

The Effects of Human Capital Disclosures on Professional Investors' Assessments of Firm Risk

Robert M. Jennings * Lisa LaViers † Ethan Rouen ‡ Jason Sandvik §

January 22, 2025

Abstract

We conduct an experiment among professional investors to examine whether human capital disclosures affect their assessments of firm risk. Human capital is a major contributor to firm value, yet market participants have voiced concerns that firms do not provide sufficient detail about their human capital risks and strategies. Our experiment sheds light on two important questions. First, are current human capital disclosures sufficient for investors to make informed investment decisions? Second, if it was provided to them, would investors incorporate additional human capital information into their assessments of firm risk? We find compelling evidence that investors seek out human capital information, but they believe the current disclosure environment is insufficient. To answer our second question, we are guided by the current Securities and Exchange Commission proposal to mandate quantitative disclosures related to employee turnover, temporary worker use, total employee expenditures, and workplace diversity. We randomly provide investors with metrics on these topics and examine whether they incorporate the metrics into their assessments of firm risk. We find evidence that turnover metrics shift the average risk assessments, relative to a control group, but we find little evidence that the other metrics do so. Importantly, across all metrics except employee expenditures, we find evidence that the dispersion of risk assessments increases, relative to the control group. These results suggest that investors demand and use human capital information, but they do not interpret this information in a uniform manner, which may help explain why market forces alone have not resulted in greater disclosure.

Keywords: Human Capital, Corporate Disclosure, Firm Risk, Investors' Subjective Beliefs

We are deeply indebted to Sandy Peters, Preethika Kannan, and the CFA Institute for their guidance and collaboration. For helpful feedback and suggestions, we thank Leonardo Barcellos, Alice Bonaime, Scott Cederburg, Preeti Choudhary, Jeremy Douthit, Alex Edmans, Stephen Glaeser, Max Hewitt, Robert Kaplan, Daniel Kinnear, Chris Lamoureux, Krishna Palepu, Sandy Peters, Eugene Soltes, Charles Wang, Brian White, and seminar participants at the 2024 Arizona Junior Conference, Harvard Business School Brownbag Series, University of Arizona, and University of Georgia.

*University of Arizona's Eller College of Management. robertjennings@arizona.edu

†Tulane University's A.B. Freeman School of Business. llaviers@tulane.edu

‡Harvard Business School. erouen@hbs.edu

§University of Arizona's Eller College of Management. sandvik@arizona.edu

1 Introduction

In recent decades, corporations have dramatically changed how they create value, moving from a dependence on physical capital to one that relies heavily on human capital (HC) (Zingales, 2000; Regier and Rouen, 2023). Despite shifting economics, disclosure regulations have remained largely unchanged, and numerous investor groups have called for new disclosures that shed light on firms' HC management practices (e.g., HCMC, 2024). In 2023, the Security and Exchange Commission's (SEC) Investor Advisory Committee (IAC) responded to investors' demands to better understand the risk profile of companies by recommending mandatory quantitative disclosures on four topics: employee turnover, temporary worker use, total employee expenditures, and workforce diversity (IAC, 2023). The debate about the proposal is ongoing, but it also remains unclear whether regulation will be necessary to achieve sufficient levels of disclosure. Specifically, unraveling theory predicts that market forces could drive firms to voluntarily disclose requested HC information as long as several conditions are met, including that the information is material and that managers believe investors will have predictable and uniform reactions to the information (Grossman and Hart, 1980; Milgrom, 1981; Beyer et al., 2010; Bond and Zeng, 2022).

In this paper, we examine two of the required conditions for unraveling by conducting an incentivized experiment with professional investors. First, we examine whether investors believe they currently have sufficient material HC information to accurately assess firm risks. Given that groups of investors have been lobbying the SEC for increased disclosure, we predict that investors will report having unmet demand for HC information (IAC, 2023). We find results that are consistent with this prediction. Investors state that they seek out HC disclosures when making investments decisions, but they believe the current information environment is insufficient. Second, we examine another necessary condition, that investors will have uniform reactions to the information, which managers are able to anticipate prior to the disclosure of it (Beyer et al.,

2010; Bond and Zeng, 2022). We predict that investors will not have uniform reactions to the risk implications of these types of disclosures. Instead, the additional information will increase the heterogeneity in the investors' risk assessments. Again, we find results that are consistent with this prediction. We show that most of the IAC's recommended HC disclosures do affect investors' risk assessments, but the effects are not uniform. In fact, the disclosures often lead to greater dispersion in investors' subjective beliefs, compared to a control group of investors. As all the conditions of unraveling need to be met to achieve an unraveling equilibrium, our results help explain, in part, why an unraveling of HC disclosure is not occurring despite investor demand (Bourveau et al., 2022).

We test our predictions by partnering with the CFA Institute to conduct a survey-based experiment among chartered financial analysts (hereafter "CFAs") to understand whether and how they incorporate HC disclosures into their assessments of firm risk.¹ The CFA Institute sent the survey that contained the experiment to all licensed CFAs who are currently working as either financial analysts, investment managers, or CFOs. In total, 512 individuals participated in the experiment. The CFAs responded to a series of questions where they were asked to estimate a hypothetical firm's required return on equity, a commonly used measure of a firm risk. They were incentivized to both participate and put meaningful effort into their responses, as the research team made a donation to the CFA Institute Research Foundation based on the number of respondents who participated and the accuracy of their responses to questions with objectively correct answers.

We test our first prediction, that investors have unmet demand for HC information, using post-experimental survey questions. Participants were asked to respond to several questions about the current HC disclosure environment. Among these questions were a series that asked whether participants seek out and use HC disclosures to inform their investment decisions and whether firms currently disclose sufficient HC information. Consistent with our prediction, we find that

¹The CFA Institute collects data from investors on a variety of different topics by conducting periodic surveys as part of its regular member engagement practices, and they included our experiment into one of those surveys.

a large majority of CFAs said they seek out HC disclosures and that these disclosures inform their investment decisions (61%–64% responded in the affirmative), but only 14% stated that firms disclose sufficient HC information. In addition, the survey responses reveal that 91% of the CFAs feel that employee turnover metrics would impact their investment decisions, and 66% and 80% said contract worker use and employee expenditure metrics, respectively, also would. About one-third of the CFAs reported the same for gender diversity metrics. These findings provide quantitative evidence that professional investors consider HC information to be material to their investment decisions, but they do not believe they currently have sufficient HC information to value the firms they analyze.

We test our second prediction, that investors will have heterogeneous reactions to HC information, using an experiment that included a series of questions based on the Capital Asset Pricing Model (CAPM). In the experiment, all the CFAs were provided with the three inputs necessary to estimate the firm’s required return on equity using the CAPM: the risk free rate, the market risk premium, and the firm’s beta. They were all also provided with information about the firm’s size and managerial experience. In addition, randomly selected subsets of participants were given additional information about one of the four HC metrics proposed by the IAC: employee turnover, temporary worker use, total employee expenditures, and workforce gender diversity. Among participants who received additional HC information, they were told the firm’s metric and whether it was significantly above or below the industry average.² This design led to eight treatment groups (4 metrics \times 2 levels) and one control group.

The first question asked the CFAs to use the CAPM to calculate the firm’s required return on equity. More than 91% of respondents were within one percentage point of the correct answer, confirming that our sample of professional investors attentively completed the experiment. The second question, which we refer to as the “personal assessment,” asked the CFAs to calculate the

²By manipulating the level of each metric relative to the firm’s industry average, we intentionally control for investors’ perceptions of how these metrics (and their implications) differ *across* industries.

required return on equity using the Expanded CAPM, which augments the CAPM by allowing for subjective adjustments to the required return on equity. That is, participants could incorporate the additional information they were given about the firm’s size, managerial experience, and, for treated participants, HC information to subjectively estimate a required return on equity that differs from the estimate derived from the CAPM.³ The third question, which we refer to as the “consensus assessment,” asked the CFAs to predict what the average personal assessment would be among all participants.⁴ We then compare the distribution of responses to the personal and consensus assessments from CFAs in the treatment groups to those in the control group. Specifically, we test if CFAs’ risk assessments are impacted by the HC disclosures and, if they are, if the effects are uniform across investors.

We find evidence that disclosing employee turnover rates significantly impacts investors’ subjective beliefs about firm risk. The personal risk assessments show that low employee turnover rates lead to significantly lower estimates of the firm’s required return on equity. The estimates differ from those of the control group by more than half a percentage point (13.89% vs. 14.58%), an economically meaningful difference. We also find evidence of symmetric effects, as the mean estimate in the above average employee turnover group is significantly larger than the control group average (15.61% vs. 14.58%), by more than one percentage point. These significant differences in means are not likely driven by outliers, as we estimate significant differences in the distributions of responses between treatment and control groups when using Wilcoxon rank-sum tests.⁵

³According to the theory of the CAPM, firm-specific risk factors should only impact one’s estimate of the firm’s required return on equity if the risks are believed to be non-diversifiable. As such, our experiment tests whether investors believe the HC information to be both material and non-diversifiable.

⁴Documentation of the experiment and survey are provided in Appendix B.

⁵To help benchmark the economic magnitude of these 0.5%–1.0% treatment effects, it is important to remember that even relatively small changes in a firm’s required rate of return can have substantial impacts on its investment decisions (Arditti, 1967; Barry et al., 2024). For instance, Arzac and Marcus (1981) note that a 0.5% change in the required return on equity of a large telecommunications conglomerate would have changed the firm’s before-tax annual revenue requirements by about \$400 million.

We arrive at similar inferences when we consider the investors' consensus assessments. Notably, in both employee turnover treatment groups, the standard deviations of responses are significantly larger than those of the control group, providing evidence that investors exhibit substantial heterogeneity in their perceptions as to how their peers will interpret the employee turnover information. Taken together, these results suggest that investors incorporate employee turnover information into their risk assessments, but they do not always do so uniformly. In addition, investors struggle to predict what others will do with the information.

Next, we find relatively limited evidence that disclosures about the use of contract workers impact investors' risk assessments, on average. The personal assessments show that low (high) rates of contract worker use lead to smaller (larger) subjective estimates of the firm's required return on equity, but the differences are not statistically significant. The participants' consensus assessments provide evidence of greater heterogeneity in risk assessments among the treatment groups. Specifically, the standard deviations of responses in both treatment groups are significantly greater than that of the control group. The dispersion in the predictions of the consensus estimates indicates that, as with the turnover disclosures, the CFAs have trouble predicting how other investors will react to the information, but they do believe that other investors will use it.

Turning to employee expenditure disclosures, we fail to find evidence that varying levels of total employee expenditures significantly impact risk assessments. For the personal assessments and consensus assessments, both the below and above average employee expenditure treatment groups report mean estimates that are statistically indistinguishable from the mean estimates of the control group. Significant variation occurs only for the above average expenditure group's personal assessments, as reflected by a larger standard deviation relative to the control group. In general, though, participants' reactions to the employee expenditure metrics were quite muted.

Lastly, we find some evidence that disclosing workforce gender diversity impacts average estimates of firm risk. In particular, high levels of female representation in the workforce (i.e.,

above average gender diversity in the experiment) elicit smaller subjective estimates of the firm's required return on equity. This effect is statistically significant when considering both personal and consensus assessments. We also find evidence of disagreement about how gender diversity disclosures impact the required return on equity. Specifically, for the below average treatment group's personal assessments, we find that the standard deviation of responses is significantly different from that of the control group. For the consensus assessments, the standard deviations for both treated groups are significantly greater than that of the control group. These findings provide evidence that investors are incorporating gender diversity information into their risk assessments, but they do not all do so with the same direction or magnitude. In other words, they fail to incorporate the information in a consistent and uniform manner.

The responses to three other sets of post-experimental questions further highlight the wide variation in professional investors' beliefs about the materiality of HC information. First, participants' responses to free-response questions indicate disagreement regarding the usefulness of each of the four metrics. Second, there is meaningful variation in how treated CFAs say the HC metric information impacted their firm risk assessments. Third, the participants exhibited substantial disagreement as to where each type of HC information should be disclosed (e.g., financial statements, MD&A disclosure, ESG report). Taken together, the results of the experiment and the responses to the subsequent survey questions support our predictions that professional investors deem HC disclosures to be material to their investment decisions, but they do not always uniformly agree as to *how* HC information affects assessments of firm risk.

Our results contribute to multiple streams of literature in finance and accounting, as well as to the ongoing global policy debates surrounding the regulation of HC disclosures. Specifically, our paper advances the fast-growing HC disclosure literature. Several papers have examined the change in qualitative HC disclosures after the 2020 amendment to Regulation S-K ("Reg S-K") (see Bourveau et al. (2022) for a detailed discussion). The papers that most relate to this study are Bourveau et al. (2022), which examines the disclosure of quantitative HC information; Arif et al.

(2022), which documents a positive stock market reaction to the amount (i.e., word count) of HC information disclosed in the 10-K; Moss et al. (2020), which suggests that ESG disclosures are irrelevant to retail investors; and Li et al. (2024), which finds that retail investors do react to ESG disclosures, but only when they are perceived as financially material. These archival papers document that investors are reacting to *currently* occurring voluntary disclosures, but their ability to analyze specific types of HC information is limited because of the endogeneity concerns inherent when multiple different pieces of information are voluntarily disclosed at the same time.

Our experiment offers the unique advantage of examining how professional investors react to HC disclosures before they become mandatory disclosure items (LaViers and Sandvik, 2023; Koonce et al., 2024). In particular, we are able to isolate the treatment effects of each of the four proposed disclosures. This would not be feasible to do in a post-regulation archival study, given that the disclosures containing the new metrics would contain many different pieces of information, which would confound inferences. Moreover, by studying the individual choices of investors, we can document heterogeneous effects, wherein investors can be exposed to the same piece of HC information, but they may react differently to it. Notably, we do not only examine the shifting of the means, as doing so would ignore the way the underlying distribution of responses changes. By also comparing the variations in responses, we show that, in many instances, the disclosure of HC information causes a greater spread in subjective risk assessments. Furthermore, by conducting an experiment among financial analysts, investment managers, and CFOs, our findings contribute to the growing literature in finance that surveys specialized samples of participants as a means to better understand the behaviors of financial professionals (Graham and Harvey, 2001; Graham et al., 2022; Edmans et al., 2023; Bancel et al., 2023; Edmans et al., 2024).

Our work also contributes to the stream of literature that examines the intersection of disclosure theory and non-financial disclosures. Grossman and Hart (1980) and Milgrom (1981) predict that market forces should lead to the unraveling of the disclosure of private material information,

such as HC information, but Beyer et al. (2010) and Bond and Zeng (2022) indicate that one reason we may not witness unraveling is if investors have heterogeneous reactions to the information. Nagar (1999) finds that, since market expectations are difficult to predict, managers may be uncertain about the capital market responses to their disclosures, leading to a non-disclosure equilibrium. Our finding that HC disclosures often elicit heterogeneous responses from investors helps explain firms' reluctance to disclose this type of information, even in the face of the overwhelming investor demand that we document in our survey results. As such, we show that at least one condition needed for unraveling is not met in the current marketplace. Our findings also suggest that the non-disclosure equilibrium documented in Bourveau et al. (2022) may be unlikely to unravel on its own. Our work may help policy makers more accurately assess whether or not there is a need for new regulations that force firms to disclose HC information to address investor demand.

Lastly, we contribute to the stream of finance literature that examines the subjective beliefs of investors and, more specifically, if and how investors' opinions of a firm's HC practices affect their valuation decisions. Growing evidence suggests that the subjective beliefs of financial professionals and other investors about returns and cash flows influence portfolio choices and asset prices (Greenwood and Shleifer, 2014; Giglio et al., 2021; Lochstoer and Muir, 2022; Nagel and Xu, 2023; Charles et al., 2024). In their review paper, however, Adam and Nagel (2023) state, "We need more work that explores how investors form beliefs about asset risks and how these risk perceptions are linked to the subjective risk premia that they demand to hold risky assets." Beyond general risk assessments, the burgeoning labor and finance literature has considered how various HC management practices contribute to firm valuations (Mueller et al., 2017a,b; Hacamo and Kleiner, 2022; Liu et al., 2023; Mkrtychyan et al., 2024). However, due to the opaque disclosure environment, it is still unknown if and how investors exhibit preferences for or against specific HC management practices. The results of our study directly address these two important holes in the literature by identifying the effects of HC disclosures on investors' risk assessments,

and by providing evidence as to why the HC information is (or is not) deemed material. In this way, our findings also contribute to the ongoing discussion about how *value* and *values* jointly impact investment decisions (Starks, 2023).

2 Background and Predictions

In this section, we provide a brief overview of the current state of HC disclosures. We then review the literature that has examined investors' reactions to HC disclosures and describe the theoretical relation between the beliefs of managers and investors that may prevent the unraveling of disclosure related to material HC information.

2.1 Background on Human Capital Disclosures

Throughout the 21st century, the SEC has introduced several new disclosure requirements related to HC.⁶ In 2017, the SEC began requiring U.S. firms to disclose their CEO pay ratios, measured as the CEO's total compensation divided by the compensation of the median employee. Evidence called into question the value of this disclosure for various types of investors (Rouen, 2020; Pan et al., 2022). Beyond the value relevance, LaViers et al. (2024) and Carter et al. (2024b) document that mandating the pay ratio disclosure directly impacted other voluntary disclosure choices that managers made.

Three years later, the SEC amended Reg S-K to require all publicly traded companies to provide in their 10-K filings a description of their HC resources and risks (SEC, 2024). The amendment took a principles-based approach, meaning that it did not prescribe specific disclosures or even define what was meant by the term "human capital." By definition, this amendment created a disclosure environment in which firms were reporting idiosyncratic information that could not be meaningfully compared across firms. Bourveau et al. (2022) shows that firms did increase the

⁶For brevity, we focus on recent broad disclosure regulation directly tied to what we study. For a comprehensive discussion of HC disclosure regulation, see Bourveau et al. (2022).

amount and scope of quantitative HC information after the amendment. However, that paper also documents increased within-industry variation in disclosure topics after the amendment.

In September 2023, citing demand from investors for additional HC information, the Investor Advisory Committee (IAC) approved a recommendation to the SEC that would require firms to disclose additional quantitative HC information (IAC, 2023). The IAC is composed of academics, investors, and government officials. Its function is to advise the SEC on issues related to disclosure efficacy and investor protections. The four topics recommended by the IAC for disclosure were employee turnover; the firm's number of full-time, part-time, and contingent workers; the "total cost of the issuer's workforce"; and workforce demographic data.

Following the IAC's recommendation, in June 2024, the FASB voted unanimously to require firms to disclose, on a quarterly basis, total employee compensation included in each line item on the income statement (Maurer, 2024). The rule is set to go into effect in 2027. This rule is similar to what is required under IFRS. Regier and Rouen (2023) shows that this aggregate metric contains information on firms' HC investments and is predictive of abnormal returns.

2.2 Market Forces and Human Capital Disclosures

Despite the ongoing policy debates around HC disclosure mandates, it could be the case that regulation is not necessary for disclosures to occur. Specifically, unraveling theory suggests that widespread demand from investors should influence firms to voluntarily disclose HC information, regardless of regulation. Grossman and Hart (1980) and Milgrom (1981) suggest that, in the absence of transaction costs, market forces will lead to the voluntary disclosure of all of a firm's relevant information to the marketplace. Yet, this is not occurring for HC information. The theory literature on disclosure and the role of market forces offers some insights on why. Beyer et al. (2010) conducts a thorough review of the literature and lays out the necessary conditions under which unraveling will occur. These conditions include that investors know the firm has

the information; the information is costless to disclose; managers' objective is to maximize the firm's share price; and firms can credibly disclose (Milgrom, 1981; Grossman and Hart, 1980; Grossman, 1981; Milgrom and Roberts, 1986). Most salient to this study, Beyer et al. (2010) states that managers will be reluctant to disclose information when they are uncertain of whether investors will interpret this information uniformly (Nagar, 1999). In more recent theoretical work, Bond and Zeng (2022) show that non-disclosure can be optimal from the firm's perspective if the firm's stakeholders have diverse preferences, as non-disclosure reduces the sensitivity of the firm's payoff to stakeholder preferences. The paper's model focuses on a firm's decision to not disclose ESG performance in the years when there was meaningful heterogeneity in stakeholders' preferences for ESG outcomes.

Archival research has only just begun to answer the question of whether and how investors will react to HC disclosures. Pan et al. (2022) shows that firms with higher CEO pay ratios have lower abnormal returns, likely driven by "inequality-averse" investors. Other papers have shown how voluntary disclosures around the pay ratio impacted those reactions, finding that the market rewarded voluntary explanation of the ratio (LaViers et al., 2024; Boone et al., 2024; Carter et al., 2024a). Moving beyond the ratio, Arif et al. (2022) examines stock market reactions after the revision of Reg S-K. The paper uses the total number of HC-related words as a proxy for total *qualitative* HC disclosure and finds that firms with more disclosure experienced higher returns.

While these archival studies document an important correlation between disclosure and returns, they are limited in their inferences about investor behavior. First, there is valid concern related to endogeneity in the findings. Since the disclosures are not randomized, it is difficult to tease apart the impacts of the disclosure of HC information on investors rather than the actual HC practices of the firms (e.g., firms that have positive HC news to share are likely the ones who are choosing to disclose that information voluntarily). Second, archival papers are often only able to document the net impact on stock price. It is difficult to know if the net effects on stock prices that they document are the result of all investors compounding this information into prices in the

same way or if there is considerable heterogeneity in responses (e.g., where some investors view the information positively, some view it negatively, and some do not consider it relevant). Lastly, archival studies have been hampered by events beyond regulation that make it nearly impossible to ascribe causality to their findings. Bourveau et al. (2022) shows that the greatest increase in post-Reg S-K disclosures were related to diversity, equity, and inclusion (DEI), and points out that the amendment to Reg S-K went into effect at the same time that stakeholders were demanding more information about firms' DEI practices in the wake of the murder of George Floyd.

The four topics proposed by the IAC to become mandatory disclosure items have each been studied outside of the disclosure setting. However, the results from these studies are quite mixed, which makes it difficult to formulate *ex ante* directional predictions as to how professional investors are likely to incorporate the HC information into their assessments of firm risk. For instance, high levels of employee turnover may be predictive of poor performance (Li et al., 2022), but some argue that high turnover rates are only problematic when they occur within “harder-to-replace” positions (Kwon et al., 2023). Furthermore, relatively low turnover rates could signal high levels of employee satisfaction, but they could also indicate that management is not optimally dismissing low performers, consistent with prior research that relates weaker governance with suboptimal employment decisions (Bertrand and Mullainathan, 2003). Similarly, heavy reliance on temporary/contract workers may allow a firm to quickly and efficiently adjust the size of its workforce to meet demand when the labor supply pool is sufficiently large, but this strategy could also be de-motivational to employees and hamper productivity (Battisti and Vallanti, 2013). Prior research has documented a positive relation between employee expenditures and stock performance, arguing that the expenditures reflect investments in HC, but similar to the arguments related to turnover, in the cross-section, it is likely that some managers overpay employees to make it easy to retain workers (Bertrand and Mullainathan, 2003; Regier and Rouen, 2023). Finally, as Edmans (2024) highlights, the evidence on the relation between firm-level diversity and firm outcomes remains mixed, at best.

The lack of clear evidence in the literature about how investors will behave is also echoed by managers. Bourveau et al. (2022) examines the question of manager expectations by interviewing public company executives who were involved in the decision about what information, if any, to disclose about HC. The authors show that managers remain uncertain about the information that is most salient to investors, and they are not sure if investors will believe that any particular piece of HC information is positive or negative news for the firm. Taken together, the current regulatory environment and prior research on investors' reactions to HC disclosures leads to two clear predictions that we test in this paper. First, we predict that investors' demand for HC information remains unsatisfied in the current disclosure environment. Second, we predict that investors will not react uniformly to the quantitative HC disclosures currently being examined by the SEC, resulting in greater heterogeneity in investors' assessments of firm risk.

3 Organizational Setting, Experimental Design, Participant Characteristics, and Incentive Compatibility

To test our predictions regarding how HC disclosures affect investors' assessments of firm risk, we conducted a randomized controlled trial experiment among a global sample of Chartered Financial Analysts (i.e., CFAs). Below we describe the organizational setting in which the experiment takes place and provide details about the experimental task. We discuss the randomization of participants into the different treatment cells, and we discuss the balance in participant characteristics across the cells. We then describe the steps we took to ensure the experimental design had proper incentive compatibility and that it minimized the likelihood of violations of the Stable Unit Treatment Value Assumption (SUTVA).

3.1 Organizational Setting

Access to samples of qualified and experienced financial professionals is limited, which is why many studies that measure investor behavior rely on more convenient and accessible samples made up of students or online labor market participants (Buchheit et al., 2018; Owens and Hawkins, 2019; Bentley, 2021). To overcome this sampling challenge, we partnered with the CFA Institute to recruit active CFA charterholders to participate in the experiment. The CFA Institute is a non-profit organization that focuses on financial education and accreditation for professional investors. It offers numerous certifications, including its flagship Chartered Financial Analyst designation, which investment professionals can obtain through exam-based assessments. This certification is difficult to obtain. To become a CFA charterholder, one must pass three different exams on various investing topics, submit 2–3 letters of recommendation, and have sufficient investment-related work experience. Successful candidates report an average of 300 hours of studying to pass the exams, and the pass rates for each of the three exams are below 50% (and often much lower).⁷ Anyone with this qualification can be considered a skilled and knowledgeable professional investor. Additionally, our sample includes only *active* CFAs, which means that the individual has engaged in continuing education since obtaining the designation.

The CFA Institute regularly sends surveys to CFAs to gather their feedback on various topics related to professional investing. They use these surveys to help lobby various regulatory groups on behalf of their members.⁸ Given the recent regulatory discussions regarding HC disclosures, the CFA Institute once again wanted to survey active charterholders' to document their beliefs and behaviors. The questions on this survey were jointly developed between our research team and the CFA, but the survey was deployed and the responses were collected by the CFA. The survey was emailed by the CFA Institute to all CFAs working as either a financial analyst, investment

⁷For additional details, see <https://www.cfainstitute.org/en/programs/cfa/exam> and <https://www.schweser.com/cfa/blog/how-to-pass-the-cfa-exam/what-is-the-cfa-exam-pass-rate>.

⁸For instance, the CFA Institute conducted a (not-yet-published) survey in 2024 that focused on U.S. debt and reserve currencies, and it conducted another survey in 2021 that focused on goodwill disclosures (Peters, 2021).

manager, or CFO. Participants were sent unique links that allowed the CFA Institute to match an individual's responses with their demographic information that had been previously collected by the Institute. Survey responses were collected in two waves, from May 13th, 2024 to June 14th, 2024, and again from September 10th, 2024 to October 7th, 2024.⁹

The survey, compiled in Qualtrics, contained the randomized controlled trial experiment described below, along with several other questions to assess CFAs' beliefs about different issues related to HC information and their valuation decisions.

3.2 Experimental Design

The survey began by notifying participants that their participation and effort in the survey would impact the amount money donated to the CFA Institute Research Foundation. We discuss the specific details of the experiment's incentive compatibility components in Section 3.4. After being provided with this general information about the survey, participants were asked to answer three questions, which were adapted from questions on the CFA exam. Figures B.1 and B.2 display the content from the CFA Institute's exam-preparation materials that motivated the questions that survey participants answered. The questions centered around estimating the required return on equity for a hypothetical company, ABC Inc. (hereafter, ABC). The first question asked participants to calculate the required return on equity using the CAPM. For the second question, the personal assessment, participants were asked to use additional firm-specific information about ABC to update their estimates of the company's required return on equity. The third question, the consensus assessment, asked them to predict what the average personal assessments of all the participants would be. Responses to the personal and consensus assessments allow us to estimate

⁹The study was pre-registered with the American Economic Association (AEA AEARCTR-0011552). The pre-registered data collection window was from May 13th, 2024 to June 14th, 2024. This coincided with our first wave of data collection. The CFA Institute requested that we distribute the survey in two waves (sending the survey to approximately half of the sample in wave one, and then to the remaining part of the sample in wave two), so as to reduce survey fatigue, as their members had been asked to complete other surveys as well.

the impact that HC information has on investors' own risk assessments, and they also provide insight into what they perceive will be the impact on others' assessments.

We use CAPM-oriented risk assessment questions in the experiment for four main reasons. First, the SEC's regulations have specifically pushed for firms to disclose the risk factors related to their HC management (IAC, 2023). Second, the extensions of the CAPM (i.e., the "Expanded CAPM") allow investors to account for additional firm-specific risk factors and the perceived riskiness of a firm's stock. Third, the CAPM and its extensions are ubiquitous tools used by professional investors, increasing the realism of the experimental task. Fourth, given their CFA status, all participants in the experiment would have had experience answering these types of questions. These design choices improve the internal validity of our findings and enhance the external generalizability of our inferences (List, 2020). We describe each of the three questions used in the experiment in detail below.¹⁰

3.2.1 Estimation with the CAPM

The first question asked all participants to use the Capital Asset Pricing Model (CAPM) to estimate the company's required return on equity. Participants were provided with the CAPM formula,

$$\text{Required Return on Equity} = \text{Risk Free Rate} + (\text{Beta} \times \text{Equity Risk Premium}),$$

along with the three pieces of information necessary to perform the calculation: (i) the *Risk Free Rate*, 3.8%, (ii) the company's *Beta*, 1.1, and (iii) the *Equity Risk Premium*, 9%. The objectively correct answer to this question is $13.7\% = 3.8\% + (1.1 \times 9\%)$. Participants were asked to use a sliding scale to select the value they deemed to be correct, with possible answers ranging from 0% to 30%, in increments of 0.1%. Participants were incentivized to arrive at the correct answer,

¹⁰IRB approval for this project was received by all three institutions that employed the authors at the time of the study.

as the correctness of the responses would impact the amount money donated to the CFA Institute Research Foundation. We discuss the specific details of the experiment's incentive compatibility components in Section 3.4. Documentation of this question is provided in Figure B.3.

3.2.2 Personal Risk Assessments

The personal assessment question (question two) asked participants to use the additional company-specific information provided to them, and the Expanded CAPM approach, to re-estimate ABC's required return on equity. All participants were provided with information about the company's size, which is a common risk factor used when estimating a company's required return on equity. Specifically, they were told ABC's market capitalization is 25% less than that of its industry peers. To provide context for evaluating the company's market capitalization, they were told ABC has 38,000 employees. They were also provided with information about the experience level of the company's executive team; specifically, that their experience is similar to that of other executives in its industry. Participants in the control group were provided with this additional company-specific information, but they were not given information about any other HC metrics. Participants in the eight different treatment groups were provided with this additional company-specific information, and they were randomly assigned to receive information about one of four other metrics related to the company's HC.¹¹

The four HC metrics that we varied in the experiment were: the company's employee turnover rate; the company's use of temporary contract workers; the company's total employee-related expenditures; and the gender diversity of the company's workforce. We chose these topics because the SEC's Investor Advisory Committee recently recommended that the regulator require firms to disclose these metrics in mandatory SEC filings (IAC, 2023). For each of the four metrics, we altered whether the company's level for the disclosed HC information was below or above

¹¹The information about the firm's size, managerial experience, and, if relevant, HC was available to participants when answering all three questions. While this information is not needed to answer the first question, providing this information throughout the experiment reduces concerns about a demand effect affecting responses to questions two and three.

the industry average. In all cases, the low (high) level of the metric was 32% lower (higher) than the industry average. The employee turnover low (high) treatment disclosed that ABC turns over about 12.2% (23.8%) of its workforce each year, using 18% yearly turnover as the industry average.¹² The contract worker low (high) treatment disclosed that temporary contract workers comprise 4.7% (9.1%) of ABC's workforce, using a 6.9% contract worker use rate as the industry average.¹³ The employee expenditure low (high) treatment disclosed that ABC has total employee expenses of about \$510,000,000 (\$990,000,000) each year, using \$750,000,000 as the industry baseline for comparison.¹⁴ The gender diversity low (high) treatment disclosed that women constitute about 34% (66%) of ABC's workforce, using 50% female representation as the industry average.¹⁵

At the beginning of the personal assessment question, the information about ABC's CAPM inputs and the additional company-specific information, including the additional HC information for those in one of the eight treatment groups, was repeated to participants. They were asked to use the Expanded CAPM to estimate ABC's required return on equity, factoring in the company-specific information that they felt was relevant. They were reminded that the Expanded CAPM "is an adaptation of the CAPM that takes the required return on equity and then makes adjustments based on the company's size and other company-specific information that is likely to influence the riskiness of the company's future cash flows." They were also reminded of the answer they gave using the CAPM in question one. Participants were again asked to use a sliding scale to select the value they deemed to be the most reasonable estimate of ABC's required return on equity, with possible answers ranging from 0% to 30%, in increments of 0.1%. Participants were incentivized to think through this question carefully and answer honestly, as they were told that their answer to

¹²This baseline is motivated by turnover rates observed in archival data (Society for Human Resource Management, 2017).

¹³This baseline is motivated by the fraction of U.S. workers who are categorized as independent contractors (Bureau of Labor Statistics, 2018).

¹⁴This baseline was chosen as it is 25% of that reported for an average firm (Deloitte, 2017), and as the market capitalization of ABC is 25% of the industry average.

¹⁵This baseline is motivated by the fact that women constitute about 50% of the U.S. labor force (Toossi, 2015).

this question would influence their ability to answer question three correctly, which would impact the amount of money donated to the CFA Institute Research Foundation. Documentation of this question is provided in Figure B.4.

3.2.3 Consensus Risk Assessments

The consensus assessment question (question three) was identical to the personal assessment question except participants were asked to predict how other participants would make their own personal assessments. Specifically, they were told the following: “When all respondents complete the survey, we will calculate the average estimate provided as an answer to Question #2. We call this average the ‘consensus estimate’ of ABC’s required return on equity. On the next screen, you will be asked to predict what you think this ‘consensus estimate’ will be.” Participants were again asked to use a sliding scale to select the value they deemed to be the consensus estimate of ABC’s required return on equity, with possible answers ranging from 0% to 30%, in increments of 0.1%. Participants were incentivized to think through this question carefully, as the closeness of their prediction to the actual consensus estimate would affect the amount money donated to the CFA Institute Research Foundation. Documentation of this question is provided in Figure B.5.¹⁶

3.2.4 Post-Experimental Questions

Following the experimental questions, participants responded to a series of post-experimental questions. These questions asked participants to assess how they made their decisions in the experiment, and they solicited their perceptions about the current HC disclosure environment. Importantly, these questions asked participants to assess how important HC information is to their investment decisions and if they believe that the current HC disclosure environment is sufficient. Note that we asked the experimental CAPM-related questions first and the post-experimental

¹⁶Documentation of the entire survey, including separate documentation of each of the eight treatment conditions, is reported in Figure B.6.

questions second in order to avoid priming our participants to use HC information that they would not normally use as they made their firm risk assessments.

3.3 Participant Characteristics and Balance Across Treatment Cells

The participants in our experiment were randomized into either the control group or one of the eight treatment groups. We report the demographic characteristics of the participants in Table 1, in aggregate and broken out by treatment condition. In total, 512 CFAs participated in the experiment, meaning they at least responded to question one (i.e., participants were allowed to skip questions that they preferred not to answer).¹⁷ The average participant is 45 years old and has been a charterholder for nearly 12 years. Women make up 12% of the participants, which is in line with the gender demographics of the total CFA population (Institute, 2016, 2024). The three occupation roles represented by the participants are Financial Analyst, 34%, Investment Manager, 55%, and Chief Financial Officer (CFO), 11%.¹⁸ The individuals in the control group and the eight different treatment cells do not differ significantly along their demographic characteristics, as shown by p -values converted from F -statistics in the bottom row of the table. The one exception to this is when considering the representation of the investment manager occupation role, where we reject equality in representation across the nine groups at the 10% level.¹⁹ Most importantly, the participants in our experiment provide a near ideal sample of qualified and experienced investors, which allows us to draw generalizable inferences from the experimental findings regarding the impact that HC disclosures have on the firm risk assessments of professional investors.

¹⁷The CFA Institute emailed the survey to approximately 60,000 of its members, so the response rate was about 1%.

¹⁸We limited the survey to these three job categories for two reasons. First, people with these jobs tend to, as part of their job, make decisions similar to the task we assigned them. Second, CFAs with these jobs represent a large majority of all CFAs.

¹⁹Across eight of the nine groups, the average representation of investment managers ranges from 41%–59%. In one group, the Employee Expenditure (Low) treatment group, the representation of investment managers is significantly higher, 70%.

3.4 Incentive Compatibility

We designed the experiment to incentivize participants to put forth effort and apply their professional judgment when estimating the company's required return on equity. At the beginning of the survey, participants were told that a donation was going to be made to the CFA Institute Research Foundation, which conducts independent research to inform the professional investment management community. Participants were told that an unconditional donation of \$2,500 was going to be made to the Foundation. On top of this, another donation of up to \$2,500 was available, contingent on the participation outcomes of the respondents. Following recent surveys of financial analysts (Brown et al., 2015, 2016), participants were told that \$2,500 would be multiplied by the percentage of participants who both completed the survey and correctly answered the two questions for which there are correct, or approximately correct, answers (the CAPM question (question one) and the consensus assessment question (question three)). By putting these donation incentives into place, we provided participants with a reason to exert effort in completing the task and responding to the questions honestly.²⁰ As we discuss the results of the experiment in the following sections, we point out patterns in the responses that highlight the high quality of the gathered responses.

We also designed the experiment to reduce the chances of violations of the Stable Unit Treatment Value Assumption (SUTVA). Specifically, we argue that it is very unlikely that leakage or other spillover effects occurred across participants. The 512 participants in our survey are spread out across more than 200 unique employers, making it unlikely that any of them discussed the survey with another participant (reducing the possibility of leakage or spillovers from one treatment to another). In addition, demand effects are not likely a major concern in our setting, as the CFAs never interacted with the research team and as the experiment was conducted as part of the

²⁰Of the 512 participants in our sample, 213 completed the survey, answered the CAPM question correctly, and predicted the consensus assessment within ± 1 percentage point. As such, the total donation made to the Foundation was $\$3,540.04 = \$2,500 + \$2,500 \times 213/512$.

CFA Institute’s regular member engagement practices.²¹ While the upfront framing of the survey makes it clear that the topic of interest is investors’ perceptions and use of HC disclosures, the design of the experiment and the presentation of the material is such that there is no obvious “socially desirable” response. Furthermore, the incentive compatibility features of the experiment encouraged participants to answer honestly, as opposed to searching for the answer they thought the surveyors wanted.

4 Materiality of HC Disclosures and Experimental Results

We begin by testing our first prediction of whether the investors in our sample find the current disclosure environment to be sufficient or if they have unmet demand for additional HC information. While investor organizations have called for new disclosures, such as the Human Capital Management Coalition (HCMC, 2024), there is a lack of empirical evidence on the topic. We fill this gap by asking CFAs a series of questions related to their beliefs about HC disclosures.

The responses in Panel A of Figure 1 related to CFAs’ use of HC disclosures. A majority of CFAs, 61%, stated that they seek out HC disclosures to inform their investment decisions, while only 19% stated that they do not. Similarly, 64% stated that these disclosures are relevant to financial value, while 14% stated they are not. In panel B, we report responses to questions about the current HC disclosure environment. Only 14% of respondents said that most firms they evaluate disclose sufficient HC information, and only 15% stated that current reporting standards require all necessary HC information. In contrast, 45%–46% of participants feel that there is *not* currently a sufficient amount of HC information available. These results indicate that a large group of professional investors agree that HC information is value relevant, but that the current disclosure environment is inadequate (IAC, 2023; HCMC, 2024).

²¹To further reduce the likelihood of demand effects, we chose not to include manipulation checks within the experiment, as doing so could put undue pressure onto respondents to incorporate the manipulated information into their risk assessments. As we discuss the results of the experiment, we point out response patterns that show it is very likely that participants were well-aware of the disclosed HC metrics levels.

We also directly asked participants whether each of the four HC metrics proposed by the IAC would affect their investment decisions and/or the fundamental value of the firm.²² Figure 2 reports responses to the investment decision questions in Panel A and to the fundamental firm value questions in Panel B. In Panel A, we find that 91% feel that employee turnover metrics would impact their investment decisions, whereas only 29% of respondents feel gender diversity metrics would. The majority of respondents agree that information on contract worker use (66%) and employee expenditures (80%) would affect their investment decisions. The results in Panel B are generally similar to those in Panel A, suggesting respondents perceive a fairly tight connection between how these HC metrics impact their investment decisions and fundamental firm value. Taken together, these responses support our first prediction that investors have unmet demand for additional HC information, as they say they value HC information that is not currently available to them. In addition, the responses highlight investors' beliefs about the materiality of each of the four HC metrics that we study (and that the IAC has proposed making mandatory disclosures items), with turnover (diversity) metrics being deemed the most (least) important.

Next, we test our second prediction, that additional HC disclosures will increase the heterogeneity in investors' risk assessments. In order to do so, we begin by analyzing the experimental part of the survey by aggregating responses to question one (the CAPM question) across the full sample of participants and separately within the control and treatment groups. We do this to show that the vast majority of participants across all control and treatment groups exerted sufficient effort in attentively completing the experiment by using the CAPM to correctly estimate ABC's required return on equity. We then estimate the main treatment effects of the HC disclosures on ABC's required return on equity by comparing the distribution of responses to the personal and

²²Specifically, we asked "Please indicate if you agree or disagree as to whether the following disclosure metrics would affect your investment decisions," and "Please indicate if you agree or disagree as to whether the following disclosure metrics would affect fundamental firm value." We intentionally delineated between "your investment decisions" and "fundamental firm value" because there are scenarios in which responses to the two questions may differ. For example, an investor may feel a certain piece of information *should not* impact fundamental firm value, but that information may still impact their investment decisions if they anticipate that a large volume of other investors are going to incorporate that information into their firm valuation estimates.

consensus assessment questions across the control and treatment groups. We discuss the results for each of the four HC disclosure topics sequentially.

4.1 Required Return on Equity Estimates Using the CAPM

The first question asked the investors to use the CAPM to calculate ABC's required return on equity given the information about the risk free rate (3.8%), ABC's beta (1.1), and the equity risk premium (9%). The objectively correct answer to this question is $13.7\% = 3.8\% + (1.1 \times 9\%)$. We report the distribution of responses to this question in Figure 3. We see that the vast majority of respondents correctly answer the question, with 81.6% of the participants selecting the exact right answer. It is possible that some participants performed the correct calculations but mistakenly input the incorrect answer (e.g., they may have accidentally and unknowingly shifted the slider a few increments left or right of the correct placement). In line with this possibility, we find that 91.6% of the responses are within ± 1 percentage point of the correct answer. These findings suggest that the vast majority of the participants have the ability to use the Capital Asset Pricing Model to estimate a firm's required return on equity. This is not particularly surprising, given the professional credentials and experience of the CFAs that make up our sample, but it does provide additional comfort that the participants in our experiment responded to the experiment's financial incentives and put in the effort required to make the calculations. Overall these results show that participants provided high quality responses.

Table 2 reports responses to this question separately by control and treatment groups. We find that at least 69.8% of the investors within each group correctly answered the question, and at least 88.1% were within ± 1 percentage point of the correct answer.

4.2 Treatment Effects of Human Capital Disclosures

The personal assessment question asked the CFAs to use the Expanded CAPM to calculate ABC's required return on equity using the additional firm-specific information they were given. Participants in the control group were given information about the firm's size (below industry average) and the experience of the firm's management team (industry average management experience). Participants in the treatment groups were given this same information, along with information about one of the four additional HC metrics. The consensus assessment question asked participants to predict what the consensus estimate would be, that is, what the average of all personal assessments would be. We estimate the treatment effects of the HC disclosures on participants' estimates of ABC's required rate of return by comparing the distribution of responses in the control group to those in the treatment groups. We do this both graphically, to compare the full distribution of responses, and by reporting the results from statistical tests that compare differences in means, standard deviations, and distributions. We also systematically analyze participants' free-response entries to assess the level of agreement regarding the usefulness of the metrics and to determine *why* the metrics do (or do not) impact valuation decisions.

4.2.1 Treatment Effects of Employee Turnover Rate Disclosures

We find evidence that employee turnover rates significantly impacted CFAs' estimates of ABC's required return on equity. This is visually apparent in Figures 4a and 4b, which correspond to the personal and consensus assessments, respectively. In both figures, the distribution of required return on equity estimates from control group participants is displayed by the solid line. The distribution of estimates from participants in the below (above) average employee turnover treatment group is displayed by the dashed (dotted) line. The distributions of estimates from the below and above average employee turnover groups are visually different from that of the control group in both figures. In particular, the below average group distribution (i.e., the dashed line) has much more density around lower required return on equity estimates. This suggests that low rates

of employee turnover caused investors' perceptions of ABC's firm-specific risk to decrease. Furthermore, in both figures we see that the below average treatment group distributions are shorter and wider than the control group distribution, with more density in the tails. This suggests that the HC information increased the variance of response estimates, indicating a lack of uniformity in how the information was interpreted by the CFAs.

We formally measure the differences in estimates between the control and treatment groups in Table 3. In Column (2) we show that the mean values of the control group's responses to the personal and consensus assessments were 14.58% and 14.84%, respectively, both of which differed significantly from the CAPM-correct estimate of 13.7% (p -value < 0.01). The control group's responses to these questions suggest that investors interpreted the information about ABC's smaller-than-average size and average managerial experience as a signal of increased risk of the firm's stock.²³ We then compare the control group's responses to those of participants in the below average employee turnover treatment group. For the personal assessment, the below average group had a mean value of 13.89%, with the mean value significantly differing from the corresponding control group value (p -value < 0.05). We find evidence of a symmetric effect, as the above average group had a mean value of 15.61%, which significantly differed from the control group value (p -value < 0.05).²⁴ As shown in Column (3), the standard deviations of the personal assessments of the treatment groups did not significantly differ from that of the control group.

In Column (4), we report medians values and the results of Wilcoxon rank-sum tests, which compare the distributions of the personal assessments of the treatment and control groups. These tests reject the null that the below (above) average treatment group distribution equals the control

²³This assessment is in line with the conventional investment view that attributes a positive risk premium to the required return on equity of small companies. See Figures B.1–B.2 for details on what CFAs are taught about applying size premiums when estimating a company's required return on equity.

²⁴This finding of a symmetric effect makes it very unlikely that participants were not aware of the disclosed HC metrics levels. While we did not include manipulation checks into the experiment, this finding suggests the disclosed levels of the HC metrics were salient to participants.

group distribution at the 5% (1%) level. These significant rank-sum results highlight that the employee turnover rate disclosures not only shifted the means but also altered the overall distribution of the estimates, indicating a substantial impact of the HC information on participants' perceptions of firm risk. Moreover, the significant results from the rank-sum tests suggest that the significant differences in means in Column (2) are not likely driven by outliers.²⁵ In all of our main treatment effects tests, whenever we find a statistically significant difference in means, we also find a statistically significant difference in distributions based on the rank-sum test. This highlights the robustness of the inferences that we draw about the treatment effects.

Turning to the consensus assessment, we see less evidence that employee turnover rate disclosures impacted the average consensus estimate responses. Although the below average group has a significantly lower mean estimate of 13.90% (p -value < 0.05), the estimate for the above average group is not significantly different from zero. Importantly, though, the tests that compare the standard deviations suggest that the CFAs did, in fact, believe that the other investors would incorporate the turnover information into their risk assessments, but there was not a clear consensus on how the information would be factored in. Across both groups, the standard deviations are statistically different from that of the control group at the 1% level, with the above (below) average group's standard deviation being more than (almost) double that of the control group.

The wide variability in how employee turnover rates are interpreted is also apparent in the free-response entries from the participants, which are discussed in Panel A of Table A.1. These comments were made in response to a prompt asking CFAs to explain why each of the studied metrics would or would not impact their investment decisions and/or estimates of firm value (see the survey documentation in Figure B.6). We find that 12% of the comments imply that employee turnover rate disclosures are not useful, either because they lack specificity, are context-

²⁵These non-parametric rank-sum tests also relax the requirement of two-sample t-tests that risk assessments be normally distributed, though they generally are in our setting.

dependent, or can easily be misinterpreted.²⁶ For instance, one CFA said, “It is questionable in my mind whether this disclosure would be meaningful without knowing where the turnover is occurring (e.g., blue collar vs. white collar).” Among the 88% of comments that imply the metric is useful, the reasons ranged from the relation between turnover and company performance to the cost implications of turnover to the importance of boosting morale and maintaining stability.

While investor groups have called for the reporting of employee turnover information, firms have been reluctant to provide these metrics (Bourveau et al., 2022; IAC, 2023). The findings from our experiment indicate that high levels of turnover may be seen as indicative of greater firm risk, which might increase a firm’s required return on equity. The results also provide evidence that investors do not always interpret employee turnover information uniformly. These implications likely create potential concerns for managers, and they help to explain why firms have resisted calls for increased disclosure.

4.2.2 Treatment Effects of Contract Worker Use Disclosures

We find limited evidence that the use of contract workers impacts the average values of investors’ personal assessments of firm risk, although our results again surface evidence about inconsistencies in how investors use this information in their risk assessments. Figures 5a and 5b show some visual evidence of shifts in the distributions of both the below and above average contract worker use treatment groups, relative to the control group distribution. In particular, the below average contract worker use distribution (dashed line) is shifted left in both figures, suggesting a decrease in perceived risk when firms rely less on contract workers. Additionally, the above average distribution (dotted line) has relatively more density in the tails, especially when considering the consensus assessment, suggesting less consensus among investors as to

²⁶We take three steps to create this panel, as well as the text response panels for all metrics. First, we hand classify each comment as stating that the metric is useful or not useful for investment decisions to create separate lists of responses. Second, we ask Chat GPT to identify the themes in each list and select representative responses. Third, we hand verify these themes and responses. Analyzing these free-response comments provides insight into the “mental models” that investors are using as they determine whether and how to incorporate HC information into their valuation decisions (Bastianello et al., 2024).

how others will interpret high contract workers use metrics. The statistics in Table 4 provide noisy support of these inferences. We find that, for both the personal and consensus assessments, the below (above) average groups have mean estimates that are less than (greater than) those of the control group, but the differences are not statistically significant.

We do, however, find evidence of increased variability in responses when contract worker use metrics are present. Specifically, for the consensus assessment, the standard deviation of responses of the below (above) average treatment group, 2.07 (1.99), is significantly greater than that of the control group, 1.31 (p -value < 0.01). This finding suggests that participants lacked consensus as to how other investors would incorporate the information about contract worker use into their risk assessments, but it also suggests that investors believe others would use the information. This lack of uniformity in interpretations is further highlighted by the free-response entries in Panel B of Table A.1. Thirty-three percent of the free-response entries suggested that contract worker use metrics are not useful for valuations, citing skill-level dependency and industry-specificity as reasons for their uselessness. Among the free-response entries that suggested the metrics are useful, one stated, “Higher % of temp workers is inversely correlated to growth and profitability due to effects on strategy execution and key insider knowledge.” Taken together, we find noisy evidence that contract worker use metrics impact investors’ perceptions of firm risk, and we find both quantitative and qualitative evidence of a lack of uniformity among investors in how these metrics are interpreted.

4.2.3 Treatment Effects of Employee Expenditure Disclosures

We find little evidence that total employee expenditure disclosures significantly impacted risk assessments. First, Figures 6a and 6b show that the response distributions of both treatment groups were similar to that of the control group. Second, as shown in Table 5, we generally do not find any evidence of significant differences in means, standard deviations, or distributions between the control and treatment groups for either of the two risk assessment questions. The one

exception to this is an increase in the variability of the personal assessments among participants in the above average treatment group. Despite the fact that we generally do not find significant treatment effects of employee expenditure disclosures on required return on equity estimates, 86% of the free-response entries implied that the metrics are useful for valuation decisions, as reported in Panel C of Table A.1. One example of a typical response in this regard was that such metrics are “...essential for analyzing the company’s financial health and operational efficiency.”

The negligible treatment effects of employee expenditure disclosures may be surprising given that the FASB has already mandated this disclosure for 2027. We note, however, that it is important to be cautious in interpreting these null results, as they may be the result of experimental design choices that produced too weak of an effect to precisely measure. For instance, the three other treatment metrics were reported as percentages (employee turnover rates, contract worker use rates, and female representation rates), whereas the employee expenditure metrics were reported in dollar amounts. It is possible that investors feel they need additional context—such as other line items in financial statements (e.g., top-line revenue or SG&A expense)—in order to incorporate employee expenditure metrics into their risk assessments.

4.2.4 Treatment Effects of Workforce Gender Diversity Disclosures

We find some evidence that workforce gender diversity disclosures impact estimates of firm risk. Figures 7a and 7b show some visual evidence of shifts in the distributions of both the below and above average gender diversity treatment groups, relative to the control group distribution. In particular, the above average gender diversity distribution (dotted line) is shifted left in both figures, suggesting a decrease in perceived risk when firms have relatively high levels of female representation. The below average distribution (dashed line) has relatively more density in the right tail, especially when considering responses to the consensus assessment, suggesting less consensus among investors as to how others will interpret low levels of female representation. The statistics in Table 6 provide evidence in support of these inferences. We find that, for both

the personal and consensus assessments, the mean estimates of the above average treatment group participants are significantly lower than the corresponding mean control group estimates at the 10% and 5% levels, respectively. While we do not find evidence of symmetric mean effects for the below average group, the variation in responses still suggests that investors are incorporating this information in a way that is not uniform across the sample. For instance, for the personal assessment, the standard deviation for the below average group, 2.23, is statistically different from that of the treatment group (p -value < 0.10).

We also find evidence of increased variability in responses when investors are asked about their consensus assessments. Once again, the standard deviations for both treatment groups are statistically different from that of the control group. This lack of uniformity is made especially salient when analyzing the free-response entries in Panel D of Table A.1, as 69% of the comments implied that workforce gender diversity metrics are not useful for valuation decisions. The common themes across these comments include concerns about “tokenism” and that a focus on gender detracts from a focus on merit. For instance, one CFA said, “All people should be judged on merit, regardless of sex.” The pervasive perception communicated via the free-response entries, that workforce gender diversity metrics are useless, stands in stark contrast to the significant treatment effects within the above average gender diversity treatment group. This divergence in the stated versus the revealed usefulness of the metrics implies that there may be a meaningful difference between the stated versus the revealed preferences that investors have for workforce gender diversity information.²⁷

Taken together, these results provide some support for our second prediction that HC information will increase the heterogeneity in investors’ risk assessments. While the results from the

²⁷In Tables A.2–A.5, we show that our inferences are generally consistent if we restrict the analyses to include only those individuals who had either high levels of accuracy on question one (the CAPM question) or high levels of self-reported certainty to the three questions in the experiment. In addition, in Table A.6, we show that the mean treatment effects are robust when we exclude CFOs and when we control for the CFAs’ characteristics such as the region in which they work, their demographic traits, and their job role. Such robustness is expected given that the CFAs were randomly allocated to treatment cells, and as we find evidence of balance in characteristics across the cells (see Section 3.3 and Table 1.)

gender diversity treatments support the prediction both when considering personal assessments and consensus assessments, the results from the employee turnover and contract worker use treatments only lend support when considering the consensus assessments. Meanwhile, we document very little response in general to the employee expenditure treatments. By testing all four of the disclosures proposed by the IAC, our results show that not all HC disclosures will have the same impacts on investors, and they provide guidance to regulators and managers about which types of disclosure may have the strongest impacts on the market.

5 Post-Experiment Survey Questions

In addition to asking participants to conduct risk assessments, we asked them questions about why they made their choices. These post-experimental questions provide additional insight into the effect of HC information on investor behavior.

5.1 Influence of Human Capital Information on Risk Assessments

In the first question after the three questions in the experiment, participants indicated how influential each piece of firm-specific information was in their estimations of ABC's required return on equity. Responses to this question are reported in Panel A of Table 7. We also asked participants how influential they felt each piece of firm-specific information was in *other participants'* estimations of ABC's required return on equity. These responses are reported in Panel B. They answered these questions using a five-point Likert scale, with responses ranging from "Large Negative Influence" to "Large Positive Influence." We group responses of "Large Negative Influence" and "Small Negative Influence" together into the "Negative" ("Neg.") category, and we do the same for the positive influence responses.

The top row in Panel A reports responses from all participants. Columns (2)–(4) show that nearly half (46%) of the respondents said that the company's smaller than average size led them

to increase their estimate of the company's required return on equity, whereas 38% said this detail led them to decrease their estimate and 16% said this detail had no effect on their estimate. Across the nine different control and treatment groups, the fraction of "Positive" responses range from 35%–66%, with 6 of 9 being greater than 40%. While risk assessments are subjective, it is common practice for investors to perceive small firm size as an indication of greater firm risk, so the responses of our experiment participants to this question align well with our expectations.

Columns (5)–(7) suggest that the information about the company's average level of managerial experience had relatively little impact on respondents' risk assessments. Across the full sample of respondents, more than half (54%) said this detail did not influence their estimate of the company's required return on equity, with 17% (29%) saying it had a negative (positive) influence. Across the nine different control and treatment groups, it was always the case that more than one-third of the respondents said the information had no effect, and in 6 of 9 cases 50% or more gave the answer of "no influence." Comparing these responses to those in Columns (2)–(4) indicates that the information about ABC's size influenced participants' risk assessments much more than did the information about ABC's managerial experience. This may be unsurprising given that the information about ABC's management specified that its executives' experience was similar to that of its industry peers.

In Columns (8)–(10), we gain insight as to how respondents' felt the additional HC information influenced their required return on equity estimates.²⁸ We find a good deal of variation in responses across the eight different treatment groups. For instance, only 28% (15%) of the respondents in the below (above) average employee turnover group said their estimates were unaffected by the additional information, whereas 56% (59%) of those in the below (above) average gender diversity group said the gender-diversity information had no influence on their estimates. There is a good deal of consistency in response rates between Panel A and Panel B, suggesting

²⁸Columns (8)–(10) are left blank for the all respondents and control group respondents, as treated respondents were given different types of information and the control group was not presented with any additional HC information.

that respondents believed that their peers were likely influenced by the additional HC information in ways similar to themselves.

Considering all columns of results together, an important takeaway from Table 7 is that 84% of respondents said they were influenced by the information regarding ABC's size and 46% were influenced by the information regarding its managerial experience. Across the treated groups, 64% of participants, on average, stated that the HC information was useful, with a high of 78% of those in the turnover groups saying it had an impact, and a low of 42% of those in the gender diversity groups stating the same. Comparing these figures to each other helps to highlight the influence of HC disclosures relative to other firm-specific information. Namely, the additional HC disclosures seem to influence assessments of firm risk, not necessarily to the same extent as the most common risk-factors (e.g., firm size), but to a greater extent than relatively innocuous details about the firm's leadership team. The divisive views across all of the HC categories further speak to the lack of a uniform interpretation of the information provided to investors, which further supports the conjecture that the failure of market forces to increase HC disclosures could be due, in part, to this predicted impediment to unraveling (Beyer et al., 2010).

5.2 Preferred Location for the Disclosures

To finish, we asked participants where they felt each type of HC disclosure should be reported, if anywhere. Specifically, we asked, "Assume that a firm will disclose these metrics. Where should the firm disclose them?" Participants could then select either (a) Financial Statements, (b) Footnote to the Financial Statements, (c) Management's Discussion & Analysis, (d) ESG or Sustainability Report, (e) Other Location, or (f) This Should Not Be Disclosed. Table 8 reports the proportion of participants who selected a particular location for each disclosure metric. Less than 10% of the respondents felt that disclosures of employee turnover, contract worker use, and workforce gender diversity should be included in financial statements, whereas 60% felt total employee expenditure disclosures should be. Only 2% of respondents felt employee expenditures

should not be disclosed, which may highlight why this metric is going to become a mandatory disclosure item in 2027. Most respondents felt employee turnover metrics and contract worker use metrics should be disclosed in either a footnote to the financial statements (31% and 34%, respectively) or the MD&A section (41% and 33%, respectively), and only 3%–7% said these metrics should not be disclosed. The majority of respondents felt workforce gender diversity disclosures belong in the ESG report (54%), but 20% said this metric should not be a disclosed. This finding further highlights the lack of uniformity in investors’ perceptions about workforce gender diversity disclosures.

6 Conclusion

Human capital is an increasingly important driver of firm performance and growth. As such, investors have become increasingly interested in learning how firm’s acquire, develop, and retain a talented workforce (e.g., Lynch, 2017; IAC, 2023). To facilitate this understanding, investors and regulators have asked firms to voluntarily disclose more details about their HC management practices and workforce compositions, but firms have been reluctant to disclose more detail than is required by law (Bourveau et al., 2022). Disclosure theory suggests that this reluctance is likely driven, in part, by managers being uncertain as to how investors will react to their HC information and whether these reactions will be uniform among them. We test this notion by conducting an experiment among CFAs where we measure the impact of HC information on the firm risk assessments of these professional investors.

We first document widespread unmet demand for increased disclosures from investors, with only 14% of professional investors saying that the current disclosure environment is sufficient. Next, we estimate the causal effects of HC information on risk assessments by randomly exposing CFAs to different details about a firm’s HC management and then asking them to provide their subjective estimates of the firm’s required return on equity. CFAs were randomly assigned to

either the control group, in which case they received no additional HC information, or one of eight treatment groups, in which case they received HC information about one of four possible metrics and whether the firm's metric value was significantly below or above the industry average. The four metrics that we consider are those which the SEC's Investor Advisory Committee recently proposed to become mandatory disclosure items: employee turnover rates, temporary worker usage, total employee expenditures, and workforce gender diversity.

We find evidence that some of these metrics significantly affect investors' risk assessments and increase the heterogeneity in risk assessments. Notably employee turnover disclosures have the strongest and most precise mean effects, whereas gender diversity disclosures have the greatest impact on the dispersion of risk assessments. In contrast, contract worker use and total employee expenditure disclosures generally have more muted effects. In aggregate, our four sets of findings show that professional investors' risk assessments are significantly impacted by the disclosure of HC information, and the impacts are not always uniform across investors.

While our experiment provides causal evidence regarding the effect that HC information has on professional investors' risk assessments, its design is subject to several limitations that should motivate future research on the topic. First, participants are told the average level of the firm's metric, along with the industry average, but investors may also have interest in the trends in these metrics over time, and they may respond differently to a given metric level depending on the recent trends of the metric. Second, our sample is composed of CFAs who work as either financial analysts, investment managers, or CFOs. This choice in sample composition allows our results to generalize across a wide range of professional investors, but the impacts of HC information on risk assessments and valuation decisions may be different for non-professional retail traders. As the influence of retail traders on stock market trading volume increases, it is important to know whether and how their valuation decisions are impacted by HC disclosures. In addition, to identify causal effects, we held constant details such as the firm's industry, its position in the business life cycle, and its country of origin. Future studies may consider whether the impact

of HC disclosures on risk assessments varies across these and other firm characteristics. Finally, we chose to expose investors to a single metric at a time, but there may be important interactive effects between various combinations of HC metrics when they are disclosed in tandem. Future researchers should consider designing experiments that identify such interactive effects.

References

- Adam, Klaus, Stefan Nagel. 2023. Expectations data in asset pricing. *Handbook of economic expectations*. Elsevier, 477–506.
- Arditti, Fred D. 1967. Risk and the required return on equity. *The Journal of Finance* **22**(1) 19–36.
- Arif, S., Y. Yoon, H. Zhang. 2022. The information content of mandatory human capital disclosures — initial evidence. *Working Paper (Available at:)* .
- Arzac, Enrique R, Matityahu Marcus. 1981. Flotation cost allowance in rate of return regulation: A note. *The Journal of Finance* **36**(5) 1199–1202.
- Bancel, Franck, Dejan Glavas, George Andrew Karolyi. 2023. Do esg factors influence firm valuation? evidence from the field. *Working Paper* .
- Barry, John W, Bruce I Carlin, Alan D Crane, John Graham. 2024. Project development with delegated bargaining: The role of elevated hurdle rates. Tech. rep., National Bureau of Economic Research.
- Bastianello, Francesca, Paul Decaire, Marius Guenzel. 2024. Mental models and financial forecasts. *Working Paper* .
- Battisti, Michele, Giovanna Vallanti. 2013. Flexible wage contracts, temporary jobs, and firm performance: Evidence from italian firms. *Industrial Relations: A Journal of Economy and Society* **52**(3) 737–764. doi:<https://doi.org/10.1111/irel.12031>. URL <https://onlinelibrary.wiley.com/doi/abs/10.1111/irel.12031>.
- Bentley, Jeremiah W. 2021. Improving the statistical power and reliability of research using amazon mechanical turk. *Accounting Horizons* **35**(4) 45–62.
- Bertrand, Marianne, Sendhil Mullainathan. 2003. Enjoying the quiet life? corporate governance and managerial preferences. *Journal of Political Economy* **111**(5) 1043–1075. doi:10.1086/376950. URL <https://doi.org/10.1086/376950>.
- Beyer, Anne, Daniel A Cohen, Thomas Z Lys, Beverly R Walther. 2010. The financial reporting environment: Review of the recent literature. *Journal of accounting and economics* **50**(2-3) 296–343.
- Bond, Philip, Yao Zeng. 2022. Silence is safest: Information disclosure when the audience’s preferences are uncertain. *Journal of Financial Economics* **145**(1) 178–193.
- Boone, Audra, Austin Starkweather, Joshua T White. 2024. The saliency of the ceo pay ratio. *Review of Finance* **28**(3) 1059–1104.
- Bourveau, Thomas, Maliha Chowdhury, Anthony Le, Ethan Rouen. 2022. Human capital disclosures .
- Brown, Lawrence D, Andrew C Call, Michael B Clement, Nathan Y Sharp. 2015. Inside the ”black box” of sell-side financial analysts. *Journal of Accounting Research* **53**(1) 1–47.
- Brown, Lawrence D, Andrew C Call, Michael B Clement, Nathan Y Sharp. 2016. The activities of buy-side analysts and the determinants of their stock recommendations. *Journal of Accounting and Economics* **62**(1) 139–156.

- Buchheit, Steve, Marcus M Doxey, Troy Pollard, Shane R Stinson. 2018. A technical guide to using amazon's mechanical turk in behavioral accounting research. *Behavioral Research in Accounting* **30**(1) 111–122.
- Bureau of Labor Statistics. 2018. Ted: The economics daily .
- Carter, Mary Ellen, Lisa LaViers, Jason Sandvik, Da Xu. 2024a. Median employee pay disclosures and changes in employee pay satisfaction. *Available at SSRN 4430286* .
- Carter, Mary Ellen, Lisa LaViers, Jason Sandvik, Da Xu. 2024b. Strategic silence: The impact of the ceo pay ratio disclosure on conference call content. *Available at SSRN 4868197* .
- Charles, Constantin, Cary Frydman, Mete Kilic. 2024. Insensitive investors. *The Journal of Finance* **79**(4) 2473–2503.
- Deloitte. 2017. Laborwise .
- Edmans, Alex. 2024. *May Contain Lies: How Stories, Statistics, and Studies Exploit Our Biases — And What We Can Do About It*. University of California Press, Oakland, CA.
- Edmans, Alex, Tom Gosling, Dirk Jenter. 2023. Ceo compensation: Evidence from the field. *Journal of Financial Economics* **150**(3) 103718.
- Edmans, Alex, Tom Gosling, Dirk Jenter. 2024. Sustainable investing: Evidence from the field. *Working Paper* .
- Giglio, Stefano, Matteo Maggiori, Johannes Stroebel, Stephen Utkus. 2021. Five facts about beliefs and portfolios. *American Economic Review* **111**(5) 1481–1522.
- Graham, John R, Jillian Grennan, Campbell R Harvey, Shivaram Rajgopal. 2022. Corporate culture: Evidence from the field. *Journal of financial economics* **146**(2) 552–593.
- Graham, John R, Campbell R Harvey. 2001. The theory and practice of corporate finance: Evidence from the field. *Journal of financial economics* **60**(2-3) 187–243.
- Greenwood, Robin, Andrei Shleifer. 2014. Expectations of returns and expected returns. *The Review of Financial Studies* **27**(3) 714–746.
- Grossman, M., O. Hart. 1980. Disclosure laws and takeover bids. *Journal of Finance* **35** 323–334.
- Grossman, Sanford J. 1981. The informational role of warranties and private disclosure about product quality. *The Journal of Law and Economics* **24**(3) 461–483. doi:10.1086/466995. URL <https://doi.org/10.1086/466995>.
- Hacamo, Isaac, Kristoph Kleiner. 2022. Competing for talent: Firms, managers, and social networks. *The Review of Financial Studies* **35**(1) 207–253.
- HCMC. 2024. Letter to the SEC Investor Advisory Committee. <https://www.sec.gov/comments/265-28/26528-468251-1275214.pdf>. Accessed: 2024-07-29.

- IAC. 2023. Recommendation of the SEC Investor Advisory Committee’s Investor-as-Owner Subcommittee regarding human capital management disclosure. <https://www.sec.gov/files/spotlight/iac/20230921-recommendation-regarding-hcm.pdf>. Accessed: 2024-07-29.
- Institute, CFA. 2016. Women in investment management initiative. <https://www.cfainstitute.org/-/media/documents/support/future-finance/women-in-investment-management-brochure.pdf>. Accessed: 2024-08-07.
- Institute, CFA. 2024. Types of diversity in finance. <https://rpc.cfainstitute.org/en/topics/diversity-equity-and-inclusion/types>. Accessed: 2024-08-02.
- Koonce, Lisa, Cassie Mongold, Laura Quaid, Brian J White. 2024. Experimental research on standard-setting issues in financial reporting. *Accounting, Organizations and Society* **112** 101509.
- Kwon, Kiwook, Chiho Ok, Kwanghyun Kim. 2023. The quality of employee turnover in high performance work systems and firm performance. *Academy of Management Proceedings* **2023**(1) 11427. doi:10.5465/AMPROC.2023.106bp. URL <https://doi.org/10.5465/AMPROC.2023.106bp>.
- LaViers, Lisa, Jason Sandvik. 2023. The heterogeneous effect of workplace gender diversity disclosures on job search decisions. *Available at SSRN 4240155* .
- LaViers, Lisa, Jason Sandvik, Da Xu. 2024. Ceo pay ratio voluntary disclosures and stakeholder reactions. *Review of Accounting Studies* **29**(1) 109–150.
- Li, Qianqian, Edward M Watts, Christina Zhu. 2024. Retail investors and esg news. *Jacobs Levy Equity Management Center for Quantitative Financial Research Paper* .
- Li, Qin, Ben Lourie, Alexander Nekrasov, Terry Shevlin. 2022. Employee turnover and firm performance: Large-sample archival evidence. *Management Science* **68**(8) 5667–5683. doi:10.1287/mnsc.2021.4199. URL <https://doi.org/10.1287/mnsc.2021.4199>.
- List, John A. 2020. Non est disputandum de generalizability? a glimpse into the external validity trial. Tech. rep., National Bureau of Economic Research.
- Liu, Tim, Christos A Makridis, Paige Ouimet, Elena Simintzi. 2023. The distribution of nonwage benefits: maternity benefits and gender diversity. *The Review of Financial Studies* **36**(1) 194–234.
- Lochstoer, Lars A, Tyler Muir. 2022. Volatility expectations and returns. *The Journal of Finance* **77**(2) 1055–1096.
- Lynch, Sarah. 2017. *U.S. investors fight to preserve SEC rule on CEO pay ratio.* <https://www.reuters.com/article/us-usa-sec-ceopay/u-s-investors-fight-to-preserve-sec-rule-on-ceo-pay-ratio-idUSKBN16T1LE>. Accessed: June 1st, 2020.
- Maurer, Mark. 2024. Companies will have to disclose spending on worker pay for the first time. *Wall Street Journal* https://www.wsj.com/articles/companies-will-have-to-disclose-spending-on-worker-pay-for-the-first-time-eccfe99d?st=z8cchbeo5ufdodx&reflink=article_copyURL_share. Accessed: July 22nd, 2024.

- Milgrom, P. 1981. Good news and bad news: Representation theorems and applications. *Bell Journal of Economics* **12** 380–391.
- Milgrom, Paul, John Roberts. 1986. Relying on the information of interested parties. *The RAND Journal of Economics* **17**(1) 18–32. URL <http://www.jstor.org/stable/2555625>.
- Mkrtchyan, Anahit, Jason Sandvik, Da Xu. 2024. Employee responses to ceo activism. *Journal of Accounting and Economics* 101701.
- Moss, Austin, James P Naughton, Clare Wang. 2020. The irrelevance of ESG disclosure to retail investors: Evidence from Robinhood. Available at SSRN 3604847 .
- Mueller, Holger M, Paige P Ouimet, Elena Simintzi. 2017a. Wage inequality and firm growth. *American Economic Review* **107**(5) 379–383.
- Mueller, Holger M, Paige P Ouimet, Elena Simintzi. 2017b. Within-firm pay inequality. *The Review of Financial Studies* **30**(10) 3605–3635.
- Nagar, V. 1999. The role of the manager’s human capital in discretionary disclosure. *Journal of Accounting Research* **37** 167–181.
- Nagel, Stefan, Zhengyang Xu. 2023. Dynamics of subjective risk premia. *Journal of Financial Economics* **150**(2) 103713.
- Owens, Joel, Erin M Hawkins. 2019. Using online labor market participants for nonprofessional investor research: A comparison of mturk and qualtrics samples. *Journal of Information Systems* **33**(1) 113–128.
- Pan, Yihui, Elena S Pikulina, Stephan Siegel, Tracy Yue Wang. 2022. Do equity markets care about income inequality? evidence from pay ratio disclosure. *The Journal of Finance* **77**(2) 1371–1411.
- Peters, Sandra. 2021. Goodwill: Investor perspectives. *CFA Institute* <https://www.cfainstitute.org/-/media/documents/survey/cfa-goodwill-survey-without-appendices-2021.pdf>. Accessed: July 22nd, 2024.
- Regier, Matthias, Ethan Rouen. 2023. The stock market valuation of human capital creation. *Journal of Corporate Finance* **79** 102384.
- Rouen, Ethan. 2020. Rethinking measurement of pay disparity and its relation to firm performance. *The Accounting Review* **95**(1) 343–378.
- SEC. 2024. Modernization of regulation s-k items 101, 103, and 105: A small entity compliance guide. <https://www.sec.gov/corpfin/modernization-regulation-s-k-compliance-guide#:~:text=The%20amendments%20to%20Regulation%20S%20DK,the%20compliance%20efforts%20of%20registrants>. Accessed: 2024-08-02.
- Society for Human Resource Management. 2017. Shrm customized human capital benchmarking report .
- Starks, Laura T. 2023. Presidential address: Sustainable finance and esg issues—value versus values. *The Journal of Finance* **78**(4) 1837–1872.
- Toossi, Mitra. 2015. *Labor force projections to 2024: the labor force is growing, but slowly*. <https://doi.org/10.21916/mlr.2015.48>. Accessed: July 22nd, 2024.
- Zingales, L. 2000. In search of new foundations. *Journal of Finance* **55** 1623–1653.

Figures and Tables

Figure 1: Investors' Overarching Views on Human Capital Disclosures

Panel A: HC Disclosure Use

I seek out HC disclosures to inform my investment decisions.	19%	20%	61%
I use HC disclosures to inform my investment decisions because they are relevant to financial value.	14%	22%	64%
I use HC disclosures to inform my investment decisions because they are relevant to non-financial value considerations.	15%	22%	63%

Panel B: HC Disclosure Sufficiency

Most firms I evaluate disclose sufficient HC information.	45%	41%	14%
I find that current HC reporting standards require all necessary information.	46%	39%	15%

Strongly Disagree/Disagree

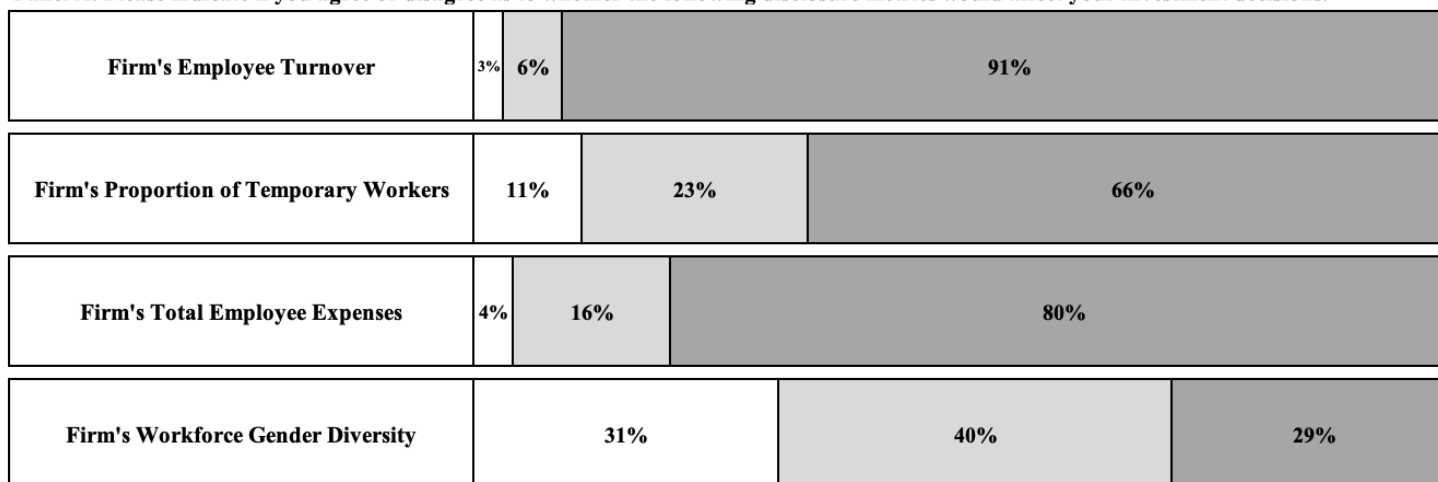
Neither Agree nor Disagree

Strongly Agree/Agree

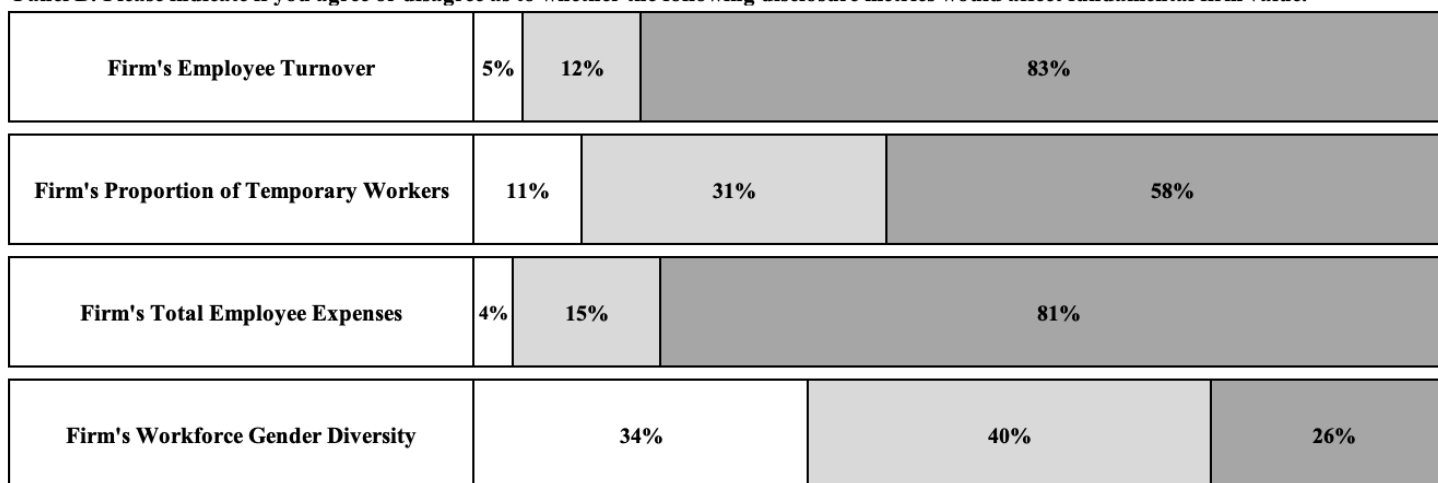
Notes. This figure displays investors' level of agreement/disagreement to several different statements about their overarching views on human capital disclosures. We group responses of "Strongly Disagree" and "Disagree" together, and we do the same for the "Strongly Agree" and "Agree" responses.

Figure 2: Effect on Investment Decisions and Fundamental Firm Value

Panel A: Please indicate if you agree or disagree as to whether the following disclosure metrics would affect your investment decisions.



Panel B: Please indicate if you agree or disagree as to whether the following disclosure metrics would affect fundamental firm value.



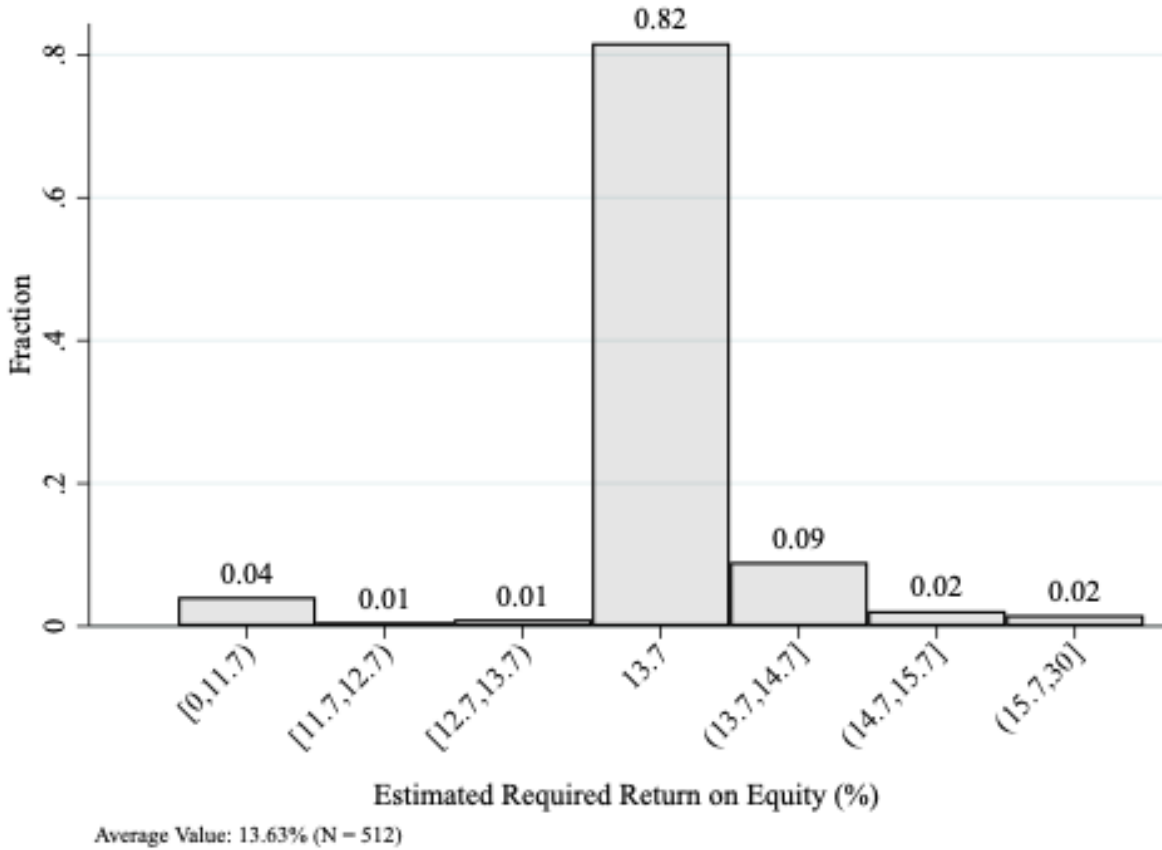
Strongly Disagree/Disagree

Neither Agree nor Disagree

Strongly Agree/Agree

Notes. This figure displays aggregate responses to questions that separately asked participants whether each of the four human capital metrics would affect their investment decisions and fundamental firm value. Specifically, we asked “Please indicate if you agree or disagree as to whether the following disclosure metrics would affect your investment decisions” (Panel A), and “Please indicate if you agree or disagree as to whether the following disclosure metrics would affect fundamental firm value” (Panel B). We group responses of “Strongly Disagree” and “Disagree” together into the “Disagree” category, and we do the same for the agree responses.

Figure 3: **Required Return on Equity Estimates Using the CAPM**



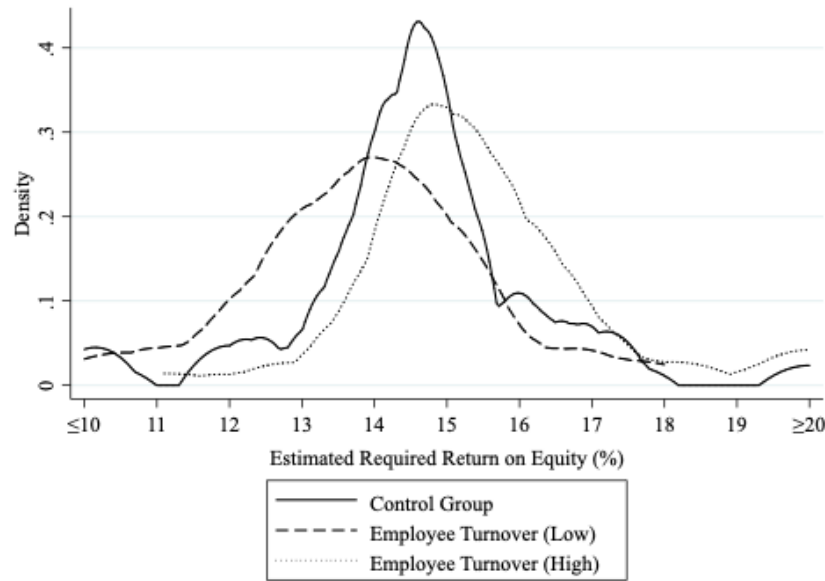
Notes. This figure displays the distribution of participants' responses to question one (the CAPM question) which asked them to calculate the company's required return on equity given the information about the risk free rate (3.8%), the company's beta (1.1), and the equity risk premium (9%). Participants were provided with the CAPM formula:

$$\text{Required Return on Equity} = \text{Risk Free Rate} + (\text{Beta} \times \text{Equity Risk Premium}).$$

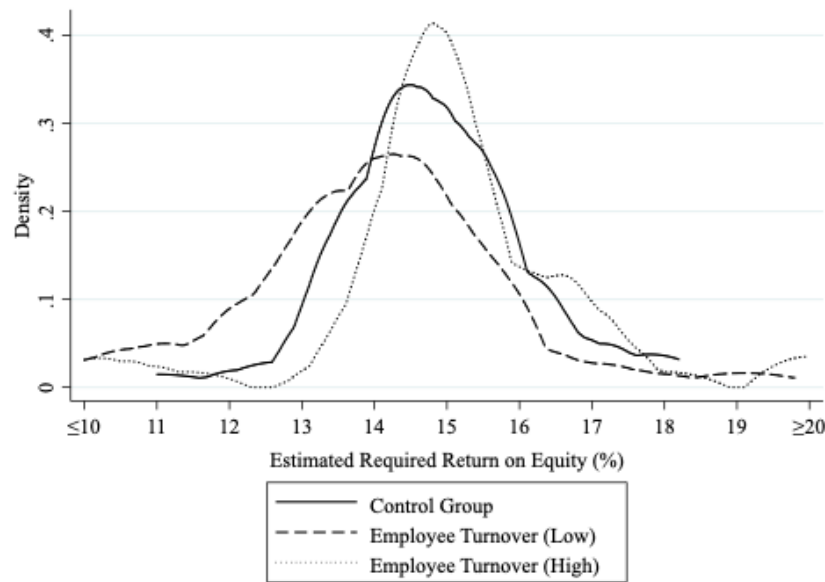
The objectively correct answer to this question is $13.7\% = 3.8\% + (1.1 \times 9\%)$. 81.6% of respondents arrived at this answer, and 91.6% of respondents were within ± 1 percentage point of this answer.

Figure 4: **Personal and Consensus Risk Assessments: Employee Turnover Rate**

(a) Personal Assessments



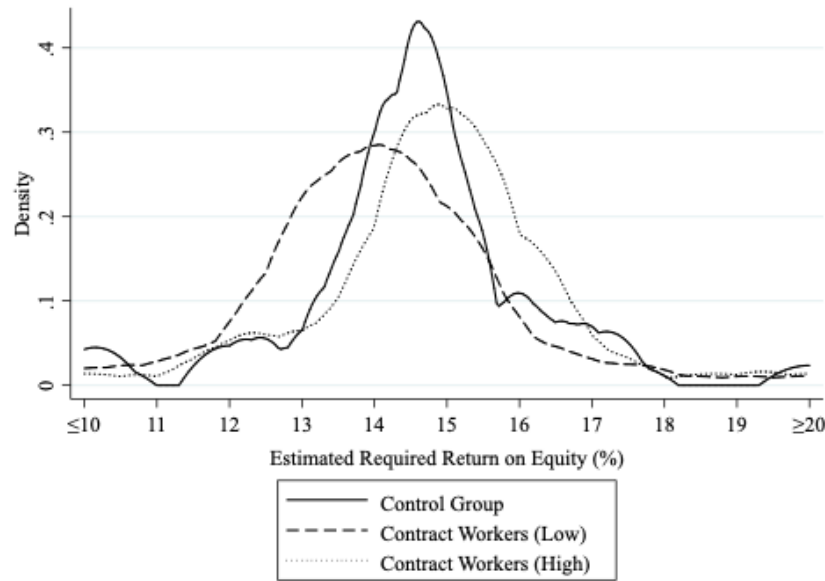
(b) Consensus Assessments



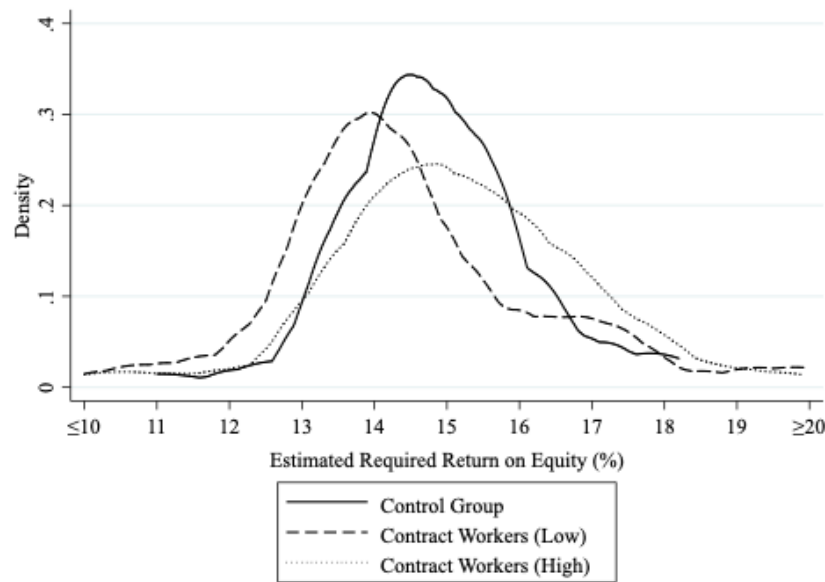
Notes. Figure (a) displays the distribution of participants' personal assessments, which asked them to use the Expanded CAPM to estimate the company's required return on equity given the information from the CAPM question and the additional information about firm-specific characteristics. Figure (b) displays the distribution of participants' consensus assessments, which asked participants to predict what the consensus estimate would be of the other participants who received the same information as them. In each figure, we plot the distribution of responses of the control group using a solid line, and we plot the distribution of responses of the above (below) average employee turnover rate treatment group using a dotted (dashed) line.

Figure 5: Personal and Consensus Risk Assessments: Contract Worker Use

(a) Personal Assessments



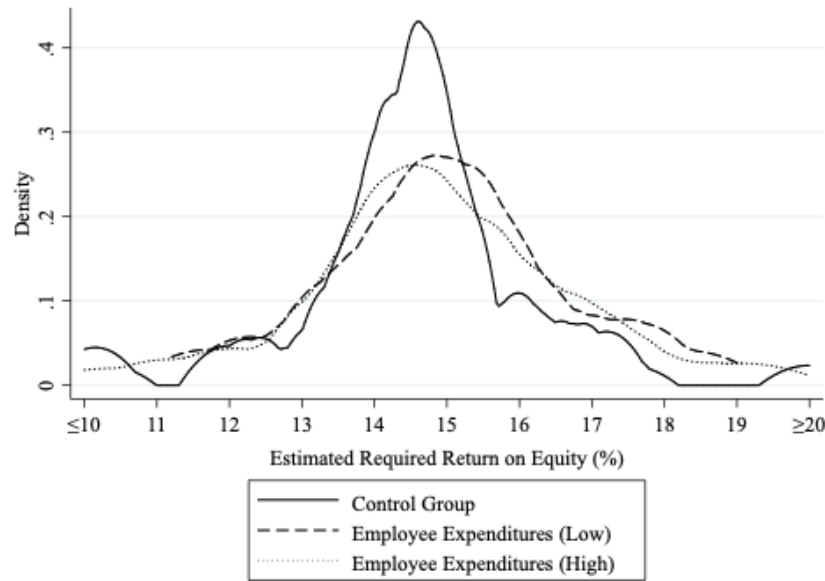
(b) Consensus Assessments



Notes. Figure (a) displays the distribution of participants' personal assessments, which asked them to use the Expanded CAPM to estimate the company's required return on equity given the information from the CAPM question and the additional information about firm-specific characteristics. Figure (b) displays the distribution of participants' consensus assessments, which asked participants to predict what the consensus estimate would be of the other participants who received the same information as them. In each figure, we plot the distribution of responses of the control group using a solid line, and we plot the distribution of responses of the above (below) average contract worker use treatment group using a dotted (dashed) line.

Figure 6: Personal and Consensus Risk Assessments: Employee Expenditures

(a) Personal Assessments



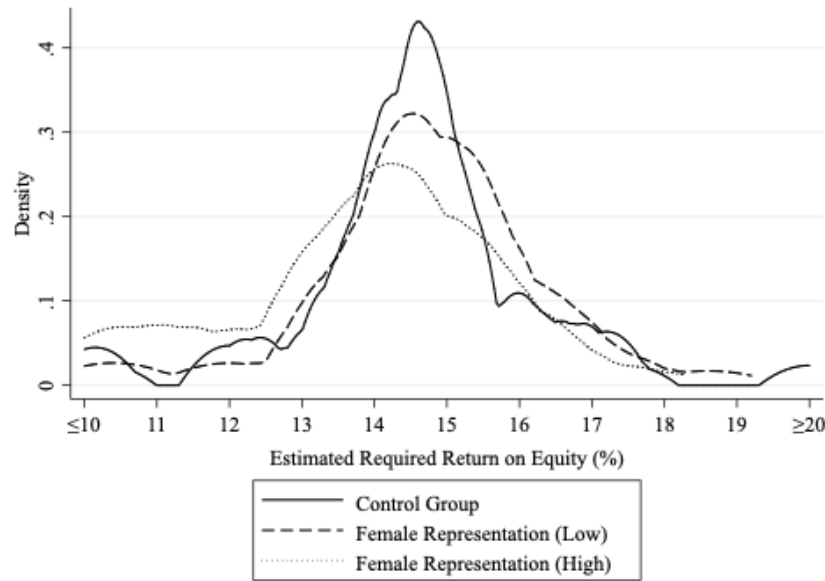
(b) Consensus Assessments



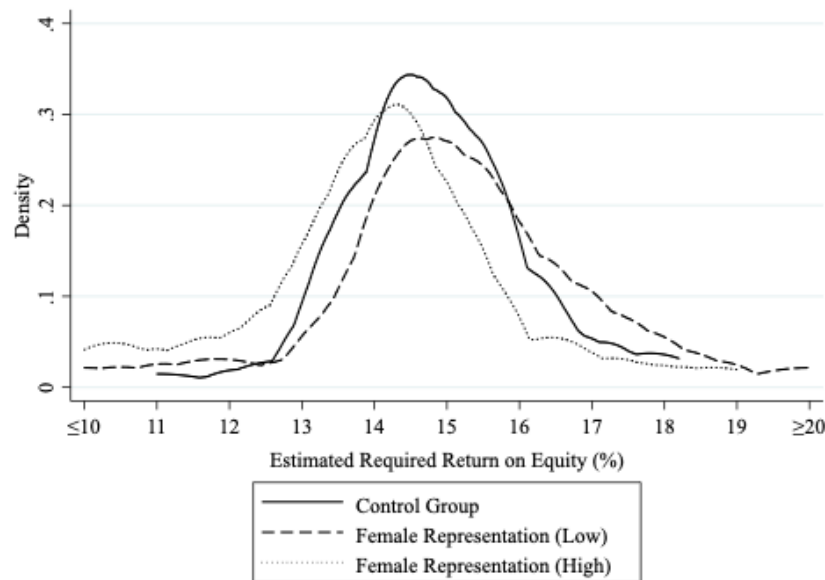
Notes. Figure (a) displays the distribution of participants' personal assessments, which asked them to use the Expanded CAPM to estimate the company's required return on equity given the information from the CAPM question and the additional information about firm-specific characteristics. Figure (b) displays the distribution of participants' consensus assessments, which asked participants to predict what the consensus estimate would be of the other participants who received the same information as them. In each figure, we plot the distribution of responses of the control group using a solid line, and we plot the distribution of responses of the above (below) average total employee expenditures treatment group using a dotted (dashed) line.

Figure 7: **Personal and Consensus Risk Assessments: Gender Diversity**

(a) Personal Assessments



(b) Consensus Assessments



Notes. Figure (a) displays the distribution of participants' personal assessments, which asked them to use the Expanded CAPM to estimate the company's required return on equity given the information from the CAPM question and the additional information about firm-specific characteristics. Figure (b) displays the distribution of participants' consensus assessments, which asked participants to predict what the consensus estimate would be of the other participants who received the same information as them. In each figure, we plot the distribution of responses of the control group using a solid line, and we plot the distribution of responses of the above (below) average workplace gender diversity treatment group using a dotted (dashed) line.

Table 1
Participant Characteristics

	N	Age	Tenure	Female	Analyst	Manager	CFO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All Respondents	512	44.86 (11.35)	11.56 (7.99)	0.12	0.34	0.55	0.11
Control Group	54	42.34 (9.46)	8.87 (7.43)	0.11	0.43	0.41	0.17
Employee Turnover (Low)	56	44.25 (11.33)	10.80 (8.31)	0.14	0.41	0.43	0.16
Employee Turnover (High)	54	43.19 (10.99)	11.65 (7.95)	0.07	0.37	0.59	0.04
Contract Workers (Low)	64	45.42 (12.54)	12.31 (8.43)	0.16	0.34	0.53	0.13
Contract Workers (High)	58	45.16 (11.05)	12.18 (7.55)	0.10	0.31	0.55	0.14
Employee Expend. (Low)	56	44.09 (10.70)	11.79 (7.90)	0.09	0.23	0.70	0.07
Employee Expend. (High)	53	46.87 (11.25)	12.67 (7.52)	0.13	0.28	0.58	0.13
Gender Diversity (Low)	58	44.12 (12.67)	10.78 (8.39)	0.14	0.34	0.57	0.09
Gender Diversity (High)	59	48.00 (11.22)	12.8 (8.03)	0.10	0.33	0.57	0.10
p-value: Similarity Across Cells		0.212	0.225	0.916	0.518	0.095	0.439

Notes. This table presents average values of participant characteristics. For characteristics with continuous values, we report standard deviations in parentheses. The p-values in the bottom row of the table report results from tests of the null hypothesis that the average value of a particular characteristic is equal across the nine different treatment and control groups. These *p*-values are calculated from *F*-statistics produced by the test of similarity across cells.

Table 2
Required Return on Equity Estimates Using the CAPM

	N	Correct	±1%	Mean	Std. Dev.	25%	50%	75%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All Respondents	512	81.6%	91.6%	13.63	1.57	13.70	13.70	13.70
Control Group	54	90.7%	96.3%	13.37	1.94	13.70	13.70	13.70
Employee Turnover (Low)	56	83.9%	92.9%	13.56	0.95	13.70	13.70	13.70
Employee Turnover (High)	54	79.6%	90.7%	14.18	1.77	13.70	13.70	13.70
Contract Workers (Low)	64	81.3%	90.6%	13.57	2.41	13.70	13.70	13.70
Contract Workers (High)	58	84.5%	94.8%	13.53	1.21	13.70	13.70	13.70
Employee Expend. (Low)	56	82.1%	91.1%	13.77	0.81	13.70	13.70	13.70
Employee Expend. (High)	53	69.8%	88.7%	14.04	1.03	13.70	13.70	13.80
Gender Diversity (Low)	58	87.9%	91.4%	13.43	1.68	13.70	13.70	13.70
Gender Diversity (High)	59	74.6%	88.1%	13.29	1.35	13.70	13.70	13.70

Notes. This table presents the summary statistics of investors' responses to question one (the CAPM question), which asked them to calculate the firm's required return on equity given the information about the risk free rate (3.8%), the equity risk premium (9%), and the firm's beta (1.1). The investors were provided with the CAPM formula:

$$\text{Required Return on Equity} = \text{Risk Free Rate} + (\text{Beta} \times \text{Equity Risk Premium}).$$

The objectively correct answer to this question is $13.7\% = 3.8\% + (1.1 \times 9\%)$. The mean values of the following groups significantly differ from the correct answer of 13.7% at the 10% level: Employee Turnover (High), Employee Expenditures (High), and Female Representation (High).

Table 3
Employee Turnover Rate Disclosures: Treatment Effects

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	46	14.58	1.69	14.55
Below Average Group	51	13.89**	1.67	13.70**
Above Average Group	49	15.61**	2.16	15.00***
Consensus Assessments				
Control Group	46	14.84	1.31	15.00
Below Average Group	50	13.90**	2.44***	14.00***
Above Average Group	48	15.09	2.93***	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average employee turnover rate treatment groups. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 4
Contract Worker Use Disclosures: Treatment Effects

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	46	14.58	1.69	14.55
Below Average Group	57	14.24	2.13	14.00*
Above Average Group	54	14.82	1.95	15.00
Consensus Assessments				
Control Group	46	14.84	1.31	15.00
Below Average Group	55	14.55	2.07***	14.00*
Above Average Group	53	15.08	1.99***	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average contract worker use treatment groups. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 5
Employee Expenditures Disclosures: Treatment Effects

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	46	14.58	1.69	14.55
Below Average Group	52	15.00	1.66	15.00
Above Average Group	46	14.70	2.70***	14.70
Consensus Assessments				
Control Group	46	14.84	1.31	15.00
Below Average Group	51	14.71	1.35	15.00
Above Average Group	46	14.94	1.35	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average employee expenditures treatment groups. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 6
Gender Diversity Disclosures: Treatment Effects

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	46	14.58	1.69	14.55
Below Average Group	55	14.55	2.23*	14.80
Above Average Group	54	13.92*	1.87	14.00*
Consensus Assessments				
Control Group	46	14.84	1.31	15.00
Below Average Group	55	15.04	2.58***	15.00
Above Average Group	55	14.05**	1.90**	14.00**

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average workplace gender diversity treatment groups. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 7
Influence of Each Factor on Estimated Required Return on Equity

Panel A: Influence on One's Own Estimate

	N	Small Firm Size			Average Manager Experience			Additional Human Capital Info.		
		Neg.	None	Pos.	Neg.	None	Pos.	Neg.	None	Pos.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All Respondents	452	38%	16%	46%	17%	54%	29%			
Control Group	45	33%	18%	49%	9%	69%	22%			
Employee Turnover (Low)	49	43%	18%	39%	20%	53%	27%	33%	28%	39%
Employee Turnover (High)	46	39%	17%	44%	18%	41%	41%	44%	15%	41%
Contract Workers (Low)	55	40%	16%	44%	16%	51%	33%	22%	29%	49%
Contract Workers (High)	50	34%	12%	54%	28%	48%	24%	36%	32%	32%
Employee Expend. (Low)	50	24%	10%	66%	16%	62%	22%	30%	44%	26%
Employee Expend. (High)	46	50%	15%	35%	15%	50%	35%	52%	17%	31%
Gender Diversity (Low)	55	33%	16%	51%	16%	66%	18%	20%	56%	24%
Gender Diversity (High)	56	45%	18%	37%	17%	42%	41%	17%	59%	24%

Panel B: Influence on Others' Estimates

	N	Small Firm Size			Average Manager Experience			Additional Human Capital Info.		
		Neg.	None	Pos.	Neg.	None	Pos.	Neg.	None	Pos.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All Respondents	449	42%	9%	49%	18%	49%	33%			
Control Group	45	42%	5%	53%	18%	44%	38%			
Employee Turnover (Low)	49	43%	8%	49%	23%	55%	22%	37%	30%	33%
Employee Turnover (High)	46	48%	6%	46%	15%	46%	39%	48%	9%	43%
Contract Workers (Low)	55	47%	11%	42%	16%	44%	40%	29%	27%	44%
Contract Workers (High)	49	35%	4%	61%	33%	43%	24%	35%	28%	37%
Employee Expend. (Low)	50	26%	12%	62%	16%	64%	20%	34%	38%	28%
Employee Expend. (High)	45	51%	11%	38%	18%	42%	40%	58%	11%	31%
Female Represent. (Low)	55	38%	9%	53%	16%	58%	26%	35%	36%	29%
Female Represent. (High)	55	49%	11%	40%	11%	43%	46%	13%	52%	35%

Notes. This table presents aggregate responses to the first question after the three CAPM-based questions. For this question, participants indicated how influential each piece of firm-specific information was in their personal assessments of ABC's required return on equity. Responses to this question are reported in Panel A. We also asked participants how influential they felt each piece of firm-specific information was in *other participants'* estimations of ABC's required return on equity. These responses are reported in Panel B. Participants answered these questions using a five-point Likert scale, with responses ranging from "Large Negative Influence" to "Large Positive Influence." We group responses of "Large Negative Influence" and "Small Negative Influence" together into the "Negative" ("Neg.") category, and we do the same for the positive influence responses.

Table 8
Preferred Location of Disclosure

	N	Financial State.	Footnotes to F.S.	MD&A Disclosure	ESG Report	Other Location	Should Not Be Disclosed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Employee Turnover	433	8%	31%	41%	14%	3%	3%
Contract Workers	432	5%	34%	33%	14%	7 %	7%
Employee Expend.	431	60%	27%	9%	1%	1%	2%
Gender Diversity	432	3%	7%	13%	54%	3%	20%

Notes. This table reports investors’ responses to the question “Assume that a firm will disclose these metrics. Where should the firm disclose them?” For each metric, investors selected either (a) Financial Statements, (b) Footnote to the Financial Statements, (c) Management’s Discussion & Analysis, (d) ESG or Sustainability Report, (e) Other Location, or (f) This Should Not Be Disclosed. The table reports the proportion of participants who selected a particular location for each disclosure metric.

A Appendix Material and Tables

Table A.1
Free Response Categorizations

Panel A: Employee Turnover (N = 287)

Useful (N = 252)	
Themes	Importance for company performance; Cost implications; Team mood and stability
Typical Responses	<ul style="list-style-type: none"> • “Employee Loyalty is a highly important metric.” • “Important for satisfactory results/products is a team mood in the company expressed by low turnover.” • “Ability of the firm to retain talent and experienced personnel is important to long-term success of the business.”
Not Useful (N = 35)	
Themes	Lack of specificity; Context-dependent; Possible misinterpretation
Typical Responses	<ul style="list-style-type: none"> • “Higher or lower rate can be good or bad, without context, information is irrelevant.” • “It is questionable in my mind whether this disclosure would be meaningful without knowing where the turnover is occurring (e.g., blue collar vs. white collar).”

Panel B: Contract Workers (N = 222)

Useful (N = 149)	
Themes	Flexibility; Industry-specific relevance; Impact on strategy
Typical Responses	<ul style="list-style-type: none"> • “More temporary workers offer the company more flexibility to adjust its human capital.” • “Higher % of temp workers is inversely correlated to growth and profitability due to effects on strategy execution and key insider knowledge.” • “Provides insight into the stability and sustainability of the workforce.”
Not Useful (N = 73)	
Themes	Short-term focused; Skill level dependency; Industry specific
Typical Responses	<ul style="list-style-type: none"> • “Depends on the level of skill required by the company. If no skills are required for particular jobs, this should not be important.” • “Temporary workers don’t impact long-term company performance.” • “The number of temporary workers does not provide insight into company stability.”

Notes. Panel A (Panel B) reports themes and examples of typical responses from the free-response entries related to the usefulness of employee turnover rate (contract worker use) metrics in making valuation decisions.

Table A.1
Free Response Categorizations (continued)

Panel C: Employee Expenditures (N = 222)

Useful (N = 191)	
Themes	Cost linkage; Performance understanding; Management insight
Typical Responses	<ul style="list-style-type: none"> • “Total employee expenses are directly linked to total costs, so it’s important to valuation.” • “Essential for analyzing the company’s financial health and operational efficiency.” • “Indicates how much the company invests in its workforce.”
Not Useful (N = 31)	
Themes	Manipulation concerns; Context dependency
Typical Responses	<ul style="list-style-type: none"> • “Can be manipulated.” • “It varies too much by industry and company size to be broadly useful.” • “Not relevant. It can be a company that is cost-focused, but it is not a problem if a company is very successful and can pay large bonuses.”

Panel D: Gender Diversity (N = 255)

Useful (N = 78)	
Themes	ESG impact; Company advantage; Industry relevance
Typical Responses	<ul style="list-style-type: none"> • “Not very essential, but may affect firm’s ESG image and the value to ESG investors.” • “This shows the firm’s advantage/disadvantage in terms of diversity. Benefiting from gender diversity is valuable. It also reflects the management’s respect to its employees and their sense of responsibility to the community.” • “A bit less important overall but must not fall below a certain threshold.”
Not Useful (N = 177)	
Themes	Tokenism risk; Merit-based judgement; Variable across industries
Typical Responses	<ul style="list-style-type: none"> • “All people should be judged on merit, regardless of sex.” • “Diversity of thought is the most important diversity. Gender doesn’t necessarily ensure that.” • “Emphasizing gender diversity might lead to tokenism rather than genuine inclusion.”

Notes. Panel C (Panel D) reports themes and examples of typical responses from the free-response entries related to the usefulness of employee expenditures (gender diversity) metrics in making valuation decisions.

Table A.2
Robustness of Treatment Effects of Employee Turnover Rate Disclosures

Panel A: Restrict Sample Based on Accuracy Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	45	14.62	1.69	14.60
Below Average Group	47	13.95*	1.66	13.70**
Above Average Group	45	15.30*	1.56	15.00**
Consensus Assessments				
Control Group	45	14.88	1.28	15.00
Below Average Group	46	13.79***	2.36***	14.00***
Above Average Group	44	14.77	2.51***	15.00
Panel B: Restrict Sample Based on Certainty Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	38	14.52	1.73	14.50
Below Average Group	46	13.76**	1.71	13.70**
Above Average Group	44	15.70**	2.26*	15.10***
Consensus Assessments				
Control Group	38	14.76	1.32	14.95
Below Average Group	45	14.12*	1.81*	14.00**
Above Average Group	43	15.08	3.08***	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average employee turnover rate treatment groups. Panel A restricts the sample to only include participants who were within ± 1 percentage point of the correct answer on the CAPM question. Panel B restricts the sample to only include participants who did *not* answer "Very Uncertain" when asked about their confidence in their responses to the CAPM, personal assessment, and consensus assessment questions. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table A.3
Robustness of Treatment Effects of Contract Worker Use Disclosures

Panel A: Restrict Sample Based on Accuracy Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	45	14.62	1.69	14.60
Below Average Group	54	14.08*	1.44	13.85**
Above Average Group	51	15.10	1.44	15.00*
Consensus Assessments				
Control Group	45	14.88	1.28	15.00
Below Average Group	52	14.45	1.65*	14.00**
Above Average Group	50	15.39*	1.48	15.00
Panel B: Restrict Sample Based on Certainty Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	38	14.52	1.73	14.50
Below Average Group	55	14.24	2.17	14.00
Above Average Group	50	14.87	2.00	15.00*
Consensus Assessments				
Control Group	38	14.76	1.32	14.95
Below Average Group	53	14.57	2.10***	14.00
Above Average Group	49	15.12	2.05***	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average contract worker use treatment groups. Panel A restricts the sample to only include participants who were within ± 1 percentage point of the correct answer on the CAPM question. Panel B restricts the sample to only include participants who did *not* answer "Very Uncertain" when asked about their confidence in their responses to the CAPM, personal assessment, and consensus assessment questions. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table A.4
Robustness of Treatment Effects of Employee Expenditures Disclosures

Panel A: Restrict Sample Based on Accuracy Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	45	14.62	1.69	14.60
Below Average Group	49	14.98	1.59	15.00
Above Average Group	42	14.49	2.72***	14.60
Consensus Assessments				
Control Group	45	14.88	1.28	15.00
Below Average Group	48	14.80	1.27	15.00
Above Average Group	42	14.84	1.33	15.00
Panel B: Restrict Sample Based on Certainty Level				
	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	38	14.52	1.73	14.50
Below Average Group	43	14.76	1.54	15.00
Above Average Group	40	14.75	2.85***	14.75
Consensus Assessments				
Control Group	38	14.76	1.32	14.95
Below Average Group	42	14.50	1.29	14.90
Above Average Group	40	14.93	1.44	15.00

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average employee expenditures treatment groups. Panel A restricts the sample to only include participants who were within ± 1 percentage point of the correct answer on the CAPM question. Panel B restricts the sample to only include participants who did *not* answer "Very Uncertain" when asked about their confidence in their responses to the CAPM, personal assessment, and consensus assessment questions. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table A.5
Robustness of Treatment Effects of Gender Diversity Disclosures

Panel A: Restrict Sample Based on Accuracy Level

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	45	14.62	1.69	14.60
Below Average Group	50	14.97	1.30*	15.00
Above Average Group	47	14.35	1.42	14.20
Consensus Assessments				
Control Group	45	14.88	1.28	15.00
Below Average Group	50	15.30	1.54	15.00
Above Average Group	48	14.38*	1.48	14.20**

Panel B: Restrict Sample Based on Certainty Level

	N	Mean (diff-mean)	Std. Dev. (sd-test)	Median (rank-sum)
	(1)	(2)	(3)	(4)
Personal Assessments				
Control Group	38	14.52	1.73	14.50
Below Average Group	49	14.54	2.34*	15.00
Above Average Group	47	14.08	1.72	14.00
Consensus Assessments				
Control Group	38	14.76	1.32	14.95
Below Average Group	49	15.15	2.68***	15.00*
Above Average Group	48	14.28	1.78*	14.20*

Notes. This table presents average, standard deviation, and median values of participants' personal and consensus assessments of the firm's required return on equity. We report separate values for participants in the control group and for participants in the below average and above average workplace gender diversity treatment groups. Panel A restricts the sample to only include participants who were within ± 1 percentage point of the correct answer on the CAPM question. Panel B restricts the sample to only include participants who did *not* answer "Very Uncertain" when asked about their confidence in their responses to the CAPM, personal assessment, and consensus assessment questions. Statistical significance, relative to the control group values, from difference-in-means tests in Column (2), equality of standard deviations tests in Column (3), and Wilcoxon rank-sum tests in Column (4) are denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

Table A.6
Robustness of Treatment Effects: Subsamples and Controls

	Full Sample	No CFOs	Full Sample		
	(1)	(2)	(3)	(4)	(5)
Employee Turnover (Low)	-0.696** (-2.036)	-0.789** (-2.082)	-0.732** (-2.090)	-0.702** (-1.976)	-0.708** (-1.990)
Employee Turnover (High)	1.032*** (2.603)	0.993** (2.343)	0.968** (2.446)	0.975** (2.431)	0.939** (2.355)
Contract Workers (Low)	-0.346 (-0.917)	-0.399 (-0.935)	-0.384 (-1.005)	-0.247 (-0.618)	-0.249 (-0.625)
Contract Workers (Low)	0.236 (0.648)	0.254 (0.630)	0.134 (0.363)	0.170 (0.456)	0.160 (0.431)
Employee Expend. (Low)	0.414 (1.218)	0.459 (1.266)	0.395 (1.149)	0.407 (1.123)	0.406 (1.133)
Employee Expend. (Low)	0.120 (0.254)	0.005 (0.010)	0.080 (0.168)	0.146 (0.312)	0.157 (0.335)
Gender Diversity (Low)	-0.030 (-0.077)	0.004 (0.011)	-0.083 (-0.212)	-0.069 (-0.172)	-0.089 (-0.217)
Gender Diversity (Low)	-0.666* (-1.868)	-0.704* (-1.810)	-0.702* (-1.935)	-0.606* (-1.651)	-0.624* (-1.677)
Age				-0.014 (-0.726)	-0.011 (-0.589)
Female				0.180 (0.592)	0.201 (0.656)
Tenure				-0.005 (-0.186)	-0.003 (-0.129)
Region FE			✓	✓	✓
Job Role FE					✓
Adj. R-Square	0.044	0.048	0.047	0.048	0.048
Observations	464	411	464	461	460

Notes. This table presents the results from robustness tests. The results in Column (1) replicate the average treatment effects for the personal assessments from Tables 3–6. In Column (2), we exclude CFOs. In Columns (3)–(5), we include all CFAs, and we control for the region in which the CFA works (the Americas, Europe, or Asia). In Columns (4)–(5), we control for the CFA’s age, gender, and tenure as a CFA charter holder. In Column (5), we control from the CFA’s job role (financial analysts, investment manager, or CFO). Statistical significance, relative to the control group, is denoted by ***, **, and * for 1%, 5%, and 10%, respectively.

B Documentation

Figure B.1: CFA Exam Preparation Documentation

REFRESHER READING

2023 CFA® PROGRAM • LEVEL 2

Equity Valuation

Private Company Valuation

by Raymond D. Rath, ASA, CEIV, CFA.

Raymond D. Rath, ASA, CEIV, CFA, is at Globalview Advisors LLC (USA).

LEARNING OUTCOMES

Mastery	The candidate should be able to:
<input type="checkbox"/>	compare public and private company valuation
<input type="checkbox"/>	describe uses of private business valuation and explain applications of greatest concern to financial analysts
<input type="checkbox"/>	explain cash flow estimation issues related to private companies and adjustments required to estimate normalized earnings
<input type="checkbox"/>	explain the income, market, and asset-based approaches to private company valuation and factors relevant to the selection of each approach
<input type="checkbox"/>	explain factors that require adjustment when estimating the discount rate for private companies
<input type="checkbox"/>	compare models used to estimate the required rate of return to private company equity (for example, the CAPM, the expanded CAPM, and the build-up approach)

Required Rate of Return: Models and Estimation Issues

A variety of factors make estimating a required rate of return for a private company challenging.

- *Application of size premiums.* In assessing private company valuations, size premiums are frequently used in developing equity return requirements by private company appraisers. This practice seems to be less prevalent in the valuation of public companies. Furthermore, size premium estimates based on public company data for the smallest market cap segments can capture premiums for financial and/or operating distress that may be irrelevant to the company being valued.
- *Use of the CAPM.* Some parties have questioned whether the CAPM is appropriate for developing discount rate estimates for small private company valuations. Small companies that have little prospect of going public or being acquired by a public company may be viewed as not comparable to the public companies for which market-data-based beta estimates are available.
- *Expanded CAPM.* The **expanded CAPM** is an adaptation of the CAPM that adds to the CAPM premiums for small size and company-specific risk (Pratt and Grabowski, 2014). Estimation of company-specific risk has been a very subjective element of the valuation process. Several valuation professionals have presented methodologies to develop quantitative estimates of company-specific risk. These tools are being vetted in the valuation community.

Figure B.2: CFA Exam Preparation Documentation

EXAMPLE 3

Developing a Discount Rate for a Private Company

Duvall and his advisers have decided to use an income approach to value Able Manufacturing.

Because of its years of operating successfully and its owner's conservative nature, Able operated with little debt. Smith explored various sources of debt financing to operate Able with a lower overall cost of capital. Analysis of public companies in Able's industry indicated several guideline public companies for possible use in estimating a discount rate for Able. Duvall and his advisers agreed on the following estimates:

- Risk-free rate: Estimated at 3.8%.
- Equity risk premium: The parties agreed that a 5% equity risk premium was appropriate.
- Beta: A beta of 1.1 was estimated based on publicly traded companies in the same industry.
- Small stock premium: The smaller size and less diversified operations suggest greater risk for Able relative to public companies. A small stock premium of 3% was included in the equity return calculation for these expected risks.
- Company-specific risk premium: Assessment of Able indicated that beyond Smith's key role at the company, no other unusual elements created additional risk. A 1% company-specific risk adjustment was included.

1. Calculate the required return on equity for Able using the CAPM.

Solution:

According to the CAPM, Required return on share i = Current expected risk-free return + β_i (Equity risk premium) = 3.8% + 1.1(5%) = 9.30%.

2. Calculate the required return on equity for Able using the expanded CAPM.

Solution:

The required rate of return is 13.3%, which is shown in the following tabular format.

Able Manufacturing, Inc. Expanded CAPM: Required Rate of Return on Equity	
Risk-free rate	3.8%
Plus: Equity risk premium adjusted for beta ^a	5.5
Plus: Small stock premium	3.0
Plus: Company-specific risk adjustment	1.0
Indicated required return on equity	13.3%

^a 1.1 beta × 5% equity risk premium = 5.5%.

Figure B.3: Survey Documentation: CAPM Question

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Based on the CAPM, what is ABC's required return on equity?
(Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30
% Required Return On Equity



Figure B.4: Survey Documentation: Personal Assessment Question

Valuation Question #2

This question uses the same valuation information that you saw about ABC Inc. in Valuation Question #1. Clicking the hyperlink below will repeat this information for your reference. You may click the hyperlink again to hide the information after opening it.

[ABC Inc. Valuation Information](#)

For Valuation Question #2, you will need to use your professional judgment to make an assessment of how risky ABC Inc. is based on the company-specific information provided. While there is no objectively correct answer to this question, you should still think through it carefully, as your answer to this question will influence your ability to answer Question #3 correctly and earn the full donation amount.

This question asks you to use the **Expanded CAPM**. The Expanded CAPM is an adaptation of the CAPM that takes the required return on equity and then makes adjustments based on the company's size and other company-specific information that is likely to influence the riskiness of the company's future cash flows.

Estimating company-specific risk is a subjective element of the valuation process, so there is no definitively correct answer to this question. As such, we are asking you to use any of the additional company-specific information provided above that you feel is value-relevant in making your estimate of ABC's required return on equity.

As a reminder, you answered % to Valuation Question #1 using the CAPM.

Based on the Expanded CAPM, what is a reasonable value for ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)



Figure B.5: Survey Documentation: Consensus Assessment Question

Valuation Question #3

You were told that your answer to Valuation Question #2 was important, as it would influence this question. When all respondents complete the survey, we will calculate the average estimate provided as an answer to Valuation Question #2. We call this average the "consensus estimate" of ABC's required return on equity.

On the next screen, you will be asked to predict what you think this "consensus estimate" will be. Your estimate will be correct if the value you predict is within +/- 1 percentage point of the "consensus estimate" and your response will enhance the additional donation to the CFA Institute Research Foundation.

Valuation Question #3

This question uses the same information that you saw about ABC Inc. in Valuation Questions #1 and #2. Clicking the hyperlink below will repeat this information for your reference. You may click the hyperlink again to hide the information after opening it.

[ABC Inc. Valuation Information](#)

Remember that the expanded CAPM is an adaptation of the CAPM that takes the required return on equity and then makes adjustments based on the company's size and other company-specific information that is likely to influence the riskiness of the company's future cash flows.

As a reminder, you answered % to Valuation Question #1 using the CAPM and 0% to Valuation Question #2 using the Expanded CAPM when making your own assessments.

Based on the Expanded CAPM and the answers you think other CFA members will give to Valuation Question #2, what do you think the "consensus estimate" of ABC's required return on equity will be? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)



Figure B.6. Full Survey Documentation

This survey is comprised of two parts.

Part One (Valuation Questions) of the survey seeks input on how corporate disclosures may impact your assessment of the risk adjusted rate of return using the Capital Asset Pricing Model ("CAPM") and requires the computation of estimates.

There are three questions (Valuation Questions #1 - #3) on this part of the survey.

Our research partners have kindly offered to donate up to \$5,000 to the CFA Institute Research Foundation to fund future research based on your participation.

- Part of this donation, \$2,500, is guaranteed.
- The other part of the donation will be based on whether you:
 - Complete the survey;
 - Your response to Valuation Question #1 is correct; and
 - Your response to Valuation Question #3 falls within the consensus estimate range established by all participants' responses.

The percentage of respondents who meet these three conditions will be multiplied by \$2,500 to determine the second part of the donation.

Part Two (Disclosure Questions) of the survey seeks your opinions on the importance and location of specific types of human capital disclosures you use or would like to use when making investment decisions.

By clicking next, you consent to be a part of this survey.

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30
% Required Return On Equity



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Valuation Question #2

This question uses the same valuation information that you saw about ABC Inc. in Valuation Question #1. Clicking the hyperlink below will repeat this information for your reference. You may click the hyperlink again to hide the information after opening it.

[ABC Inc. Valuation Information](#)

For Valuation Question #2, you will need to use your professional judgment to make an assessment of how risky ABC Inc. is based on the company-specific information provided. While there is no objectively correct answer to this question, you should still think through it carefully, as your answer to this question will influence your ability to answer Question #3 correctly and earn the full donation amount.

This question asks you to use the **Expanded CAPM**. The Expanded CAPM is an adaptation of the CAPM that takes the required return on equity and then makes adjustments based on the company's size and other company-specific information that is likely to influence the riskiness of the company's future cash flows.

Estimating company-specific risk is a subjective element of the valuation process, so there is no definitively correct answer to this question. As such, we are asking you to use any of the additional company-specific information provided above that you feel is value-relevant in making your estimate of ABC's required return on equity.

As a reminder, you answered 13.7% to Valuation Question #1 using the CAPM.

Based on the Expanded CAPM, what is a reasonable value for ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30
% Required Return On Equity

How certain are you that this required return on equity could guide an investment decision?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Valuation Question #3

You were told that your answer to Valuation Question #2 was important, as it would influence this question. When all respondents complete the survey, we will calculate the average estimate provided as an answer to Valuation Question #2. We call this average the "consensus estimate" of ABC's required return on equity.

On the next screen, you will be asked to predict what you think this "consensus estimate" will be. Your estimate will be correct if the value you predict is within ± 1 percentage point of the "consensus estimate" and your response will enhance the additional donation to the CFA Institute Research Foundation.

Next

Valuation Question #3

This question uses the same information that you saw about ABC Inc. in Valuation Questions #1 and #2. Clicking the hyperlink below will repeat this information for your reference. You may click the hyperlink again to hide the information after opening it.

[ABC Inc. Valuation Information](#)

Remember that the expanded CAPM is an adaptation of the CAPM that takes the required return on equity and then makes adjustments based on the company's size and other company-specific information that is likely to influence the riskiness of the company's future cash flows.

As a reminder, you answered 13.7% to Valuation Question #1 using the CAPM and 13.7% to Valuation Question #2 using the Expanded CAPM when making your own assessments.

Based on the Expanded CAPM and the answers you think other CFA members will give to Valuation Question #2, what do you think the "consensus estimate" of ABC's required return on equity will be? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)



How certain are you that this is the consensus estimate?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

When using the **Expanded CAPM** to determine ABC's required return on equity in your response to **Valuation Question #2**, how did each of the following pieces of information influence **your estimate** of ABC's required return on equity?

	Large Negative Influence < -1%	Small Negative Influence -1% to 0%	No Influence	Small Positive Influence 0% to +1%	Large Positive Influence > +1%
Below Average Company Size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry Average Managerial Experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When using the **Expanded CAPM** to determine ABC's required return on equity in your response to **Valuation Question #3**, how do you feel each of the following pieces of information influenced **others' estimates** of ABC's required return on equity?

	Large Negative Influence < -1%	Small Negative Influence -1% to 0%	No Influence	Small Positive Influence 0% to +1%	Large Positive Influence > +1%
Below Average Company Size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry Average Managerial Experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part Two: Disclosure Questions

Please complete the rest of the survey. Remember that the donation to the CFA Institute Research Foundation depends on you completing the survey!

Regulators are contemplating requiring firms to disclose additional information about their employees and how they are managed. Collectively, these are referred to as human capital disclosures.

There are a wide variety of possible human capital disclosures to consider - along with where these disclosures are best made. We would like your views on several high-level disclosures and then your overall perspectives on the current use and quality of human capital disclosures.

Perspectives on Several High-Level Disclosures

Please indicate if you agree or disagree as to whether the following disclosure metrics would **affect your investment decisions**:

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Firm's employee turnover	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's workforce gender diversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's proportion of temporary workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's total employee expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate if you agree or disagree as to whether the following disclosure metrics would **affect fundamental firm value**:

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Firm's employee turnover	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's workforce gender diversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's proportion of temporary workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm's total employee expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Assume that a firm will disclose these metrics. Where should the firm disclose them?

Firm's employee turnover	<input type="text"/>
Firm's workforce gender diversity	<input type="text"/>
Firm's proportion of temporary workers	<input type="text"/>
Firm's total employee expenses	<input type="text"/>

Please explain why each of the **aforementioned metrics** would or would not **affect your investment decisions and/or estimated fundamental firm value**.

Firm's employee turnover	<input type="text"/>
Firm's workforce gender diversity	<input type="text"/>
Firm's proportion of temporary workers	<input type="text"/>
Firm's total employee expenses	<input type="text"/>

Next

Overarching Perspectives on Current Use & Quality of Human Capital Disclosures:

Please indicate if you agree or disagree with the following overarching statements.

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I seek out human capital disclosures to inform my investment decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use human capital disclosures to inform my investment decisions because they are relevant to financial value .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use human capital disclosures to inform my investment decisions because they are relevant to non-financial value considerations .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most firms I evaluate disclose sufficient human capital information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that current human capital reporting standards require all necessary information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human capital reporting standards should include general principles that can be tailored by firm or industry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human capital reporting standards should include prescriptive, universal metrics that are quantitative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compensation expense disclosures need to be reported quarterly while other human capital information only needs to be reported annually unless there are significant changes during interim periods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

How often do you use firm-specific Environmental, Social, and Governance or sustainability information when making investment decisions?

Never	Very Rarely	Sometimes	Very Often	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you describe yourself as **fiscally** liberal or **fiscally** conservative?

Extremely Fiscally Liberal	Fiscally Liberal	Neither Fiscally Liberal nor Fiscally Conservative	Fiscally Conservative	Extremely Fiscally Conservative
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you describe yourself as **socially** liberal or **socially** conservative?

Extremely Socially Liberal	Socially Liberal	Neither Socially Liberal nor Socially Conservative	Socially Conservative	Extremely Socially Conservative
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Thank you for completing this survey!

If you would like to continue providing your opinion about additional human capital metrics, you can click the link below.

[Additional Link](#)

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Employee Turnover: ABC has had substantially more employee turnover than its industry peers over the last five years (ABC turns over about 23.8% of their workforce each year, whereas industry peers turn over about 18.0% of their workforce).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Employee Turnover: ABC has had substantially less employee turnover than its industry peers over the last five years (ABC turns over about 12.2% of their workforce each year, whereas industry peers turn over about 18.0% of their workforce).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30

How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC Inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Temporary Workers: ABC has had substantially higher proportions of temporary workers in its workforce than its industry peers over the last five years (temporary workers constitute about 9.1% of ABC's workforce each year, whereas temporary workers constitute about 6.9% of industry peers' workforces).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30

% Required Return On Equity

How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Temporary Workers: ABC has had substantially lower proportions of temporary workers in its workforce than its industry peers over the last five years (temporary workers constitute about 4.7% of ABC's workforce each year, whereas temporary workers constitute about 6.9% of industry peers' workforces).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Total Employee Expense: ABC has had substantially higher employee compensation than its industry peers over the last five years (ABC has a total employee expense of about \$990,000,000 each year, whereas industry peers' had total employee expense of about \$750,000,000).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30 % Required Return On Equity



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Total Employee Expense: ABC has had substantially lower employee compensation than its industry peers over the last five years (ABC has a total employee expense of about \$510,000,000 each year, whereas industry peers' had total employee expense of about \$750,000,000).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30 % Required Return On Equity



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Gender Diversity: ABC has had substantially more gender diversity than its industry peers over the last five years (women constitute about 66.0% of ABC's workforce each year, whereas women constitute about 50.0% of industry peers' workforces).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Part One: Valuation Questions

Valuation Question #1

In order to earn the extra donation for the CFA Institute Research Foundation, you need to get the correct answer to this question! This question is similar to one you would see on the CFA exam, and it will ask you to use the CAPM.

Remember, the CAPM states that a firm's Required Return on Equity = Risk Free Rate + (Beta x Equity Risk Premium).

Background Information:

The executive team at ABC inc. has hired external analysts to conduct a valuation of ABC. The analysts have decided to use an income approach to value ABC. An assessment of comparable companies in ABC's industry led the analysts to agree on the following estimates to be used in computing ABC's required return on equity:

CAPM inputs:

Risk Free Rate: Estimated at 3.8%, based on current treasury bill rates.

Equity Risk Premium: Estimated at 9%, based on expected market index returns.

Beta: Estimated at 1.1, based on comparable companies in the same industry.

Additional company-specific information:

Size: ABC is smaller than many of the comparable companies in its industry. ABC's market capitalization is 25% less than that of its industry peers, and it employs 38,000 people.

Management: ABC has a highly experienced executive team. Despite being smaller than its industry peers, ABC's executive team has accumulated industry experience that is similar to that of the other executives in its industry.

Gender Diversity: ABC has had substantially less gender diversity than its industry peers over the last five years (women constitute about 34.0% of ABC's workforce each year, whereas women constitute about 50.0% of industry peers' workforces).

Based on the CAPM, what is ABC's required return on equity? (Please enter your answer as a %, e.g., enter "1.5" for 1.5%)

0 3 6 9 12 15 18 21 24 27 30



How certain are you that this is the correct answer?

Very Uncertain	Uncertain	Neither Uncertain nor Certain	Certain	Very Certain
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next