

Management Quality, Financial and Investment Policies, and Asymmetric Information

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Abstract

We develop measures of the management quality of firms and make use of a unique sample of hand-collected data to examine the relationship between the reputation and quality of a firm's management and its financial and investment policies, a relationship that has so far received little attention in the literature. We hypothesize that better and more reputable managers are able to convey the intrinsic value of their firm more credibly to outsiders, thus reducing the information asymmetry facing their firm in the equity market. Given this, firms with better and more reputable managements will have more access to the equity market, so that we expect lower leverage ratios for these firms. In addition, they will have less need to signal using dividends, so that they will have lower dividend payout ratios. Further, since better managers are likely to select better projects (having a larger NPV for any given scale) and implement them more ably, higher management quality will also be associated with higher levels of investment. We present evidence consistent with the above hypotheses. Our direct tests of the relationship between management quality and asymmetric information also indicate that higher management quality leads to a reduction in the extent of information asymmetry facing a firm in the equity market.

Keywords: Management Quality; Capital Structure; Dividend Policy; Investment Policy; Asymmetric Information.

JEL classifications: G24; G31; G32; G35.

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I. Introduction

The determinants of the financial policies of a firm have been the subject of considerable debate in recent times (see Welch (2004) for a recent example). Surprisingly, almost fifty years after the seminal papers by Modigliani and Miller on the capital structure and the dividend policy of a firm (see Modigliani and Miller (1958, 1961)) and the large academic literature in corporate finance subsequent to their work, there is little agreement in the finance literature regarding the determinants of a firm's financial policies. Further, it is often acknowledged that there may be several missing dimensions determining a firm's financial and investment policies that have not been analyzed in the literature (see, e.g., Gompers, Ishii, and Metrick (2004)).

One "missing" factor that may be important in determining a firm's financial and investment policies is the quality and reputation of its management team. For example, the quality of a firm's management has been widely regarded by practitioners (like venture capitalists and financial analysts) as an important measure of firm quality and a predictor of its future performance. Better and more reputable management may be able to "certify" the quality of their firm to the financial markets, thus reducing the extent of information asymmetry between firm insiders and outsiders. This means that firms with higher quality managements may be able to access the equity market more easily, which may in turn affect their financial policies. Further, better managements may also be more likely to select better (higher NPV) projects and implement them more ably, thus affecting their firm's investment policy. However, relatively little attention has been paid in the academic literature so far to the relationship between a firm's management quality and its financial and investment policies, perhaps due to difficulties in

operationalizing the notion of management quality and reputation and due to data limitations.¹ Our objective in this paper is to remedy this gap in the literature.

We develop various measures of management quality and reputation (see section IV for a discussion) and use a unique sample of hand-collected data on the management quality to study the relationship between the management quality of a firm and its financial and investment policies. Given that a reduction in the extent of asymmetric information a firm faces in the financial markets is an important channel through which management quality may influence its financial and investment policies, we also directly study the relationship between management quality and asymmetric information. The sample of firms in which we study the relationship between management quality and financial and investment policies are those making seasoned equity offerings (SEOs), since this allows us to collect detailed information regarding various variables affecting a firm's management quality from SEO prospectuses.²

The ability of firm management with higher quality and reputation to certify firm value more effectively and thus reduce the extent of asymmetric information facing the firm in the equity market may arise in the following manner. First, senior members of a firm's management team build up reputational capital over their career, since these senior managers are involved in repeated dealings with the financial markets as part of their job (e.g., raising bank financing or raising capital through a public equity or debt issue). Second, these managers know that there is a significant probability that they will leave their firm to join another, and that their future employer will be influenced by their reputation in dealing with the financial markets in deciding whether or not to hire them, as well as in deciding their compensation package. Third, managers know that overpricing or "hyping" their firm's stock (or deceiving the financial markets in other ways) may tarnish their personal reputation in the equity market, thereby diminishing their future value in the labor market; the greater the personal reputation a manager has at stake, the greater is the future loss from mispricing his firm's equity. As a consequence of the above, better and more reputable managers are more likely to price their firm's equity fairly, so that such firms are faced

with less information asymmetry about firm value between insiders and outsiders.³ Reduced information asymmetry, in turn, may influence various aspects of a firm's financial and investment policies. In particular, firms facing lower information asymmetry may be more likely to issue equity (since they are more likely to get a fair price for their stock). This implies that firms with better and more reputable managements can be expected to have lower levels of leverage. Also, a lower extent of asymmetric information facing the firm makes signaling to the equity market through dividend policy less important. Therefore, firms with better and more reputable managements are likely to have lower dividend payout ratios.

Better and more reputable managers may also be able to select better projects, characterized by a larger NPV for any given scale. This means that higher management quality firms are likely to have a larger equilibrium scale of investment, which, in turn, will be reflected in higher levels of capital expenditures.⁴ We discuss in more detail how management quality and reputation may affect a firm's financial and investment policies in the next section.

In order to ascertain whether reducing the asymmetric information facing a firm is indeed an important channel through which management quality affects its financial policies, we also directly test whether management quality is inversely related to the extent of asymmetric information facing the firm. To accomplish this, we use various proxies for asymmetric information, like the number of analysts following the firm, analysts' forecast error, dispersion of analysts' forecasts, and the average bid-ask spread of a firm's stock. Further, since lower the information asymmetry facing a firm in the equity market, the greater the liquidity of the firm's equity, we also expect management quality to be positively related to liquidity, as measured by proxies such as trading volume and share turnover.⁵

The results of our empirical tests indicate that the quality and reputation of a firm's management indeed affect its financial and investment policies. First, we find that management quality and reputation are negatively related to a firm's leverage and dividend payout ratios. Second, management quality and reputation are positively related to investment levels of the firm.

We find this relationship between the management quality and the financial and investment policies of a firm to be robust, since this relationship persists even after controlling for potential simultaneity and endogeneity problems. Finally, we find direct evidence that firms with better and more reputable managements do indeed face a lower extent of information asymmetry in the equity market, and are characterized by greater liquidity of their shares, thus indicating that one of the channels through which the management quality of a firm affects its financial and investment policies is by reducing the asymmetric information it faces in the equity market.

In our formal empirical analysis, we have focused on only two channels through which the quality and reputation of a firm's management team can affect its financial and investment policies. The first channel is the reduction in the asymmetric information facing the firm in the equity market due to having a high quality management team. The second channel is the enhanced quality of projects chosen by firms with more able management teams, who may also implement these projects more efficiently. However, we cannot rule out the possibility of management quality affecting a firm's financial and investment policies through other channels such as a reduction in the agency and bankruptcy costs facing the firm or through increasing the value of the firm's debt tax shield: see section VIII for a more detailed discussion. Further, our empirical design suffers from two limitations. First, due to data availability considerations our sample consists of only firms that have made a seasoned equity issue (see footnote 2) which makes it a rather unique sample. Second, our multivariate empirical analysis may be subject to an endogeneity problem, in the sense that in addition to management quality affecting a firm's financial and investment policies, firms with certain financial and investment policies may attract high quality managers. While we have made every attempt to control for the above endogeneity problem using instrumental variables in our regression analysis, it can be argued that our choice of instruments may not be appropriate. We discuss these two limitations of our empirical design in section IX. Given the above limitations of our analysis, it is not our view that we are able to identify causal relationships, or that we are able to analyze all possible channels through which

the quality and reputation of a firm's management team may affect its financial and investment policies. However, at a very minimum, our empirical study presents some very interesting correlations between the quality and reputation of a firm's management team and its financial and investment policies, which will potentially inspire future researchers to investigate the underlying relationships at a greater depth.⁶

Our paper contributes to the newly emerging literature on the relationship between the nature of a firm's management and various aspects of its financial and investment policies and performance. Chevalier and Ellison (1999) study the relationship between the performance of mutual funds and the characteristics (age, experience, education, and SAT test scores) of their fund managers. They find that managers who attended higher-SAT undergraduate institutions had significantly higher risk-adjusted excess returns. Bertrand and Schoar (2003) find that manager fixed effects explain some of the heterogeneity in investment, financial, and organizational practices of firms. They attribute these fixed effects to the differences in style across managers and link them to observable managerial characteristics, such as the age of the managers and the institution from which they obtained an MBA degree.⁷ However, by focusing on specific managers, they capture the effects of the management styles of various managers on firms' financial policy, rather than the relationship between management quality per se and financial policy, which is the topic we study here. Chemmanur and Paeglis (2005) study the relationship between a firm's management quality and various aspects of its IPO, and show that management quality affects the characteristics of a firm's IPO.⁸ They, however, do not study the relationship between the management quality of a firm and its financial and investment policies, which is the focus of this paper. In summary, this is the first paper in the literature to study the relationship between the quality and reputation of a firm's management and its financial and investment policies. This is also the first paper to directly test the relationship between the quality of a firm's management and the extent of asymmetric information facing the firm in the equity market, and the relationship between management quality and the liquidity of its stock.

The rest of the paper is organized as follows. Section II discusses the relevant theory regarding the relationship between the management quality and reputation of a firm and its financial and investment policies. Section III summarizes the hypotheses we test in this paper based on the theoretical arguments made in section II. Section IV develops various measures of management and firm quality. Section V describes our data and sample selection procedures. Section VI presents our empirical testing methodology and reports our empirical results regarding the relationship between management quality and financial and investment policies. Section VII directly tests the relationship between the management quality of a firm and the extent of asymmetric information facing it in the equity market. Section VIII discusses channels other than a reduction in asymmetric information through which a firm's management quality may affect its financial policies and relates them to our empirical findings. Section IX discusses some limitations of our empirical design. Section X concludes with a summary of our results and our interpretation of them.

II. How Does Management Quality Affect a Firm's Financial and Investment Policies?

We now discuss in more detail the relationship between the quality and reputation of a firm's management and its financial and investment policies. Earlier, we argued that firms with better management quality and reputation are likely to face a reduced extent of information asymmetry in the equity market. In order to concretize how managers with higher quality and reputation can help a firm reduce the information asymmetry it faces in the equity market, consider the following intuitive model. The model has three dates (time 0, 1, and 2) and is analogous to the investment bank reputation model of Chemmanur and Fulghieri (1994) (see Figure 1). At time 0 (beginning of period one) the CEO (manager) of a firm has noisy information superior to equity market investors about its future cash flows, and makes an announcement (which may or may not be truthful) to the equity market about this cash flows (Step 1). The manager then chooses a financial policy variable (e.g., leverage or dividends) and announces this

to the equity market as well, after which equity market investors value the firm (Step 2). The manager's salary in the first period will be an increasing function of the firm's stock price at this time. Subsequent to this, the true value of the firm's future cash flows (announced earlier by the manager) is realized and revealed to equity market investors, who use this to update the manager's reputation for honesty using Bayes' Rule (Step 3). At the end of period one (time 1) the manager leaves the firm and joins a new firm, and Steps 1, 2, and 3 are repeated for the new firm in period two. The game ends at time 2 (i.e., at the end of period two).

[Insert Figure 1 here]

In the above setting, the manager, though self-interested, can act as an intermediary to reduce information asymmetry between the firm and equity market investors (analogous to an investment bank in Chemmanur and Fulghieri (1994)), due to his concern for his reputation for honesty. On the one hand, the manager has the incentive to announce the highest possible value for his firm's future cash flows, since this can potentially increase the firm's stock price at the end of period one and his personal compensation in that period. On the other hand, doing so would increase the probability of his cash flow estimate being wrong and the chance of damaging his personal reputation for honesty (and consequently his compensation in his future employment).⁹

In the above setting, it can be shown that, the greater the current reputation of the manager, the more likely he is to tell the truth about the firm's future cash flows. Since equity market investors are aware of this, the more reputable the manager, the more credible they will find him, and consequently the more effective he will be in mitigating the information asymmetry between the firm and the equity market (for a roadmap to formally demonstrating the above results, see Chemmanur and Fulghieri (1994)). In summary, the higher the quality and reputation of a firm's management team at the time the firm announces the choice of a financial policy variable, the lower the extent of information asymmetry the firm will face in the financial market.

We now discuss how a reduction in the information asymmetry facing a firm due to better management quality and reputation may affect its financing and dividend policies. First,

consider the relationship between information asymmetry and leverage. As shown by Myers and Majluf (1984), equity is the financing vehicle of last resort when a firm faces information asymmetry in the capital markets (see also Giammarino and Lewis (1989), Noe (1989), and Chemmanur and Jiao (2005)). However, in the presence of other market imperfections (e.g., costs of financial distress associated with debt), a firm may raise a significant portion of financing by issuing equity in equilibrium since it trades off the financing costs arising from information asymmetry with those arising from these other imperfections. In such a setting, the lower the extent of asymmetric information facing a firm, the greater the equilibrium fraction of external financing raised through equity. Thus, this theory predicts that, *ceteris paribus*, firms with better management quality and reputation will be associated with lower equilibrium leverage ratios.

Now consider the relationship between management quality and dividend policy. A number of papers in the theoretical corporate finance literature have argued that the motivation for a firm to pay out dividends is to signal firm insiders' private information to the equity market (see, e.g., Bhattacharya (1979), Miller and Rock (1985), and John and Williams (1985)). In the above setting, the greater the extent of information asymmetry facing the firm in the equity market, the stronger the signal that needs to be sent to dissipate this information asymmetry, so that the amount of dividends paid by a firm is larger in equilibrium. In summary, this theory predicts that, *ceteris paribus*, firms with better management quality and reputation will be associated with lower equilibrium dividend payout ratios.

We now discuss the effect of management quality on the investment policy of a firm. Management quality may affect a firm's investment policy directly through managerial ability. If better and more reputable managers are able to select better projects for their firms (characterized by a larger NPV for any given scale), and assuming decreasing returns to scale, a firm with better management quality will be associated with a larger equilibrium scale of investment (see Figure 2). A larger scale of investment, will, in turn, be reflected in higher levels of capital expenditures, so that these will also be increasing in a firm's management quality. **[Insert Figure 2 here]**

III. Summary of Hypotheses

As we argued above, the quality and reputation of a firm's management may affect its financial and investment policies in a variety of ways. We now summarize the hypotheses arising from the above arguments, which will serve as the basis for our empirical tests. Our first set of hypotheses deals with the relationship between the quality and reputation of a firm's management and its financial and investment policies:

H1: The leverage ratio of a firm will be negatively related to quality and reputation of its management.¹⁰

H2: The dividend payout ratio of a firm will be negatively related to quality and reputation of its management.

H3: Firms with better and more reputable managements will have higher levels of investment (capital expenditures).

Our second set of hypotheses deals with the direct relationship between management quality and the extent of asymmetric information facing the firm, and between management quality and liquidity:

H4: The degree of asymmetric information facing a firm will be negatively related to its management quality and reputation.

H5: The liquidity of a firm's equity will be positively related to its management quality and reputation.

IV. Measures of Management Quality and Reputation, and Firm Quality

A. Measures of Management Quality and Reputation

In this section we describe our measures of management quality and reputation which we measure along the following three broad dimensions: management team resources, management team structure, and management reputation in the business community. To measure each of these dimensions, we make use of several different variables.

Management team resources refer to the human and knowledge resources (including both education and relevant work experience) available to firm management. This is measured by the number of executive officers (defined as those with a rank of vice president or higher) on a firm's management team (TSIZE).

Team resources also depend upon knowledge and education of its members, which we measure in two ways. Our second measure of team resources is the percentage of the management team members with an MBA degree (PMBA). We also measure the percentage of the management team members who are Certified Public Accountants (PCPA). Higher percentages of MBAs and CPAs imply higher management quality. The third factor that increases management team resources is a prior top management experience. We look at the percentage of the management team members who have served as executive officers and/or vice presidents or higher prior to joining the firm (PFTEAM). The greater the value of this variable, the better the management quality. Finally, management team resources are also enhanced by the presence of managers who are in charge of the firm's core functional areas. Our fifth measure, therefore, is the percentage of the management team members in the core functional areas: operations and production, research and development, marketing and sales, and finance (CORE). Clearly, higher values of CORE mean better management quality.

The second dimension along which we measure management quality, namely, management team structure, reflects the extent of uniformity or heterogeneity in the tenures of management team members, and their relative importance to the management team. We look at the average tenure of the management team members (TENURE) defined as the average number of years team members have been with the team. Higher average tenure may indicate cohesion and shared experiences, and thus would imply lower transaction costs among team members.

However, long tenures might also indicate the presence of complacency and rigidifying effects on team interactions. An ideal team would have members from different cohorts, which would allow for an inflow of new ideas and perspectives. Thus, a higher management quality

would be associated not only with a long average tenure, but also with a higher dispersion of tenures. Our second measure of team structure, therefore, is tenure heterogeneity, defined as the coefficient of variation of the team members' tenures (TENHET).

The third measure of team structure we use is CEO dominance. On the one hand, a strong-willed and dominating chief executive officer may severely diminish possible contributions from subordinate team members. On the other hand, a strong CEO might improve the cohesion of the management team. Thus, while we believe that CEO dominance is an important measure of team quality, we are agnostic about the direction of the expected impact (positive or negative) of this measure on management quality. Our measure of CEO dominance is the ratio of CEO salary and bonus in the fiscal year preceding SEO to the average salary and bonus of other team members listed in the executive compensation section of the prospectus (FCEO). Assuming that CEOs have a substantial influence over their own pay and nearly total influence over their subordinates' pay, this measure reflects the gap between the CEO's assessment of his own worth to the firm and his assessment of other team members' worth, and is thus a good measure of CEO dominance.¹¹

The third dimension along which we measure management quality, namely, management reputation in the business community, reflects the reputation built up by members of the management team. This is measured by the number of corporate boards (apart from that of their own firm) that management team members sit on (BOARDS). While the measures discussed above also partially measure management reputation, this variable is a better index of the reputation and visibility of a firm's management in the business community. Again, the greater the value of this variable, the higher the quality and reputation of a firm's management.

Table 1 summarizes our measures of management quality and reputation, as well as dependent variables that will be used in subsequent regressions. The average (median) management team size (TSIZE) was 6.45 (6) with the smallest management team consisting of only one person, and the largest one of 18 members. On average 6.8 percent of managers had an

MBA degree (PMBA), 7.5 percent were CPAs (PCPA), 44.1 percent had held a top management position at another firm prior to joining the SEO firm (PFTEAM), and 54.7 percent held positions in the core functional areas (CORE). The average tenure (TENURE) ranged from 1 to 26.7 years, with a mean (median) of 5.02 (4.29) years.¹² On average, CEOs were earning 47.6 percent more than the average member of their management team (FCEO). **[Insert Table 1 here]**

Though the above variables are expected to measure management quality and reputation, each of them may have unique limitations as a measure of the underlying unobservable construct. Therefore, we use common factor analysis to construct a single variable for each management quality dimension described above that captures variation common to the observable proxies of management quality.¹³ In order to ensure that various factors are capturing only the effects of management quality (and not those of firm size or firm age) we use firm-size- and firm-age-adjusted proxy variables to extract the factors. Team resources factor (TRF) score is obtained using common factor analysis on the firm-size-adjusted TSIZE, PMBA, PCPA, PFTEAM, and CORE variables. Team structure factor (TSF) score is obtained using common factor analysis on the firm-age-adjusted TENURE, TENHET, and firm-size-adjusted FCEO variables.¹⁴

Table 2 reports the results of the above common factor analysis. Panel A presents starting communalities, calculated as the squared multiple correlations obtained from regressing each of the management quality measures on the other measures within the same dimension, while Panel B reports the eigenvalues of the reduced correlation matrices. As suggested by Harman (1976), the number of factors needed to approximate the original correlations among individual measures is equal to the number of summed eigenvalues needed to exceed the sum of communalities. In our sample the summed communalities are less than the eigenvalues for the first factor in the factor analysis for each dimension of management quality and reputation, suggesting that one factor in each of the dimensions parsimoniously explains the intercorrelations among the individual measures. Correlations between the common factor scores and their respective original measures

of management quality are reported in Panel C, while Panel D reports summary statistics of the team resources factor (TRF) and the team structure factor (TSF) scores. **[Insert Table 2 here]**

B. Proxies for Other Aspects of Firm Quality

In order to separate the effects of management quality and reputation from those of other dimensions of firm quality, we control for these other dimensions using the following proxies.

First, we use two firm quality variables commonly used in the finance literature: firm size and firm age. We use the natural log of the book value of assets (LNBVA) as a proxy for the firm size.¹⁵ Firm age is defined as the natural log of one plus the number of years the firm has return data available from CRSP (LFAGE). The larger and older the firm, the higher the firm quality.¹⁶

Second, we control for the number of outside directors, defined as the number of directors listed in the management section of the prospectus who are not executive officers of the firm (ODIR). There are two ways in which the number of outside directors affects firm quality. First, outside directors may provide additional knowledge (inputs and perspectives) to the firms' managers. Second, they provide links to external parties, such as auditors, financial institutions, and underwriters. The greater the number of outside directors, the better the firm quality.¹⁷

V. Data and Sample Selection

The data used in this study came from several different databases. The list of seasoned equity offerings between 1993 and 1997 was obtained from SDC/Platinum Global New Issues Database. After eliminating non-underwritten issues, issues with offer prices of less than \$5, spin-offs, financial firms (all firms with SIC codes between 6000 and 6999), and foreign firms we were left with 2,006 firms. Further, 32 firms were eliminated because they did not have the necessary information on CRSP/Compustat. Of the remaining companies, 6 did not have prospectuses and 338 did not have management information available in their prospectuses. After eliminating these firms, we were left with 1,630 firms in our sample.

The data on management quality was hand-collected from the prospectuses of firms conducting SEOs. The prospectuses were obtained from Thomson Financial Database. In particular, information on the team size, tenure, former work experience, level of education, and board memberships of the team members came from the management section of the prospectuses. The data necessary to calculate the CEO dominance (FCEO) were obtained from the executive compensation sections of the prospectuses. Information on stock prices was obtained from CRSP, while the accounting information was obtained from Compustat. Finally, the data necessary to calculate asymmetric information variables was obtained from IBES, while the data on bid-ask spreads was obtained from CRSP and supplemented by TAQ database.

VI. Management Quality, and Financial and Investment Policies

In this section we discuss the empirical methodology used to test our hypotheses and report our results of the relationship between management quality and financial and investment policies. First we present the results of our univariate and multivariate tests regarding this relationship. Then we present the results of our robustness tests of the same relationship.

A. Univariate Tests

Table 3 reports the results of our univariate tests of the relationship between management quality and financial and investment policies of a firm. We split the sample into two by the median management quality factor scores (TRF and TSF). We will refer to the firms with below median management quality factor scores as “low management quality firms,” and those with above median management quality factor scores as “high management quality firms.”

[Insert Table 3 here]

We measure a firm’s financial and investment policies using the following variables. First, we measure a firm’s leverage (LEVER) as the ratio of long-term debt (Compustat item 9) plus debt in current liabilities (Compustat item 34) to the sum of the long-term debt, the debt in

current liabilities, and the book value of common equity (Compustat item 60). Second, we measure a firm's dividend payout ratio (DIVID) as the ratio of the sum of common and preferred dividends (Compustat items 21 and 19, respectively) to the earnings before depreciation, interest, and taxes (Compustat item 13). Third, we measure a firm's investment level (INVEST) as the ratio of capital expenditures (Compustat item 128) to the total assets at the beginning of the year (Compustat item 6). All the preceding variables are for the fiscal year of the SEO.

We find that the team resources factor score (TRF) has a significant influence on financial and investment policy variables. In particular, we find that high management quality firms (i.e. firms with an above median TRF score) have lower leverage and dividend payout ratios, and higher levels of investment. For example, firms with high management quality have, on average, leverage ratios that are lower than those of low management quality firms by 3.8 percentage points (this is a 16 percent decrease over the leverage ratio of low management quality firms). We also find statistically significant differences in the median levels of investment and dividend payout ratios between high and low management quality firms.

The impact of the team structure factor score (TSF) on financial policy variables is ambiguous. While we observe lower levels of leverage for firms with better and more reputable managements (firms with above median TSF scores have, on average, leverage ratios that are lower than those of below median TSF score firms by 2.3 percentage points), the results on dividend payout ratios go the opposite way.

B. Management Quality and Leverage

To test the hypothesis that firms with better and more reputable managements have lower leverage (hypothesis H1), we run the following regression:

$$(1) \quad \text{LEVER}_i = \beta_0 + \beta_1 \text{TSIZE}_i + \beta_2 \text{TENURE}_i + \beta_3 \text{TENHET}_i + \beta_4 \text{PMBA}_i + \beta_5 \text{PFTEAM}_i + \\ + \beta_6 \text{PCPA}_i + \beta_7 \text{CORE}_i + \beta_8 \text{BOARDS}_i + \beta_9 \text{FCEO}_i + \beta_{10} \text{LNBVA}_i + \beta_{11} \text{LFAGE}_i + \\ + \beta_{12} \text{ODIR}_i + \beta_{13} \text{TOBINQ}_i + \beta_{14} \text{ROA}_i + \beta_{15} \text{RETSD}_i + \text{IND}_i + \varepsilon_i,$$

where TOBINQ is the Tobin's Q, defined as the market value of assets divided by the book value of assets (Compustat item 6), where market value of assets equals the book value of assets plus the market value of common equity (Compustat item 25 times Compustat item 199) less the sum of the book value of common equity (Compustat item 60) and balance sheet deferred taxes (Compustat item 74); ROA is the return on assets defined as the ratio of earnings before extraordinary items (Compustat item 18) over the total assets at the beginning of the year (Compustat item 6); RETSD is the standard deviation of the total stock return calculated over 255 trading days for the fiscal year of the issue, and IND is a set of two-digit SIC code dummies (used to account for variations in financial policy variables across industries).¹⁸

The coefficients on the first eight independent variables are expected to be negative, while we are agnostic about the sign of the coefficient of FCEO. If a strong CEO diminishes contributions from other team members, the coefficient is expected to be positive, while if the team cohesion is increased due to a strong CEO, the coefficient is expected to be negative. The remaining independent variables are unrelated to management quality and are used to control for other aspects of firm quality.¹⁹

Regressions 1 to 4 in Table 4 present the results of the regressions with leverage as a dependent variable. We find that firms with higher percentages of MBAs (PMBA) and managers in the core functional areas (CORE) have significantly lower leverage. In particular, a one standard deviation increase in CORE leads to a 1.5 percentage point decrease in the leverage ratio (about 14.3 percent of the median firm's leverage ratio), while a one standard deviation increase in PMBA results in a 0.7 percentage point decrease in leverage ratio (about 6.8 percent of the median firm's leverage). In regression 4 we replace the individual management quality variables with team resources factor (TRF) and team structure factor (TSF) scores. We find that TRF score has a statistically significant negative impact on leverage with its coefficient significant at the 1 percent level. While TSF score also affects a firm's leverage negatively, its coefficient is not statistically significant. **[Insert Table 4 here]**

C. Management Quality and Dividend Payout Ratios

To test the effect of management quality and reputation on dividend payout ratios (hypothesis H2), we estimate the following regression:

$$(2) \quad \text{DIVID}_i = \beta_0 + \beta_1 \text{TSIZE}_i + \beta_2 \text{TENURE}_i + \beta_3 \text{TENHET}_i + \beta_4 \text{PMBA}_i + \beta_5 \text{PFTEAM}_i + \\ + \beta_6 \text{PCPA}_i + \beta_7 \text{CORE}_i + \beta_8 \text{BOARDS}_i + \beta_9 \text{FCEO}_i + \beta_{10} \text{LNBVA}_i + \beta_{11} \text{LFAGE}_i + \\ + \beta_{12} \text{ODIR}_i + \beta_{13} \text{TOBINQ}_i + \beta_{14} \text{ROA}_i + \text{IND}_i + \varepsilon_i.$$

We expect management quality and reputation to have a negative effect on the dividend payout ratios. Therefore we expect negative coefficients on the first eight measures of management quality and are agnostic about the sign of the coefficient of FCEO.

As reported in regressions 5 to 8 in Table 4, the percentages of management team with a prior top management experience (PFTEAM) and in the core functional areas (CORE) have a negative effect on dividend payout ratios. In regression 8 we use TRF and TSF scores instead of individual management quality variables. The TRF score has a statistically significant negative impact on a firm's dividend payout ratio with its coefficient significant at the 5 percent level. The coefficient of the TSF score is also negative though not significant. The results are also economically significant. A one standard deviation increase in PFTEAM results in a 0.26 percentage point (about 23.1 percent of the average firm's payout ratio) decrease in the dividend payout ratio and a one standard deviation increase in CORE results in a 0.17 percentage point (about 15.0 percent of the average firm's payout ratio) decrease in the dividend payout ratio.

Our findings of a negative relationship between management quality and dividend payout ratios are consistent with the notion that better quality managers reduce information asymmetry between the firm and the equity market, which makes signaling through dividends less relevant.²⁰

D. Management Quality and the Level of Investment

To test the relationship between management quality and reputation and the level of a firm's investment (hypothesis H3), we run the following regression:

$$(3) \quad \text{INVEST}_i = \beta_0 + \beta_1 \text{TSIZE}_i + \beta_2 \text{TENURE}_i + \beta_3 \text{TENHET}_i + \beta_4 \text{PMBA}_i + \beta_5 \text{PFTEAM}_i + \\ + \beta_6 \text{PCPA}_i + \beta_7 \text{CORE}_i + \beta_8 \text{BOARDS}_i + \beta_9 \text{FCEO}_i + \beta_{10} \text{LNBVA}_i + \beta_{11} \text{LFAGE}_i + \\ + \beta_{12} \text{ODIR}_i + \beta_{13} \text{TOBINQ}_i + \beta_{14} \text{ROA}_i + \text{IND}_i + \varepsilon_i.$$

We expect the coefficients of the first eight management quality proxies to be positive, and we are agnostic about the sign of the coefficient of FCEO.

Regressions 1 to 5 in Table 5 report the results of our regressions with investment level as a dependent variable. We find that firms with larger management teams (TSIZE), higher percentages of CPAs (PCPA) on the management team, and higher percentages of managers in the core functional areas (CORE) have significantly higher levels of investment. In regression 5 we use TRF and TSF factor scores instead of individual management quality variables. The team resources factor score has a statistically significant positive effect on a firm's investment level with its coefficient significant at the 1 percent level. **[Insert Table 5 here]**

The influence of management quality variables on the investment level is also economically significant. A one standard deviation increase in the TSIZE leads to a 1.4 percentage point (about 13.8 percent of a median firm's investment level) increase in the level of investment. Also, one standard deviation increases in the percentage of CPAs (PCPA) and the percentage of managers in the core functional areas (CORE) lead to 1.8 and 1.1 percentage point increases, respectively, in the investment level. Our results are consistent with the notion that better and more reputable managers are better at selecting and implementing new projects and, therefore, have higher equilibrium levels of investment.

E. Robustness Tests of the Relationship between Management Quality and Financial Policies

It can be argued that not only management quality affects the financial and investment policies of firms but firms with certain financial and investment policies attract high quality managers; in other words, management quality and financial policies are determined simultaneously. In this case the OLS estimators from previous sections may suffer from

simultaneity problems: independent variables of management quality may be correlated with the error terms of the above regressions. To address this problem, we make use of the seemingly unrelated regression (SURE) framework where we estimate each financial and investment policy regression equation (equations (1) through (3) in previous sections) simultaneously with two other equations, where management quality factor scores serve as dependent variables while the respective financial and investment policy variables serve as independent variables together with other firm quality variables. We rely on the covariance matrix estimated from OLS results and then estimate the three regression equations simultaneously. For example, for the relationship between leverage and management quality, we estimate a system of three simultaneous equations:

$$(4) \quad \begin{cases} \text{LEVER}_i = \beta_0 + \beta_1 \text{BOARDS}_i + \beta_2 \text{LNBVA}_i + \beta_3 \text{LFAGE}_i + \beta_4 \text{ODIR}_i + \beta_5 \text{TOBINQ}_i + \\ \quad + \beta_6 \text{ROA}_i + \beta_7 \text{RETS}_i + \beta_8 \text{TRF}_i + \beta_9 \text{TSE}_i + \text{IND}_i + \varepsilon_i, \\ \text{TRF}_i = \beta_0 + \beta_1 \text{LNBVA}_i + \beta_2 \text{LFAGE}_i + \beta_3 \text{ODIR}_i + \beta_4 \text{TOBINQ}_i + \beta_5 \text{ROA}_i + \\ \quad + \beta_6 \text{LEVER}_i + \text{IND}_i + \varepsilon_i, \\ \text{TSE}_i = \beta_0 + \beta_1 \text{LNBVA}_i + \beta_2 \text{LFAGE}_i + \beta_3 \text{ODIR}_i + \beta_4 \text{TOBINQ}_i + \beta_5 \text{ROA}_i + \\ \quad + \beta_6 \text{LEVER}_i + \text{IND}_i + \varepsilon_i. \end{cases}$$

The relationship between management quality and other financial policy and investment variables is estimated in a similar manner. The results of this estimation are presented in Table 6. For each financial and investment policy variable we simultaneously estimate three regressions, where in regression 1 the financial or investment policy variable is the dependent variable and in regressions 2 and 3 management quality factor scores TRF and TSE are the dependent variables, respectively, as explained above. The coefficient of the team resources factor (TRF) score has the predicted sign and is highly significant in all the regressions with LEVER, DIVID, and INVEST as dependent variables. This provides further support to our findings in the univariate tests and OLS regressions that management quality is negatively related to the leverage and dividend payout ratios while positively related to the level of investment. The effect of management quality measured by the team structure factor (TSE) score on financial and investment policies is less pronounced as documented previously in the univariate tests and OLS regressions: the TSE

coefficient has the predicted sign in LEVER and DIVID regressions (though not significant), and its sign is opposite to that predicted in the INVEST regression. **[Insert Table 6 here]**

Further, it can be argued that management quality is endogenous in the equations of the relationship between financial and investment policies and management quality (equations (1) through (3) in previous sections). To address this endogeneity issue we make use of the two-stage OLS regression methodology, where in the first stage we regress management quality factor scores on the explanatory variables and use the predicted values of management quality factor scores from the first stage as independent variables in the second stage regression where financial and investment policy variables are the dependent variables. The choice of instrumental variables is difficult in this context, since we need to keep in mind that the set of instrumental variables should include at least some variables that are correlated with the management quality factors and virtually uncorrelated with financial and investment policy variables. We use underwriter reputation (REP) and residual standard deviation (RESSD) as instrumental variables. REP is the natural logarithm of one plus the lead underwriter's reputation as measured by Loughran and Ritter (2004); it has relatively low correlation with all financial policy variables (the highest correlation coefficient is that with leverage and equal to 0.09) and has greater correlation with management quality (the correlation coefficient with the TRF score is 0.18). RESSD is the residual standard deviation estimated using market model over 255 trading days for the fiscal year of the issue. The results of our two-stage OLS regressions are presented in Table 7. The coefficients of the team resources factor (TRF) score have the predicted sign and are significant in the regressions with LEVER and DIVID as dependent variables. The coefficient of the TRF score has the predicted sign in the INVEST regression as well, though not significant. The coefficients of team structure factor (TSF) score are insignificant in all the regressions though with the predicted sign in LEVER and INVEST regressions. The results of our two-stage OLS estimation are broadly consistent with those of the SURE estimation.²¹ **[Insert Table 7 here]**

VII. Management Quality, Asymmetric Information, and Liquidity

In this section we present the results of our direct tests regarding the relationship between management quality and the level of asymmetric information about the firm. We use two groups of asymmetric information measures. The first group includes the number of analysts following the firm, the analysts' forecast error, the dispersion of forecasts, and the bid-ask spread.²² The second group includes two liquidity measures: trading volume and equity turnover.²³

A. Univariate Tests

Table 8 presents our results of univariate tests of the relationship between management quality and the degree of asymmetric information about the firm in the equity market. We split the sample into two by the median management quality factor scores (TRF and TSF).

[Insert Table 8 here]

We measure the degree of asymmetric information facing the firm in the equity market using the following variables. First, the number of analysts (NUMEST) is the natural logarithm of one plus the number of analysts following the firm. Second, the forecast error (FORERR) is the ratio of the absolute difference between the mean analysts' EPS estimate and the actual EPS to the stock price. Third, the dispersion of forecasts (DISPERS) is the ratio of the standard deviation of analysts' forecasts to the stock price. All of the values are for the end of the fiscal year prior to the SEO. Fourth, bid-ask spread (BIDASK) is the median monthly ratio of bid-ask spread to the stock price (calculated over the fiscal year prior to the issue). Fifth, trading volume (PVOL) is the natural logarithm of the product of the stock price and the monthly trading volume, averaged over the fiscal year prior to the offer. Sixth, share turnover (TO) is the ratio of the monthly trading volume to the number of shares outstanding, averaged over the fiscal year preceding the offer.

We find that management quality and reputation do indeed reduce the degree of asymmetric information between the firm and the equity market. In particular, firms with an above median team resources factor score (TRF) have a greater analyst coverage, lower forecast

error, lower bid-ask spread, and are more liquid. For example, high management quality firms have 0.78 more analysts following them, a 0.4 percentage point reduction in analysts' forecast error, and a 0.5 percentage point reduction in the bid-ask spread relative to the corresponding values for low management quality firms. This corresponds to a 25 percent increase in the number of analysts, a 40 percent decrease in analysts' forecast error, and a 12 percent decrease in the bid-ask spread for high management quality firms relative to the corresponding values for low management quality firms. Also, average trading volume of high management quality firms is \$5.5 million (a 68 percent increase) higher, while their share turnover is approximately 3.7 percentage points higher (a 29 percent increase) than those of low management quality firms. All these differences are statistically significant at the 1 percent level, except for the forecast error which is significant at the 5 percent level.

We find that the team structure factor (TSF) score has a similar, though somewhat less significant influence on the degree of asymmetric information. Firms with above median TSF scores have more analysts following them and have lower dispersion and bid-ask spread. The differences between high and low management quality firms are also economically significant. For example, firms with better quality managements have 0.23 more analysts following them, which is around 10 percent more than the number of analysts following low management quality firms. Also, the bid-ask spread of high management quality firms is lower than that of low management quality firms by 0.2 percentage point (a 20 percent decrease).

B. Management Quality and Asymmetric Information

To test the hypothesis that firms with higher management quality and reputation have lower degree of asymmetric information (hypothesis H4), we run the following regression:

$$(5) \quad \text{NUMEST}_i = \beta_0 + \beta_1 \text{TSIZE}_i + \beta_2 \text{TENURE}_i + \beta_3 \text{TENHET}_i + \beta_4 \text{PMBA}_i + \beta_5 \text{PFTEAM}_i + \beta_6 \text{PCPA}_i + \beta_7 \text{CORE}_i + \beta_8 \text{BOARDS}_i + \beta_9 \text{FCEO}_i + \beta_{10} \text{LNBVA}_i + \beta_{11} \text{LFAGE}_i + \beta_{12} \text{ODIR}_i + \varepsilon_i.$$

We expect the coefficients of the first eight management quality variables to be positive, while we are agnostic about the sign of the coefficient of FCEO.

Regressions 1 to 5 in Panel A of Table 9 report the results of the regressions with the number of analysts as the dependent variable. We find that TSIZE, TENURE, CORE, and BOARDS have a significantly positive influence on the number of analysts following the firm. In regression 5 we use TRF and TSF scores instead of individual management quality variables: both scores have a significantly positive impact on the number of analysts following a firm. These relationships are also economically significant. A one standard deviation increase in CORE increases the number of analysts following the company by 0.31 (31% of the number of analysts that follow the median firm). Also, one standard deviation increases in TSIZE and BOARDS lead to increases in the number of analysts by 0.23 and 0.13, respectively.

Next, in regression equation (5) we substitute number of analysts by FORERR. We expect management quality to have a negative influence on the forecast error. Again, we are agnostic about the sign of the coefficient of FCEO. Regressions 6 to 8 in Panel A of Table 9 report the results of our regressions with forecast error as the dependent variable. We find that firms with longer average tenures (TENURE) and higher percentages of CPAs (PCPA) have lower forecast errors. Coefficients of these variables are significant at the 5 percent level. A one standard deviation increase in PCPA leads to a 0.17 percentage point decrease in the forecast error (about a 22 (77) percent decrease in the average (median) firm's forecast error). In regression 8 we replace individual management quality variables by TRF and TSF factor scores. Though both scores have negative coefficients, they are not statistically significant.

[Insert Table 9 Panels A and B here]

We now substitute DISPERS as the dependent variable in regression equation (5).²⁴ We expect management quality proxies to have a negative effect on the dispersion. Regressions 1 to 4 in Panel B of Table 9 present results with dispersion as the dependent variable. We find that firms with longer tenures of its managers (TENURE) and higher percentages of CPAs (PCPA) have

significantly lower dispersions. These results are significant at the 5 and 1 percent levels, respectively, and are also economically significant. One standard deviation increases in TENURE and PCPA decrease the dispersion by 0.08 and 0.07 percentage points (67 and 58 percent of the median firm's dispersion), respectively. In regression 4 we use TRF and TSF scores as measures of management quality. While TSF score has a negative coefficient significant at the 10 percent level, the TRF score has a positive coefficient and significant at the 5 percent level.

Finally, we substitute BIDASK as the dependent variable in regression equation (5). We expect better management quality firms to have lower bid-ask spreads and therefore negative coefficients of management quality variables. Regressions 5 to 8 in Panel B of Table 9 report the results of these regressions. We find that firms with larger management teams (TSIZE) and higher percentages of CPAs (PCPA) have significantly lower bid-ask spreads. One standard deviation increases in TSIZE and PCPA, respectively, reduce the bid-ask spread by 0.34 and 0.18 percentage points (equivalent to 11 and 6 percent declines in the median firm's bid-ask spread). In regression 8 we use TRF and TSF scores as measures of management quality. Both scores affect bid-ask spread negatively, with the TRF coefficient significant at the 1 percent level.

These results confirm our conjecture that better and more reputable managements are able to mitigate the degree of information asymmetry between the firm and the equity market. This relationship between management quality and the extent of information asymmetry facing the firm is both statistically and economically significant.

C. Management Quality and Liquidity

We now study whether firms with better and more reputable management have more liquid equity (hypothesis H5) and run the following regression:

$$(6) \quad \begin{aligned} PVOL_i = & \beta_0 + \beta_1 TSIZE_i + \beta_2 TENURE_i + \beta_3 TENHET_i + \beta_4 PMBA_i + \\ & + \beta_5 PFTEAM_i + \beta_6 PCPA_i + \beta_7 CORE_i + \beta_8 BOARDS_i + \beta_9 FCEO_i + \\ & + \beta_{10} LNBVA_i + \beta_{11} LFAGE_i + \beta_{12} ODIR_i + \beta_{13} SHAROUT_i + \varepsilon_i, \end{aligned}$$

where SHAROUT is the number of shares outstanding (in millions) at the end of the fiscal year preceding the offer. We expect positive signs of the coefficients of the first eight management quality proxies, but are agnostic about the sign of the coefficient of FCEO.

Regressions 1 to 7 in Table 10 present the results of our regressions with PVOL as the dependent variable. We find that firms with larger management teams (TSIZE), higher percentages of CPAs (PCPA) and managers in the core functional areas (CORE) are significantly more liquid. The coefficients of these variables are significant at the 1 percent level. In regression 7 we replace individual management quality variables by TRF and TSF scores. Both scores positively affect trading volume with the coefficient of TRF significant at the 1 percent level.

These results are also economically significant. A one standard deviation increase in TSIZE brings about \$1.9 million (about 18% of the average firm's monthly trading volume) increase in PVOL. Also, one standard deviation increases in CORE and PCPA lead to around \$1.6 and \$0.9 million increases in PVOL, respectively. **[Insert Table 10 here]**

Our second measure of liquidity is the average monthly turnover. To test if management quality and reputation is positively related to liquidity (as measured by the monthly turnover), we replace PVOL with TO in equation (6) and exclude SHAROUT as a control variable.

Regressions 8 to 12 in Table 10 report the results of various specifications of the above regression equation. Our findings indicate that firms with larger management teams (TSIZE) and higher percentages of managers in core functional areas (CORE) have significantly higher turnovers in their equity. The coefficients of these variables are significant at the 1 percent level. In regression 12 we use TRF and TSF factor scores instead of individual variables of management quality: the TRF score has a positive coefficient which is significant at the 1 percent level. The effects of TSIZE and CORE on the monthly share turnover are also economically significant. One standard deviation increases in CORE and TSIZE result in 1.3 and 1 percentage point increases, respectively, in turnover. These increases represent around 12.4 and 9.0 percent increases, respectively, in the median firm's turnover.

The above findings of a positive relationship between the quality and reputation of a firm's management and the liquidity of its equity provide additional evidence that higher management quality firms face a lower extent of asymmetric information in the equity market.

VIII. Alternative Channels through which Management Quality May Affect a Firm's Financial and Investment Policies

In addition to the two channels that we have examined above, there are several others through which the quality and reputation of a firm's management team may affect its financial and investment policies. We briefly discuss some of these channels below and relate them to our empirical findings, though we will leave it to future research to sort out these alternative explanations of the effect of a firm's management quality on its financial and investment policies.

A. Management Quality, Agency Costs, and Financial Policies

Management quality can affect leverage through the disciplining role of debt in a principal-agent type setting (see, e.g., Grossman and Hart (1982)). Consider a situation where managerial effort increases firm value, and higher quality managers have a lower cost of effort. This means that, in the absence of debt, the equilibrium level of effort exerted by lower quality management will be lower than that exerted by higher quality management. Debt can discipline management in this situation if managers suffer personal penalties in the event of bankruptcy. Since the benefit of this disciplining role of debt will be greater for lower quality managers (and the costs of having debt in a firm's capital structure are unaffected by management quality), this theory would predict (like the asymmetric information based theories that we have examined in detail) that the equilibrium level of leverage will be decreasing in management quality. Thus, our empirical finding that firms with higher management quality and reputation are associated with lower leverage ratios is consistent with the prediction of theories based on agency costs as well.

We now examine the predictions of agency cost based theories of dividends (see, e.g., Easterbrook (1984)) for the relationship between management quality and dividend policy. Like asymmetric information based theories, such theories also imply that higher management quality will lead to lower dividend payout ratios. Under the agency cost argument, a high dividend payout ratio reduces managers' ability to waste a firm's free cash flow by investing in negative net present value projects (see also Jensen (1986)). Such a high dividend payout ratio forces firms to raise external financing for investment in new projects, and since external financing is subject to monitoring by institutional investors and other intermediaries in the capital market, a firm is likely to be able to undertake only positive net present value projects using such financing. However, raising external financing more frequently requires the firm to incur additional direct and indirect costs: a firm's equilibrium dividend payout ratio emerges from trading off the above benefits and costs of paying out a higher proportion of its cash flow as dividends. Given that managers of higher quality and reputation are less likely to engage in dissipating a firm's free cash flow (see Holmström (1999) for a theoretical analysis demonstrating that concern for reputation mitigates the moral hazard problem facing a manager), the above argument implies that firms with higher management quality will have lower equilibrium dividend payout ratios. Thus, our empirical finding that firms with higher management quality and reputation are associated with lower dividend payout ratios are consistent with the predictions of agency cost based theories of dividends as well.

B. Management Quality, Bankruptcy Costs, and Financial Policies

The quality of a firm's management may affect its leverage policy through its effect on expected bankruptcy costs. Consider a situation where higher quality firm management shifts a firm's cash flow distribution to the right by managing it more effectively. This implies that, for any given level of debt, the expected value of the bankruptcy cost faced by firms with higher quality management teams will be lower (since their probability of bankruptcy will be lower).

Assuming that the benefits of having a given level of debt in their firm's capital structure (arising from the interest tax shield: see next sub-section) is the same (or greater) for firms with higher quality management teams, this implies that the equilibrium amount of debt in a firm's capital structure will be increasing in its management quality. However, our empirical finding that firms with higher management quality have less leverage is inconsistent with the above prediction.

C. Management Quality, Taxes, and Financial Policies

The quality of a firm's management may affect its leverage through its effect on the magnitude of the interest tax shield. Similar to the situation discussed in the previous sub-section, consider the case where higher quality firm management shifts a firm's cash flow distribution to the right by managing it more effectively. This increases the income of the firm subject to corporate taxes, so that the tax benefits of having a higher level of debt will be greater for firms with higher quality managements. Assuming that the cost associated with having any given level of debt is either the same or lower for firms with higher quality managers (as we argued would be in the previous sub-section), this implies that the equilibrium level of debt in a firm's capital structure will be increasing in its management quality. However, our empirical finding that firms with higher management quality have less leverage is inconsistent with the above prediction.

IX. Limitations of Our Empirical Design

A. Data Limitations

One limitation of our empirical design is that our sample consists of firms making SEOs, since this allows us to collect detailed information regarding management quality from SEO prospectuses (firms disclose detailed information regarding their management team in their IPO as well as SEO prospectuses). We choose to study firms making SEOs rather than those making IPOs, given that such firms, being more mature, will have more stable financial policies compared to firms going public (which may be in the early stages of defining their financial

policies). However, it can be argued that such firms are not representative of the universe of firms, since we are conditioning on a specific financing event (namely an SEO), limiting the ability to generalize the conclusions about the relationship between the management quality of a firm and its financial and investment policies arising from our empirical analysis. Given the above limitation of our sample, our empirical study can be viewed only as a first step in analyzing the relationship between a firm's management quality and its financial and investment policies.

B. Correcting for Endogeneity in Management Quality

In order to control for the potential endogeneity in management quality in our regression analysis of the relationship between a firm's management quality and its financial and investment policies, we make use of a two-step OLS regression methodology. We make use of underwriter reputation and residual standard deviation as instrumental variables in this regression analysis. The choice of instrumental variables is difficult in this context, since the set of instrumental variables should include at least some variables that are correlated with our management quality factors but uncorrelated with our financial and investment policy variables. One can argue that our instrumental variables may not satisfy the above requirements, since underwriter reputation or residual standard deviation may affect a firm's financial and investment policies through variables other than its management quality. Given this, our empirical analysis can be viewed only as a first step in analyzing the relationship between a firm's management quality and its financial and investment policies.

X. Summary, Interpretation of Results, and Conclusion

Using a sample of firms making seasoned equity offerings, we examine, for the first time in the literature, the relationship between the reputation and quality of a firm's management and its financial and investment policies and also the relationship between the management quality and the extent of information asymmetry facing the firm in the equity market. Our main findings

are as follows. First, the quality of a firm's management is negatively related to its leverage and dividend payout ratios. Second, management quality and reputation are positively related to the level of a firm's investments. Third, we find direct evidence that management quality and reputation are negatively related to the extent of asymmetric information facing the firm in the equity market, and positively related to the liquidity of the firm's equity.

Overall, our findings suggest that management quality and reputation are indeed important dimensions of firm quality, and that measures of these variables provide additional information about the intrinsic value of a firm over and above that provided by firm quality variables such as firm age and firm size. Our findings are consistent with better and more reputable firm management being able to convey the value of their firm more credibly to outsiders, thus reducing the information asymmetry facing the firm in the equity market. In particular, our findings that higher management quality and reputation are associated with lower levels of leverage and lower dividend payout ratios are consistent with better managements facing a lower degree of asymmetric information in the equity market. This is also directly supported by our tests of the relationship between management quality and asymmetric information, which document an inverse relationship between the quality and reputation of a firm's management and various proxies for the extent of information asymmetry facing the firm in the equity market.

Further, since better quality projects chosen by higher quality managers have larger NPV for any given scale, the equilibrium scale (level of investment) of such projects will also be larger, requiring larger capital expenditures. Thus, the positive relationship we document between the quality and reputation of a firm's management and its level of capital expenditures provides evidence consistent with the notion that firms with higher quality managers select better projects and are able to implement them more successfully.

References

Bertrand, M., and A. Schoar. "Managing with Style: The Effect of Managers on Firm Policies." *Quarterly Journal of Economics*, 118 (2003), 1169–1208.

Bhattacharya, S. "Imperfect Information, Dividend Policy, and "the Bird in the Hand" Fallacy." *Bell Journal of Economics*, 10 (1979), 259–270.

Borokhovich, K. A.; R. Parrino; and T. Trapani. "Outside Directors and CEO Selection." *Journal of Financial and Quantitative Analysis*, 31 (1996), 337–355.

Chemmanur, T. J., and P. Fulghieri. "Investment Bank Reputation, Information Production and Financial Intermediation." *Journal of Finance*, 49 (1994), 57–79.

Chemmanur, T. J., and Y. Jiao. "Seasoned Equity Issues with "Soft" Information: Theory and Empirical Evidence." Working Paper, Boston College (2005).

Chemmanur, T. J., and I. Paeglis. "Management Quality, Certification, and Initial Public Offerings." *Journal of Financial Economics*, 76 (2005), 331–368.

Chevalier, J., and G. Ellison. "Are Some Mutual Fund Managers Better Than Others? Cross-Sectional Patterns in Behavior and Performance." *Journal of Finance*, 54 (1999), 875–899.

Christie, A. A. "On Cross-Sectional Analysis in Accounting Research." *Journal of Accounting and Economics*, 9 (1987), 231–258.

Clarke, J., and K. Shastri. "On Information Asymmetry Metrics." Working Paper, University of Pittsburgh (2001).

Cotter, J. F.; A. Shivdasani; and M. Zenner. "Do Independent Directors Enhance Target Shareholder Wealth During Tender Offers?" *Journal of Financial Economics*, 43 (1997), 195–218.

Crémer, J. "Corporate Culture and Shared Knowledge." *Industrial and Corporate Change*, 2 (1993), 351–386.

D'Aveni, R. A. "Top Managerial Prestige and Organizational Bankruptcy." *Organization Science*, 1 (1990), 121–142.

Easterbrook, F. H. "Two Agency-Cost Explanations of Dividends." *American Economic Review*, 74 (1984), 650–659.

Eckbo, B. E., and Ø. Norli. "Liquidity Risk, Leverage, and Long-Run IPO Returns." *Journal of Corporate Finance*, 11 (2005), 1–35.

Gaver, J. J., and K. M. Gaver. "Additional Evidence on the Association Between the Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Accounting and Economics*, 16 (1993), 125–160.

Giammarino, R. M., and T. Lewis. "A Theory of Negotiated Equity Financing." *Review of Financial Studies*, 1 (1989), 265–288.

- Gompers, P. A.; J. L. Ishii; and A. Metrick. "Incentives vs. Control: An Analysis of U.S. Dual-Class Companies." Working Paper, University of Pennsylvania Wharton School (2004).
- Grossman, S. J., and O. D. Hart. "Corporate Financial Structure and Managerial Incentives." In *The Economics of Information and Uncertainty*, J. J. McCall, ed. Chicago, IL: University of Chicago Press (1982).
- Guay, W. R. "The Sensitivity of CEO Wealth to Equity Risk: An Analysis of the Magnitude and Determinants." *Journal of Financial Economics*, 53 (1999), 43–71.
- Hambrick, D. C., and R. A. D'Aveni. "Top Team Deterioration as Part of the Downward Spiral of Large Corporate Bankruptcies." *Management Science*, 38 (1992), 1445–1466.
- Harman, H. H. *Modern Factor Analysis*, 3rd ed. Chicago, IL: University of Chicago Press (1976).
- Hermalin, B. E. "Economics and Corporate Culture." In *The International Handbook of Organizational Culture and Climate*, S. Cartwright et al., eds. Chichester, UK: John Wiley & Sons, Ltd. (2001).
- Hodgson, G. M. "Corporate Culture and the Nature of the Firm." In *Transaction Cost Economics and Beyond*, J. Groenewegen, ed. Boston, MA: Kluwer Academic Press (1996).
- Holmström, B. "Managerial Incentive Problems: A Dynamic Perspective." *Review of Economic Studies*, 66 (1999), 169–182.
- Jensen, M. C. "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review*, 76 (1986), 323–329.
- John, K., and J. Williams. "Dividends, Dilution, and Taxes: A Signaling Equilibrium." *Journal of Finance*, 40 (1985), 1053–1070.
- Kreps, D. M. "Corporate Culture and Economic Theory." In *Perspectives on Positive Political Economy*, J. E. Alt and K. A. Shepsle, eds. Cambridge, UK: Cambridge University Press (1990).
- Kreps, D. M., and R. Wilson. "Reputation and Imperfect Information." *Journal of Economic Theory*, 27 (1982), 253–279.
- Krishnaswami, S., and V. Subramaniam. "Information Asymmetry, Valuation, and the Corporate Spin-Off Decision." *Journal of Financial Economics*, 53 (1999), 73–112.
- Kyle, A. S. "Continuous Auctions and Insider Trading." *Econometrica*, 53 (1985), 1315–1335.
- Lazear, E. P. "Corporate Culture and the Diffusion of Values." In *Trends in Business Organization*, H. Siebert, ed. Tubingen, Germany: J.C.B. Mohr (1995).
- Loughran, T., and J. R. Ritter. "Why Has IPO Underpricing Changed Over Time?" *Financial Management*, 33 (2004), 5–37.
- Michaely, R., and W. H. Shaw. "The Pricing of Initial Public Offerings: Tests of Adverse-Selection and Signaling Theories." *Review of Financial Studies*, 7 (1994), 279–319.

Miller, M. H., and K. Rock. "Dividend Policy under Asymmetric Information." *Journal of Finance*, 40 (1985), 1031–1051.

Modigliani, F., and M. H. Miller. "The Cost of Capital, Corporation Finance and the Theory of Investment." *American Economic Review*, 48 (1958), 261–297.

Modigliani, F., and M. H. Miller. "Dividend Policy, Growth, and the Valuation of Shares." *Journal of Business*, 34 (1961), 411–433.

Myers, S. C., and N. S. Majluf. "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have." *Journal of Financial Economics*, 13 (1984), 187–221.

Noe, T. H. "Capital Structure and Signaling Game Equilibria." *Review of Financial Studies*, 1 (1989), 331–355.

Ritter, J. R. "The "Hot Issue" Market of 1980." *Journal of Business*, 57 (1984), 215–240.

Welch, I. "Capital Structure and Stock Returns." *Journal of Political Economy*, 112 (2004), 106–131.

¹ Two notable exceptions to this are Bertrand and Schoar (2003) and Chemmanur and Paeglis (2005), as we discuss in more detail below.

² Firms disclose detailed information about their management team in their IPO and SEO prospectuses. We choose to study firms making SEOs, since such firms, being more mature, will have more stable financial policies than firms going public (which may be in the early stages of defining their financial policies).

³ Chemmanur and Fulghieri (1994) develop a theoretical analysis demonstrating that reputable, long-lived players associated with a firm can help reduce the extent of information asymmetry facing it in the equity market, thereby increasing the offer price for its equity. Analogously, reputation of a firm's management team can help reduce the extent of information asymmetry it faces in the equity market.

⁴ The quality of a firm's management can also potentially affect its financial and investment policies by influencing its corporate culture. However, while an emerging literature has attempted to provide economic content to corporate culture (see, e.g., Kreps (1990), Crémer (1993), Lazear (1995), Hodgson (1996), and Hermalin (2001)), this literature does not generate clear testable predictions on the relationship between management quality and a firm's financial and investment policies.

⁵ See, e.g., Kyle (1985), who shows that liquidity is inversely related to the amount of private information existing about the firm in the equity market.

⁶ An anonymous referee provided very insightful comments on the issues discussed in this paragraph, for which we are particularly thankful.

⁷ In particular, they find that CEOs with MBA degrees and younger generations of CEOs, on average, are more aggressive: they have higher levels of debt, capital expenditures, and lower dividend payout ratios.

⁸ Chemmanur and Paeglis (2005) find that firms with better managements have lower IPO underpricing and underwriting expenses, have more reputable underwriters, and larger institutional interest in their IPO.

⁹ As is standard in the finite horizon reputation modeling literature (Kreps and Wilson (1982), Chemmanur and Fulghieri (1994)) one can operationalize the notion of managerial reputation by postulating a small fraction of managers who are "pathologically honest" (i.e., who always tell the truth). While the objects of our analysis are not the above kinds of managers but those who may choose to tell the truth or otherwise based on their own self-interest, equity market investors would measure the reputation of a manager by their probability assessment that he is of the pathologically honest type. Clearly, the more accurate the

manager's forecast about the firm's future cash flows, the higher the updated value of his reputation for honesty. Note however that, since the manager's private information at time 0 about the firm's future cash flows is noisy, equity market investors are aware that he may make honest mistakes, so that a wrong forecast would not drive his reputation to zero.

¹⁰ We expect this relationship (as well as others) to hold after controlling for firm size and other firm quality variables.

¹¹ Similar measures have been used in the strategy and organizational behavior literature to study the influence of management team quality and reputation on firm performance: see, e.g., D'Aveni (1990) and Hambrick and D'Aveni (1992), who use such measures to study the deterioration of management team quality around bankruptcies. See also Chemmanur and Paeglis (2005).

¹² One could argue that financial and investment policies are not a function of management quality and reputation but rather are inherited from previous managements as long-standing policies. However, the summary statistics of our sample indicate that, while the average (median) management team tenure is 5.02 (4.29) years, the average (median) number of years since listing on an exchange is 5.16 (2) years. This implies that, on average, current management teams of firms in our sample were formed around the time these firms went public. Given that many of a firm's financial and investment policies are decided subsequent to going public, it seems to be the case that current managers (whose quality and reputation are captured by our management quality measures) indeed had a dominant role in formulating these policies.

¹³ A number of papers in the empirical corporate finance and accounting literature make use of factor analysis to isolate the unobservable construct underlying several proxy variables. See, e.g., Gaver and Gaver (1993) and Guay (1999), who make use of factor analysis to study the size of a firm's investment opportunity set.

¹⁴ Since the unadjusted TENURE and TENHET variables are most highly correlated with firm age, we adjusted these variables for age. On the other hand, since the CEO dominance variable (FCEO) is most highly correlated with firm size, we adjusted this variable for size.

¹⁵ We use book value of assets as a measure of firm size to be consistent with our analysis of firms' financial and investment policies where such policy variables are constructed using accounting information and some of them (such as capital expenditures) are normalized by the book value of assets.

¹⁶ These two measures of firm quality have been widely used in the literature (see, e.g., Ritter (1984), Michaely and Shaw (1994)).

¹⁷ Several studies in the corporate control literature have shown that outside directors enhance firm value (see, among others, Cotter, Shivdasani, and Zenner (1997) and Borokhovich, Parrino, and Trapani (1996)).

¹⁸ We include TOBINQ and ROA as additional control variables in regression equations (1) through (3) to control for potential effect of firms' investment opportunity sets and performance on financial and investment policy variables. We also include RETSD in the regression equation (1) to control for firms' asset risk which may affect their leverage ratios.

¹⁹ In order to account for possible interactions between various financial and investment policy variables, we also estimated regression equations (1) through (3) including LEVER, DIVID, and INVEST in those regressions as independent variables. For example, in the leverage regression we included DIVID and INVEST as independent variables, in the dividends regression we included LEVER and INVEST as independent variables, and, finally, in the investments regression we included LEVER and DIVID as independent variables. The results of all these estimations were similar to the ones reported here.

²⁰ This is also consistent with higher quality managers having better projects for their firms, characterized by a larger NPV for any given scale, so that they reinvest a larger fraction of cash flows that their firms generate into these positive net present value projects instead of paying them out to shareholders.

²¹ We also use the three-stage OLS estimation technique to address the endogeneity and simultaneity issues at the same time. We use the same instrumental variables as in the two-stage regressions; the results of our three-stage OLS estimation were similar to our two-stage estimation results and are available upon request.

²² These measures are similar to those used by Christie (1987), Krishnaswami and Subramaniam (1999), and Clarke and Shastri (2001).

²³ Eckbo and Norli (2005) use these liquidity measures to study liquidity risk and long-run IPO returns.

²⁴ We also used the standard deviation of analysts' forecasts as the dependent variable. The results are qualitatively unchanged with this dependent variable.

Table 1

Summary statistics. TSIZE is the size of a firm's management team, defined as executive officers with a rank of vice president or higher. PMBA is the percentage of a firm's management team with MBA degrees. PCPA is the percentage of a firm's management team who are certified public accountants. PFTEAM is the percentage of the management team who have served as executive officers and/or vice presidents prior to joining the SEO firm. CORE is the percentage of the management team having core functional expertise, namely, holding positions in operations, sales and marketing, research and development, and finance. TENURE is the average number of years management team members have been with the team. TENHET is the coefficient of variation of the team members' tenures. FCEO is the ratio of CEO salary and bonus in the fiscal year preceding the SEO to the average salary and bonus of other management team members. BOARDS is the number of other companies' boards that management team members sit on. LNBVA is the natural logarithm of the book value of the firm's assets at the end of the fiscal year prior to the SEO. LFAGE is the firm age defined as the natural logarithm of one plus the number of years the firm has return data available from CRSP. ODIR is the number of outside directors. TOBINQ is the market value of assets divided by the book value of assets, where market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity and balance sheet deferred taxes. ROA is the ratio of earnings before extraordinary items to the book value of total assets. RETSD is the standard deviation of the total stock return calculated over 255 trading days for the fiscal year of the issue. LEVER is the leverage, defined as long-term debt plus debt in current liabilities over long-term debt plus debt in current liabilities plus book value of common equity. DIVID is the dividend payout ratio defined as the sum of common and preferred dividends over earnings before depreciation, interest, and taxes. INVEST is the investment level calculated as the ratio of capital expenditures to book value of assets at the beginning of the fiscal year. NUMEST is the natural logarithm of one plus the number of analysts following the firm at the end of the fiscal year preceding the issue. FORERR is the forecast error, defined as the ratio of the absolute difference between analysts' mean EPS estimate and actual EPS to the stock price. DISPERS is the ratio of the standard deviation of analysts' forecasts to the stock price. BIDASK is the median monthly bid-ask spread as a percentage of the stock price, calculated over the fiscal year preceding the issue. PVOL is the natural logarithm of the product of the stock price and the monthly trading volume, averaged over the fiscal year preceding the offer. TO is the ratio of monthly trading volume to the number of shares outstanding, averaged over the fiscal year preceding the offer. LEVER, DIVID, and INVEST are winsorized at the 99th percentile. For LEVER and DIVID only positive observations are reported.

Panel A: Summary statistics of independent variables

	min	mean	median	max	std. dev
TSIZE	1	6.453	6	18	2.556
PMBA	0	0.068	0	0.833	0.141
PCPA	0	0.075	0	1	0.123
PFTEAM	0	0.441	0.429	1	0.285
CORE	0	0.547	0.571	0.900	0.203
TENURE	1	5.017	4.286	26.667	3.128
TENHET	0	0.684	0.671	1.741	0.300
FCEO	0	1.476	1.446	4.438	0.447
BOARDS	0	0.591	0	9	1.132
LNBVA	12.899	18.162	18.083	23.106	1.474
LFAGE	0	1.365	1.099	4.248	0.901
ODIR	0	4.866	5	14	2.072
TOBINQ	0.497	2.813	2.208	31.369	1.943
ROA	-9.705	-0.026	0.081	1.678	0.580
RETSD	0.010	0.036	0.035	0.149	0.012

Panel B: Summary statistics of dependent variables

	min	mean	median	max	std. dev
LEVER	0	0.203	0.107	1.063	0.231
DIVID	0	0.011	0.000	0.319	0.037
INVEST	0	0.192	0.102	1.856	0.242
NUMEST	0	0.834	0.693	3.526	0.842
FORERR	0	0.008	0.002	0.504	0.027
DISPERS	0	0.004	0.001	0.160	0.011
BIDASK	0	0.039	0.031	0.461	0.034
PVOL	10.118	16.181	16.242	21.070	1.592
TO	0.0002	0.145	0.106	1.128	0.125

Panel C: Correlations between independent variables

	TSIZE	TENURE	TENHET	PMBA	PFTEAM	PCPA	CORE	FCEO
TSIZE	1							
TENURE	-0.1645	1						
TENHET	0.1467	0.0578	1					
PMBA	-0.0153	-0.0849	-0.0166	1				
PFTEAM	-0.0590	-0.4934	-0.1095	0.0879	1			
PCPA	-0.1294	0.0253	-0.0294	0.0903	-0.0430	1		
CORE	-0.0225	-0.1595	-0.0019	0.1057	0.0686	0.0252	1	
FCEO	0.1833	0.0524	0.0385	-0.0707	-0.0160	-0.0495	-0.1085	1
BOARDS	0.1677	-0.0458	-0.0004	-0.0259	0.0443	-0.0322	-0.0515	0.0637
LNBVA	0.3493	0.1541	-0.0007	-0.1594	-0.0793	-0.1050	-0.2515	0.3500
LFAGE	0.0615	0.3241	0.1077	-0.0693	-0.2358	-0.0303	-0.1764	0.1550
ODIR	0.1217	-0.0637	-0.0413	-0.0432	0.0045	-0.1017	-0.1134	0.1900
TOBINQ	-0.0193	-0.1452	0.0474	0.0878	0.0481	-0.0245	0.1674	-0.1283
ROA	0.0499	0.1685	0.0584	-0.0450	-0.1328	0.0164	-0.0748	0.1070
RETS	-0.1880	-0.1869	0.0399	0.1444	0.1405	0.0122	0.2583	-0.2507

	BOARDS	LNBVA	LFAGE	ODIR	TOBINQ	ROA	RETS
BOARDS	1						
LNBVA	0.1873	1					
LFAGE	0.0725	0.2681	1				
ODIR	0.1492	0.3422	0.1990	1			
TOBINQ	-0.0462	-0.3202	-0.2055	-0.0928	1		
ROA	-0.0307	0.2857	0.1036	-0.0454	-0.0430	1	
RETS	-0.0915	-0.5710	-0.1679	-0.1784	0.2157	-0.2576	1

Table 2

Selected statistics related to a common factor analysis of eight measures of management quality and reputation. The sample consists of 1,630 seasoned equity offerings conducted between 1993 and 1997. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, PMBA, PCPA, CORE, and PFTEAM. TSF is the management team structure factor score obtained using common factor analysis on the firm-age-adjusted TENURE, TENHET, and the firm-size-adjusted FCEO.

Panel A: Estimated communalities of eight management quality measures					
	TSIZE	PCPA	PFTEAM	PMBA	CORE
TRF	0.0201	0.0234	0.0120	0.0186	0.0125
	TENURE	TENHET	FCEO		
TSF	0.0018	0.0054	0.0036		

Panel B: Eigenvalues of the reduced correlation matrix of eight management quality measures					
	1	2	3	4	5
TRF	0.16768	0.13004	0.03907	-0.07122	-0.17893
TSF	0.07912	-0.00073	-0.06764		

Panel C: Correlations between the common factors and eight management quality measures					
	TSIZE	PCPA	PFTEAM	PMBA	CORE
TRF	0.3645	0.1930	0.2487	0.7096	0.6341
	TENURE	TENHET	FCEO		
TSF	0.4262	0.7312	0.5988		

Panel D: Descriptive statistics of the common factors extracted from eight management quality measures			
		TRF	TSF
	Maximum	1.371	1.550
	Third quartile	0.203	0.155
	Median	-0.022	-0.009
	First quartile	-0.233	-0.167
	Minimum	-1.061	-1.028
	Mean	0.000	0.000

Table 3

Tests of differences in mean and median financial and investment policy variables for firms with above and below median management quality and reputation factor scores. TRF is the management team resources factor score obtained using common factor analysis on TSIZE, PMBA, PCPA, CORE, and PFTEAM. TSF is the management team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. LEVER is the long-term debt plus debt in current liabilities over the long-term debt plus debt in current liabilities plus the book value of common equity. DIVID is the sum of common and preferred dividends over the earnings before depreciation, interest, and taxes. INVEST is the ratio of capital expenditures to the book value of assets. Medians are reported in brackets. The results of *t*-tests for the difference in means and non-parametric Wilcoxon signed rank tests for the difference in medians are reported in parenthesis. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	TRF			TSF		
	below median	above median	difference	below median	above median	difference
LEVER	0.232	0.194	-0.038 (-2.84)***	0.225	0.202	-0.023 (-1.74)**
	[0.137]	[0.092]	[-0.045] (-2.39)**	[0.115]	[0.098]	[-0.017] (-1.43)
DIVID	0.019	0.006	-0.013 (-1.14)	0.005	0.020	0.015 (1.35)
	[0.000]	[0.000]	[0.000] (-3.01)***	[0.000]	[0.000]	[0.000] (2.40)***
INVEST	0.221	0.234	0.013 (0.48)	0.227	0.227	0.000 (0.01)
	[0.101]	[0.105]	[0.004] (2.02)**	[0.102]	[0.104]	[0.002] (0.06)

Table 4

Relationship between leverage, dividend payout ratio, and management quality and reputation. LEVER is the ratio of the long-term debt plus debt in current liabilities to the long-term debt plus debt in current liabilities plus the book value of common equity. DIVID is the ratio of the sum of common and preferred dividends to the earnings before depreciation, interest, and taxes. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. All regressions include two-digit SIC code industry dummies. Both dependent variables are winsorized at the 99th percentile. Only observations with positive LEVER and DIVID are included in the regressions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Dependent variable	1	2	3	4	5	6	7	8
	LEVER	LEVER	LEVER	LEVER	DIVID	DIVID	DIVID	DIVID
Intercept	-0.933 (-8.69)***	-0.981 (-9.60)***	-0.937 (-8.97)***	-1.038 (-9.92)***	-0.050 (-2.44)**	-0.054 (-2.80)***	-0.049 (-2.47)**	-0.060 (-3.07)***
TSIZE	-0.003 (-1.06)				-0.001 (-1.28)			
TENURE	-0.002 (-1.03)				0.001 (1.19)			
TENHET	-0.010 (-0.61)				-0.002 (-0.59)			
PMBA	-0.052 (-2.01)**	-0.057 (-2.20)**			0.002 (0.37)			
PFTEAM	-0.001 (-0.05)				-0.009 (-2.23)**	-0.011 (-3.03)***		
PCPA	-0.013 (-0.39)				-0.001 (-0.19)			
CORE	-0.076 (-3.16)***		-0.081 (-3.34)***		-0.008 (-2.06)**		-0.010 (-2.33)**	
FCEO	0.010 (0.90)				-0.003 (-1.24)			
BOARDS	-0.002 (-0.47)			-0.002 (-0.40)	0.002 (1.21)			0.001 (1.04)
LNBVA	0.076 (14.64)***	0.075 (15.67)***	0.074 (15.61)***	0.078 (15.97)***	0.003 (2.16)**	0.002 (2.12)**	0.002 (1.95)*	0.002 (2.19)**
LFAGE	-0.016 (-2.42)**	-0.016 (-2.70)***	-0.018 (-2.98)***	-0.018 (-2.97)***	0.002 (1.44)	0.003 (1.91)*	0.003 (2.23)**	0.003 (2.10)**
ODIR	-0.001 (-0.29)	0.000 (0.17)	0.000 (0.14)	-0.000 (-0.05)	0.002 (3.43)***	0.002 (3.20)***	0.002 (3.05)***	0.002 (3.02)***
TOBINQ	-0.021 (-4.75)***	-0.022 (-4.79)***	-0.022 (-4.75)***	-0.022 (-4.77)***	0.000 (0.35)	-0.000 (-0.12)	0.000 (0.11)	0.000 (0.06)
ROA	-0.051 (-4.34)***	-0.052 (-4.30)***	-0.052 (-4.44)***	-0.052 (-4.39)***	0.001 (0.53)	0.001 (0.59)	0.001 (1.10)	0.002 (1.18)
RETSD	-0.208 (-0.41)	-0.315 (-0.63)	-0.153 (-0.31)	-0.262 (-0.52)				
TRF				-0.044 (-3.50)***				-0.007 (-2.68)**
TSF				-0.010 (-0.54)				-0.000 (-0.06)
R ²	0.4485	0.4416	0.4448	0.4465	0.1452	0.1359	0.1319	0.1346
N	1528	1529	1529	1528	1504	1505	1505	1504

Table 5

Relationship between investment level and management quality and reputation. INVEST is the ratio of capital expenditures to the book value of assets. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. All regressions include two-digit SIC code industry dummies. Dependent variable is winsorized at the 99th percentile. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	1	2	3	4	5
Dependent variable	INVEST	INVEST	INVEST	INVEST	INVEST
Intercept	0.618 (4.59)***	0.705 (4.98)***	0.633 (4.59)***	0.605 (4.35)***	0.703 (5.40)***
TSIZE	0.005 (2.16)**	0.006 (2.51)**			
TENURE	-0.003 (-1.50)				
TENHET	-0.002 (-0.08)				
PMBA	0.017 (0.39)				
PFTEAM	0.016 (0.76)				
PCPA	0.143 (2.98)***		0.135 (2.87)***		
CORE	0.054 (2.03)**			0.067 (2.51)**	
FCEO	-0.009 (-0.60)				
BOARDS	0.004 (0.73)				0.005 (0.89)
LN BVA	-0.024 (-4.47)***	-0.028 (-5.21)***	-0.021 (-4.36)***	-0.021 (-4.31)***	-0.026 (-5.13)***
LFAGE	-0.025 (-4.19)***	-0.030 (-5.29)***	-0.031 (-5.44)***	-0.028 (-5.02)***	-0.027 (-4.85)***
ODIR	-0.003 (-0.91)	-0.003 (-0.97)	-0.002 (-0.86)	-0.003 (-0.97)	-0.003 (-0.93)
TOBINQ	0.001 (0.39)	0.002 (0.49)	0.003 (0.71)	0.002 (0.51)	0.002 (0.46)
ROA	-0.041 (-1.84)*	-0.041 (-1.88)*	-0.044 (-2.03)**	-0.044 (-1.96)*	-0.043 (-1.89)*
TRF					0.053 (3.30)***
TSF					-0.020 (-0.89)
R ²	0.3283	0.3171	0.3181	0.3167	0.3228
N	1518	1519	1519	1519	1518

Table 6

Seemingly unrelated regressions of leverage, dividend payout ratio, and investment level on management quality and reputation and other control variables. LEVER is the ratio of the long-term debt plus debt in current liabilities to the long-term debt plus debt in current liabilities plus the book value of common equity. DIVID is the ratio of the sum of common and preferred dividends to the earnings before depreciation, interest, and taxes. INVEST is the ratio of capital expenditures to the book value of assets. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. All regressions include two-digit SIC code industry dummies. LEVER, DIVID, and INVEST are winsorized at the 99th percentile. Only observations with positive LEVER and DIVID are included in the regressions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Dependent variable	1			2			3		
	LEVER	TRF	TSF	DIVID	TRF	TSF	INVEST	TRF	TSF
Intercept	-1.062 (-8.22)***	-0.849 (-3.57)***	-0.142 (-0.79)	-0.063 (-2.69)***	-0.520 (-2.23)**	-0.172 (-0.96)	0.724 (5.28)***	-0.686 (-2.91)***	-0.131 (-0.72)
BOARDS	-0.002 (-0.45)			0.001 (1.60)			0.005 (0.99)		
LNBVA	0.080 (18.35)***	0.062 (7.39)***	0.004 (0.67)	0.003 (3.29)***	0.036 (4.73)***	0.006 (1.03)	-0.027 (-6.06)***	0.042 (5.49)***	0.005 (0.87)
LFAGE	-0.020 (-3.79)***	-0.066 (-6.28)***	0.016 (2.05)**	0.003 (2.65)***	-0.055 (-5.15)***	0.010 (1.26)	-0.024 (-3.80)***	-0.051 (-4.82)***	0.011 (1.32)
ODIR	-0.000 (-0.16)	-0.004 (-0.90)	-0.007 (-1.95)*	0.002 (3.45)***	-0.001 (-0.25)	-0.007 (-2.00)**	-0.003 (-0.96)	-0.003 (-0.58)	-0.009 (-2.42)**
TOBINQ	-0.021 (-8.47)***	0.002 (0.31)	-0.001 (-0.20)	0.000 (0.16)	0.009 (1.75)*	0.001 (0.28)	0.001 (0.45)	0.008 (1.71)*	0.000 (0.03)
ROA	-0.052 (-5.81)***	-0.025 (-1.40)	0.036 (2.70)***	0.001 (0.81)	-0.006 (-0.31)	0.036 (2.56)**	-0.042 (-4.45)***	0.013 (0.82)	0.020 (1.56)
LEVER		-0.340 (-6.82)***	-0.027 (-0.71)						
DIVID					-1.293 (-5.06)***	0.027 (0.14)			
INVEST								0.311 (7.17)***	-0.089 (-2.64)***
RETSD	-0.258 (-0.56)								
TRF	-0.088 (-6.79)***			-0.013 (-5.09)***			0.104 (6.97)***		
TSF	-0.020 (-1.15)			-0.001 (-0.17)			-0.040 (-2.08)**		
R ²	0.4422	0.1359	0.0929	0.1309	0.1313	0.0856	0.3168	0.1296	0.0881
N	1528	1528	1528	1504	1504	1504	1518	1518	1518

Table 7

Two-stage OLS regressions of leverage, dividend payout ratio, and investment level on management quality and reputation and other control variables. LEVER is the ratio of the long-term debt plus debt in current liabilities to the long-term debt plus debt in current liabilities plus the book value of common equity. DIVID is the ratio of the sum of common and preferred dividends to the earnings before depreciation, interest, and taxes. INVEST is the ratio of capital expenditures to the book value of assets. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. REP is the natural logarithm of one plus the lead underwriter's reputation as measured by Loughran and Ritter (2004). RESSD is the residual standard deviation estimated using market model over 255 trading days for the fiscal year of the issue. All regressions include two-digit SIC code industry dummies. LEVER, DIVID, and INVEST are winsorized at the 99th percentile. Only observations with positive LEVER and DIVID are included in the regressions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Dependent variable	1			2			3		
	LEVER	TRF	TSF	DIVID	TRF	TSF	INVEST	TRF	TSF
Intercept	-1.421 (-4.97)***	0.007 (0.81)	0.002 (0.01)	-0.051 (-0.93)	-0.756 (-2.92)***	-0.069 (-0.34)	1.199 (2.64)***	-0.763 (-2.94)***	-0.068 (-0.34)
BOARDS	-0.007 (-0.69)	0.029 (3.15)***	-0.007 (-1.14)	0.003 (1.59)	0.008 (0.93)	-0.006 (-1.00)	0.013 (0.96)	0.008 (0.94)	-0.007 (-1.11)
LNBVA	0.098 (9.06)***	-0.055 (-5.12)***	-0.005 (-0.65)	0.003 (1.28)	0.025 (2.68)***	0.001 (0.18)	-0.051 (-2.69)***	0.026 (2.77)***	0.003 (0.40)
LFAGE	-0.024 (-1.14)	-0.007 (-1.48)	0.018 (2.16)**	-0.002 (-0.65)	-0.055 (-5.08)***	0.011 (1.33)	-0.029 (-1.22)	-0.055 (-5.17)***	0.014 (1.65)*
ODIR	-0.010 (-1.37)	0.007 (1.38)	-0.007 (-1.93)*	0.003 (1.95)*	-0.007 (-1.33)	-0.007 (-1.89)*	0.012 (0.98)	-0.007 (-1.36)	-0.008 (-2.16)**
TOBINQ	-0.018 (-3.10)**	-0.006 (-0.32)	-0.001 (-0.24)	0.000 (0.31)	0.007 (1.32)	0.001 (0.16)	-0.001 (-0.20)	0.007 (1.41)	-0.000 (-0.11)
ROA	-0.011 (-0.34)	0.176 (5.03)***	0.034 (2.53)**	-0.005 (-0.80)	-0.004 (-0.24)	0.032 (2.26)**	-0.079 (-2.26)**	0.002 (0.12)	0.021 (1.62)
REP		3.301 (3.52)***	0.033 (1.23)		0.179 (5.03)***	0.017 (0.61)		0.179 (5.03)***	0.005 (0.19)
RESSD		-0.824 (-3.20)***	-1.022 (-1.42)		3.176 (3.35)***	-1.016 (-1.38)		2.967 (3.24)***	-1.164 (-1.64)
TRF	-0.479 (-2.55)**			-0.062 (-1.95)*			0.397 (1.50)		
TSF	-1.182 (-1.59)			0.180 (1.17)			1.597 (1.37)		
R ²	-1.5567	0.1563	0.0960	-1.8865	0.1520	0.0880	-2.8482	0.1493	0.0909
N	1528	1528	1528	1501	1501	1501	1515	1515	1515

Table 8

Tests of differences in mean and median asymmetric information and liquidity variables for firms with above and below median management quality factor scores. TRF is the management team resources factor score obtained using common factor analysis on TSIZE, PMBA, PCPA, CORE, and PFTEAM. TSF is the management team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. NUMEST is the natural logarithm of one plus the number of analysts following the firm at the end of the fiscal year preceding the issue. FORERR is the forecast error, defined as the ratio of the absolute difference between analysts' mean EPS estimate and actual EPS to the stock price. DISPERS is the ratio of the standard deviation of analysts' forecasts to the stock price. BIDASK is the median monthly bid-ask spread as a percentage of the stock price, calculated over the preceding fiscal year. PVOL is the natural logarithm of the product of the stock price and the monthly volume of trade, averaged over the fiscal year preceding the offer. TO is the monthly trading volume divided by the number of shares outstanding, averaged over the fiscal year preceding the offer. Medians are reported in brackets. The results of *t*-tests for the difference in means and non-parametric Wilcoxon signed rank tests for the difference in medians are reported in parenthesis. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	TRF			TSF		
	below median	above median	difference	below median	above median	difference
NUMEST	0.723 [0.693]	0.945 [1.099]	0.222 (5.36)*** [0.406] (5.32)***	0.785 [0.693]	0.884 [1.099]	0.099 (2.39)*** [0.406] (2.50)**
FORERR	0.010 [0.002]	0.006 [0.002]	-0.004 (-2.05)** [0.000] (0.96)	0.008 [0.002]	0.007 [0.002]	-0.001 (-0.78) [-0.000] (-0.80)
DISPERS	0.004 [0.001]	0.004 [0.001]	0.000 (0.55) [0.000] (1.52)	0.005 [0.001]	0.003 [0.001]	-0.002 (-2.18)** [-0.000] (-1.66)*
BIDASK	0.042 [0.032]	0.037 [0.031]	-0.005 (-2.73)*** [-0.001] (-2.26)**	0.040 [0.032]	0.038 [0.031]	-0.002 (-1.55)* [-0.001] (-1.51)
PVOL	15.919 [15.954]	16.436 [16.478]	0.517 (6.25)*** [0.524] (6.16)***	16.171 [16.243]	16.196 [16.230]	0.025 (0.30) [-0.013] (0.22)
TO	0.126 [0.095]	0.163 [0.123]	0.037 (5.76)*** [0.028] (5.51)***	0.148 [0.113]	0.141 [0.104]	-0.007 (-1.05) [-0.009] (-0.51)

Table 9

Panel A. Relationship between the level of asymmetric information and management quality and reputation. NUMEST is the natural logarithm of one plus the number of analysts following the firm at the end of the fiscal year preceding the issue. FORERR is the ratio of the absolute difference between analysts' mean EPS estimate and actual EPS to the stock price. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	1	2	3	4	5	6	7	8
Dependent variable	NUMEST	NUMEST	NUMEST	NUMEST	NUMEST	FORERR	FORERR	FORERR
Intercept	-3.297 (-11.88)***	-2.694 (-10.59)***	-3.561 (-13.50)***	-2.765 (-10.86)***	-2.734 (-10.86)***	0.046 (1.92)*	0.037 (2.08)**	0.034 (1.84)*
TSIZE	0.037 (4.09)***	0.040 (4.66)***				-0.000 (-0.22)		
TENURE	0.013 (1.69)*					-0.001 (-2.00)**		
TENHET	0.033 (0.53)					-0.002 (-0.79)		
PMBA	0.048 (0.41)					-0.005 (-1.47)		
PFTEAM	-0.032 (-0.42)					-0.005 (-1.13)		
PCPA	0.026 (0.18)					-0.014 (-2.41)**	-0.014 (-2.51)**	
CORE	0.629 (6.60)***		0.641 (6.84)***			-0.002 (-0.70)		
FCEO	0.028 (0.58)					-0.001 (-0.41)		
BOARDS	0.049 (2.52)**			0.052 (2.65)***	0.050 (2.63)***	-0.000 (-0.47)		-0.000 (-0.51)
LNBVA	0.181 (10.52)***	0.174 (10.87)***	0.215 (14.36)***	0.191 (12.59)***	0.188 (12.49)***	-0.002 (-1.73)*	-0.002 (-1.96)*	-0.002 (-1.75)*
LFAGE	0.133 (5.48)***	0.135 (5.95)***	0.148 (6.52)***	0.131 (5.73)***	0.145 (6.40)***	0.002 (1.72)*	0.002 (1.85)*	0.002 (1.75)*
ODIR	-0.012 (-1.14)	-0.014 (-1.38)	-0.011 (-1.13)	-0.016 (-1.54)	-0.014 (-1.38)	0.000 (0.72)	0.001 (0.88)	0.001 (0.96)
TRF					0.296 (5.87)***			-0.003 (-1.36)
TSF					0.150 (2.06)**			-0.004 (-1.11)
R ²	0.1954	0.1695	0.1789	0.1613	0.1781	0.0171	0.0125	0.0116
N	1629	1630	1630	1630	1629	915	915	915

Panel B. Relationship between the level of asymmetric information and management quality and reputation. DISPERS is the ratio of the standard deviation of analysts' forecasts to the stock price. BIDASK is the median monthly bid-ask spread as a percentage of the stock price, calculated over the preceding fiscal year. See Table 1 for definitions of independent variables. TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	1	2	3	4	5	6	7	8
Dependent variable	DISPERS	DISPERS	DISPERS	DISPERS	BIDASK	BIDASK	BIDASK	BIDASK
Intercept	0.017 (2.44)**	0.019 (2.95)***	0.021 (3.21)***	0.018 (2.90)***	0.211 (9.75)***	0.203 (11.39)***	0.213 (11.80)***	0.206 (11.86)***
TSIZE	0.000 (0.34)				-0.001 (-4.22)***	-0.001 (-4.75)***		
TENURE	-0.000 (-2.31)**	-0.000 (-2.95)***			0.000 (0.53)			
TENHET	-0.001 (-1.32)				-0.004 (-1.06)			
PMBA	0.004 (1.33)				-0.004 (-0.74)			
PFTEAM	-0.001 (-0.59)				0.001 (0.34)			
PCPA	-0.006 (-3.01)***		-0.006 (-3.38)***		-0.015 (-2.25)**		-0.012 (-1.90)*	
CORE	0.003 (1.67)*				-0.004 (-0.89)			
FCEO	-0.000 (-0.07)				-0.002 (-0.66)			
BOARDS	-0.000 (-0.48)			-0.000 (-0.61)	-0.001 (-1.08)			-0.001 (-1.45)
LN BVA	-0.001 (-2.34)**	-0.001 (-2.97)***	-0.001 (-3.20)***	-0.001 (-3.03)***	-0.010 (-7.76)***	-0.010 (-8.41)***	-0.010 (-9.50)***	-0.010 (-9.47)***
LFAGE	0.002 (3.60)***	0.002 (3.59)***	0.001 (3.24)***	0.002 (3.49)***	0.003 (2.60)***	0.003 (2.97)***	0.003 (3.06)***	0.003 (2.72)***
ODIR	0.001 (2.99)***	0.001 (3.18)***	0.001 (3.21)***	0.001 (3.18)***	0.001 (1.53)	0.001 (1.62)	0.001 (1.32)	0.001 (1.32)
TRF				0.002 (2.10)**				-0.007 (-3.04)***
TSF				-0.002 (-1.93)*				-0.006 (-1.31)
R ²	0.0570	0.0476	0.0463	0.0493	0.1582	0.1550	0.1464	0.1492
N	786	786	786	786	1399	1400	1400	1399

Table 10

Relationship between liquidity and management quality and reputation. PVOL is the natural logarithm of the product of the stock price and the monthly trading volume, averaged over the fiscal year prior to the offer. TO is the ratio of the monthly trading volume to the number of shares outstanding, averaged over the fiscal year prior to the offer. See Table 1 for definitions of independent variables. SHAROUT is the number of shares outstanding at the end of the fiscal year prior to the offer (in millions). TRF is the team resources factor score obtained using common factor analysis on the TSIZE, PMBA, PCPA, PFTEAM, and CORE. TSF is the team structure factor score obtained using common factor analysis on TENURE, TENHET, and FCEO. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	1	2	3	4	5	6	7	8	9	10	11	12
Dependent variable	PVOL	PVOL	PVOL	PVOL	PVOL	PVOL	PVOL	TO	TO	TO	TO	TO
Intercept	6.332 (10.78)***	7.744 (14.82)***	7.191 (13.70)***	7.114 (13.33)***	7.211 (13.71)***	6.308 (11.05)***	7.328 (14.11)***	0.156 (3.19)***	0.277 (7.06)***	0.237 (5.88)***	0.168 (3.95)***	0.246 (6.40)***
TSIZE	0.065 (4.17)***	0.081 (5.65)***						0.004 (3.42)***	0.005 (4.38)***			
TENURE	-0.035 (-2.66)***							-0.002 (-1.80)*				
TENHET	0.203 (1.76)*		0.283 (2.46)**					0.014 (1.29)				
PMBA	0.384 (1.75)*			0.544 (2.45)**				0.009 (0.42)				
PFTEAM	-0.017 (-0.12)							0.017 (1.36)		0.022 (2.06)**		
PCPA	0.646 (2.65)***				0.520 (2.14)**			0.016 (0.75)				
CORE	0.707 (4.05)***					0.831 (4.74)***		0.065 (4.05)***			0.073 (4.54)***	
FCEO	-0.030 (-0.34)							-0.006 (-0.71)				
BOARDS	0.034 (1.19)						0.044 (1.53)	-0.003 (-0.96)				-0.002 (-0.67)
LN BVA	0.533 (15.55)***	0.475 (15.23)***	0.524 (17.14)***	0.537 (17.41)***	0.531 (17.38)***	0.555 (17.87)***	0.522 (17.31)***	-0.000 (-0.11)	-0.005 (-2.12)**	-0.001 (-0.61)	0.001 (0.28)	-0.001 (-0.69)
LFAGE	-0.479 (-10.15)***	-0.543 (-12.90)***	-0.565 (-13.23)***	-0.548 (-12.90)***	-0.551 (-13.03)***	-0.522 (-12.17)***	-0.504 (-11.59)***	-0.027 (-6.40)***	-0.032 (-8.54)***	-0.031 (-7.87)***	-0.03 (-7.82)***	-0.029 (-7.50)***
ODIR	-0.043 (-2.40)**	-0.039 (-2.26)**	-0.033 (-1.85)*	-0.037 (-2.12)**	-0.034 (-1.94)*	-0.034 (-1.93)*	-0.037 (-2.14)**	-0.006 (-4.27)***	-0.006 (-4.49)***	-0.006 (-4.49)***	-0.006 (-4.21)***	-0.006 (-4.10)***
SHAROUT	0.014 (6.57)***	0.014 (6.63)***	0.014 (6.17)***	0.014 (6.12)***	0.014 (6.11)***	0.014 (6.05)***	0.013 (6.28)***					
TRF							0.619 (6.87)***					0.043 (5.00)***
TSF							0.046 (0.33)					-0.002 (-0.19)
R ²	0.3794	0.3630	0.3495	0.3505	0.3498	0.3583	0.3665	0.0969	0.0796	0.0717	0.0819	0.0840
N	1445	1446	1445	1446	1446	1446	1445	1446	1447	1447	1447	1446

Figure 1

Model of relationship between management reputation and information asymmetry facing the firm in the equity market.

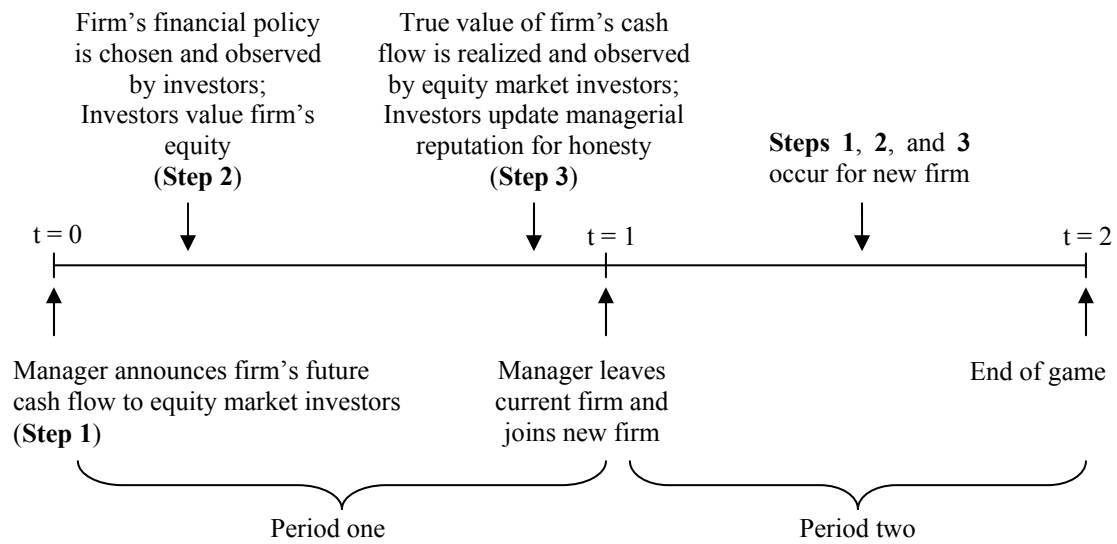


Figure 2

Relationship between management quality and investment.

As management quality increases from low (L) to high (H), the scale of the firm's investment increases from I_L^* to I_H^* .

