Geographic Clustering of Institutional Investors

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Abstract

Both the U.S. money management industry and public firms are clustered geographically, but there is considerable misalignment between the two. In this paper, we study whether and how the geographic mismatch between investors and public firms affects corporate financial policies, firm valuation, and firm performance. We measure the investor-firm misalignment at the state level based on the log of one plus the ratio of the aggregate asset under management (AUM) of institutions in a state to the total market capitalization of public firms in the same state (AM Ratio). We find that firm valuation is high when firms are located in states with high AM Ratio and the effects are stronger for firms with higher level of equity dependence. We show that a greater presence of local institutional investors mitigates the financial constraints of local firms. Firms in high AM Ratio states invest more and their investments are less dependent on internal cash flow. These firms are more likely to issue equity while local institutions hold more of the newly issued equity. The high firm valuation in the high AM Ratio states seems to be persistent, but can be affected by shocks to the money management industry.

Keywords: Institutional Investors, Local Preference, Firm Valuation, Corporate Policy

JEL Classification Number: G11, G23, G32

1 Introduction

The U.S. money management industry is geographically concentrated. In 2013, the top five states for the money management industry based on the equity holdings, namely New York, Massachusetts, California, Pennsylvania, and Illinois, account for 71% of the total U.S. stock holdings of institutional investors. On the other hand, the U.S. companies are also clustered in certain areas, although they are located less skewedly than financial institutions. In the same year, the top 5 states for the firms according to the firm size are New York, California, Texas, Illinois, and New Jersey. The market capitalization of firms in these states constitutes 54 % of the total market capitalization of U.S. public firms. Both the money management industry and public firms display a strong clustering preference for certain geographic regions.

However, the U.S. money management industry and public companies are geographically misaligned. For example, in Texas from 1980 to 2013, the total market capitalization of firms ($83.9 billion) is much greater than a total stock holding of financial institutions ($1.3 billion) on average. While in Massachusetts, one of the main clusters for the money management industry, the total size of companies ($23.9 billion) is noticeably smaller than total asset under management of financial institutions ($90.2 billion). In addition to these two states, the geographic mismatch between financial institutions and companies are widespread. For the five leading states classified by the size of the financial industry, the ratio of the size of financial institutions to companies varies from 0.37 for California to 2.92 for Massachusetts. Therefore, the questions are: What are the real consequences of the skewed distribution of the money management industry and public firms? Does the misalignment of location clusters between institutions and firms influence the value and corporate decisions of firms in a certain region?

In this paper, we study whether and how the geographic mismatch of investors and public firms affects corporate financial policies, firm valuation, and firm performance. We provide the first piece of evidence on the real effects of the mismatch of location clusters between institutions and firms. The mismatch of location clusters matters for several reasons. First, the development of the financial industry is crucial for other economic sectors and companies, since the financial industry provides capital to companies and households.[1] The developed financial market facilitates access to external financing for firms and results in better investment opportunities, mobilization of savings, innovations, and improvement of risk taking, which ultimately leads to better economic growth. Second, the locations of firms have implications for corporate finance and asset pricing because the U.S. financial market is not fully integrated. Previous studies have documented that the location of the company is important in the aspect of acquisitions and leverage (Almazan et al. 2010), dividend policy (Becker et al. 2011), investment policy (Dougal et al. 2015), and stock returns comovement (Pirinsky and Wang 2006). Third, over the past decades, institutional investors have expanded substantially. Given their importance, growing theoretical studies highlight the asset pricing kernel of financial institutions rather than households.[2] Studies empirically emphasize the role of institutional investors to effectively monitor public firms (McCahery et al. 2016) and to influence stock prices (Gompers and Metrick 2001). Our findings provide empirical support for the theoretical literature that highlights the asset pricing role of financial institutions.

To measure the mismatch between financial institutions and firms, we construct a new variable, AM Ratio, defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. AM Ratio effectively captures the relative effect of financing by local institutions and the ease of access to such financing in a state.[3] This variable is a good proxy for the aggregate risk tolerance of financial intermediaries, given the role of local financial institutions as marginal investors.

We start by examining the stock-price consequences of local institutional investors on firms. We run a panel regressions of a local firm's market-to-book on AM Ratio including several controls. We find that firms located in states with higher AM Ratio have significantly higher stock value. We further investigate the joint effect of local preference and AM Ratio on firm valuation. Our

[1] At the country level (Rajan and Zingales 1998) and at the local level (Guiso et al. 2004).

[2] See Gromb and Vayanos (2002), Kyle and Xiong (2001), Vayanos (2004), Brunnermeier and Pedersen (2009), Adrian and Shin (2010), Basak and Pavlova (2013), He and Krishnamurthy (2012), and He et al. (2016).

[3] Local institutions have information advantage given their geographical proximity. Their investment in local firms is better informed than non-local institutions. Reduced information asymmetry thus leads to the lower cost of capital and higher price efficiency.

findings indicate that the positive effect of AM Ratio on firm valuation is significantly stronger in the states with high local preference. Firms experience high valuation when nearby institutions have abundant funds and, at the same time, exhibit strong preference for local stocks. Without sufficient local institutional funding, local preference alone does not contribute to high valuation. In addition, we examine the effect of AM Ratio for subsamples of firms based on firm size, dividend payout, financial dependence, and KZ index. Small, no-dividend payout, financially dependent, and high KZ index firms are more likely to be affected by local funding because they face difficulty raising debt financing and are more dependent on equities. We find that the valuation effect of local institutional funding is stronger for equity dependent firms.

We further examine the channels of how firms benefit from local institutional funding by investigating two corporate policies: investment and issuance. If a company is located close to larger institutional funds, the cost of capital will be lower due to the local preference of the institutions. As a result, companies can invest more. We show that firms in a state with plenty of institutional capital do in fact undertake more investment opportunities. As a next step, we analyze whether abundant institutional capital alleviates financial constraints of the firms. In a frictionless world, firms invest in accordance with their investment opportunities proxied by Tobin's Q. However, firm investment is shown to be sensitive to internal cash flow, especially for financially constrained companies. We find that firms in states with greater institutional capital display a significantly lower investment-cash flow sensitivity. Moreover, firms located in high AM Ratio states tend to be more positively sensitive to investment opportunities. Empirical evidence indicates that being located near more institutional funds mitigates financial constraints.

We then explore why companies in the states with more institutional capital are able to undertake more investment. If AM Ratio proxies for the ease of funding from local institutions, firms in those states are expected to issue more. We find more equity issuance of firms located in high AM Ratio states. Furthermore, we show that firms with greater need of external financing issue more equities when they are located in states with high AM Ratio. We also provide direct evidence that financial institutions are the main players in reducing equity financing costs, since they indeed hold a large proportion of new shares of local companies. In contrast, we do not find significant impact of AM Ratio on debt issuance. Since institutional investors are more specialized in equity trading, it is plausible that AM Ratio is not related to debt issuance. This evidence confirms that our results are driven specifically by the presence of institutional investors, but not by the overall development of the local financial market.

Taken together, our findings suggest that the high value of companies close to institutional capital is a result of efficient asset allocation. More investment by these companies is made because of rational institutional decisions, as we show that companies invest more according to better investment opportunities and are less dependent on cash flows. Funds are allocated efficiently to companies that have better investment opportunities. Being close to institutional funding reduces the cost of raising capital and allows financially constrained firms to issue shares with ease. Local institutions contribute to the market efficiency by reducing financing frictions of local firms.

We also perform additional analyses on the firm relocation subsample. We document that when companies move, investors in their old locations significantly reduce holdings of the moving firms while financial institutions in the new locations substantially hold more shares of the moving firms. This suggests that the local preference of institutions is less likely to originate from familiarity bias. We then investigate whether institutional presence is an important consideration when firms make relocation decisions, especially for financially constrained firms. Firms appear to move more often from high AM Ratio states to low AM Ratio states, suggesting that institutional capital is not the main reason for a company to move.

There are potential endogeneity issues for our results, such as reverse causality, as institutions might choose to locate near firms with better prospects. To address this concern, we use the Dot-com collapse during 2000–2002 as an exogenous shock. Bubble bursts would have a serious impact on institutions that own a large portion of technology stocks and firms that are not directly related to the technology industry will be affected only through the shocks to their local institutions. We can rule out the reverse causality by using this natural experiment. We examine the valuation effect of the non-technology companies in the states where institutions have large composition of technology companies before the bubble bursts. We find that the firms in more affected states experience substantially lower valuation during the period of bubble burst. Consistently, we find the stock returns of firms in affected states are significantly lower. The results are consistent to our previous findings and establish the causality of our study.

Finally, we examine the persistence of the value of the firms close to institutional capital. The high valuation could be an overvaluation that reflects inefficient investment of biased institutional investors. Such overvaluation could be reversed in the long run. High valuation could also be a result of efficient investments and asset allocation that leads to a persistent valuation effect. From the return analysis, we do not find significant evidence of return reversal. This finding indicates that a company's high value is not a temporary overvaluation but rather an efficient one. Institutional presence has a real effect on companies and companies continuously experience high corporate value.

Our paper is closely related to Sulaeman and Wei (2014). They use the total AUM of local institutional investors at the state level as a proxy for institutional presence and find that high institutional presence leads to higher liquidity, faster information incorporation, lower cost of equity, and less financing frictions. Their study mainly concentrates on the role of institutional investors as enhancing informational efficiencies within the firm. In contrast, our study examines how market valuation of firms are influenced by the mismatched location clusters of financial institutions and firms. Thus, our main variable of interest, AM Ratio, considers both the asset under management of institutional investors and the market capitalization of all firms located in a state. This variable ensures that our results are not dominated by some states where total institutional AUM is high and the total market capitalization of firms is also high.

The remainder of the paper is organized as follows. Section 2 describes the data, and Section 3 evaluates the impact of AM Ratio on firm valuation. Section 4 explores local institutions and corporate investment and financing decisions. Section 5 provides further evidence and examines the implications for firm performance and the final section concludes.

2 Data and Summary Information

2.1 Data

Our sample is composed of U.S. domestic firms traded on NYSE, Amex, and Nasdaq from 1980 to 2013, which corresponds to the sample period of firm and institution location.

We collect state-level institutional investors' location from 1980 to 2013. The main source of institutional investors' location is 13F filings in the Securities and Exchange Commission (SEC). We acquire location information from 13F filings and match them with holdings in Thomson Reuters S34 to link cik and mgrno. The filings in Edgar start from 1993 so many filings in early years are missing. We complement the location data using Nelson's Directories of Investment Managers and Money Market Directories from 1980 to 1999. We include institutions located in 50 states and in the District of Columbia. Table I reports the summary statistics of the number of institutions for the top 5 and bottom 5 states ranked by the state-level AUM in 1980, 1997, and 2013. The total number of institutions increases from 229 in 1980 to 2895 in 2013. Institutional investors are more likely to cluster in New York, California, Massachusetts, Illinois, and Pennsylvania. These five states are ranked among the top 5 states for most of the years from 1980 to 2013.

We define a firm's location as the headquarter of a firm following Coval and Moskowitz (1999), Ivković and Weisbenner (2005), and Loughran and Schultz (2005). Corporate headquarters are close to major business activities and function as the information exchange center between suppliers and investors.[4] Headquarter state and county information is collected from COMPUSTAT annual files. In addition, historical state and county information is cross-checked using Compact Disclosure. Combining these two data sources, Table I reports the average number of firms for the top 5 and bottom 5 states ranked by the state-level AUM in 1980, 1997, and 2013. The total number of firms increases from 4484 in 1980 to 7818 in 1997 then decreases to 4805 in 2013. Alaska has the lowest average number of firms (3.18) while California has the highest average number of firms (905.97).

Firm-level financial data is collected from Center for Research in Security Prices (CRSP) and

[4] See Pirinsky and Wang (2006) and Davis and Henderson (2008).

COMPUSTAT. We obtain stock prices and the number of shares outstanding from CRSP. Our sample is restricted to common stocks (share code 10 or 11) traded on NYSE, Amex and Nasdaq (exchange code 1, 2 or 3). We exclude firms in the financial service industry (one-digit SIC codes of 6) and utility industry (one-digit SIC codes of 4) in our analysis. Annual accounting information is obtained from COMPUSTAT. These two data sources are then merged to construct firm-level and state-level variables. Institutional quarterly stock holdings are drawn from Thomson Reuter 13F institutional holdings database. Institutional investors (such as banks, insurance companies, mutual fund companies, and investment advisors) with more than $100 million assets under discretionary management are required to disclose their holdings to SEC every quarter.

2.2 Measuring Mismatch and Local Preference

In our paper, we develop a state-level the mismatch measure between financial institutions and firms and two local preference measures. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. This variable proxies for the mismatch between clusters of institutions and firms and the amount of relative funding available at state level. The higher the AM Ratio, the higher the mismatch and the easier it is for firms to gain access to local institutional capital. We take the log transformation to cope with the left skewed distribution. We also winsorize the AM Ratio at the 1% and 99% levels to show that our results are not mostly driven by low AM Ratio states and outliers.[5] We fill the missing AM Ratio by 0 when states have no institution identified. According to Table I, the average of AM Ratio across states ranges from 0.163 in 1980 to 0.462 in 2013. Massachusetts has a relatively high AM Ratio since it is a cluster for financial institutions but not for firms.

Local preference is measured using two methods. The first method (State LP1) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions

[5]We confirm that our results are robust with different specifications of winsorization ranges and without winsorization. We also use the cross-sectional rank such as the fractional rank or decile of AM Ratio to validate the robustness of our findings.

to the total AUM of local institutions and the ratio of the total market capitalization of local firms to the total market capitalization of all firms. State LP1 is a traditional measure of local preference and it captures the fraction of local firms held by local institutions relative to the market weight of investable assets considering all investors. The second method (State LP2) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions to the total AUM of local institutions and the ratio of the total market capitalization of local firms held by all institutions to the total AUM of all institutions. The second measure captures the fraction of local firms held by local institutions relative to the market weight considering only institutional investors.

$$\text{LP1} = \frac{\text{Total MV of Local Firms Held by Local Institutions}}{\text{Total AUM of Local Institutions}} - \frac{\text{Total MV of Local Firms}}{\text{Total MV of All Firms}} \tag{1}$$

$$\text{LP2} = \frac{\text{Total MV of Local Firms Held by Local Institutions}}{\text{Total AUM of Local Institutions}} - \frac{\text{Total MV of Local Firms Held by All Institutions}}{\text{Total AUM of All Institutions}} \tag{2}$$

According to Coval and Moskowitz (1999), local preference measures the tendency of institutional investors to select their portfolio choices locally relative to the market weights of investable assets. If institutional investors do have local preference, these two measures should be positive. As shown in Table I, the average of local preference decreases from 0.061 in 1980 to 0.019 in 2013 and is positive for most states. The reduction in local preference over the sample period reflects the integration of the U.S. financial market and the expansion of financial institutions. Both local preference measures for New York are small and negative in some years. Financial institutions in New York are generally large investors and they are less likely to exhibit irrational local preference. Local preference is more prevalent in small states.

To better illustrate AM Ratio measure, we graph the total AUM of institutions to the aggregate AUM of all institutions for each state (Figure 1), the total market capitalization of firms to the aggregate market capitalization of all firms for each state(Figure 2), and the ratio state for each state (Figure 3).

2.3 Other Variables

Our study examines how local funding easiness affects firm valuation, through which corporate policies firm valuation is influenced, and the real effects of local institutional funding. Besides stock market performance, all other variables are measured at annual frequency and are defined in Appendix Table I. All the accounting variables are winsorized at 1% and 99% levels.

Firm Valuation. We employ MB as a measure of firm valuation. MB is defined as the ratio of market equity value to book equity value.

Investment. We employ four measures of investment: CAPXRND, R&D, CAPEX, and INVESTMENT. CAPXRND is the sum of capital expenditures, research and development expenditures, all scaled by lagged assets. R&D is research and development expenditures scaled by lagged assets. CAPEX is capital expenditures scaled by lagged assets. INVESTMENT is the sum of total asset growth and R&D spending, all scaled by lagged total assets.

Issuance. We perform analyses on both equity issuance and debt issuance. Equity issuance is defined as the change in book equity and the change in deferred taxes, less the change in retained earnings, all scaled by lagged assets. We measure debt issuance as the change in assets, less the change in book equity, less the change in deferred taxes, all scaled by lagged assets.

Performance. We examine stock market performance. Stock market performance is defined as the monthly excess stock returns.

3 AM Ratio and Firm Valuation

In this section, we study the effect of AM Ratio on firm valuation. We first document whether the location mismatch has any influence on firm valuation. Then we investigate the joint effect of AM Ratio and local preference on stock prices. In the end, we examine when this influence is stronger and what types of firms are affected more.

3.1 AM Ratio and Firm Valuation

Hong et al. (2008) examine how the aggregate risk tolerance of individual investors in a region influences stock prices. They show that firms have higher stock prices when they are located in the states with relatively few firms per capita through the only-game-in-town effect. Supported by the literature on the financial intermediary asset pricing kernel, this section aims to examine the stock-price consequences of the relative size of local institutions. Different from traditional literature (Chhaochharia et al. 2012) that measures institutional ownership at firm level, our study utilizes the state-level mismatch measure to capture the potential investment of local institutions regardless of their actual holdings. Unlike Sulaeman and Wei (2014), our main variable of interest, AM Ratio, considers both the total AUM of institutional investors and the total market capitalization of firms located in a state. This variable provides a valid measure of the mismatched location distributions of financial institutions and firms. The design of AM Ratio also ensures that the results are not dominated by some states where the institutional AUM is high and the total market capitalization of firms is also high.

Local institutional funding is important for firm valuation since the U.S. financial market is not fully integrated and asset prices are geographically segmented for two reasons. First, locating close to firms lowers information collecting cost and reduces information asymmetry, which eventually leads to lower cost of capital. Consequently, financial institutions are more likely to invest in nearby firms. Second, institutional investors exhibit irrational preference for local firms. Both information advantage and local preference channels result in local funding flows to firms, which eventually would influence firm valuation.

We define firm valuation as the ratio of market equity value to book equity value. We include R&D Dummy, R&D-to-Sales, CAPEX-to-Sales, Leverage, Log(Assets), and ROE as independent variables to control for future growth, size, and profitability of a firm.[6] In all the model specifications, we control for the exchange, year and industry fixed effects. Industries are defined using

[6] In some models, we also include HKS Ratio, the main variable of interest in Hong et al. (2008), to control for the aggregate risk tolerance of individual investors. Detailed definition of these variables are described in Appendix Table I.

two-digit SIC code. The standard errors are clustered at the state-year level, where there is a variation of AM Ratio.

Our regression results are displayed in Table II. In column 1, without any control variables, the coefficient of AM Ratio is 0.138, significant at 5% level. The result implies that the valuation of the firm would increase by approximately 0.138% when the state AM Ratio increases by 1%. Such finding indicates that firm stock prices increase with the level of location mismatch. To rule out the industry effect on firm valuation, we include two-digit SIC code industry fixed effects. In column 2 with control variables, the coefficient of AM Ratio decreases to 0.132, but remains significantly positive. When firms can easily access external financing from local institutions, they experience higher market valuation. The non-R&D firms tend to have lower valuation than R&D firms do, and more R&D is associated with higher valuation among the R&D firms. Profitability is negatively related to firm valuation. Market valuation reduces with CAPEX but increases with firm leverage. In column 3, when we add HKS Ratio, the main variable of interest in Hong et al. (2008), we find that AM Ratio is not affected by the local risk tolerance of individual investors measure. The magnitude of AM Ratio remains the same and becomes statistically more significant. HKS ratio appears to be insignificantly negative. Similarly, our measure can be interpreted as the risk tolerance of institutional investors in a state. The results together suggest that institutional investors are more important than individual households in determining asset prices. Overall, when firms are located in a state where the relative AUM of local institutions is high, their stock prices tend to be high.

To ensure the robustness of our results, we perform several additional analyses. Firstly, we construct a neighboring states AM Ratio measure, defined as the log of one plus the ratio of the aggregate AUM of institutions in neighboring states to the total market capitalization of firms in neighboring states. We develop this measure to alleviate concerns that small states are potentially affected by adjacent big states, such as New Jersey next to New York. As reported in column 4, the coefficient of AM Ratio remains significantly positive. The result implies that our baseline finding is not originated by the extreme values of AM Ratio. Secondly, we estimate similar regressions using the region-level AM Ratio measure as shown in column 5. The overall results are statistically consistent when AM Ratio is measured at the region level. A region is a broader definition of clustering than a state. As a result, it could potentially introduce noisy factors. Thirdly, to make sure that our results are robust across different methodologies, we employ the Fama and MacBeth (1973) approach to estimate the effect of AM Ratio on firm valuation. In the first stage, we run a separate cross-sectional regression each year from 1980 to 2013 with two-digit SIC code industry fixed effects. We then compute the means of the annual regression coefcients adjusting for Newey-West standard errors. Consistent with our panel regression results, AM Ratio has a coefficient of 0.139 in column 7 and is statistically significant. The significance of our measure does not depend on the cross-sectional correlation. Finally, we perform additional subsample analyses, 1980 to 1996 and 1997 to 2013, to examine the time varying effect of AM Ratio on firm valuation. As shown in columns 8 and 9, the coefficients of AM Ratio are not significant while the coefficient of HKS Ratio is significantly negative for the period of 1980 to 1996. Such results are expected in the early period of our sample given that institutional investors just started to grow and expand. At that time, retail investors and households play dominant roles in determining stock prices. As displayed in columns 10 and 11, from 1997 to 2013, firm valuation increases significantly as AM Ratio increases and the effect of households becomes weak. The role of financial institutions becomes increasingly important in determining stock prices. It is consistent with the time trends that more households delegate their own stock investments to professional fund managers. It is more reliable that we have more explanatory power of AM Ratio recently. Overall, our main results are consistent across various samples and two alternative measures of AM Ratio. The robust results suggest that AM Ratio is a valid proxy for location mismatch and easiness of funding access from local institutions. In our later analyses, we use the panel regression approach rather than the Fama and MacBeth (1973) approach as the primary method.

To sum up, the results in this subsection suggest that the mismatch of location clusters does have an impact on firm valuation and that the ease of access to funding from local institutions is beneficial to firms.

3.2 AM Ratio, Local Preference, and Firm Valuation

We have shown that more institutional capital relative to firms' stock values in a state increases firm valuation. AM Ratio captures the effect of the potential capital to firms by local institutional investors regardless of their current investment in local companies. There would not exist the effect of AM Ratio on firm valuation without local preference. Investors can display local preferences in portfolio selection in a rational or irrational way. Previous studies document evidence that both individual investors and institutional investors exhibit strong local biases (Coval and Moskowitz 1999, Coval and Moskowitz 2001, Ivković and Weisbenner 2005, and Kang and Kim 2008). The high valuation of a firm in a high AM Ratio state may reflect high demand of biased investors. Local investors may have less information asymmetry about local companies.[7] The benefits from better monitoring will lead to higher value of local companies. We do not differentiate between the rational or irrational channel of valuation effect, but investigate whether stronger local preference can enhance the impact of AM Ratio on firm valuation.

As shown in Table III, both local preference and AM Ratio vary substantially across states. In this subsection, we examine the joint influence of AM Ratio and local preference on firm valuation. We construct two measures of local preference at the state level. The first measure captures local preference relative to the market weights of local companies while the second measure considers local preference relative to institutional investors' weights of local companies.

We introduce an interaction term to examine the joint effect of AM Ratio and local preference on firm valuation. The results are displayed in Table II. We start by examining the pure effect of local preference on valuation. As shown in columns 1 and 2, the relationship between local

[7] local investors face low communication and information gathering costs, which further reduce information asymmetry. Taking advantage of location proximity, investors are able to directly inspect local firms and obtain information. In addition, local media enhances the coverage of local firms. It is easier for local investors to build social networks with local managers and obtain soft information. Ivković and Weisbenner (2005) argue that individual investors can earn an additional return of 3.2% from local holdings which indicates that investors can exploit local information. Coval and Moskowitz (2001) find that local stocks held by mutual funds exhibit return of 3% higher than local stocks not held by mutual funds. They suggest that this is mainly driven by local investors' information advantage. Chhaochharia et al. (2012) show that local investors are effective monitors of public firms. As a result, firms have better internal governance, are more profitable, and are less likely to manage earnings. Ayers et al. (2011) find that managers use financial reporting discretion less frequently when local institutional ownership is high.

preference and firm valuation is significantly negative. Under the unconditional segmented market assumption, higher demand would lead to higher valuation. Financial institutions in small states tend to have higher local preference but they do not have sufficient funding. Since local preference only captures the abnormal per capita demand by local institutional investors, the correct enlarged demand of local preference can be measured when the size of institutional investors is considered at the same time. Without sufficient institutional capital, local preference does not contribute to firm valuation. We find the negative relationship between local preference and firm valuation because local preference is stronger in the states where financial institutions are less concentrated. We then examine the joint effect of local preference and AM Ratio. In columns 3 and 4, AM Ratio remains positively significant. The coefficient of local preference becomes insignificant. The interaction terms between local preference and AM Ratio have significantly positive coefficients. This indicates that firms are more likely to appreciate by local institutional capital when they are in states with high local preferences. The overall evidence implies that local preference alone does not have valuation effect. Its impact is pronounced when states have sufficient local equity funding supply from financial institutions. Our results are robust to the proxies of local preferences.

3.3 Subsample Analysis

We have documented the average effect of local institutional presence on firm valuation. In this subsection, we split our sample into two subsamples and examine which subsamples are influenced more by the institutional presence in a state. Ferreira and Matos (2008) show that all institutional investors across 27 different countries prefer large and liquid stocks. It is also easier for larger firms to obtain financing from institutions in US. Large companies can receive the attention of non-local institutions and raise funds from these agencies. On the other hand, small and equity-dependent companies need capital to grow, but non-local institutional investors are more likely to neglect them. It is difficult for financially constrained companies to raise capital at a distance. Therefore, the potential capital of the local institutions should contribute more to such companies.

We employ four measures to form subsamples: (1) Size. A firm is considered as small if its market capitalization is below the 50% NYSE size breakpoints and large if its market capitalization is above the 50% NYSE size breakpoints; (2) Payout. Financially constrained firms have significantly lower payout ratios (Fazzari et al., 1988). We rank firms based on their payout ratio in the previous year. A firm is classified as financially constrained if its payout ratio is 0 and financially unconstrained if its payout ratio is above 0. We define payout ratio as the ratio of total distributions (dividends plus purchase of common and preferred stock minus preferred stock redemption value) to operating income.; (3)McLean and Zhao (2014) financial dependence measure. A firm is considered as financially dependent if it meets all the three criteria: no dividend payout, no S&P crediting rating or S&P rating below BBB-, and sales not in the top quintile in the previous year among sample firms. If any of these items is not true, the firms is considered as financially undependent. Sales are defined as the ratio of net sales to lagged assets. (4) KZ index. The higher the KZ index, the more equity dependent a firm is. We rank firms based on their KZ index in the previous year. A firm is classified as financially constrained if its KZ index is above the 50% KZ index breakpoints and financially unconstrained if its KZ index is below the 50% KZ index breakpoints.[8]

The comparison results are displayed in Table IV. For the size subsamples, the coefficient of AM Ratio for small firms is 0.199, significant at 1% level. While the coefficient of AM Ratio for large firms is 0.077 and insignificant. The results suggest that local institutional funding contributes more to small firms. Since large firms are not constrained to borrow from local and non-local institutions, they rely less on local institutional funding. However, it is difficult for small firms to borrow at a distance. As a result, they benefit more from local financing. Based on the payout ratio subsamples, the significant impact of AM Ratio on the valuation of firms that do not pay dividends remains consistent. There appears to be no effect on dividend paying firms. Columns 5 and 6 display the comparison results based on McLean and Zhao (2014) measure. The market valuation of financially constrained firms increases by 0.212% when the AM Ratio increases by 1%, significant at 5% level.

[8] We use the modified version of KZ index that omits Q following Baker et al. (2003).

$$KZ_{i,t} = -1.002\frac{CF_{i,t}}{A_{i,t-1}} + -39.368\frac{DIV_{i,t}}{A_{i,t-1}} - 1.315\frac{C_{i,t}}{A_{i,t-1}} + 3.139LEV_{i,t},$$

where $CF_{i,t}/A_{i,t-1}$ is cash flow to lagged assets; $DIV_{i,t}/A_{i,t-1}$ is cash dividends to lagged assets; $C_{i,t}/A_{i,t-1}$ is cash balances to lagged assets; $LEV_{i,t}$ is leverage.

In contrast, the coefficient of AM Ratio for financially unconstrained firms is 0.139 and significant. However, the magnitude of the effect is larger for financially dependent firms. The last two columns are the comparison results based on KZ index, which is a well-acknowledged measure of financial constraints. The influence of AM Ratio on valuation is significantly positive for high KZ index firms but not significant for low KZ index firms. The results for other control variables are consistent with our baseline results. Overall, the sub-sample analysis indicates that there is a valuation effect by the presence of local institutions for both financially constrained and unconstrained companies. However, the effect is more pronounced in financially constrained companies and this would be consistent with our view that local institutional capital could potentially mitigate the financial constraints of vulnerable and less visible firms.

4 Local Institutions and Corporate Investment and Financing Decisions

In the previous section, we document a positive relationship between the state-level AM Ratio and firm valuation. We also show that the positive impact of AM Ratio on firm valuation is stronger for financially constrained firms and firms located in high local preference states. In this section, we explore the reasons of the positive relationship between the state-level AM Ratio and firm valuation by examining two corporate policies: investment and issuance. Both policies are affected by the cost of external financing. As an institution, locating close to firms lowers information collecting cost and reduces information asymmetry, which eventually leads to lower cost of funding capital. As a result, investment and issuance policies of firms are expected to be affected by the abundance of nearby institutional capital which varies across states.

Previous literature addresses the importance of institutional investors in improving corporate decisions and governance (Ferreira and Matos 2008). Recent studies highlight the role of local institutional investors in improving corporate governance (Gaspar and Massa 2007), engaging in monitoring activities (Kang and Kim 2008), increasing firm valuation (Ferreira and Matos 2008), and encouraging dividend payout (Becker et al. 2011). Overall, institutional investors contribute to better corporate decision making and governance. We investigate the impact of the mismatch between the location of firms' headquarter and that of institutional investors on firm valuation and corporate policies. We provide more evidence on the role of local institutional investors. Instead of using the heterogeneity of local institutional ownership in individual firms, we examine whether the state-level demand differentials on local stocks of institutions have a real effect on local companies.

4.1 AM Ratio and Corporate Investment

In a frictionless world, firms make investment according to their investment opportunities represented by Tobin's Q regardless of internal cash flow. In the real world, investment decisions are influenced by both internal cash flow and investment opportunities. Financially constrained firms cannot fully exploit their investment opportunities in the presence of moral hazard and information asymmetry. Literature has shown that distance is important for the acquisition of information. More nearby institutional capital implies that companies in the same state can achieve cheaper external financing from these institutions due to the lowered cost of acquiring information. Institutions may provide more funds to local companies because of local bias, i.e. familiarity heuristic. As a result, it is easier for companies to obtain external funding when they are located in high AM Ratio states. We examine whether investment policies of firms located in high and low AM Ratio states differ substantially. We expect that the companies with greater institutional presence make more investment unconditionally because they could take advantage of more investment opportunities with lower costs of external financing. We employ four measures of investment: CAPXRND, R&D, CAPEX, and INVESTMENT. R&D proxies for high risk and intangible investment while CAPEX represents low risk and tangible investment policies (Coles et al. 2006). CAPXRND and INVESTMENT capture firm aggregate investment policy. We estimate the regression model of firm investment on AM Ratio to test our hypothesis. We include control variables that have been shown to affect firm investment decisions. The variables are Cash Flow, Q, StateQ, ROE, Log(Assets), Leverage, and Ret. Cash Flow controls for firm internal financing ability. Low cash flow firms are financially constrained internally and tend to undertake fewer investment projects. Q and StateQ capture firm-level and state-level investment opportunities. When firms do not have financial constraints, they invest based on their investment opportunities. ROE controls for firm profitability and Log(Assets) effectively controls for the relationship between firm size and investment within our sample. Leverage accounts for the long-term and short-term liability of firms. Ret considers firm stock market performance. Similarly, in all the model specifications, we control for the exchange, year, and two-digit SIC code industry fixed effects. The standard errors are clustered at the state-year level.

Table V reports the regression results. For the baseline result in column 1, the coefficient of AM Ratio on INVESTMENT is 0.012, significant at 5% level. This result suggests that with 1% increase in state AM Ratio, firm overall investment increases by 0.012%. In column 4, when we exclude firm aggregate investment by combining R&D and capital expenditures, the coefficient of AM Ratio reduces to 0.011 but is still significant at 1% level. We then examine two major components of firm investment: R&D and CAPEX. As shown in column 7, high level of local institutional funding is consistently associated with more R&D. When the company is exposed to sufficient local institutional funds, it carries out high risk and intangible investments. In comparison, in column 10, the coefficient of AM Ratio on CAPEX becomes significantly negative. In high AM Ratio states, firms invest less in low risk and tangible opportunities. Jensen and Meckling (1976) point out that one of the main agency costs is the misuse of firms' free cash flow for the purpose of empire building or personal benefits. The agency problem does not govern our results, as managers are less likely to engage in empire-building activities when they can invest at a lower cost. For other control variables, the coefficients of Cash Flow are significantly positive for INVESTMENT and CAPEX. The results are consistent with previous literature that when firms have sufficient internal funding, they investment more. However, for R&D the coefficient of Cash Flow becomes significantly negative. One explanation is that for the firms that are actively engaged in R&D activities, they are usually developing firms and have lower level of internal funding. Both Q and StateQ are significantly positively associated with firm investment. Firms undertake more investment projects when there are more investment opportunities available. Firms with high level of assets invest more than firms with low level of assets. The more the leverage a firm has, the lower the level of investment. Winner firms make more investments than loser firms. In sum, the high AM Ratio is associated with ease of external funding, allowing managers to explore more investment opportunities. Managers allocate more capital to high-risk investments using easily accessible external funds .

Next, we investigate the company's investment conditioning on its cash flow and investment opportunities. If a company suffers from external financing constraints, it relies on internally generated cash flow. Previous studies have found that firms exhibit positive investment-cash flow sensitivities. Firms in high AM Ratio states are expected to rely less on cash flow if nearby institutional funds act as the ease of external financing. In addition, companies with more investment opportunities need more external financing. If a company is not constrained by external financing, investment would depend more on investment opportunities. Therefore, when located in a high AM Ratio state, firms tend to invest more in potential opportunities.

To test our hypotheses, we examine how nearby institutional capital affects the investment-cash flow sensitivity and the investment-Q sensitivity of the local companies. We therefore estimate the following model.

$$\begin{aligned}\text{Firm Investment}_{j,t} = \beta_1 + \beta_2 \text{AM Ratio}_{i,t-1} + \beta_3 \text{Cash flow}_{j,t} \text{ or } Q_{j,t-1} \\ + \beta_4 \text{Interaction}_{j,t-1} + \text{X}_{j,t-1} + \varepsilon_{j,t},\end{aligned} \tag{3}$$

where $Firm\ Investment_{j,t}$ is defined using four measures and is the investment of firm j in year t. $AMRatio_{i,t-1}$ is the AM Ratio of state i in the previous year. Cash flow is a proxy for internal financing and Q proxies for investment opportunities. In addition, we add the interactions of Cash Flow (Q) and AM Ratio to test whether financing constraints are mitigated when firms are located in states with abundant local institutional funding. We also control for StateQ, ROE, Log(Assets), Leverage, and Ret. In all the model specifications, we control for the exchange, year, and two-digit SIC code industry fixed effects. The standard errors are clustered at the state-year level.

We report the regression results in Table V. In column 2, the coefficient of the interaction term between AM Ratio and Cash Flow is -0.259 and statistically significant. The investment of firms located in high AM Ratio states becomes less sensitive to internal cash flow. In addition, in column 3, the coefficient of the interaction between AM Ratio and Q is 0.008 but insignificant. However, for CAPXRND and CAPEX, the interaction terms become statistically significant. This finding indicates that when firms have access to local institutional capital, they are able to make their investment in accordance with the investment opportunities proxied by Q. Overall, the investment-cash flow sensitivity is significantly reduced and the investment-Q sensitivity is substantially enhanced for firms located in high AM Ratio states. In the unreported results, we perform similar regression analyses for subsamples of firms based on size, dividend, financial dependence, and KZ index. We show that the effect of local institutional funding is stronger for financially constrained firms. These firms undertake more investment opportunities and face less financial constraints when they are located in high AM Ratio states.

To summarize, sufficient funding induces firms to undertake more high-risk investment and less low-risk investment. Additionally, local institutional funding eases the financial constraints of firms by making their investment less sensitive to internal cash flow and more sensitive to investment opportunities. These results also suggest that firms are well disciplined by local institutional investors, as managers do not engage in empire building with abundant capital and pursue the best interest of shareholders.

4.2 Local Institutions and Financing Decisions

In this subsection, we examine two corporate external financing channels, equity issuance and debt issuance, in the presence of institutional investors. In the previous subsection, we show that firms located in the states with more nearby institutional capital invest more and are less subject to financial constraints. We assume that the results can be explained by the presence of institutional investors that lowers funding costs of local firms and makes their investments more feasible. We investigate more direct evidence of external funding in local firms when local institutional funds are abundant. In equilibrium, corporate issuance decision would be determined by the cost of external financing. If the costs of issuance are lowered by the presence of local institutions, local firms would issue more unconditionally and issue more conditionally when they have low cash flow and good investment opportunities. We expect that high AM Ratio diminishes the cost of equity financing rather than that of debt financing because AM Ratio only captures the amount of equity holdings of nearby institutional investors, unless the location cluster of debt holders matches the location cluster of equity holders. We perform a regression analysis similar to that of Table V using the dependent variable as equity issuance and debt issuance. We include Cash Flow, Q, R&D dummy, R&D-to-Sales, and ROE to control for internal cash flow, investment opportunities, R&D investment, and profitability. Similarly, in all the model specifications, we control for the exchange, year, and two-digit SIC code industry fixed effects. The standard errors are clustered at the state-year level.

In column 1 of Table VI, we examine the effect of AM Ratio on equity issuance. The coefficient of AM Ratio is statistically significant at 5% level with a value of 0.007. When AM Ratio increases by 10%, firm equity issuance would increase by 0.02% accordingly. The result indicates that locating in high AM Ratio states makes it easier and less costly for firms to obtain external equity financing. Consequently, firms are inclined to issue more equity. The coefficient of Cash Flow appears to be insignificant. In addition, firms issue more shares when they have better investment opportunities and are less profitable. Equity issuance of R&D firms is more than that of non-R&D firms and increases with the level of R&D. In column 2, the interaction term of Cash Flow and AM Ratio has a coefficient of -0.094 and is significant at 1% level. The sensitivity of equity issuance to cash flow becomes increasingly negative in the relative size of nearby financial institutions. It is consistent with our view that low cash flow firms are financially constrained and these companies are more likely to raise capital when the cost of equity issuance is low. In column 3, the sensitivity of equity issuance to investment opportunities is insignificantly positive, indicating that more local institutional funding does not contribute more to equity issuance according to investment opportunity.

In columns 4-6, we investigate the influence of AM Ratio on debt issuance. Column 4 shows that the coefficient of AM Ratio is negative and marginally significant with a t-value of -1.67. The result suggests that firms take advantage of equity financing rather than debt financing when firms are closely located to more nearby institutional funds. It might capture the crowding-out effect of debt issuance by equity issuance, i.e. the lower cost of the equity financing drives down the amount of the debt financing. In column 5, financially constrained firms also can raise more capital through debt financing in the presence of local institutional investors based on the significantly negative coefficient of the interaction term. This result indicates that the presence of local institutional investors alleviates the financial constraints of local companies by allowing them to issue equity and debt. As the magnitude of interaction term in equity and debt issuance, equity issuance effect of institutional presence is much stronger than debt issuance effect. In the last column, we do not observe a significant improvement in debt issuance responding to investment opportunities. The results together suggest that the valuation effect we document in the previous section is not driven by the overall development of the financial sector but rather by stock markets.

In our unreported results, we introduce a Negative CF dummy, which takes the value of one if cash flow is negative, zero otherwise. Firms with negative cash flow are regarded as truly financially constrained. We show that compared with positive cash flow firms, the equity issuance firms with negative cash flow becomes more negatively sensitive to cash flow. In addition, we replicate the regression analyses in Table VI using two alternative measures of equity issuance.[9] We find robust evidence that equity issuance is more negatively sensitive to cash flow as AM Ratio increases. We also conduct the subsample tests for financially constrained firms. Financailly constrained firms close to more institutional capital can raise more equities when they experience lower cash flow.

We have shown that low cash flow firms have the incentive to raise more equity capital when nearby institutional funding is high. To provide direct evidence that the new equity capital is

[9]Two alternative measures of equity issuance are constructed by adopting a breakpoint of 3%. Issuance_Alt is set to be zero if Equity Issuance is less than 3% , equals to Equity Issuance otherwise. Issuance Dummy is an indicator variable that takes the value of one if Equity Issuance is higher than 3%, zero otherwise.

indeed raised from local institutions, we examine the percentage of newly issued shares acquired by local institutions compared with three benchmarks. This analysis is performed on a subsample of firms that have equity issuance higher than 3%.[10] We construct three benchmarks to capture the absorbing effect by local institutions. *Absorb* is defined as the percentage of newly issued shares held by local institutions. Measure 1 is defined as the difference between *Absorb* and the ratio of the total AUM of local institutions to the total AUM of all institutions. It compares *Absorb* with the proportion of local institutional AUM among all institutions. If this measure is positive, it implies that local institutions invest unevenly more in newly issued shares than they should based on their market AUM weight. Measure 2 is defined as the difference between *Absorb* and the ratio of the total market capitalization of local firms held by local institutions to the total market capitalization of all local firms. The second benchmark captures the percentage of local firms held by local institutions relative to the total market capitalization of local firms. When this measure is positive, local institutions hold more newly issued equity by local firms than their existing holding weight of nearby firms. Measure 3 is defined as the difference between *Absorb* and the ratio of the number of existing shares held by local institutions to the total number of existing shares of a firm. A positive measure of this variable indicates that financial institutions invest more money in a firm than their current investment weight.

Table VII summarizes the three measures for the full sample and two subsample periods: 1980-1996 and 1997-2013. In addition, it also provides the comparison of the three measures between firms in high and low AM Ratio states, and between small and large firms. For the full sample results of all firms, these three measures are 0.104, 0.125, and 0.136, respectively. All three measures being positive suggests that in states where the size of financial institutions is large, institutional investors hold proportionally more new equities relative to the benchmarks. When we decompose the full sample into two sample periods, all three measures appear to be higher in recent years due to the expansion of financial institutions. We further compare this absorbing effect between firms located in high and low level of AM Ratio states. For all three measures, local institutions tend to

[10] The breakpoint of 3% ensures that real equity issuance is captured while share repurchase or option exercise is not considered.

hold more newly issued shares when firms are located in high AM Ratio states for both full sample and subsample periods. We also compare the three measures for subsamples of small and large firms. There is a significant difference of the absorbing effect between large and small firms. For measure 1, the difference is almost 10% for some samples. Small firms do not issue as much equity as large firms so the absorbing effect is comparatively weak.

In summary, we find that firms rely less on internal cash flows and have the ability to raise more equities from nearby institutions when they are close to abundant local institutional capital. We further provide direct evidence that local institutions absorb newly issued shares of nearby firms and relax financial constraints of these firms.

5 Further Evidence

5.1 Firm Relocation and Local Institutions

In a previous subsection, we examine the role of local institutions in mitigating the financial constraints of local companies. If there is a large amount of institutional funds relative to the total market capitalization of firms in a state, the company tends to invest more in investment opportunities and issue more shares when they are financially constrained. In this subsection, we analyze a subsample of firms that relocate over the sample period and examine whether firms consider local institutional financing as the primary reason for making a relocation decision. In addition, we investigate the changes in local institutional ownership before and after firms move and test whether institutions place more weight on local stocks because of preference about them or familiarity.

We construct our firm relocation subsample using the state-level firm headquarter location data. First, we identify firms that report different locations over the sample period. Then, we exclude the firms that have been in the same location for less than consecutive 3 years for later analyses. We also exclude firms that move from one state to a neighboring state. For instance, if a firm moves from New York to New Jersey, it would be excluded from our sample. After merging the firm relocation sample with the AM Ratio measure, CRSP, and COMPUSTAT, our final sample of relocated companies is 475 firms.

To start with, we examine firm relocation trend. We compare the AM Ratio of a firm's new location and its old location 1 year to 5 years after it moves. Based on the unreported evidence, firms tend to move from high AM Ratio states to low AM Ratio states. When companies move, they may be less financially constrained and do not need to raise capital. Companies can be overconfident with pre-established relationships with institutions in previous locations and can underestimate the benefits around the institutions.

As the next step, we only focus on the subset of relocated companies which have the incentive to pursue local equity financing. We investigate whether equity dependent firms consider the funds from institutions of their new locations when they move. We introduce two dependent variables: AM Ratio Change and AM Ratio Change Dummy.[11] Both variables consider the difference in AM Ratio between the new and old states. Our key variables of interests are KZ Index and KZ Dummy 1 year before a firm relocates.[12] Both variables capture the relocation decision of equity dependent firms and helps to determine whether financially constrained firms chase local equity financing. We also control for Cash Flow, Q, R&D Dummy, R&D-to-Sales, ROE, state income change, and state tax change. All the control variables are lagged to 1 year before a firm relocates. The reason is that these variables at that period would affect firms' relocation decisions. In all the model specifications, we control for the exchange, year, and two-digit SIC code industry fixed effects. The standard errors are clustered at the state-year level.

The regression results are reported in Table VIII. In column 1, without any controls variables, the coefficient of KZ Index is 0.002 and not significant. When control variables are added in column 2, the coefficient of KZ Index then increases to 0.006 but remains insignificant. In addition, Cash Flow, Q, and R&D Dummy are not significant determinants for firm relocation decisions. Firms with high level of R&D tend to move to high AM Ratio states since these firms are in greater

[11] AM Ratio Change is defined as the difference between AM Ratio of a firm's new location 1 year after the relocation and AM Ratio of a firm's old location 1 year before the relocation. AM Ratio Change Dummy equals one if AM Ratio Change is positive, zero otherwise.

[12] KZ Dummy is set to one if a firm's KZ Index is higher than the top 20% breakpoints, zero otherwise.

need of financing to support their projects. Both income change and tax change are positively associated with changes in AM Ratio. Columns 3 and 4 report the regression results using AM Ratio Change Dummy and KZ Dummy with insignificant coefficients of -0.043 and -0.077, respectively. The insignificant coefficients suggest that even though equity dependent firms benefit more from nearby institutional capital, they are not likely to relocate in order to be close to local institutional financing. The most common reasons for headquarter relocations are being close to customers, reducing costs, moving to a more essential production base, and capturing synergies with other local firms (Pirinsky and Wang 2006). Thus, it is not surprising that we do not observe a significant relation between the relocation decisions of financially constrained firms and AM Ratio. In addition, it is statistically difficult to find a relation due to a small sample of moved companies.

In the above analysis, we focus on the relocation decision of financially constrained firms. Now we consider the full relocation sample and examine changes in holding of the moving firms by financial institutions in the firms' new and old locations. Local institutional holding (LH) is defined as the ratio of the market capitalization of a firm held by local institutions to the market capitalization of the firm held by all institutions. The construction of this variable controls for the growing trend of financial institutions. Assuming the moving year is year 0, we compare LH at year -1 with LH at year +1, +2, or +3 for financial institutions in the old states. As we have shown in Table I, institutional investors exhibit local preference. Thus, when firms move out of a state, financial institutions in that state are expected to reduce their holdings of the moving firm. We perform the same analyses for institutions in the new location and we expect to observe higher holdings of the moving firm by these investors.

In Table IX, we summarize local institutional holding changes for the full sample, for firms that move from low AM Ratio states to high AM Ratio states (positive move), and for firms that move from high AM Ratio states to low AM Ratio states (negative move). As shown in Panel A of Table IX, for the financial institutions in the firms' old locations, 1 year before firms move, the average local institutional holding is 9%. In comparison, 3 years after firms relocate, financial institutions on average reduce holdings to 6%. Overall, institutional investors in the old locations reduce their holdings of the moving firm by 3%, significant at 1% level. In comparison, as shown in Panel B of this table, 1 year after firms move to the new states, their local institutional holding significantly increases by 2.1%. The reduction in LH effect is stronger when firms experience positive move. The number of financial institutions in low AM Ratio states is small and they tend to show stronger local preference. Thus, when a firm moves out of the state, institutions immediate reduce holdings of this firm. The increase in LH effect is more persistent when firms experience negative move. Even 3 years after the relocation, we still observe significant difference in LH between year -1 and year +3.

To summarize, even though local institutional funding does not drive firms to relocate, firms still benefit from the mismatched clusters between financial institutions and firms, especially for financially constrained firms. In addition, our analysis on changes in local institutional holding provides support for the local preference hypothesis.

5.2 Persistence of the Valuation Effects

In this subsection, we examine whether the valuation effect of AM Ratio is temporary or persistent. We focus on both the stock market performance and operating performance. In the previous analysis, we show that firms are highly valued when they are in a state with high local institutional funds. While these companies tend to increase investments and issue more stocks, the real effects of local institutional funds is unclear, as the high valuations can be temporary overvaluation due to inefficient investments. In this case, the overvaluation will be adjusted to the intrinsic value and as a result, the stock returns will reverse in the long run. On the contrary, the valuation effect would be persistent if it is a consequence of efficient investments and asset allocation. When firms undertake value-enhancing investment opportunities, they are expected to have higher level of sales and profit. In our analysis, we focus on firms' sales growth since firm profit can be differnt between large and small firms.

We first examine the effect of AM Ratio on stock returns using the Fama-Macbeth regression approach. In the first stage, we run a separate cross-sectional regression of the monthly excess stock returns on funding easiness measure and control variables each month from 1980 to 2013. The control variables are BM, Size, Beta, Illiquidity, and Momentum. We then compute the means of the monthly regression coefcients adjusting for Newey-West standard errors. We conduct this analysis for the entire sample and subsample of the firms based on size, dividend, financial dependence, and KZ index.

The results are displayed in Panel A of Table X. For the full sample result in column 1, the coefficient of AM Ratio is 0.001 and insignificant, suggesting that there is no significant return reversal for the firms located in high AM Ratio states. The difference in stock returns between high and low level of institutional location clusters is not significant after controlling for firm characteristics. We obtain a similar conclusion for the subsamples that high valuation would be the result of efficient investments, as suggested by marginally higher stock returns for the financially dependent firms. In general, the performance of stock market does not vary significantly for firms located in states with different levels of mismatch. Firms in high AM Ratio states do not perform significantly worse than firms in low AM Ratio states. Evidence of stock market performance confirms that the valuation effect continues.

Next, we examine whether sales growth of firms differs substantially by AM Ratio. We control for R&D, capital expenditures, cash flow, leverage, and total sales. R&D and capital expenditures capture firm overall investment. Cash flow proxies for internal financing and leverage represents firm debt level. Total sales control for variation of sales level among firms. The panel regression results are reported in Panel B of Table X. As shown in column 1, the coefficient of AM Ratio is insignificant with a value of -0.005. The result indicates that after controlling for overall investment, total sales, and leverage, firms in states with high AM Ratio do not experience a significantly higher or lower level of sales growth. In addition, we obtain consistent evidence based on our subsample analyses. For financially constrained firms based on KZ Index, they have significantly higher sales growth when located in high AM Ratio states. Overall, firms have the similar rate of sales growth based on investment levels, which implies that firms take advantage of local funding, invest more, and maintain efficient investment.

To sum up, firms take advantage of the ease of access to capital and allocate resources efficiently. Our results are consistent with the efficient market hypothesis. Firms in high AM Ratio states act differently from firms in low AM Ratio states in corporate decision making. The mismatched clusters between financial institutions and firms have real effects on firms.

5.3 Valuation Effects with Shocks to Local Institutions

In this subsection, we utilize the Dotcom crash as a natural experiment to establish the causal effect of local institutional funding on firm valuation and stock market performance. The tech bubble event in 2000 provides an exogenous shock to institutional funding. The companies in tech industry or related industries experienced substantial losses. For instance, the stock price of Cisco declined by 86% and many firms were shut down. As a result, financial institutions that held a large amount of tech stocks suffered serious damages. These institutions are simultaneously experiencing outflows from investors. Therefore, they were not able to fund the local companies during that period. However, the fundamentals and market performance of firms in other industries were less likely to be directly affected by the shock. These firms would be influenced by the shrink of financial institutions, but not the bust of tech industry.

To start with, we identify the affected states where the aggregate percentage of tech stocks held by local institutions is above the top 10% in the first quarter of 2000. Our analysis is performed on a subsample of non-tech stocks where we exclude tech industry and related industries. We classify the related industry according to the Bureau of Economic Analysis (BEA) input-output of production in 2000. The BEA input-output production table shows how industries provide input to, and use output from, each other to produce Gross Domestic Product (GDP). If industry has more than 1000 million dollar as input or output from technology industry, we assume that the industry is related. For instance, publishing industry and wholesale trade industry are excluded. We also exclude firms located in California since it is a cluster for tech firms and bubble burst directly damages the whole sectors in the state during this period.

We perform regression analysis to examine whether there is a significant change in market valuation of non-tech firms located in the affected states during the period of 2000 to 2002. We restrict our sample period from 1990 to 2008 to ensure that the results are not affected by the 2008 financial crisis. We construct three main variables: Affected States, IT Bubble, and the interaction of these two variables. Affected States variable equals one if a firm is located in one of the top 10% affected states, zero otherwise. IT Bubble is set to one for the period from 2000 to 2002, zero otherwise. The interaction term captures how valuation and stock returns of the firms in the affected states change during the tech bubble period. For the valuation effect, we control for CAPEX-to-Sales, Leverage, Log(Assets), R&D Dummy, R&D-to-Sales, and ROE. For stock market performance, we include MB (market-to-book), Size, Beta, Illiquidity, and Momentum as control variables. In all the model specifications, we control for the exchange, year, and two-digit SIC code industry fixed effects. The standard errors are clustered at the state-year level.

Table XI reports the results of the regression analyses. In Panel A, we compare the market valuation of non-tech firms located in the top 10% states with the market valuation of non-tech firms for the rest of the sample and non-tech firms located in the bottom 10%, 20%, and 30% states. In column 1, the coefficient of the interaction term is -0.670 with a t-value of -2.51. The result indicates that firms in the affected states experience significantly lower market valuation than those in the unaffected states. The coefficients of other control variables are consistent with our results in Table II. When we compare firms in the top 10% states with firms in the bottom 10%, 20%, and 30% states, we obtain consistent findings that for non-tech companies located in states where financial institutions are heavily influenced by the event, market value is significantly reduced during the tech bubble period. The reduction of local institutional funds has a negative impact on the value of local companies. Given the impact on valuation, we further examine the stock market performance of non-tech firms during this period. The results are reported in Panel B. As shown in column 2, the comparison of firms located in the top 10% and bottom 10% states, the interaction of Affected States and IT Bubble is significantly negative. Our results are robust across several model specifications. The findings are consistent with the valuation changes shown in Panel A. When firms experience reduction in valuation, their stock return decreases as a result.

In the unreported results, we also remove retailers industry. If the customer of companies is also in the same state, the loss of institutional investors is the loss of customer's wealth. As a result, the business of the companies are affected by the decreasing demand from customers, not institutions. The results are consistent with our findings that firms located in the affected states experience significant reduction in market valuation and returns.

The tech bust analysis establishes the causal relation between AM Ratio and firm valuation. This exogenous shock directly affects financial institutions that held a high portion of tech stocks in their portfolio but does not systematically impact non-tech firms during the tech bubble period. We find significant decrease in firm valuation and stock market performance of the affected firms during 2000 to 2002.

6 Conclusion

Using the unique location information of U.S. institutions and firms from 1980 to 2013, we develop an effective measure, AM Ratio, that captures the potential funding available from local institutions. It also measures the mismatch of location clusters between financial institutions and firms. Our results imply that high AM Ratio proxies for low cost of external financing and low financing frictions.

Our analysis of AM Ratio on firm valuation suggests that firms benefit from being located in states with more local institutional funding. We find robust evidence that the market valuation of firms is high when the state-level AM Ratio is high. The valuation effect is stronger for equity dependent firms.

Furthermore, we show that firms invest more and issue more equity when located in high AM Ratio states. Firm investment is less dependent on internal cash flow and is more sensitive to investment opportunities. Low cash flow firms tend to issue more equity. Together, local institutional funds mitigate the financial constraints of firms through equity issuance channels. Our findings on stock returns support the efficient market hypothesis that a high valuation of firms is not a temporary overvaluation but is the result of efficient resource allocation. The geographic clustering of institutional investors indeed has real effects on firms.

Appendix I
Variable Definitions

This table reports variable definitions.

Variable	Definition
HKS Ratio	The total book value of all firms located in state i to the aggregate income of all households located in state i
R&D Dummy	One if R&D variable is missing, zero otherwise
R&D-to-Sales	Research and development expenditures scaled by sales
CAPEX-to-Sales	Capital expenditures scaled by sales
Leverage	The sum of long term debt and debt in current liabilities, all scaled by lagged assets
Log(Assets)	The log of total assets
ROE	Net income divided by lagged book equity
Cash Flow	Net income before extraordinary items, depreciation and amortization expenses, all scaled by lagged assets
Q	Market value of equity plus total assets, less book value of equity, all scaled by total assets
StateQ	Value-weighted Q of firms within each state
Ret	Annualized stock returns
Size	The log of firm market capitalization
Illiquidity	The average of the absolute value of stock return divided by dollar trading volume on a given day in a given month
Momentum	Cumulative return of months (-12, -2)
Beta	Estimated by running regression of stock returns on market returns for the previous 36 months on a monthly rolling basis
Income Change	The difference of the ratio of the personal income per capita to the total personal income per capita between a firm's new and old location
Tax Change	The difference of tax rates between new location and old location
Sales Growth	The Changes in sales scaled by lagged sales
R&D-to-Assets	Research and development expenditures scaled by lagged assets
CAPEX-to-Assets	Capital expenditures scaled by lagged assets
Log(Sales)	The log of total sales

References

Adrian, Tobias, and Hyun Song Shin, 2010, Liquidity and leverage, *Journal of Financial Intermediation* 19, 418–437.

Almazan, Andres, Adolfo De Motta, Sheridan Titman, and Vahap Uysal, 2010, Financial Structure, Acquisition Opportunities, and Firm Locations, *Journal of Finance* 65, 529–563.

Ayers, Benjamin C, Santhosh Ramalingegowda, and P Eric Yeung, 2011, Hometown advantage: The effects of monitoring institution location on financial reporting discretion, *Journal of Accounting and Economics* 52, 41–61.

Baker, Malcolm, Jeremy C Stein, and Jeffrey Wurgler, 2003, When Does the Market Matter? Stock Prices and the Investment of Equity-Dependent Firms, *Quarterly Journal of Economics* 118, 969–1005.

Basak, Suleyman, and Anna Pavlova, 2013, Asset Prices and Institutional Investors, *American Economic Review* 103, 1728–1758.

Becker, B O, Zoran Ivković, and Scott Weisbenner, 2011, Local Dividend Clienteles, *Journal of Finance* 66, 655–683.

Brunnermeier, Markus K, and Lasse Heje Pedersen, 2009, Market Liquidity and Funding Liquidity, *Review of Financial Studies* 22, 2201–2238.

Chhaochharia, Vidhi, Alok Kumar, and Alexandra Niessen-Ruenzi, 2012, Local investors and corporate governance, *Journal of Accounting and Economics* 54, 42–67.

Coles, Jeffrey L, Naveen D Daniel, and Lalitha Naveen, 2006, Managerial incentives and risk-taking, *Journal of Financial Economics* 79, 431–468.

Coval, Joshua D, and Tobias J Moskowitz, 1999, Home Bias at Home: Local Equity Preference in Domestic Portfolios, *Journal of Finance* 54, 2045–2073.

Coval, Joshua D, and Tobias J Moskowitz, 2001, The Geography of Investment: Informed Trading and Asset Prices, *Journal of Political Economy* 109, 811–841.

Davis, James C, and J Vernon Henderson, 2008, The agglomeration of headquarters, *Regional Science and Urban Economics* 38, 445–460.

Dougal, Casey, Christopher A Parsons, and Sheridan Titman, 2015, Urban Vibrancy and Corporate Growth, *Journal of Finance* 70, 163–210.

Fama, EF, and JD MacBeth, 1973, Risk, return, and equilibrium: Empirical tests, *Journal of Political Economy* 81, 607–636.

Ferreira, Miguel A, and Pedro Matos, 2008, The colors of investors' money: The role of institutional investors around the world, *Journal of Financial Economics* 88, 499–533.

Gaspar, Jose-Miguel, and Massimo Massa, 2007, Local ownership as private information: Evidence on the monitoring-liquidity trade-off, *Journal of Financial Economics* 83, 751–792.

Gompers, Paul A, and Andrew Metrick, 2001, Institutional Investors and Equity Prices, *Quarterly Journal of Economics* 116, 229–259.

Gromb, Denis, and Dimitri Vayanos, 2002, Equilibrium and welfare in markets with financially constrained arbitrageurs, *Journal of Financial Economics* 66, 361–407.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2004, Does Local Financial Development Matter?, *Quarterly Journal of Economics* 119, 929–969.

He, Zhiguo, Bryan Kelly, and Asaf Manela, 2016, Intermediary Asset Pricing: New Evidence from Many Asset Classes, *NBER working paper* .

He, Zhiguo, and Arvind Krishnamurthy, 2012, A Model of Capital and Crises, *Review of Economic Studies* 79, 735–777.

Hong, Harrison, Jeffrey D Kubik, and Jeremy C Stein, 2008, The only game in town: Stock-price consequences of local bias, *Journal of Financial Economics* 90, 20–37.

Ivković, Zoran, and Scott Weisbenner, 2005, Local Does as Local Is: Information Content of the Geography of Individual Investors' Common Stock Investments, *Journal of Finance* 60, 267–306.

Jensen, Michael C, and William H Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305–360.

Kang, Jun-Koo, and Jin-Mo Kim, 2008, The Geography of Block Acquisitions, *Journal of Finance* 63, 2817–2858.

Kyle, Albert S, and Wei Xiong, 2001, Contagion as a Wealth Effect, *Journal of Finance* 56, 1401–1440.

Loughran, Tim, and Paul Schultz, 2005, Liquidity: Urban versus rural firms, *Journal of Financial Economics* 78, 341–374.

McCahery, Joseph A, Zacharias Sautner, and Laura T Starks, 2016, Behind the Scenes: The Corporate Governance Preferences of Institutional Investors, *Journal of Finance* 71, 2905–2932.

McLean, R David, and Mengxin Zhao, 2014, The Business Cycle, Investor Sentiment, and Costly External Finance, *Journal of Finance* 69, 1377–1409.

Pirinsky, Christo, and Qinghai Wang, 2006, Does Corporate Headquarters Location Matter for Stock Returns?, *Journal of Finance* 61, 1991–2015.

Rajan, Raghuram G, and Luigi Zingales, 1998, Financial Dependence and Growth, *American Economic Review* 88, 559–586.

Sulaeman, Johan, and Chishen Wei, 2014, Institutional Presence, *Working paper* .

Vayanos, Dimitri, 2004, Flight to Quality, Flight to Liquidity, and the Pricing of Risk, *NBER working paper* .

Figure 1

Total AUM of Local Institutions to Aggregate AUM of All Institutions by State

This figure presents a map of the time-series average of the ratio of total equity holdings of 13F institutions in a state to the aggregate total equity holdings of all 13F institutions for each state.

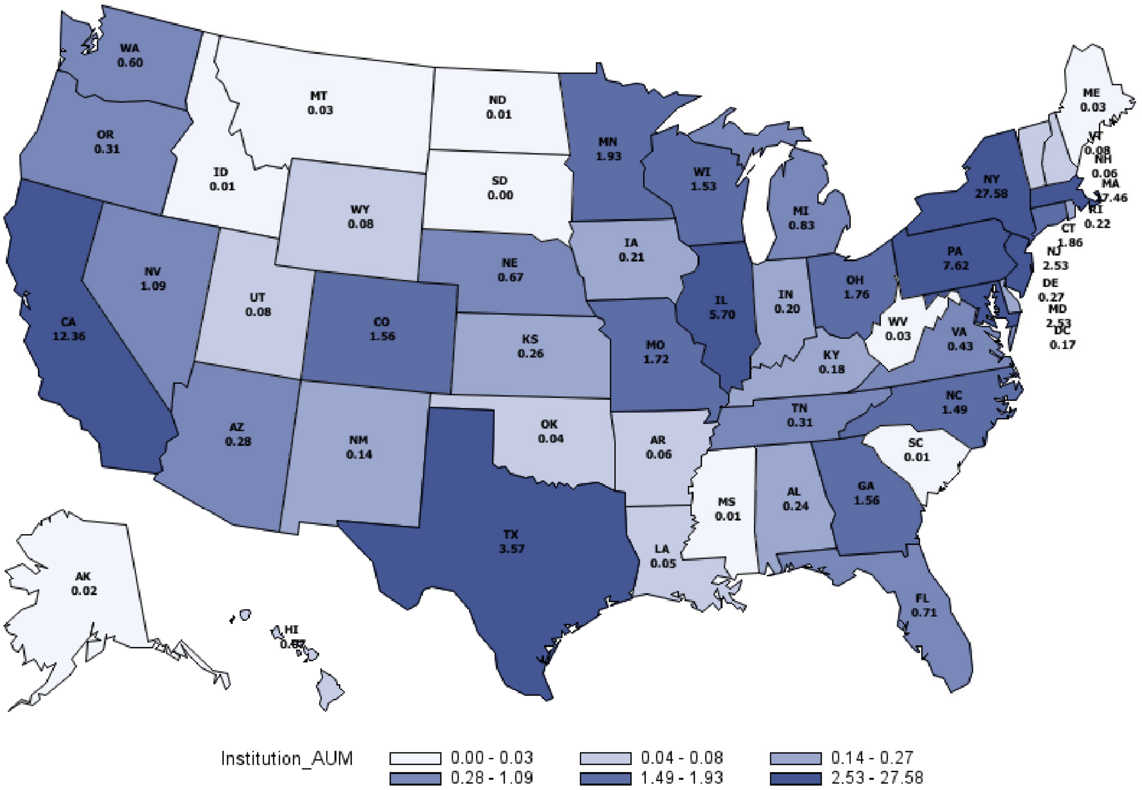

Figure 2
Total Market Capitalization of Local Firms to Aggregate Market Capitalization of All Firms by State

This figure presents a map of the time-series average of the ratio of total market capitalization of local firms to the total market capitalization of all the firms for each state.

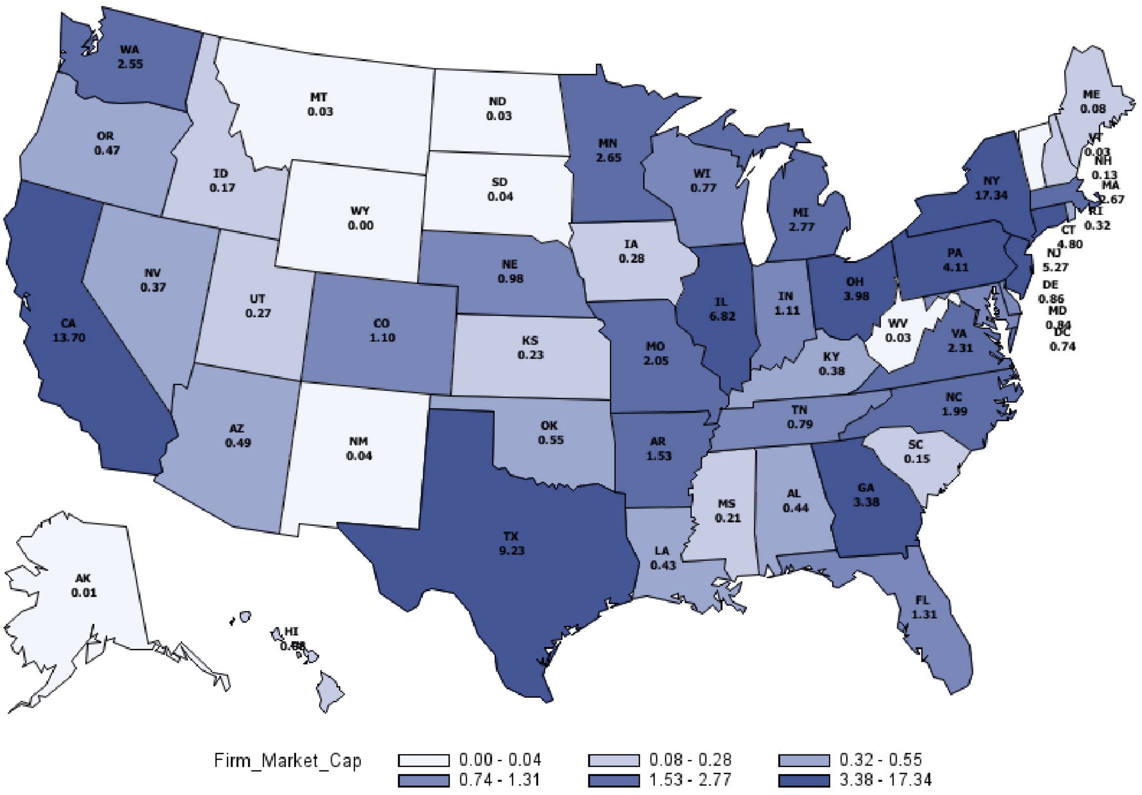

Figure 3

Asset to Market Capitalization Ratio by State

This figure presents a map of the time-series average of the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state.

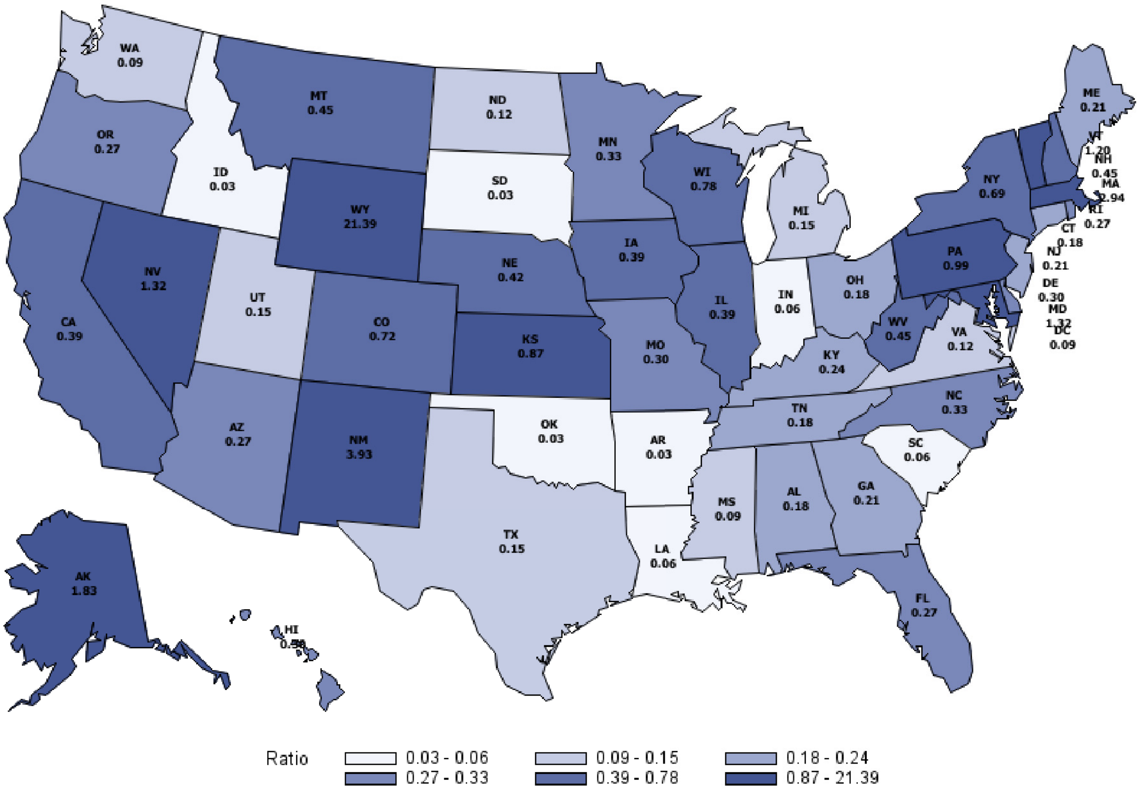

Table I: Summary Statistics

This table reports the summary statistics for the state aggregate asset under management (AUM) of 13F institutions, the number of firms, the number of 13F institutions, the state aggregate market capitalization of firms, AM Ratio, and two local preference measures for 1980, 1997, and 2013. The summary statistics are reported for top 5 and bottom 5 states ranked by the state-level AUM. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Local preference is measured using two methods. The first method (State LP1) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions to the total AUM of local institutions and the ratio of the total market capitalization of local firms to the total market capitalization of all firms. The second method (State LP2) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions to the total AUM of local institutions and the ratio of the total market capitalization of local firms held by all institutions to the total AUM of all institutions.

	State AUM (in $ billion)	Number of Firms	State Market Cap (in $ billion)	Number of Institutions	AM Ratio	State LP1	State LP2
1980							
National Aggregate	209.01	229	1180.19	4484	0.163		
State Average	4.10	7	39.34	88	0.200	0.061	0.064
State Median	0.15	3	13.35	37	0.081	0.038	0.042
Top 5 States							
NY	68.89	62	244.28	608	0.251	-0.002	0.033
MA	31.75	29	35.80	169	0.693	0.030	0.029
CA	19.06	25	148.46	529	0.121	0.056	0.070
IL	15.01	10	67.15	206	0.202	0.141	0.144
TX	14.39	16	104.84	234	0.133	0.084	0.086
Bottom 5 States							
FL	0.00	0	0.12	5	0.000	0.000	0.000
UT	0.00	0	0.47	15	0.000	0.000	0.000
KY	0.00	0	2.58	11	0.000	0.000	0.000
LA	0.00	0	0.25	4	0.000	0.000	0.000
NH	0.00	0	1.50	13	0.000	0.000	0.000
1997							
National Aggregate	4514.37	1246	9858.31	7818	0.377		
State Average	88.52	27	205.38	153	0.275	0.062	0.064
State Median	11.89	10	91.04	67	0.174	0.022	0.023
Top 5 States							
NY	1223.02	313	1483.79	695	0.604	0.005	0.021
MA	866.49	107	274.96	409	1.426	0.007	0.004
CA	634.28	152	1193.72	1270	0.431	0.006	0.016
IL	306.98	55	428.12	346	0.542	0.025	0.027
TX	213.85	71	671.44	323	0.279	0.047	0.052
Bottom 5 States							
FL	0.24	2	6.47	10	0.036	0.020	0.020
UT	0.15	2	23.71	67	0.006	0.000	0.000
KY	0.00	0	23.29	16	0.000	0.000	0.000
LA	0.00	0	19.10	54	0.000	0.000	0.000
NH	0.00	0	0.15	7	0.000	0.000	0.000
2013							
National Aggregate	12088.76	2895	20599.66	4805	0.462		
State Average	237.03	57	403.91	94	0.415	0.019	0.019
State Median	43.18	17	145.21	38	0.276	0.008	0.008
Top 5 States							
NY	2629.54	201	564.23	294	1.733	0.009	0.005
MA	2415.24	737	2931.25	572	0.601	0.031	-0.006
CA	1336.29	352	4047.77	720	0.285	-0.003	0.016
IL	1309.36	129	571.81	199	1.191	0.003	0.002
TX	838.61	161	1174.92	331	0.551	0.013	0.017
Bottom 5 States							
FL	1.44	3	1.31	3	0.743	0.003	0.003
UT	1.43	4	10.20	12	0.131	0.023	0.023
KY	0.96	4	31.18	13	0.030	0.004	0.003
LA	0.78	3	6.15	3	0.119	0.043	0.043
NH	0.33	2	6.60	9	0.049	0.017	0.017

Table II: AM Ratio and Firm Valuation

This table reports panel and the Fama-Macbeth regressions of MB on AM Ratio and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. MB is defined as the ratio of market equity value to book equity value. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. When R&D variable is missing, it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. CAPEX-to-Sales is defined as capital expenditures scaled by sales. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. ROE is defined as net income divided by lagged book equity. Leverage is defined as the sum of long term debt and debt in current liabilities, all scaled by lagged assets. Log(Assets) is defined as the log of total assets. HKS Ratio is defined as the total book value of all firms located in state i to the aggregate income of all households located in state i. Neighboring states AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in neighboring states to the total market capitalization of firms in neighboring states. Census Region AM Ratio is measured at the region level. The sample period is from 1980 to 2013. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by *, ** , and *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Variable	State AM Ratio			Neighboring States AM Ratio	Census Region AM Ratio	Fama-Macbeth Method		1980-1996		1997-2013	
AM Ratio	0.138**	0.132**	0.131**	0.556***	0.418***	0.145***	0.139***	0.048	0.041	0.190**	0.191**
	(1.97)	(2.11)	(2.10)	(5.03)	(4.03)	(3.42)	(3.20)	(0.49)	(0.42)	(2.28)	(2.30)
HKS Ratio			-0.048	-0.128**	-0.373***		-0.010		-0.201***		0.154*
			(-0.83)	(-2.32)	(-3.51)		(-0.11)		(-2.70)		(1.92)
R&D-to-Sales		0.785***	0.785***	0.786***	0.782***	1.249***	1.248***	2.566***	2.560***	0.344***	0.344***
		(14.77)	(14.77)	(14.77)	(13.66)	(4.36)	(4.36)	(12.89)	(12.85)	(9.18)	(9.18)
CAPEX-to-Sales		-0.141*	-0.141*	-0.138*	-0.142**	-0.251***	-0.253***	-0.124	-0.126	-0.285**	-0.286**
		(-1.91)	(-1.91)	(-1.88)	(-2.01)	(-3.47)	(-3.51)	(-1.42)	(-1.43)	(-2.10)	(-2.11)
R&D Dummy		-0.668***	-0.667***	-0.657***	-0.660***	-0.672***	-0.674***	-0.365***	-0.363***	-0.986***	-0.991***
		(-14.97)	(-15.05)	(-14.74)	(-14.67)	(-7.48)	(-7.43)	(-7.33)	(-7.31)	(-12.42)	(-12.62)
ROE		-1.124***	-1.125***	-1.124***	-1.120***	-1.187***	-1.188***	-1.298***	-1.299***	-1.042***	-1.042***
		(-15.30)	(-15.30)	(-15.29)	(-15.09)	(-11.43)	(-11.42)	(-12.45)	(-12.46)	(-9.98)	(-9.98)
Leverage		2.431***	2.431***	2.434***	2.431***	2.802***	2.803***	1.932***	1.933***	3.023***	3.024***
		(20.54)	(20.55)	(20.62)	(18.06)	(6.18)	(6.19)	(15.31)	(15.32)	(14.07)	(14.06)
Log(Assets)		-0.287***	-0.287***	-0.285***	-0.287***	-0.269***	-0.268***	-0.453***	-0.452***	-0.121***	-0.122***
		(-17.47)	(-17.44)	(-17.31)	(-15.12)	(-4.88)	(-4.88)	(-22.67)	(-22.57)	(-6.05)	(-6.06)
N	128990	102735	102735	102735	102535	102735	102735	49627	49627	53108	53108
Adjusted R^2	0.042	0.100	0.100	0.100	0.100	0.140	0.140	0.141	0.141	0.082	0.082
Year FE	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table III: AM Ratio, Local Preference, and Firm Valuation

This table reports panel regressions of MB on AM Ratio, local preference, and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. MB is defined as the ratio of market equity value to book equity value. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Local preference is measured using two methods. The first method (State LP1) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions to the total AUM of local institutions and the ratio of the total market capitalization of local firms to the total market capitalization of all firms. The second method (State LP2) is defined as the difference of the ratio of the total market capitalization of local firms held by local institutions to the total AUM of local institutions and the ratio of the total market capitalization of local firms held by all institutions to the total AUM of all institutions. When R&D variable is missing, it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. CAPEX-to-Sales is defined as capital expenditures scaled by sales. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. ROE is defined as net income divided by lagged book equity. Leverage is defined as the sum of long term debt and debt in current liabilities, all scaled by lagged assets. Log(Assets) is defined as the log of total assets. The sample period is from 1980 to 2013. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by *, ** , and *** at the 10%, 5%, and 1% levels, respectively.

Variable	(1)	(2)	(3)	(4)
State LP1	-1.344***		-0.475	
	(-3.41)		(-0.67)	
State LP2		-1.339***		-0.254
		(-3.35)		(-0.34)
AM Ratio			0.175*	0.219**
			(1.92)	(2.14)
State LP1×AM Ratio			3.076***	
			(5.02)	
State LP2×AM Ratio				2.516***
				(4.29)
R&D-to-Sales	0.772***	0.772***	0.771***	0.771***
	(14.42)	(14.42)	(14.42)	(14.42)
CAPEX-to-Sales	-0.211**	-0.211**	-0.211**	-0.211**
	(-2.57)	(-2.57)	(-2.56)	(-2.56)
R&D Dummy	-0.684***	-0.683***	-0.680***	-0.680***
	(-14.90)	(-14.88)	(-14.73)	(-14.75)
ROE	-1.118***	-1.118***	-1.118***	-1.118***
	(-14.17)	(-14.17)	(-14.17)	(-14.17)
Leverage	2.409***	2.409***	2.414***	2.414***
	(19.14)	(19.14)	(19.17)	(19.17)
Log(Assets)	-0.258***	-0.257***	-0.258***	-0.258***
	(-15.52)	(-15.52)	(-15.53)	(-15.54)
N	95728	95728	95728	95728
Adjusted R^2	0.100	0.100	0.100	0.100
Year FE	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table IV: AM Ratio and Firm Valuation Subsample Analysis

This table reports panel regressions of MB on AM Ratio and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. The subsamples of firms are defined using size, dividends, financial dependence, and KZ index. MB is defined as the ratio of market equity value to book equity value. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. When R&D variable is missing, it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. CAPEX-to-Sales is defined as capital expenditures scaled by sales. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. ROE is defined as net income divided by lagged book equity. Leverage is defined as the sum of long term debt and debt in current liabilities, all scaled by lagged assets. Log(Assets) is defined as the log of total assets. The sample period is from 1980 to 2013.t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by *, ** , and *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Size		Dividends		Financial Dependence		KZ index	
Variable	Small	Large	No Payout	Payout	Dependent	Independent	Top 50%	Bottom 50%
AM Ratio	0.199***	0.077	0.229***	0.045	0.212**	0.139**	0.277***	-0.002
	(3.12)	(0.59)	(2.83)	(0.55)	(2.29)	(1.97)	(3.21)	(-0.02)
R&D-to-Sales	0.770***	0.673***	0.705***	1.328***	0.647***	1.106***	1.309***	0.607***
	(14.51)	(2.61)	(12.99)	(8.78)	(11.10)	(10.77)	(12.30)	(10.90)
CAPEX-to-Sales	-0.178**	-1.034***	-0.162**	-0.117	-0.175*	-0.161	-0.299***	-0.074
	(-2.34)	(-3.80)	(-2.05)	(-0.61)	(-1.88)	(-1.35)	(-2.64)	(-0.79)
R&D Dummy	-0.541***	-0.618***	-0.772***	-0.544***	-0.827***	-0.597***	-0.707***	-0.516***
	(-12.61)	(-7.03)	(-12.91)	(-10.00)	(-9.94)	(-12.95)	(-12.99)	(-8.96)
ROE	-1.294***	-0.268	-1.236***	-0.886***	-1.449***	-0.849***	-1.491***	-0.626***
	(-16.77)	(-1.14)	(-14.75)	(-5.81)	(-13.35)	(-8.63)	(-15.50)	(-6.28)
Leverage	2.615***	3.435***	2.718***	2.132***	2.620***	2.366***	3.578***	2.337***
	(22.13)	(11.05)	(18.66)	(11.84)	(11.91)	(17.90)	(19.78)	(10.73)
Log(Assets)	-0.639***	-0.609***	-0.430***	-0.144***	-0.544***	-0.194***	-0.433***	-0.158***
	(-32.39)	(-15.23)	(-20.53)	(-6.95)	(-17.25)	(-10.77)	(-20.03)	(-8.23)
N	80480	21603	57617	45118	32043	70692	51280	51154
Adjusted R^2	0.130	0.124	0.111	0.092	0.135	0.082	0.117	0.109
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table V: AM Ratio and Investment

This table reports panel regressions of investment on AM Ratio, two interactions terms and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. CAPXRND is the sum of capital expenditures, research and development expenditures, all scaled by lagged assets. R&D is research and development expenditures scaled by lagged assets. CAPEX is capital expenditures scaled by lagged assets. INVESTMENT is the sum of total asset growth and R&D spending, all scaled by lagged total assets. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Cash Flow is defined as net income before extraordinary items, depreciation and amortization expenses, all scaled by lagged assets. Q is defined as market value of equity plus total assets, less book value of equity, all scaled by total assets. StateQ is defined as value-weighted Q of firms within each state. ROE is defined as net income divided by lagged book equity. Log(Assets) is defined as the log of total assets. Leverage is defined as the sum of long term debt and debt in current liabilities, all scaled by lagged assets. Ret is defined as annualized stock returns. The sample period is from 1980 to 2013. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by * ,** ,and *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Variable		INVESTMENT			CAPXRND			R&D			CAPEX	
AM Ratio	0.012**	0.007	0.012**	0.011***	0.008***	0.011***	0.015***	0.013***	0.015***	-0.004***	-0.005***	-0.004***
	(2.19)	(1.22)	(2.13)	(5.49)	(3.88)	(5.38)	(9.20)	(8.14)	(9.00)	(-3.89)	(-4.67)	(-3.69)
Cash Flow×AM Ratio		-0.259***			-0.155***			-0.101***			-0.040***	
		(-6.14)			(-12.37)			(-11.64)			(-7.51)	
Q×AM Ratio			0.008			0.004***			0.008***			-0.004***
			(1.47)			(3.34)			(7.07)			(-7.01)
Cash Flow	0.105***	0.123***	0.105***	-0.129***	-0.118***	-0.129***	-0.166***	-0.159***	-0.165***	0.056***	0.059***	0.056***
	(5.62)	(6.59)	(5.68)	(-18.17)	(-16.69)	(-18.09)	(-37.84)	(-36.65)	(-37.58)	(17.80)	(18.31)	(17.73)
Q	0.094***	0.094***	0.093***	0.026***	0.026***	0.026***	0.016***	0.016***	0.015***	0.009***	0.009***	0.009***
	(44.26)	(44.06)	(43.28)	(48.19)	(47.97)	(46.60)	(43.04)	(43.07)	(40.21)	(25.45)	(25.36)	(25.97)
StateQ	0.004	0.004*	0.004	0.006***	0.006***	0.006***	0.007***	0.007***	0.007***	-0.002***	-0.001***	-0.002***
	(1.58)	(1.68)	(1.57)	(6.43)	(6.61)	(6.51)	(9.58)	(9.68)	(9.80)	(-3.84)	(-3.70)	(-3.98)
ROE	-0.007	-0.007	-0.007	-0.009***	-0.008***	-0.009***	-0.009***	-0.009***	-0.009***	0.001*	0.001*	0.001*
	(-1.40)	(-1.35)	(-1.39)	(-6.74)	(-6.57)	(-6.71)	(-10.01)	(-9.85)	(-9.97)	(1.78)	(1.81)	(1.76)
Log(Assets)	-0.019***	-0.019***	-0.019***	0.000	0.000	0.000	0.002***	0.001***	0.002***	-0.001**	-0.001***	-0.001**
	(-15.32)	(-15.64)	(-15.37)	(0.98)	(0.62)	(0.92)	(5.11)	(4.75)	(4.95)	(-2.57)	(-2.73)	(-2.47)
Leverage	0.002	0.003	0.002	-0.031***	-0.030***	-0.031***	-0.047***	-0.047***	-0.048***	0.016***	0.017***	0.016***
	(0.29)	(0.47)	(0.28)	(-12.65)	(-12.18)	(-12.66)	(-29.42)	(-28.80)	(-29.52)	(11.19)	(11.28)	(11.22)
Ret	0.092***	0.091***	0.092***	0.012***	0.012***	0.012***	0.001	0.001	0.001	0.010***	0.010***	0.010***
	(25.72)	(25.77)	(25.72)	(11.11)	(11.00)	(11.10)	(1.59)	(1.33)	(1.47)	(13.08)	(13.11)	(13.08)
N	102004	102004	102004	101002	101002	101002	102011	102011	102011	101002	101002	101002
Adjusted R^2	0.199	0.201	0.199	0.316	0.323	0.316	0.506	0.512	0.508	0.236	0.237	0.236
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table VI: AM Ratio, Equity and Debt Issuance

This table reports panel regressions of Equity Issuance and Debt Issuance on AM Ratio, two interaction terms and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. Equity Issuance is defined as the change in book equity and the change in deferred taxes, less the change in retained earnings, all scaled by lagged assets. Debt Issuance is defined as the change in assets, less the change in book equity, less the change in deferred taxes, all scaled by lagged assets. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Cash Flow is defined as net income before extraordinary items, depreciation and amortization expenses, all scaled by lagged assets. Q is defined as market value of equity plus total assets, less book value of equity, all scaled by total assets. When R&D variable is missing, it is set to zero. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. ROE is defined as net income divided by lagged book equity. The sample period is from 1980 to 2013. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by * ,**, and *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable		Equity Issuance			Debt Issuance	
AM Ratio	0.007**	-0.004	-0.002	-0.005*	-0.007**	-0.005*
	(2.26)	(-1.43)	(-0.66)	(-1.67)	(-2.25)	(-1.84)
Cash Flow×AM Ratio		-0.094***			-0.042***	
		(-6.11)			(-2.60)	
Q×AM Ratio			0.002			-0.003
			(0.79)			(-1.21)
Cash Flow	-0.050	-0.316***	-0.321***	-0.011	-0.117***	-0.119***
	(-1.37)	(-39.87)	(-40.41)	(-0.83)	(-12.51)	(-12.85)
Q	0.027***	0.046***	0.046***	0.011***	0.023***	0.024***
	(5.73)	(46.89)	(45.39)	(6.57)	(27.42)	(27.07)
R&D Dummy	-0.015***	0.007***	0.007***	0.018***	0.022***	0.022***
	(-5.10)	(4.61)	(4.70)	(7.69)	(10.09)	(10.14)
R&D-to-Sales	0.000	0.012***	0.013***	0.000	-0.008***	-0.008***
	(1.22)	(6.25)	(6.78)	(1.04)	(-4.82)	(-4.52)
ROE	-0.000***	-0.036***	-0.036***	0.000	0.040***	0.040***
	(-3.64)	(-17.97)	(-17.95)	(0.30)	(12.86)	(12.88)
N	99654	99654	99654	99797	99797	99797
Adjusted R^2	0.204	0.373	0.372	0.037	0.052	0.052
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table VII: Local Institutional Holding of Newly Issued Equity

This table summarizes equity issuance held by local institutions for a subsample of firms that have equity issuance of higher than 3%. Three variables are defined to capture the absorb effect of local institutions. Absorb is defined as the ratio of the newly issued shares held by local institutions to the total number of newly issued shares. Measure 1 is defined as the difference of Absorb and the ratio of the total AUM of local institutions to the total AUM of all institutions. Measure 2 is defined as the difference of Absorb and the ratio of the total market capitalization of local firms held by local institutions to the total market capitalization of all local firms. Measure 3 is defined as the difference of Absorb and the ratio of the number of existing shares held by local institutions to the total number of existing shares of a firm. The table reports summary statistics for the full sample period and subsample periods of 1980-1996 and 1997-2013.

	All firms	High AM Ratio State	Low AM Ratio State	Large Firms	Small Firms
			Measure 1		
Full Sample	0.104	0.118	0.081	0.186	0.087
1980-1996	0.093	0.116	0.056	0.192	0.072
1997-2013	0.114	0.119	0.103	0.180	0.100
			Measure 2		
Full Sample	0.125	0.148	0.081	0.205	0.108
1980-1996	0.114	0.148	0.056	0.211	0.093
1997-2013	0.134	0.148	0.103	0.198	0.120
			Measure 3		
Full Sample	0.137	0.165	0.084	0.196	0.124
1980-1996	0.128	0.167	0.062	0.208	0.111
1997-2013	0.145	0.163	0.103	0.186	0.136

Table VIII: Firm Relocation Trend

This table reports panel regressions of AM Ratio Change or AM Ratio Change Dummy on KZ Index or KZ Dummy and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. AM Ratio Change is defined as the difference of AM Ratio of a firm's new location 1 year after relocation and AM Ratio of a firm's old location 1 year before relocation. AM Ratio Change Dummy is set to one if AM Ratio Change is positive, zero otherwise. KZ Dummy is set to one if a firm's KZ Index is higher than the top 20% breakpoints, zero otherwise. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Cash Flow is defined as net income before extraordinary items, depreciation and amortization expenses, all scaled by lagged assets. Q is defined as market value of equity plus total assets, less book value of equity, all scaled by total assets. When R&D variable is missing, it is set to zero. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. ROE is defined as net income divided by lagged book equity. Income Change is defined as the difference of the ratio of the personal income per capita to the total personal income per capital of a firm's new location 1 year after relocation and of a firm's old location 1 year before relocation. Tax Change is defined as the difference of the tax rates between new location and old location. The sample period is from 1980 to 2013. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by * ,**, and *** at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	ΔAM Ratio		Positive Change Dummy	
KZ Index	0.002	0.006		
	(0.25)	(0.56)		
KZ Dummy			-0.043	-0.077
			(-0.68)	(-1.21)
Cash Flow		0.048		0.071
		(1.00)		(1.40)
Q		-0.013		-0.002
		(-1.04)		(-0.12)
R&D Dummy		-0.029		0.017
		(-0.58)		(0.29)
R&D-to-Sales		0.045		0.076*
		(0.99)		(1.86)
ROE		0.023		0.006
		(1.09)		(0.19)
Income Change		0.460***		0.175**
		(4.57)		(2.05)
Tax Change		0.007		0.028***
		(1.25)		(4.56)
N	475	435	475	435
Adjusted R^2	0.010	0.191	0.038	0.152
Year FE	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table IX: Local Institutional Holding Change

This table reports local institutional holding changes of financial institutions in new and old locations when firms move. Local Institutional Holding (LH) is defined as the ratio of the local institutional holding to the total institutional holding of a firm. We compare local holding of financial institutions 1 year before and 1 year to 3 years after firms relocate for financial institutions in old and new locations. The results are reported for the full sample, the positive move sample (firms move to high AM Ratio states), and the negative move sample (firms move to low AM Ratio states). The table also reports the differences in the local institutional holding before and after firms relocate along with the percentage of positive and negative changes.

Panel A: Local Institution Holding Change of Old Location

	All move						Move from low to high AM ratio						Move from high to low AM ratio					
	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change
(-1,+1)	0.084	0.091	-0.007	-0.99	46.08%	53.92%	0.054	0.075	-0.021	-2.21	41.73%	58.27%	0.106	0.102	0.004	0.44	48.78%	51.22%
(-1,+2)	0.079	0.091	-0.012	-1.56	49.26%	50.74%	0.060	0.076	-0.016	-1.43	46.21%	53.79%	0.093	0.102	-0.009	-0.86	51.21%	48.79%
(-1,+3)	0.060	0.090	-0.030	-3.98	39.47%	60.53%	0.039	0.077	-0.038	-3.67	34.59%	65.41%	0.076	0.100	-0.025	-2.26	42.65%	57.35%

Panel B: Local Institution Holding Change of New Location

	All move						Move from low to high AM ratio						Move from high to low AM ratio					
	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change	After	Before	Diff	t-diff	% of Pos. Change	% of Neg. Change
(-1,+1)	0.063	0.043	0.021	3.58	57.35%	42.65%	0.107	0.073	0.034	2.96	53.52%	46.48%	0.030	0.020	0.010	2.06	61.54%	38.46%
(-1,+2)	0.062	0.043	0.019	3.24	55.02%	44.98%	0.094	0.073	0.022	2.05	50.00%	50.00%	0.037	0.020	0.017	2.62	60.28%	39.72%
(-1,+3)	0.052	0.043	0.010	1.69	53.47%	46.53%	0.078	0.072	0.006	0.63	51.39%	48.61%	0.033	0.020	0.012	1.88	55.56%	44.44%

Table X: AM Ratio and Firm Performance

Pane A of this table reports results of the monthly Fama-Macbeth regressions of excess stock returns on AM Ratio and firm-level control variables. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. Beta is estimated by running regression of stock returns on market returns for the previous 36 months. Size is the log of market capitalization. BM is defined as the ratio of book equity value to market equity value. Illiquidity is defined as the average of the absolute value of stock return divided by dollar trading volume on a given day within month. Momentum is defined as cumulative return of months (-12, -2). Panel B of this table reports panel regressions of Sales Growth on AM Ratio and firm-level control variables, as well as the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. Sales Growth is defined as changes in sales scaled by lagged sales. AM Ratio is defined as the log of one plus the ratio of the aggregate AUM of institutions in a state to the total market capitalization of public firms in the same state. When R&D variable is missing, it is set to zero. R&D-to-Assets is defined as research and development expenditures scaled by lagged assets. CAPEX-to-Assets is defined as capital expenditures scaled by lagged assets. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. Leverage is defined as the sum of long term debt and debt in current liabilities, all scaled by lagged assets. Log(Sales) is defined as the log of total sales. Cash Flow is defined as net income before extraordinary items, depreciation and amortization expenses, all scaled by lagged assets. The sample period is from 1980 to 2013. Statistical significance is denoted by * ,**, and *** at the 10%, 5%, and 1% levels, respectively.

Panel A: Stock Return									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Size		Dividends		Financial Dependence		KZ index	
Variable	Full	Small	Large	No Payout	Payout	Dependent	Independent	Top 50%	Bottom 50%
AM Ratio	0.001	0.001	-0.000	0.002	-0.000	0.003*	0.001	0.001	0.000
	(1.49)	(1.32)	(-0.12)	(1.63)	(-0.11)	(1.69)	(0.72)	(0.87)	(0.48)
Beta	-0.000	0.001	-0.002	0.000	-0.001	0.001	-0.000	0.001	-0.001
	(-0.42)	(0.57)	(-1.05)	(0.34)	(-0.39)	(0.90)	(-0.34)	(0.56)	(-0.58)
Size	-0.001*	-0.002***	0.000	-0.002***	-0.001**	-0.004***	-0.001*	-0.002***	-0.001**
	(-1.93)	(-3.02)	(0.15)	(-2.90)	(-2.40)	(-4.22)	(-1.86)	(-3.41)	(-2.05)
BM	0.001	0.001	-0.000	0.002**	-0.001	0.002**	0.000	0.001	0.002
	(1.53)	(1.27)	(-0.10)	(2.14)	(-0.56)	(2.08)	(0.61)	(1.35)	(1.61)
Illiquidity	0.061**	0.075**	70.922	0.087***	0.092	0.068	0.068*	0.086**	0.024
	(2.21)	(2.56)	(0.97)	(2.79)	(1.17)	(1.36)	(1.80)	(2.29)	(0.62)
Momentum	0.001	0.000	0.004*	-0.000	0.002	-0.001	0.002	0.001	0.000
	(0.78)	(0.06)	(1.79)	(-0.02)	(0.98)	(-0.52)	(1.09)	(0.24)	(0.10)
N	1167598	866580	257411	618857	507410	325211	801056	553198	540830
Adjusted R^2	0.03	0.028	0.077	0.028	0.04	0.028	0.034	0.03	0.038

Table X - *continued*

Panel B: Sales Growth									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Size		Dividends		Financial Dependence		KZ index	
Variable	Full	Small	Large	No Payout	Payout	Dependent	Independent	Top 50%	Bottom 50%
AM Ratio	-0.005	-0.006	-0.015	0.001	-0.007	0.002	-0.001	0.019*	-0.029***
	(-0.63)	(-0.72)	(-1.16)	(0.09)	(-0.78)	(0.14)	(-0.10)	(1.87)	(-2.58)
R&D-to-Assets	0.219***	0.125***	0.540***	0.119**	0.589***	-0.016	0.412***	0.194***	0.065
	(4.18)	(2.78)	(5.11)	(2.31)	(6.29)	(-0.26)	(5.97)	(2.62)	(1.06)
CAPEX-to-Assets	0.877***	0.709***	0.728***	0.903***	0.804***	1.015***	0.787***	0.583***	0.947***
	(21.31)	(20.52)	(10.88)	(19.78)	(13.37)	(16.19)	(17.91)	(14.66)	(17.15)
R&D Dummy	0.016***	0.030***	-0.009	0.022***	0.019***	0.019	0.018***	0.012*	0.027***
	(3.11)	(5.28)	(-1.07)	(2.82)	(3.07)	(1.50)	(3.52)	(1.91)	(3.29)
Cash Flow	-0.371***	-0.251***	-0.534***	-0.313***	-0.482***	-0.365***	-0.324***	-0.362***	-0.439***
	(-15.43)	(-11.87)	(-8.58)	(-12.79)	(-11.53)	(-10.04)	(-11.15)	(-12.31)	(-15.17)
Leverage	0.171***	0.195***	0.119***	0.201***	0.142***	0.137***	0.196***	0.328***	0.260***
	(13.75)	(13.64)	(6.95)	(12.28)	(7.82)	(4.87)	(15.69)	(20.64)	(9.41)
Log(Sales)	-0.079***	-0.109***	-0.080***	-0.107***	-0.047***	-0.141***	-0.058***	-0.070***	-0.085***
	(-31.90)	(-31.92)	(-12.73)	(-30.45)	(-15.86)	(-24.47)	(-23.18)	(-22.64)	(-24.76)
N	122159	93839	23185	70080	52077	38115	84042	61206	60763
Adjusted R^2	0.173	0.143	0.332	0.164	0.210	0.168	0.187	0.162	0.194
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table XI: Tech Bubble Effects

This table reports panel regressions of firms located in the states that are substantially affected by the tech bust with the exchange, year, and industry fixed effects. Industries are defined using two-digit SIC code. MB is defined as the ratio of market equity value to book equity value. Stock return is defined as the monthly excess returns. Affected State is defined as one if the average proportion of tech stocks held by financial institutions of a state is ranked at top the 10% among all the states, zero otherwise. We compare the MB and stock returns of the top 10% states with all the rest states, and the bottom ranked 10%, 20%, and 30% states. IT Bubble is set to one if the time period is between 2000 to 2002. When R&D variable is missing, it is set to zero. R&D Dummy is set to one if R&D variable is missing, otherwise it is set to zero. R&D-to-Sales is defined as research and development expenditures scaled by sales. ROE is defined as net income divided by lagged book equity. Size is the log of market capitalization. Beta is estimated by running regression of stock returns on market returns for the previous 36 months. Illiquidity is defined as the average of the absolute value of stock return divided by dollar trading volume on a given day within month. Momentum is defined as cumulative return of months (-12, -2). We control for year (month) and industry fixed effects. The sample period is from 1990 to 2008. The sample excludes tech stocks, industries highly correlated with tech industry and firms located in California. t-statistics, based on standard errors clustered at the state-year level, are reported in parentheses. Statistical significance is denoted by *, ** , and *** at the 10%, 5%, and 1% levels, respectively.

Panel A: MB

	(1)	(2)	(3)	(4)
	Top 10% States against			
Variable	The Rest States	Bottom 10% States	Bottom 20% States	Bottom 30% States
Affected States	0.088	0.043	0.106	0.129
	(0.42)	(0.17)	(0.47)	(0.56)
Affected States×IT Bubble	-0.670**	-1.198***	-0.852***	-0.767***
	(-2.51)	(-2.95)	(-2.82)	(-2.62)
R&D-to-Sales	10.634***	5.093	5.163**	4.909***
	(10.79)	(1.58)	(2.18)	(5.16)
CAPEX-to-Sales	-0.042	0.400	0.058	-0.080
	(-0.31)	(1.14)	(0.45)	(-0.54)
R&D Dummy	-0.277***	0.024	-0.165	-0.299**
	(-4.70)	(0.09)	(-1.00)	(-2.49)
ROE	-0.253	-1.485**	-1.268***	-0.564*
	(-1.41)	(-2.16)	(-3.35)	(-1.82)
Leverage	1.710***	1.480***	1.224***	1.670***
	(10.53)	(3.58)	(4.33)	(5.71)
Log(Assets)	-0.166***	-0.176**	-0.198***	-0.182***
	(-8.58)	(-2.59)	(-4.76)	(-4.95)
N	27641	2311	4211	7757
Adjusted R^2	0.068	0.110	0.115	0.105
Year FE	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table XI - *continued*

Panel B: Stock Return				
	(1)	(2)	(3)	(4)
	Top 10% States against			
Variable	The Rest States	Bottom 10% States	Bottom 20% States	Bottom 30% States
Affected States	0.005**	0.007***	0.007***	0.005**
	(2.56)	(2.65)	(2.60)	(2.10)
Affected States×IT Bubble	-0.008	-0.016***	-0.016***	-0.012**
	(-1.54)	(-2.67)	(-2.74)	(-2.13)
MB	-0.010***	-0.011***	-0.010***	-0.009***
	(-22.73)	(-7.48)	(-8.80)	(-12.15)
Size	0.038***	0.037***	0.033***	0.035***
	(36.42)	(11.55)	(14.26)	(20.61)
Beta	-0.001**	-0.000	-0.001	-0.001
	(-2.05)	(-0.21)	(-0.93)	(-1.02)
Illiquidity	0.001***	0.001***	0.000***	0.001***
	(22.10)	(7.36)	(8.06)	(11.91)
Momentum	-0.008***	-0.008**	-0.009***	-0.008***
	(-6.10)	(-2.18)	(-3.23)	(-3.60)
N	289360	23380	41738	79833
Adjusted R^2	0.121	0.127	0.113	0.114
Year FE	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes