. Industry and Yearmonth fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1

	LOCAL		DISP		LOCAL		DISP	
	LOW_SC	HIGH_SC	LOW_SC	HIGH_SC	LOW_SC	HIGH_SC	LOW_SC	HIGH_SC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	β(R_LOC_EW)							
EA	**-0.066***	**-0.074****	**-0.016**	**0.016**				
	(-1.80)	**(-2.12)**	**(-0.51)**	**(0.57)**				
PEER EA	**0.070*****	**0.019**	**-0.012**	**-0.038*****				
	(3.59)	**(1.13)**	**(-0.69)**	**(-2.69)**				
REVISION					**0.021**	**0.004**	**-0.011**	**-0.019**
					(0.92)	**(0.16)**	**(-0.62)**	**(-1.38)**
PEER REVISION					**0.074*****	**0.025****	**0.005**	**-0.025****
					(4.47)	**(2.00)**	**(0.29)**	**(-2.14)**
FIRM CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES
CONSTANT	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
YEARMONTH FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	23,185	21,603	19,277	18,772	23,185	21,603	19,277	18,772
Adjusted R-squared	0.028	0.027	0.060	0.062	0.029	0.027	0.060	0.062