

Do Personal Ethics Influence Corporate Ethics?*

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ABSTRACT

We introduce a new measure of personal ethics in the form of marital cheating to examine the relationship between personal ethics and corporate misconduct. Firms with CEOs and CFOs who use a marital infidelity website are more than twice as likely to engage in two forms of corporate misconduct. The relationship is not explained by a wide range of regional, firm, and executive characteristics or by the infidelity website usage of other executives. Additionally, white-collar SEC defendants also have elevated levels of infidelity website usage. Our findings suggest that personal and professional ethics are not as distinct as some believe.

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Are business ethics and corporate conduct related to personal ethics? Should shareholders care about the personal lives of corporate executives, or are these matters irrelevant to firm conduct and performance? While there is growing interest in business ethics among managers, policymakers, and educators, there is relatively little empirical research examining the relationship between personal ethics and corporate conduct. In this paper, we study whether executives who are dishonest in their private lives are more likely to engage in unethical corporate behavior.

There is a longstanding debate in philosophy and psychology regarding the extent to which ethics are situational. The classical view is that character traits such as honesty and faithfulness drive personal actions. In contrast, [Fletcher \(1966\)](#) explains, “situationism holds that in practice what in some times and places we call right is in other times and places wrong. Norms are contingent, have no transcendent status.” Hence, it is common to assume that there are different standards for private relationships as compared to “business ethics” ([Josephson \(1989\)](#); [Bartlett and Ogilby \(1996\)](#)). In psychological terms, individual behavior is often thought to be highly contingent upon context and situation ([Hartshorne and May \(1928\)](#); [Mischel \(1968\)](#)). [Bowers \(1973\)](#) critiques this view and argues that personal traits influence one’s thinking and interact with the situation across diverse contexts.

The debate over the relative importance of context and character plays out in a practical way every time a candidate for a high political office is revealed to have had an affair. Voters must implicitly decide whether they believe the candidate’s personal life is informative of his trustworthiness more generally. Public reaction seems to vary with the situation.¹ Despite the widespread interest in this issue, there is little empirical research on whether marital infidelity is associated with unethical conduct in other contexts.

In this paper, we examine the relationship between personal ethics in the form of marital infidelity and corporate misconduct. We construct a proxy of marital infidelity using data

¹For example, Bill Clinton’s popularity remained extremely high in the period after the disclosure of his infidelity, whereas alleged affairs sank the presidential aspirations of many including, John Edwards, Mark Sanford, Elliott Spitzer, and Herman Cain.

from Ashley Madison users. Ashley Madison (AM) is an online service that advertises itself as a dating service for married people to have “discreet encounters”. Despite the promises of discreetness, the data was put in the public realm through a hack as of August 2015. To avoid possible false matches, we only use data on Ashley Madison users with credit card transaction information. To ensure that we have an exact match, we match executives of U.S. publicly traded companies to Ashley Madison based on both name and mailing address. We do not consider executives to be AM users until the year they first appear in the AM transaction database. We find 67 CEOs, 70 CFOs, and 108 other top executives who were Ashley Madison paid users during the 2008 to 2014 period.²

As a cultural proxy for regional differences in personal cheating, we also examine overall Ashley Madison paid transaction usage as a percent of the population in each county. Ashley Madison (AM) use is widespread geographically across the U.S., and overall Ashley Madison usage is uncorrelated with executive usage, indicating that firm-level ethics proxies can be quite distinct from regional proxies.

As an indicator for corporate misconduct, we use a measure of whether a firm was the subject of a non-dismissed securities class action lawsuit or engaged in a financial misstatement. Our indicator of firm misconduct are at the firm-year level and includes all years affected by the misconduct. We find that firms with CEOs or CFOs who used Ashley Madison are more than twice as likely to commit corporate infractions compared to firms without an AM CEO or CFO. The results are highly statistically significant even after controlling for executive age, executive tenure, firm characteristics, time, and state fixed effects to capture potential cultural differences across different geographic areas.

Given that AM usage by CEOs and CFOs relates to corporate infractions, we would expect AM usage to also be associated with cheating and fraud in other professional settings. To test this prediction, we collect detailed data on defendants to SEC litigation alleging

²Our baseline sample of Execucomp data contains 36 CEOs, 38 CFOs, and 108 other top executives matched to Ashley Madison transaction data. In robustness tests, we consider an additional 31 CEOs and 32 CFOs that we match to Ashley Madison transaction data from non-Execucomp firms.

insider trading, Ponzi schemes, pump and dump operations, and other fraud. Consistent with our main results, we find that SEC defendant AM usage is two and three times higher than AM usage of a matched sample of firm executives with similar ages and geographic locations.

One potential concern is that the relationship between infidelity and corporate misconduct could be driven by omitted firm characteristics that jointly predict executive ethics and corporate behavior. As an alternative empirical strategy, we perform a propensity score matching of AM firms with non-AM firms in the same industry and with similar characteristics. The AM firms are nearly three times more likely to have an infraction. Our results are also robust to controlling for a wide range of firm characteristics including proxies for local area culture, corporate governance, returns, return volatility, and accounting patterns potentially associated with misreporting. Nevertheless, firms could still differ along unobservable dimensions such as culture even after controlling for observable characteristics and fixed effects.

To assess whether corporate culture is driving our findings, we analyze the effect of AM usage by top executives other than CEOs and CFOs on corporate infractions. If firm culture is the driving force behind our results, we would expect unethical firms to attract and hire unethical people throughout the executive ranks. As a result, non-CEO/CFO executive AM usage would be as or more predictive of corporate infractions as CEO/CFO usage, since there are approximately three times more executives than CEOs and CFOs. Instead, we find that non-CEO/CFO executive AM usage has no impact on corporate infractions, and the effect of AM CEO/CFO remains large and statistically significant after controlling for non-CEO/CFO usage. This is consistent with the interpretation that either the cheating of CEOs and CFOs is a much better measure of firm-level culture than the cheating of other firm executives, or that CEOs and CFOs who cheat in their personal life are more prone to allow or promote cheating in the corporate context. We also find that the relationship between CEO/CFO AM usage and corporate infractions is robust to controlling for a wide

range of regional controls potentially related to culture, including county-level overall AM usage.

We also examine the relationship between AM usage and corporate decisions that are not typically associated with corporate misconduct, such as investment, acquisitions, dividend payouts, and R&D expenses. Having an AM CEO or CFO moderately decreases investments and has no effect on acquisitions, dividends payouts, or research and development expenses, suggesting that CEO and CFO personal ethics are more strongly related to corporate ethics than to other corporate decisions. A large literature (summarized below) that finds that CEO actions influence firm activity, yields credence to the interpretation that the personal ethics of CEOs and CFOs influence their firms' propensity to engage in corporate cheating. Nevertheless, we realize we cannot rule out all non-causal and omitted variable possibilities.

This paper adds to a growing literature on the impact individual executives have on firm actions ([Bertrand and Schoar \(2003\)](#)). Examples include the effect of CEO perks and ability on firm performance ([Yermack \(2006\)](#); [Kaplan, Klebanov, and Sorensen \(2012\)](#)), the effect of CEO overconfidence and formative experiences on corporate investment and leverage ([Malmendier and Tate \(2005\)](#); [Malmendier, Tate, and Yan \(2011\)](#)); the effect of personal risk-taking on corporate risk ([Cain and McKeon \(2014\)](#)); the effect of personal leverage on corporate leverage ([Cronqvist, Makhija, and Yonker \(2012\)](#)); the effect of CEO optimism and risk aversion on corporate financial policies ([Graham, Harvey, and Puri \(2013\)](#)); and the effect of CEO military service on corporate tax avoidance ([Law and Mills \(2015\)](#)).

Our analysis is most closely related to recent papers on the impact of personal characteristics of executives on firm misconduct. [Davidson, Dey, and Smith \(2015\)](#) find that CEOs and CFOs of companies that perpetrate corporate fraud are more likely to have legal records of traffic and criminal convictions compared to CEOs and CFOs of similar firms. They also find that CEO and CFO frugality is related to overall firm culture, which impacts fraud and unintentional reporting errors by others in the firm. In contrast to using a sample of firms with fraud verses a control sample, we examine all public firms and executives, which

allows us to explore a wider range of dependent variables and explicitly compare the importance of CEO and CFO ethics to the ethics of other executives. More fundamentally, our measure of marital infidelity provides a new window into the lives of CEOs and CFOs and captures a dimension of personal ethics that is directly related to trust and honoring commitments. Similarly, [Mironov \(2015\)](#) finds income diversion in Russian firms increases with management traffic violations. [Benmelech and Frydman \(2015\)](#) find that CEOs with past military experience are less likely to be involved in corporate fraud, consistent with military service instilling a strong sense of ethics. [Cline, Walkling, and Yore \(2015\)](#) find that public announcements of accusations of dishonesty, substance abuse, sexual adventure, and violence by executives are more likely from poorly governed firms and are associated with negative returns, future corporate lawsuits and investigations, and a future loss of salary for the executives. [Jia, van Lent, and Zeng \(2014\)](#) find that corporate infractions are more common at companies with CEOs with high testosterone levels.

Our analysis of infidelity explores a new dimension of unethical personal behavior that is of widespread interest and practical importance, and is intimately connected to personal trust and honesty. We realize that our proxy is not perfect. Ashley Madison usage represents a subset of overall marriage infidelity and excludes many other forms of unethical personal behavior, and most people make serious mistakes at some point in their life in various forms.³ Given these data limitations, the strong empirical findings are even more compelling evidence that personal ethics are closely related to workplace actions. In his presidential address, [Zingales \(2015\)](#) encourages the finance profession to develop a deeper understanding of the rent-seeking dimension of finance and the messages regarding financial misconduct that we send our students. Our paper analyzes these areas and has important implications for understanding financial misconduct, corporate recruiting, codes of conduct, and the teaching of business ethics.

³Our findings are not attempting to cast moral judgements; and personal character attributes, judgement, and values can change significantly over time. Studies suggest that 20-40% of men and 20-25% of women have an extramarital affair at some point in their life ([Whisman and Snyder \(2007\)](#)).

Our results on personal ethics also relate to a relatively new literature on the importance of firm culture. [Guiso, Sapienza, and Zingales \(2015\)](#) find that firms perform better when employees perceive that top management is trustworthy and ethical. [Biggerstaff, Cicero, and Puckett \(2015\)](#) find that CEO option backdating is related to other corporate misconduct, consistent with ethics varying across firms. Several recent papers consider geographic determinants of firm culture. [Grieser, Kapadia, Li, and Simonov \(2016\)](#) find that companies with more users of Ashley Madison are more likely to have unethical behavior but also greater innovation and risk-taking.⁴ [Parsons, Sulaeman, and Titman \(2015\)](#) find that financial misconduct varies across cities and is related to other measures of city-level ethics.⁵ [Egan, Matvos, and Seru \(2016\)](#) find that misconduct by financial advisors is related to both an individual's and firm's past professional misconduct.

I. Data and Sample Selection

We merge data from six different sources to create panel data on corporate infractions and Ashley Madison usage between 2008 and 2014. We begin our analysis in 2008 because that is the first year for which we have Ashley Madison transaction data. Our starting point is executive data from Execucomp and accounting data from Compustat. We use personal contact information from Lexis Nexis searches to identify Execucomp executives in Ashley Madison's transaction records. Our indicators for corporate infractions come from securities class action lawsuits and financial statement restatement records. We describe each data source along with the sample selection process in detail below.

⁴To our knowledge, our paper and theirs are the first users of the Ashley Madison data in finance and economics applications but have different focuses and use different data. Whereas [Grieser, Kapadia, Li, and Simonov \(2016\)](#) analyze the number of email addresses in Ashley Madison's user data with a company's domain name, we analyze executives that can be linked through names and addresses to Ashley Madison transactions.

⁵Other geographic evidence shows that firms headquartered in religious areas are less unethical ([Grullon, Kanatas, and Weston \(2010\)](#)), have fewer financial reporting irregularities ([McGuire, Omer, and Sharp \(2012\)](#)), and are less risky ([Hilary and Hui \(2009\)](#)). [DeBacker, Heim, and Tran \(2015\)](#) find that corporations owned by individuals from high corruption countries engage in more corporate tax evasion.

A. *Ashley Madison*

Ashley Madison is an online dating service for married people, operating under the slogan “Life is short. Have an affair.” Their focus on facilitating affairs could not be more explicit. The service description on ashleymadison.com reads in full:

Ashley Madison is the most famous name in infidelity and married dating. As seen on Hannity, Howard Stern, TIME, BusinessWeek, Sports Illustrated, Maxim, USA Today. Ashley Madison is the most recognized and reputable **married dating company**. Our Married Dating Services for Married individuals Work. Ashley Madison is the most successful website for **finding an affair** and cheating partners. Have an Affair today on Ashley Madison. Thousands of **cheating wives** and cheating husbands signup everyday looking for an affair. We are the most famous website for **discreet encounters** between married individuals. Married Dating has never been easier. With Our affair guarantee package we guarantee you will find the perfect affair partner. Sign up for Free today. (Emphasis and capitalization theirs.)

Ashley Madison’s scope is staggering. Their website boasts 44,450,000 anonymous members as of April 3, 2016. Despite Ashley Madison’s claim, many of those members are no longer anonymous. In July of 2015, a group calling itself “The Impact Team” hacked into Ashley Madison’s computer system and downloaded internal usage, transaction data, and company documents, including records on 36 million user accounts. In August of 2015, the group publicly released this data on the dark internet.

The Ashley Madison data generated widespread public attention. Following its release, several websites were set up to search the Ashley Madison data for email addresses, allowing spouses to tell if their husband’s or wife’s email address was associated with an Ashley Madison account ([CNNMoney \(2015\)](#); [Dewey \(2015\)](#)). Searches for prominent individuals turned up public figures in the Ashley Madison data.

We obtained the data for this paper from the data dump posted on the dark internet.⁶ The popular media reported on a number of features of the data,⁷ and Ashley Madison has publicly confirmed that their data was compromised. In part based on confirmed email addresses in the data, the broad consensus is that the Ashley Madison data is accurate (CNNMoney (2015); Dewey (2015)). However, some Ashley Madison profiles may be fake, particularly for female users (Newitz (2015)).

To ensure that our measures are as accurate as possible, our analysis focuses on a subset of Ashley Madison users for whom we have transaction data. While signing up for Ashley Madison and creating a profile is free, users are charged for many activities. Paid activities include sending or receiving messages (5 credits per message) and chatting with other users (30 credits for a 30-minute chat session). For \$49, users can purchase 100 credits. For \$249, they get an “affair guarantee.”

The Ashley Madison transaction data spans March 21, 2008 to June 28, 2015 and includes 9.7 million transaction records, representing 4.1 million individual transactions.⁸ These purchases are associated with 1.4 million user accounts. We focus on the 1.0 million transaction users in the United States. The first column in Table I summarizes these accounts. One million paid accounts amount to 0.33% of the U.S. population and 0.92% of the U.S. male population over the age of 19. The median AM purchase size is \$98. The transaction data starts in 2008 with 67 thousand accounts and grows by about 150 thousand accounts each year, reaching slightly over 1.0 million paid accounts by 2015. The annual summaries in Table I reflect the running totals of the number of paid accounts in each year.

[Insert Table I Here]

⁶As such, we have no confirmation of the data from Ashley Madison. We have privately discussed the use of the data with attorneys who believe that the data is permissible to use for research purposes because the data is now in the public domain and available for research use in the same way that it is available to and used by the press.

⁷For example, it includes several thousand .mil and .gov email addresses (Gibbons-Neff (2015)) and Sao Paulo and New York have more users than other cities (Osborne (2015)).

⁸Each transaction typically has multiple records, for example separate credit card authorization and settlement records.

Ashley Madison usage is widespread throughout the United States. Figure 1 maps per capita paid AM usage by core-based statistical area (CBSA).⁹ Paid AM usage is slightly higher in the Northeast, but similarly high usage rates occur in other regions, including the metro areas of Atlanta, Austin, Dallas, Houston, Denver, Salt Lake City, and Seattle. AM usage appears to be higher in larger CBSAs. For example, paid usage rates in the top 20 CBSAs range from 0.32% and 0.52%, with an average of 0.42%, compared to the national paid usage rate of 0.33%. In the internet appendix, we report paid AM usage by CBSA for the top 20 CBSAs.¹⁰

[Insert Figure 1 Here]

In addition to reflecting active usage, the Ashley Madison transaction data has the benefit of including billing names and addresses. We use this information to merge the Ashley Madison data with Execucomp data on executives of U.S. public companies.¹¹ We search Lexis Nexis to find addresses associated with Execucomp executives. To count as an Ashley Madison match, we require a match on both name and address. We exhaustively searched Lexis Nexis for CEOs and CFOs and found profiles we could confirm as correct for 85% of CEOs and CFOs in Execucomp. We treat our AM usage indicator as missing for CEOs and CFOs that we did not match to Lexis Nexis profiles. For executives who are not CEOs or CFOs, we decrease the number of required Lexis Nexis searches by first matching executive names to Ashley Madison names for any transaction with a billing address within 50 miles of the executive's corporate headquarters and then searching Lexis Nexis to check whether these potential matches represent executive Ashley Madison usage.

Within the 2008 to 2014 Execucomp data, we find 166 executives with Ashley Madison transactions, including 36 CEOs, 38 CFOs, and 108 other executives. As described in Table

⁹Paid usage rates represent the number of paid users in a particular CBSA (computed as described above) divided by total population from the 2010 census.

¹⁰Paid AM usage by CBSA and county is available upon request for researchers interested in this as a potential measure of regional culture.

¹¹We also compared email addresses in the Ashley Madison transaction data with email addresses in executive's Lexis Nexis profiles to identify executives based on name, email address, and zip code. This alternative methodology identified only one additional executive, and this person was not a CEO or CFO.

I, this represents approximately 1.36% of CEOs and CFOs and 0.70% of other executives in the Execucomp universe. The executives have median spending of \$173. In 2008, the first year of the Ashley Madison transaction data, we find only 11 executives in the transaction data. In 2011, 84 executives had Ashley Madison transactions. There are over 95 Execucomp executive Ashley Madison transaction users throughout 2012 to 2014. As a robustness test, we also consider an expanded sample that includes non-Execucomp firms for which we have information on CEOs and CFOs from MSCI's GMI data. The expanded sample contains an additional 31 AM CEOs and 32 AM CFOs.

While our methodology for finding executives in the Ashley Madison data is entirely based on publicly available data, we believe we may be the first to actually do this match. In particular, we perform a news search on executive name and "Ashley Madison" for all the CEOs and CFOs in the data and do not find mentions in the press of Ashley Madison usage by these executives. This is somewhat surprising because some of the firms with a CEO or CFO in AM are quite prominent, including a major financial services, pharmaceutical, defense, insurance, and retail firms. Nine firms with a CEO or CFO in AM have an average market cap above ten billion dollars and 56 above one billion dollars. Additionally, most of the 2014 AM CEOs and CFOs remained employed after the Ashley Madison data was leaked. Nonetheless, it is possible that market participants analyzed these executives. [Cline, Walkling, and Yore \(2015\)](#) find negative stock price reactions to announcements of various forms of executive and director indiscretion, including sexual misadventures, suggesting that we should expect AM firms to have negative abnormal returns if hedge funds or other investors are using this information in a large-scale manner. In the internet appendix (Figure IA.1), we examine stock returns around the date of the Ashley Madison leak for firms with CEOs and CFOs in the data and find no abnormal returns.

In our empirical tests, we distinguish between Ashley Madison usage by CEOs, CFOs, and other top executives (such as Chief Operating Officers, Chief Marketing Officers, and Chief Technology Officers). In our baseline regressions, we pool together CEO and CFO Ashley

Madison users because this gives us a larger population, and we hypothesize that CEOs and CFOs matter more than other executives. Throughout the paper, we refer to executives that we have matched to Ashley Madison transaction data as AM executives. Similarly, AM CEOs and AM CFOs refer to CEO and CFO Ashley Madison transaction data matches. Our analysis is at the firm-year level. We consider an executive to be an Ashley Madison user only if they are matched to a transaction that occurred before or during the firm-year being considered.

We explore whether AM CEOs and CFOs are concentrated in certain industries. Figure 2 shows the estimated probability of a CEO or CFO being a paid user of the Ashley Madison website along with a 95% confidence interval for each of the Fama-French 12 industry classifications.¹² The highest probabilities are for Manufacturing, Healthcare, and Finance, with estimated values of 5.0%, 2.7%, and 2.2%, respectively. However, most of the differences across industries are not statistically significant.¹³ Overall, AM CEOs and CFOs do not seem to be systematically concentrated in any particular industry.

[Insert Figure 2 Here]

B. Corporate Infractions

Our indicators of corporate infractions come from security class action filings and financial statement restatement records. These indicators are commonly used as proxies for corporate misconduct. For example, [Dyck, Morse, and Zingales \(2010\)](#) and [Benmelech and Frydman \(2015\)](#) use class action data; [McGuire, Omer, and Sharp \(2012\)](#) use financial restatements.¹⁴

¹²To obtain the estimated probabilities of AM usage by industry, we regress the indicator for AM CEO/CFO on industry fixed effects. Confidence intervals are computed using heteroscedasticity-robust standard errors, clustered by firm. Levels are obtained by adding the amount of AM CEO/CFO from the omitted category (Business Equipment) to each fixed effect. Consequently, the confidence interval for the industry “Business Equipment” is not reported.

¹³The only statistically significant differences are between Manufacturing and Chemicals, and between Manufacturing and Consumer Durables.

¹⁴See [Karpoff et al. \(2014\)](#) for a detailed discussion of the advantages and disadvantages of these variables to capture corporate misconduct. The Accounting and Auditing Enforcement Releases (AAER) database, which reports information on SEC investigations about financial misconduct, is also frequently used in this literature, but we are unable to use this data because it includes only 14 observations for firms in our

Like previous studies, our data on class action lawsuits comes from the Securities Class Action Clearinghouse (SCAC) database. 281 firms in our sample were subject to class action lawsuits alleging misconduct during the 2008 to 2014 time period. Our securities class action indicator variable takes a value of one in all firm-years affected by the alleged misconduct. For our baseline specifications, we ignore class action lawsuits that have been dismissed in order to avoid cases where a firm is falsely accused.¹⁵ This results in 153 settled or ongoing lawsuits, which affect 2.58% of the firm-year observations in our sample.

Our data on financial restatements comes from Audit Analytics' Non-Reliance Restatements file, which includes corrections to financial statements disclosed to the SEC with significant accounting errors. Our restatement indicator takes a value of one in all firm-years that were restated. Because accounting-related restatements are frequently due to new interpretations or guidance on accounting rules as opposed to firm-level actions, we follow [McGuire, Omer, and Sharp \(2012\)](#) and drop accounting-related restatements. 95 firms in our sample have non-accounting restatements, which affect 1.94% of the firm-year observations in our sample.

The correlation between class actions and financial restatements is 0.105. For most of our tests, we use a combined indicator that takes the value of one for firm-year observations that were affected by either a class action or a restatement. The mean value of this variable, *Corporate Infraction*, is 4.25%.

C. Sample Summary

Our merged dataset includes Ashley Madison usage, other executive characteristics, firm characteristics, and infraction data for 9,981 firm-year observations of 1,817 unique firms between 2008 and 2014. [Table II](#) summarizes the data and compares the 213 firm-years with Ashley Madison CEOs or CFOs to the 9,768 firm-years without a CEO or CFO matched to Ashley Madison. A CEO or CFO is considered to be an Ashley Madison user if they

sample during the 2008-2014 time period we analyze.

¹⁵Our main results remain unchanged if we also include dismissed cases.

are matched to a transaction that occurred before or during the firm year being considered. County-level Ashley Madison usage is similar for firms with and without AM CEOs and CFOs, and AM CEOs and CFOs are similar to other CEOs and CFOs on average age and CEO tenure. Firm characteristics, including size (log of book assets), return on assets, Tobin's Q, investment rate, acquisition rate, R&D activity, leverage, and dividend payouts are also largely similar across AM CEO/CFO and non-AM CEO/CFO firm years. By contrast, corporate infractions are significantly more common in AM CEO/CFO firm years. 8.9% of AM CEO/CFO firm years have a class action lawsuit, compared to a 2.4% frequency for non-AM CEO/CFO firm years. Similarly, 6.1% of AM CEO/CFO have a financial restatement compared to a 1.9% frequency for other firm-years. Overall, 11.7% of AM CEO/CFO firm years have an infraction of some kind, compared to a 4.1% frequency for other firm-years. These differences are all statistically significant with standard errors clustered by firm.

[Insert Table II Here]

II. Personal Ethics and Corporate Infractions

Is there a relationship between executive AM usage and corporate infractions? Panel A of Figure 3 shows the year-by-year fraction of firms affected by a non-dismissed class action lawsuit for both the set of firms that have AM CEOs or CFOs and the remaining firms.¹⁶ Class action lawsuit frequency is considerably larger for the firms with AM CEOs or CFOs in all years except 2014. For example, in 2010, 8.0% of the firms with AM CEOs or CFOs were affected by a class action lawsuit. This is more than three times larger than the 2.4% of remaining firms which were affected by a class action. AM CEO/CFO usage is associated with similarly large increases in financial restatements in all years except 2014.

Panel B of Figure 3 shows results analogous to those in Panel A for financial restatements instead of class action lawsuits. Financial restatements are also significantly more frequent

¹⁶We exclude 2008 and 2009 from the figure due to the low CEO/CFO AM usage during those years. As reported in Table I, only six CEOs/CFOs were paid users in 2008 and 12 were paid users in 2009.

for the firms with AM CEOs and CFOs in all years except 2014, and the differences are large. For example, in 2011 the proportion of firms with AM executives that filed a financial restatement was more than five times larger than the proportion of firms that filed a financial restatement in the remaining set of firms. Overall, the results in Figure 3 are strongly consistent with private ethics being related to corporate infractions.

[Insert Figure 3 Here]

We now turn to a more formal regression framework to better control for executive and firm characteristics that may be related to corporate infractions. We first focus on the combined indicator of infractions and estimate logit regressions in which the dependent variable is a dummy that takes the value of one for the firm-years affected by a class action lawsuit or a financial statement restatement, and zero otherwise. The explanatory variables of interest are *AM CEO/CFO*, a dummy that takes the value of one in firm-years in which a firm’s CEO or CFO is a confirmed Ashley Madison user based on a matched Ashley Madison transaction before or during the year being considered¹⁷ and *AM paid usage*, the per capita paid AM usage rate at the county of the firm’s headquarter. Table III reports marginal effects of different specifications.¹⁸ Column (1) shows that probability of infraction is 4.7 percentage points higher for firms with AM CEOs or CFOs than for firms without an AM CEO or CFO, after controlling for executive age, CEO tenure, and year. The unconditional probability of infraction in the sample is 4.3%. Thus, having an AM CEO or CFO more than doubles a firm’s infraction probability. The marginal effect is strongly statistically significant, as indicated by the *z*-statistic of 3.09, with standard errors clustered by firm.

In column (2), we include the county-level paid AM usage rate along with firm size (log of book asset value), return on assets (ROA), Tobin’s Q, and market leverage as additional controls in the regression. County-level AM usage is useful as a control for any regional

¹⁷The *AM CEO/CFO* is missing when we do not identify the CEO or CFO in Ashley Madison and are unable to find a confirmed Lexis Nexis profile for either the CEO or CFO. This results in dropping approximately 24% of the firm-year observations.

¹⁸Marginal effects are computed as the derivative of the response with respect to the explanatory variables. We also report the results of OLS estimations in the Internet Appendix, Table IA.I.

differences related to AM usage and helps to isolate the direct effect of CEO/CFO AM usage. Adding county-level AM usage and firm characteristics does not significantly change the AM CEO/CFO coefficient, which is 5.9 percentage points in the column (2) specification. Interestingly, county-level AM paid usage is associated with corporate infractions with a z -statistic of 3.17.¹⁹ While this is consistent with county-level AM usage being a proxy for cultural differences that influence corporate conduct, in Section III we will show that the inclusion of local demographic characteristics attenuates the significance of county AM usage, but not CEO/CFO AM usage.

To address the possibility that infraction probability differs across industries, the third regression in Table III includes two-digit SIC fixed effects. The marginal effects of *AM CEO/CFO* and *AM paid usage* are essentially the same (6.4 ppt and 8.5 ppt, respectively, with both statistically significant at the 1% level). Finally, in column (4), we add state fixed effects to control for possible cultural or other geographic differences beyond those captured by county-level AM usage. The effect of CEO/CFO AM usage remains unchanged.

[Insert Table III Here]

To further explore the relationship between personal ethics and corporate misconduct, we repeat the previous logit estimations using indicators for class action lawsuits and financial restatements as separate dependent variables. Results are reported in Table IV. In Panel A, the dependent variable is *Class Action*, a dummy that takes the value of one for the firm-years affected by a class action lawsuit, and zero otherwise. In Panel B, the dependent variable is *Restatement*, a dummy that takes the value of one for the firm-years affected by a financial restatement, and zero otherwise. The marginal effect of *AM CEO/CFO* is economically important and statistically significant at the 1% level in all specifications for both infraction variables. In the column (4) regressions with our full set of control variables, the marginal effect of CEO/CFO AM usage is 4.9 percentage points for class action lawsuits

¹⁹A one standard deviation increase in county AM usage (0.15 ppt) is associated with a 1.25 ppt (0.15×0.083) increase in the probability of corporate infraction, which is 25% of the mean corporate infraction rate in this specification (4.4%).

and 4.5 percentage points for restatements. As with the combined indicator, these effects imply that having an AM CEO or CFO more than doubles the probability of infraction (the unconditional probability of class action and restatement are 3.6% and 2.7%, respectively).

[Insert Table IV Here]

So far, we have jointly considered firms with AM CEOs and AM CFOs. This gives us a larger sample of firms with AM users and increases the power of our tests, but it comes at the cost of hiding any differences between CEOs and CFOs and of losing firms whose CEOs or CFOs we could not find in Lexis Nexis. In Table V we consider the effects of AM CEOs and CFOs on the combined indicator of infractions separately. Both the CEO effect and the CFO effect are statistically and economically significant in all specifications, as shown by Panels A and B, respectively. The CEO and CFO marginal effects are similar to one another in the first three specifications. In the last specification with the full set of control variables the marginal effects differ more: 5.3 percentage points for CEOs vs. 6.6 percentage points for CFOs. However, this difference is not statistically different.²⁰ Overall, AM CEO and AM CFO AM usage both are related to infractions, and AM CFO usage appears to be at least as important as CEO usage.

[Insert Table V Here]

III. Interpretation

The results in the previous section show a strong relationship between corporate misconduct and the personal ethics of CEOs and CFOs, and this relationship is not explained by county-level AM usage, executive age, executive tenure, firm characteristics, or year, industry, and state fixed effects. There are three leading explanations for this finding. First,

²⁰In the Internet Appendix, Table IA.II, we repeat the estimations in Table V for class actions and financial restatements separately with similar results. The AM CFO coefficient is significant for both types of infractions, and the AM CEO coefficient is significant for class action lawsuits. Although the effect of CFOs is slightly higher on average, the difference with the effect of CEOs is not statistically significant.

unethical CEOs and CFOs cause corporations to engage in questionable corporate practices. Relatedly, CEOs and CFOs who engage in corporate misconduct may become more unethical in their private lives. These explanations are similar in that there is a personal characteristic that drives both behaviors. Second, firm culture, which may in part reflect the culture of the local geographic area, jointly influences executive personal ethics and corporate infractions. Third, some other omitted firm characteristic could drive both AM executive usage and corporate infractions. In particular, corporate boards may screen executives for ethical characteristics related to Ashley Madison usage that we do not observe. If this is the case, companies inclined to engage in unethical conduct may endogenously match with unethical executives.

We examine these potential explanations in five ways. First, to see if these relationships are unique to corporate infractions or more general, we examine the relationship between AM usage and white-collar crime in an entirely different setting. Second, we investigate the firm culture channel by analyzing AM usage by executives other than CEOs and CFOs and regional characteristics that may be related to culture. Third, we analyze the relationship between CEO and CFO AM usage and firm decisions that are not typically associated with firm misconduct. Fourth, we use a propensity score matching as an alternative approach to control for firm heterogeneity. Fifth, we consider additional firm characteristics including corporate governance, returns, return volatility, and accounting patterns potentially associated with misreporting. For robustness, we also consider alternative measures of AM usage and an expanded sample that includes CEOs and CFOs of non-Execucomp firms. None of these methods is a precise causal test, but each helps to better understand the relationship between AM usage and corporate misconduct.

A. SEC Defendants

If Ashley Madison usage and marital infidelity are associated with corporate misconduct through the personal ethics channel, we would expect AM usage to predict behavior in other

contexts as well. Given the scope and potential value of the Ashley Madison data, AM usage may be a useful measure of personal ethics in a variety of settings. To assess this possibility and to see if the patterns are unique to our CEO/CFO setting, we analyze Ashley Madison usage among defendants to SEC litigation.

We identify defendants to all civil litigation initiated by the SEC between 2010 and 2015 by reviewing complaints filed by the SEC in federal court, which are available in the SEC’s litigation release archives. These are civil lawsuits alleging criminal activity such as insider trading, Ponzi schemes, pump and dump operations, and other financial fraud. The starting point is 1,143 individual defendants, of whom 1,063 live in the United States. We found Lexis Nexis contact info for 663 of these people, which we then used to match SEC defendants to Ashley Madison transaction data, with matches based on name and mailing address, just as we did for corporate executives. Because the sample size is relatively small, in addition to verified AM transaction users, we also examine AM usage among all those who opened an account (most of whom never had a paid transaction with AM). The AM non-transaction user data does not have full address information and is usually missing names so these matches are based email address and zip code (Lexis Nexis data includes email addresses associated with an individual). For benchmarking purposes, we match each SEC defendant to an Execucomp CEO or CFO in our sample serving during the same time period, with the same gender, age within 5 years of the SEC defendant, and whose company is located within 50 miles of the SEC defendant. Each SEC defendant was matched to one CEO or CFO by first minimizing age differences and then geographic distances. The resulting matched sample contains 569 SEC defendants and 569 matched CEOs and CFOs.

Table VI shows that 4% of SEC defendants are found in the AM transaction database. Expanding our AM matching criteria to include email matches to AM user data in addition to the transaction matches, we find that 8.4% of SEC defendants have AM accounts. Since 95% of SEC defendants are male with a median age of 53.8, we compare these numbers relative to the percentage of male users between the ages of 50 to 55. Nationwide, we find

that 1.6% of men 50 to 55 have AM accounts with transactions.²¹

[Insert Table VI Here]

Because the age and the geographical location of SEC defendants can vary widely from the general population, for comparison purposes, we turn to our matched CEO/CFO sample. Recall that we compare the AM defendants to CEOs and CFOs with the same gender and similar age and location as described above.²² Only 1.8% of matched CEO/CFOs have AM transactions and 2.6% have AM accounts. Thus, SEC defendants are over twice as likely to be in the AM transaction data and over three times as likely to be in the AM user data compared to the matched sample of CEOs and CFOs. The 2.3 percentage point difference in Ashley Madison transaction rates is significant at the 5% level (with a t -statistic is 2.36) as is the 5.8 percentage point difference for AM usage more generally (with a t -statistic of 4.49). Standard errors are clustered by lawsuit, each of which can have multiple defendants.

Figure 4 plots SEC defendant and matched CEO/CFO AM usage rates by type of infraction alleged in the SEC complaint. AM usage appears to be elevated among those engaging in insider trading, pump and dump schemes, and other fraud (e.g., securities or accounting fraud). However, due to the small sample sizes, there is insufficient statistical power to differentiate AM usage rates across the different fraud categories.

[Insert Figure 4 Here]

These results suggest that Ashley Madison users are more likely to be accused of white collar crime, which is consistent with our finding that Ashley Madison CEOs and CFOs are more likely to be associated with unethical corporate behavior. This is exactly what we

²¹Without knowing which AM accounts are real, we cannot accurately estimate the AM usage rate of the general population, especially since one individual might have several fake accounts. In addition, SEC defendant non-transaction AM usage may be underestimated because our methodology only matches email addresses that are included in an SEC defendant's Lexis Nexis profile and will therefore miss accounts with anonymous emails.

²²The CEO/CFO control sample also has the advantage of being matched to Ashley Madison data using the same methodology making differences in account authenticity and match success less likely.

would expect if there is a general relationship between personal and professional ethics and is harder to explain with firm-level omitted characteristics.

B. Firm Culture

We control for geographical and industry cultural differences in our baseline regressions by including county-level AM usage, state fixed effects, and industry fixed effects, but culture is still likely to vary across firms even after controlling for these characteristics. If this is true, less ethical firms might both hire unethical executives and exhibit more corporate misconduct even if the personal ethics of executives has nothing to do with the corporate misconduct.

To assess whether unobserved firm culture is driving our results, we analyze AM usage by executives other than CEOs and CFOs. Firm culture should affect not just CEOs and CFOs, but also other top executives. Moreover, we should obtain a more precise measure of corporate culture with other executives because our non-CEO/CFO sample is approximately three times larger than our sample of CEOs and CFOs.²³ Table VII reports results for regressions of corporate infractions on both CEO/CFO and other executive AM usage. Other executive AM usage is unrelated to corporate infractions, whereas CEO/CFO AM usage continues to be strongly related.²⁴ The fact that other executive AM usage is not related to corporate infractions, while CEO/CFO AM usage suggests that either CEO and CFO AM usage is a much stronger proxy for firm culture than other executive AM usage, or CEO and CFO ethics directly affect firm corporate actions. Either way, personal and professional ethics are tightly connected, and CEOs and CFOs play an important role in corporate culture and conduct.

[Insert Table VII Here]

²³The other executives we examine include Chief Operating Officers, Chief Marketing Officers, and Chief Technology Officers, among others. Our sample includes over 15,000 non CEO/CFO executives compared to 2,700 CEOs and 2,800 CFOs.

²⁴Moreover, the differences between the marginal effects of AM CEO/CFO and AM other executives are statistically significant with chi-square tests yielding p -values that range between 1.1% and 3.6% depending on the specification.

To more fully investigate the relationship between AM usage and culture, we examine how AM usage varies with political corruption and religious adherence. Political corruption, which we measure as federal public corruption convictions between 2004 and 2013 per one million residents, was introduced by Glaeser and Saks (2006). Parsons, Sulaeman, and Titman (2015) use public corruption convictions as a measure of regional ethics and show that they are correlated with financial misconduct of firms headquartered in the region. Religious adherence represents the percent of the CBSA’s population with a religious affiliation in 2010, as reported by the Association of Religious Data Archives. Hilary and Hui (2009); Grullon, Kanatas, and Weston (2010); and McGuire, Omer, and Sharp (2012) use various measures of local area religiosity as proxies for corporate culture. In the Internet Appendix (Figure IA.2), we plot CBSA-level overall and executive AM usage versus political corruption and religious adherence and find that they are largely unrelated.²⁵

In Panel B of Table VII, we examine adding regional variables potentially related to culture to our baseline regressions. In column (1), we add county-level religious adherence and federal judicial district-level political corruption. The inclusion of these cultural measures does not affect the relationship between AM usage and corporate infractions. Column (2) adds the log of the CBSA population and county-level college education rate and median household income (based on the location of the firm’s headquarters) to the baseline specification. The marginal effect of *AM CEO/CFO* remains virtually unchanged at 6 percentage points (z -statistic of 3.87). Although the marginal effect of county AM usage decreases only slightly from 13.7 percentage points to 12.2 percentage points (compared to the baseline regression), the variable is no longer statistically significant. Finally, when including all the additional controls together (column (3)), the marginal effect of *AM CEO/CFO* remains strong and significant (6.3 percentage points).

²⁵Overall AM usage is moderately negatively correlated with political corruption within the top 50 CBSAs, but this is entirely driven by New Orleans and Memphis. Executive AM usage is moderately positively correlated with political corruption, but this is also driven by two outliers. Overall and executive AM usage are both uncorrelated with religious adherence. Table IA.III further describes and summarizes the data.

C. AM Usage and Other Corporate Decisions

CEO and CFO AM usage could be related to non-fraud corporate decisions either because unethical CEOs and CFOs manage their firms differently or because AM usage is related to omitted firm characteristics. To assess this possibility, we study the relationship between having an AM CEO or CFO and corporate decisions that are not typically associated with corporate misconduct. Specifically, we analyze *Investment* (CAPEX divided by lagged total assets), *Acquisitions* (total value of acquisitions divided by lagged total assets), *Dividend Payout* (the sum of preferred and common dividends paid divided by lagged total assets), and *R&D* (research and development expenses divided by lagged total assets), all of which are analyzed in other studies of the impact of executives on firm actions. Once again, the explanatory variable of interest is *AM CEO/CFO*. Results are presented in Table VIII.²⁶ Having an AM CEO or CFO has no effect on acquisitions, dividend payouts, or research and development expenses. However, we find that firms with AM CEO/CFOs have lower investment rates. This is consistent with unethical CEOs and CFOs being less aggressive in their investment decisions, but we caution about reading too much into this result given the lack of any significant relationship to the other variables analyzed in Table VIII.

[Insert Table VIII Here]

One could also ask how CEO and CFO AM usage is related to firm performance. We explore the relationship between stock returns and CEO/CFO AM usage in Internet Appendix, Table I.AIV. We do not find a significant relationship between a firm's annual stock return and *AM CEO/CFO*. However, we interpret this with caution because the noise inherent in firm-level stock returns limits the power of our tests.²⁷

²⁶All specifications are OLS regressions with executive and firm controls, as well as year, 2-digit SIC, and state fixed effects. Standard errors are clustered by firm.

²⁷Standard errors in these regressions are in the range of 4-5%.

D. Propensity Score Matching and Additional Firm Characteristics

Given the potential for unobserved firm characteristics to influence our results, we would ideally like to include firm fixed effects in our regressions. However, with only 36 AM CEOs and 38 AM CFOs, we lack power to estimate this specification. Concerns about heterogeneity across firms are mitigated by the similarities we have already documented. Specifically, AM and non-AM firms are similar across observable characteristics (Table II), and AM usage is similar across industries (Figure 2). To assess the robustness of our results and control for firm heterogeneity as well as possible, we conduct a propensity score matching analysis and also consider additional firm characteristic covariates. We also consider alternative measure of AM usage and analyze an expanded sample that adds non-Execucomp firms to increase the number of AM CEOs and CFOs in our analysis.

To control for differences in firm characteristics, we match firm-year observations with an AM CEO or CFO to similar firm-year observations without an AM CEO or CFO. Specifically, we match based on year, Fama-French 12 industry classification, and propensity scores estimated using a logit regression with executive age, tenure, and firm variables.²⁸ Table IA.V shows that the matching procedure achieves the intended objective of reducing the average differences in firm characteristics between the two groups of firms, compared to the full sample. Panel A of Table IX reports average treatment effects (ATT) for firm-years with AM CEO/CFOs compared to matched firms. Column (1) shows that the combined infraction rate of firms with AM CEOs or CFOs is on average 10.8 percentage points larger than their counterparts. This difference is four times larger than the control group's average infraction rate of 2.7% and is statistically significant at the 5% level (with standard errors clustered by AM firm). Likewise, columns (2) and (3) show that firms with AM CEOs or CFOs are significantly more affected by class action lawsuits and financial restatements

²⁸The firm variables include Size, ROA, Tobin's Q, Investment, Acquisitions, and Dividend Payouts. The matching uses the nearest neighbor technique (1-to-1). We require the differences between the propensity scores of the treatment (AM CEO/CFO) and control (Non-AM CEO/CFO) groups to be at most 0.5% to be considered a match. We match 87% of the firm-year observations with AM CEOs or CFOs.

than firms without AM CEOs or CFOs: ATTs are 8.1 percentage points and 6.5 percentage points, respectively. In short, the matching results validate our previous findings.

[Insert Table IX Here]

We now turn to controlling for additional firm-level measures of risk and governance.²⁹ AM usage and corporate infractions could be driven by stress and pressure induced by firm performance. In panel B of Table IX, column (1), we control for returns and return volatility contemporaneously and in the previous year. Past return volatility is negatively related to corporate infractions. In contrast, current return volatility is positively related to corporate infractions, and current stock returns are negatively related to infractions. Controlling for these return variables has no impact on the relationship between either CEO/CFO AM usage or county-level AM usage and corporate infractions.

In column (2), we examine the importance of corporate governance with the E-index of [Bebchuk, Cohen, and Ferrell \(2009\)](#). The E-index has a small and statistically insignificant coefficient, and its addition has no impact on the AM CEO/CFO coefficient except by reducing the sample size due to missing observations. In column (3), we control for [Dechow et al.'s \(2011\)](#) F-score, which predicts financial misstatement probability based on accounting data. We use coefficients from [Dechow et al.](#) and apply them to our 2008-2014 sample of firms. F-score does not significantly predict corporate infractions in our sample, and including it has essentially no impact the coefficient estimates for CEO/CFO AM usage. In the internet appendix (Table IA.VI), we consider a broader definition of AM usage based on email address matches to AM user data in addition to our more restrictive transaction data matches. We also relax the requirement that AM transaction usage occur before or during the year being considered.³⁰ The generalizations of AM usage result in lower coefficient estimates, but the results are still large and statistically significant.

²⁹These variables are not included in our baseline regressions because of concerns over potential endogeneity, missing values, and redundancy with the control variables and fixed effects already included in the baseline specifications.

³⁰Specifically, we redefine our AM usage variable such that CEOs and CFOs in the AM transaction data are AM users in all years, even those prior to their AM usage.

Table IA.VI also reports results for an expanded sample that includes non-Execucomp firms for which we have information on CEOs and CFOs from MSCI’s GMI data. GMI data on CEOs and CFOs does not appear to be quite as accurate as Execucomp data. In addition, GMI firms tend to be smaller with potentially noisier firm variables, as suggested by the lower Pseudo R^2 of the regression in column (5) (5.7% vs. the 9.6% in the Execucomp sample). Nevertheless, the expanded sample increases our firm-year observations by about 80% and includes an additional 31 AM CEOs and 32 AM CFOs. In the expanded sample we obtain an AM CEO/CFO coefficient of 5.3 percentage points with a z -statistic of 3.49.

E. Interpretation Discussion

A leading interpretation of the data is that CEOs and CFOs who violate ethical norms in their personal lives are more likely than other CEOs and CFOs to violate ethical norms and legal restrictions in their professional lives, thereby making the companies they manage more prone to corporate misconduct. If personal ethics influence professional ethics, the strong effect from CEOs and CFOs is what one would expect given the large and growing literature showing that CEOs exert strong influence on the firms they manage (e.g., [Bertrand and Schoar \(2003\)](#); [Malmendier and Tate \(2005\)](#); [Cronqvist, Makhija, and Yonker \(2012\)](#); [Davidson, Dey, and Smith \(2015\)](#); [Benmelech and Frydman \(2015\)](#)). While our baseline result could be driven by omitted firm characteristics, its robustness across different specifications and methodologies weighs against this possibility. The lack of a relationship between CEO/CFO AM usage and most other firm decisions also weighs against our results being driven by omitted firm characteristics. Additionally, the lack of any association between non-CEO/CFO AM usage and corporate infractions is evidence against our results being driven by omitted firm culture. Finally, our analysis of SEC defendants provides a window for examining personal and professional ethics in another context without the same concerns over omitted firm characteristics. Here, too, we find that professional misconduct (in this case white-collar crime) is associated with higher rates of AM usage.

Reverse causality and intentional selection of CEOs and CFOs based on their ethics could also potentially explain our results. Under the reverse causality channel, CEOs and CFOs become less ethical in their personal lives as a result of their participation in firm misconduct. Under the intentional selection channel, firms that allow corporate misconduct recruit CEOs and CFOs with more risky personal ethics. Broader versions of both of these stories would apply to non-CEO/CFO executives as well, which is inconsistent with our empirical results on non-CEO/CFO AM executives. While we cannot rule out that some firms intentionally hire less ethical CEOs and CFOs (but not other executives) or that an unethical work environment causes CEOs and CFOs (but not other executives) to act unethically in their personal lives, even if these channels drive part of the results, this still implies a strong relationship between personal and professional ethics.

Importantly, culture may also play an important role in firm conduct. Though its significance depends on what other regional characteristics we control for, the relationship between county-level AM usage and corporate infractions points in this direction. Other dimensions of regional and firm culture could also affect firm conduct. The fact that CEO and CFO AM usage remains important with an unchanged coefficient after controlling for a wide range of regional characteristics and AM usage by other executives suggests that CEOs and CFOs have a unique relationship with firm conduct, whether directly or through firm culture.

At the individual level, our results demonstrate an intimate connection between personal and professional conduct but do not reveal the exact nature of that connection. A leading possibility is that character traits such as honesty and faithfulness to commitments affect behavior across contexts. It is also possible that risk aversion or perceptions of the likelihood and cost of being caught affect behavior across contexts. Regardless of where the underlying connection comes from, personal actions are informative about professional conduct. Understanding this connection and how it changes over time is an important area for further inquiry but is beyond the scope of what we can learn in this empirical setting.

IV. Conclusion

It is increasingly clear that corporate fraud is both widespread and costly (e.g., [Dyck, Morse, and Zingales \(2010\)](#)). Yet, because it is difficult to measure personal ethics, we know little about the extent to which individual unethical behavior affects corporate actions. Recent work by [Davidson, Dey, and Smith \(2015\)](#) and [Mironov \(2015\)](#) finds a relationship between personal criminal and traffic infractions and corporate misconduct. We introduce a new measure of personal honesty and integrity by examining executive marital infidelity and its relationship to corporate misconduct in the form of class action lawsuits and financial restatements.

We find that firms with CEOs or CFOs who are confirmed Ashley Madison users are more than twice as likely to have a corporate infraction compared to other firms. This result is highly statistically significant and is not explained by geographical cultural differences or a host of other control variables. We find no relationship between corporate infractions and Ashley Madison usage by executives other than CEOs and CFOs, which suggests that the main channel may be unethical CEOs and CFOs committing or allowing corporate infractions as opposed to more general cultural differences across firms. We also find that white-collar defendants of the SEC litigation are more than twice as likely to be Ashley Madison users compared to both a matched sample and national averages. The main implications of our findings are that the personal and professional ethics of CEOs and CFOs are closely related, and the individual ethics of these executives have a large impact on corporate conduct.

More broadly, our findings suggest a lack of dichotomy between personal and professional life, and cut against the common view that ethics are predominantly situational. The findings support the classical view that virtues such as honesty and integrity influence a person's thoughts and actions across diverse contexts. Interestingly, the U.S. military has traditionally taken a holistic approach to ethics in its training and code of conduct, which may be part of why [Benmelech and Frydman \(2015\)](#) find that firms with military CEOs have fewer ethical infractions. A similarly holistic approach to business ethics may pose challenges to personal

freedom and privacy. Our findings have important implications for further research and discourse on corporate recruiting, codes of conduct, and the teaching of business ethics.

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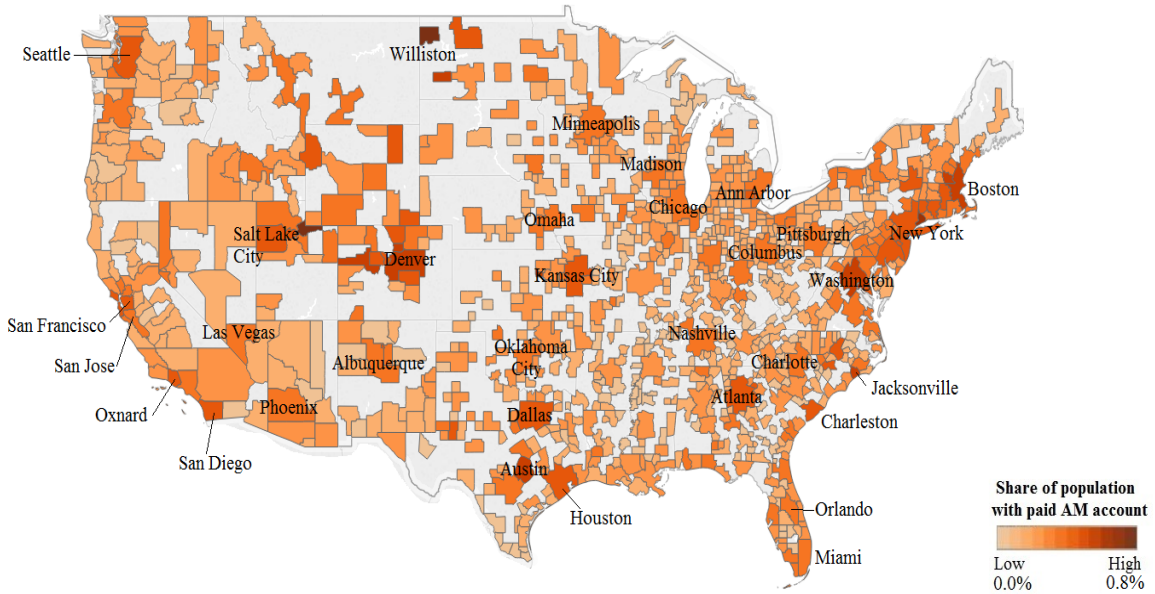


Figure 1. Ashley Madison usage. This figure shows the concentration of paid Ashley Madison usage by CBSA. Paid usage rates represent the number of paid users in a particular CBSA divided by total population from the 2010 census. Ashley Madison usage data comes from Ashley Madison’s transaction records.

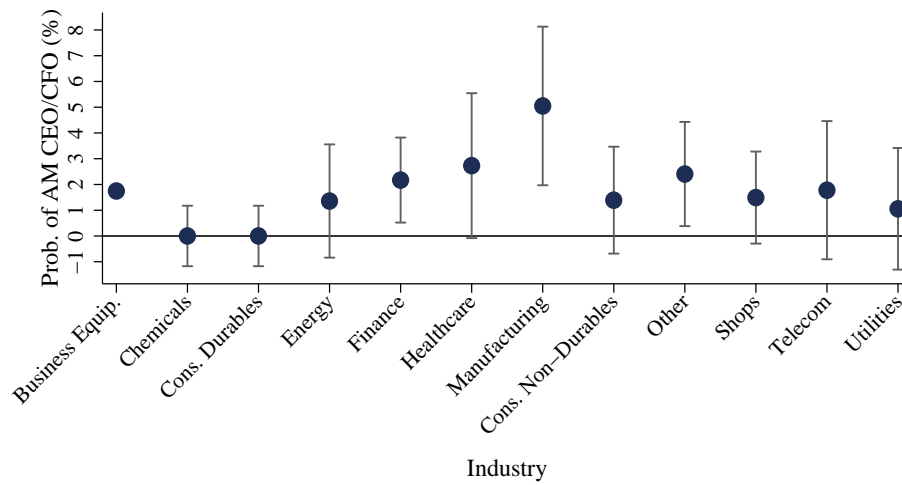


Figure 2. Probability of AM CEO/CFO by industry. This figure plots the estimated probability of having a CEO/CFO who is an active AM user by industry along with a 95% confidence interval. Estimated probabilities come from regressing an indicator for AM CEO/CFO on industry fixed effects. Levels are obtained by adding the amount of AM CEO/CFO from the omitted category (Business Equipment) to each fixed effect. Consequently, the confidence interval for the industry “Business Equipment” is not reported.

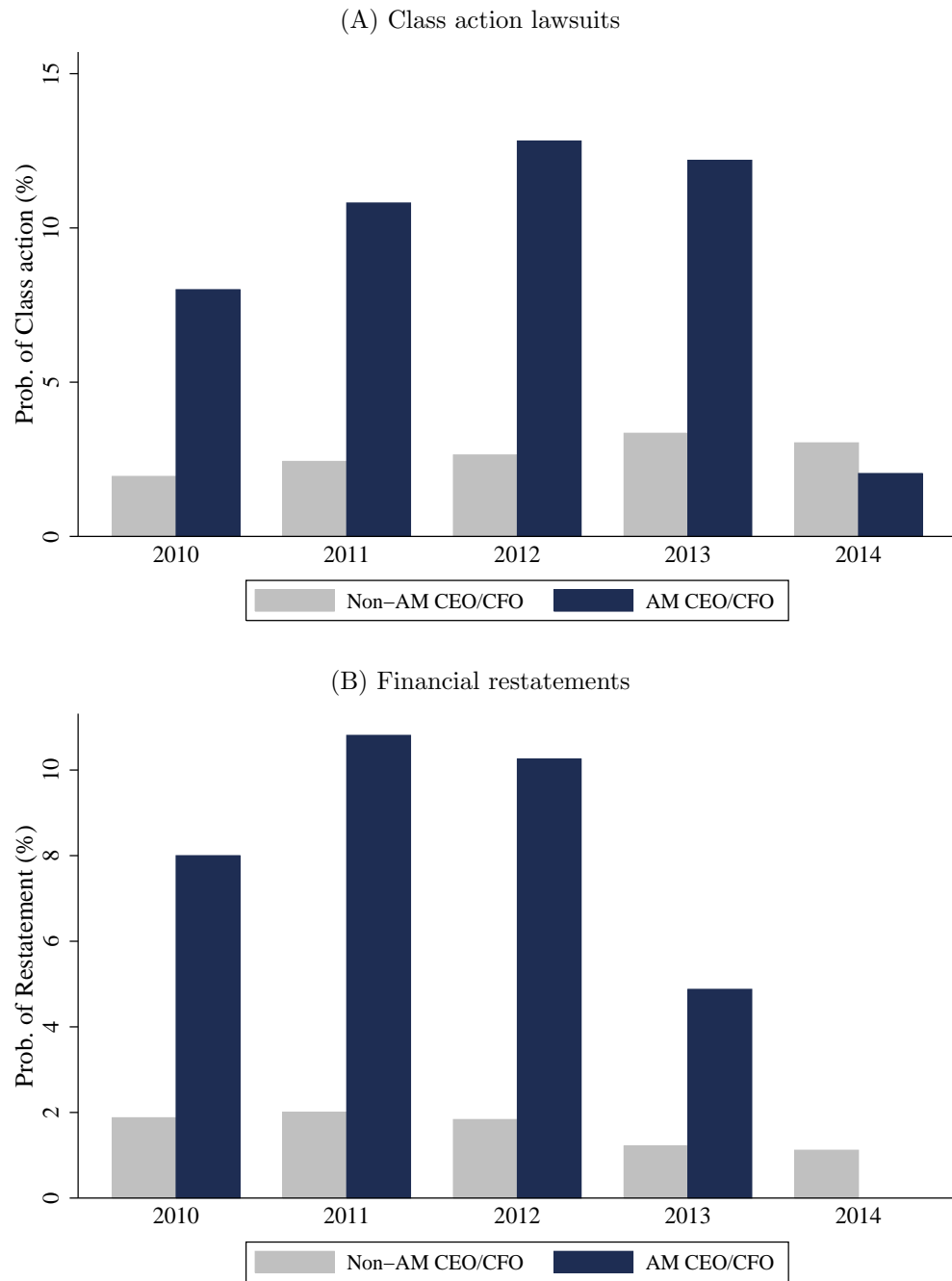


Figure 3. Probability of Corporate Infraction by Year and CEO/CFO AM Usage. This figure shows the probability of a firm being affected by a class action lawsuit (Panel A) or by a financial restatement (Panel B), by year.

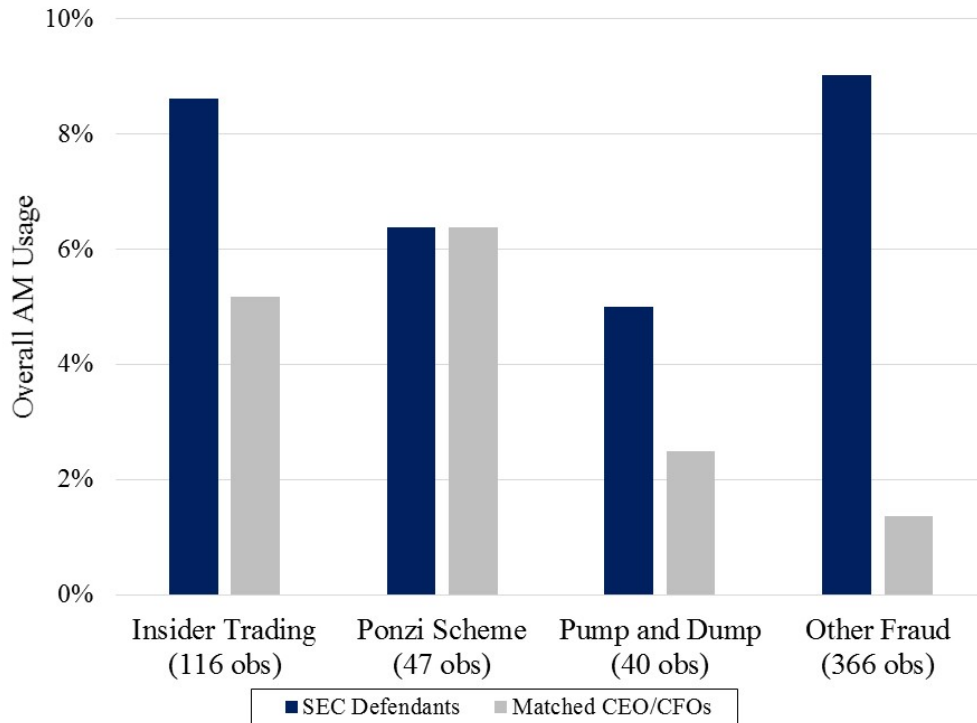


Figure 4. AM usage of SEC defendants by infraction type. This figure plots SEC defendant and matched CEO/CFO AM usage rates by type of infraction alleged in the complaints between 2010 and 2015. The types included are insider trading, ponzi schemes, pump and dump schemes, and other fraud (e.g., securities or accounting fraud). The Matched CEO/CFO sample consists of CEOs and CFOs serving during the same period that match the SEC defendants on gender, age (within five years), and geographic distance (within 50 miles). Within these criteria, each SEC defendant is matched to the most similar CEO or CFO based first on age and then on geographic distance.

Table I
Ashley Madison data summary

	Overall Population	Executives			
		All	CEO	CFO	Other
Paid Users					
Number of users	1,006,644	166	36	38	108
<i>% of population</i>	<i>0.33%</i>	<i>0.88%</i>	<i>1.36%</i>	<i>1.36%</i>	<i>0.70%</i>
Spending (\$)					
Median	98	173	154	258	169
Paid Users by Year					
2008	67,424	11	5	2	4
2009	192,106	33	7	8	18
2010	314,549	55	12	13	30
2011	457,107	84	20	18	46
2012	587,002	96	19	21	56
2013	727,665	98	19	23	56
2014	917,830	99	26	24	49
2015	1,006,644				

This table describes the data from Ashley Madison's transaction records. Overall, CEO, CFO, and other executive paid usage and spending are reported. Executive users of Ashley Madison were identified by matching Ashley Madison transactions to Execucomp executives based on the executive's name and address. Home addresses were obtained through Lexis Nexis searches. The sample is restricted to the United States.

Table II
Summary statistics, by firm-year

	Ashley Madison CEO/CFO Mean	Non-Ashley Madison CEO/CFO Mean	Difference	<i>t</i> -stat
AM paid usage (county)	0.46	0.44	0.02	0.66
Executive characteristics				
CEO age	55.08	56.07	-0.99	-0.89
CEO tenure	7.34	8.39	-1.04	-0.92
CFO age	50.37	51.11	-0.73	-0.75
Firm characteristics				
Firm size	7.85	7.80	0.05	0.17
Return on assets	0.11	0.12	-0.010	-0.20
Tobin's Q	1.57	1.81	-0.24	-0.72
Investment	0.03	0.05	-0.02	-1.41
Acquisitions	0.04	0.03	0.004	0.43
R&D	0.05	0.05	0.00	-0.19
Book leverage	0.43	0.46	-0.03	-0.09
Market leverage	0.28	0.28	0.003	0.09
Dividend payouts	0.01	0.02	-0.005	-0.92
Political corruption (jud. district)	32.73	30.03	2.70	0.89
Religious adherence (county)	53.74	52.62	1.11	0.57
Infraction variables				
Class action	0.089	0.024	0.065	3.78
Restatement	0.061	0.019	0.043	2.72
Class action or restatement	0.117	0.041	0.077	3.43
<i>N</i>	213	9,768		

This table shows summary statistics for personal characteristics of CEOs/CFOs, firm characteristics, and corporate infraction indicators. The sample period starts in 2008 (when Ashley Madison transaction data starts) and ends in 2014. The set of firms are those in Execucomp which are headquartered in the U.S. The variable *AM paid usage* represents the per capita paid AM usage rate in the county of the firm's headquarter. The dummy variable *Class Action* takes the value of one in all firm-years affected by a class action lawsuit which has been settled or is still ongoing, and zero otherwise. The dummy variable *Restatement* takes the value of one in all firm-years affected by a financial statement restatement which was not classified as an accounting principle failure or misapplication, and zero otherwise. Reported *t*-statistics are based on standard errors that are clustered at the firm level.

Table III
AM CEOs/CFOs and the likelihood of infraction

	(1)	(2)	(3)	(4)
AM CEO/CFO	0.047*** (3.09)	0.059*** (3.71)	0.064*** (4.02)	0.062*** (3.86)
AM paid usage (county)		0.083*** (3.17)	0.085*** (2.84)	0.137*** (3.76)
CEO age	0.000 (0.03)	-0.000 (-0.32)	-0.000 (-0.52)	-0.001 (-0.71)
CEO tenure	-0.000 (-0.78)	-0.000 (-0.41)	-0.000 (-0.37)	-0.000 (-0.20)
CFO age	0.001 (1.44)	0.001 (1.14)	0.000 (0.53)	0.000 (0.68)
Firm size		-0.004* (-1.96)	-0.003 (-1.18)	-0.003 (-1.28)
Return on assets		0.015 (0.54)	0.008 (0.29)	0.004 (0.17)
Tobin's Q		0.001 (0.38)	0.000 (0.13)	-0.000 (-0.11)
Market leverage		0.057*** (2.75)	0.072*** (3.27)	0.070*** (3.05)
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	9,847	7,862	7,166	6,934
Pseudo <i>R</i> ²	0.009	0.032	0.065	0.096
Mean of dep. Variable	0.043	0.044	0.048	0.049

This table shows marginal effects of logit regressions. The dependent variable is a dummy variable that takes the value of one in all firm-years with restated financial statements or that were affected by conduct alleged in a class action lawsuit. The explanatory variable of interest is *AM CEO/CFO*, a dummy variable that takes the value of one for the firm-years where a firm has either a CEO or CFO that is a paid user of the AM website, and zero otherwise. The variable *AM paid usage* represents the per capita paid AM usage rate in the county of the firm's headquarter. Executive and firm controls, as well as year, industry, and state fixed effects are included as reported. Reported *z*-statistics in parentheses are heteroscedasticity-robust and clustered by firm. ****p*<0.01, ***p*<0.05, **p*<0.1.

Table IV
AM CEOs/CFOs and the likelihood of class action lawsuit and financial restatement

A. Class action lawsuit

	(1)	(2)	(3)	(4)
AM CEO/CFO	0.032*** (3.08)	0.040*** (3.52)	0.049*** (3.91)	0.049*** (3.70)
Executive controls	y	y	y	y
Firm controls	n	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	9,847	7,862	6,472	5,872
Pseudo R^2	0.017	0.044	0.097	0.123
Mean of dep. Variable	0.026	0.027	0.032	0.036

B. Financial restatement

	(1)	(2)	(3)	(4)
AM CEO/CFO	0.027*** (2.66)	0.032*** (3.05)	0.037*** (2.82)	0.045*** (2.77)
Executive controls	y	y	y	y
Firm controls	n	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	9,847	7,862	6,411	5,754
Pseudo R^2	0.019	0.047	0.090	0.140
Mean of dep. Variable	0.020	0.020	0.025	0.027

This table shows marginal effects of logit regressions. In Panel A, the dependent variable is a dummy variable that takes the value of one in all firm-years affected by a class action lawsuit. In Panel B, the dependent variable is a dummy variable that takes the value of one in all firm-years where the financial statements were restated. The explanatory variable of interest is *AM CEO/CFO*, a dummy variable that takes the value of one for the firm-years where a firm has either a CEO or CFO that is a paid user of the AM website, and zero otherwise. Executive and firm controls including county-level AM usage, as well as year, industry, and state fixed effects are included as reported. Reported z -statistics in parentheses are heteroscedasticity-robust and clustered by firm. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table V
AM CEOs and AM CFOs and the likelihood of infraction

A. Ashley Madison CEO

	(1)	(2)	(3)	(4)
AM CEO	0.044** (2.12)	0.057** (2.56)	0.057** (2.54)	0.053*** (2.58)
Executive controls	y	y	y	y
Firm controls	n	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	11,347	9,067	8,248	8,095
Pseudo <i>R</i> ²	0.005	0.021	0.047	0.075
Mean of dep. Variable	0.044	0.044	0.049	0.050

B. Ashley Madison CFO

	(1)	(2)	(3)	(4)
AM CFO	0.047** (2.11)	0.059*** (2.63)	0.061*** (2.63)	0.066*** (2.80)
Executive controls	y	y	y	y
Firm controls	n	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	11,085	8,819	8,240	7,970
Pseudo <i>R</i> ²	0.005	0.024	0.056	0.091
Mean of dep. Variable	0.044	0.043	0.046	0.048

This table shows marginal effects of logit regressions. The dependent variable is a dummy variable that takes the value of one in all firm-years with restated financial statements or that were affected by conduct alleged in a class action lawsuit. The explanatory variables of interest are *AM CEO* or *AM CFO*, two dummy variables that take the value of one for the firm-years where a firm has a CEO or a CFO that is a paid user of the AM website, respectively. Executive and firm controls including county-level AM usage, as well as year, industry, and state fixed effects are included as reported. Reported *z*-statistics in parentheses are heteroscedasticity-robust and clustered by firm. ****p*<0.01, ***p*<0.05, **p*<0.1.

Table VI
AM usage of SEC defendants

	SEC defendants	Matched CEO/CFOs	Difference	<i>t</i> -test
AM transaction usage	4.0%	1.8%	2.3%	2.36
Overall AM usage	8.4%	2.6%	5.8%	4.49
Observations	569	569		
Gender (% Male)	95%	95%		
Age (Mean)	53.8	54.0	-0.2	-5.09
Distance (Miles)			15	

Ashley Madison usage data comes from Ashley Madison’s transaction records. Defendants to SEC litigation between 2010 and 2015 were matched to Ashley Madison transactions based on the name and mailing address and to Ashley Madison user data based on email address and zip code. Addresses and email addresses were obtained through Lexis Nexis searches. The Matched CEO/CFO sample consists of CEOs and CFOs serving during the same period that match the SEC defendants on gender, age (within five years), and geographic distance (within 50 miles). Within these criteria, each SEC defendant is matched to the most similar CEO or CFO based first on age and then on geographic distance. Standard errors are clustered by SEC complaint.

Table VII
Other AM executives and additional cultural variables

A. Other AM executives and the likelihood of infraction

	(1)	(2)	(3)	(4)
AM CEO/CFO	0.047*** (3.07)	0.059*** (3.69)	0.063*** (3.94)	0.062*** (3.74)
AM other executive	-0.012 (-0.59)	-0.017 (-0.69)	-0.007 (-0.27)	-0.003 (-0.10)
Executive controls	y	y	y	y
Firm controls	n	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	n	n	y	y
State FE	n	n	n	y
<i>N</i>	9,847	7,862	7,166	6,934
Pseudo R^2	0.011	0.033	0.066	0.098
Mean of dep. Variable	0.043	0.044	0.048	0.049
<i>p</i> -value of difference between coefficients	0.017	0.011	0.022	0.036

B. Regressions with additional cultural variables

	(1)	(2)	(3)
AM CEO/CFO	0.065*** (3.96)	0.060*** (3.87)	0.063*** (3.96)
AM paid usage (county)	0.152*** (4.04)	0.122 (1.63)	0.134* (1.68)
CEO age	-0.000 (-0.63)	-0.001 (-0.75)	-0.000 (-0.67)
CEO tenure	-0.000 (-0.27)	-0.000 (-0.19)	-0.000 (-0.24)
CFO age	0.001 (0.95)	0.000 (0.68)	0.001 (0.88)
Firm size	-0.004 (-1.61)	-0.003 (-1.18)	-0.004 (-1.57)
Return on assets	0.007 (0.27)	0.006 (0.23)	0.007 (0.30)
Tobin's Q	-0.000 (-0.09)	-0.000 (-0.08)	-0.000 (-0.08)
Market leverage	0.075*** (3.23)	0.069*** (3.05)	0.075*** (3.23)
Religious adherence (county)	0.001 (1.38)		0.001 (0.88)
Political corruption (jud. district)	0.000 (0.16)		-0.000 (-0.44)
Population (CBSA)		0.018*** (2.78)	0.014* (1.96)
College educated (education)		0.001 (0.70)	0.001 (0.78)
Income (county)		-0.000 (-0.49)	-0.000 (-0.63)
Year FE	y	y	y
2-digit SIC FE	y	y	y
State FE	y	y	y
N	6,615	6,934	6,615
Pseudo R ²	0.108	0.104	0.113
Mean of dep. Variable	0.050	0.049	0.050

This table shows marginal effects of logit regressions in which the dependent variable is a dummy variable that takes the value of one in all firm-years with restated financial statements or that were affected by conduct alleged in a class action lawsuit. Panel A includes both CEO/CFO and other executive AM usage. Panel B adds regional characteristics potentially related to culture to the regressions. *AM CEO/CFO* is a dummy variable that takes the value of one for the firm-years where a firm has either a CEO or CFO that is a paid user of the AM website, and zero otherwise. *AM other executive* is a dummy variable that takes the value of one for the firm-years where a firm has a top executive (distinct from the CEO or CFO) that is a paid user of the AM website, and zero otherwise. *AM paid usage* represents the per capita paid AM usage rate in the county of the firm's headquarter. Political corruption is measured at the federal judicial district level by public corruption convictions per 1 million residents between 2004 and 2013. The data comes from the U.S. Department of Justice's "Report to Congress on the Activities and Operations of Public Integrity Section for 2013." We drop conviction data from the District of Columbia judicial district because it not comparable to other districts. Religious adherence represents the percent of the county's population with a religious affiliation in 2010, as reported by the Association of Religious Data Archives. *Population* is the log of population of the CBSA in 2010 (as reported by the U.S. Census). *College educated* is the percentage of college educated residents in the county of the firm's headquarter in 2010 (as reported by the U.S. Department of Agriculture). *Income* is the median household income in the county of the firm's headquarters in 2010 (as reported by the U.S. Census). Reported *z*-statistics in parentheses are heteroscedasticity-robust and clustered by firm. ***p<0.01, **p<0.05, *p<0.1.

Table VIII
AM CEOs/CFOs and other firm decisions

	Investment (1)	Acquisitions (2)	Div. Payout (3)	R&D (4)
AM CEO/CFO	-0.014** (-2.30)	-0.002 (-0.20)	-0.004 (-1.60)	0.004 (0.50)
Executive controls	y	y	y	y
Firm controls	y	y	y	y
Year FE	y	y	y	y
2-digit SIC FE	y	y	y	y
State FE	y	y	y	y
<i>N</i>	7,859	7,478	7,853	4,756
<i>R</i> ²	0.370	0.044	0.178	0.444
Mean of dep. Variable	0.058	0.037	0.016	0.054

This table shows the coefficients of OLS regressions. The dependent variables are *Investment* (Column 1), *Acquisitions* (Column 2), *Dividend Payout* (Column 3), and *R&D* (Column 4). More specifically, *Investment* is CAPEX divided by lagged total assets. *Acquisitions* is the total value of acquisitions during the year divided by lagged total assets. *Dividend Payout* is the sum of preferred and common dividends paid divided by lagged total assets and *R&D* is research and development expenses divided by lagged total assets. The explanatory variable of interest is *AM CEO/CFO*, a dummy variable that takes the value of one for the firm-years where a firm has either a CEO or CFO that is a paid user of the AM website, and zero otherwise. Executive and firm controls including county-level AM usage, as well as year, industry, and state fixed effects are included. Reported *t*-statistics in parentheses are heteroscedasticity-robust and clustered by firm. ****p*<0.01, ***p*<0.05, **p*<0.1.

Table IX
Propensity score matching estimation and additional controls

A. Differences in infraction rates, AM CEO/CFO minus non-AM CEO/CFO

	Combined Infraction (1)	Class Action Lawsuit (2)	Financial Restatement (3)
Matched sample, ATT	0.108**	0.081**	0.065**
<i>t</i> -statistic (clustering by AM firm)	2.40	2.12	2.00

B. Regressions with additional controls

	(1)	Corporate infraction (2)	(3)
AM CEO/CFO	0.061*** (3.58)	0.044* (1.93)	0.056*** (3.24)
AM paid usage (county)	0.159*** (4.03)	0.175** (2.54)	0.153*** (4.00)
CEO age	-0.000 (-0.46)	-0.001 (-0.78)	-0.001 (-1.20)
CEO tenure	-0.000 (-0.36)	-0.000 (-0.41)	-0.000 (-0.06)
CFO age	0.001 (1.00)	0.001 (0.83)	0.001 (1.28)
Firm size	-0.005 (-1.43)	-0.008* (-1.80)	-0.003 (-1.03)
Return on assets	-0.003 (-0.12)	0.031 (0.82)	0.010 (0.33)
Tobin's Q	0.001 (0.14)	0.003 (0.55)	-0.001 (-0.32)
Market leverage	0.069** (2.31)	0.135** (2.57)	0.066*** (2.73)
Stock return	-0.015 (-1.63)		
Past year's stock return	0.003 (0.69)		
Return volatility	0.069** (2.20)		
Past year's return volatility	-0.070** (-2.07)		
E-index		-0.006 (-1.22)	
F-score			0.002 (0.47)
Year FE	y	y	y
2-digit SIC FE	y	y	y
State FE	y	y	y
<i>N</i>	6,012	5,097	6,040
Pseudo <i>R</i> ²	0.115	0.135	0.111
Mean of dep. Variable	0.050	0.051	0.050

Panel A shows the results from a propensity score matching estimation that compares the infraction rates of firms with AM CEOs or CFOs with the infraction rates of firms that do not have CEOs or CFOs that are paid users of the AM website. The matching is performed based on year, Fama-French 12 industry classification, and propensity scores estimated based on a logit regression with executive age, tenure, and firm controls. The matching uses the nearest neighbor technique (1-to-1). A maximum difference between the propensity scores of 0.5% is required. Columns 1, 2, and 3 show the average treatment effect on combined infractions, class action lawsuit, and financial restatement, respectively. Panel B shows marginal effects of logit regressions similar to those of Table III, but including additional controls. The dependent variable is a dummy variable that takes the value of one in all firm-years with restated financial statements or that were affected by conduct alleged in a class action lawsuit. The explanatory variable of interest is *AM CEO/CFO*, a dummy variable that takes the value of one for the firm-years where a firm has either a CEO or CFO that is a paid user of the AM website, and zero otherwise. *AM paid usage* represents the per capita paid AM usage rate at the county of the firm's headquarter. *E-index* is the corporate governance index of [Bebchuk, Cohen, and Ferrell \(2009\)](#) and *F-score* is the financial misstatement predictor of [Dechow et al. \(2011\)](#). Additional controls, as well as year, industry, and state fixed effects are included as reported. Reported *z*-statistics in parentheses are heteroscedasticity-robust and clustered by firm. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.