Local Investors' Preferences and Capital Structure*

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Abstract:

Public firms use more debt financing when they are headquartered in areas where demographics predict that local investors prefer safer portfolios. The results appear to be driven by firms' responses to the level and stability of local credit supplies. This relation is more pronounced for non-investment-grade and unrated firms that cannot easily access public markets (about two-thirds of U.S. public companies). Changes in financing activities around exogenous shocks to credit supplies including the staggered removals of interstate banking restrictions and the 2008-2009 financial crisis provide further evidence of a capital supply effect. Because demographics change slowly, firms' responses to local preferences may contribute to the persistence of capital structures.

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Public firms use more debt financing when they are headquartered in areas where demographics predict that local investors prefer safer portfolios. The results appear to be driven by firms' responses to the level and stability of local credit supplies. This relation is more pronounced for non-investment-grade and unrated firms that cannot easily access public markets (about two-thirds of U.S. public companies). Changes in financing activities around exogenous shocks to credit supplies including the staggered removals of interstate banking restrictions and the 2008-2009 financial crisis provide further evidence of a capital supply effect. Because demographics change slowly, firms' responses to local preferences may contribute to the persistence of capital structures.

Keywords: Local Demographics, Capital Structure, Segmented Markets, Fixed Income

1 Introduction

Much of our understanding of public firms' financing activities comes from research on firms' demand for capital, and the existing literature supports both the trade-off and pecking order theories of capital structure. However, demand-side theories have significant shortcomings. For example, as highlighted by Graham and Leary (2011), they do not do a good job of explaining cross-sectional variation in capital structures across firms. Nor can they explain why firm-specific financial structures are so highly persistent over time (Lemmon, Roberts, and Zender, 2008). Issues such as these have led researchers to explore other explanations for capital structure, including the relevance of capital *supply* conditions.[1]

In this paper, we ask whether the risk preferences of local investors are related to public firms' capital structures. Most generally, we hypothesize that firms often face segmented capital markets and therefore cater to the preferences of local investors when raising capital.[2] This hypothesis is motivated by an expectation that local investor preferences impact both the amount and stability of different forms of capital available to firms. We use fundamental demographic characteristics – including aggregate local sex and age ratios – to proxy for local investors' risk preferences, and test whether these measures predict local firms' financing and capital structure choices.

We begin by testing this relation in the broad cross-section of firms, and find evidence in support of our hypothesis. We then evaluate subsamples of firms partitioned by whether they are likely to be affected by capital market segmentation. Whereas large reputable firms should have low-cost access to national (or even international) markets for various forms of capital, recent literature suggests that a large fraction of public companies actually rely on private debt. In fact, bank debt is the predominant source of financing for firms in all OECD countries (Gorton and Winton, 2003). In particular, Colla, Ippolito, and Li (2013) find that firms without credit ratings and those with rating that are not investment grade rely almost exclusively on private bank debt. There is already substantial evidence that the private debt markets are segmented, and that local

[1] Recent advances in this area are substantial enough for Graham and Leary (2011) to note that "Several recent studies suggest that capital market segmentation and supply conditions significantly influence observed financial structures."

[2] Becker, Ivkovic, and Weisbenner (2011) provide evidence that local clienteles shape payout policy. In particular, they find that firms pay more dividends when they are headquartered in areas with more senior citizens. They provide some evidence that managers cater to the preferences of local seniors because they hold their stock positions longer.

investors' preferences are related to the availability of private debt capital for small private firms.[3] We therefore hypothesize that local investors' preferences have more of an impact on the capital structure choices of these public firms too. Our empirical findings provide support for this hypothesis.

These two categories of firms that rely on private debt make up a substantial fraction of the U.S. stock market; indeed, together they amount to over two-thirds of U.S. public firms. Given their ubiquity, our results can shed light both on the unexpected variation of the capital structures in the cross-section, and the within-firm capital structure persistence. The first puzzle may be related to differences in investor preferences across firm locations, and the second may reflect the stability of local demographics over time.

To test our hypotheses, we must identify differences in risk preferences across communities. We focus on two fundamental demographic characteristics: the average age of the local population, and the ratio of women to men in the local population (or "age and sex composition"). These characteristics are not only salient features of a population (U.S. Census Bureau, 2010), they are also likely to correlate with risk preferences of the population. People shift out of stocks and into fixed income securities and cash as they age (Bakshi and Chen, 1994; Brown, 1990; Dahlbäck, 1991; Fagereng, Gottlieb, and Guiso, 2017). Becker (2007) shows that this dynamic leads to higher levels of bank deposits in areas where the population is older. Women have also been shown to be more risk-averse than men, and gender-related differences in attitudes toward risk affect the composition of investment portfolios (Hudgens and Fatkin, 1985; Johnson and Powell, 1994; Sundén and Surette, 1998; Bernasek and Shwiff, 2001; Barber and Odean, 2001). Based on these patterns, we expect females and older investors to provide more debt capital than males and younger investors. Combining these fundamental determinants of risk preferences, we hypothesize that firms headquartered in areas with an older population and a higher fraction of women use more debt in their capital structure.

We use census data to identify differences in the average age and sex composition across counties in the United States. We analyze firms from 1980 to 2010, and rely on demographic data collected in the decennial U.S. census during this time period. Some of our preliminary tests consider the local age and sex composition separately, but our main tests focus on the relation between firms' financing choices and an index that capture both factors. This index, which we

[3] In particular, Becker (2007) shows that local bank deposits and lending levels are higher in areas with an older population, allowing small firms to thrive in those areas.

call the Local Age and Sex Composition Index (or *Local ASC Index*), combines areas' quintile ranks along both dimensions into a composite measure, and therefore its values range from 2 to 10. We identify a county as a *High ASC* area if its ASC index has a value of either 8, 9, or 10, and a *Low ASC* area if its index value is 2, 3, or 4. The average age and ratio of women to men associated with Low ASC counties are 33.6 years and 1.01, respectively; whereas the corresponding figures are 37.8 years and 1.09 for High ASC counties, demonstrating the significant demographic heterogeneity across the U.S.

We find a strong relation between local risk preferences and firms' capital structure and financing choices. Both age and sex composition imbalances are independently related to the level of debt in local firms' capital structure in the predicted directions. The combined effect is stronger and holds in both simple univariate tests and panel regressions. In particular, panel regressions that include industry × year fixed effects as well as relevant control variables for capital structure, indicate that leverage ratios are approximately 2.5 percentage points higher in High ASC Index areas than in areas with a Low ASC Index. This represents a 10% difference compared to the average leverage ratio of 25 percentage points in our sample.[4] Importantly, we find that this relation is driven by firms without credit ratings and those that have ratings below investment grades. These results indicate that among public firms, the preferences of local investors have a stronger impact on the capital structure choices of firms that face hurdles for accessing the broader capital markets.

Although our main results suggest that local capital supply conditions are an important determinant of public firms' capital structures, it is possible that the results reflect alternative explanations. For example, firms may sort geographically by industry or type (Frank and Goyal, 2009). If these factors are related to demand for capital, our results may reflect differences in firms' demand of capital – rather than supply thereof as we posit. Firms with more conservative or less risky operations may locate in areas with a risk-averse population, and those firms may optimally finance themselves with more debt. Fully disentangling supply and demand forces in this context is difficult, but we conduct a variety of tests that collectively weigh in favor of a capital supply interpretation.

[4] The relation between local risk preferences and firms' financing choices is confirmed in tests evaluating new capital raising activities. Firms in High ASC areas are 14% more likely to issue debt and 11% less likely to issue equity in each year. These results suggest that the overall leverage results indeed reflect variation in capital raising activities rather than just differences in the growth of assets and market equity.

Our first strategy is to control for industry effects as well as a broad variety of firm-specific controls in the regressions generating the main results. The results are robust to specifications that control for a broad range of covariates. The results are also robust to the exclusion of firms in high-tech industries, indicating that they are not driven by a greater demand for equity capital in technology firms that tend to cluster in specific geographic regions.

A second approach involves sorting firms along dimensions that are expected to correlate with the importance of local capital markets, but not to predict firm heterogeneity across other dimensions. This strategy allows us to test for differences in financing activities while controlling for overall demographics in addition to industry and firm characteristics. The results discussed above for firms sorted by credit ratings provides the first test of this nature. We also find that the relation between demographics and capital structure are concentrated in firms located in counties with high personal incomes, which further supports a supply-side interpretation because local investor preferences are likely to matter most in areas where local individuals have greater wealth to allocate.

The third approach is to include firm fixed effects in our panel regressions. Although weakened, the results largely continue to hold. This suggests that they are driven by time-series changes in local investors' preferences, which is consistent with the interpretation that investor preferences are a causal determinant of firms' financing decisions. This relation would not be expected if the results reflected differences in capital demand based on firm characteristics which are more stable over time.

Our fourth strategy is to conduct direct analyses of capital supply conditions. If debt supply conditions vary with demographics as we propose, then a capital supply explanation would appear more natural. We propose two channels through which the preferences of a local population may impact firms' financial policies. Under a model of capital structure where firms trade off the economic benefit of debt financing against the risks associated with an increasing debt burden, both of these channels lead to a prediction that firms will rationally employ higher debt levels when local investors are more risk-averse.

The first is a direct channel, motivated by the literature documenting that investors have a local bias.[5] Firms located where investors prefer safer portfolios may enjoy a higher level of debt

[5] For example, investors over-weight their portfolios towards the securities of locally-headquartered companies (Coval and Moskowitz, 1999; Ivković and Weisbenner, 2005). Individuals also tend to deposit cash in local banks, which, in turn, are more likely to make loans to local firms. Banks rely on deposits, and most deposits are local such

capital supply. This higher level of debt capital supply could allow firms to pay lower interest rates for a given level of default risk, causing them to optimally shift their capital structure towards debt.

We provide two main pieces of evidence regarding this direct channel. Becker (2007) shows that bank deposits are higher in areas with more senior citizens. We confirm that this result is also apparent when measuring local investor preferences with the combination of the average age of the population and the ratio of women to men. To explore whether local preferences are related to firms' financing choices, we also evaluate firms' capital raising efforts in the syndicated loan market. We find that greater local risk aversion is associated with higher levels of borrowing by firms through syndicated loans. Those loans are more likely to be managed by a local syndicate lead, and a larger fraction of the funds comes from local banks. On the other hand, we do not find that firms in more risk averse areas pay higher interest on their debt.

The second channel is based on an expectation that the *stability* of the capital supply may also vary across locations. Massa, Yasuda, and Zhang (2013) provide evidence that firms base capital structure decisions in part on the stability of assets under management at the institutional investors holding their securities. We extend their reasoning to predict a relation between firms' financing decisions and the stability of the local capital supply. The investible wealth in areas where individuals are more risk-averse will be weighted more towards cash and fixed income securities, and therefore will not be as volatile, so local banks will have more stable deposits. Firms headquartered in these areas may therefore be more confident they can roll their debt over at fair prices in the future when it comes due (Baker, 2009).[6] In support of this channel, we demonstrate that bank deposits are indeed less volatile in areas where the local population prefers safer assets.[7]

Our final strategy is to evaluate how firms' financing activities change when they are faced with exogenous shocks to capital supply. This analysis should help determine whether there is a causal relation between local preferences and capital structures. Since demographics are quite

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that deposit levels affect the amount available for bank loans (Kashyap and Stein, 2000). In addition, bank lending tends to be local (Petersen and Rajan, 2002; Becker, 2007).

[6] For example, Choi and Choi (2016) argue that loanable bank deposits will be less sensitive to monetary policy and therefore more stable when the local population is more motivated to maintain bank deposits to store wealth as opposed to using them as an investment option.

[7] Prior research shows considerable time-series variation in the supply of both public and private debt capital, but private loans are more volatile overall. Moreover, bank lending varies with the economy to a much greater degree than public debt financing. Becker and Ivashina (2014) show that the cyclical nature of bank lending is driven by shocks to credit supply. These patterns may explain why firms in high ASC areas raise a greater fraction of private debt: the less risky portfolios of investors in these areas may stabilize the supply of bank capital and thus reduce the volatility of this particularly unstable form of debt capital.

stable over time, it is challenging to identity shocks to local preferences so we focus instead on shocks that relaxed geographic barriers to lending: the staggered introductions of interstate banking deregulation. The integration of banking markets should have a greater impact on capital supplies in areas where local debt supplies have been more constrained because the local population has a lower preference for safe assets. We find that local deregulation is followed by increased borrowing by public companies in areas with a relatively weak local preference for safe assets. In contrast, there is no association between deregulation and corporate borrowing in areas with a strong local preference for safe assets. This is consistent with our hypothesis that high ASC areas already had ample supplies of local bank financing even before the deregulations.

We also analyze firms' outcomes during the 2007-2009 financial crisis, which was an extreme unexpected shock to firms' ability to access capital markets. This was a particularly difficult time to raise new capital – especially from banks – and many firms failed or experienced financial distress (Gorton, 2010; Almeida, et al., 2012). We find that firms' outcomes during the crisis varied with the stability of their local capital base. Firms in high ASC areas were more likely to raise capital during this time, particularly if they were headquartered in wealthier counties. Interestingly, they are more likely to issue *both debt and equity*, suggesting that the greater ability to roll over debt also enhances a firms' ability to access the equity market because there is a lower chance of default. The correlation between debt issuance and the local ASC index was also strongest among firms that entered the crisis with higher levels of short-term debt. This suggests that our results reflect lower rollover risk in high ASC areas.

Differences in access to local capital during the crisis also appears to have affected firms' economic outcomes. Firms in high ASC areas were more likely to survive the crisis as stand-alone companies whereas those in low ASC areas were more likely to either be acquired or go bankrupt. Interestingly, this indicates that firms in high ASC areas fared better even though they entered the crisis with higher leverage on average.

Although we cannot completely rule out alternative explanations based on differences in firms' capital demand, our collective results provide considerable support for the hypothesis that pubic firms respond to local capital supply conditions when conducting their financing activities. As such, local investor preferences may help explain the two empirical regularities highlighted at the beginning of this introduction. First, because local demographics change slowly and firms rarely move their headquarters, supply effects could contribute to the persistent firm-level capital structures observed across the economy. Second, the considerable variation in local demographics

across regions may help explain the heterogeneity of capital structure across firms. Furthermore, this work shows that the investing preferences of firms' local capital base may affect firms' ability to weather harsh economic conditions as were seen during the financial crisis.

Our work suggests that local capital markets are important even for the fundraising activities of public firms. These results extend the insights of Becker (2007) about the importance of local bank capital for small private firms. It also builds upon the insights of Massa, et al. (2013) regarding the importance of capital stability by demonstrating that one important determinant of the (un)certainty of a firm's capital supply is the fundamental investing and risk attitude of its local investor base.

2 Data

We hypothesize that firms' financing decisions will be affected by the risk and investing preferences of their local population. As discussed in the introduction, these attitudes vary with fundamental human characteristics, including one's gender and age. On average, women have a lower tolerance for risk than men, and older people have a greater need for safer investments than younger people. Women and older people therefore have higher demands for cash or fixed income relative to men or younger people. We expect the aggregate preferences of a local population to vary according to the concentration of women in the area, as well as by the average age of the local population.

To operationalize these measures, we obtain demographic data and various county-level variables from the 1980, 1990, 2000 and 2010 U.S. Censuses. Additionally, we obtain decennial data on religion from the American Religious Data Archive (ARDA), and annual data on county income from U.S. Bureau of Economic Analysis (BEA) website. For county level data that are available only decennially, we follow the previous literature (Alesina and La Ferrara (2000); Hilary and Hui (2009); Kumar, Page and Spalt (2011)), and linearly interpolate the data to obtain estimates for the intermediate years. We follow previous literature (Coval and Moskowitz (1999, 2001); Ivković and Weisbenner (2005)) and match the county level demographic information to the counties of the firms' headquarters.

We construct our main explanatory variable of interest, the Local Age and Sex Composition Index, as follows. For each year in our sample, we independently rank into quintiles the average age and sex composition of the counties where firms are headquartered. A higher

quintile ranking for average age and sex composition, respectively, represents a local population which is older and has more women compared to men. We add these two quintile rankings at the county level to construct our Local ASC Index, which varies from 2 to 10. We consider an area's population to have a *Low ASC* if its index takes a value of 4 or less. Similarly, we consider an area to have a high demand for fixed income (High ASC) if the index has a value of 8 or more. Each of the two groups – Low and High ASC – contains about one third of our sample of firm-years.

The county-level distributions of these fundamental demographic variables are summarized in Table 1 Panel A. There is considerable heterogeneity. For example, on average there is 1.05 women for every man. But the bottom and top quintiles have averages of 0.99 and 1.11 women per man, respectively. There is also significant variation in the average age of the local population. The mean average age of a county's population is 35.7 years, but the averages for the bottom and top quintiles of counties are 32.9 and 38.8 years, respectively. The meaningful variation can be seen by contrasting Low ASC counties with the levels in High ASC counties. The averages ratio of women to men and average age in Low ASC counties are 1.01 and 33.7 years, respectively; in contrast, these measures average 1.09 and 37.8 years in High ASC counties. These summary statistics suggest that there may be substantial differences in the aggregate risk preferences of investors across counties, motivating our inquiry into whether firms make different financing choices across these areas.[8]

[Table 1 here]

We gather additional data for our analysis from numerous sources. Data on firm characteristics, firms' location, and stock prices come from the CSRP/Compustat merged dataset. We exclude financials (2-digit SIC codes 60 to 69) and public utilities (2-digit SIC code 49) because they are highly regulated. Our sample period for the main analysis starts in 1980 and ends in 2010, which is the last census year available.

[8] Married couples are more likely to share the financial decisions and responsibilities, and particularly own joint bank accounts. In this situations, including them in our analysis may generate noise, which may give rise to attenuation bias. In an unreported analysis, we have calculated the gender ratio, excluding the married couples. The correlation between "unmarried" gender ratio and the raw gender ratio is 0.98, indicating that our results are unlikely to be affected by the choice of gender ratio. Moreover, the distribution of the "unmarried" ratio is wider than that of the raw ratio used in our main analysis. The interquartile range is 0.11, which is almost twice the 0.06 range for the raw ratio. This indicates that the raw gender ratio used throughout this paper provides a conservative estimate of the dispersion of the demographic measures – and consequently local preferences for safe assets – across regions in the US.

Part of our analysis involves data on syndicated commercial loans, which we obtain from DealScan for the years 1987 through 2010. For an analysis of the level and stability of bank deposits, we obtain data on commercial banks from their call reports. For our main analysis, we utilize an unbalanced panel of data for about 81,000 firm-years over the period from 1980 to 2010 pertaining to about 8,700 unique firms headquartered in about 700 different US counties. The numbers of observations vary across the tables based on specific data availability.

Table 1 Panel B reports descriptive statistics for our sample of firms. At the firm-year level, we report the distributions of our main variables of interest, leverage and security issuance, as well as the firm characteristics used as control variables in the regressions. Table 1 Panel C describes county-level variables used in our analysis. Other important demographic characteristics that are used as control variables include the total population of a county, whether it is a rural or urban area, the per capita income, and the fraction of the population that can be classified as religious. The construction of these control variables is described in the Appendix.

3 Local Demographic Index and Leverage

We begin our analysis by examining the link between the local demographic features and the capital structure of resident firms. We next examine firms' security issuance decisions. We then provide some robustness checks of our findings. Lastly, we conclude this section by examining the link between local demographics and the cost of debt capital.

3.1. Main Analysis of Capital Structure

Our first set of tests examine the link between local demographics and firms' market or book leverage. The focus is on whether leverage varies with the composite measure of local demographics (Local ASC Index), although we provide a complimentary analysis focused on the impact of local age or gender ratios separately in the Appendix. We conduct panel regressions where the measures of firm leverage are regressed onto year and industry fixed effects, additional control variables, and Local ASC Index (or, alternatively, dummies for Low ASC and High ASC). The results from baseline regressions that only include year and industry effects and firm size decile indicators are represented in Figure 1. The figure displays a monotonic increase in both market and book leverage across low, middle, and High ASC areas.

[Figure 1 here]

Table 2 reports the regressions with a large set of other important control variables related to leverage, including industry × year fixed effects.[9] Model (1) reports the market leverage model with the ASC Index. Consistent with our prediction, the ASC Index has a positive estimate in the market leverage regression, indicating that firms headquartered in areas whose population is likely to have a stronger preference for safe assets tend to have higher debt levels. In model (2), we use the High and Low ASC dummies to facilitate the discussion of the economic magnitude of this relation. The baseline comparison group in this regression is firms located in areas with a medium ASC Index value (ASC Index = 5, 6, or 7). Firms in *High ASC* areas have a 1.3 percentage point (t=2.46) higher level of market leverage than the baseline firms, while those in *Low ASC* areas have a 1.0 percentage point (t=2.06) lower level of leverage than the baseline. The difference in market leverage between high and Low ASC areas is 2.3 percentage points, which is about 9.2 percent of the 25 percent unconditional average of market leverage. This is an economically significant result given that these regressions control for industry and time trends as well as a broad variety of covariates or determinants of leverage. We repeat this analysis in model (3) while omitting the middle ASC Index group. The point estimate on *High ASC* indicates that the difference in market leverage between high and Low ASC areas is a statistically and economically significant 2.7 percentage points (t=4.79), again around 10 percent of the unconditional average.

[Table 2 here]

Models (4) to (6) of Table 2 present a similar analysis of firms' book leverage. The parameter estimates on the variables of interest – the ASC Index or the ASC dummies – are similar to those found in the analysis of market leverage. The last model (6) indicates that the difference in book leverage between high and Low ASC areas is around 2.2 percentage points (t=4.18), which, again, is about 9.2 percent of the unconditional average leverage of 24 percentage points.

Next we evaluate whether the main results are stronger among firms that may not have access to the broad public capital markets. As discussed in the introduction, we hypothesize that firms without credit ratings and those will ratings that are below investment grade will have difficulty accessing the pubic markets and will therefore rely more on local sources of capital

[9] Unless mentioned otherwise, all of our linear models include industry (Fama-French 48) and year interaction fixed effects (industry × year). Our nonlinear models control for industry and year fixed effects separately.

(Colla, Ippolito, and Li, 2013). In Table 3 we analyze separately the capital structures of three subsamples of firms: those with investment grade credit ratings (8,790 firm-year observations), those with below investment grade ratings (8,280 obs.), and those that are unrated by S&P (52,537 obs.). Panel A provides an analysis of capital structure based on market values, and Panel B analyzes capital structures based on book values. We do not find a significant relation between local demographics and capital structure for the investment grade firms, but we find a relation for both the low rated and unrated firms. These results support the hypothesis that public firms that face high barriers to accessing the public capital markets cater to the investing preferences of their local population. Because the large majority of firms are either unrated or have low credit ratings, these relations are also apparent in the overall cross-section of firms.

[Table 3 here]

This analysis also helps to rule out alternative capital demand based explanations for the results. One may be concerned that capital structures vary with local demographics because firms sort by type into areas with different demographics. For example, if low risk firms are more likely to be headquartered where the population invests more conservatively, then they may also maintain higher debt levels (although our other control variables should assuage this concern). The fact that the results hold only for firms hypothesized to face barriers to accessing the capital markets supports the capital supply explanation instead.

3.2. Robustness

3.2.1. Security Issuance

Following Hovakimian, Opler, and Titman (2001) and Leary and Roberts (2014), we examine the link between Local ASC Index and security issuance by constructing the following dummy variables: (1) Net Debt Issuer and (2) Net Equity Issuer. We classify a firm as a debt issuer if the net change in the firm's total debt outstanding between years *t* and *t*-1 is greater than 1% of the firm's total assets and zero otherwise. We assign a value of one for *Net Debt Issue* in year *t* to such firms, and zero for the remaining firms. Similarly, we classify a firm as an equity issuer if the difference between common stock issuance and common stock repurchases in year *t*

is greater than 1% of the total assets and zero otherwise. We assign a value of one for *Net Equity Issue* to these firm-year observations.

[Table 4 here]

Table 4 reports the parameter estimate from logit regressions modeling the probability of security issuance during a year. The regressions include year and industry fixed effects, as well as typical control variables related to security issuance. Consistent with our prediction, ASC Index has a positive estimate in predicting net debt issuance in model (1). The dummies in models (2) and (3) allow us to analyze the economic magnitude of this relation. We report the estimates for net equity issuance in models (4) to (6). The parameter estimates on the ASC dummies indicate that firms in High ASC areas have about 11 percent higher probability of issuing debt and about 14 percent lower probability of issuing equity, relative to firms in Low ASC areas. These differences translate to about 3-4 percentage point differences in equity and debt issuance, respectively. As these differences are quite similar in magnitude, the point estimates suggest that firms in high and Low ASC areas raise outside capital with similar frequency. However, consistent with the leverage results above, the forms of capital they raise appear to vary with the preferences of their local investor bases.

3.2.2. Debt Structure

Our analysis so far has focused on debt levels and capital raising activities. We now turn to the analysis of debt structure, i.e., whether firms carry more short- or long-term debt. In Panel A of Table 5 we conduct an analysis similar to models (2) and (5) of Table 2, but replace the dependent variable with the levels of short- and long-term debt, as a fraction of market value and book value of the firm, respectively. The estimates indicate that firms in High ASC areas have higher levels of both short-term debt and long-term debt. This suggests that supply conditions in High ASC areas allow for greater debt utilization by firms without increasing concerns about roll-over risk.

While both long-term and short-term debts are positively correlated with ASC index, we observe (in an untabulated analysis) that debt maturity, measured as the fraction of long-term debt of all corporate debt, is positively related with ASC index. The result is relatively weak, however, which could reflect that fact that two conflicting effects are likely at work. On one hand, a local

preference for safe securities may allow firms to increase debt maturity since long-term debt may be more readily available from local sources. But on the other hand, it may lead firms to reduce the duration of borrowings since short-term debt is cheaper and, in these areas, roll-over risk would be lower.[10]

[Table 5 here]

3.2.3. Local Income

In areas with lower income, the local population is unlikely to have savings substantial enough to be related to corporate policies. Aggregate local demand for fixed income securities is likely to be weak in these areas even if the local demographic characteristics indicate that the residents are likely to demand such securities. As such, it is difficult to imagine that the demographic characteristics, e.g., the ASC Index, would be related to resident firms' propensity to issue fixed income securities. Therefore, we hypothesize that the link between corporate capital structure and local demographic characteristics related to preferences for safe assets is weaker in lower income areas. In Panel B of Table 5 we report our capital structure tests on subsamples partitioned by whether the firms are located in counties with above or below median total income levels. We find that the link between local demographics and capital structure is much more pronounced high income areas.

3.2.4. Excluding small employers

Becker (2007) finds that higher levels of local bank deposits due to higher proportions of elderly local population positively affect financing of small for small private firms (firms with less than 500 employees). To examine if our results are driven by a sample similar to Becker's, we exclude firms with fewer than 500 employees and re-estimate our regressions. As seen in the third column of Panel C, the results are similar. This confirms novelty of our contribution that that local demography has more far-reaching influence on the financing decisions of firms than suggested by previous studies.

[10] Another channel through which ASC can affect financing decisions is through cash holdings. In an untabulated analysis, we observe a strong negative correlation between the ASC index and cash holdings. The effects are statistically significant, and economically material. Firms in high ASC areas have 2.5 percentage point lower cash holdings (as a fraction of total assets) than firms in low ASC areas, after controlling for various firm and area characteristics. This combination of higher debt levels and lower cash holdings is consistent with high ASC firms being more comfortable with having a higher leverage with less cash buffer due to the availability of local capital.

3.2.5. Omitting High Tech Firms

A potential concern is that the results are related to the clustering of high tech firms along two dimensions: (1) geographically, particularly in areas with younger population (e.g., Silicon Valley) and (2) in terms of leverage (i.e., that they tend to have lower leverage). Indeed, we find that high tech firms have more than 12 percentage point lower market leverage relative to other firms (15.3% vs. 27.7%). To address this concern, Panel B of Table 5 also reports regressions using a sample that excludes high tech firms. Imposing this restriction reduces the significance of the Low ASC dummies, consistent with high tech firms being concentrated in terms of demographic (Low ASC) as well as capital structure (low debt ratio). However, it does not affect the overall results and inference that firms in High ASC areas have higher debt ratios.

3.2.6. Fixed Effects Analysis

Panel C of Table 5 is devoted to concerns about omitted variables. First, we address the potential non-linearity in the relation between firm size and leverage, as larger firms may have easier access to the public debt market. A related concern stems from the non-linearity in the effect of relative market valuations (equity vs. debt) on the propensity to issue certain types of securities (see, e.g., the non-linear effect of returns and institutional demand documented in Alti and Sulaeman, 2012). To address these concerns, we conduct regressions that control for firm size and book-to-market with decile dummies in addition to their continuous counterparts. The results are largely unaffected, indicating that our earlier results are not driven by the failure to account for these non-linearities.

One may also be concerned about potential omitted variables at the geographic area or firm level. In particular, demographics in certain areas may lead to resident firms having a specific operational strategy that eventually leads to a specific optimal capital structures. As such, our results may be driven by variations in asset leverage rather than capital structure choices, per se. To account for this possibility, we employ two levels of fixed effects. Moreover, variations state laws (e.g., individual and corporate income taxes) may simultaneously affect corporate leverage and individuals' choice of residence. To address this issue, first, we include state fixed effects, to control for time-invariant differences in leverage across states. As shown in panel C, the

coefficients on *High ASC* continue to be positive and statistically significant, with similar economic magnitudes to our baseline analysis.

We then employ firm fixed effects. This test represents a high hurdle for establishing an empirical relation because its power is derived either from firms moving their headquarters across high and Low ASC areas, or from areas that change in the ASC index rankings. As corporate relocations are relatively rare events and demographics change slowly, this test has relatively low power. These regressions show weak or no patterns for *Low ASC*, suggesting the fixed effects absorb the differences across low and middle ASC areas. However, *High ASC* continues to be significant, and the point estimates are similar to those obtained in the main analysis of Table 2.

3.3. Channels

So far we have documented an association between area demographics and the capital structure of resident firms. We next examine two possible channels that may drive this relation: variation in local capital levels and the stability of local capital.

3.3.1. Local Capital Supply Levels

Our underlying assumption so far is that areas with higher ASC have relatively larger supply of local fixed income capital. Our first test of this assumption focuses on the level of deposits at banks, since this is one of the most prominent sources of debt capital to firms (including public firms) and data are readily available. The data for this analysis comes from banks' quarterly call reports available from Bank Regulatory database on WRDS. We regress the log of aggregate bank deposit per capita in each county on various county characteristics and the ASC Index using specifications similar to Becker's (2007). Our hypothesis is that ASC Index should be positively correlated with deposit levels. Table 6 reports the results, and the column 1 regression uses the full sample and the regression in column 2 uses only the tail samples with High and Low ASC. The estimates are consistent with our hypothesis, and provide support for our underlying assumption. In terms of an economic interpretation, the point estimate from model 2 indicates that the deposit per capita is 23 percent higher in High ASC areas.

[Table 6 here]

A second approach to testing this assumption is to evaluate the relation between ASC and firms' borrowing activity from local financial institutions. To perform this analysis, we employ data on syndicated loans from DealScan. This dataset contains various characteristics of syndicated loans including the amount of the loan, and the role of each lender in the syndicate (manager, co-manager, or only member), and the location of each syndicate member. We use this information to identify whether or not a lender is local (i.e., located in the same state). We include various firm controls, county controls, and industry and year fixed effects in our analysis to control for potentially confounding factors.

Table 7 reports the parameter estimates from several regression models. First, we analyze the broad effect of ASC Index on the size of the loan in Model (1). We find a positive coefficient on ASC, indicating that firms in High ASC areas take out larger loans. This is consistent with our earlier broader results indicating that these firms have higher leverage and issue more debt.

[Table 7 here]

The advantage of the syndicate loan setting is that it allows us to drill deeper and identify whether the higher amount of debt is obtained from local sources. To operationalize this inquiry, we analyze the likelihood that the loan syndicate include members – syndicate lead or otherwise – are local financial institutions. Models (2) to (4) report regressions in which the dependent variables are dummy variables indicating that at least one of the syndicate members is local [Model (2)], at least one of the lead syndicate members is local [Model (3)], and at least one of the non-lead syndicate members is local [Model (4)]. The results indicate that syndicates providing loans to firms in High ASC areas are more likely to include local financial institutions as both lead and non-lead members. We perform similar analysis using the fraction of syndicate members that are local in Models (5) to (7), and obtain similar inferences.

We next consider whether the higher levels of local lending are due to demand or supply forces. One potential explanation is that firms in High ASC areas demand more leverage. This higher leverage demands closer scrutiny and monitoring due to informational asymmetry concerns. Because local lenders can mitigate these concerns due to their geographical proximity, they are more likely to participate in these potentially riskier loans. Alternatively, the higher loan amount and local participation is because there is a higher level of capital supply in High ASC areas, as we conjectured in the earlier sections.

It is important to note that our earlier results in Table 7 have some implications for the information-related demand channel. Lead syndicate members typically perform the fiduciary duties of mitigating the adverse selection or monitoring concerns associated with syndicated loans. In contrast, non-lead local members are unlikely to play such important roles. We observe a higher participation rate of local syndicate leads [Models (3) and (6)], consistent with the information role of local syndicate leads. However, we also observe a similar pattern for non-leads [Models (4) and (7)], suggesting that the amount and participation results are unlikely to be driven merely by information-based demand.

To further explore the local demand vs. supply channels, we regress the loan interest rate spread (relative to the prevailing benchmark rates) on ASC Index and various firm and county controls in Model (8). If the demand channel is the dominant factor, the higher quantity of loans should result in higher loan prices, i.e., higher loan interest rates or spreads. Alternatively, if the supply channel is dominant, the loan spreads should not be affected in equilibrium, assuming that firms in High ASC areas take appropriate advantage of the higher capital supply. The coefficient estimate on ASC in Model (8) is not statistically different from zero, suggesting that variation in corporate demand for debt is unlikely to be the dominant channel driving our results.

3.3.2. Local Capital Stability

The stability of local capital may be another important driver of the relation between local investor preferences and capital structure. Capital stability is particularly important in the context of short-term debt, as a more stable source of local capital can mitigate the roll-over risk associated with relying more on short-term debt. To examine this potential channel, we analyze the volatility of local deposits as a function of ASC.

[Table 8 here]

In Table 8 we evaluate the volatility of aggregate bank deposits in a county. The dependent variable is the log of the standard deviation of quarterly percentage changes in total deposits at banks headquartered in a county, calculated over three-year windows. Accordingly, we use non-overlapping three-year windows as observations in the regression.[11] Our empirical specifications

[11] Our results are similar regardless of the choice of measurement windows.

are similar to those evaluating deposit levels in Table 6, and the results indicate that banks in High ASC areas have lower deposit volatility. In terms of economic magnitude, the coefficient on ASC indicates that a move from the bottom ASC group to the top one is associated with a reduction in deposit volatility of about 6 percent. This suggests that firms located in High ASC areas can tap a relatively more stable source of local capital if they need to roll-over their short-term debt during episodes of system-wide funding contractions. We come back to this issue in the final analysis of the paper where we evaluate how firms fared during the financial crisis.

3.4. Exogenous Variation in Capital Supply - Bank Branching

The results from the firm fixed effect analysis indicate that the relationship between demographic variables and corporate financing decisions is at least partially driven by time series changes in local investors' preferences. This is consistent with the interpretation that investor preferences are a causal determinant of firms' financing decisions, but it is not conclusive. Ascertaining causality is challenging in this context since, as discussed earlier, the static nature of demographics makes it difficult to identify exogenous shocks or instruments for their change.

A key concern is that our main explanatory variable, *Local ASC Index*, is correlated with omitted firm characteristics related to firms' *demand* for debt. However, if the ASC Index captures differences in the demand for debt only, then any exogenous change in *supply* should have no bearing on the relation between our index and debt financing. On the other hand, if High (Low) ASC index represents higher (lower) existing supply of debt, then an exogenous change in supply should affect the debt financing of firms in Low ASC areas more than those in High ASC areas.

We therefore evaluate causation by focusing on shocks that relaxed constraints on local lending activity. The setting is the staggered introductions of interstate banking deregulation. The integration of local banking markets is likely to have worked to even out firms' access to private debt capital across these markets as banks move capital into areas where there is a greater unmet borrowing demand. If our main hypothesis is true, then the impact of deregulation on corporate borrowing should be more acute in areas where local demographics suggest that the existing local debt capital was relatively scarce.[12]

[12] Although prior work has found mixed evidence on the link between banking deregulation and firms' capital raising activities, we have reason to expect a positive relation for our sample. Examining a sample of small (mostly private) firms, Rice and Strahan (2010) document a positive effect of deregulation on loan pricing (lower loan pricing after deregulation), but no effect on leverage. However, as those authors note, it is likely that agency issues are a much stronger determinant of debt capacity for small private firms than the supply of credit. Zarutskie (2006) documents similar evidence for young firms in her sample of private firms, which may similarly suffer from acute agency issues,

Our analysis focuses on changes in debt issuances patterns following bank deregulation, since these changes reflect the direct channel through which a more robust banking environment affects firms' financing choices. We examine the debt issuance decision of the sample of firms in Compustat from fiscal year 1970 to 1997, the period during which different states amended their banking laws.[13] For each firm, we define indicator variables that capture recent interstate banking deregulation in the state of the firm's headquarters. $Interstate_{t+0}$, $Interstate_{t+1}$, $Interstate_{t+2}$, $Interstate_{(t+3\ or\ later)}$ represent, respectively, the year of the local banking deregulation, a year after deregulation, two years after deregulation, and three years or later after deregulation, based on calendar year of fiscal year end dates. Following Francis, Hasan, and Wang (2014), we exclude young firms (i.e., firm's age < 4 years) in the analysis as they are likely to wind down the substantial amount of external funding raised in cash during initial public offerings.

[Table 9 here]

The results are reported in Table 9. Following previous literature, we control for firm fixed effects in addition to industry × year fixed effects in all the specifications. The first three regressions (1, 2 and 3) predict debt issuance activity, and the next three regressions (4, 5 and 6) predict equity issuance. Models 1 in Table 9 provide empirical evidence consistent with our hypothesis, in the overall sample. Firms in states experiencing interstate banking deregulations are more likely to be net debt issuers over the years following the deregulation.

We hypothesize that this positive effect of banking deregulation is likely to be weaker in areas where the local banking sectors already have sufficient deposits to satisfy the resident firms – i.e., areas that we identified as having high ASC scores compared to those with low ASC scores. To capture this different effect of banking deregulations, we perform regressions predicting debt issuances for two separate subsamples of firms: those in areas with high ASC index values (Column 2), and those in low (Column 3).

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but finds that the effect of deregulation on leverage is indeed positive for more mature private firms. Our sample of public firm is less likely to suffer from agency issues to the same extent, so there may be a stronger positive relation between deregulation and their capital raising activities.

[13] Our analysis ends in 1997 as the process of interstate banking deregulation is completed by the passage of Riegle-Neal Act in 1994. By 1997, all states have effectively removed restrictions on geographic expansion for banking institutions. The list of the staggered deregulation by each state is obtained from Kroszner and Strahan (1999), which uses Amel (1993) as a primary source.

The results are consistent with our expectation that high local credit supply weakens the effect of banking deregulation. In particular, the effect of interstate banking deregulation is statistically significant only in the subsample of firms headquartered in low ASC areas. The effect of interstate banking deregulation is never statistically significant and always small in magnitude. These results suggest that areas with high ASC Index values already have enough supply of local bank financing to meet public firms' capital needs, which in turn diminishes the effects of banking deregulation on corporate financial decisions.

Columns 4, 5 and 6 show the results for equity issuance. In the full sample in column 4, we find no effect of interstate bank deregulation. This suggests that, as expected, bank deregulation only affects firms' debt financing choices. In (5) we find some weak evidence of decreased equity issuance by firms in High ASC areas, but no evidence of any change in such activities in low ASC areas. Overall, these results suggest that our findings are not driven by changes in firm growth and investment opportunities due to deregulation (otherwise, it would affect equity issuance too), but mainly due to change in local debt supply conditions.

We also report regressions indicating whether firms' debt levels, measured by natural log of one plus total debt, were affected by banking deregulations in Columns (7) to (9) of Table 9. In the full sample, we observe significant changes in debt levels with some lag following deregulation. However, the effect is immediate and significant in the subsample of firms headquartered in areas with low ASC Index values. This result is consistent with the patterns of debt and equity issuance presented in earlier columns.

Finally, we report regressions indicating whether firms' capital structures were affected by banking deregulations in Columns (10) to (12) of Table 9. We examine book leverage because changes in market leverage are complicated by the fact that firms could also experience increases in market valuations following bank deregulation. We observe that significant changes in leverage lagged deregulation by a couple of years. However, importantly, these effects are significant and more immediate in the subsample of firms headquartered in areas associated with low ASC Index values only, consistent with our predictions and earlier findings. The effect of deregulation on capital structures are nosier than those on the levels of debt because firms also increased their assets significantly after the deregulation, which affected both the numerator and the denominator of book leverage.

While this analysis does not involve exogenous shocks to local investors' preferences, it allows us to measure firms' responses to shocks predicted to have varying effects according to

local preferences. The differential impact of deregulation on firms' financing activities across areas sorted by local investor preferences provides further evidence that the correlation between local preferences and capital structure decisions is causal in nature and is driven by the debt supply channel.

3.5. Outcomes During the Financial Crisis

The financial crisis of 2008-2009 was a massive unexpected shock to the capital markets. The extent to which financial institutions experienced distress and the capital markets tightened had not been seen since the Great Depression. Firms almost certainly did not anticipate such a severe crisis. Nor, given how unlikely such a catastrophe seemed, would they have given much weight to such a possibility when choosing their capital structures. We can therefore evaluate whether a local population's investing preferences matter for firms by analyzing firms' financing activities and outcomes during the crisis.

We expect that firms located in High ASC areas can finance their operations more easily during periods of liquidity contractions. The most obvious channel is through better ability to issue more debt. However, the stability of local capital supply may also manifest in a better ability to issue more equity as stock investors are less concerned regarding the firm's viability when faced with such contractions. As a result, firms in High ASC areas are more likely to survive such crises.

We sharpen this analysis by incorporating the insight regarding local income that we obtain in section V.A (Panel A of Table 5). In particular, we hypothesize that the effect of ASC on the ability to secure financing and survive the crises is less relevant in areas with relatively low income. To test this hypothesis, we include the interaction of the Low Income dummy (1 when the county's total income is below the median) and ASC variables in regressions reported in Table 10. The dependent variables in this table include: (1) security issuance during the 2008-2009 crisis period, (2) debt issuance during that period, (3) equity issuance during that period, and (4) whether the firm disappear from our sample due to merger or bankruptcy during that period.

[Table 10 here]

These regressions are reported in the first two rows of Table 10. As we include interactions of Low Income dummy and ASC variables in the regressions, the parameter estimates on the ASC variables capture the effect of ASC for firms located in high income areas. They indicate that firms

in High ASC areas are more likely to issue securities – particularly debt – and to survive the crises as a standalone entity. These effects are almost completely eliminated for firms located in low income areas, again consistent with the idea that local investors' preferences matter for corporate financing decisions when the local population has high enough income. Taken together, the results in this section suggest that in addition to s shift in the capital supply curve, a higher concentration of individuals – particularly wealthy people -- with a stronger preference for fixed income securities can reduce refinancing risk for locally-headquartered companies due to the relative stability of the capital supply.

4 Conclusion

This paper provides evidence that local capital supply conditions are important determinants of firms' financing policies. Because a majority of public firms rely on private debt capital, they are likely to be affected by local debt market conditions, which are a function of the investing preferences of local investors. In particular, we show that firms utilize more debt financing when their local populations are older and when there are more females relative to men, both of which indicate that in aggregate local investors will hold safer portfolios.

Local capital conditions appear most important for public firms that may face barriers to accessing the public capital markets, including firms with credit ratings indicating they are not investment grade and firms that are not rated by a major ratings agency (the large majority of firms). These results shed light on puzzling patterns in this literature including the observed variation in capital structure across firms and the strong persistence of capital structure within firms over time.

Local investor preferences appear to affect capital supply conditions through two important channels: (1) differences in investing preferences cause firms to face distinct local supply curves for different forms of capital, and (2) they also cause differences in local capital supply stability. The first channel is reflected in the higher level of bank deposits and locally-arranged syndicated loans in areas with and older population and more females, whereas the second channel is supported by the evidence that deposits are more stable in these areas. The value of robust local capital markets is evident in the better outcomes experienced by firms in these areas during the financial crisis.

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Table 1: Summary Statistics

This table provides descriptive statistics for the sample of firms in this paper. All variables used in the regressions are defined in the Appendix. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1980 to 2010. Panel A reports the distribution of county age and female to male ratio across their respective quintiles and Local ASC indices. Panel B presents summary statistics of firm-level variables; panel C presents the summary statistics of county-level variables.

Panel A: Average County Age and Female to Male Ratio

Average Age Quintile	Average County Age	Female Ratio Quintile	Female to Male Ratio	ASC Index	Average County Age	Female to Male Ratio
Q1	32.86	Q1	0.99	Low (2, 3, 4)	33.65	1.01
Q2 - Q4	35.64	Q2 - Q4	1.06	(5, 6, 7)	35.73	1.05
Q5	38.79	Q5	1.11	High (8, 9, 10)	37.82	1.09

Panel B: Firm-level descriptive statistics

	N	Mean	Std. Dev.	P1	P25	Median	P75	P99
Main Dependent Vars								
Market Leverage	81,267	0.25	0.24	0	0.03	0.18	0.40	0.89
Book Leverage	81,290	0.24	0.21	0	0.05	0.20	0.36	0.92
Debt Issuance	81,290	0.36						
Equity Issuance	81,290	0.25						
Firm Controls								
Total Assets (millions $)	81,290	1800.75	9786.37	2.36	37.72	156.48	732.85	28764
Market-to-Book	81,236	1.78	1.41	0.59	1.02	1.33	1.96	8.08
Profitability	81,289	-0.02	0.23	-1.11	-0.03	0.04	0.08	0.24
Tangibility	81,290	0.3	0.22	0.01	0.12	0.24	0.42	0.88
Stock Return	81,290	0.16	0.7	-0.83	-0.23	0.06	0.38	2.76
Stock Volatility	81,281	0.15	0.09	0.04	0.08	0.12	0.18	0.50
Firm Age	81,290	18.56	12.2	4	9	15	25	55
Dividend Payer	81,290	0.37						
R&D/Sales	81,290	0.16	1.14	0	0	0	0.05	3.61

Panel C: County variables

	N	Mean	Std. Dev.	P1	P25	Median	P75	P99
Avg. County Age	81,290	35.7	2.34	30.65	34.08	35.66	37.24	42.59
Female to Male Ratio	81,290	1.05	0.04	0.96	1.02	1.05	1.08	1.15
Local ASC Index	81,290	6	2.57	2	3	6	8	10
High ASC	81,290	0.33						
Low ASC	81,290	0.34						
Per Capita County Income	81,290	40,333	14,111	20,390	30,855	37,441	46,472	96,825
Population (000)	81,290	1417.31	1761.28	32.22	470.28	867.39	1542.87	9519.32
Rural Urban Continuum	81,290	1.06	1.11	0	0.3	1	1	6
Religious (per 1000 people)	81,290	535.38	119.08	289.93	438.05	541.44	615.35	797.68

Table 2: Local demography and firm leverage

This table presents baseline regressions of firm leverage on Local ASC Index. All variables are defined in the Appendix. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1980 to 2010. The sample excludes financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) firms. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	(1) Mkt Lev	(2) Mkt Lev	(3) Mkt Lev	(4) Book Lev	(5) Book Lev	(6) Book Lev
Local ASC Index	0.004***			0.003***		
	(5.21)			(4.26)		
High ASC		0.014***	0.027***		0.014***	0.022***
		(2.86)	(4.79)		(3.13)	(4.18)
Low ASC		-0.011**			-0.005	
		(-2.44)			(-1.21)	
Log Income	-0.024***	-0.021**	-0.014	-0.015*	-0.013	-0.008
	(-2.59)	(-2.27)	(-1.40)	(-1.70)	(-1.47)	(-0.79)
Log Population	-0.004*	-0.005*	-0.005*	-0.005**	-0.006***	-0.006**
	(-1.84)	(-1.93)	(-1.71)	(-2.39)	(-2.60)	(-2.15)
Log Religious	0.006	0.007	-0.005	0.001	0.002	-0.009
	(0.63)	(0.77)	(-0.45)	(0.12)	(0.20)	(-0.88)
Rural Urban Continuum	-0.003	-0.003	0.002	-0.003	-0.003	-0.000
	(-1.03)	(-1.03)	(0.67)	(-1.58)	(-1.62)	(-0.13)
Size	0.027***	0.027***	0.028***	0.026***	0.026***	0.027***
	(21.92)	(21.89)	(19.24)	(23.32)	(23.28)	(19.60)
Market-to-Book	-0.043***	-0.043***	-0.042***	-0.014***	-0.014***	-0.014***
	(-37.94)	(-37.98)	(-31.59)	(-12.30)	(-12.32)	(-11.05)
Profitability	-0.139***	-0.139***	-0.136***	-0.166***	-0.166***	-0.167***
	(-21.84)	(-21.83)	(-18.11)	(-20.41)	(-20.41)	(-16.98)
Tangibility	0.192***	0.192***	0.186***	0.203***	0.203***	0.206***
	(15.89)	(15.89)	(13.47)	(17.90)	(17.93)	(15.44)
Stock Return	-0.033***	-0.033***	-0.033***	-0.015***	-0.015***	-0.015***
	(-26.95)	(-26.95)	(-22.95)	(-13.27)	(-13.26)	(-11.00)
Stock Volatility	0.330***	0.330***	0.334***	0.245***	0.245***	0.252***
	(20.16)	(20.15)	(17.36)	(15.79)	(15.76)	(13.56)
Firm Age	0.000	0.000	-0.000	-0.001***	-0.001***	-0.001***
	(0.10)	(0.19)	(-0.52)	(-3.00)	(-2.92)	(-3.15)
Dividend Payer	-0.088***	-0.088***	-0.087***	-0.069***	-0.069***	-0.068***
	(-19.23)	(-19.20)	(-16.50)	(-16.99)	(-16.96)	(-13.76)
R&D/Sales	-0.006***	-0.006***	-0.007***	-0.007***	-0.007***	-0.008***
	(-5.81)	(-5.78)	(-5.61)	(-4.43)	(-4.41)	(-4.24)
Fixed Effects	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	81,267	81,267	54,573	81,290	81,290	54,587
R^2	0.342	0.342	0.352	0.237	0.236	0.246

Table 3: Local demography and firm leverage: Subsample analyses

This table presents baseline regressions of firm leverage on Local Age and Sex Composition (ASC) Index using the subsamples of firms with investment grade long-term credit rating (i.,e, firms with a rating of BBB- or higher from S&P in a given year), non-investment grade credit rating, and no credit rating. The dependent variable in Panel A (B) is Market Leverage (Book Leverage). All variables are defined in the Appendix. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1980 to 2010. The sample excludes financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) firms. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Panel A: Dependent Variable: Market Leverage

	(1)	(2)	(3)	(4)	(5)	(6)
Subsample:	Investment Grade	Non-investment Grade	Unrated	Investment Grade	Non-investment Grade	Unrated
Local ASC Index	0.002	0.006***	0.005***			
	(1.28)	(3.03)	(4.89)			
High ASC				0.016	0.035**	0.026***
				(1.30)	(2.55)	(4.12)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	8,790	8,280	52,537	5,886	5,923	35,210
R^2	0.522	0.467	0.308	0.534	0.489	0.318

Panel B: Dependent Variable: Book Leverage

	(1)	(2)	(3)	(4)	(5)	(6)
Subsample:	Investment Grade	Non-investment Grade	Unrated	Investment Grade	Non-investment Grade	Unrated
Local ASC Index	0.002	0.005**	0.003***			
	(1.17)	(2.33)	(3.57)			
High ASC				0.015	0.025*	0.018***
				(1.26)	(1.78)	(3.10)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	8,791	8,283	52,551	5,887	5,925	35,217
R^2	0.296	0.349	0.215	0.315	0.387	0.223

Table 4: Local demography and securities issuance decisions

This table presents logit regressions of a firm's decision to issue equity and debt on Local ASC Index. All variables are defined in the Appendix. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1980 to 2010. The sample excludes financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) firms. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Dependent Variable:	(1) Debt Issuance	(2) Debt Issuance	(3) Debt Issuance	(4) Equity Issuance	(5) Equity Issuance	(6) Equity Issuance
Local ASC Index	0.019***			-0.030***		
	(4.07)			(-4.46)		
High ASC		0.080***	0.118***		-0.055	-0.142***
		(3.11)	(3.83)		(-1.47)	(-3.24)
Low ASC		-0.028			0.095***	
		(-1.08)			(2.65)	
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year
N	81,290	81,290	54,587	81,290	81,290	54,587
Pseudo R^2	0.033	0.033	0.033	0.183	0.183	0.184

Table 5: Robustness

The following table presents several robustness checks for our main results. We report estimates for High ASC and Low ASC dummies in models identical to those presented as columns 2 and 5 in Table 2 with the following differences. In Panel A, we replace the leverage ratio as the dependent variable with short-term debt ratio and long-term debt ratio, respectively. Panel B estimates the regressions only within high- and low-income counties; excludes firms with fewer than 500 employees (Becker, 2007) and high-tech firms, respectively. Panel C includes various fixed effects in the regressions. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Panel A. Debt Structure

	Coef. on	**Mkt Lev**	**N**	**Book Lev**	**N**
Short-term debt	High ASC	0.005**	81,267	0.004**	81,290
		(2.20)		(2.37)	
	Low ASC	-0.002		-0.001	
		(-1.33)		(-0.41)	
Long-term debt	High ASC	0.009**	81,267	0.009**	81,290
		(2.20)		(2.44)	
	Low ASC	-0.008**		-0.004	
		(-2.20)		(-1.15)	

Panel B. Subsample Analysis

	Coef. on	**Mkt Lev**	**N**	**Book Lev**	**N**
High-Income Counties	High ASC	0.012	40,171	0.017**	40,181
		(1.48)		(2.32)	
	Low ASC	-0.022***		-0.008	
		(-2.91)		(-1.20)	
Low-Income Counties	High ASC	0.013**	41,096	0.011**	41,109
		(2.14)		(2.00)	
	Low ASC	-0.005		-0.003	
		(-0.80)		(-0.61)	
Excluding firms with <500 employees (Becker, 2007)	High ASC	0.015***	51,648	0.014***	51,661
		(2.61)		(2.85)	
	Low ASC	-0.012**		-0.008	
		(-2.19)		(-1.56)	
Excluding high-tech firms	High ASC	0.015***	63,777	0.012**	63,796
		(2.74)		(2.51)	
	Low ASC	-0.006		-0.001	
		(-1.05)		(-0.27)	

Panel C. Fixed Effects

	Coef. on	**Mkt Lev**	**N**	**Book Lev**	**N**
Size and market-to-book ratio decile fixed effects	High ASC	0.011**	81,218	0.013***	81,236
		(2.58)		(3.15)	
	Low ASC	-0.007*		-0.005	
		(-1.76)		(-1.21)	
State fixed effects	High ASC	0.012**	81,165	0.011**	81,188
		(2.14)		(2.06)	
	Low ASC	-0.006		0.000	
		(-1.11)		(0.07)	
Firm fixed effects	High ASC	0.016**	81,267	0.012*	81,290
		(2.28)		(1.92)	
	Low ASC	-0.002		0.006	
		(-0.31)		(0.99)	

Table 6: Local demography and deposit levels

This table shows the influence of local demography on the level of local bank deposits using quarterly data from 1980 to 2010. The dependent variable is log of aggregate deposits per capita in a county based on the county of the bank's main office. The main explanatory variables are county-level demographic variables and our ASC index. Standard errors are robust to heteroscedasticity and are clustered at the county level. t/z-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	Log(Deposits Per Capita)	
	(1)	(2)
Local ASC Index	0.0392***	
	(7.64)	
High ASC		0.2331***
		(7.74)
Log(Income)	0.000***	0.000***
	(7.51)	(6.55)
Log(Population)	-0.1286***	-0.1206***
	(-9.16)	(-6.83)
Housing Index	0.0017***	0.0018***
	(17.45)	(13.37)
Fixed Effects	State × Year	State × Year
N	299,985	157,488

Table 7: Local demography and syndicated loan members

This table shows the influence of local demography on syndicated loans. The data come from Thomson Reuters *DealScan* dataset and covers the years 1987 to 2010. Column 1 shows the results of an OLS regression of facility amount scaled by the borrowers' book asset, where the facility amount is actual amount of the facility committed by the facility's lender pool over a year. This analysis includes all firms that appear in DealScan database at least once during the sample period. Columns (2) to (4) are logit regressions where the dependent variables are, respectively, indicator variables for whether the syndicate has: any member (Model 2), the lead member (Model 3), and the non-lead member (Model 4) from the same *state* as the borrower's headquarters. Columns (5), (6) and (7) are analogous OLS regressions for the fractions of same-state syndicate members (lead or non-lead), lead members, and non-lead members in the syndicate, respectively. Column (8) shows an OLS regression of facility-level interest-rate spread over a benchmark. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Presence of:			Fraction of:			
	Facility Amount/ Asset	Local Syndicate Member	Local Lead Syndicate Member	Local Non-Lead Syndicate Member	Local Syndicate Members	Local Lead Syndicate Members	Local Non-Lead Syndicate Members	Loan Rate Spread
Local ASC Index	0.002***	0.085***	0.061***	0.100***	0.006***	0.009***	0.007***	-0.071
	(3.35)	(5.44)	(2.92)	(5.59)	(2.98)	(2.89)	(3.65)	(-0.12)
Facility Amount/Asset		0.950***	-0.737***	0.905***	-0.190***	-0.135***	-0.143***	-11.015
		(5.73)	(-3.35)	(4.35)	(-7.58)	(-3.94)	(-5.20)	(-1.41)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Ind. × Year	Ind., Year	Ind., Year	Ind., Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	39,249	10,801	9,642	7,854	10,802	9,643	7,857	11,460
R^2	0.064				0.282	0.258	0.234	0.517

Table 8: Volatility of local bank deposits

This table reports the relation between local demography and the volatility of deposits of local banks. The sample starts in year 1980 and ends in year 2010. *Deposit Volatility* is the natural logarithm of standard deviation of percentage change in the aggregate deposits of banks located in a county for twelve quarters in the future using non-overlapping time-series. Standard errors are robust to heteroscedasticity and are clustered at the county-level. t/z-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	Deposit Volatility	
	(1)	(2)
Local ASC Index	-0.0105***	
	(-2.84)	
High ASC		-0.0615***
		(-2.74)
Log(Income)	0.000***	0.000***
	(9.28)	(6.89)
Log(Population)	0.0432***	0.0379***
	(5.51)	(3.64)
Housing Index	0.0046	0.0005
	(1.26)	(0.11)
Fixed Effects	State × Year	State × Year
N	25,077	13,275

Table 9: Effect of Interstate Bank Deregulation

This table presents the firm fixed effects regressions that estimate the effect of interstate bank deregulation on debt issuance activities and leverage. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1970 to 1997, excluding those with less than four years of *Firm Age*. *InterstateBranch*$_{t+0}$, *InterstateBranch*$_{t+1}$, *InterstateBranch*$_{t+2}$, *InterstateBranch*$_{(t+3\ and\ later)}$ are indicator variables which represent, respectively, the same year of the deregulation, a year after deregulation, two years after deregulation, and three years and later after deregulation in the state of the firm's headquarters. Debt Issuance (Equity Issuance) equals one if Net Debt Issuances (Net Equity Issuance) > 1%; 0 otherwise. All variables are defined in the Appendix. Columns (1), (4), (7) and (10) use the full sample, (2), (5), (8) and (11) include firm-years in High ASC areas and (3), (6), (9) and (12) include firm-years in Low ASC areas. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Debt Issuance Dummy			Equity Issuance Dummy			Log(Total Debt+1)			Book Leverage		
	Full Sample	High ASC Areas	Low ASC Areas	Full Sample	High ASC Areas	Low ASC Areas	Full Sample	High ASC Areas	Low ASC Areas	Full Sample	High ASC Areas	Low ASC Areas
InterstateBranch$_{t+0}$	0.020	-0.012	0.084***	-0.003	-0.031*	0.015	0.029	-0.007	0.118***	0.004	0.001	0.015*
	(1.47)	(-0.45)	(2.79)	(-0.33)	(-1.68)	(0.58)	(1.54)	(-0.23)	(2.72)	(1.15)	(0.09)	(1.91)
InterstateBranch$_{t+1}$	0.027*	-0.015	0.084**	0.014	0.001	0.007	0.052**	0.025	0.102*	0.007	-0.000	0.017
	(1.71)	(-0.51)	(2.26)	(1.15)	(0.03)	(0.23)	(2.01)	(0.55)	(1.69)	(1.46)	(-0.01)	(1.59)
InterstateBranch$_{t+2}$	0.027	0.017	0.114**	0.004	-0.007	-0.022	0.042	0.025	0.132*	0.009	0.008	0.025*
	(1.55)	(0.52)	(2.58)	(0.29)	(-0.33)	(-0.68)	(1.35)	(0.44)	(1.75)	(1.48)	(0.85)	(1.80)
InterstateBranch	0.051***	0.023	0.151***	0.004	-0.026	-0.024	0.076*	0.035	0.140	0.013*	0.011	0.025
(t+3 and later)	(2.69)	(0.66)	(3.10)	(0.24)	(-1.03)	(-0.67)	(1.89)	(0.48)	(1.42)	(1.82)	(0.92)	(1.39)
Size	-0.062***	-0.079***	-0.063***	-0.046***	-0.039***	-0.060***	0.911***	0.935***	0.847***	0.041***	0.049***	0.036***
	(-10.95)	(-6.71)	(-5.95)	(-9.76)	(-4.66)	(-6.31)	(53.94)	(29.70)	(28.41)	(12.17)	(8.62)	(5.99)
Market-to-Book	0.029***	0.036***	0.022***	0.057***	0.060***	0.051***	-0.021**	-0.000	-0.012	-0.002	-0.003	-0.004*
	(7.86)	(4.75)	(3.72)	(17.03)	(9.85)	(8.49)	(-2.02)	(-0.01)	(-0.87)	(-1.64)	(-0.95)	(-1.90)
Profitability	0.345***	0.378***	0.274***	-0.077***	-0.056*	-0.060*	-0.653***	-0.611***	-0.565***	-0.197***	-0.199***	-0.170***
	(14.94)	(8.14)	(7.07)	(-4.03)	(-1.69)	(-1.78)	(-14.67)	(-7.32)	(-7.82)	(-19.19)	(-10.13)	(-10.48)
Tangibility	0.132***	0.116*	0.091*	0.074***	0.065	0.127***	1.034***	1.110***	1.018***	0.156***	0.160***	0.164***
	(4.25)	(1.86)	(1.67)	(3.19)	(1.37)	(3.19)	(12.23)	(6.75)	(7.37)	(9.85)	(5.55)	(6.00)
Stock Return	-0.285***	-0.311***	-0.263***	-0.140***	-0.136**	-0.131**	0.362***	-0.035	0.381***	0.170***	0.144***	0.156***
	(-6.64)	(-3.87)	(-3.53)	(-4.22)	(-2.21)	(-2.03)	(4.44)	(-0.20)	(2.89)	(10.55)	(4.58)	(5.98)
Stock Volatility	0.016***	0.014	0.020***	0.083***	0.078***	0.087***	0.026***	0.034***	0.019*	-0.014***	-0.013***	-0.013***
	(3.79)	(1.64)	(2.67)	(23.72)	(11.87)	(13.75)	(3.96)	(2.73)	(1.66)	(-11.27)	(-5.73)	(-6.39)
Firm Age	-0.102	-0.097***	-0.023	-0.076	-0.018**	-0.020	-0.044	-0.595***	0.033	0.002	-0.123***	0.015
	(-0.03)	(-11.53)	(-0.00)	(-0.08)	(-2.38)	(-0.00)	(-0.02)	(-28.21)	(0.00)	(0.00)	(-31.59)	(0.00)
Dividend Payer	0.116***	0.117***	0.113***	-0.002	0.002	-0.007	-0.046**	-0.058	-0.012	-0.030***	-0.032***	-0.019**
	(12.41)	(6.44)	(6.45)	(-0.28)	(0.13)	(-0.47)	(-2.16)	(-1.43)	(-0.28)	(-7.50)	(-4.13)	(-2.53)
R&D/Sales	0.087***	0.087*	0.067*	-0.001	-0.069**	0.041	-0.131***	0.069	-0.206***	-0.033***	-0.006	-0.044***
	(4.03)	(1.80)	(1.82)	(-0.07)	(-2.22)	(1.08)	(-2.93)	(0.87)	(-3.33)	(-4.67)	(-0.40)	(-4.08)
Fixed-effects	Firm, Ind. × Year											
N	66,550	20,471	21,047	66,550	20,471	21,047	66,550	20,471	21,047	66,550	20,471	21,047
R^2	0.222	0.260	0.287	0.396	0.428	0.443	0.916	0.922	0.922	0.718	0.728	0.749

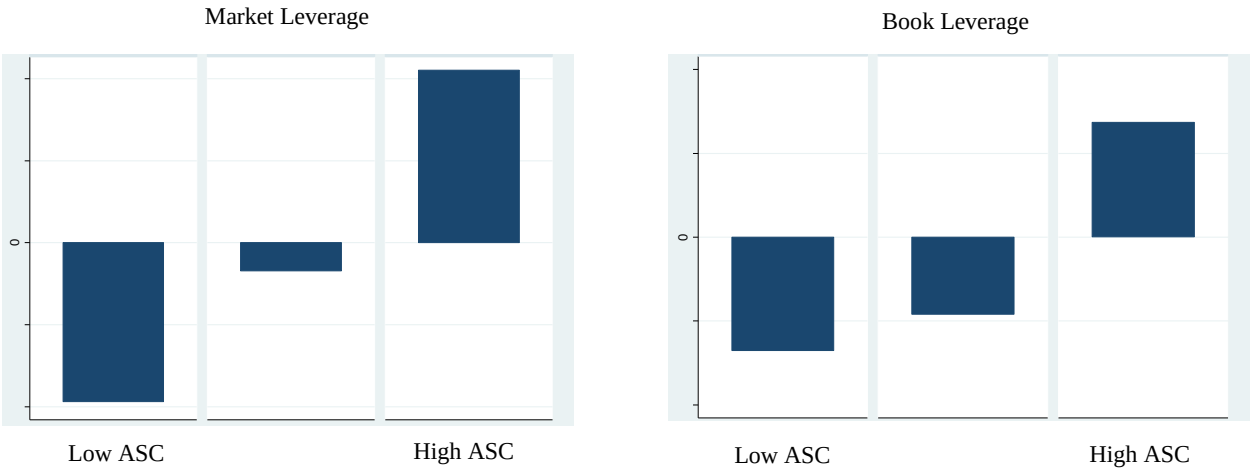
Table 10: Ability to raise capital and survival during the crisis

This table presents logit regressions on the propensity of the firms to raise capital (debt and equity) and not survive the crisis. Columns 1 through 7 are cross-sectional logit regressions where the dependent variables indicate whether a firm issued debt and/or equity, defined similar to Table 3, either during the fiscal year 2008 or 2009. The sample for columns 1 through 7 consist of all firms that survived the crisis and have some debt in their capital structure in 2007 (defined as book leverage >0.01). All explanatory variables are fixed at the end of FY 2007. Columns 7 and 8 are logit regressions where the dependent variable is whether a firm disappeared from our sample due to merger or bankruptcy during the fiscal years 2008 or 2009. Standard errors are robust to heteroscedasticity. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Debt or Equity Issue	Debt or Equity Issue	Debt Issue	Debt Issue	Equity Issue	Equity Issue	Bankrupt or Merged	Bankrupt or Merged
Local ASC Index	0.121***		0.143***		0.059		-0.167***	
	(3.13)		(3.76)		(1.41)		(-2.71)	
High ASC		0.804***		0.777***		0.690**		-1.097***
		(3.09)		(3.16)		(2.52)		(-2.74)
Low Income *	-0.130***		-0.140***		-0.079		0.141*	
Local ASC Index	(-2.62)		(-2.81)		(-1.38)		(1.85)	
Low Income *		-0.910***		-0.875***		-0.745**		1.053**
High ASC		(-2.83)		(-2.78)		(-2.08)		(2.26)
Low Income	0.250	0.074	0.432	0.200	0.302	0.263	-0.545	-0.330
	(0.69)	(0.25)	(1.18)	(0.68)	(0.72)	(0.78)	(-1.01)	(-0.79)
Market Leverage	-0.236	-0.107	-1.030***	-0.898**	0.712*	0.645	-0.203	-0.138
	(-0.65)	(-0.25)	(-2.85)	(-2.11)	(1.68)	(1.23)	(-0.41)	(-0.23)
Log Income	-0.738***	-0.636**	-0.742***	-0.563*	0.032	-0.065	0.765*	0.540
	(-2.74)	(-2.10)	(-2.79)	(-1.93)	(0.11)	(-0.19)	(1.77)	(1.09)
Log Population	-0.090	0.014	-0.042	0.011	0.065	0.218	0.029	-0.131
	(-0.87)	(0.10)	(-0.40)	(0.08)	(0.52)	(1.31)	(0.16)	(-0.61)
Log Religious	0.057	-0.109	0.273	0.081	-0.127	-0.222	-0.759*	-0.355
	(0.19)	(-0.29)	(0.99)	(0.23)	(-0.39)	(-0.51)	(-1.78)	(-0.66)
Rural Urban Continuum	-0.015	0.099	0.010	0.103	-0.055	-0.049	0.125	-0.088
	(-0.15)	(0.78)	(0.10)	(0.79)	(-0.48)	(-0.30)	(0.74)	(-0.37)
Size	0.020	0.014	0.053	0.043	0.010	0.019	-0.116**	-0.153***
	(0.52)	(0.30)	(1.42)	(0.96)	(0.23)	(0.38)	(-2.31)	(-2.64)
Market-to-Book	0.252***	0.236**	0.104*	0.073	0.306***	0.337***	-0.241***	-0.175*
	(3.00)	(2.36)	(1.68)	(1.01)	(4.25)	(3.88)	(-2.85)	(-1.93)
Profitability	-0.714	-0.696	0.084	0.099	-2.416***	-2.014***	0.450	0.446
	(-1.64)	(-1.43)	(0.20)	(0.21)	(-4.07)	(-3.13)	(1.05)	(0.81)
Tangibility	1.495***	1.462***	1.862***	1.544***	0.177	0.316	-1.241**	-1.138
	(4.05)	(3.27)	(5.23)	(3.63)	(0.43)	(0.64)	(-1.97)	(-1.51)
Stock Return	0.303**	0.308*	0.104	0.071	0.380**	0.216		
	(2.04)	(1.68)	(0.73)	(0.41)	(2.39)	(1.12)		
Stock Volatility	-0.060	0.868	-1.222	-1.230	1.632	2.594*	0.215	0.178
	(-0.05)	(0.65)	(-1.08)	(-0.96)	(1.34)	(1.83)	(0.15)	(0.11)
Firm Age	-0.002	0.001	-0.000	0.001	-0.013**	-0.011*		
	(-0.41)	(0.20)	(-0.09)	(0.27)	(-2.48)	(-1.74)		
Dividend Payer	-0.158	-0.137	0.064	0.033	-0.439***	-0.436**		
	(-1.15)	(-0.85)	(0.48)	(0.21)	(-2.60)	(-2.16)		
R&D/Sales	0.152	0.095	-0.044	-0.042	0.218	0.179		
	(1.44)	(1.26)	(-0.84)	(-0.69)	(1.47)	(1.44)		
Current Ratio							-0.060	-0.068
							(-1.31)	(-1.28)
Lag(Profitability)							-0.649	-0.456
							(-1.35)	(-0.73)
Fixed-effects	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year	Ind., Year
N	1,583	1,121	1,583	1,121	1,551	1,081	2,201	1,467
Pseudo R^2	0.088	0.100	0.087	0.084	0.151	0.174	0.073	0.072

Figure 1: Adjusted market and book leverage across ASC indices

The following charts show the average market and book leverage, respectively, across Low, Middle and High ASC indices, relative to size decile, industry and year benchmarks.



Appendix

Table A.1: Variable definitions

Variable	***Definitions***
Market Leverage	Total Debt / Market Value of Assets, where Total Debt = Short-Term Debt + Long-Term Debt = dltt + dlc, and Market Value of Assets = prcc f * cshpri + dlc + dltt + pstkl - txditc, from Compustat
Book Leverage	Book Leverage = Total Debt / Total Book Assets, where Total Book Assets = at, From Compustat
Debt Issuance	1 if Net Debt Issuances > 1%; 0 otherwise, where Net Debt Issuances = [(dltt(t) + dlc(t)) - (dltt(t-1) + dlc(t-1))] / at(t-1)
Equity Issuance	1 if Net Equity Issuances > 1%; 0 otherwise, where Net Equity Issuances = (sstk - prstkc(t) / at(t-1), from Compustat
Size	Natural logarithm of Total Assets (at), from Compustat
Market-to-Book	Book value of assets minus book value of equity plus market value of equity minus investment tax credit scaled by book value of assets (at - ceq + csho*prcc_f - txditc)/at, from Compustat
Profitability	Net income (NI) divided by total assets, from Compustat
Tangibility	Ratio of net property, plant and equipment (PPENT) to total assets, from Compustat
Stock Return	Stock return of the firm in a given year, from CRSP
Stock Volatility	Standard deviation of monthly stock return in a given year, from CRSP
Firm Age	Firm age approximated by the difference between current fiscal year and the year the firm first appeared in Compustat database
Dividend Payer	1 if a firm paid cash dividends this year; 0 otherwise, from CRSP
R&D/Sales	The ratio of R&D expenditure (XRD) to Sales, from Compustat
Current Ratio	The ratio of Current Assets (ACT) and Current Liabilities (LCT), from Compustat
InvestGrade	1 if a firm has long term credit rating by S&P of BBB- or better
Average Age	Average age of a county's residents (mid-point of the age group in years). Linearly interpolated between census years. Source: U.S. Census Bureau.
Female to Male	Ratio of female to male residents of the county in a given year. Linearly interpolated between census years. Source: U.S. Census Bureau.
Female Q5	1 if a firm belongs to a county in for top quintile of *Female to Male* in a given year; 0 otherwise
Female Q1	1 if a firm belongs to a county in for bottom quintile of Female to Male in a given year; 0 otherwise
Age Q5	1 if a firm belongs to a county in for top quintile of *Average Age* in a given year; 0 otherwise
Age Q1	1 if a firm belongs to a county in for bottom quintile of Average Age in a given year; 0 otherwise
Local ASC Index	Local Age and Sex Composition Index: Sum of quintile order of Average Age and Female to Male
High ASC	1 if the firm headquartered in a county with ASC Index of 8 to 10; 0 otherwise
Low ASC	1 if the firm is headquartered in a county with ASC Index of 2 to 4; 0 otherwise
Log Income	Natural log of median per capita county income adjusted for inflation. Source: The U.S. Bureau of Economic Analysis (BEA)
Low Income	1 if a firm belongs to a county with below median total income in a given year
High Income	1 if a firm belongs to a county with above median total income in a given year
Log Population	Natural log of population of a county in a given year. Source: U.S. Census Bureau.
Log Religious	Natural log of number of religious adherents per 1000 population in a county. Source: American Religious Data Archive (ARDA)
Rural Urban Continuum	A classification scheme that distinguishes metropolitan (i.e., metro) counties by the population size of their metro area, and nonmetropolitan counties by the degree of urbanization and adjacency to a metro area(s). Scaled from 1 to 9, where a higher number means more rural (1 to 3: metro areas; 4 to 9: non-metro areas).
Housing Index	State-level quarterly house price indices. Source: Federal Housing Finance Agency

Appendix (Continued)

Table A.2: Local demography and capital structure: Regressions using underlying variables

This table presents baseline regressions of firm leverage on the underlying variables used to construct Local Age and Sex Composition (ASC) Index. Female (Age) Q1 [Q5] is a dummy variable indicating whether the firm is headquartered in a county with lowest [highest] quintile of Female to Male ratio (Avg. County Age). All other variables are as defined in the Appendix Table A.1. The sample consists of non-financial, non-utility firms in Compustat from fiscal year 1980 to 2010. Standard errors are robust to heteroscedasticity and are clustered at the firm level. T-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

	MktLev	MktLev	MktLev	MktLev	BookLev	BookLev	BookLev	BookLev
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Avg. County Age	0.004***		0.001		0.003***		0.001	
	(3.74)		(1.11)		(3.20)		(0.79)	
Female to Male		0.251***	0.210***			0.209***	0.182***	
		(4.89)	(3.28)			(4.35)	(3.03)	
Female Q5				0.005				0.005
				(0.89)				(1.06)
Female Q1				-0.012***				-0.011**
				(-2.60)				(-2.43)
Age Q5				0.022***				0.015***
				(3.85)				(2.96)
Age Q1				0.003				0.005
				(0.67)				(1.13)
Log Income	-0.025***	-0.016*	-0.020**	-0.026***	-0.016*	-0.009	-0.012	-0.015*
	(-2.59)	(-1.76)	(-2.08)	(-2.70)	(-1.76)	(-1.06)	(-1.29)	(-1.66)
Log Population	-0.006**	-0.005**	-0.005**	-0.005**	-0.006***	-0.006***	-0.006***	-0.006***
	(-2.37)	(-2.25)	(-2.16)	(-2.09)	(-2.81)	(-2.68)	(-2.61)	(-2.94)
Log Religious	0.019**	0.004	0.006	0.009	0.011	-0.002	-0.001	0.001
	(2.20)	(0.43)	(0.60)	(0.95)	(1.37)	(-0.21)	(-0.09)	(0.06)
Rural Urban Continuum	-0.004	-0.001	-0.002	-0.003	-0.004**	-0.002	-0.003	-0.004*
	(-1.52)	(-0.58)	(-0.81)	(-1.13)	(-2.01)	(-1.13)	(-1.29)	(-1.89)
Size	0.027***	0.027***	0.027***	0.028***	0.026***	0.026***	0.026***	0.026***
	(21.94)	(21.80)	(21.91)	(22.00)	(23.32)	(23.25)	(23.27)	(23.30)
Market-to-Book	-0.043***	-0.043***	-0.043***	-0.043***	-0.014***	-0.014***	-0.014***	-0.014***
	(-37.95)	(-37.86)	(-37.88)	(-37.73)	(-12.34)	(-12.30)	(-12.29)	(-12.77)
Profitability	-0.139***	-0.139***	-0.139***	-0.139***	-0.166***	-0.166***	-0.166***	-0.160***
	(-21.80)	(-21.86)	(-21.85)	(-21.89)	(-20.39)	(-20.43)	(-20.42)	(-19.98)
Tangibility	0.192***	0.192***	0.192***	0.192***	0.202***	0.203***	0.203***	0.206***
	(15.86)	(15.90)	(15.90)	(15.92)	(17.88)	(17.92)	(17.92)	(18.53)
Stock Return	-0.032***	-0.033***	-0.033***	-0.032***	-0.015***	-0.015***	-0.015***	-0.015***
	(-26.93)	(-26.93)	(-26.94)	(-26.87)	(-13.25)	(-13.27)	(-13.27)	(-13.65)
Stock Volatility	0.330***	0.331***	0.331***	0.330***	0.245***	0.246***	0.246***	0.232***
	(20.12)	(20.17)	(20.17)	(20.15)	(15.76)	(15.80)	(15.81)	(15.41)
Firm Age	0.000	0.000	0.000	0.000	-0.001***	-0.001***	-0.001***	-0.000***
	(0.30)	(0.18)	(0.14)	(0.17)	(-2.85)	(-2.97)	(-3.00)	(-2.79)
Dividend Payer	-0.088***	-0.089***	-0.088***	-0.088***	-0.069***	-0.070***	-0.069***	-0.069***
	(-19.14)	(-19.31)	(-19.30)	(-19.18)	(-16.92)	(-17.06)	(-17.05)	(-17.15)
R&D/Sales	-0.006***	-0.006***	-0.006***	-0.006***	-0.007***	-0.007***	-0.007***	-0.005***
	(-5.73)	(-5.81)	(-5.80)	(-5.69)	(-4.39)	(-4.43)	(-4.43)	(-3.00)
Fixed-effects	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	81,267	81,267	81,267	81,267	81,290	81,290	81,290	81,290
R^2	0.342	0.342	0.342	0.343	0.236	0.237	0.237	0.237