Executive Ethics and Accounting Irregularities

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Abstract

This paper uses executives' membership on an extramarital dating website as a negative proxy for ethics and finds that financial statements from the firms of unethical executives are more likely to be restated. The likelihood of restatement is higher when unethical executives are CEOs. Restatements cluster around a few issues, with executive compensation being one of the most prominent. Unethical executives are also associated with ineffective internal controls, material weaknesses, and securities lawsuits. When unethical executives are revealed, their firms' stock prices decline. The decline is steeper for firms with recent restatements. In the subsequent year, executives revealed as unethical whose firms have restatement histories are more likely to be demoted and receive less compensation.

1 Introduction

Executives substantially influence corporate choices and outcomes. Early literature almost exclusively attributes their influence to either the principal-agent problem (Jensen and Meckling 1976) or executive traits that would in turn almost always be attributed to either ability (Bertrand and Schoar 2003) or risk preference. In the management literature, the upper echelon theory (Hambrick and Mason 1984) argues that corporations reflect managers' values and cognitive preferences. In practice, firms often claim to hold values, such as ethics and integrity (Guiso et al. 2015), and often fire executives for unethical behavior.[1] Similarly, accounting practice calls for and heavily emphasizes ethics, and accounting quality depends on preparers' ethics. As comparatively little has been written in the accounting literature that relates preparers' ethics to accounting quality, this paper bridges this this gap by empirically examining the relationship between executives' ethics and accounting irregularities.

This relationship remains untested, mainly due to the difficulties in measuring ethics. Often, ethics is measured by the revelation of indiscretions, a method hampered by severe selection biases. However, an incident in the summer of 2015 unintentionally provided a means to overcome this challenge. A group of hackers, out of moral righteousness—or so they claimed—hacked and released the user database of an extramarital dating website, Ashley Madison, the largest of its kind in the world. A nontrivial number of executives, 164, of which 81 once held the position of either CEO or CFO, appeared to be among the website's users.

Using executives' membership on this website as a negative proxy of ethics, empirical tests show a strong association between unethical executives and accounting restatements. In years when a firm employs an unethical executive, the probability of its financial statements being restated increases by 6.6%, a 39.5% increase from the empirical restatement probability of 16.7% for companies without unethical executives. If an unethical executive is the CEO, the incremental restatement probability rises to 11.5%, a 68.9% increase. To alleviate the reverse-causality concern that companies with corrupt corporate cultures are more likely to both hire unethical executives and restate financial statements, I examine restatements before and after unethical executives' employment. The likelihood to restate is indifferent from up to three years

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[1] For example, McDonald's CEO Steve Easterbrook was fired for dating a subordinate. Now he needs to disgorge $105 million as repayment to his former employer. See *McDonald's CEO Fired For Consensual Relationship: Is A Ban On Relationships The Best Policy?* (forbes.com/sites/kimelsesser/2019/11/04/mcdonalds-ceo-fired-for-consensual-relationship-is-a-ban-on-relationships-the-best-policy/) and *Former McDonald's C.E.O. Repays Company $105 Million* (nytimes.com/2021/12/16/business/mcdonalds-steve-easterbrook.html).

before an unethical executive joins a company's management team but significantly higher up to three years after an unethical executive leaves. Using whether unethical executives attempt to delete their membership records from the extramarital affair site as a proxy for their discretion, I find that discreet unethical executives reduce restatement probability. Moreover, the incremental restatements from unethical executives cluster around a few issues. In particular, unethical CEOs are 14 times more likely to precipitate compensation-related restatements, suggesting self-dealing. In addition, I find that unethical executives are associated with more ineffective internal control, more material weaknesses, and more class action securities fraud litigation. Together, these findings are consistent with unethical executives influencing accounting irregularities, although the causality may not be definitive.

Next I conduct an event study on stock price reactions to the revelation of the executives' membership on the dating website. When the website hack was acknowledged and the data released, stock prices for companies associated with unethical executives dropped by about 1%. The drop was more substantial when executives were currently employed and when they held key positions. Moreover, for firms with unethical executives and recent restatements, the amount of the stock price drop increased to 2.66%. These findings are consistent with the capital market being concerned about the possibility that unethical executives' will damage their firms through misreporting (and potentially other misdeeds).

Finally, I examine whether unethical executives suffer career outcomes upon revelation of their use of the extramarital affair site. Conditional on their companies having issued restatements during their tenures, unethical executives are by 45.7% more likely to be demoted and by 50.2% more likely to receive less compensation within a year. Similar career setbacks do not befall executives without restatement histories.

This paper joins several streams of the literature. It expands the literature on manager characteristics. Bertrand and Schoar (2003) show that managers influence a wide range of corporate choices. Recently, researchers have started to use specific traits to explain managers' impact on their firms (see Malmendier and Tate 2005, Jia et al. 2014, Davidson et al. 2015, Mironov 2015, Cline et al. 2018, Ham et al. 2017). This paper differs from prior work in several important ways. First, my ethics measure provides a direct link between an executive trait and corporate misbehavior without being mediated by ability or risk preference. Second, the proxy for ethics is solely the result of executives' own choices and is thus more revealing about their ethics. Lastly, the proxy is free from selection biases, a rare feature in studies on executive vices. This paper

also contributes to the literature on the determinants of accounting irregularities. It is, to the best of my knowledge, the first to relate executive ethics to restatements. Lastly, my finding regarding executive career outcomes supplements the literature by showing that executives may be disciplined before actual financial misrepresentation occurs, complementing the account of Karpoff et al.'s (2008) on significant disciplinary actions on individual perpetrators of financial misconduct.

The paper proceeds as follows. 2 reviews the related literature and develops the hypothesis. Section 3 designs testable empirical predictions and discusses the validity of the ethics measure. Sections 4, 5, and 6 present and interpret the empirical results regarding the ethics-restatement relation, the market reaction, and executive career outcomes. Section 7 concludes.

2   Hypothesis development

2.1   Related literature

Traditionally, the economic literature uses two frameworks to explain managers' influence on their firms. One is principal-agent theory (Jensen and Meckling 1976); that is, managers and shareholders usually do not share common goals, so managers' choices often diverge from shareholders' will. The other is managerial ability and risk preference. For example, in Gabaix and Landier's (2008) equilibrium, the most capable CEOs manage the biggest firms, which maximizes the CEOs' influence and economic efficiency. Empirically measuring ability is hard. Some papers proxy for ability with education, such as Bertrand and Schoar's (2003), where MBA degrees are used as the proxy. Age is also vaguely considered an ability proxy, as experience increases with age. Traits that are unrelated to ability, such as frugality (Davidson et al. 2015, by luxury goods ownership), corruption (Mironov 2015, by traffic violation record), poor judgment (Cline et al. 2018, by hodgepodge of offences, from lies to outright crimes), military experience (Benmelech and Frydman 2015), overconfidence (Malmendier and Tate 2005, 2008, by CEO personal portfolio choice; Hilary and Hsu 2011, by record of short run of accurate guidance), masculinity (Jia et al. 2014, by facial feature), and narcissism (Ham et al. 2017, by signature size), are usually argued to be related to risk preferences. Most of this literature focuses on corporate performance (either accounting or market) as the outcome variable, which is arguably driven by managerial ability and risk taking. Other outcome variables, such as misreporting, are viewed as deviations from normal practice and are often attributed to risk preference.

The executive literature has succeeded in explaining certain corporate choices and outcomes, including financial misreporting. However, when examining some of the most egregious cases, for example, Enron, WorldCom, Bernard Madoff, and so on, no framework satisfactorily predicts or explains such scandals, which investors, regulators, and other stakeholders of course would have preferred to know about. The scant research on human factors unrelated to ability and risk preference manifests as an apparent gap in the economic, finance, and accounting literatures. The principal-agent framework relies on rationality and ignores human factors[2] The managerial ability framework so far examines human factors that relate to executive competence. Nevertheless, the management literature acknowledges human factors' broad influence. Specifically, the upper echelons theory suggests: "Top executives view their situations [...] through their own highly personalized lenses. These individualized construals of strategic situations arise because of differences among executives in their experiences, values, personalities and other human factors" (Hambrick 2016, p. 1). The theory's proponents also argue that "organizational outcomes [...] are [...] reflections of the values and cognitive bases of powerful actors in the organization" (Hambrick and Mason 1984, p. 193). A few papers in finance deal with executives' human factors. In an opinion piece, Erhard and Jensen (2017) attribute the "seemingly never-ending scandals" and "enormous damaging impact on human welfare" (p. 2) to a lack of integrity and propose the inclusion of this lack as a part of the paradigm of financial economics. From a unique dataset provided by a consulting firm that assesses top management candidates for private equity investors, Kaplan et al. (2012) find that several desirable CEO characteristics and abilities positively contribute to success. The dataset contains 30 such characteristics and abilities, categorized into five groups, where integrity is the first characteristic in the personal group. However, Kaplan et al. interpret integrity as an interpersonal skill and categorize it as an *ability*. Whether and how executives' human factors empirically affect corporate choices and outcomes remains largely unanswered.[3]

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[2]Unless quoted from another source, in this paper, "human factors" refers to executive traits that cannot be inferred from either ability or risk preference. One human factor that does get incorporated in the principal-agent framework is the avoidance of work, but it is seldom the focus of research.(for an example, see Bertrand and Mullainathan 2003).

[3]Kaplan et al.'s (2012) other personal characteristics are organization, calmness, aggression, promptness, and commitment. Compared with integrity, they are better described as abilities. For descriptions of the characteristics, see Kaplan et al.'s Table I. For more discussion of Kaplan et al.'s integrity measure, see footnote 14.

2.2 Executive ethics and accounting irregularities

In the broadest sense, this paper's research question is whether and how corporate choices and outcomes reflect managers' human factors. Because both executives' human factors and corporate choices and outcomes are multi-dimensional, it is necessary to begin with one human factor that is important, one set of choices and outcomes that is interesting to accountants, and a readily plausible relationship between them. As a result, this paper examines how executive ethics affects accounting irregularities.

Ethics, integrity, morality, honesty, etc., are closely related concepts, and the terms are often used interchangeably. This paper does not distinguish among them and refrains from formally defining ethics. My analysis views ethics as a good human factor, which is unrelated to ability or risk preference, that leads a person to make righteous decisions. The reader must decide how well the empirical measure captures ethics, integrity, morality, or honesty.

Ethics holds a central position in accounting theory and practice. Explicit ethical requirements and expectations are imposed on preparers and auditors. Notably, the Sarbanes-Oxley Act of 2002 dedicates Section 406 to "code of ethics for senior financial officers." Section 906 of the same act holds CEOs and CFOs personally accountable on the fair presentation of all material information in the periodic reports.[4] Also, the AICPA makes ethics a focal point in the Code of Professional Conduct.[5] Empirically, Guiso et al. (2015) finds that ethics, along with other virtues, is a much advertised corporate value. Although this sort of advertisement appears unrelated to performance, top managers' ethics, as perceived by employees, is positively associated with firms' performance. Social psychology considers honesty an important personality trait. In a two-dimensional, social-desirability-versus-intellectual-desirability configuration of 60 traits, Rosenberg et al. (1968) place honesty on the social desirability axis (Figure 3), which is orthogonal to intellectual desirability. Risk preference, as discussed earlier, is missing in the social psychology analysis. One could argue that ethics requires an agent to act in accordance with the principal's risk preference. However, in Rosenberg et al. (1968)'s framework, traits such as caution, daring, and reticence are at face value more associated with risk preference. Judging from their coordination in the social-desirability-versus-intellectual-desirability space, risk preference traits are uninformative for forming social perception. Rosenberg et al. (1968) are among many social psychologists who regard ethics and competence as two fundamental dimensions

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[4]See govinfo.gov/content/pkg/PLAW-107publ204/pdf/PLAW-107publ204.pdf.
[5]See aicpa.org/research/standards/codeofconduct.html.

of social perception and do not view ethics as related to either ability or risk preference (for a list of reference, see Stellar and Willer 2018, p. 195).

Accounting irregularities are the main consequence of executive ethics considered by this paper. When accounting irregularities occur, faithful (fair) representation, which is one of the two fundamental qualitative characteristics of useful financial information specified by both FASB[6] and IAS[7], is compromised. Accounting irregularities constitute one facet of accounting quality. This paper does not address accounting quality because of its large scope and because measures of accounting quality usually summarize many forces that shape financial reporting, benign and malignant, whereas accounting irregularities more often result from misreporting, making them a better candidate for empirical analyses. Corporations and accounting are impersonal and thus cannot be unethical (or ethical) by themselves. Their ethics necessarily reflect the decisions and actions of individuals within them; put differently, a firm's ethics is the sum of its managers' (and employees') ethics. Ethical requirements and expectations on accounting practitioners reflect a belief that executive ethics is a necessary condition for better accounting quality.

The connection between executive ethics and accounting irregularities requires one last condition, which is that ethics, as a personality trait, operates indifferently at home and work. Validating this condition is beyond this paper's capacity, so it is taken as a maintained assumption. To the best of my knowledge, the social psychology literature does not separate ethics as a personality trait into professional and nonprofessional (private) domains.[8,9]

Based on the discussion above, I hypothesize that (in the alternative form):

Hypothesis 1. *Unethical executives contribute to accounting irregularities.*

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[6] See Statement of Financial Accounting Concepts No. 8 *Conceptual Framework for Financial Reporting*, pars. QC5, QC12–QC16.

[7] See IAS 1 *Presentation of Financial Statements*, pars. 15–24.

[8] Perhaps the case of Mr. Steve Easterbrook, first mentioned in footnote 1, can serve as anecdotal evidence. McDonald's board of directors removed him because dating a subordinate constitutes as a violation against corporate policies on personal conduct. The board also accused Mr. Easterbrook of lying about the number and extent of his relationships with subordinates and using his corporate email account to receive and send sexually explicit photos and videos of various women. His immoral dating practice bled into other indiscretions and violations of corporate policy.

[9] The social psychology literature does, however, have a theoretical tradition of decoupling morality and competence. Stellar and Willer (2018) indicate that "morality and competence are not traditionally examined for their impact on one another" (p. 196).

3 Empirical predictions and measurements

3.1 Empirical predictions

To evaluate hypothesis 1, I formulate a series of empirical tests. To begin, I first test the contemporaneity between unethical executives and accounting irregularities:

Prediction 1. *With all other conditions remaining the same, a company's posterior probability of accounting irregularities in fiscal years in which it employs unethical executives is higher than in fiscal years in which it does not.*

When the treatment strengthens in a quasi-experiment, the treatment effects will also strengthen. It follows that:

Prediction 1A. *With all other conditions remaining the same, a company's posterior probability of accounting irregularities in fiscal years in which it employs unethical chief executives is higher than in fiscal years in which it employs unethical nonchief executives.*

The contemporaneity in Prediction 1 may be due to reverse causality; companies prone to accounting irregularities may also hire unethical executives. To alleviate this concern, I test the lead- and lag-association between unethical executives and accounting irregularities:

Prediction 1B. *Given that a company ever employs unethical executives, its posterior probability of accounting irregularities is the highest in fiscal years during the unethical executives' employment, followed by the fiscal years after their departure, and then by the fiscal years before the unethical executives' joined.*

Immorality as a negatively perceived personal trait is best covered up, and so are accounting irregularities. Therefore,

Prediction 1C. *With all other conditions remaining the same, discreet unethical executives are associated with less known accounting irregularities than undiscreet unethical executives.*

When an executive commits accounting irregularities, that executive must consider the private benefit and the expected private cost in case the irregularities are exposed. Irregularities involving earnings, although they can help achieve a managerial benchmark, mainly shift wealth temporally from some shareholders to others. Given their "altruistic" nature, they are unlikely due to unethical executives. In contrast, irregularities of a self-dealing nature, such as option back-dating, are likely due to unethical executives. Therefore,

Prediction 1D. *With all other conditions remaining the same, unethical executives are more likely associated with self-dealing accounting irregularities than with nonself-dealing irregularities.*

Next I consider an indirect test. If hypothesis 1 is true (that is, unethical executives contribute to accounting irregularities), then once the ethics of a company's executives becomes public information, the market would update its expectation on the company's posterior probability of accounting irregularities. Based on the new probability, the company's stock will be revalued.

Prediction 2. *With all other conditions remaining the same, stock prices of companies that employ unethical executives decline on the revelation of the executives' lack of ethics. What's more, the stock prices decline more when the unethical executives' employment is ongoing and when these executives hold chief executive positions.*

Because society prefers people to behaving ethically, one may interpret supportive empirical evidence to Prediction 2 as poor corporate culture causing the revaluation of companies. To distinguish from this alternative interpretation and relate Prediction 2 to accounting irregularities, I propose a related prediction. Assume that, for companies with a recent record of irregularities, the market would assign a higher probability of another irregularity at the revelation of unethical executives. It follows that—

Prediction 2A. *With all other conditions remaining the same, companies with recent records of irregularities experience more negative stock revaluations from the revelation of unethical executives than do those without recent records of irregularities.*

Lastly, I consider the consequences of ethics for executives. Suppose again that hypothesis 1 is true. It follows that, once a board knows an executive is unethical, it would take precautionary measures, such as discharging the executive from the reporting responsibility, to reduce the probability of future irregularities. As a result,

Prediction 3. *With all other conditions remaining the same, unethical executives experience negative career outcomes after revelation, such as firing, demotions, and pay cuts.*

There are a couple of additional conditions for Prediction 3 to materialize. First, the board must be aware of the executive's lack of ethics. Second, the board must be able and willing to punish the unethical executive. Neither condition is guaranteed. For example, boards' means of evaluating executive ethics differ from the one employed by this paper. Additionally, boards may have been captured by their unethical executives. Moreover, even if Prediction 3 is empirically

documented, the outcome may be explained by office politics or other reasons unrelated to hypothesis 1.[10,11] To alleviate such concerns and relate Prediction 3 to accounting irregularities, I propose an additional prediction:

Prediction 3A. *With all other conditions remaining the same, unethical executives with records of accounting irregularities with their current companies experience more negative career outcomes than unethical executives without any record of accounting irregularities with their current companies.*

3.2 Measuring ethics

A key innovation of this paper is using executives' membership at an extramarital dating website as a negative proxy for ethics. A list of member executives is obtained by matching a leaked dump of the website to the ExecuComp database. For the sake of the brevity of the main text, the step-by-step matching procedure and a set of validating analyses on the matches are offered in Appendix A. This section discusses how this unique measure differs from existing measures of executive traits in the literature.

First, the measure and the trait measured are directly linked, as infidelity and immorality are highly correlated in social impressions. Readers thus can judge by themselves the accuracy and effectiveness of the measure without relying on the results from other disciplines.[12]

Second, the measure is not confounded by other personality traits. Having an extramarital affair is unambiguously unethical and allows for few alternative interpretations. As extensively discussed earlier, it is also unrelated to competence and risk preference.[13]

Third, the measure represents a deliberate choice of the executive. If someone has a credit card and a willingness to enroll, then that person could have become a paying member of the dating website and would have appeared in the dump. It is impossible or at least very difficult to enroll a gender, a facial feature, or a signature style.

Fourth, the measure is free from selection biases. People often hide undesirable traits. Immorality is typically caught only after being monitored, but that monitoring is certainly not

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[10]Yahoo's former CEO Scott Thompson being removed from his post due to résumé issues shows how multiple conflicting forces are involved in executive removals. See *Why Daniel Loeb is trying to get Yahoo's CEO fired* (forbes.com/sites/susanadams/2012/05/04/why-daniel-loeb-is-trying-to-get-yahoos-ceo-fired/) and *The high price of career lies* (forbes.com/sites/deborahljacobs/2012/05/14/the-high-price-of-career-lies-2/).

[11]Other explanations include, for example, that the the revelation causes stress and distress, lowering executive performance and hampering their career advancement.

[12]For example, Jia et al. (2014), relying on male facial structure predicting behaviors, acknowledge that "the linkages proposed [. . .] are topics of ongoing investigation" (p. 1201).

[13]Using the same data source, Grieser et al. (2017) aggregate employee membership at the company level to proxy for corporate culture and link this to innovation, an interpretation that this author would dispute.

random. Take Scott Thompson's case (See footnote 10) for instance. Mr. Thompson was found lying only when Daniel Loeb was "looking for dirt." Take the Rigases, as another example. Had Adelphia's securities fraud remained concealed, the public would never have known about CEO John Rigas's and CFO Timothy Rigas's abusive use of corporate jets (Yermack 2006). In the empirical financial economic literature, the identification of bad traits is almost always the joint event of having bad traits and being caught having bad traits.

Fifth, the measure is replicable. Because the dump is publicly available and the definition of having a paying membership is clear, any researcher with the right tools can create a list of unethical executives who are very close (if not identical) to the one this paper uses. Besides Grieser et al. (2017), Griffin et al. (2017) rely on LexisNexis addresses to identify individual executives and examine the effects of ethics on corporate ethics. This paper differs from those papers by focusing on the relationship between executive ethics and accounting irregularities. Parsons et al. (2018) use the dump to estimate city-level rates of spousal infidelity and use it to measure nonfinancial misconduct that is not explicitly illegal. Previously in the literature, when measuring executive indiscretions, Cline et al. (2018) mingled sexual misadventures, substance abuse, violence, and dishonesty, which are heterogeneous even within each category. When measuring executive frugality, Davidson et al. (2015) consider ownership of real estate, boats, luxury vehicles, and motorcycles. Under such a standard, an executive living in a relatively modest home yet owning, for instance, a few Rembrandt paintings could still be "frugal."

Despite its benefits, dating membership as an ethics measure does have limitations. For example, a dating membership at face value represents a tendency to seek extramarital affairs. Such tendency is age-dependent, whereas ethics is not. As a result, younger executives are over-represented in the list of unethical executives. Another concern is the timeliness of the measure. In this paper, once an executive registers as a paid member, he is considered unethical, but a person's ethics can change over time. To alleviate this concern, this paper chooses a short sample period that is close to the revelation date (more on sample period choice in Section 4.1). Also, the circumstances under which the dump was released are controversial. However, as pointed out earlier, immorality is often covered up. Kaplan et al. (2012) show how openly measuring integrity would undermine the very goal.[14] I am unaware of a better ethics proxy

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[14]Kaplan et al.'s data are initially used by private equity investors for assessing top management candidates, which are generated from four-hour structured interviews, supplemented with hard information. Each characteristic is monotonically positive in the evaluation, and therefore candidates have incentive to score as high as possible. In their Table I, "integrity" and "work ethics" have the highest means and the lowest standard deviations, consistent with their being hard to observe, quantify, verify, easily manipulated by interviewees, and ultimately uninformative.

than the one I use in this study.

4   Unethical executives and restatements

4.1   Sample descriptions

Table 1 tabulates the number of unethical executives from 2005 to 2016 at the firm level. The headings, *executive*, *chief*, *CFO*, and *CEO*, indicate that frequencies are counted for any unethical executives, chief executives only, CFOs only, and CEOs only, respectively. The heading *all* indicates that frequencies are counted as long as the matched unethical executives appear in ExecuComp. The heading *post-registration* (P.-R.) indicates frequencies are only counted in and after the year the unethical executives have joined the dating website.

A membership on the extramarital dating website can be interpreted as either representing the member's innate ethics or at least the person's willingness to consider behaving unethically. This difference affects the empirical prediction whether an executive labelled unethical could affect restatements before obtaining the membership. This paper invites readers to a moderate view that a person's ethics may change (either worsening or improving) over time, so the truth probably lies somewhere between the two interpretations. In my setting, an executive is considered unethical as long as that person has had a membership. As a counterbalance, the sample period is deliberately set short and close to the data dump date to keep the ethics measure relevant. Another reason to choose a short sample period is that the dating website was founded in 2002 and gained a half of its 2015 paid user base in 2012. It is possible that some executives in the 2000s may not have known about this website and would have otherwise registered. Starting the sample too early introduces Type I errors in identifying unethical executives. When considering the ending year, it is necessary to give a couple of years for the financial statements to be restated.[15] Moreover, given the fact the website is still in operation and attracted even more members due to the publicity from the dump release,[16] more executives might have registered after the dump release. Pushing the sample period to the most recent year also brings in Type I

Characteristics with lowest mean scores are "removes underperformers," "attention to details," and "hires A players," which are equally desirable but easier to measure with supplementary hard information.

[15]Out of all the 1,543 restatements that meet this paper's criteria from Audit Analytics, 1,529 (95.59%) and 1,540 (99.09%) have a time lag between their restatement announcement dates and the restated period end dates under two and three years, respectively.

[16]According to a Forbes article, the website "has amassed around 32 million new users since the hack." See forbes.com/sites/zakdoffman/2019/08/23/ashley-madison-is-back-with-30-million-cheating-spouses-signed-since-the-hack/.

errors by failing to identify newly registered executives. Therefore the sample period for testing Predictions 1–1D is set to 2011–2016.

The sample includes all industrial firms (historical SIC codes not in the range of 4900–4999 or 6000–6999) covered by ExecuComp. Table 2 reports descriptive statistics. Appendix C provides the variable definitions. Descriptive statistics are separately presented for unethical (*unethical firm* = 1) and ethical (*unethical firm* = 0) firms. In addition, the table reports $d(\text{Mean})$, the difference in the group means, corresponding t-statistics and p-values for the null hypothesis, $d(\text{Mean}) = 0$, under the unequal variance assumption. There are 609 unethical firm-years and 8,143 ethical firm-years.

For independent variables, 52.9% of the unethical firm-years have unethical executives in their leadership: 11.2%, 15.3%, and 26.4% have the CEO, the CFO, and at least one "chief," respectively. This affords some variation within unethical firms, which allows for testing the incremental effects from top unethical executives. Untabulated in the table, there are 306 firm-years with one unethical executive, eight with two unethical executives, 159 firm-years with one unethical chief executive, and two firm-years with two unethical chief executives. By construction, ethical firm-years have no unethical executive.

For dependent variables, the pooled mean of *restatement* (not tabulated) is 0.171. The mean of *restatement* for unethical firms and ethical firms is 0.233 and 0.167, respectively. The difference between them is significant with a p-value < 0.001. This lends preliminary support to Prediction 1. Also included are *IIC* (ineffective internal control), *# of weaknesses* (number of material weaknesses), *AAER* (Accounting and Auditing Enforcement Releases), and *# of suits* (number of security lawsuits), forming a group regarding compliance and legal outcomes. Only *# of suits* exhibits a statistical difference (at 10% level) between ethical and unethical firm-years.

A set of control variables, drawn from the restatement literature, is also presented, of which only *Big Four* and the *revenue growth* rate differ between ethical and unethical firms. The mean values for *Big Four* are only 4.2% apart from each other $((0.037)/\frac{1}{2}(0.856 + 0.893))$, so the difference is not economically significant. Thus the only material between-group difference is in *revenue growth*, which suggests that ethical firms perform better.

Following the practice in the literature, unbounded continuous independent variables are winsorized, including *revenue growth*, ΔROA, *book-to-market*, *leverage*, and *size*, at the first and 99th percentiles by year.

Table 3 reports correlation coefficients. The Pearson correlation coefficients are at the upper-

right corner, and the Spearman correlation coefficients are at the lower-left corner. To conserve space, *t*-statistics are suppressed. Coefficients in bold are significant at 5% level. Across the independent variables, *unethical CEO* and *unethical CFO* are not correlated, as during the sample period, only two firm-years have an unethical CEO and an unethical CFO simultaneously. All independent variables, except *unethical CFO*, are significantly correlated with *restatement*. The independent variables are also correlated with other compliance and legal variables, except *AAER*, which is rare.

4.2   Main results

Models used to test Predictions 1–1D are all in the following format:

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\begin{aligned}
y = \alpha &+ \beta \, \text{ethics measure(s)} \\
&+ \gamma_1 \, \textit{specialist} + \gamma_2 \log(\textit{auditor tenure}) + \gamma_3 \, \textit{big four} + \gamma_4 \log(\textit{audit fees}) \\
&+ \gamma_5 \, \textit{revenue growth} + \gamma_6 \, \Delta ROA + \gamma_7 \, \textit{book-to-market} + \gamma_8 \, \textit{leverage} \\
&+ \gamma_9 \, \textit{size} + \delta \, \text{fixed effects} + \varepsilon.
\end{aligned}
\tag{1}
$$

y is the dependent variable, which could be either *restatement, IIC, # of weaknesses, AAER, # of suits,* etc. The independent variables are the ethics measures, which can be either *unethical executive (exec.), unethical CFO, unethical CEO, unethical chief,* etc. Because *y* represents a negative outcome and the ethics measures are negative proxies, Hypothesis 1 invariably predicts significant positive coefficients on the ethics measure(s), that is, the estimator of β, $b > 0$. *Specialist* to *size* are control variables that are shown to affect accounting irregularities by the auditing and fraud literature (Beasley 1996, Abbott et al. 2004, Dechow et al. 2011, Abbott et al. 2012, Lobo and Zhao 2013). *Specialist* is a binary variable that equals 1 when the auditor is a specialist in the industry. An auditor is considered a specialist if it has the largest market share of audit fee revenues in the client's industry and its market share is at least 10 percentage points greater than the runner-up. log(*Auditor tenure*) is the natural logarithm of the number of years that the company has worked with its current auditor. *Big Four* is a binary variable that equals 1 when the financial statements are audited by one of the Big Four auditors. log(*Audit fees*) is the natural logarithm of the audit fees in thousands of dollars. *Revenue growth* is the percentage increase in sales over the past year. ΔROA is the change in ROA over the past year, where ROA is the ratio of net income to the beginning-of-period total assets. *Book-to-market* is the book-to-market ratio of common equity.

Leverage is the ratio of the book value of total debts to the book value of total assets. *Size* is the natural logarithm of total assets in millions of dollars. Fixed effects are included to ensure the model is robust. Observations are at the firm-year level.

This section reports and discusses empirical evidence for Prediction 1. Table 4 presents results from regressing *unethical exec.* on $y = P(restatement)$ under various specifications in the format of equation (1), from the most parsimonious to the most extensive. *Restatement* is a binary variable for a firm-year's financial statements subsequently restated. The interested variable is *unethical exec.*, the number of unethical executives in a firm-year. Because *restatement* is a binary variable, table 4 begins with a univariate probit model in column 1. The coefficient on *unethical exec.* is 0.256, and the *t*-statistic is 3.383, which is significant at 1%. To help quantify the economic significance of *unethical exec.*, table 4 also reports the average partial effects (APEs) of the explanatory variables under the heading *APE*. The APEs are obtained by computing the partial effect at each observation and averaging the individual partial effects, following Greene (2012, pp. 696–699). The APE of one unethical executive on restatement is 6.5%.

The model is next augmented by the inclusion of control variables. The results are in column 2. The coefficient and significance level of *unethical exec.* are very close to column 1. The literature does not produce consistent coefficient signs on control variables, so I do not push to justify each coefficient's sign. To further control for factors that are not explicitly modeled, I introduce fixed effects. Ideally, models with fixed effects should also be fitted by a probit model. However, with a lot of regressors, maximum likelihood estimators may not converge. Therefore I resort to linear probability models. To ensure consistency between the linear probability model and the probit model, I first use the linear probability model to re-estimate column 2 without fixed effects. Column 3 shows that the marginal effects, that is, the coefficients from the linear models, and the significance levels from the linear model are very close to those from the probit model. In particular, the marginal effect of *unethical exec.* is 6.5% for the probit model and 7.0% for the linear model. Column 4 reports the linear probability model estimated with industry and year fixed effects. Column 5 reports the linear probability model estimated with industry-year fixed effects, where each industry-year combination has its own coefficient. Industry-year fixed effects control for industry effects that vary over time. The marginal effects of *unethical exec.* are very close across different specifications, so are those of the control variables, with the exception of log(*auditor tenure*) and ΔROA, whose effects are completely absorbed by the industry-year fixed effects. In the rest of the paper, I use a linear probability model with industry-year fixed effects

as the default specification and refer to it as the "benchmark model."

The benchmark model supports Prediction 1. The magnitude of the incremental restatement probability is both statistically and economically significant, as 6.6% translates to a 39.5% increase from the empirical restatement probability of 16.7% for companies without unethical executives.

4.3 Unethical chief executives and restatements

This section tests Prediction 1A and considers whether restatements increase with the intensity of executive immorality. A natural continuous measure of this intensity is the number or percentage of unethical executives in a firm's leadership. However, the sample has only eight firm-years with two unethical executives, so this measure does not provide enough variation. Another measure of executive immorality intensity is the position of the unethical executives. Higher ranking executives assume more responsibility in financial reporting. It follows that restatements increase with the position of the unethical executives. This section considers four additional treatments of different intensity, that is, *unethical firm* (a less intense treatment), *unethical chief*, *unethical CFO*, and *unethical CEO*. The specification is otherwise identical to the benchmark model. Prediction 1A requires treatment variable coefficients to increase with treatment intensity.

Table 5 reports the results. The coefficient on *unethical firm* (column 1, 0.058) is smaller than the coefficient on *unethical exec.* (0.066, from table 4, column 5), and the coefficient on *unethical chief* (column 2, 0.069) is larger than the coefficient on *unethical exec.*, although the difference is small. Columns 3 and 4 together show that the incremental restatements from *unethical chief* are mainly driven by *unethical CEO*. The null result on *unethical CFO* may be explained by that unethical CFOs use their expertise to avoid restatements, which neutralizes the incremental effects brought about by their higher position, consistent with Albrecht et al. (2018). The coefficient on *unethical CEO* is 11.5%, substantially larger than the benchmark result of 6.6%. Economically speaking, this represents a 68.9% increase from the empirical restatement probability of 16.7% for companies without unethical executives.

4.4 Personal impact or corporate culture

The nontrivial coefficient on *unethical firm* reported in Section 4.3 gives rise to a competing explanation for the association between unethical executives and restatements; that is, rather than unethical executives explaining the results, unethical corporate cultures attract unethical

executives, and those cultures cause restatements.

Prediction 1B is designed to probe into this alternative explanation. Assuming corporate culture is exogenous and does cause restatements, restatements should occur at a constant rate within each firm when there is no unethical executive in its leadership. As executives do join and leave firms in the sample and firm characteristics remain relatively stable, it is possible to test this competing explanation. This section introduces two new independent binary variables, *pre-unethical exec.*, which equals 1 if a firm is not currently employing an unethical executive but employs one within the following three years, and *post-unethical exec.*, which equals 1 if a firm is not currently employing an unethical executive but employs one within the preceding three years.

Table 6 Panel A shows descriptive statistics of the new variables, calculated conditional on *unethical firm* = 1. Panel B regresses *restatement* on combinations of *pre-unethical exec.*, *unethical exec.*, and *post-unethical exec.* as interested independent variables, along with the control variables and the industry-year fixed effects from the benchmark model. The coefficients on the interested variables are consistent across combinations. *Pre-unethical exec.* is insignificantly positive. *Unethical exec.* and *post-unethical exec.* are significantly positive with greater coefficients. The coefficient on *post-unethical exec.* is larger than that on *unethical exec.*, which is unexpected, but with lower statistical significance.

The asymmetric loading of the coefficients on *pre-unethical exec.* and *post-unethical exec.* supports hypothesis 1 by suggesting that executives change corporate cultures, rather than that corporate culture attracting executives, a view shared by Graham et al. (2017). The positive coefficient on *post-unethical exec.* could be interpreted as unethical executives leaving a legacy of poor reporting practices after their departure. However, given the low frequencies for *pre-unethical exec.* and *post-unethical exec.*, the low statistical significance may be due to low power, and the conclusion in this section requires further investigation.

4.5 Discreet unethical executives and restatements

The revelation of extramarital affairs and accounting irregularities both could cost offenders substantially. Affairs are a strong predictor of divorce (Amato and Rogers 1997, Fan and Lui 2004), which can bring a raft of negative consequences.[17] Accounting restatements trigger

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[17]For example, Jeff Bezos's apparently friendly divorce cost him 35.8 billion US dollars. See `wsj.com/articles/jeff-bezos-and-his-wife-mackenzie-aredivorcing-11547048309`.

stock price drops and, among other things, for example, lawsuits. According to Audit Analytics (2008), restatements for operational or integrity issues have the largest impacts on stock performance. Palmrose et al. (2004) reports average cumulative abnormal returns (CARs) of –9.2% surrounding restatement announcements. Therefore there are similar incentives to cover up affairs (here the dating site memberships) as well as accounting maneuvers.

The dating site advertises a "full delete" service to remove all traces of a member's usage for $19, and it specifically promises removal of site usage history and personally identifiable information. After a full delete, a member loses access to website. However, against the promise, the site retains a large amount of information, including all credit card transaction records, which are used for creating the list of unethical executives. The data dump offers a rare opportunity not only to identify unethical executives but also to identify those who attempt to cover up their use of the site. This paper uses the "full delete" purchase record as a proxy for unethical executives' tendency to cover up their misbehavior, financial misreporting and extramarital affair attempts included. The binary variable, *discreet*, equals 1 when the corresponding executive purchasing the full delete service.

Table 7 Panel A reports descriptive statistics of *discreet* interacted with *unethical exec./chief/ CFO/CEO*, conditional on *unethical firm* = 1. Panel B reports the regression results, again in the format of equation (1). It corresponds to Table 5 by adding the interactive terms to the models. In column 1, the coefficient on *unethical exec. × discreet* exceeds *unethical exec.* with the opposite sign, indicating unethical executives' cover-up efforts fully mitigate the incremental restatements. Column 2 shows a similar pattern for *unethical chief*, yet the coefficient on *unethical chief × discreet* is insignificant. Column 3 repeats the pattern again, but neither coefficient is significant. In column 4, the coefficient on *unethical CEO × discreet* is only a fraction of the coefficient on *unethical CEO*. A possible explanation is, because CEOs are the very top executive, their accounting manipulations are more egregious and thus more difficult to cover up. In summary, discreet unethical executives have qualified success in covering up accounting irregularities, which is consistent with Prediction 1C.

There is a caveat concerning the validity of the results. Some executives might have used gift cards to pay for their memberships, and, by doing so, they remained absolutely discreet. However, these executives are expected to number too few to alter the results.[18]

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[18]Of the 1,074,799 paid members, only 21,399 used a gift card, compared with 318,770 members who paid for the "full delete." Based on Appendix A and Table A.2, I expect only five absolutely discreet executives by $250 \times (21,399/1,074,799) = 4.98$, where 250 is the total number of expected matches.

4.6 Restatement reasons

As the ethics-restatement association has established, the question of what kind of restatements ensues from unethical executives follows. Prediction 1D postulates a common selfish psychological makeup with someone acting unethically in both their private and work lives. Audit Analytics (2008) reports that restatements regarding operational or integrity issues in particular have the greatest impact on stock performance and explicitly singles out options backdating as an example of integrity-related restatements. If unethical executives indeed contribute to restatements, then they are expected to contribute to more self-dealing restatements than other kinds of restatements.

Audit Analytics employs a taxonomy of 71 restatement issues. (Some are empty.) A restatement is often assigned to several issues. Table 8 reports the results regarding the association between unethical executives and restatements by issue. Each row corresponds to one issue. The dependent variable is a modified version of *restatement*. It equals 1 only when a company issues a restatement due to the issue identified by the #-description combination.[19] There are four columns with a heading in the form of $N(x, y)$, where x is binary and indicates whether the firm-year employs any unethical executive (Panel A) or CEO (Panel B), and y indicates whether the firm-year is subsequently restated. When analyzing a given issue, restated observations that are unrelated to the issue are excluded, so the total number of observations used for analysis, $\sum_x \sum_y N(x, y)$, varies across issues. *Ratio* is $\frac{N(1,1)}{N(1,0)} \big/ \frac{N(0,1)}{N(0,0)}$, which serves as a rudimentary quantification on how many times unethical executives are associated with a restatement issue as ethical executives. Next I regress the dependent variable on the independent variable, again in the format of equation (1), with control variables and industry-year fixed effects. The executive ethics variable is *unethical exec.* and *unethical CEO*, in Panels A and B, respectively. The coefficients of the independent variables and their associated *t*-statistics (in absolute value) are under *est.* and *t-stat.* *Implied Rt.* is $1 + est. \big/ \frac{N(0,1)}{N(0,0)}$, which measures on how many times unethical executives are associated with a restatement issue versus ethical executives, after controlling for other variables in the model. Without prejudice, I examine and report every restatement issue.

Table 8 shows that restatements associated with unethical executives are concentrated on a handful of issues. For both *unethical exec.* and *unethical CEO*, foreign issues (#11), compensation issues (#17), tax issues (#18), and pension issues (#69) are significantly positive. For *unethical*

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[19]The exact wording describing the categories comes from Audit Analytics. Cheffers et al. (2010) and Whalen et al. (2015) describe these categories in more detail.

exec. only, cash flow statement classification errors (#19), capitalization of expenditures issues (#23), lease issues (#42), and foreign issues (#44) are significantly positive, whereas accrual issues (#14) and disclosure issues (#36) are significantly negative. For *unethical CEO* only, debt and equity security issues (#4) and performance and income statement issues (#9) are significantly positive, whereas inventory and cost of sales issues (#20) are significantly negative.

Ignoring technical and peripheral issues, such as foreign and disclosure issues, the clustering of restatement issues depicts a disturbing profile of unethical executives. Agency conflicts between unethical executives and stakeholders appear to exist across the board. Employees would likely be concerned about the pension issues,[20] tax authorities with the tax issues, and shareholders with the (unsurprising) compensation issues. Compensation issues (#17) are most associated with option valuation relating to only key executives. The coefficient on *unethical CEO* suggests a marginal effect of 6% of more restatements, which translates to a nearly 14 (14.861 − 1) times greater likelihood than for ethical CEOs, a sharp contrast to previous results (see Section 4.3 and Table 5), where unethical CEOs are "only" 67% more likely to bring about generic restatements.

4.7   Compliance and legal outcomes other than restatement

This section investigates compliance and legal outcomes from unethical executives as a supplement to restatement analyses in Section 4.2. The outcomes include the disclosure of ineffective internal control (*IIC*), the disclosure of material weaknesses (# *of weaknesses*), the receipt of SEC Accounting and Auditing Enforcement Releases (*AAER*), and facing securities class actions (# *of suits*).

There are a couple of reasons to expect a positive correlation between executive ethics and compliance and legal outcomes. First, in theory, compliance and legal actions against companies happen based on accusation of wrongdoings, usually related to integrity and ethics issues, so the arguments for unethical executives driving restatements would likewise apply. Second, in practice, ineffective internal control, material weaknesses, and restatements depend on the same information (mostly internal) and are subject to the same decision-makers (such as managers and auditors). Comparatively, AAERs and securities class actions depend less on internal information. Table 3 has shown that the compliance and legal outcome variables are correlated with *restatement* and among themselves. One would interpret a positive correlation between

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[20]If pension liabilities are considered insider debts, this also constitutes a conflict with creditors.

executive immorality and negative compliance and legal outcomes as a corollary of the main results. To alleviate this concern, this analysis includes *restatement* as a control variable to the model in equation (1). A couple of control variables, *specialist*, and log(*auditor tenure*), are removed. Industry-year fixed effects remain.

Table 9 reports the results for *unethical exec.* (Panel A) and *unethical CEO* (Panel B). As expected, the coefficients on *restatement* are significantly positive across the board, especially for *IIC* and *# of weaknesses*. They are also invariant in size and statistical significance in both panels. The coefficients on *unethical exec.* are significantly positive for *IIC* and *# of weaknesses*, and those on *unethical CEO* are significantly positive for *IIC*, *# of weaknesses*, and *# of suits*. *AAER* is insignificant for neither variable, as the sample contains only eight AAERs. Untabulated regressions without controlling for *restatement* generate very close results, except for the coefficient on *unethical exec.* for *# of suits* becomes significantly positive at 10%, with a coefficient of 0.017 and a *t*-statistic of 1.723.

The magnitude of the *unethical CEO* coefficients is again larger than that of the *unethical exec.* coefficients, as is in Table 5. Regarding economic significance, an unethical CEO is associated with 5.2% additional chance of inefficient internal control, 0.192 material weakness, and 0.050 securities class action annually. Given the means of *IIC*, *# of weaknesses*, and *# of suits* for ethical firms at 4.4%, 0.086, and 0.031 from Table 2, an unethical CEO would boost the baseline by 118%, 232%, and 161%, respectively.

5   Market reaction to unethical executives' revelation

The website data-dump release occurred during a brief period, allowing for an event study of stock price reactions to test Predictions 2 and 2A. A law firm, Heninger, Garrison & Davis, LLC, had identified six incidents and built a timeline, as reproduced in Figure 1. All incidents happened in 2015. Regarding the analysis in this section, the incidents fall into two categories: events and non-events. There are only two events. The first is the website publicly acknowledging the hack on July 20. The contents of the dump was not yet released at this point. Nevertheless, the public would have started to speculate whether any executives (or well-known people in general) were among the website's members. Some of those members of the public were very likely investors, who then began to commence their own investigations and eventually to even trade on speculations and preliminary investigation results. The second event is the data in

its entirety being released on August 17. With the information released, the public could look up directly whether a particular individual was a member. The rest of the happenings are non-events. The website learning about the hack on July 12 is only posteriorly known to the public. The hacker's releasing two profiles on July 19 fell on a nontrading day (Sunday) and immediately preceded the public acknowledgement, so it is a non-event and thus eliminated from subsequent analyses. The second dump did not contain user information, so its release on August 19 is a non-event. The lawsuit-filing against the website on August 20 is irrelevant to this analysis.

The sample consists of all firms from Section 4 with return data available from CRSP. Five different levels of (negative) ethics, or "treatments," are entertained. They are *unethical firm*, *unethical exec.*, *unethical chief*, *unethical CFO*, and *unethical CEO*, in the order of intensity.

5.1 Univariate abnormal returns

Table 10 performs a univariate analysis to test Prediction 2. Both events and non-events are considered, where non-events are placebos. In case the events occur after market closure, I also consider the following day, on a standalone basis and forming a window together with the event day. The market date column identifies the dates on which market data are drawn, that is, the trading days on or after the event days.

Two methods are used to calculate abnormal returns. The first is *value-weighted CAR*, obtained from the following steps. The first step identifies companies that receive a treatment. The abnormal returns equal the companies' event-day returns minus the value-weighted market returns. The event-window cumulative abnormal returns are obtained by compounding individual daily returns in the window. The table reports the simple average abnormal returns for treatment firms in basis point and the corresponding t-statistics for the null hypothesis that the average abnormal returns equal zero. The last row reports number of firms receiving treatments. The second is *regression coefficients*, obtained by regressing the treatment variable on the value-weighted abnormal returns. The table reports the coefficients on the treatment variables and the corresponding t-statistics for the null hypothesis that the coefficient equals zero. The total number of firms is 1,348 for this analysis.

Several observations emerge. First, the abnormal returns for the treatment firms are mostly significantly negative on event days and insignificantly different from zero on non-event days, as predicted. Second, the negative abnormal returns are larger for stronger treatments. For

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example, the regression coefficient CAR for *unethical CEO* (−104bps) is over five times as large as *unethical firm* (−19.5bps) and twice as large as *unethical exec.* (−53bps). Third, comparing the abnormal returns on both events, a higher proportion of the abnormal returns is realized during the first event for stronger treatments. For instance, the regression coefficient CARs for *unethical CEO* from July 20 and 21 and August 17 and 18 are −148bps and −81bps, whereas the same measures for *unethical exec.* are −46bps and −83bps, suggesting that market prioritizes identifying top executives and trades on their membership information sooner.

5.2 Multi-variable abnormal returns

Next I test Prediction 2A by partitioning the sample based on whether the companies recently issued any restatement. For each event-treatment combination, I estimate the following model,

$$CAR = \alpha + \beta_1(x - \bar{x}) + \beta_2(r - \bar{r}) + \beta_3(x - \bar{x})(r - \bar{r}) + \varepsilon, \tag{2}$$

where *CAR* is the value-weighted CAR, x is the treatment, and r is a binary variable for a firm having recently issued a restatement. By "recently," I mean between July 1, 2013, and June 30, 2015, which is within two years before July 2015. x and r are demeaned before interaction, which allows for easier interpretation of coefficient estimates. The interactive term $(x - \bar{x})(r - \bar{r})$ is the interested variable, and Prediction 2A expects its coefficient to be negative.

Table 11 presents the empirical results. Panel A tabulates the frequencies of total unethical executives in the sample by restatement. Panel B tabulates the regression results from equation (2), using ordinary least squares. To save space, only the event windows are reported. The estimated coefficients, a, b_1, b_2, and b_3, are under the columns *intercept*, $(x - \bar{x})$, $(r - \bar{r})$, and $(x - \bar{x})(r - \bar{r})$, respectively. Corresponding t-statistics (in absolute value) are reported in parentheses beneath. The coefficients on $(x - \bar{x})$ in general agree with the univariate analysis. They all have negative signs, and their magnitude increases with treatment intensity. However, the statistical significance is not as pronounced. The coefficients on $(r - \bar{r})$ are insignificantly small across the board, which is to be expected, as historic events should not explain short-window abnormal returns. The coefficients on $(x - \bar{x})(r - \bar{r})$ are insignificant for the first event. They are significantly negative for the second event on *unethical firm* and *unethical exec.* Panel B also performs F-tests for the overall significance, that is, $a = b_1 = b_2 = b_3 = 0$. The F-statistics and corresponding p-values are in the F-stat/p column, with F-statistics on the top. The adjusted R-squares and raw

R-squares are in the R^2-adj./R^2 column, with adjusted R-squares on the top.

Because the coefficients on $(x-\bar{x})(r-\bar{r})$ contradict each other for both events, it is necessary to weight the empirical evidence. There are four reason to stress the coefficients on *unethical firm* and *unethical exec* for the second event. First, these coefficients are the only ones that are statistically significant. Second, their models are the only ones that are significant at 5%, based on the F-tests. Third, their models also have the highest R^2's, which, despite being small, should not be dismissed, as abnormal returns are often hard to model. Finally, given the very low frequencies with *unethical chief* (3), *unethical CFO* (1), and *unethical CEO* (2) with prior restatements, the coefficients on their interactive terms tend to be unreliable. Overall, the evidence in Table 11 suggests that the market does deem companies with unethical executives and prior restatement records to be especially risky.

6 Career outcomes for unethical executives

This section presents and discusses empirical evidence regarding Predictions 3 and 3A, that is, whether and how ethical lapses impact executives' careers. Career outcomes include whether and by how much unethical executives are demoted to a lower position and receive less compensation.

6.1 Sample descriptions

The sample consists of all executives present in ExecuComp between July 2014 and June 2015, which is the last fiscal year before the data dump. Table 12 presents executive descriptive statistics by ethics and the between-group differences. There are 50 unethical executives and 7,804 ethical ones. For the dependent variables in particular, the "power" variables include *dropped executive*, *demotion*, *demotion* (*extended*), and Δ*position rank*. *Dropped executive* is a binary variable for an executive dropping out of ExecuComp after July 2015. *Position rank* is defined as the following: CEO is 1, CFO is 2, and the others are 3. *Demotion* is a binary variable for an executive dropping from a higher position in the pre-dump-release fiscal year to a lower position in the post-dump-release fiscal year. If *dropped executive* = 1, then *demotion* is coded as missing. *Demotion* (*extended*) equals *demotion* when *demotion* is nonmissing and equals 1 when *demotion* is missing. Δ*Position rank* equals the pre-dump-release position rank minus the post-dump-release position rank. A positive Δ*position rank* implies a promotion. The "money" variables include *paycut*, *paycut* (*extended*), Δlog(*pay*), Δ*pay rank*, and Δ*pay share*. *Pay* is the total

compensation reported to SEC in thousands of dollars. When *pay* is negative, it is set to 0. *Paycut* is a binary variable for an executive's compensation decreased from a higher amount in the pre-dump-release fiscal year to a lower amount in the post-dump-release fiscal year. If *dropped executive* = 1, then *paycut* is coded as missing. *Paycut (extended)* equals *paycut* when *paycut* is nonmissing and equals 1 when *paycut* is missing. log(*Pay*) is the natural logarithm of (*pay* + 1). Δlog(pay) equals the post-dump-release log(*pay*) minus the pre-dump-release log(*pay*). The *pay rank* is the descending rank of *pay* within the same firm-year. *Pay rank* = 1 means an executive is the highest paid executive in the firm-year. Δ*Pay rank* equals the pre-dump-release pay rank minus the post-dump-release pay rank. A positive Δ*pay rank* means a pay rank promotion. *Pay share* is the percentage of an executive's *pay* among all named executives in the same firm-year. Δ*Pay share* equals the post-dump-release *pay share* minus the pre-dump-release *pay share*. A positive Δ*pay share* means an executive receives a larger cut of the total pay.

For the explanatory variables, the main one is *unethical*, which is used as the grouping variable. Another interested variable is *restatement*, which is a binary variable for an executive's current employer issuing a restatement before July 2015 and during the executive's tenure. The others are control variables and are all measured before the data release unless noted otherwise. *Age* is self-explanatory. *Tenure* is the number of years an executive is employed by the current firm. *Retire* is a binary variable for an executive being at least 65 years old. *CEO* and *CFO* are binary variables for holding the corresponding positions. *Director* is a binary variable for being a director. *Loss* is a binary variable for an executive's firm's reporting of losses. *Dropped firm* is a binary for the executive's firm's dropping out of ExecuComp after the data release. *Switched firm* is a binary variable for an executive switching to another firm on ExecuComp after the data release.

Table 12 underscores a few aspects in which ethical and unethical executives differ. First, consistent with the predictions, unethical executives are on average demoted by 0.049 of a rank, while ethical executive are on average promoted by 0.011 of a rank. The difference, 0.060 of a rank, is significant at 10%. Second, unethical executives are on average 2.4 years younger than ethical executives and accordingly by 4.4% less likely to be over the retirement age, both significant at 5%. Such differences are expected, as younger individuals are more likely to pursue affairs. Third, by percentage, there are 13.8% more unethical CFOs than ethical CFOs. Fourth, unethical executives do not switch firms. Because the unethical CFO count drops from 16 in 2014 to 11 in 2015 (see Table 1) and the frequency of firm switching is very low, the paper does

not push to justify the last two differences, as they are probably incidental.

6.2 Regression results

The paper does not find evidence conforming to Prediction 3. Results are suppressed to save space. To test Prediction 3A, I begin with the following model:

$$
\begin{aligned}
\text{Career outcome} = {} & \alpha + \beta_1 \, \textit{unethical} + \beta_2 \, \textit{restatement} + \beta_3 \, \textit{unethical} \times \textit{restatement} \\
& + \gamma_1 \, \textit{age} + \gamma_2 \, \textit{tenure} + \gamma_3 \, \textit{retire} + \gamma_4 \, \textit{CEO} + \gamma_5 \, \textit{CFO} \\
& + \gamma_6 \, \textit{director} + \gamma_7 \, \textit{loss} + \gamma_8 \, \textit{dropped firm} + \gamma_9 \, \textit{switched firm} \\
& + \delta \, \text{fixed effects} + \varepsilon.
\end{aligned}
\tag{3}
$$

where *career outcome* is either *demotion (extended)* or *paycut (extended)*. Table 13 presents the results. As in Table 4, columns 1 and 4 are parsimonious, with only *unethical*, *restatement*, and *unethical×restatement* as explanatory variables. *Unethical* and *restatement* are demeaned before interaction, allowing for easier interpretation of coefficient estimates. Their notations are unaltered, because that does not introduce ambiguity. Columns 2 and 5 expand with more control variables. Columns 3 and 6 further expand with industry fixed effects.

Unethical is inconsequential for both *demotion (extended)* and *paycut (extended)*, which is consistent with the untabulated results for Prediction 3. For it to load positively, boards must detect and act (solely) based on an executive's membership at the affair website, a condition not often met. From time to time, executives are fired for questionable dating practices. Yet whether executives manages to keep their jobs highly depends on their power within their companies. Besides, when an executive successfully handles an accusation like this, the accusation likely remains unknown to the public. To the best of my knowledge, to date, there is no public report on any executive being fired or demoted just because of membership on the affair website. *Restatement* is negatively correlated with *demotion (extended)*. As the variable measures historical restatement, the negative coefficient picks up the executive's survivability. The positive coefficient on *restatement* for *paycut (extended)* indicates past professional errors do cost executives (lastingly) in the form of compensation, as Prediction 3A expects. The interaction term *unethical×restatement* is strongly positive in *demotion (extended)* and mildly positive in *paycut (extended)*. Furthermore, the coefficients on the interaction terms are larger than those on the standalone terms by a magnitude, suggesting that past *restatement* and increased chance of

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future restatements (*unethical*) together most harm an executive's career.

As to control variables, *age*, *tenure*, and *retire* reflect seniority, which increases the chance of dropping out of ExecuComp. *Tenure* also reflects connectedness within the company, which might help executives keep jobs and maintain compensation. Based on the results from Table 13, connectedness does not overcome aging. *CEO*, *CFO*, and *director* reflect an executive's power, which also helps keep jobs and maintaining compensation. *CEO* does not load because it is the highest position and often the highest paid in the company. *CFO* and *director* are significantly negative, consistent the power explanation. *Loss* does not load negatively for either outcome. *Dropped firm* is positive in both outcomes. When companies drop out of ExecuComp, because of either failure, acquisition, or privatization, they likely would take the majority of the management team off the radar with them. *Switched firm* is negative in both outcomes, consistent with executives pursuing outside opportunities only when offered more power and money. The coefficients on *dropped firm* and *switched firm* are not only significant statistically but very large in magnitude.

To advance the pilot results in Table 13, it is necessary to implement some design changes when further quantifying immorality's harm on executive careers. The executive turnover in ExecuComp is high. The pooled mean of *dropped executive* is 19.3% (untabulated), that is almost one out of five executives leaves ExecuComp in the sample year. Due to the way in which *demotion* (*extended*) and *paycut* (*extended*) are defined, the dropouts contribute to 86.5% of *demotion* (*extended*) and 34.6% of *paycut* (*extended*), respectively.[21] Given that the dropouts are likely due to retirement, pooling them with those who remain working may introduce measurement errors and obscure the interpretation. Therefore I use two-stage Heckman models for the subsequent analyses. The first stage predicts executives "surviving" ExecuComp:

$$
\begin{aligned}
\text{Dropped executive} = {} & \alpha + \beta_1 \, \text{unethical} + \beta_2 \, \text{restatement} + \beta_3 \, \text{unethical} \times \text{restatement} \\
& + \gamma_1 \, \text{age} + \gamma_2 \, \text{tenure} + \gamma_3 \, \text{retire} + \gamma_4 \, \text{CEO} + \gamma_5 \, \text{CFO} \\
& + \gamma_6 \, \text{director} + \gamma_7 \, \text{loss} + \gamma_8 \, \text{dropped firm} + \gamma_9 \, \text{switched firm} \\
& + \delta \, \text{fixed effects} + \varepsilon.
\end{aligned}
\tag{4a}
$$

The the explanatory variables from equation (3) are all carried over to equation (4a), except *switched firm*, as executives who switch firms by definition have survived. The first column in

---

[21]The pooled mean of *demotion* (*extended*) is 0.223, and the pooled mean of *paycut* (*extended*) is 0.558. $0.193/0.223 = 86.5\%$. $0.193/0.558 = 34.6\%$.

Table 14 reports the results. It is a nonlinear model, so the coefficients are not marginal effects and should not be compared with the coefficients in Table 13. Nevertheless, in contrast to model 3 in Table 13, an important difference emerges from the first stage, that is, the interaction term, *unethical×restatement*, no longer loads. This difference suggests that the demotion effect are borne by the survivors. Another minor difference is that *CEO* now loads significantly.

The second stage deals with executive career outcomes conditional on survival, that is, *dropped executive* = 0:

$$
\begin{aligned}
\text{Career outcome} = {} & \alpha + \beta_1 \, \textit{unethical} + \beta_2 \, \textit{restatement} + \beta_3 \, \textit{unethical} \times \textit{restatement} \\
& + \gamma_1 \, \textit{age} + \gamma_2 \, \textit{tenure} + \gamma_3 \, \textit{retire} + \gamma_4 \, \textit{CEO} + \gamma_5 \, \textit{CFO} \\
& + \gamma_6 \, \textit{director} + \gamma_7 \, \textit{loss} + \gamma_8 \, \textit{dropped firm} + \gamma_9 \, \textit{switched firm} \\
& + \delta \, \text{fixed effects} + \lambda + \Sigma + \varepsilon.
\end{aligned}
\tag{4b}
$$

In equation (4b), the career outcome variables are categorized into either "power" or "money," led by *demotion* and *paycut*. *Demotion* and *paycut* are binary variables for negative outcomes. The rest are ordinal variables. Therefore regression coefficients should take opposite signs for binary and ordinal dependent variables. The second-stage regressions use identical explanatory variables, which include the first-stage variables plus *switched firm* and a couple of parameters (λ and Σ) generated by the first stage. Fixed effects are no longer used because they deplete much of the variation on the smaller sample and because of the insignificance of the interaction term in Table model 6 in 13. The second-stage models are linear models. Therefore the coefficients can be directly interpreted as marginal effects. The first stage is shared by all six second-stage regressions.

Unethical is again not statistically associated with any career outcome. *Restatement* increases the chance of demotion by 1.7% and the chance of a pay cut by 5.7%. It decreases pay rank by 0.145 of a rank and does not statistically affect other outcomes. The interaction term, *unethical×restatement*, increases the chance of demotion by 45.7%, decreases position rank by 0.456 of a rank, increases the chance of a pay cut by 50.2%, decreases $\log(pay)$ by 0.575—which in approximation translates to a 43.7% paycut ($e^{-0.575} - 1 = -0.437$)—and decreases pay rank by 1.375. The only insignificant outcome is Δ*pay share*. Regarding control variables, *retire* becomes insignificant across the board, indicating that, once an executive survives in ExecuComp, there is no additional negative outcome for being 65 or older. *CEO* and *CFO* titles become negative

factors, underscoring the limited upward mobility and fierce competition in the corporate hierarchy. *Loss* becomes insignificant across the board, too, suggesting life continues as usual as long as an executive is not fired or demoted. In summary, results from the second-stage regressions are internally consistent and consistent with Prediction 3A. The strongest results are on the interactive term. To generalize, once an executive has a record of professional errors, the upwardly revised probability of future errors would cost him both power and money.

A caveat concerning the research design is that the sample only contains the year in which the website data are released, so there is no way to tell whether the outcomes are due to immoral behavior or its revelation. This shortcoming would have been addressed by using panel data, that is, extending the sample period to include preceding and subsequent years. However, other problems introduced by panel data—the hard-to-interpret three-way interaction (*unethical×restatement×revelation*) and time-series structures as survival becomes dynamic, to name a few—outweigh the benefits. To lessen the identification issue, I create another sample as if the events occurred in 2013 on the same dates, and repeat the full set of analyses. This "pseudo" sample generates null results for *unethical* and the interactive term *unethical×restatement* across the board, and career outcomes of past *restatement* remain negative to insignificant.

7   Conclusion

This paper hosts a panoramic discussion regarding executive ethics on corporate accounting irregularities. Relying on and benefiting from a unique ethics measure, the empirical analyses document a robust association between executive ethics and accounting restatements. Additional tests from varying ethics intensity to focusing on particular restatement issues suggest the association might be causal. The paper also presents novel findings that stock markets and corporations respond to the revelation of executives' misdeeds by instantly devaluing their companies' stock prices and removing the executives from key positions. These responses appear to relate to restatement concerns.

This paper is relevant to practitioner readers. Based on the findings, boards need to monitor executives' ethics to prevent executives' immoral conduct from hurting shareholder value. As to executives, maintaining a certain degree of ethics could save careers at critical moments.

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Figure 1: Ashley Madison hack timeline

July 12: *Ashley Madison learns about hack*
Employees log on their computers to find a warning message accompanied by the AC/DC song "Thunderstruck." It threatens to release client information [unless] the website is taken down.

July 20: *Hack Publicly acknowledged*
Avid Life Media turns to the Toronto police after the company had already launched an internal investigation, hired a private investigator and enlisted cyber security firm Cycura. Avid Life announces hack in a press release.

July 19: *Hackers release information on two people*
The Impact Team reportedly releases information on two Ashley Madison clients, one in Mississauga and the other in Brockton, Mass., in an apparent attempt to prove they are serious.

Aug 17: *Information on 34 million users made public*
Impact Team reportedly releases personal information of Ashley Madison's more than 30 million users, including email addresses, physical addresses, partial credit card numbers and sexual preferences. The Impact Team posted a message titled "Time's Up" to explain their decision.

August 19: *More information released*
A second data dump releases internal documents, including email of Avid Life Media CEO Noel Biderman. The hackers included a message to Biderman saying, "Hey Noel, you can admit…it's real now."

August 20: *Lawsuits begin to be filed*
Lawsuits against Ashley Madison and parent company, Avid Life Media are filed alleging that Ashley Madison failed to protect its customers.

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Table 1: Number of unethical executives by year

Year	Executive		Chief		CFO		CEO	
	All	P.-R.	All	P.-R.	All	P.-R.	All	P.-R.
2005	44	0	27	0	14	0	13	0
2006	51	2	26	1	16	0	10	1
2007	59	3	31	2	17	0	14	2
2008	58	10	33	6	19	2	14	4
2009	60	27	34	13	20	7	14	6
2010	57	31	30	18	17	10	13	8
2011	61	42	30	22	18	14	12	8
2012	67	52	30	23	19	15	11	8
2013	64	55	29	25	17	15	12	10
2014	50	50	27	27	16	16	11	11
2015	42	42	22	22	11	11	11	11
2016	38	38	23	23	12	12	11	11
2011–2016	322	279	161	142	93	83	68	59
2005–2016	651	352	342	182	196	102	146	80

The *executive* column concerns all unethical executives. The *chief* column concerns either unethical CEOs or unethical CFOs. The *CFO* column concerns unethical executives who are also CFOs. The *CEO* column concerns unethical executives who are also CEOs. Under the *all* columns, frequencies are counted as long as an unethical executive appears in ExecuComp. Under the *post-registration* (P.-R.) columns, frequencies are only counted in and after the year when an unethical executive becomes a member.

Table 2: Firm descriptive statistics

Variable	Unethical firm = 1				Unethical firm = 0				Difference		
	N	Mean	St.d.	Median	N	Mean	St.d.	Median	d(Mean)	t-stat.	p-value
Independent variables											
Unethical exec.	609	0.529	0.525	1	8,143						
Unethical chief	609	0.264	0.449	0	8,143						
Unethical CFO	609	0.153	0.360	0	8,143						
Unethical CEO	609	0.112	0.315	0	8,143						
Dependent variables											
Restatement	609	0.233	0.423	0	8,143	0.167	0.373	0	0.067	3.77	0.000
IIC	596	0.057	0.232	0	7,822	0.044	0.206	0	0.013	1.28	0.200
# Weaknesses	596	0.136	0.791	0	7,822	0.086	0.524	0	0.050	1.52	0.128
AAER	609	0.002	0.041	0	8,143	0.001	0.029	0	0.001	0.47	0.640
# Suits	609	0.046	0.210	0	8,143	0.031	0.175	0	0.015	1.73	0.085
Control variables											
Specialist	604	0.101	0.302	0	8,034	0.115	0.319	0	−0.014	1.10	0.273
log(Auditor tenure)	604	2.099	0.740	2.398	8,034	2.112	0.738	2.398	−0.013	0.42	0.674
Big Four	604	0.856	0.351	1	8,034	0.893	0.309	1	−0.037	2.55	0.011
log(Audit fees)	604	7.659	0.919	7.580	8,034	7.617	1.026	7.531	0.043	1.10	0.273
Revenue growth	603	0.054	0.198	0.036	8,073	0.074	0.213	0.051	−0.020	2.35	0.019
ΔROA	604	−0.008	0.080	−0.002	7,974	−0.005	0.086	−0.001	−0.003	0.76	0.449
Book-to-market	589	0.455	0.479	0.390	7,901	0.461	0.456	0.387	−0.006	0.30	0.761
Leverage	607	0.250	0.198	0.229	8,111	0.246	0.214	0.222	0.004	0.53	0.597
Size	609	7.724	1.469	7.544	8,143	7.623	1.658	7.547	0.102	1.63	0.103

The table reports descriptive statistics for unethical firms (*unethical firm* = 1) and ethical firms (*unethical firm* = 0) at firm-year level. Between-group differences are reported under *difference*. d(Mean) is the difference in the mean values (unethical firms minus ethical firms). The t-statistics and p-values are for the null hypothesis, d(Mean) = 0, under the assumption of unequal variances. Appendix C provides the variable definitions.

Table 3: Correlation coefficients

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Unethical exec.		**0.70**	**0.54**	**0.46**	**0.04**	**0.03**	**0.03**	−0.01	0.02	−0.01	−0.02	**−0.04**	0.01	−0.00	−0.01	−0.01	−0.00	0.01
2	Unethical chief	**0.71**		**0.76**	**0.66**	**0.03**	**0.04**	**0.05**	−0.00	**0.03**	**−0.02**	−0.02	**−0.03**	0.01	−0.02	−0.01	0.00	0.01	0.00
3	Unethical CFO	**0.54**	**0.76**		0.02	0.01	**0.03**	**0.03**	−0.00	0.02	−0.00	**−0.03**	**−0.06**	−0.02	−0.01	−0.01	0.01	−0.00	−0.01
4	Unethical CEO	**0.46**	**0.65**	0.02		**0.03**	**0.03**	**0.04**	−0.00	0.02	**−0.03**	0.01	**0.03**	**0.04**	−0.02	−0.00	−0.01	0.01	0.02
5	Restatement	**0.04**	**0.02**	0.01	**0.03**		**0.23**	**0.18**	**0.05**	**0.04**	**0.05**	−0.01	**0.06**	**0.06**	**−0.03**	**−0.03**	**0.05**	**0.07**	0.02
6	IIC	**0.02**	**0.03**	**0.03**	**0.03**	**0.23**		**0.75**	**0.07**	**0.09**	0.01	**−0.09**	**−0.03**	0.01	−0.01	−0.01	0.02	**0.04**	**−0.08**
7	# Weaknesses	0.02	**0.03**	0.02	0.03	**0.24**	**0.99**		**0.05**	**0.09**	0.00	**−0.07**	−0.01	**0.04**	**−0.03**	−0.02	0.01	**0.03**	**−0.06**
8	AAER	−0.01	−0.00	−0.00	−0.00	**0.05**	**0.07**	**0.07**		**0.06**	−0.01	0.00	−0.00	0.01	0.01	−0.01	0.01	−0.00	0.00
9	# Suits	0.02	**0.02**	0.02	0.02	**0.04**	**0.09**	**0.09**	**0.06**		−0.00	**−0.04**	−0.01	**0.04**	−0.01	**−0.05**	0.01	0.01	**0.03**
10	Specialist	−0.01	**−0.02**	−0.00	**−0.03**	**0.05**	0.01	0.01	−0.01	−0.01		**0.04**	**0.12**	**0.06**	−0.02	0.01	**−0.05**	**0.07**	**0.08**
11	log(Auditor tenure)	−0.02	−0.02	**−0.04**	0.02	−0.02	**−0.05**	**−0.05**	−0.01	**−0.03**	**0.05**		**0.34**	**0.25**	**−0.13**	−0.00	**−0.03**	**0.03**	**0.26**
12	Big Four	**−0.04**	**−0.03**	**−0.06**	**0.03**	**0.06**	**−0.03**	**−0.03**	−0.00	−0.01	**0.12**	**0.34**		**0.38**	**−0.06**	−0.01	**−0.08**	**0.16**	**0.37**
13	log(Audit fees)	0.01	0.01	−0.02	**0.04**	**0.07**	0.01	0.02	0.00	**0.04**	**0.06**	**0.28**	**0.38**		**−0.14**	−0.00	**−0.09**	**0.25**	**0.84**
14	Revenue growth	−0.00	**−0.03**	−0.02	−0.02	**−0.04**	**−0.03**	**−0.03**	0.01	**−0.04**	−0.02	**−0.15**	**−0.04**	**−0.16**		**0.21**	**−0.10**	**−0.04**	**−0.09**
15	ΔROA	−0.01	−0.01	−0.00	−0.01	**−0.03**	−0.02	−0.02	−0.01	**−0.06**	0.02	−0.00	0.00	−0.02	**0.22**		**−0.09**	−0.02	−0.01
16	Book-to-market	0.00	0.02	0.02	0.00	**0.06**	0.02	0.02	0.02	0.01	**−0.07**	**−0.08**	**−0.07**	**−0.08**	**−0.17**	**−0.12**		**−0.23**	**−0.06**
17	Leverage	0.01	0.02	0.01	0.02	**0.07**	**0.03**	**0.04**	−0.00	0.01	**0.07**	**0.08**	**0.18**	**0.34**	**−0.07**	−0.01	**−0.19**		**0.31**
18	Size	0.01	0.00	−0.01	**0.02**	**0.03**	**−0.08**	**−0.08**	0.00	**0.02**	**0.08**	**0.30**	**0.37**	**0.82**	**−0.09**	−0.02	**−0.07**	**0.41**	

This table reports correlation coefficients. Observations are at firm-year level (N = 8,418–8,752). Pearson correlation coefficients are reported in the upper-right corner, and Spearman correlation coefficients are reported in the lower-left corner. Coefficients in **bold** are significant at 5% level. Appendix C provides the variable definitions.

Table 4: The effects of unethical executives on restatement

	Probit				Linear		
	(1)	APE	(2)	APE	(3)	(4)	(5)
Unethical exec.	0.256***	0.065	0.263***	0.065	0.070***	0.072***	0.066***
	(3.383)		(3.350)		(3.352)	(3.424)	(3.150)
Specialist			0.197***	0.049	0.055***	0.047***	0.050***
			(3.969)		(4.258)	(3.394)	(3.551)
log(Auditor tenure)			−0.059**	−0.015	−0.015**	−0.013**	−0.008
			(2.425)		(2.389)	(2.128)	(1.298)
Big Four			0.269***	0.066	0.058***	0.052***	0.034**
			(4.142)		(3.907)	(3.487)	(2.293)
log(Audit fees)			0.217***	0.053	0.055***	0.055***	0.064***
			(7.157)		(7.380)	(6.620)	(7.712)
Revenue growth			−0.021	−0.005	−0.004	0.009	−0.020
			(0.262)		(0.191)	(0.422)	(0.908)
ΔROA			−0.370*	−0.091	−0.093*	−0.092*	−0.075
			(1.901)		(1.900)	(1.880)	(1.505)
Book-to-market			0.250***	0.062	0.065***	0.061***	0.058***
			(6.968)		(7.020)	(6.416)	(5.935)
Leverage			0.512***	0.126	0.127***	0.111***	0.146***
			(5.991)		(5.976)	(4.911)	(6.382)
Size			−0.124***	−0.031	−0.032***	−0.032***	−0.036***
			(6.535)		(6.774)	(6.138)	(6.889)
Intercept	−0.960***		−2.070***		−0.101***		
	(59.304)		(14.126)		(2.844)		
Fixed Effects	None		None		None	Ind. & Year	Ind.×Year
N	8752		8393		8393	8393	8393
Model DF	1		10		10	53	273
McFadden's LRI	0.001		0.024				
Adjusted R^2					0.020	0.032	0.047

This table reports the effects of unethical executives on restatements. Model 1 is a univariate Probit model. Model 2 is a multiple variable Probit model. In addition to the coefficients and t-statistics, under the *APE* columns, the table reports the average partial effects, obtained by averaging the partial effects of each independent variable at each observation. Model 3 re-estimates Model 2 using a linear probability model. Model 4 augments Model 3 by including industry and year fixed effects. Model 5 augments Model 3 by including industry-year fixed effects. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 5: The effects of unethical chief executives on restatement

	(1)	(2)	(3)	(4)
Unethical firm	0.059***			
	(3.658)			
Unethical chief		0.070**		
		(2.320)		
Unethical CFO			0.038	
			(0.928)	
Unethical CEO				0.116**
				(2.504)
Specialist	0.050***	0.050***	0.049***	0.051***
	(3.531)	(3.588)	(3.520)	(3.635)
log(Auditor tenure)	−0.008	−0.008	−0.008	−0.008
	(1.329)	(1.301)	(1.325)	(1.297)
Big Four	0.034**	0.033**	0.033**	0.032**
	(2.294)	(2.204)	(2.188)	(2.118)
log(Audit fees)	0.065***	0.064***	0.065***	0.063***
	(7.782)	(7.694)	(7.767)	(7.602)
Revenue growth	−0.018	−0.019	−0.020	−0.019
	(0.840)	(0.876)	(0.897)	(0.883)
ΔROA	−0.076	−0.075	−0.076	−0.076
	(1.521)	(1.510)	(1.517)	(1.520)
Book-to-market	0.058***	0.057***	0.057***	0.057***
	(5.928)	(5.893)	(5.864)	(5.877)
Leverage	0.146***	0.146***	0.146***	0.146***
	(6.372)	(6.375)	(6.368)	(6.404)
Size	−0.036***	−0.035***	−0.036***	−0.035***
	(6.955)	(6.833)	(6.880)	(6.758)
Fixed Effects	Ind.×Year	Ind.×Year	Ind.×Year	Ind.×Year
N	8393	8393	8393	8393
Model DF	273	273	273	273
Adjusted R^2	0.047	0.046	0.046	0.046

This table reports the effects of *unethical firm, unethical CFO, unethical CEO,* and *unethical chief* on restatements. All models include industry-year fixed effects. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 6: The leading, trailing, and present effects of unethical executives on restatement

Panel A: Additional descriptive statistics

| | | Unethical firm = 1 | | |
Variable		N	Mean	Sum
Unethical exec.		609	0.528736	322
Pre-unethical exec.		609	0.044335	27
Post-unethical exec.		609	0.098522	60

Panel B: Regression coefficients

	(1)	(2)	(3)	(4)
Pre-unethical exec.	0.033		0.032	0.033
	(0.438)		(0.420)	(0.440)
Unethical exec.	0.066***	0.067***		0.067***
	(3.152)	(3.175)		(3.178)
Post-unethical exec.		0.115**	0.113**	0.115**
		(2.323)	(2.288)	(2.323)
Specialist	0.050***	0.050***	0.050***	0.050***
	(3.545)	(3.574)	(3.538)	(3.568)
log(Auditor tenure)	−0.008	−0.008	−0.008	−0.008
	(1.285)	(1.329)	(1.348)	(1.316)
Big Four	0.034**	0.035**	0.033**	0.035**
	(2.287)	(2.346)	(2.197)	(2.341)
log(Audit fees)	0.064***	0.064***	0.065***	0.064***
	(7.719)	(7.736)	(7.786)	(7.744)
Revenue growth	−0.020	−0.019	−0.019	−0.019
	(0.898)	(0.885)	(0.874)	(0.875)
ΔROA	−0.075	−0.076	−0.077	−0.077
	(1.508)	(1.529)	(1.550)	(1.532)
Book-to-market	0.058***	0.058***	0.057***	0.058***
	(5.936)	(5.955)	(5.871)	(5.956)
Leverage	0.146***	0.146***	0.146***	0.146***
	(6.385)	(6.394)	(6.393)	(6.396)
Size	−0.036***	−0.036***	−0.036***	−0.036***
	(6.896)	(6.909)	(6.892)	(6.917)
Fixed Effects	Ind. × Year	Ind. × Year	Ind. × Year	Ind. × Year
N	8393	8393	8393	8393
Model DF	274	274	274	275
Adjusted R^2	0.047	0.047	0.046	0.047

This table reports the leading (*pre-unethical exec.*), trailing (*pre-unethical exec.*), and present (*unethical exec.*) effects of unethical executives on restatements. Panel A reports complementary descriptive statistics, conditional on *unethical firm* = 1. Panel B reports regression results. All models include industry-year fixed effects. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 7: The effects of discreetly unethical executives on restatement

Panel A: Additional descriptive statistics

Variable		Unethical firm = 1	
	N	Mean	Sum
Unethical exec. × Discreet	609	0.128079	78
Unethical chief × Discreet	609	0.075534	46
Unethical CFO × Discreet	609	0.039409	24
Unethical CEO × Discreet	609	0.036125	22

Panel B: Regression coefficients

	(1)	(2)	(3)	(4)
Unethical exec.	0.098***			
	(4.012)			
Unethical exec. × Discreet	−0.129**			
	(2.556)			
Unethical chief		0.092***		
		(2.609)		
Unethical chief × Discreet		−0.081		
		(1.209)		
Unethical CFO			0.074	
			(1.562)	
Unethical CFO × Discreet			−0.133	
			(1.472)	
Unethical CEO				0.124**
				(2.254)
Unethical CEO × Discreet				−0.029
				(0.282)
Specialist	0.049***	0.050***	0.049***	0.051***
	(3.471)	(3.563)	(3.479)	(3.635)
log(Auditor tenure)	−0.008	−0.008	−0.008	−0.008
	(1.247)	(1.292)	(1.284)	(1.302)
Big Four	0.033**	0.033**	0.033**	0.032**
	(2.220)	(2.206)	(2.179)	(2.121)
log(Audit fees)	0.064***	0.064***	0.065***	0.063***
	(7.741)	(7.677)	(7.790)	(7.584)
Revenue growth	−0.021	−0.020	−0.020	−0.019
	(0.961)	(0.901)	(0.926)	(0.886)
ΔROA	−0.075	−0.075	−0.075	−0.076
	(1.507)	(1.507)	(1.507)	(1.521)
Book-to-market	0.058***	0.058***	0.057***	0.057***
	(5.962)	(5.919)	(5.864)	(5.883)
Leverage	0.148***	0.146***	0.145***	0.147***
	(6.492)	(6.395)	(6.364)	(6.409)
Size	−0.036***	−0.035***	−0.036***	−0.035***
	(6.889)	(6.802)	(6.883)	(6.740)
Fixed Effects	Ind.×Year	Ind.×Year	Ind.×Year	Ind.×Year
N	8393	8393	8393	8393
Model DF	274	274	274	274
Adjusted R^2	0.047	0.046	0.046	0.046

This table reports the effects of discreetly unethical executives on restatements. Panel A reports complementary descriptive statistics, conditional on *unethical firm* = 1. Panel B reports regression results. All models include industry-year fixed effects. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 8: The effects of unethical executives on restatement by category
Panel A: Unethical executives

#	Description	N(1,0)	N(1,1)	N(0,0)	N(0,1)	Ratio	Est.	t-stat.	Implied Rt.
1	Depreciation, depletion or amortization errors	231	0	6782	42	0.000	−0.006	(1.124)	0.072
3	PPE intangible or fixed asset (value/diminution) issues	235	4	6859	119	0.981	−0.000	(0.001)	0.999
4	Debt, quasi-debt, warrants & equity (BCF) security issues	239	8	6933	193	1.202	0.001	(0.050)	1.019
5	Proforma financial information reporting issues	231	0	6744	4	0.000	−0.000	(0.189)	0.493
6	Revenue recognition issues	240	9	7012	272	0.967	0.010	(0.794)	1.251
7	Expense (payroll, SGA, other) recording issues	239	8	6907	167	1.384	0.013	(1.294)	1.536
8	Financial derivatives/hedging (FAS 133) acct issues	231	0	6757	17	0.000	−0.002	(0.615)	0.200
9	EPS, ratio and classification of income statement issues	233	2	6764	24	2.419	0.005	(1.177)	2.335
10	Acquisitions, mergers, disposals, re-org acct issues	233	2	6821	81	0.723	−0.001	(0.177)	0.894
11	Foreign, related party, affiliated, or subsidiary issues	246	15	6971	231	1.840	0.022*	(1.883)	1.650
12	Liabilities, payables, reserves and accrual estimate failures	237	6	6902	162	1.079	0.008	(0.813)	1.339
13	Consolidation issues incl Fin 46 variable interest & off-B/S	235	4	6828	88	1.321	0.004	(0.548)	1.318
14	Accounts/loans receivable, investments & cash issues	231	0	6876	136	0.000	−0.022**	(2.390)	−0.092
17	Deferred, stock-based and/or executive comp issues	237	6	6767	27	6.345	0.021***	(4.598)	6.157
18	Tax expense/benefit/deferral/other (FAS 109) issues	258	27	7146	406	1.842	0.042***	(2.884)	1.739
19	Cash flow statement (SFAS 95) classification errors	252	21	7146	406	1.467	0.024*	(1.677)	1.430
20	Inventory, vendor and/or cost of sales issues	239	8	6973	233	1.002	−0.001	(0.053)	0.982
21	Lease, SFAS 5, legal, contingency and commitment issues	235	4	6799	59	1.961	0.010	(1.640)	2.167
22	Gain or loss recognition issues	232	1	6754	14	2.079	0.003	(0.830)	2.229
23	Capitalization of expenditures issues	235	4	6769	29	3.973	0.012**	(2.565)	3.713
24	Intercompany, investment in subs./affiliate issues	235	4	6811	71	1.633	0.006	(0.859)	1.553
26	Debt and/or equity classification issues	233	2	6766	26	2.234	0.006	(1.368)	2.489
28	Restatements made while in bankruptcy/receivership	231	0	6742	2	0.000	−0.000	(0.030)	0.887
29	Balance sheet classification of assets issues	232	1	6783	43	0.680	−0.002	(0.445)	0.632
32	Unspecified (amounts or accounts) restatement adjustments	231	0	6742	2	0.000	−0.000	(0.226)	0.135
35	Comprehensive income issues	231	0	6764	24	0.000	−0.004	(1.102)	−0.188
36	Fin Statement, footnote & segment disclosure issues	231	0	6799	59	0.000	−0.012*	(1.915)	−0.329
37	Consolidation, foreign currency/inflation (subcategory) issues	233	2	6798	58	1.006	0.002	(0.305)	1.218
42	Lease, leasehold and FAS 13 (98) only (subcategory)	235	4	6789	49	2.358	0.012**	(2.165)	2.698
43	Intercompany, only, (subcategory)—accounting issues	235	4	6801	61	1.898	0.006	(0.963)	1.674
44	Foreign, subsidiary only issues (subcategory)	246	15	6968	228	1.864	0.022*	(1.915)	1.665
45	Acquisitions, mergers, only (subcategory) acct issues	233	2	6797	57	1.024	0.001	(0.129)	1.093
46	PPE issues—Intangible assets, goodwill only (subcategory)	234	3	6793	53	1.643	0.006	(1.082)	1.810
69	Pension and other post-retirement benefit issues	236	5	6777	37	3.881	0.015***	(2.937)	3.683
71	Asset retirement issues	231	0	6746	6	0.000	−0.001	(0.301)	0.367

Table 8: The effects of unethical executives on restatement by category (continued)

Panel B: Unethical CEOs

#	Description	N(1,0)	N(1,1)	N(0,0)	N(0,1)	Ratio	Est.	t-stat.	Implied Rt.
1	Depreciation, depletion or amortization errors	45	0	6968	42	0.000	−0.010	(0.825)	−0.602
3	PPE intangible or fixed asset (value/diminution) issues	45	0	7049	123	0.000	−0.018	(0.906)	−0.023
4	Debt, quasi-debt, warrants & equity (BCF) security issues	49	4	7123	197	2.952	0.051**	(2.162)	2.828
5	Proforma financial information reporting issues	45	0	6930	4	0.000	−0.000	(0.111)	0.298
6	Revenue recognition issues	47	2	7205	279	1.099	−0.010	(0.335)	0.754
7	Expense (payroll, SGA, other) recording issues	45	0	7101	175	0.000	−0.032	(1.372)	−0.296
8	Financial derivatives/hedging (FAS 133) acct issues	45	0	6943	17	0.000	−0.001	(0.191)	0.415
9	EPS, ratio and classification of income statement issues	46	1	6951	25	6.044	0.018**	(2.006)	6.103
10	Acquisitions, mergers, disposals, re-org acct issues	45	0	7009	83	0.000	−0.005	(0.335)	0.537
11	Foreign, related party, affiliated, or subsidiary issues	49	4	7168	242	2.418	0.043*	(1.659)	2.270
12	Liabilities, payables, reserves and accrual estimate failures	45	0	7094	168	0.000	−0.022	(0.971)	0.071
13	Consolidation issues incl Fin 46 variable interest & off-B/S	45	0	7018	92	0.000	−0.020	(1.173)	−0.543
14	Accounts/loans receivable, investments & cash issues	45	0	7062	136	0.000	−0.030	(1.441)	−0.548
17	Deferred, stock-based and/or executive comp issues	48	3	6956	30	14.492	0.060***	(5.965)	14.862
18	Tax expense/benefit/deferral/other (FAS 109) issues	52	7	7352	426	2.323	0.059*	(1.785)	2.012
19	Cash flow statement (SFAS 95) classification errors	50	5	7348	422	1.741	0.046	(1.382)	1.794
20	Inventory, vendor and/or cost of sales issues	45	0	7167	241	0.000	−0.051*	(1.878)	−0.507
21	Lease, SFAS 5, legal, contingency and commitment issues	45	0	6989	63	0.000	−0.004	(0.274)	0.566
22	Gain or loss recognition issues	45	0	6941	15	0.000	0.000	(0.037)	1.120
23	Capitalization of expenditures issues	45	0	6959	33	0.000	−0.008	(0.762)	−0.681
24	Intercompany, investment in subs./affiliate issues	45	0	7001	75	0.000	−0.016	(1.006)	−0.455
26	Debt and/or equity classification issues	45	0	6954	28	0.000	−0.002	(0.228)	0.455
28	Restatements made while in bankruptcy/receivership	45	0	6928	2	0.000	0.000	(0.032)	1.286
29	Balance sheet classification of assets issues	46	1	6969	43	3.523	0.012	(1.016)	2.957
32	Unspecified (amounts or accounts) restatement adjustments	45	0	6928	2	0.000	−0.000	(0.059)	0.466
35	Comprehensive income issues	45	0	6950	24	0.000	−0.002	(0.227)	0.424
36	Fin Statement, footnote & segment disclosure issues	45	0	6985	59	0.000	−0.008	(0.557)	0.090
37	Consolidation, foreign currency/inflation (subcategory) issues	45	0	6986	60	0.000	−0.011	(0.791)	−0.293
42	Lease, leasehold and FAS 13 (98) only (subcategory)	45	0	6979	53	0.000	−0.004	(0.291)	0.499
43	Intercompany, only, (subcategory)—accounting issues	45	0	6991	65	0.000	−0.015	(1.042)	−0.625
44	Foreign, subsidiary only issues (subcategory)	49	4	7165	239	2.447	0.042	(1.637)	2.260
45	Acquisitions, mergers, only (subcategory) acct issues	45	0	6985	59	0.000	−0.005	(0.334)	0.453
46	PPE issues—Intangible assets, goodwill only (subcategory)	45	0	6982	56	0.000	−0.007	(0.506)	0.151
69	Pension and other post-retirement benefit issues	50	5	6963	37	18.819	0.091***	(8.364)	18.178
71	Asset retirement issues	45	0	6932	6	0.000	−0.001	(0.176)	0.130

Table 8: The effects of unethical executives on restatement by category (continued)

This table reports the effects of unethical executives (Panel A) and CEOs (Panel B) on restatements by category. The categories are assigned by Audit Analytics. #-*description* are the exact code number and description used by Audit Analytics. $N(x, y)$ are frequencies, where x is binary and indicates whether the firm-year has any unethical executive (Panel A) or CEO (Panel B), and y indicates whether the firm-year is subsequently restated due to the issue identified by the #-description combination. *Ratio* is $(N(1,1)/N(1,0))/(N(0,1)/N(0,0))$. *Est.* and *t-stat* are coefficients of x and associated t-statistics obtained by regressing the dependent variable on the independent variable, with the control variables and industry-year fixed effects from the benchmark model. The signs, *, **, and ***, indicate the coefficients of x are significant at 10%, 5%, and 1% levels, respectively. *Implied Rt.* is $1 + est./(N(0,1)/N(0,0))$.

Table 9: The effects of unethical executives on compliance and legal outcomes

Panel A: Unethical executives

	IIC	# Weaknesses	AAER	# Suits
Unethical exec.	0.021*	0.057*	−0.001	0.016
	(1.833)	(1.903)	(0.771)	(1.591)
Restatement	0.124***	0.232***	0.004***	0.020***
	(20.613)	(14.616)	(4.131)	(3.801)
Big Four	−0.020***	−0.019	−0.001	−0.018***
	(2.616)	(0.946)	(0.859)	(2.645)
log(Audit fees)	0.060***	0.182***	0.002**	0.013***
	(13.091)	(15.169)	(2.197)	(3.367)
Revenue growth	0.020*	0.001	0.001	−0.001
	(1.714)	(0.029)	(0.476)	(0.141)
ΔROA	−0.053*	−0.134*	−0.001	−0.114***
	(1.931)	(1.858)	(0.302)	(4.742)
Book-to-market	0.016***	0.041***	0.001	0.011**
	(3.071)	(2.947)	(0.639)	(2.397)
Leverage	0.044***	0.110***	0.001	0.013
	(3.576)	(3.364)	(0.326)	(1.205)
Size	−0.044***	−0.123***	−0.001	−0.002
	(15.712)	(16.624)	(1.605)	(0.757)
Fixed Effects	Ind.×Year	Ind.×Year	Ind.×Year	Ind.×Year
N	8262	8262	8393	8393
Model DF	272	272	272	272
Adjusted R^2	0.097	0.071	−0.017	0.031

Panel B: Unethical CEOs

	IIC	# Weaknesses	AAER	# Suits
Unethical CEO	0.053**	0.198***	−0.002	0.050**
	(2.116)	(2.961)	(0.452)	(2.234)
Restatement	0.124***	0.232***	0.004***	0.020***
	(20.627)	(14.612)	(4.117)	(3.799)
Big Four	−0.021***	−0.022	−0.001	−0.019***
	(2.726)	(1.062)	(0.817)	(2.745)
log(Audit fees)	0.059***	0.181***	0.002**	0.013***
	(12.980)	(15.013)	(2.209)	(3.263)
Revenue growth	0.021*	0.002	0.001	−0.001
	(1.734)	(0.056)	(0.471)	(0.120)
ΔROA	−0.053*	−0.136*	−0.001	−0.114***
	(1.948)	(1.881)	(0.298)	(4.750)
Book-to-market	0.016***	0.041***	0.001	0.011**
	(3.054)	(2.945)	(0.656)	(2.375)
Leverage	0.045***	0.112***	0.001	0.013
	(3.601)	(3.402)	(0.323)	(1.224)
Size	−0.044***	−0.122***	−0.001	−0.002
	(15.599)	(16.480)	(1.628)	(0.653)
Fixed Effects	Ind.×Year	Ind.×Year	Ind.×Year	Ind.×Year
N	8262	8262	8393	8393
Model DF	272	272	272	272
Adjusted R^2	0.097	0.072	−0.017	0.031

This table reports the effects of unethical executives on corporate legal outcomes, including internal control, material weaknesses, AAERs, and lawsuits. Panel A reports the effects of any unethical executives. Panel B reports the effects of unethical CEOs. All models include industry-year fixed effects. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 10: Market reaction to unethical executive revelation

		Mean value-weighted CARs					Regression coefficient				
Event	Market date	Firm	Exec.	Chief	CFO	CEO	Firm	Exec.	Chief	CFO	CEO
Website learns about hack	July 13	20.24	24.20	14.37	27.63	1.10	11.30	14.94	4.72	18.05	−8.69
		(1.27)	(0.88)	(0.29)	(0.30)	(0.03)	(0.60)	(0.54)	(0.12)	(0.34)	(0.16)
Hack announced and acknowledged	July 20	−74.08***	−94.00**	−165.15**	−150.27	−180.03*	−12.23	−32.30	−104.15**	−88.29	−118.30*
		(2.82)	(2.43)	(2.49)	(1.43)	(2.10)	(0.55)	(0.99)	(2.33)	(1.40)	(1.88)
Hack announced and acknowledged +1	July 21	10.40	−2.53	−25.18	−18.27	−32.08	4.70	−8.83	−31.72	−24.50	−38.42
		(0.35)	(0.07)	(0.37)	(0.14)	(0.77)	(0.19)	(0.24)	(0.63)	(0.35)	(0.54)
Dump released	August 17	−3.48	−34.76	−67.59	0.70	−135.88	−18.83	−50.38*	−82.99**	−13.46	−151.16***
		(0.19)	(1.11)	(1.17)	(0.01)	(1.41)	(0.99)	(1.82)	(2.19)	(0.25)	(2.84)
Dump released +1	August 18	−64.28***	−68.28**	−52.28	−98.25*	−6.31	−38.48*	−41.10	−24.22	−70.37	22.33
		(2.76)	(2.37)	(1.30)	(1.86)	(0.11)	(1.82)	(1.33)	(0.57)	(1.18)	(0.37)
Second dump released	August 19	−2.89	−10.83	−57.65	−19.18	−96.13	13.88	5.16	−42.53	−3.39	−80.97
		(0.13)	(0.34)	(1.01)	(0.27)	(1.06)	(0.46)	(0.12)	(0.71)	(0.04)	(0.96)
Lawsuits filed	August 20	−15.68	−64.03	45.38	45.94	44.83	−1.24	−51.10	60.91	60.96	59.85
		(0.38)	(0.79)	(0.52)	(0.35)	(0.37)	(0.04)	(1.22)	(1.06)	(0.75)	(0.74)
Hack announced and acknowledged (0,1)	July 20–21	−64.65*	−97.84**	−192.68**	−173.03	−212.33**	−7.31	−41.28	−137.07**	−116.13	−155.76*
		(1.77)	(2.04)	(2.43)	(1.26)	(2.46)	(0.25)	(0.97)	(2.35)	(1.41)	(1.89)
Dump released (0,1)	Aug 17–18	−69.15***	−103.43**	−120.48*	−99.25	−141.70	−58.36**	−91.46**	−107.41**	−85.13	−127.92*
		(2.91)	(2.66)	(1.90)	(1.79)	(1.21)	(2.18)	(2.35)	(2.01)	(1.13)	(1.70)
N (1348)		93	42	22	11	11					

This table reports stock price reactions to the revelation of unethical executives. Observations are at firm level. Figure 1 identifies the events. *Market dates* are the first trading days on or after the event dates. Five "treatments," that is, (unethical) firm, executive, chief, CEO, and CFO, are entertained. *Mean value-weighted CARs* are the mean values of the CARs for treatment firms on market dates. Observation numbers used to compute the mean value-weighted CARs are in the last row. The *regression coefficients* are obtained by regressing event-date CARs on each treatment. The sample includes all industrial firms covered by Compustat/CRSP with available data. The total number of firms is 1,348. CARs are reported in basis points. The absolute values of *t*-statistics are reported in parentheses. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively.

Table 11: Market reaction to unethical executive revelation with interactive effects

Panel A: Frequencies

	N	Unethical				
		Firm	Exec.	Chief	CFO	CEO
No prior restatement ($r = 0$)	1,299	86	37	19	10	9
Prior restatement ($r = 1$)	49	7	5	3	1	2

Panel B: Regression results

Event	Unethical	Intercept	$x - \bar{x}$	$r - \bar{r}$	$(x - \bar{x})(r - \bar{r})$	F-stat/p	R^2-Adj./R^2
Hack announced and acknowledged (0,1)	Firm	−57.90***	−7.90	−3.99	20.94	0.03	−0.002158
		(7.79)	(0.27)	(0.10)	(0.18)	0.9919	0.000074
	Exec.	−57.99***	−45.41	−3.54	55.38	0.37	−0.001414
		(7.80)	(1.03)	(0.09)	(0.41)	0.7775	0.000817
	Chief	−58.19***	−157.51***	−4.96	212.89	2.34	0.002966
		(7.85)	(2.59)	(0.12)	(1.22)	0.0722	0.005186
	CFO	−57.87***	−119.02	−2.25	55.57	0.67	−0.000727
		(7.80)	(1.42)	(0.06)	(0.19)	0.5681	0.001502
	CEO	−58.22***	−200.31**	−6.22	315.15	1.90	0.001999
		(7.85)	(2.28)	(0.16)	(1.46)	0.1278	0.004222
Dump released (0,1)	Firm	−14.15**	−48.96*	−8.97	−250.54**	3.66	0.005900
		(2.09)	(1.82)	(0.24)	(2.38)	0.0120	0.008114
	Exec.	−14.14**	−69.53*	−7.26	−266.14**	3.51	0.005570
		(2.09)	(1.73)	(0.20)	(2.14)	0.0147	0.007785
	Chief	−14.55**	−89.04	−19.17	−166.90	1.88	0.001954
		(2.15)	(1.60)	(0.52)	(1.05)	0.1312	0.004177
	CFO	−14.75**	−75.06	−27.71	−157.87	0.76	−0.000525
		(2.17)	(0.98)	(0.76)	(0.60)	0.5139	0.001704
	CEO	−14.64**	−102.45	−22.22	−153.98	1.34	0.000751
		(2.16)	(1.27)	(0.61)	(0.78)	0.2606	0.002977

Table 11: Market reaction to unethical executive revelation with interactive effects (continued)

This table reports stock price reactions to the revelation of unethical executives with interactive effects. Observations are at firm-level. Figure 1 identifies the events. Five "treatments," that is, (unethical) firm, executive, chief, CEO, and CFO, are entertained. Panel A reports frequencies of treatment variables by whether a given firm issued any restatement within two years before July 2015, that is, July 1st 2013 to June 30th 2015. Panel B reports regression results of

$$CAR = \alpha + \beta_1(x - \bar{x}) + \beta_2(r - \bar{r}) + \beta_3(x - \bar{x})(r - \bar{r}) + \varepsilon,$$

where CAR is the value-weighted CAR in basis points during an event, x is a binary variable for the treatment identified in the *treatment* column, and r is a binary variable for a firm issuing any restatement within two years before July 2015. Before interacting and estimating the regression, x and r are demeaned. The demeaned x and r are denoted with $x - \bar{x}$ and $r - \bar{r}$, respectively. The estimated intercept and coefficients, a, b_1, b_2, and b_3 are reported under columns *intercept*, $x - \bar{x}$, $r - \bar{r}$, and $(x - \bar{x})(r - \bar{r})$, respectively. Corresponding absolute values of t-statistics are reported in parentheses. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. F-statistic and p-values for the null hypothesis, $a = b_1 = b_2 = b_3 = 0$, are in the F-stat/p column, where F-statistics are in the top. R-squares and adjusted R-squares are in the R^2-adj./R^2 column, where adjusted R-squares are on the top.

Table 12: Executives career descriptive statistics

Variable	Unethical executives				Ethical executives				Difference		
	N	Mean	St.d.	Median	N	Mean	St.d.	Median	d(Mean)	t-stat.	p-value
Dependent variables											
Dropped executive	50	0.180	0.388	0	7,804	0.193	0.394	0	−0.013	0.23	0.818
Demotion (extended)	50	0.220	0.418	0	7,804	0.223	0.416	0	−0.003	0.05	0.964
Paycut (extended)	50	0.640	0.485	1	7,804	0.558	0.497	1	0.082	1.19	0.238
Demotion	41	0.049	0.218	0	6,300	0.037	0.189	0	0.012	0.34	0.735
Paycut	41	0.561	0.502	1	6,300	0.452	0.498	0	0.109	1.38	0.175
ΔPosition rank	41	−0.049	0.218	0	6,300	0.011	0.443	0	−0.060	1.73	0.091
Δlog(pay)	41	−0.048	0.365	−0.026	6,300	0.016	0.664	0.026	−0.064	1.10	0.276
ΔPay rank	41	−0.098	1.068	0	6,300	0.067	1.396	0	−0.165	0.98	0.332
ΔPay share	41	−0.005	0.048	−0.003	6,300	0.000	0.084	0.001	−0.006	0.75	0.458
Explanatory variables											
Restatement	50	0.100	0.303	0	7,804	0.074	0.261	0	0.026	0.61	0.543
Age	50	51.120	6.965	49.500	7,804	53.523	7.381	53	−2.403	2.43	0.019
Tenure	50	7.060	3.867	7	7,804	6.297	5.128	5	0.763	1.39	0.172
Retire	50	0.020	0.141	0	7,804	0.064	0.245	0	−0.044	2.19	0.033
CEO	50	0.220	0.418	0	7,804	0.183	0.387	0	0.037	0.62	0.541
CFO	50	0.320	0.471	0	7,804	0.182	0.386	0	0.138	2.06	0.044
Director	50	0.280	0.454	0	7,804	0.279	0.449	0	0.001	0.01	0.993
Loss	50	0.160	0.370	0	7,804	0.187	0.390	0	−0.027	0.52	0.607
Dropped firm	50	0.060	0.240	0	7,804	0.044	0.204	0	0.016	0.48	0.631
Switched firm	50	0.000	0.000	0	7,804	0.010	0.101	0	−0.010	9.05	0.000

The table reports descriptive statistics for unethical executives (*unethical* = 1) and ethical executives (*unethical* = 0) at executive level. Between-group differences are reported under *difference*. d(Mean) is the difference in the mean values (unethical executives minus ethical executives). The t-statistics and p-values are for the null hypothesis, d(Mean) = 0, under the assumption of unequal variances. Appendix C provides the variable definitions.

Table 13: Career outcomes for unethical executives

		Demotion (extended)			Paycut (extended)		
		(1)	(2)	(3)	(4)	(5)	(6)
Unethical		−0.014	−0.008	−0.000	0.072	0.076	0.071
	t-statistic	(0.232)	(0.147)	(0.008)	(1.015)	(1.096)	(1.028)
Restatement		−0.042**	−0.032**	−0.035**	0.044**	0.056***	0.054**
		(2.351)	(1.986)	(2.124)	(2.058)	(2.699)	(2.564)
Unethical × Restatement		0.467**	0.529***	0.504***	0.358	0.379*	0.328
		(2.374)	(2.958)	(2.810)	(1.524)	(1.655)	(1.434)
Age			0.005***	0.006***		0.005***	0.004***
			(7.045)	(7.376)		(4.882)	(4.324)
Tenure			0.001	0.002*		0.005***	0.005***
			(1.538)	(1.949)		(3.761)	(3.972)
Retire			0.072***	0.065***		0.036	0.048*
			(3.415)	(3.062)		(1.317)	(1.751)
CEO			−0.023	−0.023		0.016	0.014
			(1.432)	(1.434)		(0.784)	(0.683)
CFO			−0.038***	−0.037***		−0.049***	−0.048***
			(3.308)	(3.296)		(3.342)	(3.353)
Director			−0.093***	−0.095***		−0.129***	−0.126***
			(6.594)	(6.740)		(7.183)	(7.044)
Loss			0.094***	0.097***		0.014	0.012
			(8.472)	(8.581)		(0.957)	(0.848)
Dropped firm			0.778***	0.776***		0.453***	0.456***
			(37.038)	(36.446)		(16.851)	(16.769)
Switched firm			−0.262***	−0.258***		−0.348***	−0.351***
			(6.177)	(6.054)		(6.408)	(6.466)
Intercept		0.223***	−0.082**		0.558***	0.302***	
		(47.438)	(2.172)		(99.651)	(6.222)	
Fixed effects		None	None	Industry	None	None	Industry
N		7854	7854	7854	7854	7854	7854
Model DF		3	12	55	3	12	55
Adjusted R^2		0.001	0.177	0.180	0.001	0.053	0.063

This table reports unethical executives' career outcomes after their revelation. The primary outcomes are whether the executive is demoted to a lower position (model 1–3) or experiences any paycut (model 4–6). Model 1 and 4 are parsimonious linear probability models. Model 2 and 5 are multiple variable linear probability models with control variables. Model 3 and 6 augment model 2 and 5 by including industry fixed effects. *Unethical* and *restatement* are demeaned before interacting and regressing. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Table 14: Unethical executives' career outcome: Two-stage Heckman

		Stage 1	Stage 2: Power		Stage 2: Money			
		Drop. exec.	Demotion	ΔPos. rank	Paycut	Δlog(Pay)	ΔPay rank	ΔPay share
Unethical		0.066	−0.009	−0.009	0.093	−0.034	−0.076	−0.001
	t-statistic	(0.270)	(0.319)	(0.138)	(1.194)	(0.326)	(0.355)	(0.115)
Restatement		−0.209***	0.017*	0.003	0.057**	−0.043	−0.145**	−0.003
		(2.824)	(1.942)	(0.165)	(2.333)	(1.341)	(2.160)	(0.630)
Unethical		0.552	0.457***	−0.456**	0.502*	−0.575*	−1.375*	−0.060
×Restatement		(0.746)	(4.734)	(2.107)	(1.921)	(1.654)	(1.894)	(1.386)
Age		0.019***	0.001***	−0.005***	0.007***	−0.006***	−0.010***	−0.001***
		(6.099)	(2.907)	(4.710)	(5.333)	(3.361)	(2.852)	(3.471)
Tenure		0.009**	−0.000	−0.005***	0.006***	−0.010***	−0.024***	−0.001***
		(2.233)	(0.024)	(4.337)	(4.352)	(5.412)	(6.015)	(3.128)
Retire		0.231***	0.002	−0.022	0.050	−0.070	−0.032	−0.003
		(2.774)	(0.187)	(0.772)	(1.470)	(1.568)	(0.346)	(0.592)
CEO		−0.586***	0.108***	−0.506***	−0.034	−0.065	−0.405***	−0.039***
		(7.709)	(9.353)	(19.588)	(1.097)	(1.568)	(4.667)	(7.507)
CFO		−0.639***	0.111***	−0.161***	−0.110***	0.020	−0.138*	−0.010**
		(11.607)	(10.528)	(6.791)	(3.828)	(0.529)	(1.737)	(2.182)
Director		−0.372***	−0.015*	0.357***	−0.181***	0.202***	0.344***	0.031***
		(5.959)	(1.679)	(17.717)	(7.440)	(6.226)	(5.085)	(7.608)
Loss		0.387***	0.006	−0.004	0.029	0.000	0.030	0.001
		(8.565)	(0.822)	(0.249)	(1.340)	(0.006)	(0.501)	(0.287)
Dropped firm		2.751***	0.230***	−0.878***	0.724***	−1.003***	−2.521***	−0.152***
		(23.622)	(4.259)	(7.259)	(4.944)	(5.155)	(6.204)	(6.285)
Switched firm			0.027	0.502***	−0.228***	0.281***	1.267***	0.109***
			(1.155)	(9.554)	(3.586)	(3.330)	(7.185)	(10.399)
λ			−0.027	−0.010	0.254***	−0.184***	−0.100	0.002
			(1.624)	(0.262)	(5.552)	(3.034)	(0.786)	(0.327)
Σ			0.182***	0.407***	0.493***	0.655***	1.368***	0.081***
			(112.606)	(112.611)	(112.611)	(112.612)	(112.613)	(112.590)
Intercept			−0.032	0.348***	−0.290**	0.639***	0.913***	0.040**
			(0.743)	(3.628)	(2.499)	(4.142)	(2.832)	(2.062)
Fixed effects		Industry	None	None	None	None	None	None
N		7854	6341	6341	6341	6341	6341	6341
Model DF		54	14	14	14	14	14	14
McFadden's LRI		0.2012						

This table reports unethical executives' career outcomes after their revelation using the two-stage Heckman model. Stage 1 concerns whether an executive is dropped from the ExecuComp universe after the revelation. It is estimated with a Probit model, with industry fixed effects. Stage 2 concerns an array of outcome variables for the survivors from the first stage. The outcome variables are categorized into either *power* or *money*, estimated with the maximum likelihood method. *Unethical* and *restatement* are demeaned before interacting and regressing. λ and Σ are parameters generated by the first stage. The signs, *, **, and ***, indicate coefficients are significant at 10%, 5%, and 1% levels, respectively. Appendix C provides the variable definitions.

Appendix A The Ashley Madison data dump

The Ashley Madison website, accessible at `ashleymadison.com`, run by Avid Life Media, went online in 2002 and had 36 million registered members as of mid-2015. The website facilitates extramarital dating under the trademarked slogan "Life is Short. Have an Affair." A group of hackers, self-identified as the "Impact Team," hacked the website in the summer of 2015 and released its membership data. This incident triggered intensive media coverage, from which many celebrity members were identified. Figure 1 outlines the timeline of the hack and the release of the data.

The data contains rich details that facilitate matching. There are five mySQL files comprising an array of mostly self-reported information, such as nickname, email, gender, ethnicity, date of birth, height, weight, marrital status, sexual preferences, and GPS coordinates. These mySQL files contain information for all members. In addition, there is an Excel file that contains daily credit card transaction records from March 12, 2008, to the date of the release. A member must purchase credits to initiate a conversation with another member. Among the 36,416,520 registered accounts, 1,420,450 had at least one credit card transaction record, and 1,074,799 had full names and addresses on record.

The matching begins with names and addresses from the credit card transaction records and from ExecuComp. There are 33 executives whose names and company addresses directly matched the credit card records. Next I place a limit on the distance between a credit card address or GPS coordinates and its name-matched corporate business addresses to under 200 miles. Then I use Google to manually check whether each credit card address appears in EDGAR with the matched executive name. Matches are usually confirmed by employment contracts and stock award disclosures. I then determine whether the filing firms are indeed associated with the matched executive. If not, I examine the executive's résumé to establish linkages. I also search whether executive names, credit card addresses, and company names are simultaneously present in sources outside EDGAR. Matches arise in political donation and company registration records. For matches found outside of EDGAR, I use Google Maps (Satellite) and Google Street View to visually assess whether the property on the address is likely an executive residence. The size of the property and whether it has any swimming pool or tennis court are key considerations. Including the 33 aforementioned executives, the process identifies 164 unique executives with at least one member account, of which 37 and 47 (82) were once CEOs and CFOs, respectively.

Table A.1 displays some common variables for matched executives.[22] *Age* is as of 2014. *White* and *male* are binary variables for being white and male, respectively. *Weight* is in kilograms, and *height* is in centimeters. *# of Accounts* is the number of paid accounts matched to a given executive. There are 201 paid accounts registered by the 164 matched executives. The variables *age* and *height* come from the most recently registered account should an executive have multiple accounts. I compare the self-reported age from the data dump with the ExecuComp age and find that over half of the ages are within one year of each other; for the rest, the data dump age is almost always younger than the ExecuComp age. For executives with multiple accounts, birth years vary, but birth months and birth days are usually identical. *Weight* and *height* are also consistent across accounts. *# of Transactions* is the number of successful credit card transactions. *Total expense* is the sum of purchases in U.S. dollars. Variable *# of transactions* and *total expense* are aggregated from all matched accounts. *Per day expense* is *total expense* divided by the number of days between the date of an executive's first account registration and July 1, 2015. *Active days* is the number of days between the date of an executive's first account registration and the date of the last activity on record, which refers to updating profiles, sending emails, and sending chats. *Activeness* is *active days* divided by the number of days between the date of the first account registration and July 1, 2015. *Discreet* is a binary variable for purchasing Ashley Madison's "full delete" service. *Company credit card* is a binary variable for the billing address of an executive's paying credit card being identical to his business address.

Because the data were released by a third party, it is necessary to validate their authenticity. I examine the match from two perspectives: the authenticity of the data and the potential failures during the matching. The website never directly confirmed the authenticity of the release. However, it did send copyright takedown notices to social networks and file-sharing sites, suggesting the data were authentic.[23] The main consideration here is whether and how much of the data were altered before the release. The website charges a fee to remove member records, but it failed to purge the records. Ironically, some executives were identified only because they paid for the "full delete" service. Nevertheless, whether it removed some records remains an open question. The website uses consecutive integers for member IDs. For the 36,416,520 accounts on file, the largest ID number is 37,338,542, suggesting 921,878 ID numbers are missing. Matching the transaction records to the mySQL files show that there are 10 IDs

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[22]In this appendix, I use the term matched executives, member executives, and unethical executives interchangeably.

[23]As reported by The Guardian on August 20, 2015 (`theguardian.com/technology/2015/aug/20/ashley-madison-using-copyright-law-to-try-to-limit-attack-leak`). Last accessed on July 26, 2018.

(of 1,420,450 members) in the transaction records absent from the mySQL files, suggesting at least some IDs were removed after generation. However, these 10 IDs reside on a very early and narrow ID number range. Some IDs purchased "full delete," whereas some did not, so the missing IDs are unlikely due to deliberate intervention based on deletion requests. Given their small size, relative to the full sample, the missing IDs are unlikely substantial. Whether and how Impact Team altered the data also remains an open question.

Potential failures in the matching comprise both type I and type II errors. For type II errors, the possibility that a credit card was stolen or a transaction was forged cannot be ruled out. For type I errors, there are several potential sources. For instance, Google might not have fully indexed EDGAR, much less the whole internet. An executive may use a credit card address that is more than 200 miles away from the corporate headquarters or another person's credit card or a gift card. Corporate headquarters may have moved. An executive's address may never have appeared in a public source, and so on. I take the following steps to qualify and quantify type I errors.

First, I compute expected numbers of matches based on demographics and compare them with the number of actual matches. Most executives are white males. Assuming executives are as equally likely to register on the dating site as is any U.S. white male, the expected number of matches equals the ratio of the website members to the U.S. population, multiplied by the number of executives. Table A.2 thus tabulates the U.S. white male population by age, the ExecuComp male population, the site members who self-identify as white males from the United States, the matched executives, the matches expected, and the ratio of actual to expected matches. Excluded from the tabulation were 10,882 male executives (of which 23 were matched white male executives) whose age was not reported in ExecuComp. For the age group from 40 to 74 years old, the average ratio of actual to expected matches is 57.9% (125/216), which translates to 91 (216 minus 125) unidentified white male executives. However, there is reason to believe that the match is more complete than it appears. First, the U.S. population census does not include the deceased, who are likely old, but this is not the case for ExecuComp or the data release. Second, because ExecuComp does not specify executive ethnicity, all male executives are counted instead of just the white ones. Third, as mentioned earlier, a person can register more than one account. All these factors bias the number of expected matches upward. There are two matched female executives, consisting of 1.22% (2/164) of the matched executives. Female members make up 2.22% of the site members (23,809/1,074,799). Because so few female

executives seem to cheat, I do not differentiate gender in my subsequent analyses.[24]

Second, to ensure that the search-match process is not affected by the extra attention paid to executives with rare names and thus overlooks executives with common names, Table A.3 tabulates the most popular given names for matched executives in the ExecuComp universe. The most popular names for matched executives—James, David, Robert, John, Steven, Michael, Thomas, and William—are also the most popular names for executives, except for Steven.

Lastly, I obtain a commercial executive mailing list, which includes both mailing addresses and email addresses (work and home), and match it to the data dump. The matches that arise from the mailing list are small in quantity and do not contribute to any new match. The site gives members full access, even if they do not provide their real emails. Moreover, email addresses were deleted after a "full delete." As a result, emails are not used in the matching. Only two matched executives used their work emails (whose domains match company URL domains) to sign up with the site.

To better understand the matched executives, I consider their distribution across industries. A maintained assumption is that unethical executives occur randomly across industries. A challenge to this assumption is that people with different propensities to seek extramarital affairs likely work in different industries, and different industries offer different opportunities to have affairs. Table A.4 tabulates the matched executives using the Fama-French 49-industries classification and compares the frequency with the ExecuComp population. An executive is counted for all industries that person has worked in. The following discussion concentrates on industries that have at least six matched executives or six expected executives (not printed), defined as the percentage of executives in a given industry of all executives, multiplied by the number of unique matched executive-industry combinations (180). The restaurants & hotels (#44) industry has the highest ratio of actual to expected matches, 2.8 times, followed by the computer software (#36)(1.6 times) and trading (#48)(1.5 times) industries. The utility (#31) industry has the lowest at only 12%, followed by machinery (#21)(49%) and pharmaceutical products (#13)(58%). Interestingly, banking (#45) is among the lowest, whereas trading (#48) is among the highest, despite both are broadly considered part of the financial industry.

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[24]Munsch (2015) reports that breadwinning increases infidelity for men but decreases it for women, consistent with a lower occurrence of female member executives.

Table A.1: Demographic and membership statistics of the matched executives

Variable	N (164)				
	Mean	Std	Min	Median	Max
Age	52.62	7.25	32.00	53.00	73.00
White	0.91	0.28	0.00	1.00	1.00
Male	0.99	0.11	0.00	1.00	1.00
Weight	84.86	9.95	38.56	83.92	106.60
Height	181.84	6.42	157.00	183.00	198.00
# Accounts	1.23	0.64	1.00	1.00	5.00
# Transactions	4.98	6.95	1.00	2.00	57.00
Total expense	331.11	461.59	19.00	172.98	3010.99
Per day expense	0.31	0.51	0.01	0.16	3.72
Active days	871.41	679.00	1.00	799.50	3001.00
Activeness	0.48	0.30	0.00	0.45	1.00
Discreet	0.22	0.42	0.00	0.00	1.00
Company credit card	0.16	0.37	0.00	0.00	1.00

This table presents the characteristics of executives from matching the membership dump and ExecuComp. Appendix C provides the variable definitions.

Table A.2: Age distribution of the unethical executives

Age	United States	ExecuComp	Members	# of Matches	Exp. #	Ratio
15 to 19 years	8,375,051	0	495	0	0	0.00
20 to 24 years	8,949,348	0	10,001	0	0	0.00
25 to 29 years	8,626,241	9	45,654	0	0	0.00
30 to 34 years	8,446,408	68	82,810	0	1	0.00
35 to 39 years	7,781,246	393	109,289	0	6	0.00
40 to 44 years	8,061,522	1,548	127,711	5	25	0.20
45 to 49 years	8,289,988	3,600	126,731	16	55	0.29
50 to 54 years	9,027,463	6,049	97,134	21	65	0.32
55 to 59 years	8,619,419	7,225	63,814	33	53	0.62
60 to 64 years	7,445,796	6,005	34,675	29	28	1.04
65 to 69 years	6,207,724	5,065	13,126	14	11	1.31
70 to 74 years	4,412,109	3,476	3,597	6	3	2.12
75 to 79 years	3,052,554	1,906	1,053	1	1	1.52
80 to 84 years	2,104,454	1,100	28	0	0	0.00
85 years and over	1,881,608	653	1	0	0	0.00

Age is as of 2014. The *United States* column concerns the U.S. white male population. The *ExecuComp* column covers male executives. The *members* column concerns site members who are U.S. white males. The *# of matches* column concerns the number of matched executives. *Exp. #* is calculated as (*ExecuComp*)(*Members/United States*). *Ratio* is calculated as the (*# of Matches*)/(*Exp. #*). The U.S. population data are from the U.S. Census.

Table A.3: Frequency of popular executive first names

First name	Member executives			ExecuComp		
	Freq.	Pct.	Rank	Freq.	Pct.	Rank
James	10	6.17	1	1,874	4.05	4
David	9	5.56	2	1,757	3.80	5
Robert	8	4.94	3	2,082	4.50	2
John	7	4.32	4	2,498	5.40	1
Steven	7	4.32	4	616	1.33	14
Michael	6	3.70	6	1,876	4.06	3
Thomas	6	3.70	6	1,266	2.74	8
William	6	3.70	6	1,481	3.20	6

Freq. is the frequency of a given first name for either the matched executive or the ExecuComp male population. *Pct.* is the percentage (%) of a first name from either population. *Rank* is the rank of a first name from either population. A higher rank indicates a higher frequency or percentage compared with a lower rank.

Table A.4: Frequency of executives by Fama-French 49 industry

FF-49 industry		# of Matches	# of Exec.	Pct. matched	Pct. of exec.	Ratio
2	Food Products	6	971	3.28	1.84	1.78
9	Consumer Goods	2	800	1.09	1.52	0.72
10	Apparel	4	684	2.19	1.30	1.69
11	Healthcare	3	811	1.64	1.54	1.07
12	Medical Equipment	1	1,433	0.55	2.71	0.20
13	Pharmaceutical Products	4	2,150	2.19	4.07	0.54
14	Chemicals	3	1,367	1.64	2.59	0.63
15	Rubber and Plastic Products	2	253	1.09	0.48	2.28
17	Construction Materials	2	967	1.09	1.83	0.60
18	Construction	2	606	1.09	1.15	0.95
19	Steel Works Etc	3	789	1.64	1.49	1.10
20	Fabricated Products	2	84	1.09	0.16	6.87
21	Machinery	3	1,761	1.64	3.34	0.49
22	Electrical Equipment	2	516	1.09	0.98	1.12
23	Automobiles and Trucks	2	1,010	1.09	1.91	0.57
27	Precious Metals	2	179	1.09	0.34	3.22
30	Petroleum and Natural Gas	7	1,986	3.83	3.76	1.02
31	Utilities	1	2,385	0.55	4.52	0.12
32	Communication	4	1,435	2.19	2.72	0.80
33	Personal Services	2	596	1.09	1.13	0.97
34	Business Services	10	2,454	5.46	4.65	1.18
35	Computer Hardware	5	1,598	2.73	3.03	0.90
36	Computer Software	21	3,783	11.48	7.17	1.60
37	Electronic Equipment	15	2,985	8.20	5.65	1.45
38	Measuring and Control Equipment	5	901	2.73	1.71	1.60
39	Business Supplies	1	776	0.55	1.47	0.37
41	Transportation	3	1,311	1.64	2.48	0.66
42	Wholesale	6	1,569	3.28	2.97	1.10
43	Retail	11	3,281	6.01	6.22	0.97
44	Restaraunts, Hotels, Motels	10	979	5.46	1.85	2.95
45	Banking	8	3,746	4.37	7.10	0.62
46	Insurance	9	2,117	4.92	4.01	1.23
48	Trading	11	2,444	6.01	4.63	1.30
49	Almost Nothing	2	928	1.09	1.76	0.62
Total		183	52,786			

# of matches is the number of matched executives in a given industry. *# of exec.* is the total number of executives in a given industry. If an executive has worked in more than one industry, his industry membership is counted for all industries in which he has worked. *Pct. matched* is calculated as the *# of matches*, divided by the total number of matched executives. *Pct. of exec* is calculated as the *# of exec.*, divided by the total number of executives. *Ratio* is calculated as (*pct. matched*)/(*pct. of exec.*). Industries with less than two matched executives and *pct. of exec.* $< 1\%$ are suppressed to conserve space.

Appendix B Data sources

This appendix lists the source of each database used in the paper. Dates reflects the "date modified" time stamp on the data files.

Database	Source
AAER	CMFR at Berkeley Hass, dated December 19, 2017
Ashley Madison dump	BitTorrent magnet number `40ae8a90de40ca3afa763c8edb43fc1fc47d75f1`
Audit Analytics	WRDS, dated April 10, 2018
CCM	WRDS, dated February 1, 2018
Compustat	WRDS, dated September 6, 2018
CRSP	WRDS, dated May 3, 2019
ExecuComp	WRDS, dated March 5, 2019
RiskMetrics	WRDS, dated August 8–9, 2018
SCAC	SCAC at Stanford Law, last accessed May 8, 2018
US population	US Census 2018 Population Estimates, table `PEP_2018_PEPASR5H_with_ann`

Appendix C   Variable definitions

Executive characteristics are measured at executive level. Career outcome regression variables are measured at executive-year level. Other variables are measured at firm-year level, where firms are identified by Computats's GVKey. Compustat variables are in `monospace`.

Variable name	Definition
Executive characteristics	
Age	An executive's age as of 2014.
White	Equals 1 if an executive is white; otherwise 0.
Male	Equals 1 if an executive is male; othersise 0.
Weight	An executive's self-reported height in centimeters.
Height	An executive's self-reported weight in kilograms.
# Accounts	Number of paid accounts registered by an executive.
# Transactions	Number of credit card transactions by an executive.
Total expense	Total dollar amount paid to the dating website by an executive.
Per day expense	*Total expense* divided by the number of days between the date of an executive's first account registration and July 1, 2015.
Active days	Number of days between the date of an executive's first account registration and the date of the last activity on record, which refers to updating profiles, sending emails, and sending chats.
Activeness	*Active days* divided by the number of days between the date of the first account registration and July 1, 2015
Discreet	Equals 1 if an executive ever purchased the "full delete" service; otherwise 0.
Company credit card	Equals 1 if an executive's credit card address coincides with his firm headquarters address; otherwise 0.
Independent variables	
Unethical firm	Equals 1 if a firm ever employs an unethical executive; otherwise 0.
Unethical exec.	Number of unethical executives. An unethical executive is an executive who is also a paid member on the extramarital dating website.
Unethical chief	Number of unethical chief executives. A chief executive is either the CEO or the CFO.
Unethical CFO	Equals 1 if CFO is unethical; otherwise 0.
Unethical CEO	Equals 1 if CEO is unethical; otherwise 0.
Pre-unethical exec.	Equals 1 if a firm is not currently employing an unethical executive but employs one within the following three years; otherwise 0.
Post-unethical exec.	Equals 1 if a firm is not currently employing an unethical executive but employs one within the preceding three years; otherwise 0.
Dependent variables	
Restatement	Equals 1 if a firm's financial statements are subsequently restated due to accounting or fraud reasons; otherwise 0.
IIC	Equals 1 if a firm's internal control is ineffective; otherwise 0.
# Weaknesses	Number of material weaknesses of a firm.
AAER	Equals 1 if a firm receives an AAER from SEC; otherwise 0.
# Suits	Number of engaged securities class actions as defendant by a firm.
Control variables	

(Continued)

Variable name	Definition
Specialist	Equals 1 if a firm's auditor is a specialist; otherwise 0. An auditor is considered a specialist if it has the largest market share of the audit fee revenues in the client's industry and its market share is at least 10 percentage points greater than the runner-up.
log(Auditor tenure)	Natrual logarithm of the number of years that the company has worked with its current auditor.
Big Four	Equals 1 if a firm's financial statements are audited by one of the Big Four auditors; otherwise 0.
log(Audit fees)	Natrual logarithm of audit fees in thousands of dollars.
Revenue growth	Percentage increase in sales (`sale`) over the past year.
ΔROA	Change in ROA over the past year, where ROA is the ratio of net income (`ib`) to the beginning-of-period total assets (`at`).
Book-to-market	Common equity (`ceq`) divided by total closing stock price (`prcc_f` times `csho`).
Leverage	Long-term debt (`dctt`) plus debt in current liabilites (`dlc`) divided by total assets (`at`).
Size	Natural logarithm of total assets (`at`) in millions of dollars.
Career outcome regressions	
Dropped executive	Equals 1 if an executive dropped out of ExecuComp after July 2015; otherwise 0.
Demotion (extended)	Equals *demotion* when *dropped executive* = 0; otherwise 1.
Paycut (extended)	Equals *paycut* when *dropped executive* = 0; otherwise 1.
Demotion	Defined as missing when *dropped executive* = 1; equals 1 when Δ*Position rank* < 0; otherwise 0.
Paycut	Defined as missing when *dropped executive* = 1; equals 1 when Δlog(*pay*) < 0; otherwise 0. *Pay* is the total compensation reported to SEC in thousands of dollars (`total_sec`). When *pay* is negative, it is set to 0.
ΔPosition rank	Equals the pre-dump-release *position rank* minus the post-dump-release *position rank*. *Position rank* is defined as the following: CEO = 1, CFO = 2, others listed on ExecuComp = 3.
Δlog(Pay)	Equals the post-dump-release log(*pay*) minus the pre-dump-release log(*pay*). log(*Pay*) is the natural logarithm of (*pay* + 1).
ΔPay rank	Equals the post-dump-release *pay rank* minus the pre-dump-release *pay rank*. *Pay rank* is the descending rank of *pay* within the same firm-year.
ΔPay share	Equals the post-dump-release *pay share* minus the pre-dump-release *pay share*. *Pay share* is the percentage of an executive's *pay* among all named executives in the same firm-year.
Unethical	Equals 1 if an executive is unethical; otherwise 0.
Restatement	Equals 1 if an executive's firm issued any restatement before July 2015 (inclusive) for any fiscal year he worked for the firm; otherwise 0.
Age	An executive's age as of the last annual report before July 2015.
Tenure	Number of years an executive is employed by the current firm as of the last annual report before July 2015.
Retire	Equals 1 if an executive is 65 or older as of the last annual report before July 2015; otherwise 0.
CEO	Equals 1 if an executive is the CEO as of the last annual report before July 2015; otherwise 0.
CFO	Equals 1 if an executive is the CFO as of the last annual report before July 2015; otherwise 0.
Director	Equals 1 if an executive is a board director as of the last annual report before July 2015; otherwise 0.
Loss	Equals 1 if an executive's firm reports losses in the last annual report before July 2015; otherwise 0.
Dropped firm	Equals 1 if an executive's firm drops out of ExecuComp/Compustat after July 2015.
Switched firm	Equals 1 if an executive switches to another firm on ExecuComp/Compustat between the last annual report before July 2015 and the first annual report after July 2015; otherwise 0.