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The Dark Side of Industry Tournament Incentives

Finance Working Paper N° 684/2020
Revised March 2023

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This paper can be downloaded without charge from:
https://doi.org/10.67929/ecgi-fin-684-2020

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ECGI Working Paper Series in Finance

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We thank Nerissa Brown, David Cicero, Clifton Green, Jim Irving, Michael Jung, Brandon Lockhart, Paul Ma, Tao Ma, Mo Shen, Cong Wang, Xiangang Xin, Min Zhu, and seminar participants at the FEA conference, China International Conference in Finance, Southern Finance Association meetings, Australian National University, Chinese University of Hong Kong, City University of Hong Kong, Clemson University, and University of International Business and Economics for valuable comments and suggestions. We gratefully acknowledge financial support from the Research Grants Council of the HKSAR Government (CityU 21500214) and the City University of Hong Kong.

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Abstract

We find that firms whose CEOs face stronger industry tournament incentives, measured by their pay gap relative to the highest industry CEO pay, engage in more earnings manipulations. The evidence is concentrated in cases where CEOs face fewer mobility restrictions, are more likely to participate in the tournament, and are less aligned with shareholder interests. CEOs with stronger industry tournament incentives also disclose positive (negative) news more (less) frequently. Our findings highlight a form of perverse incentives created by industry tournaments and imply that one firm's executive compensation policy can generate negative externality for other firms' disclosure practice.

Keywords: Industry tournament incentives; managerial labor market; benchmark beating; earnings management; selective news release

JEL Classifications: G30, G32, G34

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First draft: February 3, 2014
This draft: October 26, 2022

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1. Introduction

The relation between a firm's own executive compensation scheme and financial disclosure practice has been the subject of a long line of investigation. However, firms do not exist in a vacuum, and their major policies are likely to influence and be influenced by other firms (see, e.g., Leary and Roberts (2014)). Yet, to what extent a firm's disclosure policy is affected by *other* firms' executive compensation remains unexplored. This is surprising because the pay practices of industry peers represent a powerful indicator of top executives' potential reward from upward mobility in the managerial labor market. Survey evidence from Graham, Harvey, and Rajgopal (2005) suggests that top executives consider labor market opportunities a more important factor than their current compensation in making financial disclosure choices.

Our paper aims to fill this void. We measure a CEO's potential reward from upward mobility in the managerial labor market by the gap between her compensation and the maximal compensation received by her industry peers. The intuition behind this measure is that to the extent that each cluster of similar industry firms can be considered a tournament for CEOs competing for higher-level positions and that the highest CEO compensation among these firms is the prize for winning the tournament, this pay gap measure captures a CEO's potential gains from winning the tournament. Coles, Li, and Wang (2018) define the pay gap measure as industry tournament incentives.[1] It is important to recognize that the industry tournament incentives for a firm's CEO are partly determined by the level of CEO compensation at other firm(s), over which the focal firm has little control. Our study focuses on this externality and its implication for corporate financial disclosure. Specifically, we investigate whether CEO industry tournament incentives influence firms' choices in their disclosure of financial information to the capital market. If so, a closely related question is whether these choices subsequently affect CEOs' labor market outcomes, including compensation and mobility.

[1] The effects of tournament incentives have been the subject of prior investigations in the mutual fund industry (Brown, Harlow, and Starks (1996)) and in the sports setting, such as the Professional Golfers Association (PGA) tour (Ehrenberg and Bognanno (1990)).

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To answer the first question, we evaluate a range of observable outcomes of a firm's financial disclosure decisions: meeting or narrowly beating consensus earnings forecasts, earnings management, and financial misrepresentation. As we elaborate below, while industry tournament incentives clearly have the potential to influence CEOs' choice in corporate financial disclosure, their actual impact can be difficult to predict ex ante.

On the one hand, we posit that CEOs with stronger industry tournament incentives are more likely to make strategic choices in corporate financial disclosure to improve their reputation and career prospects in the managerial labor market. The survey evidence in Graham, Harvey, and Rajgopal (2005) suggests that meeting or exceeding the earnings benchmark is a very important consideration in managers' financial disclosure decisions. Managers believe that hitting earnings benchmarks on a consistent basis can establish credibility in the financial market, help maintain or increase their firm's stock price, and enhance their reputation in the managerial labor market and their likelihood of moving up to larger, more prestigious companies. Even in the absence of an actual move, a higher reputation will increase a CEO's outside opportunities, which may prompt the firm's board to either match any outside offers received by the CEO or significantly increase the CEO's compensation to preempt any overtures from firms looking for a CEO. To consistently exceed the earnings benchmark, CEOs can try to generate superior firm performance by exerting more effort or taking more risk (Coles, Li, and Wang (2018)). Alternatively, they can engage in accounting maneuvers to accomplish that objective. To distinguish between these two possibilities, we focus on a firm's probability of *meeting or narrowly beating* consensus analyst forecasts by one cent or less. Prior research, e.g., Cheng and Warfield (2005), has used this metric to proxy for firms' earnings manipulation. While the more benign effort-exertion or risk-taking argument may predict a higher likelihood of exceeding the earnings benchmark for firms with CEOs facing stronger industry tournament incentives, there is no reason to expect them to either just meet or narrowly beat the benchmark by only a small margin.

One often used strategy to meet or narrowly beat the earnings benchmark is earnings management through discretionary accruals (Cheng and Warfield (2005)). Therefore, we expect CEOs with stronger

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industry tournament incentives to be more aggressive in the use of discretionary accruals. While most of such accounting maneuvers are likely within the confines of the Generally Accepted Accounting Principles (GAAP), some of the most egregious ones may violate GAAP and result in financial misrepresentation.

On the other hand, it is important to recognize that there are constraints to the extent and scope of earnings manipulation engaged by CEOs with strong industry tournament incentives. For example, Hazarika, Karpoff, and Nahata (2012) find that firms' earnings management increases the probability and speed of forced CEO turnovers. In addition, overly aggressive earnings management and fraudulent financial disclosure that violate GAAP can trigger earnings restatements, shareholder lawsuits, and legal and regulatory sanctions by the Securities and Exchange Commission (SEC) and the Department of Justice (DOJ). These adverse consequences, if materialized, can inflict significant damage on the reputation of top executives at the culprit firms (Desai, Hogan, and Wilkins (2006) and Karpoff, Lee, and Martin (2008)), so much so that CEOs presiding over these firms could be eliminated from the industry tournament in which they vie for higher-pay positions.[2] These factors can have countervailing effects on the influence of industry tournament incentives. Therefore, it is ultimately an empirical question if and to what extent CEOs with strong industry tournament incentives engage in aggressive earnings manipulation.

We investigate this question in a large sample of firm-year observations from 1993 to 2017. As our primary identification strategy, we estimate Generalized Method of Moments (GMM) regressions with instrumental variables (IV) whenever applicable. In addition, we control for CEO-firm *pair* fixed effects to ensure that our results are driven neither by latent variables related to certain CEO and firm characteristics, such as managerial ability, ethnic or educational background, and experience, nor by the endogenous matching between CEOs and firms. We find that firms run by CEOs with stronger industry tournament incentives engage in more earnings manipulation, as measured by a higher propensity to meet or *narrowly* beat consensus earnings forecasts, larger abnormal accruals, and a higher probability of committing

[2] It is worth noting that the unconditional probability of forced CEO turnovers is only about 3% in each firm year (see, e.g., Jenter and Kanaan, 2015) and that a majority of accounting frauds go undetected. Dyck, Morse, and Zingales (2021) estimate an upper bound probability of fraud detection of 1/3.

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financial fraud and restating earnings. Crucially, we do not find that higher CEO industry tournament incentives are significantly related to a firm's likelihood of beating the earnings benchmark by more than one cent. This suggests that our result on firms' tendency to meet or narrowly beat earnings benchmarks is not the artifact of any positive relation between CEO industry tournament incentive and firm performance.

To further bolster our confidence in a causal interpretation of our evidence, we explore plausibly exogenous variations in the power of industry tournament incentives. Specifically, we partitioning our sample based on whether firms are headquartered in states that recognize the Inevitable Disclosure Doctrine (IDD). Klasa, Ortiz-Molina, Serfling, and Srinivasan (2018) find that executives at firms located in IDD states experience reduced mobility to rival firms. This implies that IDD can reduce the potency of industry tournament incentives by restricting CEOs' participation in the tournament. Therefore, if our earlier results are indeed driven by industry tournament incentives, we would expect the results to be stronger in non-IDD states. This is precisely what we find; the significantly positive relations between CEO industry tournament incentives and earnings manipulation measures are concentrated in firms located non-IDD states.

We also uncover several other interesting cross-sectional variations in the relation between CEO industry tournament incentives and firms' financial reporting choices. First, we find that our results are more pronounced when *ex ante* a firm's CEO is more likely to participate or advance in the industry tournament, e.g., when the CEO is not close to retirement age, and when the firm's industry is more homogeneous or has witnessed more external but intra-industry CEO hires. Second, we find that our results are primarily concentrated in firms subject to more severe agency problems. In particular, CEOs are more likely to distort corporate financial disclosure in response to industry tournament incentives when they are subject to less corporate governance pressure and when their incentives are less aligned with those of shareholders.

We further broaden the scope of our investigation to include firms' general information disclosure policy. We relate CEO industry tournament incentives to firms' inclination to release positive and negative news. Conditional on firm operating performance and stock returns, we find that firms with stronger CEO industry tournament incentives tend to disclose more positive news and less negative news. This evidence

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echoes our results from firms' financial reporting decisions and suggests that CEOs with greater industry tournament incentives are more likely to distort their firms' disclosure policy and information environment to enhance their reputation and career outcomes in the managerial labor market.

In our final set of analyses, we address our second research question by relating CEOs' benchmark-beating tendency to their future compensation and mobility in the managerial labor market. We find that a greater frequency of meeting or narrowly beating analyst forecasts leads to higher CEO compensation and more mobility in the labor market. This evidence is consistent with the view expressed by top executives in the survey of Graham, Harvey, and Rajgopal (2005) that consistently hitting earnings benchmarks can burnish their reputation and increase their reward from the managerial labor market. These findings also provide a justification for CEOs responding to industry tournament incentives by distorting their firms' financial reporting.

Our study makes two main contributions. First, we add to the managerial labor market literature by providing the first evidence of the perverse incentives created by industry tournaments. Beginning with the pioneering work of Fama (1980) and Holmstrom (1982, 1999), researchers have shown that managerial labor market incentives can have important implications for the resolution of agency problems, the design of optimal incentive contracts, and various corporate policies and decisions.[3] A recent stream of research led by Coles, Li, and Wang (2018) documents that industry tournament incentives have beneficial effects in terms of inducing more managerial effort and risk taking, which lead to more innovation, more efficient use of corporate cash holdings, and higher firm performance and valuation (Huang, Jain, and Kini (2019), Tu and Zhao (2021), and Kong, Lonare, and Nart (2022)). We differ from these studies by showing that industry tournaments create incentives for CEOs to distort their firms' financial and general information disclosures and to obfuscate the firms' true performance. Therefore, our findings complement prior research

[3] For theoretical treatments, see, e.g., Narayanan (1985a, b), Holmstrom and Ricart I Costa (1986), Stein (1989), Boot (1992), Gibbons and Murphy (1992), Hirshleifer and Thakor (1992), Bebchuk and Stole (1993), and Prendergast and Stole (1996), Song and Thakor (2006). For empirical evidence, see, e.g., Gibbons and Murphy (1992) and Brickley, Linck, and Coles (1999). In addition, Chevalier and Ellison (1999), Graham (1999), Hong, Kubik, and Solomon (2000), and Harford, Jiang, Wang, and Xie (2019) examine the effect of career concern motives in non-corporate settings (specifically, for mutual fund managers and sell-side equity analysts).

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by offering alternative perspectives on industry tournaments and portraying a more complete picture of the managerial incentive effects they create.

Second, we add to the corporate financial disclosure literature by establishing industry tournament incentives as an important determinant of firms' financial disclosure choices. For robust inference, we apply rigorous econometric treatment to correct for the endogeneity bias inherent in the measures of industry tournament incentives.[4] We also exploit plausibly exogenous variations in the strength of such incentives. We report consistent evidence across a wide range of corporate financial reporting and disclosure decisions, including benchmark beating, earnings management through accounting accruals and real activities, the probability and occurrence of financial misreporting, and selective news releases.

Our paper is related to studies examining the effect of managerial equity incentives on firms' financial disclosure choices (see, e.g., Cheng and Warfield (2005), Bergstresser and Philippon (2006), Burns and Kedia (2006), Erickson, Hanlon, and Maydew (2006), Efendi, Srivastava, and Swanson (2007), Armstrong, Jagolinzer, and Larcker (2010), and Armstrong, Larcker, Ormazabal, and Taylor (2013)). However, we differ from this body of research in an important way. That is, the labor market incentives faced by a firm's CEO are partially determined by external forces over which the firm has no direct control, i.e., the highest CEO pay at industry peer firms. Therefore, our findings suggest that a firm's executive compensation policy can generate externalities for other firms' financial disclosure decisions. This compounds the challenges that shareholders and boards face in trying to curb managers' incentive to distort firm financial information for personal gains.[5]

2. Data and variables

2.1. Sample construction

[4] Please see footnote 10 on page 13 for more detailed discussions.

[5] Boards may try to take into account the external labor market incentives in designing executive compensation. However, even if boards are equipped with all requisite information, such as current CEO pay at rival firms, it would still be a quite difficult and delicate balancing act to offset the negative incentives of industry tournaments while preserving the positive incentives.

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The data used in this study come from multiple sources. Our sample construction starts with the ExecuComp database, which provides information on executive compensation for S&P 1500 companies from 1992 onward. We keep all firm-year observations (excluding financial and utility firms) during the period of 1992 to 2016 that have an identifiable CEO.[6] We use the CEO compensation data in year *t* to construct the industry tournament incentive measures and use these measures to explain firms' financial disclosure decisions in year *t*+1. We obtain firm financial characteristics from COMPUSTAT, stock prices and returns from CRSP, analyst earnings forecasts from I/B/E/S, earnings restatements from the Audit Analytics (AA) database and the U.S. General Accounting Office (GAO) reports, news releases from Capital IQ, and other CEO characteristics from ExecuComp.

2.2. CEO industry tournament incentive measures

We first obtain information on CEO total compensation (*TDC1*) from ExecuComp, defined as the sum of base salary, bonus, value of restricted stock grants, the Black-Scholes value of option grants, and other long-term incentive plans. Following Coles, Li, and Wang (2018), we use the Fama-French 30-industry (FF-30) classification to define the industry in which CEOs compete, and construct two measures of CEO industry tournament incentives.[7]

The first measure (*Indgap1)* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry. We use the second-highest rather than the highest CEO pay to mitigate the influence of extreme compensation resulting from unusual corporate events, but our results are robust to using the highest CEO pay. The second measure incorporates the fact that firms often select industry peers of similar size as members of performance or compensation benchmark groups. Accordingly, in each year, we partition firms into two subgroups based on whether their annual net sales are above or below the industry median, and define *Indgap2* as the pay gap between a firm's CEO and the second-highest

[6] We also follow Bhojraj et al. (2009) and remove any penny stocks from our analysis.
[7] Our results are robust to defining industries based on 2-digit SIC codes, the FF-17 classification, or the FF-48 classification.

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paid CEO in the firm's industry-size subgroup. For both measures, CEOs are presumed to face stronger industry tournament incentives when the pay gap is wider.

2.3. Financial reporting choices

The dependent variables of our analyses cover a range of observable outcomes of a firm's choices in disclosing financial information to the capital markets, including meeting or narrowly beating earnings benchmarks, earnings management, and financial misreporting.

To measure firms' earnings-benchmark beating behavior, we obtain analyst quarterly earnings forecasts from I/B/E/S for firms with at least three analysts.[8] We define the consensus forecast as the average of individual analysts' forecasts issued over the 30 days prior to the quarterly earnings announcement. We identify all firm quarters in which a firm meets or narrowly beats the consensus earnings forecast by one cent or less.

We also construct a proxy for accrual-based earnings management. Specifically, for each year-industry cohort, we estimate the performance-augmented discretionary accruals model proposed by Kothari, Leone, and Wasley (2005). To mitigate the impact of outliers, we winsorize the top and bottom 1% of all regressors in each estimation. The proxy for accrual-based earnings management, *abnormal accruals*, is estimated as the residual from the cross-sectional regressions. Positive (negative) abnormal accruals indicate income-increasing (decreasing) earnings management.

Earnings management can also be done through real operating activities. We develop proxies for real earnings management following Roychowdhury (2006). The abnormal levels of cash flow from operations, discretionary expenses and production costs for each firm-year are computed as the difference between the actual and normal levels predicted by Roychowdhury's regression models. At a given level of sales, abnormally low cash flow from operations and discretionary expenses and unusually high production costs are indicative of income-increasing real earnings management.

[8] Our results are robust to using annual earnings data.

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We create the earning restatement sample based on the U.S. General Accounting Office (GAO) reports and the Audit Analytics (AA) database. The GAO reports include 2,705 earnings restatements announced between January 1, 1997 and June 30, 2006. The AA database contains restatements and non-reliance filings made by all SEC registrants.[9] Its coverage formally begins in 2000, with some limited data prior to 2000. To maximize the overlap with the ExecuComp database, we merge the GAO and AA samples to include all restatements announced after January 1, 1997. For the GAO sample, we follow Hennes, Leone, and Miller (2008) and define a restatement as an accounting irregularity if it satisfies at least one of the three criteria: (i) variants of the words "irregularity" or "fraud" were explicitly used in restatement announcements or relevant filings in the four years around the restatement; (ii) the misstatements came under SEC or DOJ investigations; and (iii) independent investigations were launched by boards of directors of restatement firms. Similarly, for the AA sample, we classify a restatement as an accounting irregularity if it is related to fraud ("res_fraud") or involves an SEC investigation ("res_SEC_invest").

One caveat of the earnings restatement sample is that it only includes instances of detected financial misreporting. To mitigate this issue, we follow Dechow, Ge, Larson, and Sloan (2011) and construct a measure (F-score) to capture a firm's ex-ante probability of committing material financial misrepresentation.

2.4. Descriptive statistics

Due to data availability reasons, the samples used in our analyses differ across the range of financial disclosure variables discussed in the previous section. For expositional convenience, we use the quarterly earnings forecast beating sample to produce summary statistics for our variables. This sample is based on 22,216 firm-year observations associated with 2,358 unique firms and 4,510 unique CEOs. Detailed variable definitions are in the Appendix. All continuous variables are winsorized at their 1st and 99th percentiles to reduce the influence of outliers, and all dollar values are adjusted to the 2016 level. Panel A

[9] AA extracts its data primarily from SEC Form 8-K or required amended periodic reports (Forms 10-K/A, 10-Q/A, 10KSB/A, 20-F/A, and 40-F/A). It analyzes all 8-K and 8-K/A filings that contain "Item 4.02 - Non-Reliance on Previously Issued Financial Statements or a Related Audit Report or Completed Interim Review" (an item required by the SEC since August 2004).

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of Table 1 reports summary statistics for compensation-related variables and main CEO characteristics. The median (mean) CEO total pay is about $3.1 million ($4.8 million). The median values of our industry tournament incentive measures, *Indgap1* and *Indgap2*, are $14.4 million and $7.1 million, respectively. We also follow Kale, Reis, and Venkateswaran (2009) and Kini and Williams (2012) to estimate the within-firm tournament incentives, calculated as the difference between the CEO's total pay and the median total pay of vice presidents (VP). The median (mean) within-firm pay gap (*Firm gap*) for our sample is $1.9 million ($3.2 million), similar to those reported in earlier studies. The median CEO in our sample is 56 years old and has been in her position for 6 years. Panels B and C of Table 1 present the descriptive statistics for key industry and firm characteristics that we will discuss later. In Panel D, we report summary statistics for our main disclosure variables.

3. Industry tournament incentives and corporate financial reporting decisions

We first examine how CEO industry tournament incentives affect a firm's various financial reporting decisions. One empirical challenge that we need to overcome in our analysis is that the industry tournament incentives measures are at least partly endogenously determined because one of the components in their constructs is the CEO compensation at the focal firm. Since a firm's CEO compensation policy is driven by many CEO, firm, and industry characteristics, which themselves may be related to the firm's financial disclosure policy, any regression analysis that does not account for this endogeneity is likely to produce biased coefficient estimates. To address the endogeneity issue, we control for CEO-firm *pair* fixed effects throughout our analyses to ensure that our results are not driven by any time-invariant CEO or firm characteristics nor by the endogenous matching between CEOs and firms. In addition, we estimate all regressions using the Generalized Method of Moments with Instrumental Variables (GMM-IV). In our setting, the GMM-IV approach first estimates regressions of the industry tournament incentive measures using instrumental variables and then estimates regressions of financial reporting decisions using the predicted values of the industry tournament incentive measures.

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3.1. Instruments for industry tournament incentive measures

For the GMM-IV regressions, we follow Coles, Li, and Wang (2018) to construct two instrumental variables for the industry tournament incentive measures. The first instrument, *Geo CEO mean*, is defined as the average total pay received by CEOs of firms headquartered within a 250-kilometer radius of the focal firm, and it captures the idea that a firm's CEO compensation policy is affected by the compensation received by CEOs of geographically proximate firms (Bouwman, 2011). To ensure that the average CEO pay at geographically proximate firms is not reflecting any underlying industry characteristics, firms in the same FF-30 industry as the firm of interest are excluded from the average compensation calculation. We expect this instrument to be positively related to the firm's CEO compensation and thus negatively related to the industry pay gap measures. Our second instrument, *Ind CEO comp*, is defined as the total compensation received by all CEOs in an industry, and it measures the industry's aggregate ability to pay the best managerial talent. The greater the industry's ability to pay top managerial talent, the higher the compensation received by the industry's top-paid CEO, and the larger the pay gap faced by other CEOs in the industry.

Table 2 presents the results on the determinants of the industry pay gap. The dependent variable is the natural logarithm of our industry tournament incentive measure, *indgap1* in column (1) and *indgap2* in column (2). In both regressions, we include our two instruments, various CEO, firm, and industry characteristics, and year and CEO-firm fixed effects. We find that our IVs individually satisfy the validity requirement in that they are both significantly related to the industry tournament incentive measures. More specifically, in both regressions, the coefficients on the industry total compensation (*Ind CEO comp*) are positive and significant, and the coefficients on the average pay of geographically proximate CEOs (*Geo CEO mean*) are significantly negative. The estimated coefficients on other controls variables are similar to those reported by Coles, Li, and Wang (2018).

3.2. Industry tournament incentives and marginal benchmark beating

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In this section, we investigate whether firms whose CEOs face stronger industry tournament incentives display a greater propensity to meet or narrowly beat consensus analyst forecasts. Toward that end, we merge the sample of firms from ExecuComp with the quarterly earnings forecast data from I/B/E/S, and obtain a sample of 81,947 firm-quarter observations with all necessary variables for our analysis.

Table 3 presents the second-stage results from the GMM-IV regressions of a firm's probability of meeting or narrowly beating the consensus analyst forecast of quarterly earnings. The dependent variable is a binary variable equal to one if a firm meets or narrowly beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. The key explanatory variable is the predicted *indgap1* in column (1) or the predicted *indgap2* in column (2), both obtained from the first-stage regressions using *Geo CEO mean* and *Ind CEO comp* as instruments. The samples are slightly different between the two columns due to some missing observations for *indgap2*. We control for a variety of CEO and firm characteristics previously shown to affect the likelihood of beating analyst earnings forecasts. More specifically, we include CEO delta and vega, CEO age and tenure, within-firm pay gap, firm size, growth opportunities (as proxied by the market-to-book ratio), leverage, profitability, stock return, sales growth, sales growth volatility, cash flow volatility, firm age, and the number of CEOs within the same industry. All of these variables are measured at the previous fiscal year end. In addition, we add several analyst forecast attributes, including the number of analysts, average analyst forecasting horizon, and analyst forecast dispersion. We further include year-quarter and CEO-firm pair fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm clustering.

We find a significantly higher likelihood of meeting or narrowly beating analyst forecasts by firms whose CEOs face stronger industry tournament incentives, as evidenced by the significantly positive coefficients on both industry tournament incentive measures (columns (1) and (2)). In terms of the economic significance of our results, all else being equal, a one-standard-deviation increase in *ln(Indgap1)* increases the probability of marginally beating consensus analyst forecasts by 1.7 percentage points. This is a sizable effect given that the unconditional probability of meeting or marginally beating the earnings benchmark is about 13.2% in our sample. These results are consistent with the hypothesis that CEOs driven

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by stronger industry tournament incentives are more likely to engage in earnings manipulation to enhance their reputation in the managerial labor market. Bolstering our confidence in the GMM-IV estimates, the first-stage *F*-statistics reject the null of weak instruments, and the Hansen *J*-test suggests that the instruments satisfy the exclusion restriction. In addition, the Hausman exogeneity test supports the use of GMM-IV estimation over the OLS estimation.[10]

To further validate our interpretation of the above results, we estimate GMM-IV regressions of a firm's probability of beating the consensus analyst forecast by *more than* one cent. Again, the key explanatory variables are the two industry tournament incentive measures. Table IA.1 in the internet appendix presents excerpts of the estimation results. We find that neither industry tournament incentive measure has a significant coefficient, indicating that CEOs with stronger tournament incentives are not more likely to exceed the earnings benchmark by more than one cent. These findings provide additional support that the marginal benchmark beating results presented earlier are driven by earnings manipulation rather than the more benign effort exertion or risk taking by CEOs with stronger tournament incentives. In the next section, we further corroborate the marginal benchmark beating behavior by analyzing firms' earnings management activities.

One issue about the industry tournament incentives measures is that they may be partially driven by differences in pay structure between firms. That is, a CEO may receive higher total pay because of higher risk in her compensation package. Therefore, the difference in pay level does not necessarily reflect the reward that a CEO can receive from upward mobility in her industry. To address this issue, we measure the riskiness of a CEO's pay package by the percentage of equity-based pay in the total compensation. We control for the compensation risk difference between the CEO of the focal firm and the second-highest-

[10] One possible reason why the OLS estimates are unreliable is the attenuation bias introduced by potential reverse causality. That is, CEOs who meet or narrowly beat earnings benchmark receive higher compensation, which shrinks their pay gap from their highest paid industry peers. This can create a negative correlation between the independent variable, industry tournament incentives, and the error term, which can bias OLS estimates toward zero. Consistent with the presence of attenuation bias and similar to Coles et al. (2018), we find that the coefficient estimates on our industry tournament incentive measures are insignificant in OLS regressions (untabulated).

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paid CEO in the same industry in our regressions. Our results continue to hold (see Table IA.2 in the internet appendix).

Another potential concern with our investigation is to what extent industry tournament incentives simply capture local tournament incentives (Ma, Pan, and Stubben (2020)) given the tendency of some industries to cluster geographically (e.g., Ellison and Glaeser (1997)). To address this concern, we construct two measures of local tournament incentives, which are defined as the gap between the focal firm's CEO pay and the second highest CEO pay among firms located within a 60 (or 100) miles radius of the focal firm. We re-run the GMM-IV estimation of the marginal benchmark beating regressions while controlling for local tournament incentives. Because not all firms in our original sample have local peers covered by the ExecuComp database, including the new control reduces the sample size for different analyses by 13-18% (100-miles radius) or 20-26% (60-miles radius). We present excerpts of the estimation results in Table IA.3 of the internet appendix. We find that despite the smaller sample size, the coefficients on both industry tournament incentives measures remain significantly positive and are similar in size to those from the full sample.[11] This holds for both marginal benchmark beating and other financial disclosure variables examined later in the paper. Therefore, industry tournament incentives appear to play a distinct role in influencing managerial behavior from local tournament incentives.

3.3. Industry tournament incentives and accrual-based earnings management

In this section, we investigate one potential mechanism through which firms can achieve the objective of meeting or narrowly beating earnings benchmarks: earnings management via discretionary accruals. We conjecture that CEOs facing stronger industry tournament incentives are more aggressive in

[11] We note that measures of local tournament incentives never load significantly in our regressions. The attenuation bias discussed in the previous footnote applies to local tournament incentive measures as well. OLS regressions used by prior research, e.g., Ma et al. (2020), likely produce biased estimates. Correcting for this bias would require identifying instruments for local tournament incentives, which is outside the scope of our paper.

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managing earnings upward through discretionary accruals to boost reported firm performance and hit earnings targets.[12]

To test this conjecture, we estimate GMM-IV regressions of abnormal accruals against industry tournament incentive measures while controlling for CEO and firm characteristics. The dependent variable is the performance-adjusted abnormal accruals estimated based on the methodology of Kothari, Leone, and Wasley (2005). Table 4 presents the second-stage regression results. We find that the coefficients on both industry tournament incentive measures are positive and statistically significant at the 1% level, suggesting that CEOs with stronger industry tournament incentives indeed engage in more accrual-based earnings management to inflate reported earnings. In terms of economic significance, *ceteris paribus*, a one-standard-deviation increase in *ln(Indgap1)* increases abnormal accruals by 0.63% of the book value of total assets.[13]

3.4. Industry tournament incentives and real-activity earnings management

In addition to discretionary accruals, firms can resort to altering real operating activities for the purpose of earnings manipulation and meeting earnings expectations (e.g., Healy and Wahlen (1999); Dechow and Skinner (2000); Graham, Harvey, and Rajgopal (2005); and Roychowdhury (2006)). However, one distinguishing feature of earnings management through real operating activities, i.e., real earnings management, is that it can lead to suboptimal operating decisions that ultimately hurt firm performance. For example, cutting back marketing and advertising expenses for the purpose of reporting higher earnings in the current period may cause firms to lose market share and suffer declines in sales and earnings in the near future. The negative performance consequence of real earnings management can potentially defeat the very purpose of earnings management in the first place. However, if the performance consequence of real earnings management manifests slowly over time and boards of directors focus more on short-term results

[12] We observe income-increasing abnormal accruals in about 70% of observations in which firms meet or narrowly beat the consensus analyst forecasts.

[13] In unreported robustness analysis, we find that the results are concentrated among firm-years with positive discretionary accruals, suggesting that our results are driven by CEOs who intend to manage earnings upward.

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when evaluating CEOs, we may still observe some extent of real earnings management by CEOs facing strong labor market incentives. Given these considerations, we expect a relatively muted effect of industry tournament incentives on real earnings management.

To test our conjecture, we estimate GMM-IV regressions of real earnings management measures against CEO industry tournament incentives while controlling for CEO and firm characteristics as well as CEO-firm pair fixed effects. Following Roychowdhury (2006), we construct three real earnings management measures, namely, abnormal cash flows, abnormal discretionary expenses, and abnormal production costs. We note that at a given level of sales, abnormally low cash flows from operations and discretionary expenses and unusually high production costs are indicative of income-increasing real earnings management. In Table IA.4 in the internet appendix, we find some evidence consistent with income-increasing real earnings management. Specifically, CEO industry tournament incentives are significantly and negatively associated with abnormal discretionary expenses, but they are not significantly associated with abnormal cash flows and abnormal production costs. Taken together, these results are consistent with our expectation that CEOs with stronger industry tournament incentives are moderately inclined to resort to real earnings management to boost reported earnings.

3.5. Industry tournament incentives and financial misreporting

Our earlier results show that firms with CEOs facing stronger industry tournament incentives are more likely to meet or narrowly beat analyst forecasts and engage in aggressive accrual-based earnings management. To the extent that some of the accounting maneuvers can run afoul of GAAP, we expect them to increase firms' likelihood of financial misrepresentation. As noted earlier in the paper, overly aggressive earnings management and outright accounting frauds can trigger negative career outcomes and reputational damages to CEOs. However, given the relatively low frequency of these consequences materializing, CEOs motivated by large potential labor market rewards may still be tempted to pursue such actions.

To examine whether industry tournament incentives affect firms' propensity to misreport earnings, we merge the restatement data with our main sample. In Table 5, we examine how CEO industry tournament

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incentives affect the probability of a firm committing financial misreporting that triggers restatements later. The dependent variable is equal to one for firm years restated due to accounting irregularities. We find that the coefficients on both industry tournament incentive measures are positive and statistically significant, suggesting that CEOs facing stronger industry tournament incentives are more likely to engage in aggressive earnings manipulations that violate GAAP. Our results are significant not only statistically, but also economically. For instance, *ceteris paribus*, a one-standard-deviation increase in *ln(Indgap1)* increases the probability of financial misreporting by 1 percentage point, while the unconditional probability of financial misreporting is only about 2.2% in our sample.

One concern with using the earnings restatement data to examine a firm's financial misreporting tendency is that we do not observe all financial misreporting because earnings restatements only capture cases of detected financial misreporting. Therefore, it is possible that CEOs facing stronger industry tournament incentives commit similar degrees of earnings manipulation or fraudulent behavior as CEOs facing weaker industry tournament incentives, but they are less skilled or less lucky in avoiding detection. While it is difficult to separate firms that have not committed financial fraud from firms that have committed fraud but managed to avoid detection, we try to alleviate this concern by using the F-score developed by Dechow, Ge, Larson, and Sloan (2011) as an ex-ante measure of a firm's probability of committing material financial misstatements. Using a database of enforcement actions by the SEC against firms that allegedly have misstated their financial results, Dechow et al. develop a model to predict serious misstatements based on the characteristics of misstating and non-misstating firms. The predictive model is then used to create for each firm a scaled probability, i.e., the F-score, that reflects the firm's likelihood of committing serious financial misreporting. Wang, Xie, and Zhu (2015) and Fang, Huang, and Karpoff (2016) also use the F-score as a supplementary measure of financial misreporting in addition to detected financial frauds.

We use this F-score measure to reexamine the relation between CEO industry tournament incentives and a firm's financial misreporting tendency. Table 6 presents the results from the GMM-IV regressions. We find that both industry tournament incentive measures are significantly and positively related to a firm's F-score, suggesting that larger rewards from upward mobility in the labor market increase

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a firm's ex-ante probability of financial misrepresentation. In terms of economic significance, *ceteris paribus*, a one-standard-deviation increase in *ln(Indgap1)* increases the F-score by 0.039. This represents a 3.7% increase in the likelihood of material financial misreporting given the average F-score of 1.06 in our sample.

Overall, the evidence in this section supports our conjecture and suggests that CEOs with stronger industry tournament incentives engage in more aggressive earnings manipulation and thus have a higher probability of committing financial misreporting and restating earnings.

3.6. Enhanced identification using the Inevitable Disclosure Doctrine

In this section, we aim to strengthen our identification by exploiting plausible exogenous variations in the power of industry tournament incentives introduced by states' staggered recognition of the Inevitable Disclosure Doctrine (IDD). Our strategy is based on Klasa et al.'s (2018) finding that the IDD recognition significantly reduces the mobility of employees in managerial positions because they are more likely to possess trade secrets knowledge. The IDD recognition represents a plausibly exogenous shock in our setting because it is the result of a state's consideration of protecting firms' trade secrets vis-à-vis freedom of employment (see Harris (2000) and Godfrey (2004)), rather than firms' financial reporting policy. In addition, the IDD recognition is not based on the passage of state laws, but driven by judicial decisions on specific cases, which are unanticipated by firms.[14]

Because the IDD restricts executives' mobility in the labor market, we posit that it weakens the incentive effects of potential rewards from winning an industry tournament. Therefore, we expect the relations between industry tournament incentives and corporate financial reporting decisions to be more pronounced for firms headquartered in states without IDD.

To test this conjecture, we first partition our sample into two subgroups based on whether a firm's headquarters state has adopted the IDD or not (Klasa et al., 2018). We then perform the GMM-IV

[14] See Klasa et al. (2018) for more detailed arguments and empirical support for the plausible exogeneity of the IDD recognition.

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estimations of firms' financial reporting decisions in each subsample. Table 7 reports the second-stage regression results. The key explanatory variable is the predicted *Ln(Indgap1)*, and the coefficients on the control variables are omitted for brevity. Consistent with our prediction, we find that the coefficients of industry tournament incentives are insignificant in the subsample of firms located in IDD states (IDD = 1), but remain significantly positive in the subsample of firms located in non-IDD states (IDD = 0). We repeat the above subsample analyses using the other industry tournament incentive measure, *Indgap2*, and find similar results (untabulated). In summary, our approach to combine the GMM-IV estimation and the staggered IDD adoption enhances the identification of our analyses and provides further support for our hypothesis that industry tournament incentives lead to distortions in corporate financial reporting decisions.

3.7. Cross-sectional variations in the effect of industry tournament incentives on financial disclosure

Next we explore cross-sectional variations in the relation between industry tournament incentive measures and firms' financial disclosure decisions. Specifically, we investigate whether the distortions in corporate financial disclosure driven by CEO industry tournament incentives are more pronounced (i) when ex ante a CEO's probability of winning the industry tournament is higher, and (ii) when the manager-shareholder agency conflicts are expected to be more severe.

3.7.1. CEO's ex-ante probability of winning the industry tournament

The industry tournament incentive measures we construct represent how much a CEO stands to gain *if* she wins the industry tournament, so the expected gains from winning the tournament needs to account for the CEO's probability of winning the tournament. For a CEO who, ex ante, has very little realistic chance of winning or advancing in the tournament, even an enormous pay gap between the CEO and her top-paid industry peer may not generate any large incentive effect. To proxy for the ex-ante likelihood of winning, we first consider CEO age. We argue that CEOs close to retirement are less likely to be promoted to another firm in the same industry and thus are unlikely to win the industry tournament. As a result, for these CEOs, the incentive effect from the industry tournament should be relatively weaker.

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To test this conjecture, we partition our sample into two subgroups based on whether the CEO's age is at least 63, i.e., within two years of the typical mandatory retirement age of 65.[15] We perform the GMM-IV estimation in each subsample, and report the second-stage regression results in Table 8 Panel A. The key explanatory variable is the predicted *Ln(Indgap1)*, and the coefficients on the control variables are omitted for brevity. Consistent with our expectation, we find that when CEOs are close to retirement, industry tournament incentives have no significant impact on firms' financial reporting decisions, while the effect is statistically significant when CEOs are not close to retirement. Specifically, in firms run by CEOs whose age is below 63, stronger industry tournament incentives are significantly associated with a higher propensity to meet or narrowly beat consensus earnings forecasts, larger abnormal accruals, and a higher probability of committing financial misreporting and restating earnings.

The strength of industry tournament incentives is also likely to depend on how easily or likely CEOs can move across firms in the same industry. For instance, in more homogeneous industries, the ex-ante probability of within-industry CEO moves may be higher because the knowledge and experience gained by a CEO at one firm are more transferrable and applicable to another firm. Similarly, in industries that historically have had more external but within-industry CEO hires, the likelihood of within-industry promotion should also be higher. Hence, we expect the effect of industry tournament incentives on firms' financial disclosure decisions to be more pronounced for firms operating in more homogeneous industries or in industries with more frequent external but within-industry CEO hires.

To test this conjecture, we first follow Parrino (1997) and measure industry homogeneity by the partial correlation of stock returns of firms in the same FF-30 industry. A higher partial correlation coefficient indicates a higher performance correlation among firms in an industry and thus higher industry homogeneity. We then split our sample into two subgroups based on whether the firm's industry homogeneity is above the sample median. The results in Panel B of Table 8 are consistent with our prediction. We find that the previously reported association between industry tournament incentive

[15] CEOs in about 15% of firm-year observations are age 63 or above.

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measures and financial disclosure decisions is mainly driven by firms operating in more homogeneous industries. Alternatively, for each FF-30 industry we calculate the percentage of external but within-industry CEO hires over the sample period, and regenerate the subsamples based on whether an industry's percentage is above the sample median. As expected, the results in Panel C of Table 8 suggest that the incentive effect from winning the industry tournament is stronger when CEOs work in industries that tend to make more external but within-industry hires.

We repeat the above subsample analyses using the other industry tournament incentive measure, (*Indgap2*) and find similar results (untabulated). In summary, results in Table 8 show that the significant effect of industry tournament incentives on a firm's financial disclosure decisions is concentrated in firms that do not have CEOs close to retirement age and in firms from industries with greater CEO mobility as reflected by higher industry homogeneity and more frequent external but within-industry CEO hires. This evidence lends further credence to our argument that firms whose CEOs face stronger industry tournament incentives are more aggressive in manipulating earnings, especially when the ex-ante probability of a CEO winning or advancing in the industry tournament is higher.

3.7.2. Expected agency conflicts between managers and shareholders

Managers left to their own device are more likely to engage in opportunistic behavior to advance their personal interests at the potential expense of shareholders. Therefore, we expect to find stronger evidence of the distortive effects of industry tournament incentives when managers are subject to less governance pressure or when their interests are less aligned with those of shareholders.

To test this prediction, we follow Duchin and Sosyura (2013) to construct an agency index that combines the following three measures of governance variables: (1) the Gompers, Ishii, and Metrick (2003) governance index (G-index), which captures the disciplinary power of the market for corporate control; (2) the percentage of shares held by institutional investors, which captures monitoring by institutional investors; and (3) the fraction of shares held by the top managers, which captures their incentive alignment with

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shareholders.[16] In particular, the agency index averages a firm's percentile ranking in the sample according to each measure (for the latter two, the reverse ranking is used). We then scale the index to range from zero (low) to one (high). Higher values of the agency index indicate weaker corporate governance and therefore more severe agency problems. We then split our sample into two subgroups based on whether the firm's agency index is above the sample median. In each subsample, we estimate GMM-IV regressions of marginal benchmark beating, abnormal accruals, earnings restatements, and F-score. We present the second-stage results in Table 9. The coefficient estimates of control variables are suppressed for brevity. Consistent with our conjecture, we find that the coefficients of *Ln(Indgap1)* is positive and significant only in subsamples with higher agency index values, i.e., more severe agency problems. The results (untabulated) are very similar when we repeat the subsample analyses using *Ln(Indgap2)* as the key independent variable.

3.8. Industry tournament incentives and corporate news releases

In this section, we broaden the scope of our investigation to include firms' general information disclosure policy. In particular, we examine whether CEO industry tournament incentives affect firms' news release policies. We conjecture that CEOs with stronger industry tournament incentives are more likely to release positive news and suppress negative news to improve their reputation and career prospects in the managerial labor market.

We obtain firms' news releases during the period 2002–2014 from the S&P Capital IQ Key Developments database. Capital IQ collects news from over 20,000 sources, including but not limited to company websites, regulatory filings, call transcripts, and investor presentations. It provides the source information of each news article and removes duplicate records of any particular piece of news. Moreover, Capital IQ classifies news releases into different categories based on the content of the news article, which enables us to focus on discretionary news items whose issuance is likely to be under the managers' control (Edmans, Goncalves-Pinto, Wang, and Xu (2018)).

[16] Requiring the availability of these three variables results in a loss of slightly over half of our sample observations.

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Following Liu and Xuan (2019), we classify discretionary news releases coming directly from firms as positive, neutral, and negative. Specifically, we calculate the number of news articles classified as "Discontinued operations/Downsizings", "Corporate Guidance—Lowered", "Dividend Cancellation", or "Dividend Decrease" for each firm each year. For positive news, we focus on news classified as "Business Expansions", "Dividend Increase", "Dividend Initiation" and "Corporate Guidance—Raised".

In Table 10, we examine how CEO industry tournament incentives affect firms' release of positive and negative news. It is important that we control for firms' operating performance and stock returns in this analysis. Otherwise, any observed relation between industry tournament incentives and corporate news release patterns could be due to the previously documented effect of industry tournament incentives on firm performance. Namely, CEOs with stronger industry tournament incentives exert more effort and take more risk, and deliver better firm performance. Better-performing firms tend to have more good news than bad news to disclose.

In column (1), the dependent variable is the natural logarithm of one plus the number of negative discretionary news releases. We find that, conditional on firm operating performance and stock returns, firms with stronger CEO industry tournament incentives release significantly less negative news. In column (2), we focus on positive news and find a positive relation between industry tournament incentives and the frequency of positive news releases. The impact is also economically significant. For instance, *ceteris paribus*, a one-standard-deviation increase in ln(*Indgap1)* is associated with a 20% decrease in the number of negative news releases and a 9% increase in the number of positive news releases. This is consistent with our conjecture that CEOs with greater industry tournament incentives are more likely to distort their firms' disclosure policy and information environment to enhance their reputation and career outcomes in the managerial labor market.

4. Marginal benchmark beating and future labor market performance

To further rationalize that CEOs make strategic financial disclosure choices in response to their career concerns, in this section we examine whether CEOs' future labor market performance is related to

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their track record of meeting or narrowly beating earnings benchmarks. The survey evidence from Graham, Harvey, and Rajgopal (2005) suggests that top executives believe their reputation and mobility in the managerial labor market can benefit from consistently hitting earnings targets. Such benefits can take the form of higher pay at current employers if the boards recognize the CEO's reputation and outside options in the labor market and increase her compensation as a preemptive action. CEOs can also gain from capitalizing on their reputation in the labor market and making a move to take the top post at a new firm. However, these scenarios may not materialize if corporate boards and the managerial labor market recognize the strategic disclosure choices behind the marginal benchmark beating and choose not to reward CEOs for such behavior. To provide more clarity on this issue, we examine two labor market performance measures: CEO compensation and CEO moves.

We first investigate whether marginally beating earnings benchmarks affects CEO's compensation in the following year. We construct an annual measure of a firm's marginal benchmark beating behavior by calculating the number of quarters in a fiscal year in which a firm meets or narrowly beats earnings forecasts (*# of marginal beats*). If a firm does not have all four quarterly earnings forecasts in a particular year, we exclude this firm-year observation from our sample. This reduces our sample to 17,072 firm-year observations with no missing data.

Results are presented in Table 11 column (1). The dependent variable is the natural logarithm of CEO total compensation. The key independent variable is the frequency of marginal benchmark beatings during the previous fiscal year. Control variables include a wide array of known determinants of CEO pay, such as firm size, stock and operating performance, leverage, growth opportunities, stock return volatility, CEO age, and CEO tenure, all of which are lagged one year relative to the dependent variable. In addition, we control for the number of quarters in which a firm beats the consensus analyst forecast by more than one cent *(# of beats by more than one cent*). We find that the frequency of marginally beating quarterly earnings forecasts (*# of marginal beats*) has a significantly positive coefficient, suggesting that CEOs who hit analyst forecasts more frequently receive higher total compensation in the following year.

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Next, we examine whether marginally beating earnings benchmarks affects CEOs' actual mobility in the managerial labor market. Since our industry tournament incentive measures are based on the CEO's incentive to compete for the highest pay in the same industry, we focus on within-industry CEO-to-CEO moves, which are defined as situations in which a CEO leaves her current firm and immediately takes the top post at another firm in the same industry. Fee and Hadlock (2003) show that executives who jump to CEO positions at new employers usually come from firms with superior performance, suggesting that a within-industry CEO move usually reflects upward mobility in the managerial labor market.

We use the ExecuComp database to identify all CEO-to-CEO moves during our sample period. If we cannot identify the new employer of a departing CEO, we exclude the move from our analysis. This process generates 100 CEO-to-CEO moves, among which 67 are intra-industry.[17] After imposing the data availability requirement on the main variables, i.e., earnings forecasts for all four quarters in the previous fiscal year, we end up with 25 within-industry CEO promotions.[18] To investigate whether a CEO's history of marginal benchmark beating affects her mobility in the labor market, we construct a sample in a similar fashion to Fee and Hadlock (2003). Specifically, for each CEO that makes a within-industry move to another firm, we use the CEOs at industry peer firms who do not move as the matching group. This procedure yields a final sample of 1,218 firm-year observations. We then estimate both an OLS and a probit regression in which the dependent variable equals one for firms whose CEO made an intra-industry move during the year, and zero otherwise.

Columns (2) and (3) of Table 11 show that the marginal benchmark beating frequency has a significant and positive coefficient, indicating that CEOs who more frequently meet or narrowly beat analysts' forecasts are more likely to move to another firm in the same industry. It is worth noting that the effect of marginal benchmark beating is incremental to those of current and lagged stock return and

[17] These figures are similar to those reported by Gao, Luo, and Tang (2015), who also use the ExecuComp database to identify CEO moves. However, this approach underestimates the top executive movements in the managerial labor market because many movements involve non-ExecuComp public firms, private firms, or non-CEO senior executives being tapped for the CEO position at another firm.

[18] Within-industry moves are excluded if a CEO's total pay (*TDC1*) in the new firm is lower than what she received from the previous employer.

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operating performance measures documented in prior literature (e.g., Fee and Hadlock (2003)). As such, these results provide clear support for the notion that consistently beating analyst forecasts can enhance managers' reputation and mobility in the labor market.

To summarize, the evidence presented in this section suggests that CEOs who more frequently hit earnings benchmark receive higher total compensation in the following year and are more likely to be promoted to another firm in the same industry. Our findings offer a strong rationale for CEOs to make strategic financial disclosure choices in response to the potential reward from the labor market. They also provide clear support for the view expressed by top executives in the Graham, Harvey, and Rajgopal (2005) survey regarding the important interconnections between labor market opportunities, financial disclosure choices, and actual labor market consequences of these choices.

Our findings of favorable labor market outcomes experienced by CEOs as a result of consistent benchmark beating echo the evidence from the prior literature on the penalties suffered by CEOs for missing the benchmark in the form of pay cuts and forced turnovers (e.g., Puffer and Weintrop (1991), Farrell and Whidbee (2003), Matsunaga and Park (2001), and Mergenthaler, Rajgopal, and Srinivasan (2012)). Mergenthaler et al. argue that these penalties reflect the fixation of corporate boards on achieving analyst earnings forecasts. With respect to why boards value and reward CEOs for beating the earnings benchmark, even though some of it is likely the result of earnings manipulations, we believe the following forces may be jointly at work. Managerial ability is not observable, at least not entirely, to the market and boards (Pan, Wang, and Weisbach (2015)). Therefore, boards use observable managerial actions and firm outcomes as clues to update their belief about managerial ability, and firms' reported earnings and whether they beat the earnings benchmark are among the most salient signals available to boards. Yet, information asymmetry faced by boards, especially by independent directors on the boards, makes it difficult for them to completely see through and unwind managerial incentives and earnings manipulation. In addition, boards have their own career concerns. Given that the stock market puts a premium (at least in the short run) on a firm's ability to consistently beat analyst earnings forecasts, directors will see their human capital and opportunities in the director labor market increase as their company's stock price keeps rising. Therefore,

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in the absence of sufficient information and incentives, they may be content with CEOs consistently beating the earnings benchmark.

5. Conclusion

In this paper, we document the first evidence of the distortive effects of CEO industry tournament incentives. Our analysis indicates that firms whose CEOs face greater industry tournament incentives display a higher tendency to meet or narrowly beat consensus analyst forecast, are more aggressive in managing earnings upward through discretionary accruals, and are more likely to commit financial misrepresentation and restate earnings. Our evidence is stronger when CEOs face less mobility restriction and have a higher ex-ante probability of winning or advancing in the industry tournament, and when the agency conflicts between managers and shareholders are likely to be more severe. Collectively, these results suggest that CEOs make strategic choices in firms' financial disclosure by taking into account the potential rewards from the managerial labor market. More specifically, CEOs who expect to reap a larger reward from moving up the industry hierarchy are motivated to meet or narrowly beat the earnings expectations set by the capital markets and engage in more aggressive earnings manipulation.

With respect to the managerial labor market ramifications of firms' strategic disclosure choices, we find that a greater frequency of meeting or narrowly beating analyst forecasts leads to higher CEO compensation and more mobility in the labor market. These results are consistent with the view expressed by top executives in the survey of Graham, Harvey, and Rajgopal (2005) that hitting earnings benchmarks consistently can burnish their reputation and increase their reward from the managerial labor market.

Our study highlights that industry tournaments can create perverse managerial incentives in the context of corporate disclosure policies, which represents an important complement to prior research documenting the beneficial effects of industry tournament incentives. Our findings also imply that a firm's executive compensation policy can generate externalities for other firms' financial disclosure decisions by altering the potential rewards from winning the industry tournament.

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Appendix. Variable definitions

Variable	Source	Definition
Indgap1 ($000)	Execucomp	Second-highest CEO's total compensation within industry – CEO's total compensation
Indgap2 ($000)	Execucomp	Second-highest CEO's total compensation within industry and size – CEO's total compensation
Firm gap ($000)	Execucomp	CEO's total compensation – Median VP total compensation
CEO delta ($000)	Execucomp	Dollar change in CEO wealth associated with a 1% change in the firm's stock price
CEO vega ($000)	Execucomp	Dollar change in CEO wealth associated with a 0.01 change in the standard deviation of the firm's returns
CEO pay ($000)	Execucomp	Salary + bonus + restricted stock grants + option grants + LTIP + other annual payments
CEO tenure	Execucomp	The number of years as the firm's CEO
CEO age	Execucomp	The CEO's age in sample year
Retire CEO	Execucomp	A dummy variable = 1 if the CEO's age is 63 or above, and 0 otherwise
Ind # CEOs	Execucomp	The number of CEOs within each industry
Ind # CEOs Above	Execucomp	The number of higher-paid CEOs within the same industry
Ind # CEOs Below	Execucomp	The number of lower-paid CEOs within the same industry
Ind CEO comp ($000)	Execucomp	The sum of total compensation across all CEOs within each industry
Geo CEO mean ($000)	Execucomp/Compustat	The average total compensation received in the previous year by CEOs who work at firms in the different industry and headquartered within a 250-kilometer radius of the firm
Ind stock return vol	CRSP	The volatility of industry stock return for the prior year based on daily return of an equal-weighted portfolio using all firms in the industry
Total assets	Compustat	Total assets
Firm size	Compustat	Natural log of total assets
Leverage	Compustat	Long term debt plus debt in current liabilities divided total assets

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ROA	Compustat	Return on assets, calculated as net income before extraordinary items and discontinued operations divided by total assets
MB	Compustat	Market value of equity plus the book value of debt divided by total assets
CF vol	Compustat	Cash flow volatility computed as the standard deviation of seasonally-adjusted quarterly EBITDA divided by total assets over years t-4 through t-1
Stock Return (1YR)	CRSP	Prior one-year stock return
Sale growth vol	Compustat	The volatility of sales growth over years t-4 through t-1
Sale growth	Compustat	The average sales growth over years t-4 through t-1
Meet or marginally beat	I/B/E/S	An indicator variable that equals one if the reported EPS for a firm meets or narrowly beats the consensus earnings forecast by one cent or less in a given quarter and zero otherwise
Abnormal accruals	Compustat	Abnormal accruals (scaled by assets) is calculated as the difference between total accruals and non-discretionary accruals based on the performance-adjusted discretionary accruals model proposed by Kothari, Leone, and Wasley (2005)
Financial misreporting	Audit Analytics/GAO	An indicator variable that equals one if a firm restated earnings due to accounting irregularities
F-score	Compustat	An ex-ante measure of a firm's probability of committing material financial misstatements based on a model developed by Dechow, Ge, Larson, and Sloan (2011)
# of negative news	Capital IQ	The number of negative news releases issued by a firm in a given fiscal year. Negative news includes all discretionary news classified as "Discontinued operations/Downsizings", "Corporate Guidance—Lowered", "Dividend Cancellation", or "Dividend Decrease" during each year
# of positive news	Capital IQ	The number of positive news releases issued by a firm in a given fiscal year. Positive news include all discretionary news classified as "Business Expansions", "Dividend Increase", "Dividend Initiation" and "Corporate Guidance—Raised"

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Table 1. Summary statistics

This table presents summary statistics based on the firm-year observations from the sample used in the earnings forecast beating analysis. Financial firms and utility firms are excluded from the sample. Summary statistics for incentive and CEO characteristics are provided in Panel A, industry characteristics in Panel B, firm characteristics in Panel C, and disclosure variables in Panel D. The definitions of these variables are provided in the Appendix. All continuous variables are winsorized at the 1st and 99th percentiles, and all dollar values are adjusted to 2016 dollars.

Panel A: Incentive and CEO characteristics						
	N	Mean	Median	Std Dev	Q1	Q3
Indgap1 ($000)	22,216	20,967.74	14,387.44	23,043.41	7,731.86	25,598.07
Indgap2 ($000)	21,702	12,963.53	7,084.86	18,570.78	3,154.57	15,783.07
Firm gap ($000)	22,216	3,236.54	1,879.52	4,571.38	784.77	4,096.95
CEO delta ($000)	22,216	752.61	214.36	4,770.40	89.67	549.08
CEO vega ($000)	22,216	127.94	49.90	255.16	15.81	137.31
CEO tenure	21,664	8.52	6.00	7.37	3.00	11.00
CEO age	22,084	55.67	56.00	7.25	51.00	60.00
Panel B: Industry Characteristics						
Ind # CEOs	22,216	95.67	65	68.02	38	159
GEO CEO mean ($000)	22,207	426,273.34	276,317.31	359,984.14	125,718.15	728,162.47
Ind CEO comp ($000)	21,940	4,836.93	4,624.58	2,108.52	3,415.53	6,043.05
Ind stock return vol	22,216	0.03	0.02	0.01	0.02	0.03
Panel C: Firm Characteristics						
Total assets ($ million)	22,216	5,947.97	1,355.50	18,354.80	514.42	4,189.25
Firm size	22,216	7.34	7.21	1.51	6.24	8.34
MB	22,216	2.07	1.66	1.29	1.27	2.36
Leverage	22,216	0.22	0.21	0.18	0.06	0.33
ROA	22,216	0.05	0.06	0.09	0.02	0.09
Stock retun	22,216	0.18	0.12	0.48	-0.11	0.37
Sales growth	22,216	0.15	0.10	0.19	0.04	0.20
CF vol	22,216	0.04	0.03	0.04	0.02	0.05
Sales growth vol	22,216	0.17	0.12	0.15	0.07	0.22
Firm age	22,216	24.98	20.00	19.13	11.00	34.00
Panel D: Disclosure variables						
Meet or marginally beat	81,947	0.132	0.000	0.339	0.000	0.000
Abnormal accruals	22,216	-0.004	-0.002	0.086	-0.047	0.040
Financial misreporting	19,744	0.022	0.000	0.147	0.000	0.000
F-score	22,172	1.064	0.978	0.609	0.641	1.362
# of positive news	12,641	1.168	0.000	1.996	0.000	2.000
# of negative news	12,641	0.305	0.000	0.713	0.000	0.000

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Table 2. Determinants of CEO industry tournament incentives

This table presents multivariate models of the determinants of industry tournament incentives using a sample of ExecuComp firms from 1992 to 2016. The dependent variable is the natural logarithm of *Indgap1* and the natural logarithm of *Indgap2* respectively. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variables	(1) ln(Indgap1)	(2) ln(Indgap2)
ln(CEO delta)	-0.026***	-0.041***
	(0.002)	(0.000)
ln(Firm gap)	-0.186***	-0.275***
	(0.000)	(0.000)
Firm size	0.010	-0.061***
	(0.509)	(0.002)
Stock return	0.008	0.005
	(0.307)	(0.660)
Sales growth	-0.079**	-0.047
	(0.036)	(0.321)
ln(CEO tenure)	0.009	0.014
	(0.572)	(0.434)
ln(CEO age)	-0.155	-0.307
	(0.660)	(0.446)
Industry stock return vol	12.616***	5.752***
	(0.000)	(0.000)
ln(Ind # CEOs)	-1.248***	-1.129***
	(0.000)	(0.000)
ln(Ind CEO comp) (IV)	1.894***	1.681***
	(0.000)	(0.000)
ln(Geo CEO mean) (IV)	-0.065**	-0.142***
	(0.018)	(0.000)
Year FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	20,747	19,659
R-squared	0.873	0.869

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Table 3. Industry tournament incentives and the probability of marginal benchmark beating

This table presents the results of GMM-IV regression analysis of firms meeting or marginally beating consensus analyst forecasts using a sample of firm-quarter observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable in the second stage is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1*) and *ln(Indgap2*). *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year-quarter and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Meet or marginally beat	
ln(Indgap1)	0.019**	
	(0.028)	
ln(Indgap2)		0.026**
		(0.021)
ln(CEO delta)	0.016***	0.018***
	(0.001)	(0.001)
ln(CEO vega)	-0.003	-0.003
	(0.355)	(0.415)
ln(Firm gap)	-0.004	-0.005
	(0.431)	(0.391)
ln(CEO tenure)	-0.005	-0.002
	(0.500)	(0.783)
ln(CEO age)	-0.045	0.009
	(0.885)	(0.977)
Firm size	-0.013	-0.025**
	(0.114)	(0.010)
MB	0.006	0.004
	(0.122)	(0.291)
Leverage	-0.024	-0.024
	(0.318)	(0.344)
ROA	0.068**	0.066**
	(0.023)	(0.031)
Stock return	0.001	-0.002
	(0.920)	(0.633)
Sales growth	-0.062***	-0.066***
	(0.007)	(0.006)
CF vol	0.212**	0.209**
	(0.035)	(0.046)
Sales growth vol	0.044*	0.036
	(0.094)	(0.184)
ln(Firm age)	-0.040***	-0.042***
	(0.003)	(0.003)
ln(Ind # CEOs)	0.032*	0.029*

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	(0.053)	(0.061)
ln(# of analysts)	-0.022***	-0.021***
	(0.000)	(0.001)
Forecast horizon	0.015***	0.015***
	(0.000)	(0.000)
Forecast disp	-0.040***	-0.040***
	(0.000)	(0.000)
Year-qtr FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	76,055	72,524
R-squared	0.012	0.010
Endogeneity, relevance, and overidentification		
First-stage F-statistics	332.49***	191.78***
Hausman exogeneity test	10.29***	7.90***
Hansen J -test	0.08	0.03

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Table 4. Industry tournament incentives and abnormal accruals

This table presents the results of GMM-IV regression analysis of abnormal accruals using a sample of firm-year observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable is abnormal accruals, estimated from the model proposed by Kothari, Leone, and Wasley (2005). The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1)* and *ln(Indgap2)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Abnormal accruals	
ln(Indgap1)	0.007***	
	(0.008)	
ln(Indgap2)		0.008***
		(0.006)
ln(CEO delta)	0.006***	0.006***
	(0.000)	(0.000)
ln(CEO vega)	-0.002**	-0.002**
	(0.032)	(0.010)
ln(Firm gap)	-0.002	-0.002
	(0.269)	(0.263)
ln(CEO tenure)	0.005	0.005
	(0.132)	(0.143)
ln(CEO age)	-0.023	-0.017
	(0.655)	(0.753)
Firm size	-0.013***	-0.015***
	(0.000)	(0.000)
MB	0.003**	0.002*
	(0.041)	(0.099)
Leverage	-0.005	-0.006
	(0.575)	(0.451)
ROA	-0.245***	-0.245***
	(0.000)	(0.000)
Stock return	0.014***	0.014***
	(0.000)	(0.000)
Sales growth	-0.031***	-0.030***
	(0.000)	(0.000)
CF vol	0.005	0.013
	(0.889)	(0.747)
Sales growth vol	0.004	0.003
	(0.630)	(0.715)
ln(Firm age)	-0.007*	-0.008**
	(0.063)	(0.028)
ln(Ind # CEOs)	0.003	0.004
	(0.448)	(0.367)

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Year FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	19,827	18,872
R-squared	0.066	0.063
Endogeneity, relevance, and overidentification		
First-stage F-statistics	380.99***	209.29***
Hausman exogeneity test	9.51***	7.65***
Hansen J -test	1.02	0.41

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Table 5. Industry tournament incentives and financial misreporting: Earnings restatements

This table presents the results of GMM-IV regression analysis of firms committing financial misreporting using a sample of firm-year observations from 1997 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable is a dummy that equals one if the firm years restated due to accounting irregularities. The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1*) and *ln(Indgap2*). *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Financial misreporting	
ln(Indgap1)	0.012**	
	(0.046)	
ln(Indgap2)		0.017**
		(0.019)
ln(CEO delta)	0.004	0.004
	(0.154)	(0.258)
ln(CEO vega)	0.001	0.001
	(0.736)	(0.581)
ln(Firm gap)	-0.002	-0.002
	(0.428)	(0.388)
ln(CEO tenure)	0.006	0.008
	(0.172)	(0.129)
ln(CEO age)	0.013	-0.012
	(0.917)	(0.925)
Firm size	0.006	0.001
	(0.302)	(0.889)
MB	0.001	0.001
	(0.791)	(0.712)
Leverage	0.023	0.02
	(0.198)	(0.305)
ROA	-0.001	-0.009
	(0.964)	(0.695)
Stock return	-0.004	-0.003
	(0.192)	(0.332)
Sales growth	0.031	0.031
	(0.181)	(0.183)
CF vol	0.074	0.06
	(0.310)	(0.420)
Sales growth vol	-0.012	-0.017
	(0.522)	(0.383)
ln(Firm age)	-0.003	-0.004
	(0.728)	(0.634)
ln(Ind # CEOs)	0.002	0.002
	(0.789)	(0.853)

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Year FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	17,892	17,052
R-squared	0.013	0.005
Endogeneity, relevance, and overidentification		
First-stage F-statistics	191.85***	137.58***
Hausman exogeneity test	6.08**	5.74**
Hansen J -test	0.61	1.09

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Table 6. Industry tournament incentives and financial misreporting: F-scores

This table presents the results of GMM-IV regression analysis of financial misstating based on F-scores using a sample of firm-year observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable is F-scores, estimated from the model proposed by Dechow et al. (2011). The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1)* and *ln(Indgap2)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	F-score	
ln(Indgap1)	0.043**	
	(0.018)	
ln(Indgap2)		0.042**
		(0.043)
ln(CEO delta)	0.056***	0.057***
	(0.000)	(0.000)
ln(CEO vega)	-0.010	-0.012
	(0.172)	(0.145)
ln(Firm gap)	-0.006	-0.006
	(0.529)	(0.523)
ln(CEO tenure)	0.004	0.006
	(0.806)	(0.714)
ln(CEO age)	-0.083	0.003
	(0.845)	(0.995)
Firm size	-0.148***	-0.158***
	(0.000)	(0.000)
MB	0.010	0.010
	(0.431)	(0.472)
Leverage	0.256***	0.248***
	(0.000)	(0.000)
ROA	0.939***	0.930***
	(0.000)	(0.000)
Stock return	0.054***	0.059***
	(0.000)	(0.000)
Sales growth	0.020	0.018
	(0.729)	(0.770)
CF vol	-0.511**	-0.483*
	(0.041)	(0.057)
Sales growth vol	-0.162**	-0.153**
	(0.023)	(0.038)
ln(Firm age)	-0.026	-0.023
	(0.340)	(0.413)
ln(Ind # CEOs)	0.043	0.044
	(0.102)	(0.151)

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Year FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	19,753	18,811
R-squared	0.078	0.076
Endogeneity, relevance, and overidentification		
First-stage F-statistics	386.78***	236.47***
Hausman exogeneity test	5.47**	4.46**
Hansen J -test	0.21	0.18

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Table 7. Enhanced Identification Using the Inevitable Disclosure Doctrine

This table presents the results of GMM-IV regression analysis of disclosure variables for subsamples created based on the adoption of Inevitable Disclosure Doctrine in a given state (Klasa et al., 2018). For brevity, only the second-stage regression results are reported. In columns (1) and (2), the dependent variable is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. In columns (3) and (4), the dependent variable is abnormal accruals, estimated from the model proposed by Kothari, Leone, and Wasley (2005). In columns (5) and (6), the dependent variable equals one if a firm has an irregularity accounting restatement and zero otherwise. In columns (7) and (8), the dependent variable is F-scores, estimated from the model proposed by Dechow et al. (2011). The key explanatory variables are predicted *ln(Indgap1)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry. All other control variables are defined in the Appendix. All regressions include year (or year-quarter) and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
Explanatory variables	IDD = 1	IDD = 0	IDD = 1	IDD = 0	IDD = 1	IDD = 0	IDD = 1	IDD = 0
Predicted ln(Indgap1)	0.011	0.035**	0.006	0.009**	0.005	0.018**	0.028	0.070**
	(0.311)	(0.020)	(0.101)	(0.045)	(0.436)	(0.048)	(0.271)	(0.012)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr (or year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,720	42,335	8,891	10,936	8,008	9,884	8,845	10,908
R-squared	0.012	0.013	0.066	0.069	0.016	0.017	0.059	0.100

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Table 8. Cross-sectional variations in the relation between industry tournament incentives and corporate financial disclosure

This table presents the results of GMM-IV regression analysis of disclosure variables for subsamples created based on CEO and industry characteristics. For brevity, only the second-stage regression results are reported. In columns (1) and (2), the dependent variable is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. In columns (3) and (4), the dependent variable is abnormal accruals, estimated from the model proposed by Kothari, Leone, and Wasley (2005). In columns (5) and (6), the dependent variable equals one if a firm has an irregularity accounting restatement and zero otherwise. In columns (7) and (8), the dependent variable is F-scores, estimated from the model proposed by Dechow et al. (2011). The key explanatory variable is predicted *ln(Indgap1)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry. *Retiring* is an indicator equal to one if the CEO's age is 63 or above, and zero otherwise. *Industry homogeneity* is an indicator equal to one if the industry homogeneity is above the sample median. *External Hiring* is an indicator equal to one if the industry's external but within-industry CEO hiring ratio is above the sample median. All other control variables are defined in the Appendix. All regressions include year (or year-quarter) and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Retiring CEO

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
	Retiring = 1	Retiring = 0	Retiring = 1	Retiring = 0	Retiring = 1	Retiring = 0	Retiring = 1	Retiring = 0
ln(Indgap1)	0.009	0.021**	-0.004	0.010***	0.006	0.014**	-0.012	0.059***
	(0.624)	(0.033)	(0.572)	(0.004)	(0.565)	(0.023)	(0.755)	(0.004)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr (or year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,303	64,745	2,850	16,727	2,542	15,125	2,826	16,677
R-squared	0.014	0.012	0.073	0.069	0.021	0.016	0.107	0.079

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Panel B: Industry homogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
	Low	High	Low	High	Low	High	Low	High
ln(Indgap1)	0.011	0.025**	0.005	0.010**	0.003	0.020**	0.021	0.066**
	(0.355)	(0.042)	(0.278)	(0.010)	(0.640)	(0.037)	(0.368)	(0.016)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr (or year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25,298	50,745	6,260	12,989	5,340	12,000	6,228	12,948
R-squared	0.009	0.013	0.059	0.087	0.013	0.019	0.101	0.075

Panel C: External hiring

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
	Low	High	Low	High	Low	High	Low	High
ln(Indgap1)	0.010	0.023**	-0.006	0.013***	0.001	0.018**	0.022	0.050**
	(0.560)	(0.024)	(0.301)	(0.000)	(0.903)	(0.013)	(0.428)	(0.012)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr (or year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,872	54,180	5,858	13,924	5,293	12,566	5,847	13,862
R-squared	0.012	0.013	0.052	0.075	0.018	0.018	0.118	0.073

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Table 9. Industry tournament incentives and corporate financial disclosure: The role of corporate governance

This table presents the results of GMM-IV regression analysis of disclosure variables for subsamples created based on firm corporate governance. For brevity, only the second-stage regression results are reported. In columns (1) and (2), the dependent variable is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. In columns (3) and (4), the dependent variable is abnormal accruals, estimated from the model proposed by Kothari, Leone, and Wasley (2005). In columns (5) and (6), the dependent variable equals one if a firm has an irregularity accounting restatement and zero otherwise. In columns (7) and (8), the dependent variable is F-scores, estimated from the model proposed by Dechow et al. (2011). The key explanatory variables are predicted *ln(Indgap1)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry. All other control variables are defined in the Appendix. All regressions include year (or year-quarter) and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
Agency index	Low	High	Low	High	Low	High	Low	High
ln(Indgap1)	-0.007	0.036**	0.006	0.014**	0.002	0.017*	0.038	0.092***
	(0.702)	(0.025)	(0.226)	(0.037)	(0.864)	(0.084)	(0.286)	(0.003)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr (or year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,542	15,424	4,543	4,069	3,593	3,674	4,522	4,050
R-squared	0.014	0.022	0.067	0.087	0.024	0.022	0.106	0.122

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Table 10. Industry tournament incentives and corporate news releases

This table presents the results of GMM-IV regression analysis of different types of news using a sample of firm-year observations from 2002 to 2014. For brevity, only the second-stage regression results are reported. The dependent variable is the natural logarithm of one plus the total number of positive and negatives news releases, respectively. The key explanatory variable is the predicted labor market incentive measure *ln(Indgap1)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1) # of negative news	(2) # of positive news
ln(Indgap1)	-0.071**	0.116*
	(0.023)	(0.077)
ln(CEO delta)	0.004	0.053
	(0.848)	(0.229)
ln(CEO vega)	-0.008	0.030
	(0.488)	(0.225)
ln(Firm gap)	0.033	0.021
	(0.118)	(0.633)
ln(CEO tenure)	-0.003	0.056
	(0.918)	(0.438)
ln(CEO age)	-0.487	-2.252
	(0.500)	(0.380)
Firm size	0.035	0.013
	(0.194)	(0.867)
MB	0.007	0.020
	(0.596)	(0.481)
Leverage	0.154*	-0.408*
	(0.075)	(0.084)
ROA	0.131	0.031
	(0.196)	(0.874)
Concurrent ROA	-0.781***	1.006***
	(0.000)	(0.000)
Stock return	-0.061***	0.120***
	(0.001)	(0.000)
Concurrent stock return	-0.163***	0.237***
	(0.000)	(0.000)
Sales growth	0.146**	0.388**
	(0.045)	(0.034)
CF vol	-0.438	-0.664
	(0.140)	(0.364)
Sales growth vol	-0.108	-0.304
	(0.207)	(0.121)
ln(Firm age)	0.090	-0.070
	(0.124)	(0.647)

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ln(Ind # CEOs)	-0.041	0.177*
	(0.468)	(0.061)
Year FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	11,385	11,385
R-squared	0.085	0.111
Endogeneity, relevance, and overidentification		
First-stage F-statistics	215.95***	215.95***
Hausman exogeneity test	4.35**	4.46**
Hansen J -test	0.11	0.32

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Table 11. Marginal benchmark beating and future CEO compensation and mobility

This table presents the results of regression analysis of CEO compensation and CEO movements in the labor market. In column (1), a sample of firm-year observations from 1993 to 2017 is used. The dependent variable is the natural logarithm of CEO total compensation. In columns (2) and (3), a matched sample is used to investigate whether a CEO's history of marginal benchmark beating affects her mobility in the labor market. For each CEO who makes a within-industry move to another firm, we use the CEOs at industry peer firms who do not move as the matching group. The dependent variable is an indicator variable equal to one for firms with CEO moves in a year, and zero for all matched firms. The key explanatory variable is the number of quarters during the previous year in which a firm meets or marginally beats the consensus quarterly earnings forecast (*# of marginal beats*). All other control variables are defined in the Appendix. All regressions include year and industry fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
	Dep. var: ln(total pay)	Dep. var: 1 if for firm-years with CEO moves, 0 otherwise	
Variables	OLS	OLS	Probit
# of marginal beats	0.016***	0.008*	0.227***
	(0.009)	(0.055)	(0.002)
Firm size	0.443***	0.005*	0.175***
	(0.000)	(0.081)	(0.001)
Stock return	0.088***	0.008	0.376
	(0.000)	(0.285)	(0.158)
ROA	0.548***	0.073	1.173
	(0.000)	(0.182)	(0.152)
Leverage	-0.049	-0.053**	-1.228*
	(0.333)	(0.037)	(0.058)
MB	0.117***	0.004	0.163***
	(0.000)	(0.105)	(0.002)
Stock return vol	1.878***	-0.038	-1.114
	(0.000)	(0.580)	(0.650)
# of beats by more than one cent	0.057***	0.006*	0.176**
	(0.000)	(0.080)	(0.033)
ln(CEO age)	-0.108	-0.008	-0.695
	(0.166)	(0.754)	(0.308)
ln(CEO tenure)	0.018*	-0.016**	-0.491***
	(0.051)	(0.016)	(0.002)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	17,072	1,218	1,218
R-squared (or Pseudo)	0.551	0.063	0.229

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Internet Appendix

Table IA 1. Industry tournament incentives and the probability of beating the earnings benchmark by more than one cent

This table presents the results of GMM-IV regression analysis of firms beating consensus analyst forecasts by more than one cent using a sample of firm-quarter observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable in the second stage is a dummy variable that is equal to one if a firm beats analysts' consensus forecasts by more than one cent in a quarter and zero otherwise. The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1*) and *ln(Indgap2*). *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year-quarter and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Beat by more than one cent	
ln(Indgap1)	0.006	
	(0.682)	
ln(Indgap2)		0.015
		(0.322)
Controls (Table 3)	Yes	Yes
Year-qtr FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	76,055	72,524
R-squared	0.023	0.022

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Table IA 2. Industry tournament incentives and the probability of marginal benchmark beating: Controlling for pay structure difference

This table presents the results of GMM-IV regression analysis of firms meeting or marginally beating consensus analyst forecasts using a sample of firm-quarter observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variable in the second stage is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1*) and *ln(Indgap2*). *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. In addition, we include *Difference in equity pay ratio*, defined as the equity-based pay to total pay ratio difference between the CEO of the focal firm and the second-highest-paid CEO in the same industry, in the regressions. All other control variables are defined in the Appendix. Both regressions include year-quarter and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variables	Meet or marginally beat	
ln(Indgap1)	0.020**	
	(0.028)	
ln(Indgap2)		0.028**
		(0.016)
Difference in equity pay ratio	-0.002	-0.001
	(0.786)	(0.966)
Controls (Table 3)	Yes	Yes
Year-qtr FE	Yes	Yes
CEO-firm FE	Yes	Yes
Observations	76,055	72,524
R-squared	0.012	0.010

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Table IA 3. Robustness tests: Controlling for local tournament incentives

This table presents the results of GMM-IV regression analysis of firm financial reporting variables by controlling for local tournament incentives. Local tournament incentives is defined as the pay gap in total compensation between the second-highest paid CEO of a similarly sized local firm and the CEO of the sample firm. In Panel A (or B), local firms are those within 100 (or 60) miles of the sample firm (Ma et al. 2020). Similarly sized firms are those in the same half of the distribution of firm sales revenue. For brevity, only the second-stage regression results are reported. In columns (1) and (2), the dependent variable is a dummy variable that is equal to one if a firm meets or beats analysts' consensus forecasts by one cent or less in a quarter and zero otherwise. In columns (3) and (4), the dependent variable is abnormal accruals, estimated from the model proposed by Kothari, Leone, and Wasley (2005). In columns (5) and (6), the dependent variable equals one if a firm has an irregularity accounting restatement and zero otherwise. In columns (7) and (8), the dependent variable is F-scores, estimated from the model proposed by Dechow et al. (2011). All regressions include year (or year-quarter) and CEO-firm fixed effects. In parentheses are two-side p-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Using a 100-miles radius to define local tournament incentives

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
ln(Indgap1)	0.020**		0.008***		0.012*		0.043**	
	(0.033)		(0.008)		(0.054)		(0.029)	
ln(Indgap2)		0.029**		0.010**		0.017**		0.042*
		(0.018)		(0.012)		(0.026)		(0.060)
Local tournament incentives	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr FE (or Year FE)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	65,438	63,204	17,020	16,410	14,600	14,105	16,855	16,256
R-squared	0.011	0.009	0.066	0.063	0.012	0.007	0.087	0.086

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Panel B: Using a 60-miles radius to define local tournament incentives

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Meet or marginally beat		Abnormal accruals		Financial misreporting		F-score	
ln(Indgap1)	0.017*		0.009***		0.012*		0.041**	
	(0.099)		(0.006)		(0.064)		(0.045)	
ln(Indgap2)		0.024*		0.011***		0.018**		0.039*
		(0.056)		(0.009)		(0.033)		(0.090)
Local tournament incentives	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-qtr FE (or Year FE)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	59,976	57,929	15,517	14,959	13,323	12,872	15,365	14,817
R-squared	0.011	0.010	0.067	0.064	0.014	0.009	0.086	0.087

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Table IA 4. Industry tournament incentives and real earnings management

This table presents the results of GMM-IV regression analysis of real earnings management using a sample of firm-year observations from 1993 to 2017. For brevity, only the second-stage regression results are reported. The dependent variables are abnormal discretionary expenses (columns 1 and 2), abnormal cash flows (columns 3 and 4), and abnormal production costs (columns 5 and 6), estimated from the model proposed by Roychowdhury (2006). The key explanatory variables are the predicted labor market incentive measures, *ln(Indgap1)* and *ln(Indgap2)*. *Indgap1* is defined as the pay gap between the CEO of interest and the second-highest-paid CEO in the same industry, and *Indgap2* is defined as the pay gap between a firm's CEO and the second-highest paid CEO in the firm's industry-size subgroup. All other control variables are defined in the Appendix. Both regressions include year and CEO-firm fixed effects. In parentheses are two-side *p*-values based on robust standard errors adjusted for firm-level clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Abnormal discretionary expenses		Abnormal cash flows		Abnormal production costs	
ln(Indgap1)	-0.009**		0.003		0.001	
	(0.042)		(0.330)		(0.808)	
ln(Indgap2)		-0.009*		0.004		-0.001
		(0.085)		(0.256)		(0.831)
Controls (Table 4)	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
CEO-firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,723	17,810	18,723	17,810	18,723	17,810
R-squared	0.098	0.100	0.086	0.089	0.075	0.077

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