Intermediary Capital and the Decision to Go Public*

Shahram Amini

University of Denver, Daniels College of Business
Email: shahram.amini@du.edu

Andrew MacKinlay

Virginia Tech, Pamplin College of Business
Email: acmackin@vt.edu

Johan Sulaeman

National University of Singapore, NUS Business School
Email: sulaeman@nus.edu.sg

Chishen Wei

Singapore Management University, Lee Kong Chian School of Business
Email: cswei@smu.edu.sg

Abstract

We find that the supply of intermediary capital influences the propensity of firms to go public. Using a geographic setting, we measure the supply of regional intermediary capital using the total amount of equity capital held by institutional investors located in a U.S. region. When regional intermediary capital is abundant, resident firms in high-tech industries (i.e., computing and pharmaceuticals) are more likely to go public and do so at a younger age than otherwise similar firms. We design a test using out-of-state pension inflows to show that regional economic factors are not driving our results. Overall, the evidence suggests that financial intermediation can reduce information frictions and increase financing for collateral-poor firms.

Keywords: Intermediary capital, Monitoring capital, IPOs, High-tech firms
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The financial health of intermediaries such as banks, investment companies, and hedge funds affect asset prices across many markets, countries, and throughout various historical periods. For example, intermediary risk bearing capacity affects the pricing of equities, bonds, and derivatives (Adrian, Etula, and Muir, 2014; He, Kelly, and Manela, 2017; Baron and Muir, 2021). As our understanding of the importance of intermediary capital for asset market equilibrium grows, it is natural to ask: What are the effects of financial sector frictions on corporate financing decisions? This paper aims to empirically address this question.

We examine whether intermediary capital affects a key financing event in the life of a firm, the decision to go public. The initial public offering (IPO) is an important decision to analyze for the following reasons. First, when markets are frictionless, raising capital through equity sales does not affect firm value. However, if intermediary frictions are sufficient to affect prices, the effects on the firm's cost of capital should be first order. Second, the IPO is heavily intermediated as most IPOs are conducted through the book building process and institutional investors are the primary participants (Rock, 1986; Benveniste and Spindt, 1989; Chemmanur, Hu, and Huang, 2010).[1] Third, going public is perhaps the important financing event of the firm to date and managers must carefully weigh the tradeoffs of being public (Stulz, 2020). Because firms that plan to go public are likely to face a high degree of asymmetric information between insiders and outsiders, the health of financial intermediaries can affect the demand schedule for the offering. In particular, young collateral-poor firms are at risk of being financially rationed as their ability to raise external financing is more sensitive to the supply of capital (Holmstrom and Tirole, 1997).

In this paper, we exploit the geographic heterogeneity in the regional U.S. financial intermediary sector to examine the decision to go public. To measure the capacity of regional financial intermediaries, we design a state-level measure of intermediary capital based on the total market value of equity holdings managed by institutional investors located in each state. Based on data from 13F regulatory filings, our measure of *regional intermediary capital* (*RIC*) captures the potential amount

[1]Haddad and Muir (2021) show that the degree of intermediation explains the relation between intermediary capital and risk premiums in different securities markets.

of intermediary capital available in the region. Investors located near resident firms have better access to information through informal sources such as conversations with employees, suppliers, and competitors or from information exchange and sharing within the resident investment community (Van Nieuwerburgh and Veldkamp, 2009). They are more likely to receive serendipitous information by chance in their day-to-day activities (Subrahmanyam and Titman, 1999). Our RIC measures captures the concept of "monitoring capital" in Holmstrom and Tirole (1997) because regional intermediaries can use their advantage in monitoring to substitute for a firm's lack of collateral. For firms that face greater information asymmetry, such as those in the high-tech industry (i.e., technology or pharmaceutical), the ability of regional intermediaries to reduce the demand for collateral by alleviating information frictions should affect the propensity of going public.

Our key finding is that greater regional intermediary capital spurs resident firms in the high-tech industry to go public. Estimates from linear probability models indicate that a 10% increase in the RIC measure corresponds to an increase in the number of high-tech IPOs of about 1.4%. These firms are also younger on average. A 10% increase in regional intermediary capital decreases the average IPO age by about 2.5 months. Despite more firms going public sooner, these firms do not seem to pay a cost in terms of valuation. We find that firms in areas with higher intermediary capital receive similar valuations to high-tech IPOs elsewhere.

The regression specifications also account for regional economic conditions that may affect the IPO decision. First, all specifications include year fixed effects to address broader macroeconomic shifts, such as the dot-com bubble. Second, we include state-level macroeconomic variables, such as GDP and personal income, to capture regional variation in economic conditions. Third, in more stringent tests, we include state by year fixed effects to compare high-tech to non-high-tech IPOs. This is a powerful specification because it acts as a difference-in-difference by absorbing the variation in common economic conditions across firms in a given state and year. We continue to observe significant differential effects using this approach. Finally, we confirm that our result is robust to excluding the states of California, Massachusetts, and New York, where there are major high-tech hubs.

The remaining threat to identification is possible time-series variation in regional economic conditions that drives both high-tech IPOs and regional intermediary capital. The use of state by year fixed effects helps to absorb time-varying economic conditions at the state level, but it is possible that high-tech firms are more sensitive to fluctuations in regional economic conditions. For example, a positive regional shock may increase the viability of high-tech firms in the region as well as the size of regional financial intermediary capital. To address this specific issue, we identify a shock to regional intermediary capital that is plausibly exogenous to the regional economic condition. Specifically, we hand-collect the investment allocations of two of the largest state public pension systems (California Public Employees' Retirement System and Florida State Retirement System), whereby they allocate their investment portfolios to out-of-state domestic equity fund managers. From the perspective of the fund managers, the allocation decisions of these out-of-state pension systems would result in time-series variations in their capital, and therefore the relative size of regional financial intermediaries. As these shocks are generated by out-of-state pension systems, they allow us to net out the role of regional economic conditions from the causal effect of the changes in the amount of financial capital available in the region. Using pension fund allocation data, we find that flows from out-of-state pension systems predict more high tech IPOs in the state. Estimates from linear probability models indicate that a 10% increase in the regional intermediary capital stemming from pension system allocation decisions corresponds to an increase in the number of high-tech IPOs of about 0.9%.

We also test the theoretical prediction that if resident intermediaries represent monitoring capital, they should hold a significant incremental portion of IPO shares. We confirm that they account for an additional 6.85% of the overall institutional ownership for a 1% increase in regional intermediary capital. They hold high-tech IPOs at an even higher rate: an additional 1.54% of the institutional ownership share for each 1% increase in regional intermediary capital, compared to non-high-tech IPOs. The presence of more regional intermediary capital has clear effects on the composition of a company's shareholder base. These effects persist for at least the first three years following the firm's IPO.

Our final analysis examines long-run IPO returns. If more frequent high-tech IPOs in regions with higher intermediary capital are driven by some bias or non-fundamental elements, we expect these firms to be initially overvalued and subsequently underperform. However, consistent with the ability of resident intermediaries to mitigate the information frictions faced by these firms, we do not observe any evidence of IPO overvaluation. The 6, 12, and 36 month buy and hold abnormal returns (BHARs) of high-tech IPOs in high regional intermediary capital areas are comparable do not suffer from excess underperformance relative to other similar IPOs (Loughran and Ritter, 1995).

Our contribution is to show that intermediary capital affects corporate financing decisions. The paper is related to a growing empirical literature on the effect of intermediary capital on risk premiums (Adrian, Etula, and Muir, 2014; He, Kelly, and Manela, 2017; Baron and Muir, 2021). We depart from these studies by examining a key corporate financing event, the IPO. By analyzing the corporate side, our paper additionally includes the role of shareholder monitoring, which is absent in intermediary asset pricing literature. IPOs are a natural setting to analyze because the process is highly intermediated. Hence, we should expect intermediary capital to play an important role (Haddad and Muir, 2021) in the IPO outcome. In this regard, our setting and analysis is closest to the model introduced in Holmstrom and Tirole (1997). In Holmstrom and Tirole (1997), investors use monitoring to substitute for collateral, which unlocks capital for collateral-poor firms. Using a geographic setting, we find evidence that supports the model's key predictions. When capital supply is abundant, collateral-poor firms, such as high-tech companies, who would otherwise be finanically rationed, are still able to raise financing through equity issuance.

Our paper also contributes to the literature on the decision to go public (Roell, 1996; Pagano, Panetta, and Zingales, 1998; Ritter and Welch, 2002). On the firm side, going public is determined by the stage of a firm's life-cycle such as its acquisition activity (Zingales, 1995; Brau and Fawcett, 2006; Bernstein, 2015), ownership dispersion (Chemmanur and Fulghieri, 2015), monitoring (Holmström and Tirole, 1993; Maug, 2001), and competition effects in the product market (Chemmanur, He, and Nandy, 2010). On the market side, the decision to go public coincides with high valuations (Lerner, 1994; Pagano, Panetta, and Zingales, 1998), investor sentiment (Baker and Wurgler, 2002;

Lowry, Michaely, and Volkova, 2017), and stock market development (Subrahmanyam and Titman, 1999). Our empirical approach shares similarities with the methodology in Bernstein (2015), who uses recent NASDAQ market returns after IPO filing as an instrument for IPO completion (Busaba, Benveniste, and Guo, 2001) to study innovation activity. In contrast, we use fluctuations in regional intermediary capital to test whether local firms are more likely to raise funds through an IPO. Our evidence suggests collateral-poor firms can turn to regional financial intermediaries, who can reduce the demand for collateral by monitoring more intensely.

1. Data

We extract data from several sources to form our estimation sample. Data on IPO filings conducted in the U.S. markets come from the Thomson Reuters Security Data Company (SDC) Platinum database from 1980 to 2011. We deploy a number of data filters that are common in the empirical IPO literature (see Purnanandam and Swaminathan, 2004; Liu and Ritter, 2011). We exclude unit offers, closed-end funds, REITs, ADRs, limited partnerships, spin-offs, issues of non-common shares, IPOs with an offer price less than $5, and IPOs in the financial industry with SIC codes between 6000 and 6999. These filters leave us with a sample of 6,925 IPO filings. We obtain data on the number of years since the company was founded (firm age) from Jay Ritter's website.[2] Information on stock prices and returns are from the Center for Research in Security Prices (CRSP) database and accounting data are from the Compustat database. We use the Thomson Reuters 13(F) Institutional Holdings database to quantify local and non-local institutional investor participation in IPOs. The headquarters of the institutional investors are from Nelson's Directories of Investment Managers and firm headquarters are from SDC Platinum. The total number of firms and establishments are from the U.S. Census Bureau. Finally, state-level GDP and income data are from the BEA. All dollar variables are deflated using the GDP implicit price deflator from the St. Louis Fed's FRED database.

[2] We thank Jay Ritter for making these data available online. The data on the founding date and age of IPO firms can be found at https://site.warrington.ufl.edu/ritter/ipo-data/. These founding dates are first used in Loughran and Ritter (2004).

Table 1 contains the descriptive statistics of the primary sample. The first part of the table reports the characteristics of the IPOs. The median IPO firm is 8 years old with an average 17.82% first day return, defined as the percentage change from the offer price to the first day closing price. We find that 52% of the IPOs are in high-tech industries and 40% of them have negative income at the time of the IPO. About 16% of the IPOs are listed on NYSE or AMEX exchanges and an average IPO firm has a post-issue market-to-book ratio of 2.16. The IPO firms have, on average, a 2.38% market-adjusted six-month holding-period return calculated by compounding daily returns over 6 months after the IPO (excluding the initial-day return) adjusted by subtracting the similarly-compounded CRSP value-weighted market return. The one-year and three-year market-adjusted holding-period returns for the IPO firms are -4.26% and -18.2%, which are consistent with prior findings documenting the long-run underperformance of IPOs (Ritter and Welch, 2002).

The second part of the table reports the participation of local and non-local institutional investors in IPOs in the IPO quarter and the next three quarters. An institutional investor located in the same state as the IPO firm is considered a local investor and an institutional investor located outside the firm's state is considered a non-local investor. Based on 13-F filings, local institutional investors initially hold about 2.02% of the IPOs and non-local institutional investors hold about 20.5% of the IPO stocks, on average. The ownership of both local and non-local investors monotonically increases following the IPO. Finally, the last part of the table reports state-level regional intermediary capital (RIC), nominal GDP, and personal income.

We complement our main RIC measure with an alternative variable, *Ln(RIC), External Pensions*. This variable is a subset of RIC based on two of the largest U.S. state public pension systems: the California Public Employees' Retirement System (CALPERS) and the Florida State Retirement System (FRS). As both of these systems are funded by a combination of state government and employee contributions, the source of the capital is specific to each state. Further, both systems make public how they allocate their investments in public equity. They specifically report the particular managers they employ and the net asset value of all investments with these managers.[3]

[3] We were able to collect this information for FRS going back to 1987 and for CALPERS since 2001.

We hand-match the managers used by these pension funds to their locations and aggregate them to the state level. We also explicitly exclude any assets that are managed in the pension system's home state. The purpose of this measure is to identify a subset of local capital which is brought in from out-of-state sources. We discuss how this is used to address some potential identification concerns in Section 2.1.

In general, a firm is categorized as high-technology in the SDC database if the company offers technology services. So while many of these high-technology IPOs are in the expected industries (e.g. business services and computers), they also extend across many more industries. Panel A of Table 2 presents the number of IPOs by Fama-French 49 industry classification. Indeed, 33 of the non-financial industry classifications have at least one high-tech IPO during our sample. The industries with the most common high-tech IPOs—besides computer software and hardware, electronic equipment, and business services—include pharmaceutical products, medical equipment, communication, healthcare, and even retail. Panel B of Table 2 presents a similar table by the IPO firm's state. Here we also see broad geographical coverage: with the exception of Hawaii, West Virginia, and Wyoming, all other states in our sample have at least one IPO designated as "high-tech." Overall, the presence of technology services across many sectors of the economy and in many states speaks to the broad presence of these potential information frictions.

While the high-tech categorization is our primary measure of differences in information frictions across firms, we include two alternative proxies. The first is an indicator for whether the firm reports negative income at the time of IPO. This measure is based on the notion that firms without positive income are more difficult to value, and would therefore benefit from more intensive information collection. The second proxy is an indicator for whether firms have below median asset tangibility compared to the sample of all IPO firms. Tangibility is defined as the firm's gross property, plant, and equipment (PP&E) divided by book assets. Because this information is not available before the IPO in a systematic manner, we rely on the data from the first annual financial statements following the IPO. The argument for this proxy is that firms with a low fraction of tangible assets (and therefore a high fraction of intangible assets) will be more difficult to value without additional information.[4]

2. Regional Intermediary Capital and the IPO Decision

2.1. Demand for IPOs

If changes in regional intermediary capital influence local firms' decisions to go public, we should see higher rates of IPOs. The argument being that more marginal firms, seeing a better opportunity for going public with more regional intermediary capital, choose to do so.

To test whether this is the case, we run the following regression:

$$\begin{aligned} \ln(1 + \text{Number of IPOs})_{hst} = &\alpha_s + \gamma_t + \beta_1 \ln(RIC)_{st-1} + \beta_2 \ln(RIC)_{st-1} \times \text{High Tech}_{hst} \\ &+ \beta_3 \text{High Tech}_{hst} + \beta_4 \text{State Controls}_{st-1} + \varepsilon_{hst} \end{aligned} \quad (1)$$

Here we have two categories of IPO for each state (s) and year (t), high-tech IPOs ($h = 1$) and non-high-tech IPOs ($h = 0$). The data structure is such that each state has two observations for each year: the number of high-tech IPOs and the number of non-high-tech IPOs.[5]

We include year fixed effects to remove macroeconomic changes that might increase both regional intermediary capital (RIC) and the frequency of IPOs, such as the dot-com bubble. We also include state fixed effects in some specifications to confirm that our results do not merely reflect persistent differences across states, such as states having persistently high RIC levels and IPO activity. In addition to the year and state fixed effects, we include state-level GDP, personal income, and the total number of firms to further control for other economic factors that would both influence RIC levels and IPO activity. In later specifications, we instead use state by year fixed effects to most generally confirm that the differential effect of RIC on high-tech IPOs is not driven

[4]While some high-tech firms will have negative income and more intangible assets, the correlations between the measures are not extreme. In our sample, the correlation between the high-tech and negative income indicators is 0.264 and the correlation between the high-tech and low tangibility indicators is 0.329. The correlation between the negative income and low tangibility indicators is 0.190.

[5]We do not include those states (Hawaii, West Virginia, and Wyoming) which never have a high-tech IPO over our sample period. We find similar results if we include these observations, or if we use a Poisson regression framework instead of a linear regression.

by local economic conditions in a specific year. We cluster our standard errors at the state level to allow for correlation across observations.

Panel A of Table 3 presents the results. In column 1, we find that an increase in local RIC does increase the number of non-high-tech IPOs in a state. This effect is while controlling for macroeconomic shocks using fixed effects, and local economic factors such as state GDP and income. While the average effect on non-high-tech IPOs is only statistically significant at the 10% level, the differential effect for high tech IPOs is highly statistically signficant. We find that a 10% increase in the regional intermediary capital would increase the number of high-tech IPOs by about 1.4% (column 1).[6] Since there are nationally about 108 high-tech IPOs per year, these estimates would translate into about 1-2 additional high-tech IPOs in a given year, on average. In column 2, we find that the interaction term for high-tech firms and local RIC remains statistically significant. As column 2 includes state-level fixed effects, this coefficient is identified from changes in RIC levels within a state, rather than comparing high RIC states to low RIC states. Likewise, our result remains very similar if we instead use state by year fixed effects (column 3), which will most comprehensively control for any factors specific to a given state and year that might affect the likelihood of an IPO. In column 4, we allow for our other state economic variables to have a differential effect for high-tech IPOs. Our estimate of the effect of local RIC on high-tech IPOs becomes stronger.

A potential concern is that our results are concentrated in specific states with a very particular investment and corporate landscape. For example, California being a high-tech hub which draws both more high-tech IPOs and higher amounts of capital. Indeed, Panel B of Table 2 shows particularly high incidents of high-tech IPOs for California, Massachusetts, and New York. While the use of state fixed effects and state by year fixed effects removes any persistent differences across states in Panel A of Table 3, these states could still be the main driver of our results. Therefore, in Panel B of Table 3, we repeat the analysis but exclude California, Massachusetts, and New York. While the economic magnitudes of the estimates of local RIC decrease somewhat, the statistical

[6]The calculation is $1.10^{.0629+.0802} = 1.014$.

significance remains. And in our most robust specification (column 4), the estimate is quite close to what we find in the full sample of Panel A.

While we argue the increase in high-tech IPO frequency is driven by the increase in local RIC, there are several alternative explanations. First, it is plausible that changes in local RIC are simply correlated with broad economic conditions. Thus, our RIC variable is merely capturing omitted economic factors. To address this concern, we take the following steps. In Table 3, we include year fixed effects in all specifications to address broader macroeconomic shifts, such as the dot-com bubble. Our inclusion of state-level macroeconomic variables, such as GDP and personal income, also help capture regional variation in economic conditions. Third, our inclusion of state by year fixed effects confirms that we still observe differential effects when controlling for common economic conditions across firms in a given state and year.

As an alternative identification strategy, in Table 4 we consider a specific subset of RIC which we can determine is generated by non-local sources. Specifically, we focus on the investment allocations of two of the largest state public pension systems (California Public Employees' Retirement System and Florida State Retirement System). As discussed in Section 1, we purposefully exclude any amounts that are invested by the pension in asset managers that are located in the system's home state. By focusing on this subset of RIC, we are able to better separate the role of local economic conditions from the direct effect of changes in the amount of financial capital available. Our assumption is that the out-of-state pension systems do not allocate equity capital to managers based on the specific economic conditions of where that manager happens to locate.

Apart from the omitted economic variable concern outlined above, it is possible that changes in local economic conditions affect our RIC results through a more direct channel. Namely, if stronger economic conditions generate more investable capital, and local individuals and entities invest this capital with local intermediaries, this could contribute to our result. Although this effect can still give our results for the reasons we argue—the presence of more local RIC reducing information frictions—it is commingled with the underlying strong economic conditions. Insofar as this out-of-state subset of RIC is not driven by changes in local capital inflows, this measure helps separate this other possible channel.

Turning to the results of Table 4, we run the same specifications as in our previous table (Table 3). Across these specifications, we find the effect of higher RIC on high-tech IPO frequency to be very similar as to our full sample. Further, this effect is statistically significant at the 5% or 1% level across all specifications, despite the reduction in total observations.[7] For the sample of state-years in which we are able to measure a subset of external RIC, we are able to confirm that increased local RIC leads to more frequent high-tech IPOs. This helps confirm that our positive result is not attributable to omitted local economic factors or pure increases in local RIC from local economic conditions.

Overall, we find that more regional intermediary capital leads to more firms going public, but only for high-tech firms. Given that firms with high-tech activities are likely to be more opaque and difficult to value due to the nature of their business, this indicates that local RIC plays an important role in IPO decisions of information-intensive firms.

To confirm that our findings are likely driven from informational issues inherent in high-tech firms and not some other aspect of their businesses, we repeat our analysis with two different measures for firms that would be difficult to value. Presented in Panel A of Appendix Table A1, we split our sample of firms into those with negative and positive income at the time of their IPO. Other than the change in our heterogeneity measure, the specifications are the same as in Table 3. Comparing the coefficients with the negative income measure to those in Table 3, we find a similar effect of local RIC. As local RIC increases, firms with negative income (and therefore harder to value without additional information) are more likely to IPO.

In Panel B of Appendix Table A1, we repeat the analysis again except use the indicator for firms with below-median asset tangibility. Again we find that firms with low asset tangibility IPO more frequently as local RIC increases. Taken together, we find that increases in local RIC encourage high-tech firms, firms without established income, and firms with few tangible assets to IPO. As

[7] This reduction is driven by the fact that this subset of RIC data begins in 1987 and FRS and CALPERS do not allocate capital to managers in every state.

the difficulty to value these firms is a common feature of the three measures, the results point to a channel in which local investors mitigate informational frictions between firms and outsiders.

2.2. Age of IPO Firms

We next consider the profile of firms that decide to go public, paying special attention to how geographic proximity may be most important for difficult to value firms. One dimension of a firm that may contribute to a more difficult valuation is age, as younger firms will have less historical information for investors to incorporate and hence more uncertainty. In Table 5 we look at the effect of regional intermediary capital on the age of firms when they go public.

In particular, we run the following specification for firm i in state s that goes public in year t:

$$\begin{aligned}\text{IPO Age}_{it} = &\alpha_s + \gamma_t + \delta_{ind} + \beta_1 \ln(RIC)_{st-1} + \beta_2 \ln(RIC)_{st-1} \times \text{High Tech}_{it} \\ &+ \beta_3 \text{High Tech}_{it} + \beta_4 \text{Firm Controls}_{it} + \beta_5 \text{State Controls}_{st-1} + \varepsilon_{ist} \qquad (2)\end{aligned}$$

In addition to state and year fixed effects, we also include industry fixed effects (δ_{ind}) in all specifications. Using the Fama-French 49 industry classification, this allows us to control for differences in firm profiles related to industry.[8] As additional firm-level controls, we include indicators for whether the IPO is listed on the NYSE or AMEX, and whether the firm reports negative income at the time of IPO. An additional factor that may influence when the firm is able to IPO include the underwriter's market share and the size of the firm in the year that it goes public. As in Table 3, we include state-level GDP and personal income as local economic factors that may influence both RIC and the IPO decision. We also include the lagged returns of the firm's specific industry to control for time-varying changes in the performance of the firm's industry which might influence the timing of the firm's IPO.

Table 5 reports the results. Across columns 1–3, we find that the coefficient of the interaction term to be negative and statistically significant at the 1% level. This is true with state and year fixed

[8]One consequence of including industry fixed effects is that the economic meaning of the *High Tech* indicator is less informative. It now captures the average difference in age for high-tech and non-high-tech firm IPOs within the same industry, and is identified by the subset of industries which have both high-tech and non-high-tech IPOs.

effects (column 1), with state by year fixed effects (column 2), and with state by year fixed effects with additional interactions for other state economic variables (column 3). Overall, we find that high-tech firms in states with more RIC go public at an earlier age in the firm's life-cycle. Using the estimates from column 3, we find that for a 10% increase in regional intermediary capital, firms go public about 2.5 months earlier.[9] This translates to about 2.6% sooner for the median IPO age of 8 years. As we do not find any significant effects for other state-level macroeconomic variables, this suggests the pattern of earlier high-tech IPOs is driven by a higher presence of RIC, rather than local economic trends outside of the financial sector. Similar to our IPO frequency results in Section 2.1, it appears that the effect of local RIC is concentrated in the more opaque high-tech firms.

2.3. Firm Valuation

The results in the prior sections suggest that potential adverse selection issues stemming from information asymmetry, which are particularly acute for high-tech firms, are mitigated by a higher presence of regional intermediary capital. If non-local institutional investors tend to avoid these firms because of these frictions, local institutions will play a significant role in the firm's ability to generate sufficient IPO proceeds. A natural question is whether these firms have different valuations as a result of variation in local RIC.

One challenge of determining the firm's value is the inability construct a comprehensive valuation measure before the firm goes public. Therefore, we use the initial IPO price and the subsequent book value and post-issuance number of shares to construct an at-IPO market-to-book ratio. Insofar as we control for differences across IPOs that might systematically affect their valuation—such as industry, size, age, and any time effects—we can examine to what extent the level of local RIC affects IPO valuation.

Our findings are presented in Table 6. While factors such as underwriter market share, industry stock returns, firm size and age affect the initial market-to-book ratio, we do not find that higher RIC increases the valuation of the average non-high-tech IPO firm (column 1). For high-tech IPOs,

[9]The exact calculation is $-2.149 \times \ln(1.10) \times 12 = -2.457$.

we also do not find evidence of an effect across the various specifications. These findings suggest that the increase of local RIC does not materially affect valuations of high-tech IPOs. It appears that the presence of more local RIC affects the likelihood of a firm deciding to go public but does not systematically alter the valuation of the firm when it goes public.

3. Post-IPO Ownership

3.1. Local Institutional Ownership of IPOs

In our setting, we argue that investors co-located in the same region as the firm are able to gather soft information about new IPOs due to their geographical proximity. We further argue that this information is most useful for firms that are more opaque by the nature of their business. If RIC operates through this channel, such information collection should manifest in higher local institutional holdings following IPOs.

To determine if this is the case, we construct a new variable, *Local Share of Institutional Ownership*, which is the share of aggregate institutional ownership in a company that is held by local institutions. By local we mean the investors reside in the same state as the company. Table 7 presents the results for the effect of RIC on the local share of institutional ownership for the first quarter following the firm's IPO.[10] Like in the prior analysis, we include an interaction term for the IPO firm being a high-technology firm to differentially test whether the effects of RIC on local institutional holdings are different for these high-tech firms. The interaction also serves as a check that our results are not due to a mechanical relation between a state having a higher level of regional intermediary capital and therefore more holdings of all stocks. If our result was merely driven by such a mechanical relation, we would not observe a meaningfully different level of local holdings based on whether the firm operates in the high-tech sector or not.

In column 1, we see that more RIC is indeed associated with higher levels of local ownership of local non-high-tech IPOs. Local institutions also hold meaningfully higher percentages of these

[10] For firms that conduct an IPO in the last two weeks of a quarter, we instead use the ownership share from the next quarter.

high-tech firms compared to other IPO firms. Specifically, these institutions make up an additional 1.54% of total institutional holdings for these firms (beyond the increase in local holdings for non-high-tech IPOs) for a 1% increase in regional intermediary capital. Further, this effect remains statistically significant at the 5% level even in the presence of state fixed effects (column 2).

In columns 3 and 4, we replace the state and year fixed effects with state by year fixed effects. We find that even with the more comprehensive control for local economic factors, there is still a differential effect of RIC on high-tech local ownership. The economic magnitudes of the effect of RIC on ownership is similar to the estimates in columns 1 and 2.

3.2. Institutional Ownership Dynamics Following IPOs

The results in Table 7 focus on the quarterly holdings for the first quarter after the IPO. If local investors continue to hold informational advantage about these firms, the elevated local institutional ownership would continue in subsequent quarters after the firm's IPO. Alternatively, the difference in ownership between local and non-local firms may dissipate over time as the firm provides more publicly available information.

To better understand these dynamics, in Figure 1, we consider the effect of an increase in local RIC on the percent of local and non-local institutional ownership for up to three years following the firm's IPO. The estimates plotted in this figure are generated by running a specification analogous to column 2 in Table 7 for each of the first 12 quarters after the firm's IPO. Instead of using the dependent variable in Table 7, we scale each type of institutional ownership by total shares outstanding so that we can separate the dynamics of both local and non-local institutional ownership.[11]

Considering the quarterly coefficients depicted in Figure 1, we observe a persistent positive effect for local institutional ownership. A 1% increase in local RIC when the firm goes public predicts a roughly 0.25% increase in local institutional ownership which persists for at least 3 years following the IPO. As a point of reference, the average local institutional ownership in firms following their

[11] Since quarter 1 is the initial IPO quarter, those estimates are the direct analogues to the estimate in column 2 of Table 7.

IPO is 2.03% as a fraction of total shares outstanding. These coefficients are generated from a specification that includes industry, year, and state fixed effects along with the other firm and state-level control variables. It suggests that factors motivating local institutions to hold larger fraction of high-tech firms are not transitory in nature.

Examining the share of non-local institutional ownership, we observe a more transitory effect. The effect of increased local RIC on non-local institutional ownership is negative and statistically significant for the first two quarters after an IPO. While estimates of the effect of local RIC at the time of the firm's IPO on non-local ownership remain negative for the first three years, most estimates are not statistically significant. This suggests that for many high-tech firms, non-local institutions increase their ownership to average levels as time passes. Such an effect is consistent with an information asymmetry story: for these opaque high-tech firms, non-local institutions increase ownership as information frictions weaken. However, as local ownership remains elevated over this period, this suggests that the increase in non-local ownership must come from shares initially held by firm insiders or retail investors.

4. Long-Term Performance of IPOs

We argue that regional intermediaries are better positioned to collect information about the more difficult to value high-tech firms and as a result invest more in them. It is also possible that their larger investment in these companies is driven by non-information motivations, such as a generic bias for local investments (Coval and Moskowitz, 1999) or a desire for more interesting or flashy high-tech investments.

These alternative explanations may also play a role and are difficult to rule out completely. Nevertheless, we examine the long-run performance of these IPOs as an additional piece of evidence. If the local investment in these firms is driven by reasons unrelated to the fundamentals of the firm, we would expect an eventual underperformance in these companies. In Table 8, we look at the buy-and-hold market-adjusted return (BHAR) for these IPOs at the 6-month, 12-month, and 36-month horizon. Similar to prior tables, we include specifications that include all IPOs together, split IPOs into high-tech and non-high-tech companies. For each horizon, we run the analysis with industry fixed effects and either separate year and state fixed effects or state by year fixed effects.

In general, we do not find evidence of underperformance for these companies. At the 6-month horizon (columns 1–2) or the 12-month horizon (columns 3–4), the level of local RIC is positively associated with the market-adjusted holding period return for high-tech firms. These estimates are statistically significant across all four specifications. Looking at the longest horizon (36 months), we still do not find evidence of such a reversion. If anything, we find evidence that more local RIC at the time of the IPO still predicts stronger 36-month returns for these high-tech companies, although less statistically significant. Taken together, we believe this evidence is consistent with the argument that the higher initial investment by local investors is not a case of overvaluation.

5. Conclusion

This paper shows that the supply of regional intermediary capital affect the propensity of a resident firm to go public. We find that fluctuations in regional intermediary capital have significant but heterogeneous effects: for high-tech firms that are more opaque and collateral-poor, an increase in regional intermediary capital is largely beneficial. These firms are more likely to go public and are able to do so at a younger age. Further, they maintain equivalent market-to-book valuations and experience more positive long-run returns than comparable high-tech firms in states with less intermediary capital capital. We confirm that collateral-poor firms are more likely to go public using the presence of negative income or low asset tangibility as alternative measures of informational opacity.

We further verify that these effects are consistent with the ability of regional investors to garner an information advantage with respect to these firms. In particular, these investors typically hold significantly higher percentages of these firms. At the same time, we do not observe a similar pattern for less opaque firms that go public, about whom there would be less room for a proximity-based informational advantage. Presumably, regional investors do not have as great an incentive to collect additional information and invest in these firms as they are subject to less intense information asymmetries. In general, it does not appear that the less opaque, non-high-tech firms benefit from more regional intermediary capital.

Taken together, our findings highlight the importance of intermediary asset pricing for corporate finance decisions. The ability of intermediaries to collect information and surmount these information frictions and a lack of collateral is also important for the firm. Our results also point to the importance of the composition and size of the financial intermediary sector in the region. We show that the presence of such informed outsiders has implications on what sectors of the local economy will most likely be harmed or benefit. Our findings may also help explain why certain industries that are traditionally collateral-poor may benefit from being co-located with a larger investor base.

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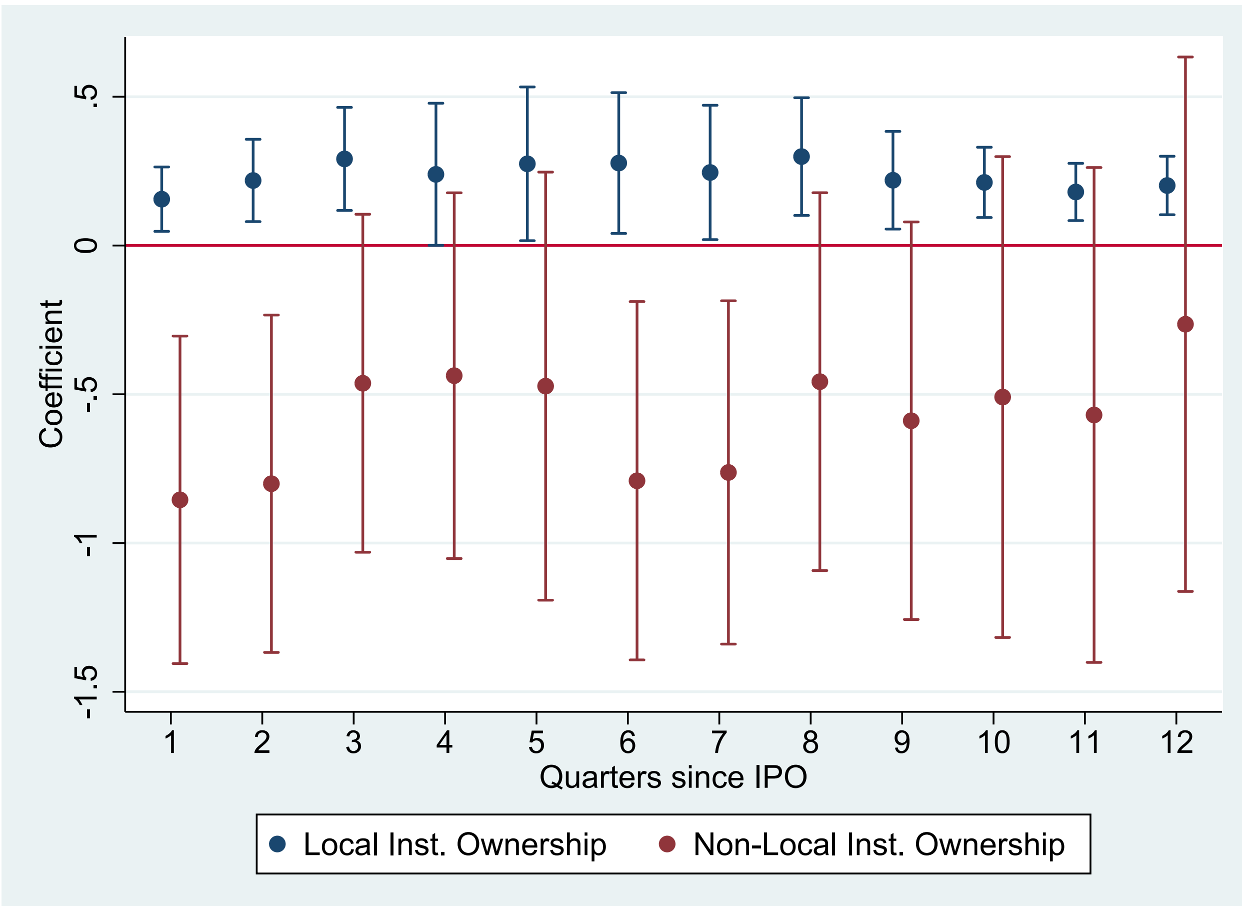

Figure 1: Local and non-local institutional ownership

This figure plots the coefficient estimates for the effect of an increase in local RIC for the high-tech IPOs on local and non-local institutional ownership in the quarters following an IPO. Local and non-local institutional ownership is defined as the fraction of the company's total outstanding shares (as a percent) owned by local or non-local institutional investors, respectively. 95% confidence intervals are presented for the coefficient estimates.

Table 1: Summary Statistics

The sample consists of the IPO filings conducted in the U.S. markets from 1980 to 2015. High Tech Indicator takes a value of 1 if the IPO firm is in a high tech industry. NYSE/AMEX Indicator takes a value of 1 for those listing exchanges. Negative Income Indicator is 1 if the IPO firm has a negative income at the time of the IPO. IPO Age (in years) is the difference between founding date of the firm and when the firm undertakes an IPO. Ln(Assets) is log amount of total assets in millions. Tangibility is the fraction of gross property, plant, and equipment (PP&E) divided by total assets. Percentage Sold indicates the percentage of post-issue shares outstanding sold to the public. Market-to-Book (At Offer Price) is the ratio of the market value of equity to the book value of equity using the offer price to compute the market value of the post-issue shares outstanding. Ln(Proceeds) is the log amount of total proceeds raised in the IPO in millions. IPO Initial Return is the percentage difference between the first day closing price obtained from CRSP and IPO offer price obtained from SDC. Underwriter Market Share determines the fraction of same-year IPOs (by dollar value) underwritten by the same investment bank. Research and Development (R&D) is the dollar value of R&D expenditure scaled by total assets. Capital Expenditures is the dollar value of spending on physical capital scaled by total assets. 6 Month Buy-and-Hold Market-Adjusted Return (BHAR) is the difference between the compounded daily returns over 6 months after the IPO (excluding the initial return) and the similarly-compounded CRSP value-weighted market return. 12 and 36 Month BHARs are similar returns calculated over 12 and 36 months after the IPO date. Local Institutional Holdings in Quarter i indicates the participation of local institutional investors in IPOs in the i's quarter after the IPO date (i=0,1,2,3). Non-Local Institutional Holdings in Quarter i indicates the participation of non-local (out-of-state) institutional investors in IPOs in the i's quarter after the IPO date (i=0,1,2,3). Ln(RIC State) is the log amount of the state-level intermediary capital. Ln(RIC State), External Pensions is the log amount of the state-level intermediary capital using only capital from out-of-state pensions systems. Ln(State GDP) is the log amount of nominal state-level GDP at the time of the IPO while Ln(State Personal Income) is log amount of state-level personal income at the time of the IPO. Ln(Number of Firms) is the log of the total number of firms in a state in a given year. Industry Stock Returns is the annual return for the particular Fama-French 49 industry.

	Mean	Std. Dev.	25th Pctile	Median	75th Pctile	Observations
Panel A: IPO and Firm Characteristics						
High Tech Indicator	0.524	0.499	0.000	1.000	1.000	6,925
NYSE/AMEX Indicator	0.157	0.364	0.000	0.000	0.000	6,925
Negative Income Indicator	0.397	0.489	0.000	0.000	1.000	6,904
IPO Age	15.269	20.379	4.000	8.000	16.000	6,925
Ln(Assets)	4.515	1.448	3.619	4.437	5.293	6,925
Tangibility (%)	29.787	28.200	8.899	19.139	42.086	6,893
Percent Sold (%)	29.861	16.525	19.861	27.885	37.187	5,703
Market-to-Book (At Offer Price)	2.159	1.489	1.058	1.870	2.884	6,542
Ln(Proceeds)	3.640	1.081	2.908	3.660	4.310	6,925
IPO Initial Return (%)	18.070	37.945	0.000	6.938	22.727	6,542
Underwriter Market Share (%)	4.441	7.002	0.356	1.869	5.701	6,925
Research and Development (R&D) (%)	10.049	11.888	1.218	6.748	13.922	4,387
Capital Expenditures (%)	10.751	17.528	2.242	4.785	10.882	5,912
6 Month BHAR (%)	2.383	62.819	−31.898	−7.953	21.607	6,825
12 Month BHAR (%)	−4.255	80.177	−53.072	−19.388	23.324	6,825
36 Month BHAR (%)	−18.220	204.986	−104.537	−60.078	10.100	6,825

(*Continued*)

Table 1: Summary Statistics—*Continued*

	Mean	Std. Dev.	25th Pctile	Median	75th Pctile	Observations
Panel B: Institutional Investors' Holdings						
Local Institutional Holdings Quarter 0 (%)	2.019	4.379	0.000	0.240	2.177	6,181
Local Institutional Holdings Quarter 1 (%)	2.253	4.658	0.000	0.249	2.492	6,250
Local Institutional Holdings Quarter 2 (%)	2.533	5.253	0.000	0.233	2.858	6,240
Local Institutional Holdings Quarter 3 (%)	2.691	5.497	0.000	0.219	3.063	6,157
Non-Local Institutional Holdings Quarter 0 (%)	20.488	18.044	8.285	16.222	26.987	6,176
Non-Local Institutional Holdings Quarter 1 (%)	22.874	18.916	9.684	18.375	30.235	6,238
Non-Local Institutional Holdings Quarter 2 (%)	25.408	20.530	10.109	20.766	34.793	6,232
Non-Local Institutional Holdings Quarter 3 (%)	27.159	21.772	10.463	22.118	38.573	6,155
Panel C: State-Level and Industry-Level Variables						
Ln(RIC State)	18.539	1.670	17.395	18.586	19.671	6,417
Ln(RIC State), External Pensions	7.150	1.988	6.282	7.388	8.454	3,564
Ln(State GDP)	12.994	0.962	12.340	12.992	13.820	6,923
Ln(State Personal Income)	12.832	0.956	12.190	12.864	13.625	6,923
Ln(Number of Firms)	12.159	0.850	11.542	12.226	12.920	6,855
Industry Returns (%)	18.080	24.999	4.005	16.110	30.446	6,925

Table 2: Distribution of Firms with Technology Services IPOs

Panel A of the table reports statistics on the number of IPOs that are designated as High-Tech by Fama-French 49 Industry Classification. Panel B of the table reports statistics on the number of IPOs that are designated as High-Tech by the IPO firm's state.

FF 49 Industry	Number of High-Tech IPOs	FF 49 Industry	Number of High-Tech IPOs
Panel A: Number of Technology Service IPOs by Industry			
Computer Software	1077	Defense	4
Pharmaceutical Products	575	Agriculture	3
Electronic Equipment	499	Consumer Goods	3
Business Services	354	Fabricated Products	3
Medical Equipment	299	Rubber and Plastic Products	2
Computer Hardware	265	Utilities	2
Communication	197	Almost Nothing	2
Measuring and Control Equip.	114	Food Products	1
Healthcare	110	Automobiles and Trucks	1
Retail	58	Restaurants, Hotels, Motels	1
Wholesale	39	Candy and Soda	0
Machinery	37	Beer and Liquor	0
Electrical Equipment	24	Tobacco Products	0
Recreation	16	Apparel	0
Chemicals	12	Textiles	0
Entertainment	10	Shipbuilding, Railroad Equip.	0
Personal Services	10	Precious Metals	0
Printing and Publishing	7	Non-Metallic and Indust. Metal Mining	0
Steel Works Etc	7	Coal	0
Construction Materials	6	Petroleum and Natural Gas	0
Aircraft	5	Business Supplies	0
Transportation	5	Shipping Containers	0
Construction	4		

(*Continued*)

Table 2: Distribution of Firms with Technology Services IPOs—*Continued*

State	Number of High-Tech IPOs	State	Number of High-Tech IPOs
Panel B: Number of Technology Service IPOs by State			
California	1313	Iowa	13
Massachusetts	393	Oklahoma	13
New York	220	Indiana	12
Texas	190	Alabama	11
New Jersey	167	Kansas	10
Pennsylvania	123	Nebraska	10
Florida	112	Kentucky	9
Washington	104	South Carolina	9
Illinois	102	District of Columbia	8
Virginia	102	Rhode Island	8
Georgia	94	Idaho	7
Maryland	87	Delaware	5
Colorado	85	New Mexico	5
Minnesota	77	Arkansas	4
Connecticut	68	Louisiana	4
North Carolina	64	Maine	4
Arizona	46	Montana	3
Ohio	42	Mississippi	2
Oregon	36	South Dakota	2
Michigan	32	Vermont	2
Missouri	31	Alaska	1
Tennessee	30	North Dakota	1
Wisconsin	29	Hawaii	0
Utah	24	West Virginia	0
New Hampshire	22	Wyoming	0
Nevada	15		

Table 3: Incidences of IPOs

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *Number of IPOs*, is the number of IPOs for either high-tech or non-high-tech firms for each state and year. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. Panel A includes all states and years. Panel B excludes California, Massachusetts, and New York. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	Number of IPOs			
	(1)	(2)	(3)	(4)
Panel A: Full Sample of IPOs				
Lagged Ln(RIC State)	0.063*	−0.043		
	(0.037)	(0.033)		
High Tech × Lagged Ln(RIC State)	0.080***	0.080***	0.080***	0.133***
	(0.024)	(0.024)	(0.024)	(0.022)
High Tech Indicator	−0.091**	−0.091**	−0.091**	−0.091**
	(0.042)	(0.042)	(0.042)	(0.041)
Lagged Ln(State GDP)	0.393**	−0.834**		
	(0.180)	(0.341)		
High Tech × Lagged Ln(State GDP)				−0.087
				(0.166)
Lagged Ln(State Personal Income)	−0.215	0.578		
	(0.300)	(0.569)		
High Tech × Lagged Ln(State Income)				−0.042
				(0.135)
Lagged Ln(Number of Firms)	0.256	0.574		
	(0.226)	(0.374)		
Year Fixed Effects	Yes	Yes	No	No
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	2,966	2,966	2,966	2,966
Adjusted R^2	0.560	0.666	0.702	0.707

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

(*Continued*)

Table 3: Incidences of IPOs—*Continued*

	Number of IPOs			
	(1)	(2)	(3)	(4)
Panel B: Excluding California, Massachusetts, and New York				
Lagged Ln(RIC State)	0.041	−0.033		
	(0.030)	(0.029)		
High Tech × Lagged Ln(RIC State)	0.056***	0.056***	0.056***	0.122***
	(0.017)	(0.017)	(0.017)	(0.016)
High Tech Indicator	−0.128***	−0.128***	−0.128***	−0.128***
	(0.035)	(0.035)	(0.035)	(0.031)
Lagged Ln(State GDP)	0.268	−0.595**		
	(0.176)	(0.287)		
High Tech × Lagged Ln(State GDP)				−0.165
				(0.130)
Lagged Ln(State Personal Income)	−0.037	0.326		
	(0.307)	(0.525)		
High Tech × Lagged Ln(State Income)				−0.011
				(0.117)
Lagged Ln(Number of Firms)	0.149	0.489		
	(0.214)	(0.380)		
Year Fixed Effects	Yes	Yes	No	No
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	2,780	2,780	2,780	2,780
Adjusted R^2	0.501	0.588	0.627	0.639

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

Table 4: Incidences of IPOs, External Pensions

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *Number of IPOs*, is the number of IPOs for either high-tech or non-high-tech firms for each state and year. *Ln(RIC State), External Pensions* is the log amount of the state-level intermediary capital managed for out-of-state pension funds. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	Number of IPOs			
	(1)	(2)	(3)	(4)
Lagged Ln(RIC State), External Pensions	0.009	−0.008		
	(0.013)	(0.020)		
High Tech × Lagged Ln(RIC State), External Pensions	0.081**	0.081**	0.081**	0.074***
	(0.033)	(0.033)	(0.033)	(0.028)
High Tech Indicator	0.142	0.142	0.142	0.099
	(0.118)	(0.118)	(0.118)	(0.173)
Lagged Ln(State GDP)	1.211**	−1.152		
	(0.587)	(1.304)		
High Tech × Lagged Ln(State GDP)				−0.770
				(0.891)
Lagged Ln(State Personal Income)	−0.062	0.593		
	(0.513)	(1.829)		
High Tech × Lagged Ln(State Income)				0.806
				(0.750)
Lagged Ln(Number of Firms)	−0.520	1.023		
	(0.323)	(1.212)		
Year Fixed Effects	Yes	Yes	No	No
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	624	624	624	624
Adjusted R^2	0.683	0.733	0.681	0.683

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

Table 5: IPO Age

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *IPO Age*, is the age (in years) when the firm undertakes an IPO. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	IPO Age		
	(1)	(2)	(3)
Lagged Ln(RIC State)	0.163		
	(0.896)		
High Tech × Lagged Ln(RIC State)	−1.192***	−1.231***	−2.149***
	(0.329)	(0.397)	(0.740)
High Tech Indicator	0.655*	−1.257	−2.189
	(0.356)	(1.754)	(2.054)
NYSE/AMEX Indicator	11.090***	5.707	5.683
	(2.623)	(6.012)	(6.103)
Negative Income Indicator	−2.812	−4.653***	−4.886***
	(3.475)	(1.696)	(1.712)
Ln(Assets)	4.609***	4.550***	4.542***
	(0.296)	(0.301)	(0.302)
Underwriter Market Share	−0.106***	−0.123***	−0.128***
	(0.038)	(0.038)	(0.038)
Lagged Industry Stock Returns	−0.682	−0.454	−0.236
	(0.849)	(0.964)	(0.919)
Lagged Ln(State GDP)	−0.770		
	(5.648)		
High Tech × Lagged Ln(State GDP)			−6.213
			(7.783)
Lagged Ln(State Personal Income)	−5.345		
	(6.917)		
High Tech × Lagged Ln(State Income)			8.592
			(7.810)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	No	No
State Fixed Effects	Yes	No	No
State-Year Fixed Effects	No	Yes	Yes
Observations	6,450	6,192	6,192
Adjusted R^2	0.280	0.337	0.338

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

Table 6: Market to Book (At Offer Price)

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *Market to Book*, is the ratio of the post-issue market value of equity to book value of equity where the IPO offer price is multiplied with the number of shares outstanding to compute the market value. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	Market to Book (At Offer Price)		
	(1)	(2)	(3)
Lagged Ln(RIC State)	−0.091		
	(0.059)		
High Tech × Lagged Ln(RIC State)	0.004	0.013	−0.034
	(0.022)	(0.029)	(0.051)
High Tech Indicator	0.329	−0.165***	−0.213***
	(0.262)	(0.048)	(0.073)
NYSE/AMEX Indicator	−0.047	0.817*	0.830*
	(0.234)	(0.480)	(0.472)
Negative Income Indicator	0.561*	0.581**	0.577**
	(0.287)	(0.252)	(0.253)
Ln(1 + IPO Age)	−0.145***	−0.143***	−0.144***
	(0.025)	(0.027)	(0.026)
Ln(Assets)	−0.525***	−0.527***	−0.528***
	(0.017)	(0.019)	(0.018)
Underwriter Market Share	0.033***	0.034***	0.034***
	(0.003)	(0.004)	(0.004)
Lagged Industry Stock Returns	0.326***	0.316***	0.326***
	(0.073)	(0.073)	(0.076)
Lagged Ln(State GDP)	0.255		
	(0.479)		
High Tech × Lagged Ln(State GDP)			−0.448
			(0.947)
Lagged Ln(State Personal Income)	−0.006		
	(0.684)		
High Tech × Lagged Ln(State Income)			0.573
			(0.941)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	No	No
State Fixed Effects	Yes	No	No
State-Year Fixed Effects	No	Yes	Yes
Observations	6,076	5,817	5,817
Adjusted R^2	0.406	0.421	0.421

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

Table 7: Local Institutional Ownership Share

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *Local Institutional Ownership*, is the percentage of local institutional holdings as a fraction of total institutional holdings. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	Local Share of Institutional Ownership (%)			
	(1)	(2)	(3)	(4)
Lagged Ln(RIC State)	6.661***	−0.771		
	(2.340)	(0.824)		
High Tech × Lagged Ln(RIC State)	1.535***	1.009**	0.752**	1.424**
	(0.398)	(0.406)	(0.346)	(0.647)
High Tech Indicator	0.312	9.429*	9.006***	8.803**
	(3.135)	(4.842)	(3.051)	(3.742)
NYSE/AMEX Indicator	0.565	−8.773***	5.788	5.790
	(7.024)	(1.818)	(11.050)	(10.963)
Negative Income Indicator	4.864***	−1.870	1.656	1.712
	(1.510)	(2.964)	(1.092)	(1.090)
Ln(1 + IPO Age)	−0.176	−0.095	−0.065	−0.058
	(0.263)	(0.237)	(0.271)	(0.281)
Ln(Assets)	−0.503*	−0.315	−0.257	−0.252
	(0.294)	(0.261)	(0.255)	(0.260)
Underwriter Market Share	−0.009	−0.019	−0.014	−0.011
	(0.013)	(0.013)	(0.014)	(0.013)
Lagged Industry Stock Returns	1.592*	1.240	0.652	0.487
	(0.927)	(0.892)	(0.929)	(0.865)
Lagged Ln(State GDP)	12.392	20.632**		
	(9.528)	(10.203)		
High Tech × Lagged Ln(State GDP)				−0.740
				(4.798)
Lagged Ln(State Personal Income)	−14.180	−19.828*		
	(9.654)	(10.231)		
High Tech × Lagged Ln(State Income)				−0.896
				(4.739)
Year Fixed Effects	Yes	Yes	No	No
Industry Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	5,721	5,721	5,454	5,454
Adjusted R^2	0.203	0.304	0.310	0.310

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

Table 8: Long-Run Performance

This table reports parameter estimates from panel fixed effects regressions. The dependent variables, *6 Month BHAR (%)*, *12 Month BHAR (%)*, and *36 Month BHAR (%)* are the difference between the compounded daily returns over 6, 12, and 36 months after the IPO (excluding the initial return) and the similarly-compounded CRSP value-weighted market return, respectively. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. *Additional Controls* include *NYSE/AMEX Indicator*, *Negative Income Indicator*, *Ln(1+IPO Age)*, *Ln(Assets)*, *Underwriter Market Share*, *Lagged Ln(State GDP)*, and *Lagged Ln(State Personal Income)*. *Lagged Ln(State GDP)* and *Lagged Ln(State Personal Income)* are also interacted with the *High Tech Indicator*. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	6 Month Adj. HPR		12 Month Adj. HPR		36 Month Adj. HPR	
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged Ln(RIC State)	−3.876		3.662		5.558	
	(2.718)		(6.321)		(11.898)	
High Tech × Lagged Ln(RIC State)	3.087**	4.253**	2.273*	3.780***	5.146*	5.403
	(1.353)	(1.667)	(1.246)	(1.434)	(2.949)	(3.532)
High Tech Indicator	36.379**	−0.807	34.791	−0.083	86.559***	19.464
	(16.339)	(17.450)	(23.382)	(14.386)	(22.129)	(18.606)
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	No	Yes	No
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	No	Yes	No	Yes	No
State-Year Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	6,355	6,099	6,355	6,099	6,355	6,099
Adjusted R^2	0.051	0.062	0.040	0.073	0.023	0.024

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

A. Appendix

Table A1: Incidences of IPOs, Alternative Measures

This table reports parameter estimates from panel fixed effects regressions. The dependent variable, *Number of IPOs*, is the number of IPOs for either low tangibility or high tangibility firms for each state and year. *Negative Income Indicator* takes on a value of 1 for firms which report negative income at the time of their IPO. *Low Tangibility Indicator* takes a value of 1 for firms which have gross PP&E to assets below the sample median. *Ln(RIC State)* is the log amount of the state-level intermediary capital variable. Panel A uses *Negative Income Indicator* as an alternative measure to identify informationally opaque firms. Panel B uses *Low Tangibility Indicator* as an alternative measure to identify informationally opaque firms. Industry fixed effects use the Fama-French 49 classification. Standard errors are clustered by state. See Section 1 and Table 1 for the description of control variables.

	Number of IPOs			
	(1)	(2)	(3)	(4)
Panel A: Negative Income Firms				
Lagged Ln(RIC State)	0.074**	−0.027		
	(0.037)	(0.031)		
Negative Income × Lagged Ln(RIC State)	0.060***	0.060***	0.060***	0.177***
	(0.016)	(0.016)	(0.016)	(0.022)
Negative Income Indicator	−0.271***	−0.271***	−0.271***	−0.271***
	(0.035)	(0.035)	(0.035)	(0.028)
Lagged Ln(State GDP)	0.390**	−0.719**		
	(0.181)	(0.327)		
Negative Income × Lagged Ln(State GDP)				0.129
				(0.163)
Lagged Ln(State Personal Income)	−0.198	0.520		
	(0.300)	(0.543)		
Negative Income × Lagged Ln(State Income)				−0.409**
				(0.169)
Lagged Ln(Number of Firms)	0.235	0.550		
	(0.227)	(0.367)		
Year Fixed Effects	Yes	Yes	No	No
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	2,966	2,966	2,966	2,966
Adjusted R^2	0.562	0.670	0.707	0.734

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01

(*Continued*)

Table A1: Incidences of IPOs, Alternative Measures—*Continued*

	Number of IPOs			
	(1)	(2)	(3)	(4)
Panel B: Low Tangibility Firms				
Lagged Ln(RIC State)	0.068*	−0.040		
	(0.038)	(0.032)		
Low Tangibility × Lagged Ln(RIC State)	0.074***	0.074***	0.074***	0.130***
	(0.019)	(0.019)	(0.019)	(0.017)
Low Tangibility Indicator	−0.144***	−0.144***	−0.144***	−0.144***
	(0.034)	(0.034)	(0.034)	(0.032)
Lagged Ln(State GDP)	0.400**	−0.834**		
	(0.184)	(0.351)		
Low Tangibility × Lagged Ln(State GDP)				0.039
				(0.144)
Lagged Ln(State Personal Income)	−0.231	0.571		
	(0.306)	(0.590)		
Low Tangibility × Lagged Ln(State Income)				−0.173
				(0.123)
Lagged Ln(Number of Firms)	0.273	0.645		
	(0.233)	(0.398)		
Year Fixed Effects	Yes	Yes	No	No
State Fixed Effects	No	Yes	No	No
State-Year Fixed Effects	No	No	Yes	Yes
Observations	2,966	2,966	2,966	2,966
Adjusted R^2	0.575	0.686	0.752	0.758

Standard errors in parentheses. * p<.10, ** p<.05, *** p<.01