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Local creative culture and dividend policy

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Abstract

This paper examines the role of local risk-taking propensity on dividend demand by using local creative culture as a measure of local risk-taking. We find that firms located in areas with a strong creative culture are less likely to pay and initiate dividends and exhibit lower levels of dividend yield. The empirical findings also remain robust after addressing endogeneity and a series of robustness checks. Furthermore, our paper highlights the local component of corporate dividend policies and offers additional evidence supporting dividend catering theory. Our results underscore the importance of cultural determinants of investors' risk-taking for the financial industry participants. © 2018 Academy of Financial Services. All rights reserved.

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1. Introduction

This study investigates the role of risk-taking for local dividend demand and corporate dividend policies. Prior literature has investigated the determinants of dividend demand and investors' payout preferences since Miller and Modigliani (1961). Previous studies suggest that risk aversion plays an important role for investors' choice between dividends and capital gains (i.e., Gordon, 1963; Lintner, 1963) and the financial planning process (Guillemette and Nanigian, 2014). Moreover, recent studies show the impact of local factors on dividend demand and different corporate payout policies that cater to investor demand (i.e., Becker, Ivković, and Weisbenner, 2011; Ucar, 2016). We introduce a new measure of risk-taking to

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dividend literature and examine the impact of risk-taking behavior associated with local culture on dividend demand and corporate dividend policies.

Specifically, we use the fraction of local creative class that includes people employed in occupations that require creative thinking as a proxy for creative culture and investigate the effect of local risk-taking propensity induced by local creative culture on geographically varying dividend demand and corporate dividend policies. The empirical findings show that firms located in areas with a stronger creative culture are less likely to be dividend payers and to initiate dividends. In addition, these firms have lower dividend yields. Our findings are consistent with prior literature that highlights the notion that creative culture is associated with higher degrees of risk-taking behavior and creative people are risk-takers (e.g., Amabile, 1983; Dewett, 2004, 2006; Gardner, 1993; Heilman, 2016; Tesluk, Farr, and Klein, 1997). Furthermore, our results are consistent with prior literature that underscores the link between risk-aversion and dividend demand (e.g., Gordon, 1963; Lintner, 1963; Ucar, 2016). In addition, our results are consistent with the studies that examine the importance of the determinants of spatial and temporal variation in investors' risk aversion (Guillemette and Nanigian, 2014; Kuzniak and Grable, 2017.[1]

Creativity and creative thinking require higher degrees of risk-taking tendency and previous studies highlight the link between perceived risk and creativity in organizations (e.g., Fidler and Johnson, 1984; Jalan and Kleiner, 1995; Shalley, Gilson, and Blum, 2000; Zhou and George, 2001). Quoting Adams (1986): "Creativity involves risk because it involves embracing the unknown and deviating from norms." From Marade, Gibbons, and Brinthaupt (2007) we have: "Taking risks and encountering failure in expressing their novel ideas freely comes with the territory for truly creative individuals." Risk-taking can actually be considered as a part of creativity as stated by Gardner (1993) and Amabile (1983). In professional settings, a willingness to take risks is a major predictor of employee's creative behavior (Dewett, 2004, 2006), and when shown en masse by the employees it is also a major contributor to creative environments (Tesluk, Farr, and Klein, 1997). From the neuropsychological perspective, creative people are often risk-takers as it is one of the behaviors that activate their ventral striatal reward system (Heilman, 2016).

Therefore, one expects that creative culture encourages the risk-taking behavior. This paper uses local creative share, which is the fraction of creative class—people employed in occupations that require creative thinking—as a measure of local creative culture and investigates the role of creative culture on dividend demand and policies. The creative class measure is also consistent with the creative class theory introduced by Richard Florida (e.g., Florida, 2002, 2003, 2005). This theory examines people who work in knowledge-intensive industries and similar occupations, such as intellectuals and artists, with the focus on their innovative culture and their contribution to economic growth. In addition, recent studies show that local investors' risk-taking induced by creative culture has an impact on corporate innovation (Ucar, 2018a) and corporate risk-taking behavior and other policies (Ucar, 2018b). Our paper is consistent with these studies and demonstrates the impact of local creative culture on dividends through its impact on local investors' risk-taking characteristics.

Psychological biases that affect investors' risk aversion have been extensively documented in the literature (Baker and Nofsinger, 2002, Hirshleifer, 2015). However, not only

retail investors but the financial industry professionals with local clienteles may be subject to behavioral and psychological biases that influence risk aversion as well (Baker, Filbeck, and Ricciardi, 2017; Baker and Ricciardi, 2015; Nofsinger and Varma, 2007). Furthermore, Hirshleifer, Jian, and Zhang (2018) and Statman (2018) suggest that cultural factors too can affect financial decision making and in particular investors' risk aversion. Our paper sheds light on the cultural factors that may influence risk tolerance of financial planners and their clienteles yielding a deeper understanding of the financial planning process biases that have been documented (Nofsinger and Varma, 2007).

Risk-taking is one of the important factors in shaping dividend demand, and it has attracted attention in the literature. Previous studies suggest that investors prefer dividends over capital gains because dividends are perceived as safe current income compared with future risky capital gains (Gordon, 1963; Lintner, 1963). Guillemette and Nanigian (2014) examine components of investors' risk aversion and Kuzniak and Grable (2017) find geographical and temporal variation in risk aversion of investors. Furthermore, Ucar (2016) demonstrates a dividend demand effect based on local religion consistent with differences in risk aversion among different religious groups. Consistent with this literature, we investigate whether local risk-taking behavior induced by creative culture affects geographically varying dividend demand and corporate dividend policies.

Another strand of literature investigates the notion that corporations provide payout policies in line with investors' dividend demand and dividend clienteles. In particular, Baker and Wurgler (2004a) and Baker and Wurgler (2004b) suggest that investors consider dividends as more valuable compared with capital gains and firms cater to investors' dividend preferences through their corporate dividend policies. Becker, Ivković, and Weisbenner (2011) and Ucar (2016) demonstrate that firms cater to dividend demand by providing dividend payouts consistent with local dividend clienteles. Our paper contributes to this literature by showing that firms provide dividend payouts and policies in line with local dividend demand shaped by the effect of the local creative culture on the local investors' risk-taking.

This paper is also related to the strand of literature that investigates the impact of local factors on financial outcomes and the role of local bias. Ivković and Weisbenner (2005) demonstrate that individual investors have a local bias and a higher likelihood of investing in local firms. Massa and Simonov (2006) and Grinblatt and Keloharju (2001) document local bias in other countries as well. Pirinsky and Wang (2006) show a higher degree of co-movement of stock returns for firms headquartered in the same location. Hilary and Hui (2009) find the impact of local religion on corporate risk-taking and corporate policies. We demonstrate the role of local creative culture for corporate payout policies. Our paper is closely related to recent studies that examine local dividend clientele effect. Becker, Ivković, and Weisbenner (2011) show how corporations determine their dividend policies based on the age of the local dividend clienteles. Ucar (2016) finds that geographical variation in local religions leads to a dividend clientele effect and firms shape their dividend payouts consistent with this clientele effect. Our paper contributes to this literature by introducing the role of local risk-taking characteristics induced by a new local factor—creative culture—in the determination of the dividend demand and showing a geographically varying dividend clientele effect consistent with local creative risk-taking.

Using previously mentioned venues of research, we build our intuition in the following way. We start with the literature on dividend demand and dividend clientele. The origins of this literature go back to Miller and Modigliani (1961) who suggest that transaction costs, taxes, or other market imperfections create differences in investor preferences and dividend demand, and help to form dividend clienteles. This view was developed further by Baker and Wurgler (2004a) who formalize the catering theory of dividends in three basic components. First, some investors exhibit an uninformed and time-varying demand for dividend-paying stocks perhaps from sentiment, mental accounting (Shefrin and Statman, 1984), or investment constraints, resulting in a dividend premium. Second, arbitrage is limited and the uninformed dividend premium is allowed to persist. Third, managers rationally cater to investor demands by paying higher dividends when the premium on the dividend payers is high and vice versa. Baker and Wurgler (2004a) and Baker and Wurgler (2004b) are generally agnostic as to the causality flow[2] in their theory, although they highlight the investor sentiment as the most probable explanation for the time-varying dividend premium to which firms respond by catering and adjusting their dividend payout policies.

Next, we introduce the literature on the local bias pervasive among investors (Coval and Moskowitz, 1999; Ivković and Weisbenner, 2005) who document that local investors overweight local companies in their portfolios. Subsequently, we apply local bias to the dividend catering theory to isolate the magnitude of the dividend demand using the prevalence of local investors among firm shareholders. Finally, we investigate the creative culture as a determinant of the local investors' dividend demand that shapes a firm's dividend policy through rational catering to local investors. Becker, Ivković, and Weisbenner (2011) propose a very similar approach to test whether it is actually shareholder demand for dividends that influences firm payout policy and not the other way around by using the evidence on the heterogeneity of the dividend clienteles from Graham and Kumar (2006) and the existence of local retail bias from Ivković and Weisbenner (2005). The authors use the geographical variation in the proportion of senior citizens in the areas close to the firms' headquarters as an instrument in their identification strategy and find that the firms do respond to the changes in the dividend demand of the local retail senior investors by adjusting their dividend payouts. The increase in dividend demand is exemplified for instance by the higher jump in the price at the initiation of the dividend (Baker and Wurgler, 2004a) and the lower drop in the stock price at the announcement of a decrease in the dividend. Firms rationally observe that time-varying dividend premium and react accordingly to capture the investor demand for dividends which is further corroborated by the direct tests of dividend catering by Kumar, Lei, and Zhang (2016).

On the other hand, anon-trivial part of firm shares are held by local investors (about 4% of total stock ownership was held by local senior investors during 1991 to 1996 period (Becker, Ivković, and Weisbenner, 2011a) who in turn are subject to time-varying risk tolerance determined by a multitude of factors. The importance of the retail investors in the determination of the dividend policy is further corroborated by Kumar, Lei, and Zhang (2016) who perform a direct test of dividend catering using historical Google searches.[3] In other words, we do not need the interaction of the board of directors of the firm with the local creative class directly,[4] we can observe the effect of the creative culture on the corporate

decisions via catering to the changes in the dividend premium driven in part by the local investors who are subject to the effect of the creative culture.

We believe it is important to distinguish between retail and institutional dividend demands and highlight the fact that the paper focuses on the retail part of the dividend demand. Furthermore, we do not assume that the firms disregard institutional investors when managing their dividend payout policy. Institutional investors actually do form dividend clienteles with concomitant dividend catering of their own as shown by Hotchkiss and Lawrence (2007) and they are subject to local bias as well (Coval and Moskowitz, 1999). However, consistent with the mission of FSR, we focus on the role of retail investors. The literature (for instance, Baker and Wurgler, 2004a, 2004b; Brown, Stice, and White, 2015; Graham and Kumar, 2006; Loughran and Schultz, 2004; Peress, 2014; Shive, 2012) finds that retail investors, and in particular, local retail investors, in general exert substantial influence on asset prices and firm policies while controlling for the influence of the institutional investors.[5] Furthermore, Ucar (2016) shows that investor characteristics such as religion can influence dividend clienteles while Pantzalis and Ucar (2018) examine the incidence of allergy bouts affecting local investors and link it with lower trading volume and stock returns of the firms headquartered in the area. Additionally Chi and Shanthikumar (2016) discover that an increase in local Google searches, most commonly associated with retail investors, before earnings announcements is linked to higher bid-ask spreads, trading volume and stronger post-earnings announcement drift. These studies show that even though, retail investors hold a smaller share of stocks than the institutional investors their effect on the equity prices and corporate policies is still considerable and merits scientific scrutiny.

The remainder of the paper is organized as follows. The next section presents a summary of the data and the sample selection method along with the summary statistics. Section 3 provides the main empirical tests along with a set of additional detailed tests and robustness checks. Section 4 presents a conclusion.

2. Data, sample selection, and summary statistics

We follow a sample selection method similar to the one used in recent studies (i.e., Grullon et al., 2011; Ucar, 2016). We exclude the firms in the utilities and financial industries (SIC codes 4900–4999 and 6000–6999) and the firms with issue codes other than 10 or 11. We exclude utilities because they tend to be regulated with little discretionary control over the amount and frequency of dividend payouts.[6] Furthermore, regulation may influence firm characteristics like volatility or debt that show up as control variables on the right-hand side of our regressions potentially biasing our inferences. Because of these reasons, financial literature tends to avoid including financial and utilities firms as mentioned in Baker and Wurgler (2004) and Fama and French (2001).[7]

Our sample obtains accounting and firm information from COMPUSTAT and stock price information from CRSP databases. We use the firm address information from COMPUSTAT in the main tests. Our sample requires the sample firms to have one year of lagged information because we use one year lagged firm information in constructing some variables. To measure local creative culture and risk-taking propensity associated with creative culture,

we use a variable called *CreativeShare*, which measures the fraction of the creative class in a given firm-county similar to recent studies (Ucar, 2018a, 2018b). The creative share data are from the U.S. Department of Agriculture Economic Research Service (USDA ERS) website.[8] The USDA ERS presents detailed information on county-level creative share information and the creative class occupations that are used in the dataset. The ERS website reports that the occupations in constructing the creative share are the occupations "that involve a high level of creative thinking" such as architecture, engineering, arts, design, entertainment, media, computer, and mathematics.[9] This website provides 1990, 2000, and 2007 county-level *CreativeShare* information that measures the fraction of the local creative class. We use the interpolations of this dataset for the sample years without available data. Our sample includes *CreativeShare* variable for the years between 1990 and 2007. We use *CreativeShare* in our empirical tests. Therefore, our final sample spans the years between 1990 and 2007.

We use an empirical model similar to the one used in the related literature (e.g., Becker, Ivković, and Weisbenner (2011) and Ucar (2016)). This model entails a set of three OLS and logit regressions with the three dependent variables describing dividend policy: dividend payer, dividend yield and dividend initiation, and the independent variables comprising the variable of interest and a host of the firm, time and locale control variables. Logit regressions are used when the dependent variable is binary, that is, takes 1 or 0 as values, which in the case of this model are dividend initiation and dividend payer. The set of three regressions is then considered as the baseline model and additional robustness and subsample tests then are performed.[10] We construct dividend payout and firm characteristics variables used in our empirical tests by following previous studies (Becker, Ivković, and Weisbenner, 2011a; Grullon et al., 2011; Ucar, 2016). The dependent variables used in our empirical tests are *Dividend payer*, *Dividend yield*, and *Dividend initiation*. *Dividend payer* is a dummy variable that takes a value of one if the total amount of dividends is greater than zero for a given year, and zero otherwise. *Dividend yield* is the ratio of total dividends to lagged market value. *Dividend Initiation* is a dummy variable that takes a value of one if a non-dividend payer firm in the previous year becomes a dividend payer in the current year, and zero if a non-dividend payer firm in the previous year stays as non-dividend payer firm in the current year.

We use the following set of main control variables and define them by following Ucar (2016) and Becker, Ivković, and Weisbenner (2011a). We define *Net income* as the net income divided by total assets for a given year. *Cash* is the cash divided by total assets for a given year. We define *Q* as the sum of the market value of equity and the book value of liabilities divided by total assets for a given year. *Debt* is the long-term debt divided by total assets for a given year. We define *Log of MV* as the logarithm of a firm's market value for a given year and *Log of assets* as the logarithm of total assets. We define *Volatility* as the standard deviation of monthly stock returns for the previous two-year period and *Lagged return* as the monthly stock returns for the previous two-year period.[11] *Asset growth* is the logarithm of the total assets growth rate calculated using both the current and previous year's figures. All accounting and firm variables are winsorized at the 1% and 99% levels. Firm age is the time between the date that a firm is listed on the CRSP and the current year. We use the following firm age-group indicator variables in our empirical tests: Age 1–5, Age 6–10,

Age 11–15, and Age 16–20 with Age 21 being the omitted category. The main empirical tests also control for state, industry,[12] and year indicator variables.

Our regression model is similar to the general form of the model in Becker, Ivković, and Weisbenner (2011a) and Ucar (2016) in the example of the dividend payer test and this model can be represented as the model (1) below:

$$\begin{aligned} DivPayer_{i,t} = {} & \alpha + \beta_{CS} CreativeShare_{i,t} + \beta_{NI} NI_{i,t} + \beta_{Cash} Cash_{i,t} + \beta_{Q} Q_{i,t} \\ & + \beta_{Debt} Debt_{i,t} + \beta_{Vol} Vol_{i,t} + \beta_{LagRet} LagRet_{i,t} + \beta_{logMV} logMV_{i,t} \\ & + \beta_{AssetGr} AssetGrowth_{i,t} + AgeGroup_{i,t} + LocContr_{i,t} + IndFE_{i,t} \\ & + YearFE_{t} + \in_{i,t} \end{aligned} \quad (1)$$

Moreover, we use the following alternative control variables used in the literature in some robustness tests and define these variables by following Grullon et al. (2011) and Ucar (2016). We define *NYE* as the measure of firm size based on the NYSE equity (market capitalization) percentiles for the corresponding period. It is important to note that although NYSE equity percentiles are calculated via sorting the NYSE stock universe into market capitalization percentiles, they are used to create an alternative firm size (market capitalization) variable for all firms in the sample.[13] NYSE equity percentiles are widely used in the financial literature, for instance, by Baker and Wurgler (2004) and Kumar, Lei, and Zhang (2016) who adopt this approach from Fama and French (2001) with all three papers analyzing dividend policy. We do not limit our sample to any particular exchange as neither did the aforementioned studies.

Furthermore, the intuition behind using NYSE instead of saying NASDAQ percentiles is described in Fama and French (2001) on page 76:

> "… Instead of forming equal groups by size, however, we use the 20th and 50th percentiles of market capitalization for NYSE firms to assign NYSE, AMEX, and NASDAQ firms to portfolios. This prevents the growing population of small NASDAQ firms from changing the meaning of small, medium, and large over the sample period. (The 20th and 50th NYSE percentiles lead to similar average numbers of firms in the medium and large groups, and many more in the small group.)"

It could also be argued that there might be a potential industry selection bias when using NYSE size deciles to assign a NASDAQ firm to a percentile. However, we believe that a possible bias is mitigated for the following reasons. First, this is set of control variables alternative to our main specification which includes the *Log of MV* defined as the logarithm of a firm's market value for a given year and does not employ sorting the stock universe into deciles and hence avoids any potential bias from using any ranking procedure. We only use NYSE equity percentiles in the alternative set of controls in one test as a robustness check and we use our main controls variables in our other tests with the findings in both tests being broadly similar. Second, we include *Industry* fixed effects based on Fama-French 48 industry classification as controls in all of the main regressions controlling for the heterogeneity between industries in our samples. While there may benon-linear patterns in firm industry distribution over time, existing corporate financial literature usually considers the imple-

Table 1 Summary statistics

	Mean	25th percentile	Median	75th percentile	Standard deviation
CreativeShare	0.292	0.248	0.279	0.335	0.070
Dividend payer	0.275	0.000	0.000	1.000	0.446
Dividend yield	0.006	0.000	0.000	0.005	0.012
Dividend initiation	0.023	0.000	0.000	0.000	0.149
NYE	24.547	3.000	12.000	39.000	27.563
M/B	2.029	1.085	1.465	2.235	1.745
ROA	0.054	0.028	0.109	0.169	0.238
Sales growth	0.208	−0.024	0.089	0.250	0.647
Total assets ($mil)	1,222.124	32.146	129.586	588.833	3,799.233
Age	14.332	4.441	9.422	19.641	14.475

Note: This table provides summary statistics of the following variables. *CreativeShare* measures the fraction of the creative class in a given firm county. *Dividend payer* is a dummy variable that takes a value of one if the total amount of dividends is greater than zero for a given year, and zero otherwise. *Dividend yield* is the ratio of total dividends to lagged market value. *Dividend initiation* is a dummy variable that takes a value of one if a non-dividend payer firm in the previous year becomes a dividend payer in the current year, and zero if a non-dividend payer firm in the previous year stays as non-dividend payer firm in the current year. *NYE* is defined as the measure of firm size based on the NYSE equity percentiles for the corresponding period. *M/B* is defined as the ratio of the market to book value of assets in which market value of assets is calculated as the market value of equity plus total assets minus total equity. *ROA* is defined as the return on assets as calculated by income before depreciation divided by the total assets for a given year. *Sales growth* is defined as the sales growth rate calculated as the change in the previous and current year's figures. *Firm age* is the time between the date that a firm is listed on the CRSP and the current year.

mentation of *Industry* fixed effects using Fama-French 48 industry classification to be a reasonable approach for the majority of cases.

We define *M/B* as the ratio of the market to book value of assets in which the market value of assets is calculated as the market value of equity plus total assets minus total equity. *ROA* is the return on assets as calculated by income before depreciation divided by the total assets for a given year. We define *Sales growth* as the sales growth rate calculated as the percentage change from the previous to the current year's sales.

We also use local control variables in some empirical tests consistent with the related literature. Becker, Ivković, and Weisbenner (2011a) use the fraction of local seniors and find an age-based local dividend clientele effect. We include *Local seniors* variable which is the proportion of individuals who are 65 years old or older within a county where a firm is headquartered by following Becker, Ivković, and Weisbenner (2011a). Ucar (2016) uses local religion and shows a local dividend clientele effect induced by local religion. Therefore, we also include *Cpratio* which is the ratio of Catholics to Protestants in the county where a firm is located by following Ucar (2016). We also use local *Income*, which is the median household income in a given firm county. Local controls also include *Log of Population*, which is the logarithm of the population for a given county, and local *Education*, which is the fraction of people 25 years and over having a bachelor's, graduate, or professional or some college degree.

Table 1 reports summary statistics of some important firm characteristics and local creative culture as measured by the fraction of local creative class. On average, 27% of the sample firms are dividend payer firms with about 1% dividend yield. On average, 2% of the

sample firms initiate dividends during the sample years. The fraction of the creative class, as measured by *CreativeShare*, in an average firm location is about 29%. On average, sample firms have an equity value that is equal to about the 25th percentile of the NYSE equity size distribution in a given year. The average sample firm's market-to-book ratio is about two with 5.4% ROA and 21% sales growth. On average, the sample has about $1.2 billion in total assets. The average firm age is about 14.3 years. Overall, Table 1 presents summary statistics consistent with prior literature.

3. Empirical results

3.1. Main tests

First, in this section, we present the main tests of the impact of local risk-taking induced by creative culture on dividend payout policy variables in Table 2. We employ an empirical model similar to the one used in the related literature (e.g., Becker, Ivković, and Weisbenner, 2011a; Ucar, 2016). The main control variables include *Net income*, *Cash*, *Q*, *Debt*, *Volatility*, *Lagged return*, *Log of MV*, *Log of Assets*, *Asset growth,* and also firm age indicator variables.[14] The main tests also include state, industry, and year fixed effects. Standard errors are adjusted for heteroskedasticity and clustered at the firm level. The dependent variables are *Dividend payer*, *Dividend yield*, and *Dividend initiation* for Columns 1, 2, and 3, respectively. The main variable of interest is *CreativeShare* that is a measure of local creative culture in a given year and defined as the fraction of the creative class in a given firm's county. We use a logit regression model for *Dividend payer* and *Dividend initiation* tests and an OLS model for *Dividend yield* test in this table as well as the following tables.

CreativeShare is negative and statistically significant in all three columns. This result demonstrates a negative relationship between dividend payout variables and local risk-taking. Firms located in areas with a more prominent creative culture are less likely to be dividend payers and to initiate dividends, and they have lower levels of dividend yields. The economic significance of coefficients cannot be directly interpreted by looking at coefficient magnitudes in logit regressions. To understand the economic importance of variables, it is easier and better to focus on the change in odds for the dependent variable by using a one standard deviation change in a given independent variable. We use this approach in interpreting economic values of coefficients in this table and also the other tables of this paper. Column 1 of Table 2 suggests that a one standard deviation increase in creative share in a firm's county is associated with a 17.4% less likelihood in the odds that a firm pays dividends compared with another firm located in a county with lower creative share.

Similarly, Column 3 indicates that a one standard deviation increase in creative share in a firm's county is associated with 10.9% less likelihood in the odds that a firm initiates dividends. These findings demonstrate the economic significance of the impact of the local creative culture on dividend demand and corporate dividend payout. Column 2 also presents a similar result. Column 2 suggests that a one standard deviation increase in local risk-taking behavior as measured by local creative culture leads to an almost 0.07 standard deviation decrease in dividend yield.

Table 2 Main tests

	(1)	(2)	(3)
Dependent variable	*Dividend payer*	*Dividend yield*	*Dividend initiation*
CreativeShare	−2.746***	−0.013***	−1.692**
	(−3.66)	(−4.75)	(−2.13)
Net Income	3.824***	−0.001***	4.017***
	(14.24)	(−4.21)	(6.35)
Cash	−0.792***	0.001	0.343*
	(−3.66)	(1.14)	(1.69)
Q	−0.163***	−0.000***	−0.153***
	(−4.11)	(−8.12)	(−3.62)
Debt	−1.035***	−0.004***	−0.372*
	(−5.72)	(−8.69)	(−1.71)
Volatility	−16.240***	−0.019***	−4.504***
	(−24.55)	(−18.75)	(−5.67)
Lagged Return	−0.007	0.000	0.185***
	(−0.31)	(0.65)	(6.22)
Log of MV	0.398***	0.001***	0.272***
	(7.12)	(8.01)	(3.69)
Log of Assets	0.050	0.000**	−0.079
	(0.85)	(2.05)	(−1.05)
Asset Growth	−0.594***	−0.001***	−0.277**
	(−10.74)	(−16.69)	(−2.39)
Local Controls	Yes	Yes	Yes
Industry and year FE	Yes	Yes	Yes
Observations	65,239	65,239	47,014
R^2	0.438	0.280	0.117

Note: *Significant at 10%; **significant at 5%; ***significant at 1 %. This table reports the main tests for the years between 1990 and 2007. The dependent variables are *Dividend payer*, *Dividend yield*, and *Dividend initiation* for Columns 1, 2, and 3, respectively. *Dividend payer* is a dummy variable that takes a value of one if the total amount of dividends is greater than zero for a given year, and zero otherwise. *Dividend yield* is the ratio of total dividends to lagged market value. *Dividend Initiation* is a dummy variable that takes a value of one if a non-dividend payer firm in the previous year becomes a dividend payer in the current year, and zero if a non-dividend payer firm in the previous year stays as non-dividend payer firm in the current year. *CreativeShare* measures the fraction of the creative class in a given firm county. This table uses an empirical setting, as well dependent variables and main control variables similar to the ones used in the related literature (i.e., Becker, Ivković, and Weisbenner, 2011). This table has the following main controls: *Net income* is defined as the net income divided by total assets for a given year. *Cash* is the cash divided by total assets for a given year. *Q* is defined as the sum of the market value of equity and the book value of liabilities divided by total assets for a given year. *Debt* is defined as the long-term debt divided by total assets for a given year. *Log of MV* is defined as the logarithm of a firm's market value for a given year. *Log of Assets* is defined as the logarithm of total assets. *Volatility* is defined as the standard deviation of monthly stock returns for the previous two-year *Lagged return* is defined as the monthly stock returns for the previous two-year period. *Asset growth* is the logarithm of the total assets growth rate calculated using both the current and previous year's figures. These are the variables reported in the table. This table also controls for local control variables for religion (*CP* ratio), seniors (*Local Seniors*), population (*Log of Population*), education (*Local Education*), and income (*Local Income*); however, the coefficient estimates are not reported for brevity. The main tests also include the following age-group indicator variables: Age 1–5, Age 6–10, Age 11–15, and Age 16–20. Age 21 and over is the dropped category in the tests. The main empirical tests also control for industry and year indicator variables. Intercept, firm age indicators, industry, and year dummy variables are not displayed for brevity. Standard errors are adjusted for heteroskedasticity and clustered at the firm level. Robust *t* and *z* stats are in parentheses.

Table 2 presents empirical findings consistent with risk-taking effect associated with creativity and creative culture highlighted in previous social science studies. Table 2 also shows evidence in line with the relationship between risk aversion and investors' dividend preferences suggested in the related dividend literature. In addition, this table's results are consistent with dividend clientele argument which suggests a variation in dividend demand associated with differences in investor characteristics. Overall, this table indicates that risk-taking characteristics induced by local creative culture and environment play an important role in investors' demand for dividends and payout policies of local firms that cater to this demand.

3.2. Additional tests and robustness checks

To shed more light on the main results reported in the previous section, in this section we perform additional tests and robustness checks and report the results in Table 3. Panel A, B, and C in Table 3 display results for the robustness tests for the dependent variables: *Dividend payer*, *Dividend yield*, and *Dividend initiation*, respectively. Furthermore, we include the main and local control variables, and year and industry dummies in all regressions performed in this section.

Tests in Column 1 investigate whether local factors or state-related variables drive the results reported in the main dividend policy tests in Table 2. Across all panels A through C, *CreativeShare* in Column 1 has a negative sign consistent with the earlier main dividend test results. Therefore, the negative sign and magnitude for *CreativeShare* in Column 1 provide additional support to the findings in Table 2 and demonstrate that the effect of local risk-taking, as measured by local creative culture, is robust to local factors and state effects and is the main driver of the results shown in the earlier findings.

To shed more light on our previous findings and demonstrate that local risk-taking induced by creative culture is effective on not only some areas with a prominent creative culture but also on all the other areas, we exclude firms located in areas with a highly prominent creative culture and repeat the main regressions in Column 2. Specifically, we exclude firms that are located in the Silicon Valley area and re-examine the empirical findings in Column 2 with the underlying goal to investigate the extent of the local risk-taking effect.

CreativeShare is negative and statistically significant for all the three dividend payout tests in Panels A through C in Column 2 demonstrating that local risk-taking effect on dividend payout holds not only for the areas with a well-known and strong creative culture but also for the other areas. The results in Column 2 also indicate economically important effects. A one standard deviation increase in local risk-taking where a firm is located, as measured by *CreativeShare*, leads to a 16.6% decrease in the odds that a firm pays dividends as presented in Panel A. A one standard deviation increase in local creative share is associated with almost 0.065 standard deviation decrease in dividend yield in Panel B. In addition, a one standard deviation increase in local creative share leads to a 9.7% decrease in the likelihood of a firm initiating dividends as indicated in Panel C. These findings provides additional supporting evidence and highlight the influence of local risk-taking propensity induced by creative culture on dividend demand and corporate payout policies of local firms.

Table 3 Additional tests and robustness checks

	(1)	(2)	(3)
Panel A: Dividend payer tests			
Dependent variable: Dividend payer			
CreativeShare	−2.807 (−3.05)***	−2.674 (−3.55)***	−2.085 (−2.70)***
Main controls	Y	Y	Y
Year variables	Y	Y	Y
Industry variables	Y	Y	Y
Local controls	Y	Y	Y
State fixed effects	Y	N	N
Excluding areas with a famous creative culture	N	Y	N
Alternative location data	N	N	Y
Observations	65,239	62,335	49,245
R^2	0.447	0.436	0.432
Panel B: Dividend yield tests			
Dependent variables: Dividend yield			
CreativeShare	−0.010 (−3.12)***	−0.012 (−4.46)***	−0.012 (−4.08)***
Main controls	Y	Y	Y
Year variables	Y	Y	Y
Industry variables	Y	Y	Y
Local controls	Y	Y	Y
State fixed effects	Y	N	N
Excluding areas with a famous creative culture	N	Y	N
Alternative location data	N	N	Y
Observations	65,239	62,335	49,245
R^2	0.289	0.280	0.280
Panel C: Dividend initiation tests			
Dependent variable			
CreativeShare	−2.032 (−2.09)**	−1.532 (−1.93)*	−0.952 (−1.04)
Main controls	Y	Y	Y
Year variables	Y	Y	Y
Industry variables	Y	Y	Y
Local controls	Y	Y	Y
State fixed effects	Y	N	N
Excluding areas with a famous creative culture	N	Y	N
Alternative location data	N	N	Y
Observations	46,831	44,381	34,458
R^2	0.124	0.115	0.113

Note: *Significant at 10%; **significant at 5%; ***significant at 1 %. This table reports the additional tests and robustness checks for the main tests with controls for state effects, strong creative culture areas and an alternative location dataset. The dependent variables are *Dividend payer*, *Dividend yield*, and *Dividend initiation* in Panels A, B, and C, respectively. The main variable of interest is *CreativeShare*. Column 1 controls for state dummies. Column 2 re-examines the tests after excluding firms located in areas with a strong creative culture, and more details are provided in the text. Column 3 re-examines the tests by using an alternative firm location information provided by the Compact Disclosure data as well as the firm location information from Bill McDonald's website. This table has the following main controls: *Net income*, *Cash*, *Q*, *Debt*, *Log of MV*, *Log of assets*, *Volatility*, *Lagged return*, *Asset growth*. The main controls also include the following age-group indicator variables: Age 1–5, Age 6–10, Age 11–15, and Age 16–20. Age 21 and over is the dropped category in the tests. These variables are defined in Table 1 and Table 2. The empirical tests also control for the state, industry, and year indicator variables. Only *CreativeShare* is displayed for brevity. *Local Controls* comprise the following variables: *Local seniors, Cpration, Income, Log of Population, Education*. *Local seniors* is defined as the proportion of individuals who are 65 years old or older within a county where a firm is headquartered. *Cpratio* is defined as the ratio of Catholics to Protestants in the county where a firm is located. *Income* is the median household income in a given firm county. *Log of Population* is the logarithm of population for a given county. *Education* is the fraction of people 25 years and over having a bachelor's, graduate, or professional or some college degree. Standard errors are adjusted for heteroskedasticity and clustered at the firm level. Robust *t* and *z* stats are in parentheses.

In Column 3, we rerun the main regressions for the dividend policy variables using an alternative firm location dataset and analyze the coefficient estimates. The previous tests use firm location information provided by COMPUSTAT. Prior literature shows that there is a small number of headquarter moves (e.g., Pirinsky and Wang, 2006). One might suggest that the fact that COMPUSTAT does not consider any corporate relocation may bias our findings. To take into account corporate relocations and to ascertain whether our findings are driven by COMPUSTAT firm location information or not, we use an alternative firm location dataset. In particular, we use firm location information from the Compact Disclosure database as well as Bill McDonald's website[15] and repeat our main tests in Column 3.

The results presented in Column 3 exhibit a negative and statistically significant coefficient for *CreativeShare* for all the three dividend payout variables in line with the previous tests after using an alternative firm location information dataset which considers firm relocations. Our empirical findings remain economically robust too. Column 3 estimates demonstrate that a one standard deviation increase in creative share leads to an almost 14% decrease in the odds that a firm becomes a dividend payer. In addition, a one standard deviation increase in creative share is associated with almost 0.068 standard deviation decrease in dividend yield. Panel C suggests a negative relationship between creative share and dividend initiation analysis consistent with the previous results. However, the coefficient is statistically insignificant. The reason for this can be the smaller sample size in the alternative location data sample for the dividend analysis. Overall, Table 3 provides additional supporting evidence for the role of local risk-taking induced by local creative culture in the determination of the investors' dividend demands and, hence, of the corporate dividend policies of local firms that cater to these demands.

3.3. Tests using an alternative set of controls

In this section, we provide a series of robustness tests, as well as some additional tests, to shed more light on local risk-taking effect induced by creative culture on geographically varying dividend demand and corporate dividend policies. Previous studies employ a slightly different set of variables in examining certain dividend payout variables. Now, first, we repeat our main tests for *Dividend payer*, *Dividend yield*, and *Dividend initiation* after controlling an alternative set of control variables used in prior literature (e.g., Fama and French, 2001; Grullon et al., 2011) by following Ucar (2016). Specifically, we control for market-to-book ratio, ROA, sales growth, and firm size, by following definitions used by Fama and French (2001) and Grullon et al. (2011), as well as local controls, and year, industry, and state dummies in Table 4.

Table 4 reports a negative and statistically significant creative share coefficient in all columns as consistent with our earlier results. The empirical findings are also economically important. A one standard deviation increase in creative share is associated with a 20.9% decrease in the likelihood of becoming a dividend payer for a firm. Similarly, a one standard deviation increase in creative share leads to a 0.086 standard deviation decrease in dividend yield and an 11.5% decrease in the likelihood of initiating dividends. This table shows that our empirical results are robust to alternative control variables and supports the main findings. This table suggests that local risk-taking behavior encouraged by local creative

Table 4 Tests with an alternative set of controls

	(1)	(2)	(3)
Dependent variable	*Dividend payer*	*Dividend yield*	*Dividend initiation*
CreativeShare	−3.360***	−0.015***	−1.779**
	(−4.59)	(−5.33)	(−2.21)
NYE	0.040***	0.000***	0.017***
	(30.40)	(23.14)	(11.98)
M/B	−0.414***	−0.001***	−0.109***
	(−11.93)	(−12.99)	(−3.94)
ROA	5.880***	0.002***	4.370***
	(21.90)	(4.20)	(11.53)
Sales growth	−1.028***	−0.001***	−0.005
	(−15.28)	(−18.42)	(−0.06)
Local controls	Yes	Yes	Yes
Year, industry, state dummies	Yes	Yes	Yes
Observations	65,118	65,118	46,767
R^2	0.331	0.215	0.099

Note: ***, **, and *Indicate significance at the 1%, 5%, and 10% levels, respectively. This table reports the main tests with an alternative set of controls. The dependent variables are *Dividend payer*, *Dividend yield*, and *Dividend initiation* for Columns 1, 2, and 3, respectively. *Dividend payer* and *Dividend initiation* tests have logit regressions whereas *Dividend yield* has OLS regression. The main variable of interest is *CreativeShare*. This table has the following set of controls: *NYE*, *M/B*, *ROA*, and *Sales growth*. Only *CreativeShare* and the control variables are displayed for brevity. The empirical tests also control for the state, industry, and year indicator variables as well as local controls (*Local seniors*, *Cp Ratio*, *Income*, *Education*, and *Log of Population*). Intercept, year and industry dummies are not reported for brevity. Robust *t* statistics and *z* statistics are reported in parentheses. Pseudo R^2 values are reported for *Dividend payer* and *Dividend initiation* tests.

culture is the main driver of the negative impact on dividend payout as indicated by the previous sections.

3.4. Identification tests

One might suggest that a firm's location choice is endogenous or there might be an omitted variable that affects the results presented in the earlier sections. Therefore, we use a series of tests controlling for endogeneity. First, we use a matched sample analysis similar to the one used in Ucar (2016) and re-examine dividend payout variables. Matching sample analysis allows us to control for the firm characteristics while observing the exogenous variation in *CreativeShare*.[16] We take a closer look at pairwise comparisons between firms located in areas with a high creative share and a matched sample of firms located in areas with a low creative share. First, we divide the sample into five based on *CreativeShare*, and examine firms in the highest quintile of *CreativeShare* as the firms located in areas with a *High CreativeShare* and the lowest quintile of *CreativeShare* as the firms located in areas with a *Low CreativeShare*. We determine a firm-year observation with the same year, industry, and age group from *Low CreativeShare* area firms for each firm-year observation from *High CreativeShare* area firms. Next, we use a matching process based on the firm characteristics including *Total Assets*, *Market Value*, *Net Income*, *Cash*, *Q*, *Debt*, *Volatility*,

Table 5 Matched sample analysis

Variable	*N*	*High CreativeShare*	*Low CreativeShare*	Difference	*p*-value
Dividend Payer	11,777	0.203	0.297	−0.093	(0.000)***
Dividend Yield	11,777	0.004	0.006	−0.002	(0.000)***
Dividend Initiation	7,317	0.014	0.021	−0.007	(0.001)***

Note: *Significant at 10%; **significant at 5%; ***significant at 1%. This table presents the mean values for dividend payout variables for firms that are located in *High CreativeShare* and a matched sample of firms that are located in *Low CreativeShare* areas. Dividend payout variables—*Dividend Payer*, *Dividend Yield*, and *Dividend Initiation*—defined in Tables 1 and 2. The sample is divided into five based on *CreativeShare*, and the firms in the highest quintile of *CreativeShare* are assigned to the *High CreativeShare* area and the firms in the lowest quintile of *CreativeShare* are assigned to the *Low CreativeShare* area. Matched *Low CreativeShare* area firms are identified after matching each firm-year observation of a *High CreativeShare* area firm with a firm-year observation of a *Low CreativeShare* area firm that is from the same year, industry, and age group with the closest *Asset size*, *Market value*, *Net income*, *Cash*, *Q values*, *Debt*, *Volatility*, and *Lagged return*. All the variables that are used in matching are defined in Tables 1 and 2. Robust *p*-values are in parentheses.

and *Lagged return*. In particular, we match every firm-year observation of *High CreativeShare* area firms with a firm-year observation from a *Low CreativeShare* area firm from the same year, industry, and age group, with the closest matched values for *Total Assets*, *Market Value*, *Net Income*, *Cash*, *Q*, *Debt*, *Volatility*, and *Lagged return*. The matched sample analysis includes the firms from *High CreativeShare* areas with a match from *Low CreativeShare* areas in Table 5 and examines differences in dividend payout variables between the *High CreativeShare* area firms and their matches from the *Low CreativeShare* areas.

Table 5 presents the mean values for the matched sample analysis. The findings are consistent with the earlier findings. The difference in *Dividend payer* between *High CreativeShare* area firms and *Low CreativeShare* area firms is negative and statistically significant. Similarly, the differences in *Dividend yield* and *Dividend initiation* are negative and statistically significant. This table shows that firms located in areas with a greater degree of local risk-taking induced by creative culture are less likely to pay and initiate dividends and have lower dividend yields compared with firms located in areas with a lower degree of local risk-taking as measured by creative culture after using matched sample tests. In summary, Table 5 is consistent with the earlier findings and provides supporting evidence by using a matched sample analysis.

To shed more light on the local risk-taking effect induced by creative culture and to take a further step in addressing endogeneity, now we use an instrumental variable (IV) approach and re-examine dividend payout variables. In particular, we repeat the earlier logit regression analyses of *Dividend payer* and *Dividend initiation* by using a probit regression with an IV approach and the earlier OLS regression analysis of *Dividend yield* by using a Two-Stage Least Squares (2SLS) analysis with an IV approach. We use the following variables as an IV for *CreativeShare* to address possible endogeneity: $CreativeShare_{t\text{-}10}$, the creative share lagged by 10 years, in Table 6 Panel A and *ArtShare*, the fraction of people used in the arts for a given county, in Table 6 Panel B.

In Table 6 Panel A, we use $CreativeShare_{t\text{-}10}$, the creative share lagged by 10 years, as the first IV for the *CreativeShare*. The creative share lagged by 10 years can be considered correlated with the current creative share. On the other hand, one expects that the creative

Table 6 Instrumental variable approach

	(1)	(2)	(3)
Dependent variable	*Dividend payer*	*Dividend yield*	*Dividend initiation*
Panel A: IV approach (IV: $CreativeShare_{t-10}$)			
CreativeShare	−1.240***	−0.014***	−0.589
	(−4.40)	(−3.75)	(−1.03)
Main controls	Y	Y	Y
Local controls	Y	Y	Y
Year fixed effects	Y	Y	Y
Industry fixed effects	Y	Y	Y
Observations	25,691	25,691	19,049
R^2	0.400	0.229	0.137
Panel B: IV approach (IV: *Artshare*)			
CreativeShare	−1.688***	−0.011***	−0.412
	(−7.59)	(−3.14)	(−0.95)
Main controls	Y	Y	Y
Local controls	Y	Y	Y
Year fixed effects	Y	Y	Y
Industry fixed effects	Y	Y	Y
Observations	65,239	65,239	47,014
R^2	0.429	0.280	0.110

Note: *Significant at 10%; **significant at 5%; ***significant at 1%. This table reports instrumental variables (IV) tests for the dependent variables *Dividend payer*, *Dividend yield*, and *Dividend initiation* defined earlier. Panels A and B use an IV Probit analysis with an IV approach for logit regression analyses of *Dividend payer* and *Dividend initiation* used in the main tests and a Two-Stage Least Squares (2SLS) analysis with IV approach for the OLS regression analysis of *Dividend yield* used in the main tests. Panels A and B present coefficients of the instrumented creative share variable from second stages of these IV analyses. Panels A and B use all the main control variables used the earlier dividend payout analyses along with the year and industry dummies and local controls. Panel B uses $CreativeShare_{t-10}$, *creative share lagged by five years, as IV whereas Panel C uses ArtShare*, the fraction of people employed in the arts in a county in a year, as IV. More details on IV approach are provided in the text. This table has the following main controls: *Net income*, *Cash*, *Q*, *Debt*, *Log of MV*, *Log of assets*, *Volatility*, *Lagged return*, *Asset growth*. *Local Controls* comprise the following variables: *Local seniors*, *Cpration*, *Income*, *Log of Population*, *Education*. *Local seniors* is defined as the proportion of individuals who are 65 years old or older within a county where a firm is headquartered. *Cpratio* is defined as the ratio of Catholics to Protestants in the county where a firm is located. *Income* is the median household income in a given firm county. *Log of Population* is the logarithm of the population for a given county. *Education* is the fraction of people 25 years and over having a bachelor's, graduate, or professional or some college degree. The main controls also include the following age-group indicator variables: Age 1–5, Age 6–10, Age 11–15, and Age 16–20. Age 21 and over is the dropped category in the tests. These variables are defined in Table 1 and Table 2. Only *CreativeShare* is reported for brevity. Robust *t* and *z* values are in parentheses. Pseudo R^2 values are reported for *Dividend payer* and *Dividend initiation* tests.

share lagged by 10 years is not correlated with any omitted variables in the current year. Furthermore, using a local variable lagged by 10 years can be regarded as a good IV candidate considering that Hilary and Hui (2009) use local religion lagged by three years as an IV for current local religion in their setting. Therefore, we implement $CreativeShare_{t-10}$ as an IV in the first stage of 2SLS in Table 6 Panel A to predict *CreativeShare* before running the main tests for corporate decision and risk-taking variables during the second stage.

We report the coefficients of the instrumented *CreativeShare* variable from the second stages of these IV analyses in Table 6. First, in Panel A, we use an IV approach that uses the ten years lagged creative share variable, $CreativeShare_{t-10}$. Panel A reports creative share coefficients with a negative sign consistent with the earlier findings. Creative share is statistically significant for *Dividend payer* and *Dividend yield* tests that provides additional support to the earlier findings and highlights the role of local risk-taking induced by creative culture for dividend demand and dividend policy. Creative share is not statistically significant for *Dividend initiation* although it has a negative sign as expected. Lower statistical significance may be because of a smaller sample of observations used in the dividend initiation tests. Overall, Panel A provides some additional supporting evidence for the earlier empirical results.

Next, in Panel B, we use *ArtShare*, the fraction of people used in the arts for a given county, as a second IV variable for *CreativeShare* to further address endogeneity concerns and shed more light on the impact of creative culture on corporate decisions. People who are employed in the arts include "art and design workers, painters, musicians, composers, sculptors, photographers, and so forth"[17] *ArtShare* is a subset of *CreativeShare*—creative class—that includes the people who work in the arts. USDA ERS reports that creative class dataset identifies occupations that involve a high level of "thinking creatively" and this skill element is defined as "developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions." The USDA ERS *CreativeShare*—creative class—definition includes occupations such as architecture, engineering, arts, design, entertainment, sports, media, computer and mathematical science, advertising, top executives, physical scientists, and social scientists. Artists or people from art occupations are considered as creative people and risk-takers[18] as the other occupations in the creative class—*CreativeShare*. Therefore, *ArtsShare* and *CreativeShare* are correlated in terms of creativity and risk-taking. Although one might suggest that other occupations that constitute creative culture—*CreativeShare*—such as architecture, engineering, media, computer and mathematical science, and advertising, might be considered as related to corporate decisions or factors affecting corporate decisions, this reasoning does not hold for people employed in the arts. *ArtsShare*, which represents the local fraction of artists or people from art occupations, is directly related to local creative culture while *ArtsShare* is not considered as correlated with the factors related to local corporate decisions or it is not expected to influence corporate policies. Therefore, *ArtShare* can be considered a good IV because it is correlated with creativity and creative-risk taking but not correlated with any potential omitted variables related to corporate decisions.

The evidence in Panel B demonstrates that *CreativeShare* instrumented by *ArtShare* exhibits negative coefficients in each one of the dividend policy tests consistent with the earlier results. Except for the *Dividend initiation* test, all the other tests have a statistically significant creative culture effect. Lower statistical significance for *CreativeSha*re in the *Dividend initiation* test is most likely because of a much smaller sample used in that particular test.

In summary, after using IVs, *CreativeShare* has signs and coefficient magnitudes consistent with the earlier results. *CreativeShare* is statistically significant for *Dividend payer* and *Dividend yield* tests. This result provides additional support to the earlier findings and

highlights the role of local risk-taking induced by creative culture for dividend demand and dividend policy. *CreativeShare* is not statistically significant for *Dividend initiation* although it has a negative sign as expected. This result might come from a smaller sample of observations used in the dividend initiation tests. Overall, the evidence in Panels A and B lends support to the earlier findings and shows that local creative culture and creative risk-taking have a negative effect on dividend demand and corporate dividend payout after addressing endogeneity concerns.

The endogeneity, for instance, can present itself via geographical clustering.[19] One example could be the stock options explanation where the highly educated local investors are comprised in large part by the long-term employees of once-young startups that usually use stock options-based compensation in the early stage of their lifecycle. In this case, more young technology-oriented firms would locate close to the education clusters and use riskier stock options-based compensation to attract employees with low risk aversion. We recognize that causality is difficult to ascertain in corporate finance research and that is why we implement several robustness tests and corrections for endogeneity.

First, we use several control variables that should capture the geographical clustering effect: *Education*, to control for local high-education high-tech clusters, *FirmAge*, to control for the heterogeneity in dividend policy across firm's lifecycle, and *Industry* fixed effects, to control for the variation in dividend payout policies across industries. We believe that younger firms in tech industries in our sample would prefer stock options-based compensation to the dividend one and that our control variables should account for that pattern in the data.

Second, we address possible endogeneity concerns by using two IV: $CreativeShare_{t\text{-}10}$, the creative share lagged by 10 years, and *ArtShare*, the fraction of people employed in the arts for a given county. IV regressions like 2SLS help to elucidate the causality in regressions with possible endogeneity. One of the requirements for a valid IV is that the IV is correlated with the potentially endogenous independent variable of interest but not correlated with the possible omitted variables as stated on pages 89–90 in Wooldridge (2010). Hilary and Hui (2009) use local religion lagged by three years as an IV for current local religion and we employ a similar approach with $CreativeShare_{t\text{-}10}$, that is, creative share lagged by 10 years, which is correlated with the current creative share but is unlikely to correlate with the current year omitted variables. *ArtShare*, the fraction of people employed in the arts for a given county, is also correlated with creative share and is unlikely to be correlated with the omitted variables, say, for instance, the frequency of using stock options compensation plans by the local companies. The results in 2SLS tests show that after accounting for possible omitted variables, the relationship between creative share and dividend policy remains significant and in line with our prior hypotheses.

Third, we also perform a matching sample analysis where we match firms from *Low* and *High Creative Share* areas on their characteristics and compare the sample means for the three dividend policy variables. This approach allows us to control for potentially omitted patterns in the variation of firm characteristics and to isolate the relationship between creative share and dividend policy from confounding factors. In general, we believe that the aforementioned tests offer sufficient evidence in favor of our hypothesis even in the presence of possible endogeneity, for instance, because of geographical clustering.

4. Conclusion

Studies in social literature argue that creativity is associated with risk-taking behavior and creative people are risk-takers. We use a novel measure of risk-taking, local creative culture, and examine the relationship between investors' willingness to take risks and investor's payout preferences and, through the dividend catering channel, corporate payout policies. In particular, we empirically investigate the effect of the local creative share, which is a proxy for local creative culture, on geographically varying dividend demand and corporate dividend policies. We show that firms located in areas with a greater creative share are less likely to become dividend payers and to initiate dividends. In addition, firms located in areas with a more pronounced creative culture have lower dividend yields. These results are consistent with higher risk-taking behavior associated with creativity and creative culture. These results are also consistent with previous studies in the dividend and financial planning (Guillemette and Nanigian, 2014; Kuzniak and Grable, 2017) literature that highlight the role of risk aversion for dividend demand and investor preferences for risky assets. Furthermore, our findings offer underscore the importance of the dividend catering theory and argue that firms shape their payout policies consistent with variation in dividend demand and cater to dividend demand of dividend clienteles.

We contribute to this literature by showing the impact of risk-taking behavior induced by creative culture on corporate dividend policies consistent with dividend demand shaped by this risk-taking behavior. Our paper shows the role of local risk-taking behavior associated with creative culture for corporate dividend policies of local firms that cater to investors' dividend demand. Moreover, recent studies underline the importance of local factors on dividend policies and show local dividend clienteles based on local factors such as local senior effect (Becker, Ivković, and Weisbenner, 2011a) or local religion effect (Ucar, 2016). This study contributes to this literature by introducing a new local factor associated with local risk-taking[20] on dividend demand. Furthermore, the tests in this paper yield additional evidence on the importance of the cultural factors (Hirshleifer, Jian, and Zhang, 2018) that influence risk tolerance of financial industry professionals and their clienteles (Baker and Ricciardi, 2015; Nofsinger and Varma, 2007), which is a key factor in the financial planning process.

We demonstrate that the empirical results remain robust after addressing potential endogeneity concerns about local creative culture and firm location by employing a matched sample analysis and an instrumental variable approach. The empirical findings hold after a series of robustness tests. The local risk-taking effect is robust to local controls, county fixed effects, and the use of alternative firm location dataset. The results are also robust to use of an alternative set of control variables. The empirical results remain robust after excluding firms located in areas with a well-known strong creative culture. This point demonstrates that the impact of local-risk-taking on dividends affects not only the firms located in areas with a highly prominent creative environment like Silicon Valley but also the firms located in other areas. Overall, this paper introduces a new local factor—creative culture and risk-taking associated with creative culture—to dividend literature and shows that investors' local risk-taking characteristics affect corporate dividend policies. This finding highlights the

notion that firms cater to investors' dividend preferences determined by local risk-taking characteristics.

Notes

1 The empirical results hold after addressing endogeneity concern by using a matched sample analysis and an IV approach. Our findings also remain robust after a series of robustness tests. The local risk-taking effect holds after controlling for local factors, county effects, and it also remains robust after using an alternative firm location dataset. In addition, our findings hold after using an alternative set of control variables including return on assets and sales growth. *Return on Assets* and *Sales Growth* are used to control for profitability and investment opportunities that determine dividend supply so that we can focus on the dividend demand effect on firm dividend policy. We thank anonymous referee for pointing this distinction out. These results support the notion that the effect shown in this paper comes through the local culture channel. Our findings remain robust after excluding areas with a highly prominent local creative culture. The association between dividend policies and the local risk-taking propensity proxied by the local creative culture is significantly positive in not only the areas with a highly prominent creative culture but also all the other areas. This result highlights the extent of the association between the dividend policy and local risk-taking. We thank the anonymous referee for the suggestion to move the discussion about robustness tests to a footnote.

2 We thank anonymous referee for bringing the role of causality in dividend catering to our attention.

3 We thank the anonymous referee for highlighting the importance of additional tests of dividend catering theory.

4 We would like to thank anonymous referee for the recommendation to clarify the importance the board of directors in setting firm's dividend policy.

5 We thank anonymous referee for raising the issue of differences in shareholdings of retail and institutional investors.

6 We thank the anonymous referee for bringing this point to our attention.

7 Quoting from Fama and French (2001) on page 68: "We begin by examining the incidence of dividend payers among NYSE, AMEX, and NASDAQ firms. We exclude utilities from the sample to avoid the criticism that their dividend decisions are a byproduct of regulation. We exclude financial firms because our data on the characteristics of dividend payers are from COMPUSTAT and COMPUSTAT's historical coverage of financial firms is spotty."

8 Please see the dataset specifics at http://www.ers.usda.gov/data-products/creative-class-county-codes/.

9 Please see the data documentation at http://www.ers.usda.gov/data-products/creative-class-county-codes/documentation/.

10 We thank the anonymous referee for the suggestion to clarify the models used in this paper.

11 Following Ucar (2016), we require *Volatility* and *Lagged return* to have stock return information to be non-missing for at least the previous 12 months for firms with stock returns available for less than 24 months.
12 We use the Fama and French (1997) 48 industry classifications.
13 We thank the anonymous referee for pointing out the potential bias when using NYSE percentiles.
14 The addition of firm controls related to profitability and investment opportunities of the firm allows us to isolate dividend supply determined for instance by factors like *Lagged Return*, *Q*, and *Asset Growth* as in Becker, Ivković, and Weisbenner (2011) and focus on the dividend demand by the local investors. We thank anonymous referee for bringing this issue to our attention.
15 The 10k header dataset is provided by Bill McDonald's website at http://www3.nd.edu/~mcdonald/10-K_Headers/10-K_Headers.html.
16 We thank the anonymous referee for bringing this interpretation of the matching sample tests to our attention.
17 https://www.ers.usda.gov/data-products/creative-class-county-codes/ and https://www.ers.usda.gov/data-products/creative-class-county-codes/documentation.aspx.
18 For example, Marade, Gibbons, and Brinthaupt (2007), Poorsoltan (2012), Tyagi et al. (2017), and Fillis (2000).
19 We thank the anonymous referee for bringing this potential source of endogeneity to our attention.
20 We should emphasize that *CreativeShare* is not a complete proxy for local investor risk taking. There is, however, a demonstrably strong association between creative culture and risk-taking (see Section 1: Introduction), even though the former is not a complete proxy for the latter. We thank anonymous referee for making this distinction.

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