Tailspotting:
What can investors learn by tracking the flights of corporate jets?

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Abstract

This paper shows close connections between corporate news disclosures and CEOs' vacation schedules. I identify CEO vacations by merging corporate jet flight records with locations of CEO vacation residences. When CEOs are away, stock prices exhibit sharply lower volatility than usual. Volatility increases immediately when CEOs return to work. Companies disclose favorable news just before CEOs leave for vacation and then delay subsequent announcements until CEOs return.

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I. Introduction

This paper documents a close connection between the timing of corporate news disclosures and CEOs' personal vacation schedules. I find that companies tend to disclose favorable news just before CEOs leave for vacation and then hold over subsequent news announcements until they return to headquarters. During periods when CEOs are away from the office, stock prices behave quietly with sharply lower volatility than usual. Volatility increases immediately when CEOs return to work. I identify CEO vacation trips by merging publicly available flight records of corporate jets with on-line real estate records that indicate the locations of CEO vacation residences, often in upscale oceanfront communities in Florida or New England or close to golf or ski resorts.

An example of this pattern appears in Figure 1. On January 7, 2010, aerospace manufacturer Boeing Co. disclosed a 28% increase in annual commercial airliner deliveries and also issued an earnings forecast for the year ahead. Boeing stock rose 4%, capping three days in which it outperformed the market by almost 10%. The company's shares were quiet for the next several weeks, not moving significantly again until January 27 when Boeing announced strong

quarterly earnings and its stock rose more than 7%. In between these announcements, Boeing's CEO appears to have been on vacation, an inference based upon Federal Aviation Administration (FAA) records of company aircraft trips to and from an airport near his vacation home in Hobe Sound, FL. During this period that Boeing's CEO appears to have been away, the annualized volatility of its stock dropped to 0.16, an unusually low level for a major blue chip. During the three days before and three days after his trip, the volatility was more than twice as high at 0.40.

I find patterns similar to Figure 1 for a sample of 126 vacations lasting five work days or longer, taken by CEOs of 35 major U.S. companies during the four year period 2007-2010. To obtain aircraft flight histories, the key information needed to identify vacation dates, I use The Wall Street Journal's Jet Tracker database, a searchable Internet archive of trips by all aircraft registered to U.S. businesses during 2007-2010. While I do not know for certain that the CEO is a passenger on every flight to and from airports near his vacation home, executive compensation disclosures indicate substantial personal use of corporate aircraft use by nearly all of the CEOs in the sample. In the case Boeing, the company disclosed an incremental cost $303,962 for personal use of company aircraft in 2010 by its CEO, W. James McNerney Jr. Estimates on the Jet Tracker database put the incremental cost of a typical corporate aircraft flight in the neighborhood of $5,000 to $10,000 (depending on the plane model and distance flown), implying that Boeing's CEO took a number of personal trips on the company's executive jet in 2010.

This paper contributes to several areas of research in corporate finance, valuation, and securities regulation. Most significantly, it illuminates a facet of corporate disclosure policy rarely noticed by investors or regulators. Since the 1930s U.S. authorities have established detailed ground rules for the timing of company disclosures such as Regulation FD and the

Sarbanes-Oxley Act; since it became effective in 2004, SOX has required companies to disclose a wide range of material events on Form 8-K within four business days. Notwithstanding these regulations, my results strongly suggest that companies coordinate public news disclosures with the personal schedules of their CEOs. In particular, companies appear to empty their queues of news announcements just before the CEO leaves for vacation, and then delay subsequent disclosures until the CEO is back in the office.

The causation underlying these patterns is not obvious: companies may fix their schedules of news releases to accommodate CEOs' vacation plans, or CEOs may travel only when they expect no significant activity at the office and may cut short vacations when news arises. Data are somewhat consistent with the latter pattern, as stock volatility for the sample companies rises just before the end of the 126 vacation intervals in my sample, and in a number of cases CEOs appear to interrupt vacations, flying back to headquarters for just one day and then resuming their time off. Regardless of the direction of causation, the movement of a company's aircraft to and from a CEO's vacation residence provides a very visible signal of pending news announcements and silences. With a trivial amount of research and monitoring, investors could observe flights of corporate aircraft in real time between the headquarters airport and the CEO's vacation locale, either by monitoring live FAA data on the Internet or stationing scouts for "tailspotting" of tail numbers of planes that land at leisure airports favored by CEOs such as Nantucket, MA, Horshoe Bay, TX, or Naples, FL. This information could support straightforward trading strategies, such as using derivatives to bet on declines in volatility when a CEO arrives at his vacation airport and increases in volatility when he departs.

A large academic literature has investigated the strategic timing of news disclosure by

corporations. These papers generally focus upon firms' attempts to influence analysts and journalists or exploit gaps in investors' attention spans. For instance, Patell and Wolfson (1982), Damodaran (1989), and many other studies find that firms release adverse news on late Friday afternoons, or in the evenings after the stock exchange has closed. Dye (2010) studies conditions under which companies will cluster or "bunch" several disclosures together in order to diminish the attention paid by investors to any one announcement. Ahern and Sosyura (2011) show that when negotiating stock-for-stock acquisitions, a bidder firm will often flood the news media with positive announcements, attempting to drive its their share prices higher and obtain a more favorable exchange ratio with the target firm. Delaying or advancing news for the convenience of the CEO represents an additional aspect of disclosure policy that seems fairly obvious but has not been previously noted by researchers.

Tying disclosure policy closely to the schedule of the company's CEO implies than the traits of one individual manager directly affect how investors receive information and revise the value of a firm. Such a pattern would be consistent with recent studies showing a connection between the characteristics of managers and companies' reporting of financial data on a quarterly or annual basis. Much of this literature follows the framework of Bertrand and Schoar (2003), who introduce the concept of "management style" and assign manager-level intercepts to CEOs in panel data regressions for samples that include some managers who move from one company to another. Using this research design, Dyreng, Hanlon and Maydew (2010) find that corporate tax avoidance is linked to the characteristics of individual managers who change companies. Ge, Matsumoto, and Zhang (2011) obtain a similar result for the influence of chief financial officers upon accounting practices. Yang (forthcoming) shows that a manager's personal track record of

issuing accurate earnings forecasts influences market responsiveness to future forecasts by the same manager. Bamber, Jiang, and Wang (2010) link corporate disclosure practices to individual CEO attributes such as prior military service and education. Related research examines the importance for firm performance of CEO overconfidence (Malmendier and Tate, 2005) and high media visibility that gives some CEOs celebrity or "superstar" status (Malmendier and Tate, 2009). Studying firms' financial policies, Cronqvist, Makhija, and Yonker (2012) find a connection between CEOs' personal leverage, measured by home mortgages, and the capital structures of their companies. A pair of companion papers by Bennedsen, Pérez-Gonzalez, and Wolfenzon (2010, 2011) show that deaths in CEOs' families, deaths of CEOs, and illnesses of CEOs negatively impact companies' future operating performance.

Numerous studies in the Management field have obtained detailed information about top managers' daily activities, though it is unusual for these papers to document associations between CEO schedules and companies' financial performance. One exception is Bandiera, Guiso, Prat, and Sadun (2011), who study one week of detailed work diaries for CEOs of 94 large Italian companies, tracking such variables as the number of hours worked and the frequency of meetings with colleagues and customers. Though only limited performance measures are available for these companies, the authors find a positive association between company productivity, measured as sales per employee, and hours worked by CEOs, especially for hours spent inside the firm rather than externally in meetings with outsiders such as investors or customers. However, these relations could be endogenous, as CEOs may work longer with subordinates when they perceive greater potential for productivity increases from mentoring or monitoring, and the authors do not address this possibility. The study of CEO illnesses (which

may be less endogenous) by Bennedsen, Pérez-Gonzalez, and Wolfenzon (2011) includes detailed information about the duration (in days) of CEO hospitalizations and finds connections with subsequent company profitability. In both of these papers the outcome variables are reported at the annual level, in contrast to this study which looks at daily stock price behavior when a CEO is in and away from the office.

Finally, this paper adds to an ongoing literature on the consequences of CEOs' corporate jet usage. Rajan and Wulf (2006), citing factors such as the location of headquarters, conclude that firms' provision of aircraft to top managers for either work or leisure travel occurs when the convenience is most likely to improve productivity. In accord with the convenience hypothesis, raw data in this study clearly show that private corporate aircraft enable CEOs to travel quickly, sometimes at odd hours, to distant vacation spots not always served by commercial airlines. In contrast to the broader measure of aircraft use in Rajan and Wulf (2006), Yermack (2006) focuses on CEOs' leisure travel only and documents sustained underperformance by firms that permit personal travel on the company plane. These contemporaneous papers led to a 2007 expansion of the SEC's disclosure rules for managers' aircraft use and attracted additional authors to the topic. A theory paper by Marino and Zábojník (2008) and an empirical study of Chinese companies by Adithipyangkul, Alon, and Zhang (2011) both support the productivity rationale for corporate jets and other workplace perks. Event studies by Grinstein, Weinbaum and Yehuda (2011) and Andrews, Linn, and Yi (2009) show negative valuation consequences of disclosures of corporate jet leisure use by CEOs of U.S. firms. Edgerton (forthcoming) finds that corporate jet fleets are significantly reduced in a sample of U.S. companies that undergo leveraged buyouts, indirect evidence that "executives in a substantial minority of public firms

enjoy excessive perquisite and compensation packages." The availability of precise flight data may help resolve conflicts in these papers and illuminate other issues as well. For instance, seasonal or day-of-the-week patterns of CEO vacations may help explaining temporal oddities of stock market behavior such as the "January effect," which could be linked to CEOs staying away from the office in large numbers for vacations during the first part of January.

The remainder of this paper is organized as follows. Section II describes the data collection and presents descriptive statistics about the sample. Section III contains an analysis of stock returns and changes in volatility when a CEO is out of the office at his vacation home[**, as well as an analysis of corporate news releases and a discussion of derivative trading strategies investors could use to exploit the volatility effect**]. Section IV concludes the paper.

II. Data description

Data for this study comes from the Jet Tracker online database made available for public search by The Wall Street Journal since May 2011 (Maremont and McGinty, 2011). The database, derived from FAA data, consists of "every private aircraft flight recorded in the FAA's air-traffic management system for the four years from 2007 through 2010," according to the newspaper. The database lists the tail number used to identify each aircraft, which the newspaper matches to individual companies using an FAA registry obtained with a Freedom of Information Act request as discussed below.

I search the Jet Tracker database for all companies included in the S&P 500 index between 2007 and 2010, using a list of companies and CEOs downloaded from ExecuComp. If a company operates its own aircraft, the database rank-orders its 2007-2010 flights by airport.

Invariably the headquarters city of the company is the first airport listed. For those companies whose aircraft fly often to airports serving leisure destinations such as Martha's Vineyard or Key Largo, I search on-line real estate records available on Lexis-Nexis to determine whether the company's CEO owns property near that airport.[1] If I locate a property, I query the database for exact details of each flight to and from the vacation airport, on the assumption that those flights transport the CEO. I then use this flight information to construct a record of the CEO's trips to his vacation home.

Compiling flight records for individual trips requires some subjective judgment. Many companies' aircraft follow a pattern of flying from headquarters to a vacation destination, staying only a few minutes (presumably to discharge passengers), and then immediately returning to the headquarters airport or perhaps another city. This allows the plane to avoid local hangar fees and undertake other corporate missions. Some days later, the same aircraft will travel again to the vacation city, stop briefly to pick up passengers, and then return once again to headquarters, so that CEO vacations often involve two separate round-trips by the company plane. Sometimes the CEO appears to fly from his vacation airport to cities other than headquarters, often for an up-and-back trip in one day. Many of these side trips are to obvious leisure destinations, such as Augusta., Ga., which some CEOs visit for day trips of six hours or less, enough time for a round of golf. If the CEO travels from his vacation home to another leisure destination, I count it as a

[1] Searchable real estate databases include information about housing sales, property taxes, and mortgages and list the owner and exact address of properties across the United States. These data have been used by several recent papers such as Liu and Yermack (2007) and Cronqvist, Makhija, and Yonker (2012) to identify the main residences of corporate managers. To search these databases accurately, one must sometimes consult biographical sources to obtain information such as the CEO's middle initial or spouse's name. CEOs with common last names such as Smith or Johnson can be problematic, and in several such cases I excluded companies from the sample when I could not link an individual CEO to specific real estate records with high confidence.

continuation of the vacation trip, but if the trip appears to be to an urban or commercial destination, I treat it as the end of the vacation. If the corporate aircraft travels to the CEO's vacation airport but no return flight ever appears in the database, I do not include the trip in my sample; in these cases the CEO probably leaves by commercial air service or surface transport at I time I cannot identify. To classify a departure day from headquarters as either a work day or vacation day, I use a cutoff of 4:00 p.m. takeoff, so if the CEO's plane leaves the headquarters city later than 4:00, I count the vacation beginning the next working day. For return days, if the flight lands in the headquarters city or another non-leisure destination at 12:00 noon or earlier, I count that as a work day.

These methods will obviously yield only an incomplete record of a CEO's vacations, since I will record trips to locations where he owns homes but not to other destinations where he may vacation without owning property. A few companies' planes travel regularly to Bermuda and Mexico resort towns and to Europe, but I do not have access to foreign real estate records to verify whether the CEO owns property in these locations. On occasion the CEO may travel on commercial airlines or use time-sharing corporate jet services from an outside company such as NetJets, and I will miss these trips as well. Even when the CEO travels to his vacation home, he may spend time working on company business while there, so my measure of vacation travel may be overinclusive.[2] I also cannot verify that the CEO is a passenger on every flight made on company planes to the airport near his vacation home; some of these trips may transport the

[2] An interesting recent case involves Houston company Nabors Industries Ltd. and its CEO Eugene Isenberg, who owns homes in Palm Beach and Martha's Vineyard, locations frequently visited by the company's aircraft. The CEO's employment contract entitles him to establish offices at any of his personal residences and to perform his work duties from those locations. In November 2011 the SEC opened an investigation because the company had disclosed zero expense for the CEO's personal use of company aircraft, apparently under a rationale that the CEOs' trips to these locations were always for business purposes. McGinty and Maremont (2011).

CEO's family members or junior executives from the company, for instance.

My sampling procedure yields vacation schedules for 35 CEOs. I tabulate a binary vacation variable for each CEO, with the U.S. stock market calendar used to distinguish working days from weekends and holidays. For CEOs who held their jobs continuously for the entire 2007-2010 period, the sample includes 1,008 days of data, an average of 252 stock market days per year. For CEOs who were appointed or resigned during this period, I track vacations only during their time in office. Table 1 presents basic overview statistics about the sample. In all, the database contains 27,851 company-days, of which 1,988, or 7.1%, are spent by CEOs at their vacation homes, an average of about 18 work days per year. The data exhibit considerable variation across companies, with one CEO recording only three work days at his vacation home during the four-year, 1,008-day sample period, and another spending 197 days at his retreat during the same period.

Table 1 presents additional descriptive detail about CEOs' vacation trips. Generally these days out of the office follow predictable patterns, with Fridays and Mondays represented more than midweek days and a high concentration of vacations during July, August, and the winter holiday season. The frequency of CEO vacations was much higher in 2010 than 2007-09, perhaps because improved conditions in the national economy permitted more time for relaxing away from the office. In all, I identify a total of 627 distinct CEO vacation trips, uninterrupted by days back at headquarters, with lengths varying between one and 21 work days. More than half of all CEO trips are just one or two days in length, but approximately 51% of all vacation days occur in trips at least one week (five working days) long, and I will focus much of the analysis below on this subsample. Absences longer than two weeks – 11 or more working days –

comprise 4% of all trips and 17% of all vacation days.

To increase the power of my statistical tests, I focus on long CEO vacations, which I define as those lasting five or more consecutive work days. If a CEO flies back to headquarters for one day and then returns to his vacation home, I count the one day as an "interruption" of a vacation, with the additional spell of days treated as a continuation of the first trip. In all I identify 126 distinct long vacations by CEOs of the 35 companies in the sample, which include 1,062 total work days plus 19 interruption days, along with an uncounted number of weekend and holiday days. I do not count trips lasting four work days plus a weekday that is a stock market holiday, and I do not count interrupted trips unless there is a continuous stay of at least five days on either or both sides of the interruption.

[**Add model on when CEOs take vacations - Table 2.**]

III. Analysis

In the subsections below I analyze the impact of CEO vacations upon the company's stock on a day-to-day basis. Section III.A investigates abnormal stock price behavior when the CEO is out of the office. Section III.B studies changes in stock volatility. [**Section III.C presents data about patterns of corporate news releases with respect to the CEO's travel to his vacation home.**] Section III.D discusses the results [**and evaluates whether they could form the basis of a profitable trading strategy**]. This seems quite likely given the striking changes in stock volatility illustrated below.

A. Abnormal stock returns

I investigate whether stock prices exhibit abnormal behavior around the days that the CEO is out of the office at his vacation home. Table 3 presents an analysis of abnormal stock returns in a standard four-factor Fama-French model, with indicator variables added to identify the days around CEO vacation trips. In column two, the estimate for an indicator for all CEO vacation days shows that stock returns are generally not different than normal on days that the CEO visits his vacation home. In the third column, the vacation indicator is decomposed into pieces representing days of short and long vacations, defined as those five or more working days in length. Again, the estimates for these variables seem uninteresting.

The most significant abnormal return estimates appear in columns four and five of Table 3, when the model includes indicators for the three-day periods immediately before and after the CEO leaves for a long vacation of five or more days. As shown in the table, abnormal stock returns are about 24 basis points higher than ususal for each of the three days just before the CEO leaves for vacation, and about 17 basis points higher than usual for each of the three days after he returns. Given the three-day length of these periods, the estimates correspond to appreciations in the company's stock of about 0.72% and 0.51%, respectively, though only the first estimate is statistically significant.

These estimates suggest that companies announce good news just before the CEO leaves for a long trip, then announce nothing at all while he is gone, and finally announce more good news on his return. This pattern is reinforced by the analysis of stock price volatility that appears below. Bad news announcements do not seem to occur in proximity to the CEO's lengthy vacations. Since many CEOs begin or end vacations in the first month of the year, these data may have a plausible connection to the well-known "January effect" of stocks performing

unusually well in the first weeks of a new year.

These findings are broadly consistent with recent papers by Tsiakas (2006, 2010), who studies abnormal stock returns around holidays. He finds positive expected returns both before and after mid-week holidays. For holidays on Mondays or Fridays that include a three-day weekend, abnormal returns are positive in advance of the long weekend, as found in my sample, but negative on the first day back to work. I check my data to see whether lengthy CEO vacations often are coordinated with the start or end of holiday periods, but this rarely occurs in my sample. Of the 126 distinct long CEO vacations at 35 companies, only one trip begins in advance of a holiday weekend, and only 46 holidays appear in the middle of the 126 trips which last a collective 1,062 days.

B. Volatility

Table 4 presents data about stock volatility when CEOs are at work, and when they are out of the office at their vacation homes. I calculate grand average volatilities for the 35 companies in the sample, taking the standard deviation of continuously compounded stock returns over the entire sample and multiplying the result by the square root of 252, which equals the number of stock market trading days in a typical year. At the top of Table 4, the data indicate significant drops in stock volatility when the CEO is at his vacation home: on these days, realized volatility is 0.386, compared to 0.444 on all other days. In other words, volatility falls by about 13% when the CEO is out of the office.

The difference becomes even more dramatic when the CEO leaves for a long vacation instead of a short one. Realized volatility during long CEO vacations is about 23% below

normal, or 0.340. During short CEO vacations of less than five days volatility also drops slightly below normal, to 0.433. *F*-tests indicate that the estimated volatilities for long vacations and for all vacation days are significantly less than estimated volatilities on work days, at extremely low significance levels. Changes in stock volatility around CEO vacations are economically large, though similar to results in other studies that have examined important corporate events. For example, Ohlson and Penman (1985) find that volatility rises by approximately 30% following stock splits. Clayton, Hartzell and Rosenberg (2005) find that volatility increases by approximately 23% in the year following forced turnover of a CEO. That paper cites about 15 other studies than have found significant volatility changes after corporate events such as tender offers and dividend announcements.

Further detail in Table 4 show volatilities during periods around the start and end of long CEO vacations. The data show that volatility gradually trends down in the three days before the CEO leaves, dropping more on his first day of vacation, before bottoming out during the middle days of the trip. On the final day of a long vacation, volatility is higher than before, and it rises further during the CEO's first three days back in the office.

The research strategy in all of the earlier papers documenting changes in volatility is different than that used here. Other studies exploit a discrete time series break in daily data and calculate volatility estimates over relatively long estimation windows before and after an event that occurs only once for each sample firm. In contrast, this study pools together all daily data for each company and separates it into two subsamples using a binary indicator that may switch back and forth frequently after relatively short periods time; some CEOs, for example, shuttle back and forth frequently between headquarters and their vacation homes especially during July

and August. Ignoring the length of each vacation, I calculate realized volatility for the entire set of observations in each subsample, regardless of whether their separation in time. This strategy leads to a number of potential biases that are discussed and evaluated below.

The strong volatility patterns associated with CEO vacation trips might be somewhat endogenous, if CEOs cut short vacations when the activity level at headquarters increases or are more likely to leave for their vacation homes when the office is quiet. In general, CEOs' trips do not exhibit strong associations with certain days of the week or holidays that might be affected by market-wide changes in volatily. For instance, CEOs are most likely to be out of the office on Mondays and Fridays, according to data in Table 1. However, these two days have the highest, rather than lowest, market-wide volatility, an effect generally attributed drops in liquidity that occur when traders leave for three-day weekends, taking either Friday or Monday off. See Kiymaz and Berument (2003). Tsiakas (2006) studies volatility around market holidays and finds an ambiguous pattern, with lower market volatility prior to mid-week holidays, higher volatility after long weekend holidays, and no significant effects in other cases. As noted above, however, CEOs rarely start or end their vacations in conjunction with holidays, and only 6% of the long vacations in my sample include a holiday at any point.

My method of calculating a grand average volatility for all companies pooled together may be biased if CEOs from quieter companies with lower volatilities are away from the office more often than their counterparts from higher volatility companies. To control for this possibility, Table 5 shows the comparison between volatilities when the CEO is in the office and when he is away on a long vacation, with the comparison statistics calculated separately for each of 27 companies (for the other eight companies in the sample, the CEO never is away for five or

more consecutive days). As shown in Table 5, volatility is lower for all but three of the 27 companies when the CEO is away on a long vacation. The overall decline, calculated as an equal-weighted average across the 27 companies, is 22.5%, significant below the 1% level, almost exactly the same as calculated in Table 4 with all observations pooled together.

C. News announcements

[**Add analysis of news releases - Table 6.**]

D. Discussion

If company stock prices follow regular patterns when CEOs leave for vacations, investors could profit by keeping close track of when a CEO flies to his vacation home or returns to headquarters. The data collection for this paper suggests that traders could obtain this information by simply monitoring Internet air traffic websites.

The stock price behavior with the greatest economic magnitude is the sharp drop in volatility that occurs when a CEO is away on a lengthy vacation. To profit from this pattern, a trader would want to sell short derivative securities with a high price sensitivity to volatility, or vega, when the CEO's aircraft flies form headquarters to the CEO's vacation home, and then do the opposite when the CEO flies back. With an appropriate portfolio, these strategies could be implemented on a delta-neutral basis, with no sensitivity to the underlying stock price. The tools for these strategies, such as "straddles" and "strangles" involving put and call options, are widely taught to MBA finance students and are easily implemented by traders on the exchanges. See Chaput and Ederington (2005).

[**Add documentation of hypothetical profits from such a trading strategy - Table 7.**]

One obstacle to implementing a trading strategy could arise if companies exercised their legal rights to prevent aircraft tail numbers from appearing on public Internet sites. Congress passed legislation creating the Block Aircraft Registration Request (BARR) program in 2000 allowing companies to opt out of live tracking sites for security reasons, in order to frustrate potential terrorists or kidnappers. Currently the scope of the BARR program is under reconsideration by the FAA, Congress, and the Obama administration.[3] However, even if tail numbers are blocked from public Internet sites, aircraft are large enough to be observed physically taking off and landing at airports by "tailspotters," and tail numbers can be matched with company operators either in the FAA's online registry or by making Freedom of Information Act requests to the agency.

IV. Conclusions

This paper studies patterns of corporate news disclosures associated with CEOs' personal vacation schedules. By merging records of corporate aircraft flights with information about the location of CEOs' vacation residences, I identify days when CEOs are likely to have been away from their offices. I find several regularities in stock price behavior consistent with companies releasing good news to the market just before the CEO goes away, and then delaying subsequent

[3] Between 2000 and 2009, the FAA allowed any private aircraft operator to opt out of public tracking databases for an expanded list of reasons including privacy and competitive secrecy, but this policy was reversed in 2009 after the agency was sued by a variety of media outlets seeking complete lists of tail numbers under the Freedom of Information Act. The FAA elected to begin disclosing the identities of operators of aircraft with blocked tail numbers (though not their flight records) in response to such requests in 2009, and a 2010 decision by a federal court rejected a challenge by a business group to the FAA's policy. See Grabell (2010). In August 2011 the FAA greatly reduced its blocking of tail numbers but then reinstated the practice in December 2011, though not retroactively for aircraft that had already been unblocked. See Federal Register vol. 76, no. 242, p. 78328 (December 16, 2011).

news releases until he returns. When the CEO takes a long vacation trip lasting five days or more, company stock volatility declines by approximately 23% for the period he is away. Volatility increases to normal levels in a pattern that begins one day before the CEO returns from his vacation. The results suggest that corporations release news on a schedule determined not only by when the information may be important for investors, but also when the CEO's personal schedule allows him to be present at the time of an announcement. Observing the movements of corporate aircraft to and from the CEO's vacation airport could potentially give investors valuable signals about impending disclosures by companies.

References

Adithipyangkul, Pattarin, Ilan Alon, and Tianyu Zhang, 2011, "Executive perks: Compensation and corporate performance in China," Asia Pacific Journal of Management 28, 401-425.

Ahern, Kenneth, and Denis Sosyura, 2011, "Who writes the news? Corporate press releases during merger negotiations," unpublished manuscript, available at ssrn.com/abstract=1570530.

Andrews, Angela B., Scott C. Linn, and Han Yi, 2009, "Corporate governance and executive perks: Evidence from the new SEC disclosure rules," unpublished manuscript, available at ssrn.com/abstract=1268087.

Bamber, Linda Smith, John Xuefeng Jiang, and Isabel Yanyan Wang, 2010, "What's my style? The influence of top managers and their personal backgrounds on voluntary corporate financial disclosure," Accounting Review 85, 1131–1162.

Bandiera, Oriana, Luigi Guiso, Andrea Prat, and Rafaella Sandun, 2011, "What do CEOs do?" Harvard Business School working paper 11-081.

Bennedsen, Morten, Francisco Pérez-Gonzalez, and Daniel Wolfenzon, 2010, "Do CEOs matter?" Unpublished manuscript, available at gsb.columbia.edu/whoswho/getpub.cfm?pub=3177.

Bennedsen, Morten, Francisco Pérez-Gonzalez, and Daniel Wolfenzon, 2011, "Estimating the value of the boss: Evidence from CEO hospitalization events," unpublished manuscript, available at gsb.columbia.edu/whoswho/getpub.cfm?pub=5556.

Bertrand, Marianne, and Antoinette Schoar, 2003, "Managing with style: The effect of managers on corporate policy," Quarterly Journal of Economics 118, 1169-1208.

Chaput, J. Scott, and Louis H. Ederington, 2005, "Volatility trade design," Journal of Futures Markets 25, 243-279.

Clayton, Matthew C., Jay C. Hartzell, and Joshua Rosenberg, 2005, "The impact of CEO turnover on equity volatility," Journal of Business 78, 1779-1808.

Cronqvist, Henrik, Anil K. Makhija, and Scott E. Yonker, 2012, "Behavioral consistency in corporate finance: CEO personal and corporate leverage," Journal of Financial Economics 103, 20-40.

Damodaran, Aswath, 1989, "The weekend effect in information releases: A study of earnings and dividend announcements," Review of Financial Studies 2, 607-623.

Dye, Ronald A., 2010, "Disclosure 'bunching;" Journal of Accounting Research 48, 489-530.

Dyreng, Scott, Michelle Hanlon, and Edward Maydew, 2010, "The effects of managers on corporate tax avoidance," Accounting Review 85, 1163-1189.

Edgerton, Jesse, forthcoming, "Agency problems at public firms: Evidence for corporate jets in leveraged buyouts," Journal of Finance __, ___-___.

French, Kenneth R., and Richard Roll, 1986, "Stock return variances: The arrival of information and the reaction of traders," Journal of Financial Economics 17, 5-26.

Ge, Weili, Dawn Matsumoto, and Jenny Li Zhang, 2011, "Do CFOs have style? An empirical investigation of individual CFOs on accounting practices," Contemporary Accounting Research 28, 1141-1179.

Grabell, Michael, 2010, "Court upholds release of corporate jets list sought by ProPublica," February 26, available at propublica.org/article/court-upholds-release-of-corporate-jets-list-sought-by-propublica-0226.

Grinstein, Yaniv, David Weinbaum, and Nir Yehuda, 2011, "The economic consequences of perk disclosure," unpublished manuscript, available at ssrn.com/abstract=1108707.

Kiymaz, Halil, and Hakan Berument, 2003, "The day of the week effect on stock market volatility and volume: International evidence," Review of Financial Economics 12, 363-380.

Liu, Crocker, and David Yermack, 2007, "Where are the shareholders' mansions? CEOs' home purchases, stock sales, and subsequent company performance," unpublished manuscript, available at ssrn.com/abstract=1300781.

Malmendier, Ulrike, and Geoffrey Tate, 2005, "CEO overconfidence and corporate investment," Journal of Finance 60, 2661-2699.

Malmendier, Ulrike, and Geoffrey Tate, 2009, "Superstar CEOs," Quarterly Journal of Economics 124, 1593-1638.

Maremont, Mark, and Tom McGinty, 2011, "For the highest flyers, new scrutiny," The Wall Street Journal, May 21, A1.

Marino, Anothony M., and Ján Zábojník, 2008, "Work-related perks, agency problems, and optimal incentive contracts," RAND Journal of Economics 39, 565-585.

McGinty, Tom, and Mark Maremont, 2011, "Nabors draws SEC scrutiny," The Wall Street Journal, November 11.

Ohlson, James A., and Stephen H. Penman, 1985, "Volatility increases subsequent to stock splits: An empirical aberration," Journal of Financial Economics 14, 251-266.

Patell, James M., and Mark A. Wolfson, 1982, "Good news, bad news, and the intraday timing of corporate disclosures," Accounting Review 57, 509-527.

Rajan, Raghuram G., and Julie Wulf, 2006, "Are perks purely managerial excess?" Journal of Financial Economics 79, 1-33.

Tsikas, Ilias, 2006, "Periodic stochastic volatility and fat tails," Journal of Financial Econometrics 4, 90-135.

Tsikas, Ilias, 2010, "The economic gains of trading stocks around holidays," Journal of Financial Research 33, 1-26.

Yang, Holly I., forthcoming, "Capital market consequences of managers' voluntary disclosure styles," Journal of Accounting and Economics __, ___-___.

Yermack, David, 2006, "Flights of fancy: Corporate jets, CEO perquisites, and inferior shareholder returns," Journal of Financial Economics 80, 211-242.

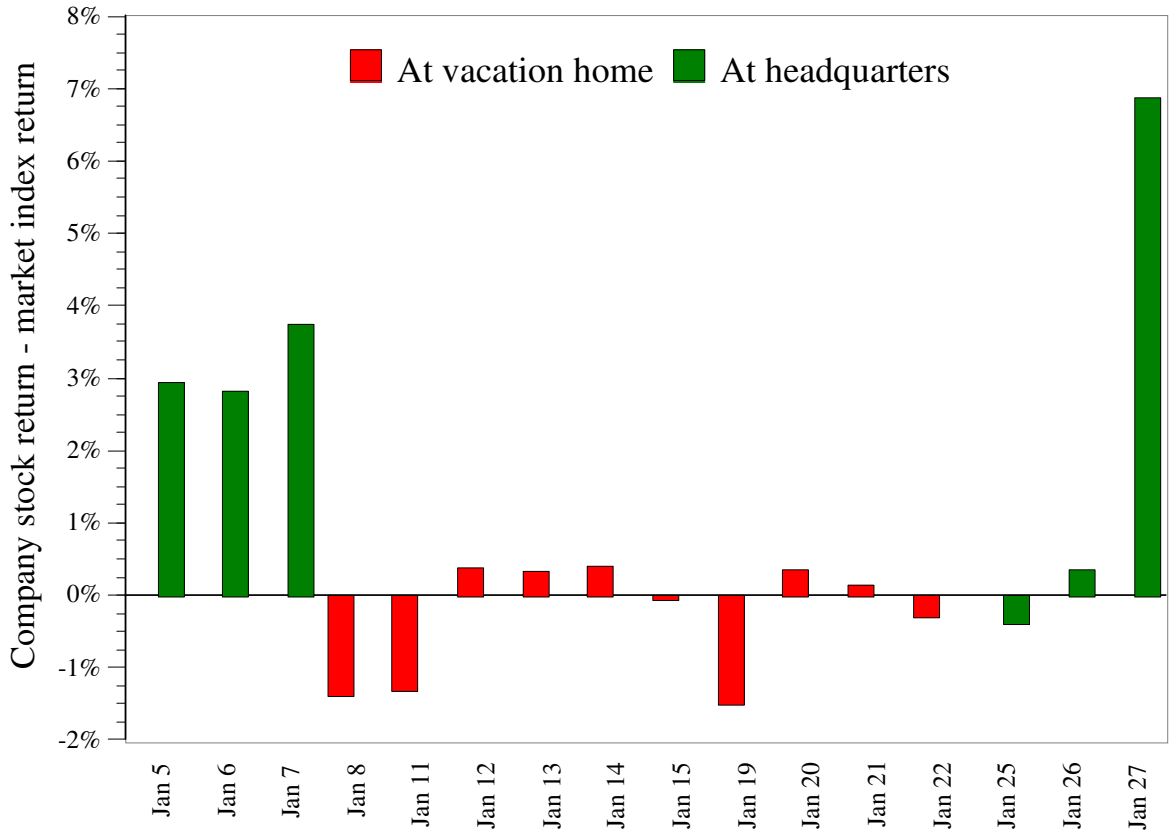

Figure 1
Boeing Co. daily stock returns, January 2010
The figure shows daily returns for the stock of Boeing Co. minus returns for the CRSP value-weighted market index for an interval of January 2010. On January 7 the company announced that its commercial airliner deliveries had increased 28% for the prior year and also issued an earnings forecast for the year ahead. On January 27 the company announced better-than-expected earnings results for the 4th quarter of 2009. Little news of significance was announced between those two dates, a period when the company's CEO appears to have been away from headquarters at his vacation home. Flight records for Boeing's Executive Flight Operations unit show that its Bombardier CL-600 corporate jet flew from its headquarters airport near Chicago to Washington, DC on the night of January 7, then from Washington to Palm Beach, FL, at mid-day January 8, returning to headquarters later than afternoon. On January 24, the same aircraft flew from Chicago back to Palm Beach and back to the headquarters airport. Boeing's Chairman and CEO, W. James McNerney Jr., owns a vacation home in Hobe Sound, FL, 34 miles from the Palm Beach airport, according to real estate records. Flight records are obtained from The Wall Street Journal Jet Tracker database.

Table 1
Sample of CEOs' trips to their vacation homes
The table presents descriptive statistics about 35 CEOs' travel to their vacation homes. The timing of trips is based upon flight records of corporate aircraft obtained from The Wall Street Journal Jet Tracker database for the years 2007-2010. To appear in the sample, an executive must be listed as CEO of an S&P500 firm by ExecuComp during this period, and he must own a vacation property near a destination visited regularly by his company's aircraft. Property ownership is determined from real estate records available on Lexis-Nexis. Data for vacation lengths are based upon weekdays when the U.S. stock market is open for trading and do not include weekends or holidays. A travel day counts as part of a vacation if the aircraft takes off from headquarters earlier than 4:00 p.m., or if the return flight lands at the headquarters airport at 12:00 noon or later.

CEOs in sample	35
Company-day observations (total)	27,851
Company-day observations (at vacation home)	1,988
Fraction of days spent by CEO at vacation home	7.1%
Fraction of days spent by CEO at vacation home, by year	
2007	6.6%
2008	6.8%
2009	6.4%
2010	9.0%
Fraction of days spent by CEO at vacation home, by day of week	
Monday	7.9%
Tuesday	6.3%
Wednesday	6.3%
Thursday	6.6%
Friday	8.6%

Table 1
continued

Fraction of days spent by CEO at vacation home, by month	
January	8.0%
February	7.4%
March	11.1%
April	6.3%
May	4.2%
June	3.3%
July	10.2%
August	10.6%
September	5.2%
October	2.9%
November	7.0%
December	9.6%

Location of CEOs' vacation homes	
Florida (Palm Beach, Naples)	17
Massachusetts (Martha's Vineyard, Nantucket)	7
Colorado (Vail, Snowmass)	4
South Carolina	3
California	2
Alabama, Idaho, New Hampshire, New Jersey, Texas	1 each

Length of trips to vacation home	Fraction of trips	Fraction of total days
1 day	33%	11%
2 days	25%	16%
3 days	14%	13%
4 days	7%	9%
5 days	7%	11%
6 days	3%	6%
7 days	2%	4%
8 days	2%	4%
9 days	2%	5%
10 days	2%	5%
11 or more days	4%	17%

Table 3
Abnormal stock returns

The table presents Fama-French four-factor models of company stock returns estimated by ordinary least squares. The dependent variable equals the daily stock returns for a sample of 35 companies between 2007 and 2010. The four factors are the return on the market portfolio minus the risk-free rate (*MktRF*), the difference in returns for portfolios of growth vs. value stocks (*HML*), the difference in returns for portfolios of small vs. large stocks (*SMB*), and the difference in returns for portfolios of rising minus falling stocks (*UMD*). All returns are compounded continuously. The vacation day indicator equals one for days on which the CEO is out of the office at his vacation home, as determined from a database of corporate aircraft flight records maintained by the Federal Aviation Administration. Long vacations are those of five work days or longer. Standard errors appear in parentheses below each coefficient estimate.

Variable	Estimate	Estimate	Estimate	Estimate	Estimate
Intercept	-0.0001	-0.0001	-0.0001	-0.0001	-0.0002
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
MktRF	1.2177 [a]	1.2179 [a]	1.2179 [a]	1.2181 [a]	1.2183 [a]
	(0.0620)	(0.0620)	(0.0620)	(0.0620)	(0.0620)
HML	-0.2050	-0.2051	-0.2051	-0.2068	-0.2069
	(0.1473)	(0.1473)	(0.1473)	(0.1473)	(0.1473)
SMB	-0.3866 [a]	-0.3868 [a]	-0.3870 [a]	-0.3853 [a]	-0.3857 [a]
	(0.1296)	(0.1296)	(0.1296)	(0.1296)	(0.1296)
UMD	0.1125	0.1124	0.1122	0.1117	0.1114
	(0.0802)	(0.0802)	(0.0802)	(0.0802)	(0.0802)
Vacation day indicator		0.0003			
		(0.0006)			
Short vacation indicator			0.0008		0.0008
			(0.0009)		(0.0009)
Long vacation indicator			-0.0001		-0.00004
			(0.0009)		(0.0009)
Three days prior to long vacation				0.0024 [c]	0.0024 [c]
				(0.0014)	(0.0014)
Three days following long vacation				0.0017	0.0017
				(0.0014)	(0.0014)
Observations	27,851	27,851	27,851	27,851	27,851
R2	0.0183	0.0183	0.0183	0.0184	0.0185

Significant at 1% (a), 5% (b) and 10% (c) levels.

Table 4
Stock volatility for subsamples of trading days
The table shows realized stock volatility for subsamples of trading days for 35 large companies between 2007 and 2010. CEO vacation schedules are inferred from corporate aircraft flight records maintained by the Federal Aviation Administration. Volatilities are calculated as the standard deviations of continuously compounded daily stock returns, annualized by multiplying by the square root of 252, the number of trading days in a typical year. A long vacation is one lasting five or more work days. All of the estimated volatilities are different from the volatility on the CEOs' ordinary work days in the office at very low significance levels according to *F*-tests.

Subsample	Observations	Annualized volatility
CEO days in office	25,863	0.444
CEO days at vacation home	1,988	0.386
CEO days at vacation home (short trips)	926	0.433
CEO days at vacation home (long trips)	1,062	0.340
Last three days before long vacations	369	0.375
First day of long vacations	126	0.360
Last day of long vacations	125	0.400
First three days back after long vacations	365	0.405

Table 5
Stock volatilities for individual companies

The table shows stock volatilities for 27 companies on days that the CEOs are on slong vacations and days that the CEOs are in the office. A long vacation is defined as a trip to the CEO's vacation home for at least five consecutive working days. Office days are all days excluding both long and short trips to the vacation home. Trips are inferred from flight records of corporate aircraft maintained by the Federal Aviation Administration. The sample period includes all trading days between 2007 and 2010 for which the individual manager served in the CEO position. Eight additional firms are in the sample, but their CEOs do not take any long vacations. The right column shows the ratio for each company between the volatilities on office days and long vacation days. The *t*-statistic at the bottom of the table tests the null hypothesis that the mean of this ratio, equal weighted across companies, equals one.

	Office days	Long vacation days	Volatility on office days	Volatility on long vacation days	Ratio of volatilities
Bank of America	748	6	0.926	0.236	0.254
General Dynamics	577	5	0.336	0.118	0.352
ConocoPhillips	992	6	0.392	0.203	0.516
Computer Sciences	115	7	0.244	0.135	0.554
Boeing	954	37	0.366	0.220	0.602
General Electric	966	15	0.431	0.273	0.635
ExxonMobil	995	5	0.322	0.207	0.642
Citigroup	208	15	0.502	0.328	0.654
ConAgra Foods	948	54	0.244	0.162	0.664
Amgen	880	89	0.327	0.225	0.687
Hess	932	16	0.565	0.395	0.699
Abbott Laboratories	990	5	0.232	0.163	0.705
AK Steel	966	10	0.801	0.619	0.773
Comcast	811	98	0.429	0.356	0.831
CVS Caremark	853	76	0.327	0.278	0.850
Nabors Industries	816	105	0.581	0.495	0.852
Duke Energy	963	28	0.247	0.213	0.862
Procter & Gamble	588	20	0.254	0.222	0.876
Anadarko Petroleum	939	29	0.541	0.476	0.880
Entergy	960	32	0.292	0.273	0.933
W.W. Grainger	305	24	0.238	0.223	0.935
Covidien	154	75	0.254	0.239	0.940
Air Products & Chemicals	663	68	0.389	0.370	0.950
Cintas	830	100	0.326	0.320	0.981
AirGas	889	75	0.468	0.475	1.015
American International Group	336	24	0.353	0.426	1.208
Fortune Brands	205	38	0.175	0.235	1.340
Mean			0.391	0.292	0.785
t-statistic					5.44