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## Does Corporate Culture Influence IPO Pricing?

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# Does Corporate Culture Influence IPO Pricing?

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## **Abstract**

Corporate culture is an influential factor for a corporation's success, but its value cannot be easily assessed by the parties involved in an Initial Public Offering (IPO) process. Using a corporate culture measure based on Li et al. (2021) and a sample of 937 US IPOs, we find IPOs of firms with a strong corporate culture to be associated with higher first-day returns and also to some extent with higher subsequent volatility and absolute offer price revisions. Our findings are consistent with the theory about the relation between ex ante uncertainty and IPO pricing.

*Keywords:* IPO, Corporate Culture, Underpricing, Price Revision, Volatility

*JEL Classification:* G12, G14, G30, Z10

## 1. Introduction

Survey evidence indicates that corporate culture might be one of the most influential factors for a corporation’s success (Graham et al., 2018, 2019). Thus, it should also affect a firm’s first market valuation. Corporate culture is, however, intangible and its value is difficult to assess (Edmans, 2011; Graham et al., 2019). Graham et al. (2019), for instance, highlight that a strong corporate culture facilitates risk-taking, which could create uncertainty and might affect the ability of all parties involved in an Initial Public Offering (IPO) process to value the firm accurately. Further, according to Guiso et al. (2015), going public might also alter the firm’s inherent culture, which makes it even more difficult to assess its value a priori. Given that key theories and empirical evidence suggest that more underpricing, higher absolute offer price revisions, and higher subsequent volatility characterize IPOs with more uncertainty about the value of the firm (see e.g., Beatty and Ritter, 1986; Loughran and McDonald, 2013; Ritter, 1984; Rock, 1986), we expect IPOs of firms with a strong corporate culture to be associated with these attributes.

We test this conjecture using a sample of 937 US IPOs from 2001 through 2018 and data on corporate culture based on Li et al. (2021). Consistent with theory, we find IPOs of firms with a strong corporate culture to experience higher variation in both primary and secondary market pricing, i.e., firms with a strong corporate culture are associated with significantly higher first-day returns and to some extent with higher post-IPO volatility and absolute offer price revisions. Our results hold in several multivariate specifications and in tests addressing endogeneity concerns. The latter include the implementation of the entropy balancing algorithm by Hainmueller (2012) as well as instrumental variables approaches.

In additional tests, we find that while all cultural dimensions appear to contribute to underpricing, the cultural dimension *innovation* appears to drive the results concerning absolute offer price revisions and post-IPO volatility. Further, we provide evidence that in environments where information asymmetry is high, the effect of corporate culture on IPO underpricing is even more pronounced. We test this by employing sample splits and three measures of information asymmetry provided by the existing literature (i.e., firm age, the number of business segments, and firm size) (Lowry et al., 2020; Ritter, 1984).

In our robustness tests, we also address the issue that the culture scores provided by Li et al. (2021) suffer from look-ahead bias since there is only data for the fiscal year after the IPO. Although corporate culture is rather stable and should evolve only slowly over time (Li et al., 2021), employing these forward-looking scores might distort our results. To tackle this issue, we construct alternative culture measures based on initial IPO prospectuses. We construct these measures using the word lists and closely following the methodology in Li et al. (2021). Our results show that our alternative measures strongly correlate with those provided by Li et al. (2021). Further, we find, consistent with the results from our baseline regressions, a positive association between corporate culture and IPO pricing using these alternative culture measures. This suggests that look-ahead bias is unlikely affecting our results.

Taken together, we believe that our findings do not only contribute to the extensive literature on IPO pricing (see e.g., Huang and Ritter, 2022; Ljungqvist and Wilhelm Jr, 2003; Loughran and Ritter, 2002; Lowry et al., 2017; Lowry and Schwert, 2004; Ritter and Welch, 2002) but also to the literature investigating the relation between corporate culture and capital market outcomes (see e.g., Biggerstaff et al., 2015; Cumming et al., 2019; Davidson et al.,

2015; Fiordelisi and Ricci, 2014; Guiso et al., 2015; Li et al., 2020, 2021). The study which is the most closely related to ours is Cumming et al. (2019). They use a text-based measure to show that corporate culture has an impact on an IPO firm’s financial performance (in terms of its return on assets or its earnings before interest and tax) and its distress risk. We extend their study by using a novel culture measure based on a semisupervised machine learning approach; and we show IPOs of firms with a strong corporate culture to experience significantly higher first-day returns and to some extent higher subsequent volatility and absolute offer price revisions. These findings provide empirical support for several key theories of IPO pricing related to asymmetric information between the underwriter, the IPO firm, and the market participants (see e.g., Beatty and Ritter, 1986; Benveniste and Spindt, 1989; Ritter, 1984; Rock, 1986).

We organize the rest of this paper as follows. In Section 2, we present the theoretical background, related empirical findings, and also develop our hypotheses. In Section 3, we describe our sample, the main variables, and our methodology. In Section 4, we show our empirical results. Section 5 concludes.

## **2. Theoretical Background and Development of Hypotheses**

In this section, we will first provide the relevant background concerning corporate culture and its impact on firm value. Then, we will briefly present the theory about the relationship between ex ante uncertainty, information asymmetry, and IPO underpricing. Finally, we will develop our hypotheses on how corporate culture might affect IPO underpricing based on this theoretical foundation.

## *2.1. Corporate Culture and Its Impact on Firm Value*

Despite the fact that corporate culture is viewed as an important factor for a corporation's success, a general definition of corporate culture is difficult and has thus been debated in the literature. O'Reilly and Chatman (1996) were one of the first who aimed to define corporate culture from an academic viewpoint. They state that corporate culture can be seen as "a system of shared values defining what is important, and norms, defining appropriate attitudes and behaviors, that guide members' attitudes and behaviors" (O'Reilly and Chatman, 1996, p. 166).

Although other definitions of corporate culture have evolved over time, recent interview evidence by Graham et al. (2019) indicates that the definition of O'Reilly and Chatman (1996) matches pretty well with how executives view corporate culture. They document that executives described corporate culture, for example, as "'a beliefs system,' 'a coordination mechanism,' 'an invisible hand,' 'how employees interact with one another,' 'a standard of behavior,' [and] 'norms around how people treat people,' [...]" (Graham et al., 2019, p. 4).

Yet, more importantly, the interview evidence by Graham et al. (2019) not only highlights executives' views on what corporate culture is but also their views on how it potentially impacts firm value. According to them, 92% of corporate executives are convinced that enhancing corporate culture will raise the value of their company due to its important impact on decisions and actions. The interviewed executives mentioned that a firm's culture influences risk-taking, earnings management practices, and the choice of long-term versus short-term objectives (Graham et al., 2019).

Empirical evidence also supports the view that corporate culture influences corporate

decision-making and thus firm value. Using a sample of S&P 500 firms for the period from 2007 through 2011, Guiso et al. (2015) report an outperformance (as measured by Tobin's Q and return on sales) of firms where employees trust the firms' top managers. Li et al. (2021) provide large scale evidence of a positive association between corporate culture and firm performance using a sample of all Compustat firms for the period from 2001 through 2018. They show firms with a strong corporate culture to be related to an executive compensation design fostering risk-taking, more actual corporate risk-taking, higher operational efficiency, less earnings management, and higher Tobin's Qs. Besides, Li et al. (2020) document that firms with a strong corporate culture had significantly higher stock returns during the recent COVID-19 crisis.

Given that survey evidence and empirical evidence stress that corporate culture appears to influence corporate decision-making and consequently firm value, we expect it to affect a firm's first market valuation as well. However, corporate culture is intangible and its value is difficult to assess (a priori) for the parties involved in an IPO process. For example, Guiso et al. (2015) suggest that the process of going public alters the trade-off between costs and benefits of strict norms, leading management to retain only those values that they think are consistent with maximizing shareholder value. But management's perceptions about corporate values maximizing shareholder value might be wrong, and this can ultimately distort corporate decision-making. Further, Edmans (2011) highlights that stock markets sometimes undervalue intangibles such as employee satisfaction due to their ambiguous effects on firm performance. In the context of corporate culture, this might be true as well. While Graham et al. (2019) and Li et al. (2021) document that a strong corporate culture should be associated with a higher firm value, they also show corporate culture to facilitate risk-taking.

This ambiguity might result in uncertainty about the firm’s value and should consequently, as the theory presented in the next section suggests, lead to more underpricing.

## *2.2. Asymmetric Information and IPO Underpricing*

Underpricing typically refers to the percentage difference between the price at which the IPO shares were offered to investors and the closing price on the first trading day (Ljungqvist, 2007). Several prior studies have found that IPO underpricing is common<sup>1</sup> and that investors can earn abnormal profits. However, different explanations for this phenomenon have evolved in the literature over the last decades. Ljungqvist (2007) therefore defines four broad categories for these different explanations: Asymmetric information models, institutional explanations, explanations based on ownership and control, and behavioral explanations.

In this study, we relate to the explanations based on asymmetric information as, according to Lowry et al. (2017), most studies do. One of the most influential models building on the concept of asymmetric information is the Rock (1986) model. The model imposes a “winner’s curse” problem, where uninformed investors receive more shares in overpriced IPOs as their demand in attractively priced IPOs is partly crowded out by informed investors. As a result, IPOs must be underpriced in expectation to induce less informed investors to bid in the offering. Building on Rock (1986), Ritter (1984) as well as Beatty and Ritter (1986) show that underpricing is more pronounced when the ex ante uncertainty about the value of an IPO firm is high. This is because uncertainty causes investors to gather information, resulting in more informed investors, which in turn aggravates the winner’s curse problem, i.e., uninformed investors are crowded out. Therefore, IPOs, where ex ante uncertainty about

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<sup>1</sup>Lowry et al. (2017) notes that average underpricing amounts to 17.4% regarding a sample of US IPOs covering the period from 1973 through 2016.



the value is high, must be even more underpriced in order to induce uninformed investors to participate.

### *2.3. Development of Hypotheses*

Given that the asymmetric information models suggest a positive relation between ex ante uncertainty about an IPO's value and underpricing, we also expect to find issues of firms with a strong corporate culture to be associated with higher first-day returns, or in other words, more underpricing. The main reasons are that corporate culture is intangible, its value is difficult to assess, and corporate culture also facilitates risk-taking, which in turn should lead to uncertainty about an IPO's value. On this account, we form the following hypothesis:

**Hypothesis I:** All else equal, IPOs of firms with a strong corporate culture are associated with higher first-day returns.

While the uncertainty about the value of an IPO might be captured by its initial returns, absolute offer price revisions and post-IPO volatility are also commonly used to analyze the effect of ex ante uncertainty on IPO pricing (Ritter, 1984; Loughran and McDonald, 2013). If ex ante uncertainty about an IPO's value is high and there is information asymmetry, this might induce further information production as bookbuilding theory suggests (Benveniste and Spindt, 1989). If more information is produced during the bookbuilding process, offer prices are revised. On this account, we argue that the uncertainty about the value of corporate culture might cause information production during the bookbuilding process, and thus IPOs of firms with a strong corporate culture are associated with higher absolute offer

price revisions. Similarly, the information asymmetry should also result in heterogeneity in investors' beliefs about the value of corporate culture in the secondary market, which in turn should lead to higher volatility in the period shortly after the offering. We thus hypothesize:

**Hypothesis II:** All else equal, IPOs of firms with a strong corporate culture are associated with higher absolute offer price revisions and post-IPO volatility.

### 3. Data and Methodology

In this next section, we first outline the construction of our sample and define our key variables. Then, we provide summary statistics and describe our econometric approach to investigate the relationship between corporate culture and IPO pricing.

#### 3.1. Sample Construction

We construct our sample of US IPOs based on data from Thomson Financial's SDC New Issues database and the corrections provided on Jay Ritter's website.<sup>2</sup> We follow the literature and exclude real estate investment trusts (REITs), American depository receipts (ADRs), unit offerings, closed-end funds, and IPOs that are offered at a price below \$5.00 (see e.g., Loughran and McDonald, 2013; Lowry et al., 2017). We then merge with accounting data from Compustat, stock data from the Center for Research in Security Prices (CRSP), data from IPO prospectuses from the Electronic Data Gathering and Retrieval System (EDGAR), and data on corporate culture based on Li et al. (2021). After merging the data, our final sample consists of 937 US IPOs in the period from 2001 through 2018.

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<sup>2</sup>See <https://site.warrington.ufl.edu/ritter/ipo-data/>.

### 3.2. Definition of Key Variables

#### 3.2.1. Dependent Variables

The primary dependent variable in our baseline regressions is *First-Day Return*, which we define as the percentage change from the offer price to the first closing price. In additional regressions, we also employ *Abs. Revision* and *Post-IPO Volatility* as the dependent variables. We define the variable *Abs. Revision* as the unsigned percentage change from the midpoint of the first filed price range to the final offer price, while we define the variable *Post-IPO Volatility* as the root-mean square error of a market model estimation for each IPO for the window from day  $t + 5$  through day  $t + 94$  with  $t = 0$  as the IPO date, similar to Loughran and McDonald (2013).

#### 3.2.2. Independent Variables

Our main independent variables of interest are the raw *Culture Score*, which is the sum of the values of the five cultural dimensions (i.e., integrity, teamwork, innovation, respect, and quality) obtained from Li et al. (2021), and the dummy variable *Strong Culture*. The dummy variable *Strong Culture* equals one if the firm’s *Culture Score* is in the top quartile across all Compustat firms in a year, and zero otherwise.<sup>3</sup> While we acknowledge that our corporate culture scores are prone to a look-ahead bias since we are taking data for the fiscal year after the IPO<sup>4</sup>, we argue that corporate culture is rather stable and evolves only slowly over time (Li et al., 2021). For instance, the correlation between *Culture Score* and its lagged value

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<sup>3</sup>In additional regressions, we also define *Strong Culture* across all firms in our sample in a year and find qualitatively similar results. This approach allows us to mitigate the concern that IPO firms might considerably differ from firms that have been listed for a substantial duration.

<sup>4</sup>Data on corporate culture for the IPO year is only available for a few firms in our sample.

across all Compustat firms is 74%. Thus, taking data for the fiscal year after the IPO should not have a major influence on our findings.

However, we also address this issue by constructing an alternative culture score (*Culture Score Prospectus*) based on the IPOs' initial prospectuses and use this score in our robustness checks. To construct this alternative score, we use the word lists and follow the methodology of Li et al. (2021), i.e., we employ the term frequency-inverse document frequency (tf.idf) weighted count of the number of words belonging to each cultural dimension. Since we apply this method to the IPOs' initial prospectuses, this score does not suffer from the look-ahead bias mentioned above. Nonetheless, we believe that the scores obtained from Li et al. (2021) are more appropriate to measure corporate culture since the authors show that applying their method to earnings calls is superior compared to applying the method to the Management's Discussion and Analysis (MDA) section of annual reports (10-Ks). A reason for this is that earnings calls are held by the top managers who themselves are likely to live by the values and pass them on in their companies. Further, using the extemporaneous question-and-answer (QA) section of an earnings call instead of the scripted management presentation section has the advantage that it mitigates self-promotion to which IPO prospectuses are also likely prone to. Applying the method to the prospectuses might thus not measure corporate culture as accurately. For that reason, we employ the culture scores obtained from Li et al. (2021) as our main measure.

### 3.2.3. *Control Variables*

We control for a host of variables common in the IPO literature (see e.g., Loughran and McDonald, 2013; Lowry and Shu, 2002; Liu and Ritter, 2011). These variables include firm,

IPO, and market characteristics, i.e., we control for offer price revisions (*Price Revision*), the firm’s age at the IPO ( $\ln(Age)$ ), the firm’s sales ( $\ln(Sales)$ ), the firm’s leverage ratio (*Leverage*), an indicator variable taking the value of one if the IPO firm has positive earnings per share (*Positive EPS*), an indicator variable taking the value of one if the IPO was backed by venture capital (*Venture Backed*), the bookrunner’s and the lawyer’s market share (*Bookrunner Market Share* and *Lawyer Market Share*), an indicator variable taking the value of one if one of the big 4 auditing firms is the accounting firm involved in the IPO process (*Big 4 Auditor*), and for the buy and hold market return (*Market Return*) as well as the market volatility (*Market Volatility*) over the last 30 days prior to the IPO. Detailed definitions of all variables, especially of the control variables, are provided in Table A1 in the appendix.

### 3.3. *Summary Statistics, Correlations, and Univariate Tests*

In Table 1, we report descriptive statistics for the variables in our sample in Panel A and their pairwise correlations in Panel B.

[Insert Table 1 here]

Consistent with prior literature (see e.g., Loughran and McDonald, 2013), we find average first-day returns to amount to approximately 16.76% with a standard deviation of 25.23%. Thus, the IPOs in our sample are not only significantly underpriced on average, but first-day returns also exhibit large variation. Regarding absolute offer price revisions and post-IPO volatility, we also find large variation. Further, the descriptive statistics show that the average raw *Culture Score* amounts to 6.60; and 38% of the firms in our sample have a

strong corporate culture. As a point of reference, the average raw *Culture Score* across all Compustat firms over the period from 2001 through 2018 is 5.63. We can thus conclude that the firms in our sample have a slightly higher average score. Finally, in terms of control variables, the descriptive statistics in Panel A show that the average firm size as measured by sales is \$746.44 million, average firm age is 23.08 years, and average leverage is 37.25%.

Regarding pairwise correlations reported in Panel B, we find them to be rather low among our control variables. The only noteworthy correlations are between  $\ln(\text{Sales})$  and *Venture Backed* and between  $\ln(\text{Sales})$  and  $\ln(\text{Age})$ , but they do not exceed 70%. We therefore assume that multicollinearity does not affect our results. Perhaps, more interestingly is that Panel B also reveals significantly positive pairwise correlations between *Strong Culture* and the IPO pricing variables, i.e., 28%, 9%, and 26% for *First-Day Return*, *Abs. Revision*, and *Post-IPO Volatility*, respectively. This may provide some support for our hypotheses.

A further preliminary (univariate) test of our hypotheses is displayed in Figure 1, where we sort the IPO pricing variables into quartiles of our raw *Culture Score*.

[Insert Figure 1 here]

Except for *Abs. Revision*, we find a clear pattern that, in the absence of control variables, a higher *Culture Score* is associated with higher first-day returns and higher subsequent volatility.

### 3.4. *Econometric Approach*

To ensure that the association between corporate culture and IPO pricing also persists in multivariate specifications, we first perform ordinary least squares (OLS) regressions of the

following form:

$$\begin{aligned} \textit{First-Day Return}_i = & \beta_0 + \beta_1 \times \textit{Culture Score}_i \text{ (or } \textit{Strong Culture}_i\text{)} \\ & + \beta' \times X_i + \textit{Industry FE} + \textit{Year FE} + \varepsilon_i, \end{aligned} \quad (3.1)$$

where  $i$  is the firm and  $\varepsilon$  denotes the error term. The main dependent variable to test our first hypothesis is *First-Day Return*. To test our second hypothesis, we employ *Abs. Revision* and *Post-IPO Volatility*, which we do not show in equation 3.1 for reasons of brevity. The main independent variables of interest are *Culture Score* and *Strong Culture*. Since we hypothesize that IPOs of firms with a strong corporate culture are associated with higher first-day returns (as well as with higher absolute offer price revisions and subsequent volatility), we expect the coefficient  $\beta_1$  to be positive and significant. To account for other variables potentially affecting IPO pricing, we also include a vector of control variables denoted by  $X$ , Fama-French 48-industry dummies denoted by *Industry FE*, and year dummies denoted by *Year FE*. Finally, to account for heteroscedasticity, we report the regression results with standard errors clustered across industry.

But although we control for this host of variables, include several fixed effects, and also cluster standard errors, the results from these OLS regressions might only provide a first indication of whether corporate culture impacts IPO underpricing. The reason is that endogeneity (i.e., our variables of interest are correlated with the error term) might distort our results. Sources of endogeneity might be, for instance, omitted variable bias and selection bias.<sup>5</sup>

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<sup>5</sup>We believe that reverse causality is unlikely affecting our results in this setting. However, our tests should also account for this source of endogeneity.

To account for the potential endogeneity, we employ two different approaches. First, we rerun the regressions where *Strong Culture* is our main independent variable of interest on an entropy-balanced sample. The rationale behind this is that firms with a strong corporate culture might systematically differ from firms without a strong corporate culture (in terms of other firm characteristics). Hence, to ensure that our results are not driven by these differences, we employ the entropy balancing algorithm proposed by Hainmueller (2012). This algorithm allows us to obtain a weighted sample where differences between the moment conditions of the covariates in our treatment and control groups are eliminated. Thus, running the same regressions on the entropy-balanced sample should account for the potential selection bias.

Second, we employ an instrumental variables approach to address endogeneity concerns and particularly those related to omitted variable bias (Angrist and Krueger, 2001; Kennedy, 2008). To do so, we use the two-stage least squares estimator (2SLS). This estimator requires at least one instrumental variable, which meets two conditions – the relevance and the exclusion condition. The relevance condition is met if the instrument is strongly correlated with the potentially endogenous variable, while the exclusion condition requires that the instrument only influences the outcome variable through the potentially endogenous variable and is thus uncorrelated with the error term.

In the first stage of our 2SLS regressions, we employ two variables to instrument for our potentially endogenous measure of corporate culture. Our first instrument is the median *Culture Score* of all Compustat firms in the same 4-digit SIC industry in the year prior to



the firm’s IPO.<sup>6</sup> The rationale behind using this particular instrument is that firms in the same industry might be similar in terms of their cultural values and norms. In this regard, Graham et al. (2019) even highlight that ”industry considerations play a role in determining whether a firm has an effective culture” (p. 10). We thus expect to find a strong positive correlation between our industry-level measure and the firm’s corporate culture. But even if we find a strong correlation and our instrument meets the relevance condition, it must also meet the exclusion condition. We argue that although an industry’s culture might affect the culture of a firm within the industry, it should unlikely affect the pricing of the firm’s IPO. Thus, the exclusion condition is likely met and we believe our first instrument is valid.

For our second instrument, we make use of the ”mimicking variable” strategy as done in Cumming et al. (2019), for example. In our case, we use propensity score matching to match the IPO firms in our sample with firms in the same 4-digit SIC industry and year based on firm size. We then use the one-year lagged *Culture Score* of these matched firms to instrument for the IPO firms’ corporate culture. As firms which are similar in size and also operate in the same industry might share similarities in their corporate cultures, we expect to find a positive correlation between our second instrument and our potentially endogenous variable. Hence, we believe that the relevance condition should likely be met. Regarding the exclusion condition, we also believe that this condition is met since the corporate culture of a matched firm should unlikely affect the pricing of the firm’s IPO.

In our second stage regressions, we can then exploit the exogenous variation from our instruments to establish a causal relationship between corporate culture and IPO pricing.

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<sup>6</sup>There are also a number of other recent studies that instrument the potentially endogenous variable with an industry-level measure of the same variable (see e.g., Lin et al., 2011; Yang and Zhao, 2014)

To check if our instruments are indeed exogenous as we have argued above, we can employ the Sargan-Hansen J-statistic (Hansen, 1982; Sargan, 1958). This is only possible because we employ two instruments for one potentially endogenous variable; and thus our 2SLS regression system is overidentified. Since the null hypothesis of the Sargan-Hansen J-statistic is that the instruments are uncorrelated with the error term, our instruments are valid if the results of this test are indicative of a failure to reject the null hypothesis.

In sum, we believe that our econometric approach is suitable to address potential endogeneity concerns and thus to test if there is a causal relationship between an IPO firm’s corporate culture and underpricing.

## 4. Empirical Analysis and Results

In this section, we discuss the results from our empirical analysis investigating the effect of corporate culture on IPO pricing.

### 4.1. *The Impact of Corporate Culture on First-Day Returns*

We first discuss the results from our baseline OLS regressions where *First-Day Return* is the dependent variable and where *Culture Score* and *Strong Culture* are the main independent variables of interest. Table 2 reports the results.

[Insert Table 2 here]

In column (1) of Table 2, we present the results from a regression where we only include our control variables. The results show that, consistent with prior studies, first-day returns are significantly higher when the issue had higher offer price revisions (Hanley, 1993), when

the issue was backed by venture capital (Loughran and McDonald, 2013), when the bookrunner had a higher market share (Megginson and Weiss, 1991), and when the market prior to the issue was performing well. Initial returns are, however, lower for larger firms.

In column (2), we report the results from the same regression, but where we add *Culture Score* as an additional independent variable. As can be seen, the coefficient on *Culture Score* is positive and highly significant (1% level). This is in line with our first hypothesis suggesting that IPOs of firms with a stronger culture are associated with higher first-day returns. Also, it is noteworthy that the R-squared improves from 29.9% to 31.2%, while the estimates on the control variables remain qualitatively similar. The only noteworthy differences are that the coefficient on our proxy for firm size ( $\ln(Sales)$ ) becomes statistically insignificant, whereas the coefficient on *Leverage* becomes statistically significant.

Finally, in column (3), we show the results from a regression where we employ the dummy variable *Strong Culture* instead of the continuous variable *Culture Score* as the main independent variable of interest. But similar to column (2), we find IPOs of firms with a strong culture to be associated with higher first-day returns, or in other words, more underpricing. The effect is also economically significant since the coefficient on *Strong Culture* suggests that these issues have almost 4 percentage points higher first-day returns.

Taken together, we can thus conclude that the results from these baseline specifications lend support to our first hypothesis.

#### 4.2. Tests Addressing Endogeneity

Although the baseline results provide a clear picture of a positive association between firms with a strong corporate culture and IPO underpricing, we caution that the results might be

biased because of endogeneity. To address this issue, we perform two further tests in the next sections.

#### *4.2.1. Entropy Balancing*

Our first test used to mitigate endogeneity concerns is to employ the entropy balancing algorithm by Hainmueller (2012). As mentioned before, this algorithm allows us to obtain a weighted sample where differences between the moment conditions of the covariates in our treatment and control groups are eliminated. Rerunning our previous regression specifications on this entropy-balanced sample should thus help us to account for a possible selection bias, i.e., firms with a strong corporate culture might systematically differ from firms without a strong corporate culture (in terms of other firm characteristics). We report the results from this test in Table 3.

[Insert Table 3 here]

In Panel A, we show the covariate balance before and after entropy balancing. We indeed find that in our sample, firms with a strong culture are systematically different from those without a strong culture. For instance, before implementing the entropy balancing algorithm, firms with a strong culture are significantly smaller and younger, are less leveraged, and have less likely positive earnings per share. Further, the issues of these firms are more often backed by venture capital, the respective bookrunners have higher market shares, and one of the big four auditing firms is more often involved in the IPO process. However, Panel A shows that all of these differences are eliminated once the algorithm is implemented.

In Panel B, we report the results from regressions (similar to columns (1) and (3) of

Table 2) employing this weighted sample. Yet, the results do not alter significantly with regard to the effect of corporate culture on IPO first-day returns. We again find a positive and highly statistically significant coefficient on *Strong Culture* in column (2). The magnitude of the coefficient is also comparable to Table 2. This leads us to the conclusion that the observable differences between IPOs of firms with a strong culture and those without a strong culture do not appear to be the driving force behind our results; it is rather corporate culture.

#### 4.2.2. *Instrumental Variables Approach*

We next turn to the instrumental variables approach to address endogeneity and to particularly rule out concerns related to omitted variable bias. We perform 2SLS estimations where we employ two instruments for our potentially endogenous variable *Culture Score*. The first instrument is the median *Culture Score* of all Compustat firms in the same 4-digit SIC industry in the year prior to the firm’s IPO (*Industry Culture*). While finding an appropriate instrument for a firm’s corporate culture is difficult, we argue that firms in the same industry might be similar in terms of their cultural values and norms (Graham et al., 2019). Further, several other studies have also employed an industry-year-level measure of the potentially endogenous variable as an instrument and state that it should unlikely affect the firm’s outcomes directly (see e.g. Lin et al., 2011; Yang and Zhao, 2014). We therefore believe that our first instrumental variable is valid and meets, as outlined before, both the relevance and the exclusion condition.

The second instrument is the one-year lagged *Culture Score* of a matched firm in the Compustat universe. We argue that firms, which are similar in size and operate in the same

industry, also share similarities in terms of their corporate culture. However, the culture of a matched firm should unlikely affect an IPO's first-day return. Thus, the relevance and the exclusion condition are likely met.

In Table 4, we report the results from the 2SLS estimations.

[Insert Table 4 here]

Column (1) documents the regression results from the first stage. As expected, we find positive and significant coefficients on our two instruments. The reported F-test shows that we can also reject the null hypothesis that the coefficients on the instruments are jointly 0. Further, the results of the Sargan-Hansen test document that our instrumental variables are indeed uncorrelated with the residuals in the second stage regressions and are thus likely exogenous. In column (2), we display the regression results from the second stage. In line with our first hypothesis and our previous results, we find that IPOs of firms with a stronger corporate culture are associated with higher first-day returns. Hence, we believe that the results from the instrumental variables approach allow us to rule out that omitted variable bias is affecting our results.

In regressions shown in our online appendix, we also use instrumental variables approaches to test if the results hold when we employ our dummy variable *Strong Culture*. Since this variable is a binary, we not only run 2SLS estimations but also three stage esti-

mations<sup>7</sup> and average treatment effect models (see Heckman, 1976, 1978, e.g.). However, in all of these tests, we also find consistent evidence that firms with a strong corporate culture are associated with higher first-day returns.

### 4.3. *The Impact of Corporate Culture on Absolute Offer Price Revisions and Post-IPO Volatility*

While our analyses so far focus on the relation between corporate culture and first-day returns, we also test whether corporate culture affects offer price revisions and post-IPO volatility. Our hypothesis is that the uncertainty about the value of corporate culture and its potential effects on the firm’s development might also result in higher absolute offer price revisions<sup>8</sup> and post-IPO volatility (Loughran and McDonald, 2013). In Table 5, we therefore report the results from tests similar to the previous sections, but where we use *Abs. Revision* and *Post-IPO Volatility* as the dependent variables.

[Insert Table 5 here]

In Panel A of Table 5, we focus on the impact of corporate culture on absolute offer price revisions. In column (1), we show the results from an OLS regression where the main independent variable of interest is *Culture Score* and where the control variables are the same

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<sup>7</sup>Wooldridge (2010) notes that while 2SLS estimations are appropriate when the potentially endogenous variable is binary, a three stage estimation might be advantageous because (I) using a binary response model in the first stage takes the nature of the variable into consideration, (II) the approach is even consistent when the binary response model in the first stage is not correctly specified, and (III) the standard errors of the conventional instrumental variables approach stay asymptotically valid. In our three stage estimations, the first stage is a probit model explaining the potentially endogenous variable *Strong Culture* with our instrumental variables and some additional control variables. The second and third stage are then similar to a 2SLS estimation with the fitted probabilities used as the instrumental variable.

<sup>8</sup>Similar to Loughran and McDonald (2013), we use unsigned offer price revisions since we are not interested in the direction but in the magnitude of the revision.

as those used earlier, except that we exclude *Price Revision*. The results show that issues of firms with a stronger corporate culture are significantly associated with higher absolute offer price revisions. When we repeat this regression with our dummy variable *Strong Culture* as the main independent variable of interest, we also find a positive and significant association (column (2)). This result also holds when employing an entropy-balanced sample in column (3). However, although we find a positive coefficient in column (4) where we present the results from a 2SLS estimation, the coefficient is not statistically significant at conventional levels as the  $p$ -value is 15.81%. We thus conclude that there is some slight evidence that issues of firms with a strong corporate culture are related to higher absolute offer price revisions, but we cannot completely rule out endogeneity concerns.

In Panel B, we report the results from regressions where *Post-IPO Volatility* is the dependent variable. Control variables are again similar to those used earlier, but we additionally control for the IPO's first-day return. In column (1), we do not find a significant coefficient on *Culture Score* when we estimate an OLS regression. This suggests that corporate culture does not appear to affect post-IPO volatility. However, the result changes when we use the dummy variable *Strong Culture* in column (2). In this specification, the coefficient on *Strong Culture* is significant at the 5% level. This result also remains when using the entropy-balanced sample (column (3)) and when running a 2SLS estimation (column (4)).

Overall, the results in this section provide (at least to some extent) support for our second hypothesis stating that the uncertainty about the value of corporate culture and its potential effects on the firm's development lead to higher absolute offer price revisions and post-IPO volatility.



#### 4.4. Additional Tests

In this section, we present the results from additional tests helping us to provide a clearer picture of the link between corporate culture and IPO pricing.

##### 4.4.1. The Impact of Different Cultural Dimensions on IPO Pricing

We first aim to disentangle which cultural dimensions are particularly driving our results. We do so by running OLS regressions with the scores for each of the five cultural dimensions as the main independent variables of interest. The results are displayed in Table 6.

[Insert Table 6 here]

In Panel A, we focus on the impact of the cultural dimensions on first-day returns. The results suggest that each cultural dimension positively and significantly affects IPO first-day returns. In Panel B, we display the results from regressions with *Abs. Revision* as the dependent variable. Except for the dimension *innovation*, we do not find any statistically significant coefficients. Finally, in Panel C, we employ *Post-IPO Volatility* as the dependent variable and find that issues of firms with high scores on the cultural dimension *innovation* appear to be strongly associated with higher subsequent volatility.

All in all, the results suggest that particularly IPOs of firms with an innovative culture are associated with more underpricing, higher absolute offer price revisions, and higher post-IPO volatility. Underwriters and investors appear to be uncertain about the value of these firms. In this respect, Heeley et al. (2007) also argue that firms with a nontransparent relationship between innovation and inventive returns may be associated with more information asymmetry and are therefore more likely to be underpriced. However, it is also important

to note that the combination of all cultural dimensions (as measured by our primary culture variables) might be causing even more uncertainty and results in higher first-day returns, absolute offer price revisions, and post-IPO volatility.

#### 4.4.2. *Information Asymmetry and the Relationship between Corporate Culture and Underpricing*

We next turn to investigating whether the information environment particularly affects the relation between corporate culture and IPO pricing. Our results so far are consistent with the well-documented theoretical relationship between information asymmetry and IPO prices, i.e., higher information asymmetry among participants in the IPO process is associated with higher underpricing (for an overview, see e.g., Ljungqvist, 2007). Assuming that the information environment is also likely to be a key determinant of uncertainty in the valuation of a strong corporate culture, we expect that the better the information environment, the easier it is to determine the value of corporate culture and the uncertainty is thus reduced. Consequently, the impact of corporate culture on the IPO pricing variables should be lower for IPOs with a better information environment.

As measures of information asymmetry, we follow previous literature and use firm age, the number of business segments, and firm size (Lowry et al., 2020; Ritter, 1984). We split the sample based on the median of each variable and repeat our baseline tests. The results are displayed in Table 7.

[Insert Table 7 here]

For all three sample splits, we find the coefficient on *Culture Score* to be higher for IPOs

in environments where information asymmetry is high.<sup>9</sup> For instance, the coefficient on *Culture Score* almost doubles for younger firms ( $\leq 12$  years) compared to more mature firms with richer information environments (1.455 and 0.788, respectively). With respect to the number of business segments, the coefficient on *Culture Score* even becomes insignificant for the sample of firms with a higher number of segments ( $> 2$ ). More business segments may lead to higher diversification and may benefit IPO firms by reducing information asymmetries (Boulton et al., 2013; Lowry et al., 2020). However, we note that the relatively unbalanced sample split (647 to 236 observations) may also have an influence on this result.

#### 4.5. Robustness

In this section, we discuss the results from robustness tests that allow us to ensure the validity of our results.

##### 4.5.1. The Impact of Corporate Culture on IPO Pricing Using an Alternative Culture Measure

While the results using our primary culture measure based on Li et al. (2021) provide consistent evidence of a positive association between corporate culture and first-day returns and to some extent absolute offer price revisions and post-IPO volatility, the results might suffer from look-ahead bias. As mentioned earlier, we account for this by constructing alternative scores for each cultural dimension as well as an aggregate measure based on the IPO prospectuses. To construct these scores, we use the word lists and closely follow the methodology of Li et al. (2021), i.e., we employ the tf.idf-weighted count of the number of words belonging

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<sup>9</sup>These results also hold when calculating standardized regression coefficients.

to each cultural dimension. Table 8 reports the correlations between our primary culture measures and the alternative culture scores based on the IPO prospectuses.

[Insert Table 8 here]

The results show that the correlations are strongest between our alternative cultural dimensions and their counterparts based on Li et al. (2021). For instance, the correlation between our measure for *innovation* and the measure obtained from Li et al. (2021) is 56%, while the correlation between our measure for *quality* and its counterpart is even higher at 59%. Also, it is important to note that the correlation between our alternative aggregate measure of corporate culture and its counterpart is 53%. Hence, we believe our alternative measures are appropriate to capture corporate culture.

After having shown that our alternative culture measures appear to capture the firms' culture accurately, we also test whether our previous regression results persist when employing these alternative scores. In Table 9, we show the results from regressions where the main independent variable of interest is *Culture Score Prospectus*.

[Insert Table 9 here]

In Panel A, we report the results from regressions using the same sample of IPOs as in the previous sections, i.e., the IPOs for which we have data on corporate culture based on Li et al. (2021).<sup>10</sup> In column (1), the dependent variable is *First-Day Return*. Consistent with our previous findings, we document a positive and statistically significant association

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<sup>10</sup>We note that for some of these IPOs, we were unable to unambiguously assign the correct initial prospectus because either there were multiple IPO prospectuses or the IPO prospectus was more than three days away in time from the filing date reported in the Thomson Financial's SDC New Issues database. This reduces our sample size by 33 observations.

between corporate culture and first-day returns. This strengthens our first hypothesis that the ex ante uncertainty about the value of corporate culture results in higher initial returns. In column (2), we display the regression results with *Abs. Revision* as the dependent variable and find no significant association. Finally, column (3) displays the regression results where *Post-IPO Volatility* is the dependent variable. The results show a positive and significant association between corporate culture and volatility in the period shortly after the IPO, which is consistent with our second hypothesis.

In Panel B, we rerun the regressions from Panel A on a larger sample of IPOs covering the period from 2001 through 2018. For being included in the sample, we do not require the firms to have data on corporate culture based on Li et al. (2021). Yet, even when using this larger sample, the results do not change qualitatively. We still find positive and significant coefficients on *Culture Score Prospectus* in the regressions where *First-Day Return* (column (1)) and *Post-IPO Volatility* (column (3)) are the dependent variables.

In addition to the OLS estimations, we also rerun the 2SLS regressions using the alternative culture measure as our main independent variable. Regarding the tests based on same sample of IPOs as in the previous sections, the employed instruments are again *Industry Culture*, which is the industry-year median of *Culture Score* one year prior to the IPO based on all Compustat companies with available culture values, and *Matched Culture*, which is the one-year lagged *Culture Score* of a firm matched by industry, year, and sales in the Compustat universe. Note that based on the larger sample, we instrument *Culture Score* only with *Industry Culture*, since *Matched Culture* is insignificant in the first stage regression. Table 10 shows the results.

[Insert Table 10 here]

In Panel A, we again report the results from regressions using the same sample of IPOs as in the previous sections. Columns (1) to (3) show the results from the first stage regressions. Across all three columns, we find a strong positive correlation between our instruments and the alternative culture score. Further, the results of the Sargan-Hansen test document that our instrumental variables are indeed uncorrelated with the residuals in the second stage regressions and are thus likely exogenous. Columns (4) to (6) report the results from the second stage regressions. Similar to the results in Table 4, we obtain positive and significant coefficients when we employ *First-Day Return* as the dependent variable. The coefficients on *Abs. Revision* and *Post-IPO Volatility* are, however, insignificant.

Using the larger sample in Panel B, we also find similar results. In column (6) where *Post-IPO Volatility* is the dependent variable, we even find a positive and significant coefficient. This lends support to our hypotheses.

Altogether, the results largely resemble those obtained using the baseline culture measure *Culture Score*, which leads us to the conclusion that the results are not driven by a look-ahead bias.

#### 4.5.2. Further Robustness Checks

We also perform several other robustness checks to ensure the validity of our findings. The results of these tests are summarized below. The reader is referred to the Supplementary Material for more information.<sup>11</sup>

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<sup>11</sup>We note that we only report the results with *First-Day Return* as the dependent variable for reasons of brevity. The results regarding *Abs. Price Revision* and *Post-IPO Volatility* are slightly weaker, but available upon request from the authors.

First, we begin by employing alternative measures of initial returns. Specifically, we calculate the percentage change from the offer price to the stock price after one and two weeks, respectively (see e.g., Ellul and Pagano (2006)). We rerun the baseline OLS regression, the weighted regressions based on entropy-balanced samples, and the 2SLS regressions with these alternative dependent variables. Consistent with our previous results, we find a positive and significant association between corporate culture and initial IPO returns.

Second, we use two alternative definitions of our dummy variable *Strong Culture*. For instance, we define that firms possess a strong culture if their *Culture Score* exceeds the 90<sup>th</sup> percentile of all Compustat firms in a year, and zero otherwise. Our second alternative definition is that firms possess a strong culture if their *Culture Score* exceeds the 75<sup>th</sup> percentile of all IPOs in our sample in a year, and zero otherwise. Using these alternative definitions, we find our results to remain qualitatively unchanged. In fact, they are even more pronounced.

Third, we include additional control variables<sup>12</sup> and dummy variable for the states in which the firms were headquartered at the time of the IPO<sup>13</sup> to further rule out concerns related to omitted variable bias. We carry out an array of tests, i.e., we use different estimation methods (e.g., OLS regressions, 2SLS regressions, three-stage regressions and average treatment effect models (see e.g., Heckman (1976, 1978)) and alternative measures of corporate culture, and find our results to be robust.

Fourth, we proceed by testing whether the results hold when we apply different restric-

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<sup>12</sup>The additional control variables include, among others, variables on venture capital reputation (Nahata, 2008), recent IPO activity (Butler et al., 2014; Gao et al., 2013; Huang and Ritter, 2022), and multiple share classes Smart and Zutter (2003).

<sup>13</sup>The reason is that there is, for instance, evidence that Delaware incorporations are associated with higher firm value and greater takeover activity (Daines, 2001).

tions and splits to our sample, such as excluding certain industries, i.e., financials, utilities, or internet firms, or taking regulatory changes and other important events during our observation period into account, i.e., the Sarbanes-Oxley Act (SOX), the financial crisis, the Dodd-Frank Act, and the JOBS Act. However, the results are qualitatively similar regardless of the restrictions and sample splits used.

Finally, we rerun our baseline OLS specification with alternative standard errors, i.e., robust standard errors, standard errors clustered across years, and clustered across both industries and years as done in Liu and Ritter (2011). We find that the results remain robust.

Taken together, we believe that this battery of robustness checks lends strong support for our first hypothesis that there is a causal relation between corporate culture and initial IPO returns. The tests also provide some support for our second hypothesis stating that the uncertainty about the value of corporate culture and its potential effects on the firm’s development leads to higher absolute offer price revisions and post-IPO volatility.

## **5. Conclusion**

In this paper, we examine the impact of corporate culture on IPO pricing. Although corporate culture is an influential factor for a corporation’s success, it is rather intangible and its value is difficult to assess. Further, survey and empirical evidence show that a strong corporate culture facilitates corporate risk-taking, which might create uncertainty and affects the ability of investors to value the company (see e.g., Graham et al., 2019; Li et al., 2021).

Key theories of IPO pricing suggest that ex ante uncertainty about an IPO’s value leads to more underpricing (see e.g., Beatty and Ritter, 1986; Ritter, 1984). Using a sample



of 937 US IPOs from 2001 to 2018, we find evidence consistent with these theories. Our results show that IPOs of firms with a strong culture are significantly related to higher first-day returns, or in other words, more underpricing. Further, we find a positive association between corporate culture and post-IPO volatility, which is also in line with the notion that information asymmetry results in heterogeneity in investors' beliefs about the value of corporate culture.

In additional tests, we show that the effect of corporate culture on IPO underpricing is even stronger in environments where information asymmetry is high. Using firm size, firm age, and the number of business segments as proxies for information asymmetry, the effect is considerably higher on average compared to our baseline specifications.

With these results, our study contributes to the vast literature on IPO pricing (for an overview, see e.g., Lowry et al., 2017) and to the literature investigating the impact of corporate culture on capital market outcomes (see e.g., Guiso et al., 2015; Li et al., 2021). To the best of our knowledge, we are the first to show that, consistent with theory, corporate culture affects IPO pricing.

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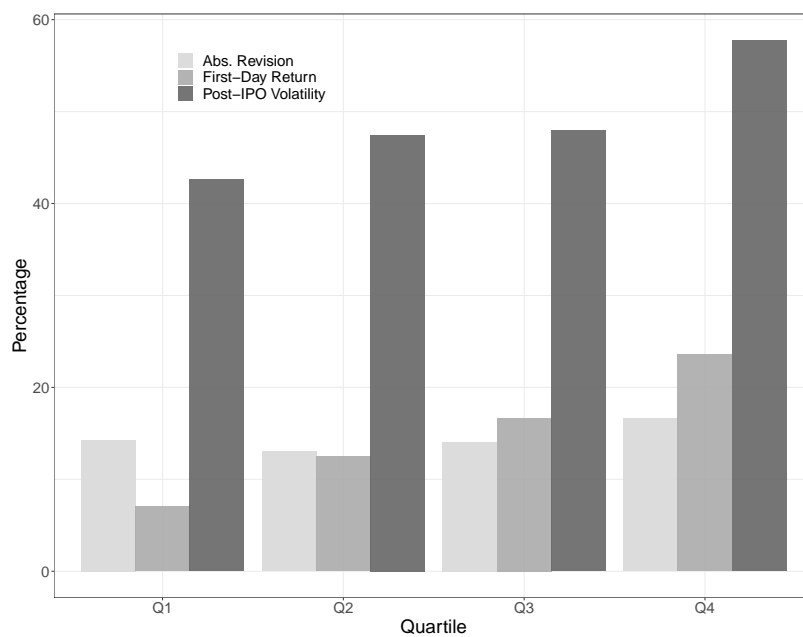
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## Figures and Tables

**Figure 1:** Univariate Results

Notes: This figure shows the mean values of *Abs. Revision*, *First-Day Return*, and *Post-IPO Volatility* sorted by *Culture Score* quartiles.



**Table 1:** Descriptive Statistics and Correlation Matrix

Notes: This table presents descriptive statistics in Panel A and pairwise correlations in Panel B. Details on the variable definitions and sources can be found in Table A1 in the appendix. The asterisks indicate statistical significance at the 5% level or lower.

Panel A: Descriptive Statistics						
	Obs.	Mean	Median	Std.	Min.	Max.
<i>Dependent Variables:</i>						
First-Day Return	937	16.7637	10.1250	25.2301	-41.0833	206.6667
Abs. Revision	937	14.9812	12.5000	13.1734	0.0000	91.3043
Post-IPO Volatility	937	50.0428	46.8106	20.7882	10.3037	152.0505
<i>Main Variables of Interest:</i>						
Strong Culture	937	0.3799	0.0000	0.4856	0.0000	1.0000
Culture Score	937	6.6078	5.9813	3.2730	0.0542	20.8588
<i>Control Variables:</i>						
Price Revision	937	-2.8250	0.0000	19.7542	-57.1429	91.3043
ln(Age)	937	2.6728	2.4849	0.9152	0.0000	5.1120
ln(Sales)	937	4.7647	4.8804	2.1332	0.0000	11.5578
Leverage	937	0.3725	0.2692	0.4734	0.0000	5.9549
Positive EPS	937	0.4642	0.0000	0.4990	0.0000	1.0000
Venture Backed	937	0.4632	0.0000	0.4989	0.0000	1.0000
Bookrunner Market Share	937	0.2761	0.2476	0.2108	0.0000	0.7132
Lawyer Market Share	937	0.0231	0.0095	0.0386	0.0000	0.2686
Big 4 Auditor	937	0.8474	1.0000	0.3598	0.0000	1.0000
Market Return	937	0.2156	0.1836	0.4006	-0.8366	4.9632
Market Volatility	937	0.1218	0.1091	0.0531	0.0386	0.7576

Panel B: Correlations																
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) First-Day Return	1.00*															
(2) Abs. Revision	0.13*	1.00*														
(3) Post-IPO Volatility	0.26*	0.21*	1.00*													
(4) Strong Culture	0.21*	0.09*	0.26*	1.00*												
(5) Culture Score	0.28*	0.06	0.27*	0.80*	1.00*											
(6) Price Revision	0.48*	-0.26*	-0.01	0.09*	0.13*	1.00*										
(7) ln(Age)	-0.09*	-0.07*	-0.32*	-0.21*	-0.21*	-0.01	1.00*									
(8) ln(Sales)	-0.05	-0.16*	-0.45*	-0.18*	-0.20*	0.16*	0.57*	1.00*								
(9) Leverage	-0.14*	-0.01	-0.12*	-0.09*	-0.10*	-0.09*	0.22*	0.11*	1.00*							
(10) Positive EPS	0.01	-0.07*	-0.24*	-0.16*	-0.18*	0.10*	0.23*	0.38*	-0.05	1.00*						
(11) Venture Backed	0.21*	0.16*	0.51*	0.38*	0.39*	0.03	-0.39*	-0.49*	-0.25*	-0.31*	1.00*					
(12) Bookrunner Market Share	0.18*	-0.06	-0.04	0.12*	0.20*	0.18*	0.04	0.24*	-0.06*	0.00	0.04	1.00*				
(13) Lawyer Market Share	-0.02	-0.04	-0.02	0.04	0.10*	0.00	-0.03	0.06*	0.06	-0.05	-0.01	0.15*	1.00*			
(14) Big 4 Auditor	0.07*	0.02	0.00	0.08*	0.08*	0.09*	0.06	0.13*	-0.07*	-0.07*	0.05	0.23*	0.01	1.00*		
(15) Market Return	0.06	0.01	-0.06*	0.02	-0.01	0.10*	-0.01	-0.02	-0.03	0.01	0.02	-0.02	-0.01	0.00	1.00*	
(16) Market Volatility	-0.02	0.09*	0.09*	0.01	-0.06	-0.05	0.01	0.03	0.01	0.08*	0.01	0.01	-0.05	0.03	-0.05	1.00*



**Table 2:** OLS Regressions of IPO First-Day Returns on Corporate Culture

Notes: This table shows the results from OLS regressions where IPO *First-Day Return* is the dependent variable and measures for corporate culture are the main independent variables of interest. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Dependent Variable: First-Day Return	(1)	(2)	(3)
Culture Score		1.153*** (5.320)	
Strong Culture			3.908*** (3.270)
Price Revision	0.553*** (10.789)	0.539*** (10.278)	0.551*** (10.637)
ln(Age)	-0.102 (-0.094)	-0.159 (-0.146)	-0.081 (-0.075)
ln(Sales)	-0.954* (-1.802)	-0.653 (-1.279)	-0.835 (-1.635)
Leverage	-2.771 (-1.523)	-3.057* (-1.778)	-2.944 (-1.649)
Positive EPS	1.060 (0.846)	1.299 (1.113)	1.234 (0.989)
Venture Backed	8.240*** (3.168)	6.562** (2.446)	7.263** (2.695)
Bookrunner Market Share	7.438* (1.835)	6.392* (1.824)	7.078* (1.796)
Lawyer Market Share	-24.065 (-1.453)	-25.042 (-1.385)	-24.100 (-1.452)
Big 4 Auditor	1.150 (0.744)	0.646 (0.378)	0.882 (0.553)
Market Return	2.373* (1.879)	2.683** (2.152)	2.257* (1.858)
Market Volatility	21.466 (1.268)	21.849 (1.481)	21.075 (1.330)
Industry/Year FE	Yes	Yes	Yes
Observations	937	937	937
Adjusted R <sup>2</sup>	0.299	0.312	0.302

**Table 3:** Weighted Least Squares Regressions of IPO First-Day Returns on Corporate Culture

Notes: This table shows the results from weighted least squares regressions where *IPO First-Day Return* is the dependent variable and *Strong Culture* is the main independent variable of interest. The weights are calculated using entropy balancing (Hainmueller, 2012) and *Strong Culture* as the treatment variable. Panel A displays the covariate balance and Panel B the regression results. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Covariate balance for the entropy-balanced sample						
	Pre-Match			Post-Match		
	Treatment	Control	Diff.	Treatment	Control	Diff.
Price Revision	−0.5212	−4.2366	3.7154***	−0.5212	−0.5215	0.0003
ln(Age)	2.4292	2.8221	−0.3929***	2.4292	2.4295	−0.0003
ln(Sales)	4.2660	5.0702	−0.8042***	4.2660	4.2664	−0.0004
Leverage	0.3173	0.4064	−0.0891***	0.3173	0.3173	0.0000
Positive EPS	0.3624	0.5267	−0.1643***	0.3624	0.3624	0.0000
Venture Backed	0.7051	0.3150	0.3901***	0.7051	0.7047	0.0004
Bookrunner Market Share	0.3072	0.2571	0.0501***	0.3072	0.3072	0.0000
Lawyer Market Share	0.0250	0.0219	0.0031	0.0250	0.0250	0.0000
Big 4 Auditor	0.8848	0.8244	0.0604**	0.8848	0.8847	0.0001
Market Return	0.2269	0.2087	0.0182	0.2269	0.2269	0.0000
Market Volatility	0.1223	0.1216	0.0007	0.1223	0.1223	0.0000

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Panel B: WLS using the entropy-balanced sample		
Dependent Variable: First-Day Return		
	(1)	(2)
Strong Culture		4.535*** (2.967)
Price Revision	0.511*** (6.592)	0.515*** (6.643)
ln(Age)	-2.758 (-1.661)	-2.845* (-1.743)
ln(Sales)	-0.457 (-0.502)	-0.229 (-0.264)
Leverage	-4.111 (-1.610)	-4.176* (-1.771)
Positive EPS	1.392 (0.700)	1.507 (0.772)
Venture Backed	7.762* (1.922)	7.791* (1.958)
Bookrunner Market Share	8.992 (1.546)	9.396 (1.654)
Lawyer Market Share	-36.83* (-1.902)	-35.10* (-1.863)
Big 4 Auditor	1.889 (0.755)	1.688 (0.665)
Market Return	2.952** (2.145)	2.785* (1.995)
Market Volatility	3.107 (0.112)	3.312 (0.126)
Industry/Year FE	Yes	Yes
Observations	937	937
Adjusted R <sup>2</sup>	0.348	0.353

**Table 4:** Two-Stage Least Squares Regression of IPO First-Day Returns on Corporate Culture

Notes: This table shows the results from two-stage least squares regressions where *IPO First-Day Return* is the dependent variable and *Culture Score* is the main independent variable of interest. The employed instruments are *Industry Culture*, which is the industry-year median of *Culture Score* one year prior to the IPO based on all Compustat companies with available culture values, and *Matched Culture*, which is the one-year lagged *Culture Score* of a firm matched by industry, year, and sales in the Compustat universe. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Dependent Variable: First-Day Return	First Stage	Second Stage
Culture Score <sub>Instrumented</sub>		3.464*** (3.148)
Industry Culture	0.471*** (4.930)	
Matched Culture	0.065** (2.043)	
Price Revision	0.013** (2.316)	0.508*** (8.966)
ln(Age)	-0.050 (-0.392)	-0.093 (-0.083)
ln(Sales)	-0.249** (-2.674)	-0.060 (-0.117)
Leverage	0.288* (1.763)	-3.638* (-1.868)
Positive EPS	-0.123 (-0.751)	2.014 (1.581)
Venture Backed	1.091*** (5.589)	3.644 (1.102)
Bookrunner Market Share	0.914 (1.344)	4.273 (1.220)
Lawyer Market Share	1.116 (0.411)	-28.891 (-1.629)
Big 4 Auditor	0.471 (1.572)	-0.830 (-0.536)
Market Return	-0.308** (-2.022)	3.860** (2.685)
Market Volatility	-0.091 (-0.029)	23.754 (1.347)
Partial F-Statistic	18.29***	
Sargan Statistic		0.394
Sargan P-Value		0.530
Industry/Year FE	Yes	Yes
Observations	895	895
Adjusted R <sup>2</sup>	0.407	0.306

**Table 5:** Effect of Corporate Culture on Absolute IPO Offer Price Revisions and Post-IPO Volatility

Notes: This table shows results from different regression models using different estimation methods where *Abs. Revision* (Panel A) and *Post-IPO Volatility* (Panel B) are the dependent variables and measures for corporate culture are the main independent variables of interest. Columns (1) and (2) present the results from OLS regressions, column (3) presents the results from a weighted least squares regression based on an entropy-balanced sample, and column (4) presents the results from a two-stage least squares regression model. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Dependent Variable: Abs. Revision				
	OLS (1)	OLS (2)	EB (3)	2SLS (4)
Culture Score	0.316* (1.921)			
Strong Culture		2.237** (2.506)	3.281*** (3.345)	
Culture Score <sub>Instrumented</sub>				1.101 (1.438)
ln(Age)	0.150 (0.206)	0.171 (0.241)	0.376 (0.516)	
ln(Sales)	-0.125 (-0.373)	-0.139 (-0.418)	0.140 (0.280)	-0.039 (-0.134)
Leverage	0.528 (0.562)	0.501 (0.536)	0.717 (0.708)	0.284 (0.298)
Positive EPS	-0.454 (-0.504)	-0.416 (-0.468)	-1.201 (-1.176)	-0.543 (-0.549)
Venture Backed	2.493** (2.113)	2.408** (2.072)	2.988* (1.899)	1.017 (0.583)
Bookrunner Market Share	-3.791 (-1.554)	-3.668 (-1.495)	-5.704 (-1.606)	-4.843* (-1.891)
Lawyer Market Share	2.272 (0.244)	2.466 (0.258)	20.611 (1.271)	0.802 (0.084)
Big 4 Auditor	0.256 (0.229)	0.251 (0.225)	-0.748 (-0.707)	-0.226 (-0.213)
Market Return	-0.663 (-1.022)	-0.798 (-1.104)	-2.012*** (-3.028)	-1.004 (-0.562)
Market Volatility	22.303* (1.693)	21.889 (1.645)	21.719 (1.395)	23.394 (1.679)
Partial F-Statistic				17.84***
Sargan Statistic				0.220
Sargan P-Value				0.640
Industry/Year FE	Yes	Yes	Yes	Yes
Observations	937	937	937	895
Adjusted R <sup>2</sup>	0.082	0.083	0.114	0.081

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Panel B: Dependent Variable: Post-IPO Volatility				
	OLS (1)	OLS (2)	EB (3)	2SLS (4)
Culture Score	0.373 (1.315)			
Strong Culture		3.366** (2.143)	3.362** (2.554)	
Culture Score <sub>Instrumented</sub>				2.941** (2.660)
First-Day Return	0.125*** (3.363)	0.126*** (3.175)	0.082* (1.877)	0.085** (2.324)
Price Revision	-0.062 (-1.443)	-0.060 (-1.378)	-0.055 (-1.195)	-0.079 (-1.645)
ln(Age)	-1.701 (-1.654)	-1.664 (-1.618)	-2.400 (-1.375)	-1.824** (-2.067)
ln(Sales)	-2.131*** (-7.298)	-2.125*** (-7.024)	-1.728*** (-4.127)	-1.519*** (-3.096)
Leverage	-0.170 (-0.142)	-0.222 (-0.187)	-0.529 (-0.303)	-1.079 (-0.980)
Positive EPS	-0.107 (-0.077)	-0.036 (-0.026)	0.224 (0.108)	1.197 (0.894)
Venture Backed	10.438*** (7.675)	10.128*** (7.620)	10.246*** (7.935)	7.035*** (3.570)
Bookrunner Market Share	-3.528** (-2.141)	-3.510** (-2.236)	-3.770* (-1.684)	-5.518** (-2.594)
Lawyer Market Share	-3.692 (-0.273)	-3.372 (-0.260)	-14.693 (-1.050)	-6.622 (-0.472)
Big 4 Auditor	-0.589 (-0.359)	-0.657 (-0.404)	0.598 (0.307)	-1.497 (-0.877)
Market Return	-2.784 (-0.957)	-2.988 (-1.073)	-4.336 (-1.259)	-1.788 (-0.472)
Market Volatility	12.381 (0.915)	11.890 (0.871)	23.245 (1.322)	16.578 (1.050)
Partial F-Statistic				16.64***
Sargan Statistic				1.411
Sargan P-Value				0.235
Industry/Year FE	Yes	Yes	Yes	Yes
Observations	937	937	937	895
Adjusted R <sup>2</sup>	0.391	0.393	0.322	0.398

**Table 6:** Cultural Dimensions and IPO First-Day Returns, Absolute Offer Price Revisions, and Post-IPO Volatility

Notes: This table shows the results from regressions where IPO pricing variables (i.e., *First-Day Return* (Panel A), *Abs. Revision* (Panel B), and *Post-IPO Volatility* (Panel C)) are the dependent variables and the cultural dimensions are the main independent variables of interest. All regressions include the control variables used in the previous regressions as well as year and industry dummies. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Dependent Variable: First-Day Return					
	Integrity	Teamwork	Innovation	Respect	Quality
	(1)	(2)	(3)	(4)	(5)
Cultural Dimension	3.185** (2.433)	1.350*** (2.798)	1.771*** (3.663)	2.344** (2.664)	1.086* (1.717)
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	937	937	937	937
Adjusted R <sup>2</sup>	0.303	0.300	0.305	0.307	0.300
Panel B: Dependent Variable: Abs. Revision					
	Integrity	Teamwork	Innovation	Respect	Quality
	(1)	(2)	(3)	(4)	(5)
Cultural Dimension	-0.077 (-0.136)	0.824 (1.374)	0.563* (1.814)	0.325 (0.792)	0.537 (1.388)
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	937	937	937	937
Adjusted R <sup>2</sup>	0.078	0.080	0.080	0.078	0.079
Panel C: Dependent Variable: Post-IPO Volatility					
	Integrity	Teamwork	Innovation	Respect	Quality
	(1)	(2)	(3)	(4)	(5)
Cultural Dimension	-0.054 (-0.055)	-0.046 (-0.034)	1.446*** (3.042)	-0.496 (-0.841)	1.139 (1.648)
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	937	937	937	937
Adjusted R <sup>2</sup>	0.389	0.389	0.395	0.390	0.391

**Table 7:** Information Asymmetry and the Relationship between IPO First-Day Returns and Corporate Culture

Notes: This table shows the results from OLS regressions of corporate culture on IPO first-day returns based on sample splits conditional on various proxies of information asymmetry. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Dependent Variable: First-Day Returns	Firm Age		# Segments		Firm Size	
	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)
Culture Score	1.455*** (5.062)	0.788*** (2.739)	1.504*** (5.914)	0.278 (0.490)	1.445*** (4.358)	1.021*** (3.530)
Price Revision	0.531*** (9.162)	0.514*** (5.408)	0.564*** (11.105)	0.635*** (7.391)	0.560*** (10.454)	0.459*** (5.614)
ln(Age)	2.213 (1.046)	-1.418 (-0.700)	-0.624 (-0.533)	2.448 (0.959)	2.324 (1.078)	-0.393 (-0.264)
ln(Sales)	-0.462 (-0.835)	-1.306 (-1.667)	-0.561 (-0.715)	-1.252 (-0.932)	-0.760 (-0.543)	-1.550* (-1.710)
Leverage	-1.000 (-0.322)	-3.687*** (-3.299)	-3.142* (-1.881)	-4.520 (-1.106)	-5.135*** (-3.010)	-0.100 (-0.034)
Positive EPS	0.092 (0.056)	0.621 (0.489)	3.380** (2.180)	-2.230 (-1.156)	-0.766 (-0.505)	1.218 (0.686)
Venture Backed	2.859 (0.814)	6.477** (2.154)	6.008* (1.860)	3.842 (0.657)	3.054 (1.198)	9.746*** (3.112)
Bookrunner Market Share	18.070*** (3.782)	-0.981 (-0.222)	5.107 (1.315)	8.717 (1.449)	7.540** (2.474)	5.169 (0.989)
Lawyer Market Share	-66.088** (-2.470)	18.131 (1.596)	-36.760* (-1.699)	-30.046 (-0.630)	-39.818** (-2.461)	-2.328 (-0.109)
Big 4 Auditor	2.390 (0.975)	-0.088 (-0.046)	1.454 (0.634)	0.626 (0.225)	1.056 (0.439)	3.536* (1.805)
Market Return	4.398** (2.101)	-0.475 (-0.235)	4.514*** (3.033)	-5.432* (-2.005)	5.044 (1.204)	1.211 (0.769)
Market Volatility	23.056 (0.891)	4.076 (0.223)	13.847 (0.773)	19.430 (1.047)	16.786 (0.730)	37.282*** (2.813)
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	477	460	647	236	470	467
Adjusted R <sup>2</sup>	0.275	0.338	0.320	0.243	0.313	0.300



**Table 8:** Correlations between Baseline and Initial Prospectus Measures

Notes: This table shows the correlations between the baseline corporate culture variables and our measures based on the initial prospectuses of the IPOs. The asterisks indicate statistical significance at the 5% level or lower.

	Initial Prospectus Measures					
	Integrity	Teamwork	Innovation	Respect	Quality	Culture Score
Integrity	0.14*	0.14*	−0.02	0.04	−0.10*	0.04
Teamwork	0.05	0.46*	0.10*	−0.04	0.00	0.18*
Innovation	0.04	0.18*	0.56*	0.19*	0.22*	0.49*
Respect	0.13*	0.06	0.18*	0.35*	0.13*	0.28*
Quality	−0.06	0.04	0.37*	0.12*	0.59*	0.45*
Culture Score	0.08*	0.27*	0.46*	0.24*	0.32*	0.53*

**Table 9:** Results for an Alternative Measure of Corporate Culture Based on Initial Prospectuses

Notes: This table shows the results from regressions where IPO pricing variables are the dependent variables and an alternative measure of corporate culture is the main independent variable of interest. All regressions include the control variables used in the previous regressions as well as year and industry dummies. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Same IPOs as in the Baseline Tests			
Dependent Variable:	First-Day Return	Abs. Revision	Post-IPO Volatility
	(1)	(2)	(3)
Culture Score Prospectus	7.903*** (3.233)	1.661 (0.810)	5.129*** (3.132)
Controls	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes
Observations	904	904	904
Adjusted R <sup>2</sup>	0.310	0.081	0.386
Panel B: All Available IPOs from 2001-2018			
	(1)	(2)	(3)
Culture Score Prospectus	8.553*** (4.022)	1.866 (1.340)	5.788* (1.754)
Controls	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes
Observations	1548	1548	1547
Adjusted R <sup>2</sup>	0.273	0.088	0.269

**Table 10:** Two-Stage Least Squares Regression Results for an Alternative Measure of Corporate Culture  
Based on Initial Prospectuses

Notes: This table shows the results from two-stage least squares regressions where IPO pricing variables are the dependent variables and an alternative measure of corporate culture is the main independent variable of interest. The employed instruments are *Industry Culture*, which is the industry-year median of *Culture Score* one year prior to the IPO based on all Compustat companies with available culture values, and *Matched Culture*, which is the one-year lagged *Culture Score* of a firm matched by industry, year, and sales in the Compustat universe. All regressions include the control variables used in the previous regressions as well as year and industry dummies. Details on the variable definitions and sources can be found in Table A1 in the appendix. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Same IPOs as in the Baseline Tests						
	First Stage			Second Stage		
	First-Day Return (1)	Abs. Revision (2)	Post-IPO Vola (3)	First-Day Return (4)	Abs. Revision (5)	Post-IPO Vola (6)
Industry Culture	0.059*** (6.210)	0.059*** (6.134)	0.058*** (6.307)			
Matched Culture	0.007*** (3.896)	0.007*** (3.900)	0.007*** (3.734)			
Culture Score Prospectus <sub>Instrumented</sub>				22.762** (2.262)	6.973 (1.117)	14.519 (1.327)
Partial F-Statistic	31.41***	31.41***	30.34***			
Sargan Statistic				0.535	0.333	1.478
Sargan P-Value				0.465	0.564	0.224
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	864	864	864	864	864	864
Adjusted R <sup>2</sup>	0.503	0.504	0.505	0.310	0.082	0.391

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Panel B: All Available IPOs from 2001-2018						
	First Stage			Second Stage		
	First-Day Return (1)	Abs. Revision (2)	Post-IPO Vola (3)	First-Day Return (4)	Abs. Revision (5)	Post-IPO Vola (6)
Industry Culture	0.057*** (4.454)	0.056*** (4.293)	0.056*** (4.391)			
Culture Score				26.209**	8.104	19.376**
Prospectus <sub>Instrumented</sub>				(2.393)	(0.980)	(2.054)
Partial F-Statistic	19.84***	18.43***	19.28***			
Sargan Statistic						
Sargan P-Value						
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1454	1467	1454	1454	1454	1453
Adjusted R <sup>2</sup>	0.487	0.485	0.490	0.270	0.085	0.254

## Appendix

**Table A1:** Variable Definitions and Sources

Notes: This table provides definitions and sources of the variables used throughout the paper. “SDC” refers to the Thomson Financial’s SDC New Issues database. “CRSP” refers to The Center for Research in Security Prices. “E” refers to the Electronic Data Gathering And Retrieval System (EDGAR). “CS” refers to Compustat/Capital IQ. “R” refers to Jay Ritter’s website.

Variable	Description	Source
<i>Dependent Variables:</i>		
First-Day Return	The percentage change from the offer price to the first closing price	SDC, CRSP
Abs. Revision	The unsigned percentage change from the midpoint of the first filed price range to the final offer price	E, SDC
Post-IPO Volatility	The root-mean square error of a market model estimation for each IPO for the window from day $t + 5$ through day $t + 94$ , where $t = 0$ is the IPO date	CRSP
<i>Main Variables of Interest:</i>		
Culture Score	The sum of the values for each of the five cultural dimensions (i.e., innovation, integrity, quality, respect, and teamwork) based on Li et al. (2021)	
Strong Culture	Dummy variable that equals one if the firm’s <i>Culture Score</i> is in the top quartile across all Compustat firms in a year, and zero otherwise	
<i>Control Variables:</i>		
Price Revision	The percentage change from the midpoint of the first filed price range to the final offer price	E, SDC
ln(Age)	The natural logarithm of the difference between the issue year in the SDC Database and the founding year provided by Jay Ritter	SDC, R
ln(Sales)	The natural logarithm of one plus the firm’s sales (in million USD)	CS
Leverage	The firm’s long and short-term debt divided by its total assets	CS
Positive EPS	Dummy variable that equals one if the firm’s earnings per share are positive, and zero otherwise	CS
Venture Backed	Dummy variable that equals one if the issuer is backed by a venture capital firm, and zero otherwise	SDC
Bookrunner Market Share	Two-year trailing market share (based on IPO proceeds) of the (first) lead underwriter	SDC
Lawyer Market Share	Two-year trailing market share (based on IPO proceeds) of the lawyer	SDC
Big 4 Auditor	Dummy variable that equals one if the accounting firm is one of PwC, EY, KPMG, or Deloitte, and zero otherwise	SDC
Market Return	The trailing annualized 30-day return based on daily data, where the market portfolio is the CRSP value-weighted index	CRSP
Market Volatility	The trailing annualized 30-day standard deviation based on daily data, where the market portfolio is the CRSP value-weighted index	CRSP

## Supplementary Material

We provide the results from several robustness tests concerning the relationship between corporate culture and IPO underpricing in this supplementary material.

### *I.) Alternative Measures of Initial Returns*

We begin by using two alternative dependent variables to test the robustness of our findings. Table S1 reports the results from different estimations where we employ IPO returns over one week (Panel A) and over two weeks following the listing day (Panel B) as the dependent variable (see e.g., Ellul and Pagano, 2006).

[Insert Table S1 here]

Consistent with the results in the paper, we find a positive and significant association between corporate culture and IPO returns using these two alternative definitions and OLS regressions in column (1). The results also remain when we use alternative estimation methods, i.e., weighted regressions based on an entropy-balanced sample (EB) and two-stage least squares regressions (2SLS) where we instrument corporate culture with *Industry Culture*, which is the median *Culture Score* of all Compustat firms in the same 4-digit SIC industry in the year prior to the firm's IPO, and *Matched Culture*, which is the one-year lagged *Culture Score* of a Compustat firm that operates in the same 4-digit SIC industry and year and is matched by its sales (columns (2) & (3)). The first stage regression is thus identical to the one reported in Table 4 in the paper.

## II.) *Alternative Measures of Corporate Culture*

Next, we use two alternative definitions of our dummy variable *Strong Culture* in this supplementary material. First, we define that firms possess a strong culture if their *Culture Score* exceeds the 90<sup>th</sup> percentile of all Compustat firms in a year, and zero otherwise. Our second alternative definition is that firms possess a strong culture if their *Culture Score* exceeds the 75<sup>th</sup> percentile of all IPOs in our sample in a year, and zero otherwise. The rationale behind this second alternative definition is that IPO firms might differ from those firms already listed on capital markets for a substantial amount of time. In fact, we have already shown in Table 1 in the paper that the firms in our sample have a higher average *Culture Score* compared to the average of all firms in Compustat. It is thus worth investigating if employing this alternative definition changes our results.

In Table S2, we report the results from OLS regressions with the same set of baseline controls as in Table 2 in the paper using these two alternative dummy variables.

[Insert Table S2 here]

As can be seen, we find even more pronounced results compared to those presented in Table 2 in the paper when we employ these two alternative dummy variables. Firms with a strong culture appear to experience approx. 6 percentage points higher first-day returns.

## III.) *Additional Control Variables*

We continue by including additional control variables as well as dummy variables for the states in which the firms were headquartered at the time of the IPO<sup>1</sup> in our baseline regression

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<sup>1</sup>The reason is that there is, for instance, evidence that Delaware incorporations are associated with higher firm value and greater takeover activity (Daines, 2001).

specifications. These tests allow us to further rule out concerns related to omitted variable bias. In addition to our baseline controls, we include *Previous IPOs*, which is the number of IPOs in the past 90 days, *Average First-Day Return* (and *Average Price Revision*), which is the average *First-Day Return* (*Price Revision*) of the IPOs in the past 90 days, *VC Market Share*, which is the two-year trailing market share of the lead venture capital firm based on IPO proceeds,  $\ln(\textit{Proceeds})$ , which is the natural logarithm of the number of shares offered multiplied by the offer price,  $\ln(\textit{Filing Range})$ , which is the natural logarithm of the number of days between the filing date of the initial prospectus and the issue date, *Multiple Share Classes*, which is a dummy variable indicating if the firm has multiple share classes, *Internet Firm*, which is a dummy variable that equals one if the issuer is an internet-based company, and *DRS Filing*, which indicates if the firm has filed a draft registration statement. All of these variables have been used in related studies examining IPO underpricing (Barth et al., 2017; Butler et al., 2014; Loughran and McDonald, 2013; Nahata, 2008; Smart and Zutter, 2003), but as some of them reduce our sample size significantly, we do not include them in our tests presented in the paper. However, Table S3 documents the results from regressions including these variables.

[Insert Table S3 here]

In Panel A, we show the results from OLS regressions of *First-Day Return* on *Culture Score*, our baseline and the additional control variables, the state dummies, as well as industry and year dummies. Across all columns, we find consistent evidence of a positive association between a firm’s corporate culture and its first-day return. The coefficients on *Culture Score* are highly significant (1% level) and also similar in size compared to the results shown in



Table 2 in the paper.

In Panel B, we show the results from regressions where we employ our dummy variable *Strong Culture* instead of our continuous variable *Culture Score* as the main independent variable of interest and also find similar results. The coefficient estimates suggest that IPO firms with a strong corporate culture have 3 to 4 percentage points higher first-day returns.

Analogously to the paper, we proceed by running regressions on entropy-balanced samples. This allows us to further reduce the probability of a potential selection bias.

[Insert Table S4 here]

In Panel A of Table S4, we show the results from regressions including our additional control variables, where the sample is, however, only balanced based on our baseline control variables.<sup>2</sup> In Panel B, we show the results from regressions where the sample is balanced based on all control variables.<sup>3</sup> Nonetheless, across all columns in both panels, we find the coefficients on *Strong Culture* to be positive and significant. In unreported tests that are available upon request, we also include the *State Dummies* in the regressions and find that this does not alter our findings. Taken together, this reinforces that the observable differences between IPOs of firms with a strong culture and those without a strong culture do not appear to be the driving force behind our results.

Next, we check the robustness of our results by rerunning our two-stage least squares regressions with the additional control variables as well as the dummy variables for the states in which the firms were headquartered at the time of the IPO. We again instrument

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<sup>2</sup>We note that we do not report the covariate balance for the balanced samples for reasons of brevity.

However, the covariate balance of Panel A matches that of Panel A in Table 3 in the paper.

<sup>3</sup>We note that the samples in columns (1) to (4) are balanced based on mean and variance; however, the sample in column (5) is only balanced on the mean of the treatment and control samples. The reason for that is that the algorithm does not converge when using all control variables and the smaller sample.

an IPO firm’s culture by *Industry Culture* and *Matched Culture*. For the sake of brevity, we only report the results from the second stage regressions in detail in Table S5. However, we report the partial F-statistic of the joint explanatory power of the instrumental variables as well as the results from the Sargan-Hansen test. Also, we assure that the instruments are strongly correlated with *Culture Score* in the first stage estimations.<sup>4</sup>

[Insert Table S5 here]

As can be seen in Table S5, we find, in line with our previous results and our hypothesis, positive and significant coefficients on *Culture Score<sub>Instrumented</sub>* across all columns. The results from the Sargan-Hansen test also show that the instruments appear to be uncorrelated with the residuals in the second stage regressions and are thus likely exogenous. Overall, these results lend strong support to the conclusions drawn in the paper.

In addition to our instrumental variables estimations for our continuous measure of corporate culture presented in the paper and to those presented above, we also run instrumental variables estimations for our binary variable *Strong Culture*. However, instead of running 2SLS regressions, we use a three-stage regression approach. This is because Wooldridge (2010) notes that while 2SLS estimations are appropriate when the potentially endogenous variable is binary, a three-stage estimation method might be advantageous because (I) using a binary response model in the first stage takes the nature of the variable into consideration, (II) the approach is even consistent when the binary response model in the first stage is not correctly specified, and (III) the standard errors of the conventional instrumental variables approach stay asymptotically valid.

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<sup>4</sup>The first stage results are available upon request.

In our three-stage estimation approach, the first stage is a probit model explaining the potentially endogenous variable *Strong Culture* with our instrumental variable *Industry Culture* and some additional control variables. The second and third stage are then similar to a 2SLS estimation with the fitted probabilities used as the instrumental variable. The results are reported in Table S6.

[Insert Table S6 here]

In Panel A, we show the results from the first stage probit model. We find that the coefficient on our instrumental variable *Industry Culture* is positive and significant. This is consistent with our argumentation in the paper that firms in the same industry might be similar in terms of their cultural values and norms.

In Panel B, we report the results from the third stage regressions.<sup>5</sup> In column (1), we show the results from a specification where we include the set of baseline controls as well as industry and year dummies. As expected, the coefficient on *Strong Culture<sub>Instrumented</sub>* is positive and significant. In columns (2) to (6), we report the results from specifications where we add the additional control variables mentioned in the beginning. However, this does not affect our findings.

While the results from the three-stage regression approach help us to mitigate endogeneity concerns regarding our binary variable *Strong Culture*, we also use average treatment effect (ATE) models (see e.g., Heckman, 1976, 1978) to address these concerns. Again, we use *Industry Culture* as an instrumental variable in these specifications. The results are displayed in Table S7.

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<sup>5</sup>For reasons of brevity, we do not report the second stage results. In these regressions, we find that the fitted probabilities from the first stage are significantly and positively correlated with *Strong Culture*. The results are available upon requests.

[Insert Table S7 here]

Except for columns (3) and (6), where the sample size is much smaller, we find support for our hypothesis and our previous findings since the coefficients on *Strong Culture<sub>Instrumented</sub>* are positive and significant.

Moreover, after having shown that the results hold when we employ our binary variable *Strong Culture*, we also test whether the results hold when we use our alternative culture measure *Culture Score Prospectus* and include the additional control variables as well as the *State Dummies*. Table S8 reports the results from OLS estimations.

[Insert Table S8 here]

In Panel A of Table S8, we show the results from regressions where *First-Day Return* is the dependent variable and *Culture Score Prospectus* is the main independent variable of interest using the same sample as in our baseline tests and including the additional control variables. Across all columns, we find support for our hypothesis that IPOs of firms with a stronger culture are associated with more underpricing.

In Panel B, we repeat the same regressions using a larger sample of IPOs for which we can construct our alternative culture measure. Again, we find that including the additional control variables as well as the *State Dummies* does not change our results.

In Table S9, we report the results from 2SLS estimations including the additional control variables and the *State Dummies*.

[Insert Table S9 here]

In Panel A of Table S9, we display the results from the second stage of 2SLS estimations where we again use the same sample as in our baseline tests and include the additional

control variables as well as the *State Dummies*. The instrumental variables are *Industry Culture* and *Matched Culture*, which are found to be positively and significantly related to *Culture Score Prospectus* in unreported first stage regressions.<sup>6</sup> The results show that, except for column (2), the coefficients on our instrumented measure for corporate culture are positive and significant. Also, the results from the F-test and the Sargan-Hansen test show that our instruments appear to be valid.

In Panel B, we report the results from the second stage of 2SLS estimations using the larger sample and including the additional controls as well as the *State Dummies*. We instrument our alternative culture measure with *Industry Culture*. While we find *Matched Culture* to be also positively associated with *Culture Score Prospectus* in unreported first stage regressions, the coefficients are not significant at conventional levels. This is why we use only one instrument in these tests. However, the results also support our findings in the paper since the coefficients on our instrumented measure for corporate culture are positive and significant across all columns.

Overall, we conclude that the inclusion of additional control variables does not affect our results. We therefore believe that we can rule out omitted variable bias.

#### *IV.) Alternative Sample Specifications*

Since our results do not appear to be influenced by the inclusion of additional control variables, we next test whether the results hold when we account for regulatory changes and other important events during our observation period, e.g., the Sarbanes-Oxley Act (SOX), the financial crisis, the Dodd-Frank Act, and the JOBS Act. In Table S10, we document

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<sup>6</sup>The first stage regressions are again available upon request.

the results from our baseline regression based on different subsamples accounting for these regulatory changes and events.

[Insert Table S10 here]

In Panel A, our main variable of interest is *Culture Score*. Regardless of whether we (I) restrict our sample to IPOs after SOX (column (1)), (II) exclude IPOs during the financial crisis (column (2)), (III) split the sample based on the introduction of the Dodd-Frank Act (columns (3) & (4)), or (IV) split the sample based on the introduction of the JOBS Act (columns 5 & 6), we find positive and significant coefficients on *Culture Score*.

In Panel B where we repeat these tests with *Strong Culture* as our main independent variable of interest, we find very similar results. Across all columns, the coefficients on *Strong Culture* are positive and significant. However, it is noteworthy that the magnitude of the coefficient increases after the introduction of the Dodd-Frank Act and the JOBS Act, respectively. We therefore conclude that the effect is even stronger for more recent IPOs.

In unreported tests, we also interact our main variables of interest with dummy variables for each of these events. However, while we find that the coefficients on our measures for corporate culture remain positive and significant, the interaction terms are found to be statistically insignificant. Besides, we use alternative estimation methods, i.e., weighted regressions and 2SLS regressions, and include the additional control variables, but this does not affect our findings.

Furthermore, as another robustness check, we also test if our results are driven by firms operating in certain industries. In Table S11, we therefore show the results from our baseline regression where we exclude (I) financial firms, (II) internet firms, and (III) utilities from

the sample. Yet, excluding these firms does not alter our findings.

[Insert Table S11 here]

*V.) Alternative Clustering of Standard Errors*

Finally, we test if alternative clustering of standard errors affects our results. In Table S12, we show the results from our baseline regression with standard errors clustered by year and industry (column (1)), year (column (2)), as well as industry-year (column (3)) and the results with robust standard errors (column (4)).

[Insert Table S12 here]

As can be seen, we find that the coefficients on *Culture Score* remain significant across all columns. Hence, clustering of standard errors does not change our findings.

Taken together, we therefore believe that this battery of robustness checks in this supplementary material lends strong support for our hypothesis that there is a causal relation between corporate culture and IPO returns.

## Tables

**Table S1:** Results for Alternative Definitions of IPO Returns

Notes: This table shows the results from different regression estimations where we use alternative specifications of IPO returns as the dependent variable and measures for corporate culture as the main independent variable of interest. In Panel A, the dependent variable is defined as the percentage change from the offer price to the (CRSP) stock price after one week. In Panel B, the dependent variable is defined as the percentage change from the offer price to the (CRSP) stock price after two weeks. All regressions include the control variables used in Table 2 as well as year and industry fixed effects. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: One-Week Return as the Dependent Variable			
	OLS	EB	2SLS
	(1)	(2)	(3)
Culture Score	1.430*** (6.843)		
Strong Culture		5.988*** (3.740)	
Culture Score <sub>Instrumented</sub>			3.727*** (2.824)
Partial F-Statistic			18.294***
Sargan Statistic			0.515
Sargan P-Value			0.473
Controls	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes
Observations	937	937	895
Adjusted R <sup>2</sup>	0.281	0.304	0.270

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Panel B: Two-Week Return as the Dependent Variable			
	OLS	EB	2SLS
	(1)	(2)	(3)
Culture Score	1.182*** (5.887)		
Strong Culture		4.909*** (3.060)	
Culture Score <sub>Instrumented</sub>			3.165** (2.572)
Partial F-Statistic			18.294***
Sargan Statistic			0.456
Sargan P-Value			0.499
Controls	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes
Observations	937	937	895
Adjusted R <sup>2</sup>	0.254	0.269	0.247

**Table S2:** OLS Regressions Based on Alternative Strong Culture Specifications

Notes: This table shows the results from OLS specifications where we use different definitions for our variable *Strong Culture*. *Strong Culture*<sub>90%</sub> equals one if the firm's *Culture Score* is in the top decile across all Compustat firms in a year, and zero otherwise. *Strong Culture*<sub>75%, Sample</sub> equals one if the firm's *Culture Score* is in the top quartile across all firms in our sample in a year, and zero otherwise. Both specifications include year and industry fixed effects. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

	<i>Dependent Variable: First-Day Return</i>	
	(1)	(2)
Strong Culture <sub>90%</sub>	6.087*** (3.969)	
Strong Culture <sub>75%, Sample</sub>		5.968*** (4.247)
Price Revision	0.548*** (10.579)	0.547*** (10.799)
ln(Age)	-0.284 (-0.265)	-0.118 (-0.112)
ln(Sales)	-0.678 (-1.319)	-0.703 (-1.401)
Leverage	-3.023* (-1.723)	-3.064* (-1.782)
Positive EPS	1.185 (1.017)	1.012 (0.852)
Venture Backed	7.467*** (2.818)	7.119*** (2.778)
Bookrunner Market Share	7.282* (1.898)	6.835* (1.760)
Lawyer Market Share	-26.477 (-1.485)	-26.036 (-1.456)
Big 4 Auditor	0.885 (0.555)	0.890 (0.568)
Market Return	2.502* (1.939)	2.111* (1.816)
Market Volatility	22.094 (1.386)	21.172 (1.372)
Industry/Year FE	Yes	Yes
Observations	937	937
Adjusted R <sup>2</sup>	0.306	0.307

**Table S3:** Baseline Regressions Including Additional Control Variables and State Dummies

Notes: This table shows the results from different OLS specifications where *Culture Score* is the main variable of interest in Panel A and *Strong Culture* in Panel B, and where we include additional control variables. All specifications also include *State Dummies* indicating the state in which the firm was headquartered at the time of the IPO, industry and year fixed effects, and the controls variables used in Table 2. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: <i>Culture Score</i>					
	<i>Dependent Variable: First-Day Return</i>				
	(1)	(2)	(3)	(4)	(5)
Culture Score	0.996*** (4.595)	1.275*** (5.181)	0.964*** (4.648)	0.970*** (4.796)	1.184*** (3.763)
Previous IPOs	0.102 (1.443)				0.127* (1.962)
Average First-Day Return	−0.146 (−0.813)				−0.163 (−0.673)
Average Price Revision	3.274* (1.848)				3.646** (2.028)
VC Market Share		−8.723 (−0.970)			−6.267 (−0.650)
ln(Proceeds)			−0.970 (−1.035)		−1.655 (−0.986)
ln(Filing Range)			0.663 (0.674)		0.564 (0.374)
Multiple Share Classes				2.257 (0.653)	6.214 (1.414)
Internet Firm				−1.897 (−1.058)	−2.102 (−0.797)
DRS Filing				5.818*** (2.918)	4.717* (1.865)
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	681	894	937	646
Adjusted R <sup>2</sup>	0.307	0.313	0.301	0.307	0.307

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Panel B: <i>Strong Culture</i>					
	<i>Dependent Variable: First-Day Return</i>				
	(1)	(2)	(3)	(4)	(5)
Strong Culture	3.211** (2.470)	3.717*** (2.775)	3.121** (2.306)	3.202** (2.413)	3.785** (2.611)
Previous IPOs	0.110 (1.572)				0.149** (2.189)
Average First-Day Return	−0.150 (−0.846)				−0.193 (−0.801)
Average Price Revision	3.141* (1.719)				2.745 (1.160)
VC Market Share		−2.848 (−0.270)			−0.220 (−0.020)
ln(Proceeds)			−0.973 (−1.016)		−1.781 (−1.107)
ln(Filing Range)			0.656 (0.659)		0.705 (0.456)
Multiple Share Classes				2.743 (0.782)	7.077 (1.571)
Internet Firm				−1.838 (−0.979)	−2.189 (−0.879)
DRS Filing				5.868*** (2.959)	4.858 (1.675)
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	681	894	937	646
Adjusted R <sup>2</sup>	0.300	0.302	0.294	0.300	0.298

**Table S4:** Weighted Regressions with Additional Control Variables

Notes: This table shows the results from weighted regressions of IPO first-day returns on corporate culture. The weights are calculated using entropy balancing (Hainmueller, 2012) and *Strong Culture* as the treatment variable. In Panel A, the sample is balanced based on the baseline control variables. In Panel B, the sample is balanced based on all control variables including the additional controls. All specifications include industry and year fixed effects, and the controls variables used in Table 2. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Entropy Balancing on Baseline Controls					
	<i>Dependent Variable: First-Day Return</i>				
	(1)	(2)	(3)	(4)	(5)
Strong Culture	4.478*** (2.955)	4.800*** (2.775)	4.537*** (2.810)	4.366*** (3.128)	5.197*** (3.014)
Previous IPOs	0.046 (0.444)				0.095 (0.888)
Average First-Day Return	-0.086 (-0.415)				-0.140 (-0.618)
Average Price Revision	3.821* (1.843)				5.911** (2.536)
VC Market Share		-7.272 (-0.530)			-6.013 (-0.408)
ln(Proceeds)			-0.128 (-0.091)		-1.329 (-0.724)
ln(Filing Range)			2.309* (1.881)		1.743 (1.134)
Multiple Share Classes				5.195 (1.613)	10.990*** (2.726)
Internet Firm				-2.231 (-0.923)	-2.725 (-0.881)
DRS Filing				0.233 (0.058)	-1.007 (-0.217)
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	681	894	937	646
Adjusted R <sup>2</sup>	0.302	0.317	0.298	0.303	0.318

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Panel B: Entropy Balancing on Baseline and Additional Controls					
	<i>Dependent Variable: First-Day Return</i>				
	(1)	(2)	(3)	(4)	(5)
Strong Culture	4.773*** (2.895)	4.120** (2.257)	5.017*** (2.861)	3.734*** (2.887)	4.909** (2.625)
Previous IPOs	0.070 (0.669)				0.095 (0.877)
Average First-Day Return	−0.088 (−0.456)				−0.341 (−1.541)
Average Price Revision	3.642 (1.509)				14.320** (2.288)
VC Market Share		−8.137 (−0.605)			−0.922 (−0.085)
ln(Proceeds)			0.149 (0.103)		−1.800 (−0.950)
ln(Filing Range)			2.149* (1.776)		1.540 (0.901)
Dual Dummy				6.544* (1.869)	12.010*** (3.048)
Internet Dummy				−1.673 (−0.631)	−3.938 (−1.094)
DRS Dummy				−0.347 (−0.091)	−0.256 (−0.058)
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	937	681	894	937	646
Adjusted R <sup>2</sup>	0.311	0.346	0.294	0.300	0.314

**Table S5:** Two-Stage Least Squares Regressions with Additional Control Variables and State Dummies

Notes: This table shows the results from the second stage of two-stage least squares regressions where *Culture Score* is instrumented by *Industry Culture* and *Matched Culture* and where we include additional control variables. All specifications also include *State Dummies* indicating the state in which the firm was headquartered at the time of the IPO, industry and year fixed effects, and the controls variables used in Table 2. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

	<i>Dependent Variable: First-Day Return</i>				
	Second Stage				
	(1)	(2)	(3)	(4)	(5)
Culture Score <sub>Instrumented</sub>	3.543*** (2.935)	2.929* (1.860)	3.301** (2.386)	3.424*** (2.888)	3.788** (2.564)
Previous IPOs	0.069 (0.977)				0.085 (1.165)
Average First-Day Return	−0.148 (−0.867)				−0.169 (−0.742)
Average Price Revision	4.797*** (2.957)				6.397*** (2.862)
VC Market Share		−17.454* (−1.770)			−21.826** (−2.096)
ln(Proceeds)			−0.721 (−0.664)		−0.979 (−0.545)
ln(Filing Range)			0.893 (0.972)		0.664 (0.519)
Multiple Share Classes				0.152 (0.043)	3.241 (0.694)
Internet Firm				−1.732 (−0.808)	−2.509 (−0.966)
DRS Filing				5.466*** (2.796)	5.286* (1.870)
Partial F-Statistic	14.32***	7.75***	13.48***	13.82***	7.04***
Sargan Statistic	0.376	0.719	0.432	0.645	0.658
Sargan P-Value	0.540	0.397	0.511	0.422	0.417
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	895	653	855	895	621
Adjusted R <sup>2</sup>	0.303	0.302	0.297	0.301	0.298

**Table S6:** Three-Stage Regression Approach with Additional Control Variables

Notes: This table shows the results from three-stage regressions. Panel A shows the results from a first stage probit regression of *Strong Culture* on a set of explanatory variables and an instrumental variable called *Industry Culture*. We also include industry and year fixed effects in this specification. In unreported second stage regressions, we employ the fitted probabilities from this first stage regression as the instrumental variable. Panel B shows the results from the third stage of our three-stage regression approach where *Strong Culture* is instrumented by the fitted probabilities. All specifications in Panel B (and in the unreported second stage regressions) include industry and year fixed effects as well as the control variables used in Table 2. In columns (2) to (6), we also add additional control variables. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: First Stage Probit Regression	
	<i>Dependent Variable: Strong Culture</i>
	(1)
Industry Culture	0.195*** (4.548)
ln(Age)	−0.116 (−1.403)
ln(Sales)	−0.136*** (−2.750)
Leverage	−0.005 (−0.048)
Return on Equity	−0.016* (−1.885)
Industry/Year FE	Yes
Observations	910
Pseudo R <sup>2</sup>	0.244

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Panel B: Third Stage OLS Regressions						
	<i>Dependent Variable: First-Day Return</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Strong Culture <sub>Instrumented</sub>	24.240** (2.417)	25.880** (2.627)	22.020* (2.001)	24.930** (2.269)	24.610** (2.520)	27.740** (2.405)
Previous IPOs		0.067 (1.001)				0.149* (1.827)
Av. First-Day Return		-0.135 (-0.774)				-0.280 (-1.332)
Av. Price Revision		4.425** (2.439)				4.982*** (3.404)
VC Market Share			-3.566 (-0.353)			-3.052 (-0.326)
ln(Proceeds)				0.210 (0.166)		-0.556 (-0.286)
ln(Filing Range)				0.861 (0.966)		1.362 (0.953)
Multiple Share Classes					2.170 (0.605)	7.592 (1.691)
Internet Firm					-2.389 (-1.107)	-4.608* (-1.903)
DRS Filing					6.351** (2.434)	6.043 (1.526)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	867	867	636	828	867	605
R <sup>2</sup>	0.356	0.362	0.377	0.355	0.361	0.386

**Table S7:** Average Treatment Effect Model with Additional Control Variables

Notes: This table shows the results from average treatment effect models. Panel A shows the results from a probit regression of *Strong Culture* on a set of explanatory variables and an instrumental variable called *Industry Culture*. Panel B shows the second stage results from average treatment effect models. All specifications in Panel B include industry and year fixed effects as well as the control variables used in Table 2. In columns (2) to (6), we also add additional control variables. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of robust standard errors. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: First Stage Probit Regression	
	<i>Dependent Variable: Strong Culture</i>
	(1)
Industry Culture	0.195*** (4.319)
ln(Age)	−0.116 (−1.531)
ln(Sales)	−0.136*** (−3.843)
Leverage	−0.005 (−0.045)
Return on Equity	−0.016** (−2.062)
Industry/Year FE	Yes
Observations	910
Pseudo R <sup>2</sup>	0.244

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Panel B: Second Stage ATE Regression						
	<i>Dependent Variable: First-Day Return</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Strong Culture <sub>Instrumented</sub>	7.218** (1.960)	8.013* (1.716)	7.836 (1.505)	6.777** (2.000)	7.029* (1.941)	25.57 (1.555)
Previous IPOs		0.0959 (1.288)				0.170 (1.633)
Av. First-Day Return		-0.143 (-1.055)				-0.239 (-1.404)
Av. Price Revision		4.185*** (2.688)				3.320 (1.441)
VC Market Share			0.470 (0.0273)			4.617 (0.266)
ln(Proceeds)				-0.955 (-0.908)		-2.149 (-1.422)
ln(Filing Range)				1.068 (1.146)		0.707 (0.538)
Multiple Share Classes					3.981* (1.717)	9.706*** (2.783)
Internet Firm					-1.255 (-0.480)	-3.774 (-1.196)
DRS Filing					4.946** (2.028)	2.759 (0.675)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	910	910	664	872	910	632

**Table S8:** OLS Regressions with an Alternative Culture Measure, Additional Control Variables, and State Dummies

Notes: This table shows the results from different OLS specifications using an alternative measure of corporate culture based on the initial IPO prospectuses and including additional control variables. The regressions in Panel A are based on the sample of IPOs for which we have the culture data based on Li et al. (2021). The regressions in Panel B are based on a larger sample of IPOs for which we can construct our alternative culture measure. All specifications across both panels also include *State Dummies* indicating the state in which the firm was headquartered at the time of the IPO, industry and year fixed effects, and the control variables used in Table 2. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Same IPOs as in the Baseline Tests					
	<i>Dependent Variable: First-Day Return</i>				
	(1)	(2)	(3)	(4)	(5)
Culture Score Prospectus	7.148*** (3.144)	7.453** (2.632)	7.464*** (2.795)	7.342*** (3.030)	7.886** (2.158)
Previous IPOs	0.124** (2.115)				0.155** (2.369)
Average First-Day Return	−0.156 (−0.829)				−0.163 (−0.666)
Average Price Revision	3.704** (2.266)				2.556 (1.146)
VC Market Share		−2.934 (−0.264)			−0.191 (−0.016)
ln(Proceeds)			−0.786 (−0.752)		−1.429 (−0.809)
ln(Filing Range)			0.884 (0.899)		0.626 (0.423)
Multiple Share Classes				2.257 (0.638)	6.491 (1.472)
Internet Firm				−2.817 (−1.434)	−3.113 (−1.272)
DRS Filing				4.050** (2.035)	3.969 (1.321)
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	904	669	861	904	634
Adjusted R <sup>2</sup>	0.304	0.304	0.297	0.301	0.298

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Panel B: All Available IPOs from 2001-2018					
Culture Score Prospectus	8.032*** (3.812)	7.398*** (3.186)	8.382*** (3.624)	7.774*** (3.470)	7.821*** (2.742)
Previous IPOs	0.102*** (3.000)				0.195*** (3.141)
Average First-Day Return	-0.133 (-1.318)				-0.176 (-1.359)
Average Price Revision	1.849 (1.602)				-0.040 (-0.037)
VC Market Share		-14.197** (-2.315)			-13.126** (-2.242)
ln(Proceeds)			0.065 (0.049)		-0.230 (-0.122)
ln(Filing Range)			0.724 (1.124)		0.392 (0.445)
Multiple Share Classes				3.012 (1.151)	5.738* (1.862)
Internet Firm				0.291 (0.290)	0.753 (0.438)
DRS Filing				1.096 (0.456)	1.176 (0.272)
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1548	1091	1468	1548	1031
Adjusted R <sup>2</sup>	0.312	0.273	0.304	0.310	0.267

**Table S9:** Two-Stage Least Square Regressions with an Alternative Culture Measure, Additional Control Variables, and State Dummies

Notes: This table shows the results from the second stages of two-stage least squares regressions using an alternative measure of corporate culture based on the initial IPO prospectuses and including additional control variables. The regressions in Panel A are based on the sample of IPOs for which we have the culture data based on Li et al. (2021), and where we instrument our alternative culture measure by both instruments – *Industry Culture* and *Matched Culture*. The regressions in Panel B are based on a larger sample of IPOs for which we can construct our alternative culture measure, and where we instrument our alternative culture measure by *Industry Culture*. All specifications across both panels also include *State Dummies* indicating the state in which the firm was headquartered at the time of the IPO, industry and year fixed effects, and the control variables used in Table 2. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Panel A: Same IPOs as in the Baseline Tests					
	<i>Dependent Variable: First-Day Return</i>				
	Second Stage				
	(1)	(2)	(3)	(4)	(5)
Culture Score Prospectus <sub>Instrumented</sub>	22.613** (2.136)	17.718 (1.464)	22.402* (1.839)	22.850** (2.188)	27.707** (2.303)
Previous IPOs	0.122* (1.959)				0.183** (2.701)
Average First-Day Return	−0.145 (−0.813)				−0.189 (−0.833)
Average Price Revision	4.500*** (2.800)				3.241 (1.531)
VC Market Share		−1.809 (−0.157)			2.014 (0.186)
ln(Proceeds)			−0.192 (−0.148)		−0.463 (−0.247)
ln(Filing Range)			1.408 (1.472)		1.376 (1.037)

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Multiple Share Classes				1.806 (0.501)	5.066 (1.123)
Internet Firm				-2.438 (-1.071)	-4.088 (-1.618)
DRS Filing				3.261 (1.570)	4.556 (1.554)
Partial F-Statistic	27.90***	21.76***	24.51***	26.68***	16.85***
Sargan Statistic	0.516	0.447	0.646	0.944	0.446
Sargan P-Value	0.472	0.504	0.421	0.331	0.504
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	864	642	824	864	610
Adjusted R <sup>2</sup>	0.305	0.303	0.297	0.299	0.298
Panel B: All Available IPOs from 2001-2018					
Culture Score Prospectus <sub>Instrumented</sub>	23.973** (2.376)	26.537* (1.904)	23.513** (2.049)	21.937** (2.272)	32.963** (2.167)
Previous IPOs	0.115*** (3.556)				0.241*** (3.840)
Average First-Day Return	-0.128 (-1.292)				-0.134 (-1.078)
Average Price Revision	2.788*** (3.092)				0.060 (0.095)
VC Market Share		-7.434 (-1.175)			-6.208 (-1.118)
ln(Proceeds)			0.452 (0.274)		0.674 (0.293)
ln(Filing Range)			0.741 (1.131)		0.764 (0.777)
Multiple Share Classes				2.175 (0.780)	4.188 (1.352)
Internet Firm				-0.059 (-0.061)	-1.126 (-0.636)
DRS Filing				0.550 (0.226)	0.443 (0.106)
Partial F-Statistic	25.01***	19.95***	23.11***	23.66***	15.48***
Sargan Statistic					
Sargan P-Value					
State Dummies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Industry/Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1454	1029	1377	1454	972
Adjusted R <sup>2</sup>	0.312	0.274	0.302	0.308	0.267

**Table S10:** Regression Results Based on Subsamples

Notes: This table shows the results from our baseline regressions where the main independent variable of interest is *Culture Score* in Panel A and *Strong Culture* in Panel using several subsamples. In column (1), our sample is based on IPOs after the introduction of the Sarbanes-Oxley-Act (SOX) on July 30, 2002. In column (2), we exclude all IPOs issued during the financial crisis, i.e., between 2008 and 2009. In columns (3) and (4), we use samples of IPOs before and after the introduction of the Dodd-Frank-Act, which was introduced on July 21, 2010. In columns (5) and (6), we use samples of IPOs before and after the introduction of the JOBS-Act, which was introduced on April 15, 2012. Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).



Panel A: *Culture Score*

	<i>Dependent Variable: First-Day Return</i>					
	Post SOX	Excluding Financial Crisis	Pre Dodd-Frank	Post Dodd-Frank	Pre JOBS	Post JOBS
	(1)	(2)	(3)	(4)	(5)	(6)
Culture Score	1.131*** (5.183)	1.193*** (5.530)	1.087*** (4.047)	1.269*** (4.425)	1.053*** (4.070)	1.270*** (3.497)
Price Revision	0.532*** (10.133)	0.538*** (9.964)	0.476*** (8.612)	0.549*** (7.657)	0.441*** (5.698)	0.650*** (8.755)
ln(Age)	−0.003 (−0.002)	−0.244 (−0.214)	−1.219 (−1.098)	−0.552 (−0.406)	−1.209 (−1.134)	−0.532 (−0.420)
ln(Sales)	−0.641 (−1.223)	−0.716 (−1.422)	0.572 (0.698)	−1.279* (−1.782)	0.550 (0.833)	−1.510** (−2.248)
Leverage	−3.057* (−1.794)	−3.118* (−1.808)	−2.450** (−2.533)	−4.165* (−1.706)	−0.954 (−0.731)	−5.775** (−2.710)
Positive EPS	1.181 (0.974)	1.516 (1.308)	0.864 (0.536)	1.612 (1.021)	1.737 (1.367)	0.901 (0.482)
Venture Backed	7.093** (2.583)	6.607** (2.429)	5.417* (1.875)	7.081* (1.719)	6.884** (2.355)	5.828 (1.396)
Bookrunner Market Share	6.538* (1.874)	6.662* (1.958)	3.858 (0.493)	7.840** (2.250)	4.423 (0.627)	7.574* (1.888)
Lawyer Market Share	−24.110 (−1.327)	−24.296 (−1.264)	7.133 (0.217)	−29.536 (−1.294)	−11.648 (−0.513)	−26.562 (−1.054)
Big 4 Auditor	0.513 (0.295)	0.124 (0.069)	0.438 (0.175)	−0.179 (−0.073)	0.132 (0.068)	0.477 (0.192)
Market Return	2.974** (2.156)	2.653 (1.424)	2.387** (2.586)	3.761 (1.361)	2.209* (1.902)	5.062 (1.348)
Market Volatility	23.030 (1.535)	23.492 (1.109)	44.539*** (2.754)	−18.184 (−0.594)	18.311* (1.697)	21.564 (0.378)
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	921	897	403	534	503	434
Adjusted R <sup>2</sup>	0.313	0.308	0.354	0.299	0.333	0.296

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Panel B: *Strong Culture*

	<i>Dependent Variable: First-Day Return</i>					
	Post SOX	Excluding Financial Crisis	Pre Dodd-Frank	Post Dodd-Frank	Pre JOBS	Post JOBS
	(1)	(2)	(3)	(4)	(5)	(6)
Strong Culture	3.772*** (3.162)	4.235*** (3.530)	3.691** (2.060)	5.713** (2.562)	3.377* (2.018)	6.215** (2.113)
Price Revision	0.545*** (10.489)	0.550*** (10.326)	0.482*** (8.850)	0.568*** (8.079)	0.450*** (5.800)	0.672*** (9.696)
ln(Age)	0.080 (0.071)	-0.151 (-0.135)	-1.319 (-1.194)	-0.451 (-0.341)	-1.215 (-1.143)	-0.500 (-0.410)
ln(Sales)	-0.823 (-1.567)	-0.902* (-1.818)	0.382 (0.454)	-1.467** (-2.117)	0.331 (0.486)	-1.632** (-2.524)
Leverage	-2.928 (-1.658)	-3.008* (-1.683)	-2.276** (-2.351)	-4.155 (-1.650)	-0.716 (-0.535)	-6.021*** (-2.808)
Positive EPS	1.079 (0.842)	1.457 (1.176)	1.068 (0.611)	1.506 (0.938)	1.907 (1.438)	0.859 (0.448)
Venture Backed	7.810*** (2.835)	7.309** (2.670)	5.555** (2.089)	7.695* (1.885)	7.141** (2.552)	6.382 (1.508)
Bookrunner Market Share	7.187* (1.840)	7.484* (1.934)	3.686 (0.457)	8.345** (2.291)	4.604 (0.624)	7.825* (1.853)
Lawyer Market Share	-23.167 (-1.386)	-22.952 (-1.302)	7.989 (0.233)	-29.550 (-1.419)	-8.340 (-0.375)	-27.435 (-1.166)
Big 4 Auditor	0.761 (0.471)	0.346 (0.206)	0.906 (0.359)	-0.282 (-0.128)	0.579 (0.296)	0.204 (0.090)
Market Return	2.542* (1.869)	2.145 (1.174)	1.986** (2.069)	3.098 (1.172)	1.709 (1.450)	4.355 (1.176)
Market Volatility	22.287 (1.382)	21.764 (0.967)	44.096** (2.513)	-19.400 (-0.609)	18.035 (1.539)	22.330 (0.385)
Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	921	897	403	534	503	434
Adjusted R <sup>2</sup>	0.304	0.298	0.344	0.291	0.324	0.289

**Table S11:** OLS Regressions Based on Subsamples Excluding Specific Industries

Notes: This table shows the results from our baseline regressions based on subsamples where we exclude financial firms (SIC codes 6000-6999), utility firms (SIC codes 4000-4999), and internet firms (classifications come from Jay Ritter's website). Variable definitions and sources can be found in Table S13. Below the coefficient estimates, we provide t-statistics in parentheses calculated on the basis of standard errors clustered by industry. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

Excluding	<i>Dependent Variable: First-Day Return</i>		
	Financials	Utilities	Internet Firms
	(1)	(2)	(3)
Culture Score	1.141*** (4.860)	1.097*** (4.839)	1.171*** (3.526)
Price Revision	0.560*** (11.741)	0.548*** (10.452)	0.532*** (8.454)
ln(Age)	-1.227 (-1.305)	-0.343 (-0.287)	-0.588 (-0.437)
ln(Sales)	-0.644 (-1.291)	-0.744 (-1.367)	-0.388 (-0.732)
Leverage	-4.196** (-2.406)	-3.472** (-2.075)	-2.999* (-1.785)
Positive EPS	2.084* (1.719)	1.081 (0.880)	0.732 (0.534)
Venture Backed	4.412* (1.724)	7.056** (2.494)	6.730** (2.459)
Bookrunner Market Share	5.062 (1.365)	6.247 (1.667)	5.583 (1.677)
Lawyer Market Share	-29.187 (-1.650)	-24.005 (-1.294)	-25.494 (-1.195)
Big 4 Auditor	0.644 (0.379)	0.108 (0.060)	-1.011 (-0.463)
Market Return	3.002** (2.301)	2.441* (1.853)	2.298 (1.557)
Market Volatility	23.827 (1.384)	20.467 (1.329)	24.714 (1.340)
Industry/Year FE	Yes	Yes	Yes
Observations	825	891	814
Adjusted R <sup>2</sup>	0.327	0.313	0.296

**Table S12:** OLS Regressions Based on Different Standard Errors

Notes: This table shows the results from our baseline regressions with alternative clustering of standard errors. Variable definitions and sources can be found in Table S13. The following significance levels are indicated by asterisks: \*\*\* (1%), \*\* (5%), \* (10%).

	<i>Dependent Variable: First-Day Return</i>			
	Industry & Year	Year	Industry $\times$ Year	Robust
	(1)	(2)	(3)	(4)
Culture Score	1.153** (2.628)	1.153** (2.347)	1.153*** (2.832)	1.153*** (4.157)
Price Revision	0.539*** (5.625)	0.539*** (8.110)	0.539*** (10.983)	0.539*** (13.478)
ln(Age)	-0.159 (-0.123)	-0.159 (-0.132)	-0.159 (-0.147)	-0.159 (-0.153)
ln(Sales)	-0.653 (-0.685)	-0.653 (-0.790)	-0.653 (-0.951)	-0.653 (-1.142)
Leverage	-3.057* (-1.937)	-3.057*** (-2.912)	-3.057** (-2.215)	-3.057* (-1.900)
Positive EPS	1.299 (1.493)	1.299 (1.331)	1.299 (0.941)	1.299 (0.787)
Venture Backed	6.562* (1.994)	6.562** (2.810)	6.562*** (2.952)	6.562*** (3.347)
Bookrunner Market Share	6.392** (2.361)	6.392 (1.444)	6.392 (1.151)	6.392 (1.502)
Lawyer Market Share	-25.042 (-1.445)	-25.042* (-1.940)	-25.042* (-1.744)	-25.042 (-1.308)
Big 4 Auditor	0.646 (0.363)	0.646 (0.353)	0.646 (0.335)	0.646 (0.306)
Market Return	2.683* (1.988)	2.683* (1.934)	2.683* (1.856)	2.683 (1.380)
Market Volatility	21.849 (1.197)	21.849 (1.171)	21.849 (1.386)	21.849 (1.262)
Industry/Year FE	Yes	Yes	Yes	Yes
Observations	937	937	937	937
Adjusted R <sup>2</sup>	0.312	0.312	0.312	0.312

**Table S13:** Variable Definitions and Sources

Notes: This table provides definitions and sources of the variables used throughout the paper. “SDC” refers to the Thomson Financial’s SDC New Issues database. “CRSP” refers to The Center for Research in Security Prices. “E” refers to the Electronic Data Gathering And Retrieval System (EDGAR). “CS” refers to Compustat/Capital IQ. “R” refers to Jay Ritter’s website.

Variable	Description	Source
<i>Dependent Variables:</i>		
First-Day Return	The percentage change from the offer price to the first closing price	SDC, CRSP
Abs. Revision	The unsigned percentage change from the midpoint of the first filed price range to the final offer price	E, SDC
Post-IPO Volatility	The root-mean square error of a market model estimation for each IPO for the window from day $t + 5$ through day $t + 94$ , where $t = 0$ is the IPO date	CRSP
<i>Main Variables of Interest:</i>		
Culture Score	The sum of the values for each of the five cultural dimensions (i.e., innovation, integrity, quality, respect, and teamwork) based on Li et al. (2021)	
Strong Culture	Dummy variable that equals one if the firm’s <i>Culture Score</i> is in the top quartile across all Compustat firms in a year, and zero otherwise	
<i>Control Variables:</i>		
See Table A1 of the main paper.		
<i>Additional Control Variables:</i>		
Previous IPOs	Number of IPOs in the past 90 days	SDC
Average First-Day Return	Average <i>First-Day Return</i> of IPOs in the last 90 days	CRSP, SDC
Average Price Revision	Average <i>Price Revision</i> of IPOs in the last 90 days	E, SDC
VC Market Share	Two-year trailing market share (based on IPO proceeds) of the (first) lead venture capital firm	CRSP, SDC
ln(Proceeds)	The natural logarithm of the number of shares offered multiplied by the offer price	SDC
ln(Filing Range)	The natural logarithm of the number of days between the filing date of the initial prospectus and the issue date	SDC
Multiple Share Classes	Dummy variable that equals one if the firm has multiple share classes, and zero otherwise	R
Internet Firm	Dummy variable that equals one if the issuer is an internet-based company, and zero otherwise	R
DRS Filing	Dummy variable that equals one if the firm has filed a draft registration statement, and zero otherwise	E

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