

A Comparison of CEO Compensation Data Sources

Jeffrey T. Brookman
University of Nevada, Las Vegas

Tomas Jandik
Sam M. Walton College of Business, University of Arkansas

Craig G. Rennie*
Sam M. Walton College of Business, University of Arkansas

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Abstract

We investigate consistencies and discrepancies between three compilations of CEO compensation data, including the two most used in leading empirical finance, accounting, and economics journals: Standard & Poor's *Execucomp*, and *Forbes* Annual Compensation Survey. We also investigate a third data source that is not as widely used: *The Wall Street Journal/William M. Mercer CEO Compensation Survey (WSJ)*. Advantages and disadvantages of each are discussed, and common data items compared. We document systematic, persistent discrepancies among compilations that are related to the determinants of executive compensation (size, growth opportunities, and profitability). Compensation values are particularly different between *Execucomp* and *Forbes*. These discrepancies present the possibility that some of the results of published compensation research is biased. However, we also find option values reported using Black Scholes option pricing model in *Execucomp* are not systematically different from those reported using the binomial option pricing model in *WSJ*. This result supports the current widespread use of *Execucomp* in leading compensation research.

* Corresponding author: Craig G. Rennie, Walton College of Business, WCOB 302, 1 University of Arkansas, Fayetteville, AR 72704, USA, Phone: (479) 575-7496, FAX: (479) 575-8407, Email: crennie@walton.uark.edu.

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CEO Compensation Data Sources Count

1. Introduction

CEO compensation structure is a key component in the corporate governance structures of firms.¹ Company proxy statements are the primary source documents available to empiricists to obtain CEO compensation data, but are difficult to work with. Instead, most researchers rely on secondary sources for summary CEO compensation data compiled from information ultimately obtained from proxy statements or company surveys. However, the reliability of these compilations, and the extent of any bias they may introduce into empirical compensation studies, have not yet been assessed in the literature.

In this paper, we investigate the consistencies and discrepancies between three compilations of CEO compensation data. These sources include the two databases most often used in leading empirical finance, accounting, and economics literature: Standard and Poor's *Execucomp* (1992-2004); and *Forbes* Annual Compensation Survey (1970-2004). A third source not widely used in this literature, *The Wall Street Journal*/William M. Mercer CEO Compensation Survey (*WSJ*, 1992-2004), is also examined. We summarize advantages and disadvantages of each, compare common data items, and look for evidence of systematic bias.

Although the majority of values of key compensation variables (for example, salary and bonus) are similar across the databases, we provide the first evidence of certain systematic differences. Importantly, we document that salary and bonus

¹ See Shleifer and Vishny, 1997, for a comprehensive summary of governance and compensation literature. Other important compensation studies include, for example, Jensen and Murphy, 1990; Kole and Lehn, 1999; Core, Guay, and Larcker, 2003

differences between the two most widely used compensation data sources – *Execucomp* and *Forbes* – are autocorrelated and related to firm size. Differences in total direct compensation between these two compilations are significantly related to firm market-to-book ratios (a proxy for firms’ growth opportunities). Since firm size and growth opportunities have been found to be determinants of executive compensation (e.g. Smith and Watts, 1992), our findings indicate the possibility that some of the results reported in published executive compensation research could be affected by error-in-variables measurement problems.

Our study contains important evidence on reported values of stock options among all three databases. On the one hand, the values of options disclosed in *Execucomp* and the *WSJ* are remarkably similar (84 percent of reported values are within 2 percent of one another) despite the fact each compilation uses a different formula for the valuation of executive stock option grants. *Execucomp* uses a Black Scholes option pricing model (modified for dividends, with a 30 percent reduction for the possibility of early exercise of executive stock options), whereas the *WSJ* uses the standardized binomial option pricing model. In addition, option and total compensation differences between *WSJ* and *Execucomp* are not related to any of the commonly accepted determinants of executive compensation (size, growth opportunities, and profitability). Consequently, even though the *WSJ* utilizes the theoretically best method for valuing executive stock options, option values reported by *Execucomp* are likely not the source of potential bias in existing finance research.

On the other hand, *Forbes* reports the value of options exercised, not granted. Not surprisingly, substantial differences between option grant values reported in each of *Execucomp* and the *WSJ* compared to option exercise values reported in *Forbes* lead to

substantial differences in total compensation. Importantly, we find, differences in the values of CEO total compensation between *Forbes* and the two other databases increase with firm growth opportunities and profitability, suggesting *Forbes*' estimate of option values may bias results of studies that use it.

The remainder of the paper proceeds as follows. Section 2 summarizes the relevant literature. Section 3 discusses each of the three CEO compensation data compilations, the distribution of key compensation variables by compilation and year, and advantages associated with the use of each source of CEO compensation data based on coverage and source. Section 4 highlights areas of overlap between databases, reports relative discrepancies, and analyzes autocorrelation of errors and the relation between errors and the determinants of executive compensation. Section 5 discusses results, concludes, and offers suggestions for future research.

2. Evidence from the prior literature

The prior literature documents bias among compilations of financial, accounting, and industry data other than data associated with CEO compensation. It shows CEO compensation contracts to be complex. It discusses long term trends in CEO pay. Finally, the leading research makes extensive use of *Execucomp* and *Forbes* but not the *WSJ*. In this section, we summarize the literature.

2.1. Biases previously identified in non-CEO compensation data sources

One of the earliest papers to discuss financial database discrepancies is Nelson and Mueller (1961). In their examination of sources of data for changes in business ownership following mergers and acquisitions, the reliability of secondary sources and questionnaires is shown to vary, reporting is inconsistent, and compiled data sometimes cannot be reconciled with primary sources. In another early paper, Rosenberg and Houglet (1974) show that a small number of large errors existed in the *Center for Research in Securities Prices (CRSP)* and *Compustat* databases of that time, and that these errors could change the outcome of common empirical tests. Bennin (1980) updated Rosenberg et al.'s results by comparing *CRSP* with the newer *Compustat Price Earnings Dividend Tape*, pointing out advantages and disadvantages associated with each. Nunn, Hill, and Schneeweis (1986) compared *Moody's Bond Record* with *Merrill Lynch's Municipal and Corporate Bond Computer Service*, documenting that bond risk-return measures were sensitive to data sources used. Kern and Morris (1994) and Yang, Vasarhelyi, and Liu (2003) compare *Compustat* and *Value Line*, and show differences tend to be explained by the coverage of different firms, discrepancies in definitions, or direct measurement error. Kahle and Walkling (1996) compare two- and four-digit SIC codes for *Compustat* and *CRSP* firms, and show that industry matches in *Compustat* are more powerful than those in *CRSP*. Anderson and Lee (1997) compare *Corporate Text*, *Compact Disclosure*, *Value Line*, and *Spectrum* ownership databases, and find that a pecking order based on accuracy exists between them. They use simulations to estimate the economic significance of reporting discrepancies. Elton, Gruber, and Blake (2001) compare *CRSP Survivor Bias Free U.S. Mutual Fund Database* with *Morningstar*, and find that neither database is entirely survivorship bias free. Finally, Abarbanell and

Lehavy (2002) compare *I/B/E/S*, *Zachs*, *First Call*, and *Compustat* earnings forecasts databases. They show that significant differences exist in the distribution of alternate earnings numbers.

2.2 *CEO compensation complexity*

One explanation for the absence of any published rigorous comparison of CEO compensation data sources is the complexity of CEO compensation contracts. Jensen and Murphy (1990) and Kole (1997) observe that different forms of compensation, notably cash salaries, bonuses, restricted stock grants, stock option grants, long-term incentive plans, and the threat of dismissal, are interrelated components of CEO compensation structure. In their seminal paper linking CEO pay to performance, Jensen and Murphy (1990) use *Forbes* Annual Compensation Survey data to show that CEO wealth tends to increase only \$3.25 for every \$1,000 in shareholder value. Mehran (1995) shows that the form as well as level of CEO compensation motivates managers to make decisions that increase shareholder value, and shows firm performance, measured by Tobin's Q or ROA, is positively related to the proportion of managerial compensation paid in equity. Hall and Liebman (1998) show that CEO wealth is affected by incentives in portfolios of accumulated restricted stock and stock option grants, as well as new awards, and that mean CEO wealth increases \$5.29 for every \$1,000 in shareholder value.²

2.3 *Long-term trends in CEO compensation exist*

² One drawback associated with equity portfolio incentive measures used by Jensen and Murphy (1990) and Hall and Liebman (1998) is that they require detailed data on CEO stock option portfolio holdings that may not be publicly available. The procedure developed by Core and Guay (2002) is a low-cost but accurate (99 percent) method of estimating CEO stock option portfolio value, and the sensitivity of this portfolio value to changes in stock price or volatility, using current year proxy statement and annual report data. One caveat is that all three papers assume Black-Scholes is appropriate for the valuation of CEO stock options.

Another factor that could have deterred a comparison of CEO compensation databases in the past is that there are long-term trends in CEO compensation. For example, Hall and Liebman (2000) document a sharp increase over twenty years following 1980 in the proportion of executive compensation paid in the form of stock options, and demonstrate this increase is largely unrelated to tax law changes. Ofek and Yermack (2000) add that the growth in stock-based pay was especially strong in the U.S. during the 1990s. Kole (1997) identifies several cross-sectional patterns in stock option awards, including: exercise prices being set at the closing market price of the firm's stock on the day of issue (93 percent of the time); options being set to expire after 10 years (99 percent of the time)³; and options being non-transferable. She also shows stock options typically vest in four installments over four years, and tandem stock appreciation rights are usually given so managers do not have to purchase and then liquidate stock when exercising their options.

A persistent trend also noted in the prior literature concerns the non-use of relative performance evaluation. For example, the exercise prices of CEO stock options could be adjusted for returns on broad market indexes or peer firms that are theoretically out of the control of the CEO. However, Aggarwal and Samwick (1999) find little evidence of the use of relative performance evaluation, possibly because a positive association between CEO compensation and the performance of rival firms could encourage collusion to the benefit of shareholders. Alternatively, Gibbons and Murphy (1990) suggest relative performance incentives could lead CEOs to make decisions that damage rival firm performance, even if such decisions destroy value at their own firms.

³ One of the implications of the conventions concerning exercise price and time to maturity seemingly not discussed in the literature is that even if an executive does absolutely nothing and the firm's equity merely increases at the rate of inflation, his/her options will probably expire deep in the money.

Abowd and Kaplan (1999) nevertheless note, “Why shareholders allow CEOs to ride bull markets to huge increases in their wealth is an open question.”

2.4 CEO database usage in the prior literature

The usage of secondary compilations of CEO compensation data, as well as primary proxy statement/10-K data, in ten leading empirical finance, accounting, and economics journals, is summarized in Tables 1 and 2. Data sources considered include *Execucomp*, *Forbes*, *The Wall Street Journal*/William M. Mercer CEO Compensation Survey (*WSJ*), and “other” (*Compustat*, an undisclosed major consulting firm, proprietary, Dun and Bradstreet, Moody’s Industrial Manual, Hewitt Associates Compensation Surveys, data from state insurance departments, and Worldscope). Journals surveyed are the *Journal of Finance*, *Journal of Financial Economics*, *Review of Financial Studies*, *Journal of Financial and Quantitative Analysis*, *Journal of Business*, *Journal of Accounting and Economics*, *Journal of Accounting Research*, *American Economic Review*, *Journal of Political Economy*, and *Quarterly Journal of Economics*.

Table 1 shows 27 articles relied on *Execucomp*, whereas 26 were based on *Forbes*.⁴ However, the first studies to use *Execucomp* were only published in 1999. *Forbes* was the clear favorite before this time. None of these studies used *WSJ* data. Primary source proxy statements/10-Ks were used in 21 studies. Pairs of data sources, including *Execucomp* and *Forbes*, *Execucomp* and proxy statements/10-Ks, and *Forbes* plus proxy statements/10-Ks, were used in 2 articles each.⁵ Other sources of data,

⁴ *Forbes* was used in some important research at this time, including a seminal paper by Jensen and Murphy (1990) on the relation between pay and performance.

⁵ Pairs are not included in stand-alone numbers. For example, 31 studies use *Execucomp*, including 2 that employ both *Execucomp* and *Forbes* and two that are based on *Execucomp* and proxy statements/10-Ks.

including *Compustat*, an undisclosed major consulting firm, proprietary data from Brian Hall, *Dun and Bradstreet*, *Moody's Industrial Manual*, Hewitt Associates Compensation Surveys, data from state insurance departments, and *Worldscope*, were used in the remaining 9 articles.

Table 2 shows *Execucomp* is used most in articles published in the *Journal of Finance* and *Journal of Financial Economics* (7 times each). However, *Forbes* is used just as much as *Execucomp* by the *Journal of Financial Economics*. *The Review of Financial Studies* has only one article that uses executive compensation data, while the *Journal of Financial and Quantitative Analysis*, *Journal of Accounting and Economics*, *American Economic Review*, and *Journal of Political Economy*, rely chiefly on *Forbes* (3, 6, 2, and 4 times respectively).

In short, evidence in Tables 1 and 2 suggests a virtual tie exists between *Execucomp* and *Forbes*, although *Execucomp* is the current favorite. It also shows a complete absence of the Wall Street Journal/William M. Mercer survey. Finally, it documents consistent usage of proxy statements/10-Ks throughout the period 1990-2004. This evidence underscores the need for a comparison of *Execucomp* and *Forbes* for accuracy and potential bias. It also raises the question why the *WSJ* has not yet been used in studies published in these leading journals.

3. CEO compensation databases

3.1. Database descriptions

In this sub-section, we outline each of the three CEO compensation data compilations studied in this paper.

3.1.1. S&P's *Execucomp*

The Standard & Poor's *Execucomp* database includes approximately 2,500 active and inactive firms in the S&P 1500 index, plus a handful of additional firms.⁶ Data is compiled from annual company proxy statements filed with the SEC within 120 days of company fiscal year end. ADRs do not file proxy statements with the SEC, so they are not included in *Execucomp*. Compensation data on the top five executives of each company are typically reported each year, although as many as nine are sometimes shown depending on company reporting in proxy statements. Each executive has an identifier (EXECID) that permits career tracking across firms, and an executive/company identifier (CO_PER_R). Like *Compustat*, *Execucomp* defines years in fiscal rather than calendar years.⁷ *Execucomp* identifies companies using identifiers common to *Compustat* (GVKEY), but the first six digits of its CUSIP also correspond to *Compustat*'s six digit CNUM. When executives simultaneously occupy positions in parent and subsidiary firms, their compensation from each entity is summed. *Execucomp* also contains limited

⁶ As of May 5, 2005, coverage included 2,610 firms, 24,787 executives and directors, and 145 variables.

⁷ Fiscal years (FYR) ending between January and May (FYR = 1 to 5) refer to the previous calendar year, whereas fiscal years ending between June and December refer to the current calendar year. For example, fiscal year February 2000 observations correspond to calendar year 1999, whereas fiscal year October 2000 observations refer to the calendar year 2000.

ownership, age, and board membership information, but its chief strength lies in its detailed information about CEO compensation.

Execucomp uses the Black Scholes option pricing model to estimate stock option grant values. Options are assumed to be granted on July 1st of each year. Time to maturity is estimated as the difference between the expiration date and the assumed grant date, with rounding to the nearest whole year. Black Scholes option values are reduced by 30 percent ostensibly because executives rarely wait until exercise dates before exercising their options. The risk-free rate is the yield-to-maturity on a 7-year U.S. Treasury. Underlying stock price volatility is estimated over the 60 months (or as many months as possible if the stock has traded for less than 60 but more than 12 months, or the average volatility for the S&P 1500 if the stock has traded for less than 12 months) preceding the option grant, with adjustments to outliers in the top or bottom 5 percent of volatility. Future dividend yield is estimated by averaging three-year dividend yields, adjusted to the level of the 95th percentile in the case of outliers. Exercise prices are as stated in proxy statements, and market prices of the underlying stock are assumed equal to the strike price per share, except where otherwise stated in company proxy statements.⁸

Execucomp contains detailed information not only on the compensation of CEOs, but also on the compensation of the five other highest paid officers and the directors of covered firms. However, in this paper we focus on the variables most relevant to CEO compensation. Expressed in thousands of dollars, these variables include: salary; bonus; other annual compensation (OTHANN); restricted stock grants (RSTKGRNT); options granted (Black-Scholes value) (BLK_VALU); options granted (valued by the company)

⁸ Mean volatility, low volatility, high volatility, high dividend yield, and the risk-free rates for each year are shown in Appendix I.

(SOPTVAL); long term incentive payouts (LTIP); all other paid compensation (ALLOTHPD); total current compensation (TCC); total compensation including option grants (TDC1); value realized from options exercised (SOPTEXER); and total compensation including options exercised (TDC2). Details on all 145 variables in *Execucomp* are available from Standard and Poor's.

Like other compilations of CEO compensation data, *Execucomp* changes over time. Data for 1992 and 1993 are largely based on S&P 500 firms. Full coverage of S&P 1500 firms only began in 1994. We use *Execucomp* data for the period 1992-2004.

3.1.2. *The Forbes Annual Compensation Survey*

The *Forbes* Annual Compensation Survey surveys approximately 700 U.S. firms each year for the period 1970-2004. Compensation data reported in thousands of dollars includes: salary; bonus; salary plus bonus; benefits; contingent compensation; other compensation; stock gains; and total compensation. *Forbes* also reports data on CEO age, tenure as CEO, tenure with the firm, stock ownership (both as a percentage of outstanding stock and in terms of market value).

Forbes also contains potentially important information about CEOs and CEO compensation that is not available in *Execucomp* or the *WSJ*. This data includes CEO graduate education (1987-1999), background (1970-1991), and efficiency grade (2001-2003).

3.1.3 The Wall Street Journal/William M. Mercer Annual CEO Compensation Survey

The Wall Street Journal/William M. Mercer Annual CEO Compensation Survey surveys approximately 350 firms each year for the period 1992-2004. Data reported include (with values reported in thousands of dollars): salary; bonus; salary plus bonus; percent change in salary plus bonus from prior year; long-term compensation; total direct compensation; and present value of option grants. Long-term compensation includes gains from stock option/stock appreciation rights exercises, restricted stock/restricted stock unit grants, and payouts of long-term incentive plan compensation. Total direct compensation is defined as salary, bonus, and long-term compensation, and does not include other annual compensation or all other compensation.

The most significant changes over time in The Wall Street Journal/William M. Mercer Annual Compensation Survey involve the manner in which option grants are valued. In 1992, the present value of option grants was estimated by assuming a 10 percent stock price increase over the full term of the option and then discounting the gain by 14 percent (based on a 7 percent average yield on the 10-year U.S. Treasury Note in 1992 plus 7 percent equity-risk premium). The survey cautions readers not to add total direct compensation to the present value of option grants because the value of the grants would appear in both when granted and later when exercised (probably at widely different values). Starting in 1993, long-term compensation in the form of option gains is reported separately from other long-term compensation. Also commencing 1993, the present value of option grants was estimated using a binomial option pricing model with stock price at grant date, exercise price of the option, term of option, risk free rate at grant date (based on the yield of U.S. Treasuries (later strips) with maturity dates corresponding to the term of the option), the year-end dividend rate, and expected

volatility based on daily stock prices over 250 days prior to year-end. Starting in 1997, long-term compensation realized option gains were separated from unrealized gains, and total direct compensation separated into realized and potential. Stock ownership value and a proprietary total SHARETM value were reported, along with percent changes in realized and potential total direct compensation and total SHARETM value. Total SHARETM value estimates shareholder accumulation and remuneration by adding salary, bonus, gains from stock option/stock appreciation right exercises, the value of restricted stock/restricted stock units granted, the value of other long-term incentive compensation plan amounts awarded, excludes other annual compensation and all other compensation, and includes the number of common shares beneficially owned at fiscal year end, excluding exercisable stock options/stock appreciation rights, times the common share closing price at fiscal year end. Commencing 1998, 1 year company and 1 and 5 year industry peer returns also began to be reported (starting in 2001, 5 year company returns began to be reported).

3.2. Distribution of CEO compensation data by compilation

In this sub-section, we describe the distribution of key CEO compensation data in each database.

3.2.1. S&P's Execucomp

The distribution of key CEO compensation data reported in *Execucomp* is for all cases where the *Execucomp* variable annual CEO flag (CEOANN) is “CEO” summarized in Table 3. The annual CEO flag variable takes on a value of “CEO” in *Execucomp* whenever the person-year observation is the CEO for all or most of that fiscal year. We

impose the requirement that this variable equal “CEO” throughout the paper to ensure only CEOs are included, not other officers or directors, facilitating comparisons with *Forbes* and *WSJ* surveys already limited to CEOs.

Table 3 shows that there are 19,232 CEO-year observations for the period 1992-2004. Data are available for all variables except for a few missing observations for stock options (174 for Black Scholes option value, 235 for company reported option value, 174 for total compensation including option grants, and 5 for value realized from option exercises). A negative value for option exercises suggests data entry errors exist in the value realized from option exercises variable. Restricted stock grants are comparatively rare, with one outlier of \$650 million. Option grants are more common, but there are large outliers there as well, including one valued between \$600 million (Black Scholes) and \$1.1 billion (company reported value).⁹ There was also one outlier of an option exercise worth \$706 million. Controlling for outliers should be a consideration when using *Execucomp* for CEO compensation data.

3.2.2. The *Forbes* Annual Compensation Survey

The distribution of CEO compensation data covered by *Forbes* is described in Table 4. Even though *Forbes* covers fewer firms than *Execucomp*, its longer coverage gives it more CEO-year observations than *Execucomp*. Total compensation data are available for 26,691 CEO-year observations. Salary and especially bonus are not reported for all years. Outliers seem to be a problem for bonus, salary plus bonus, contingent pay

⁹ The Black Scholes value would have been \$858 million had *Execucomp* not artificially reduced Black Scholes values by 30 percent to account for the fact most CEOs did not wait until maturity to exercise their options. Nevertheless, the substantial difference between company reported and Black Scholes values of options suggests Black Scholes has potential to understate CEO stock option grant values and thus the value of total CEO compensation, including option grants.

(i.e., options exercised), stock gains, total compensation, and the market value of stock owned. The maximum contingent pay of \$706 million in *Forbes* in Table 4 matches the maximum value of options exercised in *Execucomp* in Table 3. However, total compensation in *Forbes* in Table 4 is based on options exercised, not Black-Scholes as in the case of *Execucomp*, so it is likely that total compensation will consistently differ between *Forbes* and *Execucomp* whenever options are granted and/or exercised. The outlier problem apparent in *Execucomp* is also present in *Forbes*.

3.2.3. *The Wall Street Journal/William M. Mercer Annual CEO Compensation Survey*

The distribution of CEO compensation data included in the *WSJ* is summarized in Table 5. With only 4,589 observations, the *WSJ* survey is by far the smallest of the three CEO compensation data compilations considered in this paper. There are substantial differences in the number of observations involving salary and/or bonus and those involving options (realized or unrealized). However, most of the differences in the number of observations are related to changes over time in the variables included in the survey. For example, all variables showing 354 observations were only added in the 2004 version of the *WSJ* survey. Once again, the maximum total direct compensation of \$706 million in the *WSJ* in Table 5 is the same as the maximum contingent pay in *Forbes* in Table 4 and options exercised in *Execucomp* in Table 3. Outliers are also a problem with the *WSJ*.

3.3. *Summary Statistics of CEO compensation data by compilation and year*

In this sub-section, we summarize means and medians of key CEO compensation data by compilation and year.

3.3.1. S&P's *Execucomp*

Summary statistics (means and medians) of key CEO compensation data reported in *Execucomp* by year are shown in Table 6. They show that only 434 CEO-year observations exist for 1992, notwithstanding that *Execucomp* was based on the S&P 500 that year. The number of observations steadily increased through 1993, reflecting the expansion of the database to include the S&P 1500 supercomposite index. However, there are only 764 observations in 2004. In addition, the number of observations is consistently lower for option grants (whether valued by Black Scholes or the company) and total compensation including option grants. However, the number of values realized from options exercised is the same as the total number of observations for every year except 1992.

In short, the smaller number of observations in 1993 and especially 1992 and 2004 should be borne in mind by researchers using *Execucomp* data. Similarly, studies using *Execucomp* data on options other than the value of options exercised could include the caveat that some observations are absent from the *Execucomp* database.

3.3.2. *The Forbes Annual Compensation Survey*

Summary statistics for CEO compensation data reported in *Forbes* by year are shown in Table 7. During the early years (1970-1978), salary is reported. Between 1979 and 1982, benefits and contingent compensation are included. Compensation from stock gains is included starting in 1980, and other compensation starting in 1983. Total compensation (including the value of options exercised, not grants) is reported for the entire life of the *Forbes* survey. Additional CEO data, such as tenure with the firm, tenure as CEO, stock ownership (both as a percentage of shares outstanding and market value) also enter and/or leave the survey at different times. The non-stationary composition of the *Forbes* survey is something researchers should bear in mind when using CEO compensation or other data from *Forbes*.

3.3.3. *The Wall Street Journal/William M. Mercer Annual CEO Compensation Survey*

Summary statistics for CEO compensation data reported in the *WSJ* are listed in Table 8. Salary, bonus, and salary plus bonus, are reported for all years, although there are some missing observations for bonuses in 1992. Realized option gains are shown for the period 1993 through 2003, and stock option gains for 2004. Unrealized option gains are shown for the period 1997-2003. Long term compensation is reported starting in 1993, and total direct compensation realized is reported for the entire life of the survey. Total direct compensation potential and SHARETM are reported for 1997 through 2004 (2003 in the case of SHARETM). Long term compensation is only reported in 1992, and the present value of option grants (based on the standardized binomial option pricing model) is shown for the period 1992-2004. The value of restricted stock grants is also reported in 2004. As in the case of *Forbes*, the non-stationary nature of the variables

included in the *WSJ* survey is something researchers should consider when using *Forbes* survey data.

3.4. Advantages of each CEO compensation data compilation, by coverage

Each of the three data compilations examined in this paper has advantages and disadvantages for researchers. The *Execucomp* database covers the largest number of firms post-1993 (though not for the year 2004). Indeed, it is the only CEO data compilation that covers smaller mid- or small-market capitalized firms. It includes 145 data fields, not just on the CEO of each company, but on the five highest officers of each company. Black-Scholes values are standardized as per sub-section 3.1.1. The *Forbes* survey covers a smaller number of firms than *Execucomp*, but includes the early period 1970 through 1991. Proxy statements from this period are notoriously difficult to obtain, and tend not to be available in electronic form, making *Forbes* invaluable to researchers seeking this early data. In addition, *Forbes* includes unique CEO post-graduate education and background data, and efficiency scores, albeit for small sub-sets of its years of coverage. The *WSJ* is limited to just over 350 large firms over the period 1993 through 2004, but includes options valued using the binomial instead of Black Scholes models. In addition, it includes a potentially useful but proprietary measure of CEO ownership (SHARE^{TM}) for the period 1997 through 2003. Finally, Hall and Liebman (1998) and Abowd and Kaplan (1999) show that most of the link between managerial and shareholder wealth is associated with stock and especially stock option portfolios. This means that *Execucomp* and the *WSJ* have an additional advantage over *Forbes* for researchers using CEO total compensation beginning 1992.

4. Relative discrepancies between CEO compensation databases

In this section, we summarize areas of potential overlap between CEO compensation data compilations, estimate reporting discrepancies, and look for systematic bias. Importantly, we focus on the period 1992 through 2004 because *Execucomp* and the *WSJ* do not cover the period 1970 through 1991.

4.1. Estimated overlap between data fields, 1992-2004

Areas of potential overlap between related data fields in each of the three data compilations considered in this paper are summarized in Table 9. *Execucomp* has the greatest number of potential linkages to the *Forbes* and *WSJ* surveys because it has the most data fields.

4.2. Reporting discrepancies between databases/surveys

In this paper, we match firm-year observations and estimate reporting discrepancies, sometimes called variable relatives in the prior literature (Rosenberg and Houglet, 1974; Benin, 1980). Reporting discrepancies are calculated by taking the difference of the value of each variable for one database, subtracting the value of the same variable for the firm-year matched observation from another database, and then scaling by the value of the observation from the second database. Absolute values are also reported, together with information on the percent of the firm-year matched sample that has reporting discrepancies under 2 percent, between 2 and 5 percent, and greater than 5 percent. Pearson correlation coefficients and the results of differences in means and medians tests for each variable are also estimated.

4.2.1. *Execucomp* vs. *Forbes*

Table 10 reports reporting discrepancies between *Execucomp* and *Forbes*. The correlation coefficient for salary suggests an imperfect correlation between the values of salary between the *Execucomp* database and the *Forbes* survey. However, 85.5 percent of the matched observations have reporting discrepancies under 2 percent. On the other hand, the correlation coefficient for bonus suggests a 66.0 percent correlation, while 85.4 percent of reporting discrepancies are less than 2 percent. Salary plus bonus observations have a 78.9 percent correlation, while 83.3 percent of discrepancies are under 2 percent. The correlation coefficient on all other compensation is much lower at 17.8 percent, but 98.8 percent of reporting discrepancies are below 2 percent. Restricted stock grants and total compensation including option grants match poorly between *Execucomp* and *Forbes*. However, total compensation including options exercised in *Execucomp* match closely with total compensation in *Forbes*, with a correlation coefficient of 51.2 percent and 63.9 percent of reporting discrepancies under 2 percent. Researchers can conclude that there are good matches for salary, bonus, and salary plus bonus, and a poor match for restricted stock grants, for *Execucomp* and *Forbes*.

4.2.2. *Execucomp* vs. *WSJ*

Table 11 reflects reporting discrepancies between *Execucomp* and the *WSJ* survey data. Salary, bonus, and salary plus bonus (constructed by adding salary plus bonus where necessary) all correspond closely between compilations, with correlation coefficients of 80.3 percent or higher, with 88.9 percent or more of reporting differences being under 2 percent. The correlation coefficient on restricted stock is lower, at 71.0 percent, but 86.8 percent of reporting differences are under 2 percent. Importantly, the correlation between the value of options granted (using Black Scholes in *Execucomp* and the binomial model in *WSJ*) is 94.9 percent, with 83.8 percent of reporting differences under 2 percent. The correlation between the reported values of options is also high, at 92.5 percent, although reporting discrepancies tend to be greater. Long term incentive payouts correspond well between *Execucomp* and the *WSJ*. Total compensation including option grants in *Execucomp* corresponds closely with direct compensation and especially realized option gains in the *WSJ*. The value realized from options exercised in *Execucomp* also corresponds closely with option gains in the *WSJ*, as does the value realized from options exercised. Researchers can conclude that there is a close association between *Execucomp* and *WSJ* data. Importantly, the effects of valuing options using Black Scholes and the binomial option pricing model seem not to affect the value of option grants or total compensation. Given the other advantages of *Execucomp*, this result helps explain why leading researchers have demonstrated a preference for *Execucomp* over *WSJ* survey data.

4.2.3. *Forbes vs. WSJ*

Table 12 summarizes reporting discrepancies between *Forbes* and the *WSJ*. The correlation coefficients for salary, bonus, and salary plus bonus, are between 48.2 percent and 90.9 percent, but at least 88.0 percent of the reporting discrepancies are under 2 percent. All other compensation is poorly correlated between compilations, but 78.1 percent of reporting discrepancies are under 2 percent. Total compensation in *Forbes* is highly correlated with total compensation realized in the *WSJ*, but only 50.1 percent of reporting discrepancies are under 2 percent. Total compensation in *Forbes* is less highly correlated with total compensation potential in the *WSJ*, but 88.0 percent of reporting discrepancies are under 2 percent. This evidence once again underscores that *Forbes* total compensation data based on options exercised is substantially different from total compensation based on options granted in the *WSJ*.

4.3 *Autocorrelations of compensation data differences*

While all databases may have errors, it is only the systematic errors that are likely to introduce bias into empirical research (Elton, Gruber, and Blake, 2001). Data entry errors could exist, but merely require correction. If discrepancies between databases are caused primarily by data entry errors, there should be no significant error autocorrelation (i.e., current errors will be unrelated to past ones). However, if database differences persist over consecutive years, error autocorrelation will be positive.

Table 13 summarizes results of our autocorrelation analysis. Panel A examines the autocorrelation of errors between *Execucomp* and *Forbes*. Importantly, we document that autocorrelations of both salary and bonus differences are positive and statistically significant. These findings suggest systematic differences exist between the two data

sources. Discrepancies among salary and bonus values do not vanish but persist over time. We also uncover systematic differences in the values of restricted stocks. Panel B shows autocorrelation of errors for *Execucomp* and the *WSJ*. There are no statistically significant errors for salary, bonus, or salary plus bonus. Importantly, there is no autocorrelation of errors for the value of option grants based on *Execucomp*'s version of the Black Scholes option pricing model and the binomial option pricing model used by the *WSJ*. However, total compensation variables are for the most part autocorrelated. Panel C reports autocorrelation of errors for *Forbes* and the *WSJ*. There is no evidence of autocorrelation of errors in salary, bonus, salary plus bonus, or all other compensation. However, there is evidence of substantial autocorrelation of errors for total compensation, not surprising given *Forbes* includes options exercised whereas the *WSJ* includes option grants in total compensation.

4.4. Determinants of compensation data differences

The autocorrelation of errors for a variety of compensation variables shown in Table 13 raises the possibility of error-in-variables problems for studies that utilize one or more of the three sources of compensation data under consideration. These concerns would be heightened if discrepancies were also related to the determinants of compensation such as firm size, growth opportunities, or profitability (Smith and Watts, 1992; Murphy, 1999).

Table 14 reports results from our analysis of the relation between reporting discrepancies and the determinants of compensation. Contemporary reporting differences are regressed on lagged differences. Positive coefficients on lagged differences would suggest autocorrelation in errors robust to the inclusion of controls. We also include

controls for the log of firm size, the market-to-book ratio, and return on assets both because they are determinants of compensation and relate to information asymmetry, agency costs, and the precision of data reporting. Specifically, we expect data differences to be negatively related to firm size and positively related to market-to-book, as smaller, higher growth opportunity firms are more likely associated with greater agency and information asymmetry costs and decreased precision in data reporting. In addition, since the methods for option valuation differ across compensation databases, we expect the values of option grants and thus total compensation to differ most for high growth opportunity companies. Options likely account for larger proportions of total compensation in such firms. More profitable firms may be associated with smaller discrepancies, as agency and information asymmetry costs are likely lower for such firms. On the other hand, more profitable firms tend to be associated with larger values of option grants. The value of options and thus total compensation could therefore differ more for such firms. The sign of the profitability coefficient is therefore an open empirical issue.

Table 14 reports our empirical results. Panel A shows the regression analysis of the data differences between *Execucomp* and *Forbes*. Results suggest positive error autocorrelation for salary, bonus, and salary plus bonus differences, consistent with the presence of systematic discrepancies in one or both compilations (similar findings were reported in Table 13). Unexpectedly, salary, bonus, and salary plus bonus differences are larger for large firms. On the other hand, as expected, total direct compensation differences are larger for firms with greater growth opportunities. Since *Execucomp* computes option grant values whereas *Forbes* reports the value of options exercised, differences in the values of options and thus total compensation are probably greater for

higher growth opportunity firms that typically use greater option compensation.

Differences in total direct compensation also appear significantly smaller for more profitable firms, suggesting better reporting precision for profitable firms with lower agency and information asymmetry.

Panel B shows the results of regressions of data differences between *Execucomp* and the *WSJ*. Importantly, there is no evidence of autocorrelation of errors or a relation between reporting discrepancies and the determinants of compensation for the value of options as estimated using *Execucomp*'s version of the Black Scholes option pricing model or the *WSJ*'s binomial option pricing model. This result supports the current widespread use of *Execucomp* compensation data even in the face of theoretically better estimates of executive stock options available from the *WSJ*. There is evidence however of autocorrelation of errors involving total direct compensation and stock option exercises between databases.

Panel C shows the results of regressions involving *Forbes* and the *WSJ*. There is no evidence of any kind of bias in salary, bonus, or salary plus bonus. However, we find autocorrelation of errors in total compensation. This is likely due to the fact *Forbes* includes option exercises whereas the *WSJ* includes option grants in total compensation.

5. Discussion and conclusion

This paper compares three compilations of CEO data, including the two cited most in leading empirical finance, accounting, and economics journals: Standard and Poor's *Execucomp* (1992-2004); and *Forbes* Annual Compensation Survey (1970-2004). We also look at a third source not commonly used in this literature, The Wall Street Journal/William M. Mercer CEO Compensation Survey (*WSJ*, 1992-2004). We describe each, summarize advantages and disadvantages based on coverage, report consistencies and discrepancies for matched firm-year observations, and report evidence of systematic bias.

The paper contains three major findings. First, it shows most of the values of overlapping compensation data are relatively similar across all three compilations. However, we identify systematic discrepancies. In particular, there are systematic differences in salary and bonus reporting in *Execucomp* and *Forbes* that relate to firm size. In addition, total compensation reporting differences are related to firm growth opportunities, raising concern about error-in-variables problems when measuring executive compensation using one or more of these databases.

Second, the paper demonstrates that option values reported in *Execucomp* and the *WSJ* are remarkably similar even though *Execucomp* values executive stock option grants using a modified version of the Black Scholes option pricing model and the *WSJ* uses a theoretically more elegant binomial option pricing model. In addition, reporting discrepancies are unrelated to commonly accepted determinants of executive compensation (firm size, growth opportunities, and profitability).

Third, we document that *Forbes* provides noticeably different values for executive stock option valuation and thus total compensation, chiefly because it includes values of options exercised instead of grants in CEO total compensation. Importantly, we find differences in the values of CEO total compensation between *Forbes* and the two other compilations increase with firm growth opportunities and profitability, suggesting *Forbes'* estimate of option values may bias results of studies that use it.

Several avenues offer promise for future research. First, all data analyzed in this paper are nominal, and should be converted into real constant dollars in a subsequent iteration. Estimates of the economic significance of any potential bias from the use of *Execucomp* vs. *Forbes* estimates of total compensation (i.e., total compensation based on option grants instead of options exercised) could be made using standardized CEO compensation regressions with both sets of data (Rosenberg and Houglet, 1974; Anderson and Lee, 1997).

Second, whereas we document significant and systematic compensation data differences across the three considered databases, the relative precision of each of the data sources is still unknown. Direct comparison of the observations with highest discrepancies with the raw proxy data may help determine which database is relatively most precise.

Finally, and perhaps most important, we allude to potential problems with the interpretation of the results of the existing compensation research. Specifically, the two most widely used data sources, *Execucomp* and *Forbes*, display significantly positive autocorrelation of differences of option and total compensation values, and some of these differences are related to firm size, growth opportunities, and profitability. Consequently, it may be useful to re-estimate results of classic compensation studies using both

Execucomp and *Forbes* data to determine the economic significance of these potential biases.

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Table 1: Frequency of CEO compensation data source usage in ten leading journals, by year, 1990-2004

The frequency of CEO compensation data source usage in ten leading finance, accounting, and economics journals, by year during the period 1990-2004, is reported. Data sources considered include *Execucomp*, *Forbes*, and *The Wall Street Journal/William M. Mercer CEO Compensation Survey (WSJ)*, proxy statements/10-K filings, and other. Journals surveyed include the *Journal of Finance (JF)*, *Journal of Financial Economics (JFE)*, *Review of Financial Studies (RFS)*, *Journal of Financial and Quantitative Analysis (JFQA)*, *Journal of Business (JB)*, *Journal of Accounting and Economics (JAE)*, *Journal of Accounting Research (JAR)*, *American Economic Review (AER)*, *Journal of Political Economy (JPE)*, and *Quarterly Journal of Economics (QJE)*.

	<i>Only Execucomp*</i>	<i>Only Forbes*</i>	<i>WSJ</i>	<i>Proxy/10-K</i>	<i>Execucomp+ Forbes</i>	<i>Execucomp+ Proxy/10-K</i>	<i>Forbes + Proxy/10-K</i>	<i>Other**</i>	<i>Total</i>
1990	0	1	0	1	0	0	0	0	2
1991	0	2	0	2	0	0	0	0	4
1992	0	0	0	1	0	0	0	1	2
1993	0	4	0	2	0	0	0	0	6
1994	0	4	0	2	0	0	0	0	6
1995	0	2	0	1	0	0	1	1	5
1996	0	3	0	2	0	0	0	2	7
1997	0	2	0	2	0	0	0	1	5
1998	0	2	0	2	0	0	0	0	4
1999	2	1	0	1	0	1	0	2	7
2000	5	1	0	0	1	0	1	0	8
2001	3	0	0	2	0	1	0	1	7
2002	2	0	0	2	0	0	0	0	4
2003	11	3	0	1	1	0	0	0	16
2004	4	1	0	0	0	0	0	1	6
Total	27	26	0	21	2	2	2	9	89

* Pairs are excluded (for example: *Execucomp* was used in 31 studies, including 2 with *Forbes* and 2 with proxy/10-K reports).

** Includes data from *Compustat*, an undisclosed major consulting firm, proprietary data from Brian Hall, *Dun and Bradstreet*, *Moody's Industrial Manual*, *Hewitt Associates Compensation Surveys*, data from state insurance departments, and *Worldscope*.

Table 2. Frequency of CEO compensation data source usage, by journal, pooled across years 1990-2004

The frequency of CEO compensation data source usage in ten leading finance, accounting, and economics journals, by year during the period 1990-2004, is reported. Data sources considered include *Execucomp*, *Forbes*, and *The Wall Street Journal/William M. Mercer CEO Compensation Survey (WSJ)*, proxy statements/10-K filings, and other. Journals surveyed include the *Journal of Finance (JF)*, *Journal of Financial Economics (JFE)*, *Review of Financial Studies (RFS)*, *Journal of Financial and Quantitative Analysis (JFQA)*, *Journal of Business (JB)*, *Journal of Accounting and Economics (JAE)*, *Journal of Accounting Research (JAR)*, *American Economic Review (AER)*, *Journal of Political Economy (JPE)*, and *Quarterly Journal of Economics (QJE)*.

	<i>Execucomp</i> *	<i>Forbes</i> *	<i>WSJ</i>	<i>Proxy/10-K</i>	<i>Execucomp+</i> <i>Forbes</i>	<i>Execucomp+</i> <i>Proxy/10-K</i>	<i>Forbes +</i> <i>Proxy/10-K</i>	<i>Other</i> **	<i>Total</i>
JF	7	1	0	3	0	0	0	0	11
JFE	7	7	0	9	0	1	0	2	26
RFS	0	0	0	0	0	0	0	1	1
JFQA	2	3	0	0	0	0	0	1	6
JB	2	2	0	0	0	0	2	2	8
JAE	4	6	0	5	1	1	0	2	19
JAR	2	1	0	4	0	0	0	1	8
AER	1	2	0	0	1	0	0	0	4
JPE	2	4	0	0	0	0	0	0	6
QJE	0	0	0	0	0	0	0	0	0
Total	27	26	0	21	2	2	2	8	89

* Pairs are excluded (for example: *Execucomp* was used in 31 studies, including 2 with *Forbes* and 2 with proxy/10-K reports).

** Includes data from *Compustat*, an undisclosed major consulting firm, proprietary data from Brian Hall, *Dun and Bradstreet*, *Moody's Industrial Manual*, *Hewitt Associates Compensation Surveys*, data from state insurance departments, and *Worldscope*.

Table 3. Distribution of CEO compensation data in *Execucomp*

The distribution of CEO compensation data in *Execucomp* is reported (where CEOANN is “CEO”). Sales, total assets, market to book, and return on assets are from *Compustat*.

	N	Mean	Std Dev	Skewness	Kurtosis	Min	25%	Median	75%	Max
Salary	19,232	598	333	2.18	12.67	0	375	541	767	5,294
Bonus	19,232	656	1,532	23.82	1,227.82	0	69	320	735	102,015
Salary + bonus (constructed)	19,232	1,254	1,671	18.79	864.56	0	535	875	1,472	102,449
Other annual compensation	19,232	52	357	47.78	3,882.72	0	0	0	12	32,970
Restricted stock grants	19,232	399	5,043	112.34	14,399.38	-5	0	0	0	650,812
Options granted (Black Scholes)	19,058	2,261	9,377	26.55	1,193.15	0	0	519	1,845	600,347
Options granted (as valued by the company) (SOPTVAL)	18,997	2,585	12,990	50.03	3,601.87	0	0	630	2,168	1,111,597
Long term incentive payouts (LTIP)	19,232	169	930	16.04	401.07	-2,361	0	0	0	36,908
All other paid compensation (ALLOTHPD)	19,232	79	1,081	48.06	3,495.46	0	0	0	0	95,107
Total current compensation (TCC)	19,232	1,254	1,671	18.79	864.56	0	535	875	1,472	102,449
Total compensation including option grants (TDC1)	19,058	4,303	11,525	24.56	1,059.45	0	954	1,929	4,243	655,448
Value realized from options exercised (SOPTEXER)	19,227	1,786	10,692	29.15	1,485.06	-100	0	0	392	706,077
Total compensation including options exercised (TDC2)	19,232	3,823	12,584	25.90	1,154.83	0	703	1,384	3,156	706,120
Sales (\$ Millions)	19,004	4,184	11,380	9.53	134.94	0	420	1,121	3,344	286,103
Total assets (\$ Millions)	19,004	10,267	45,488	13.22	246.77	2	452	1,369	5,034	1,484,101
Market to book	18,926	2.11	2.61	15.87	447.27	0.22	1.14	1.48	2.21	105.09
Return on assets	18,725	0.12	0.15	-17.02	940.22	-9.57	0.08	0.13	0.18	1.14

Table 4. Distribution of CEO compensation data in *Forbes*

The distribution of CEO compensation data in *Forbes* is reported. Salary plus bonus was calculated by adding salary and bonus items from *Forbes* for the years 1993-2000. This sum is reported in *Forbes* after 2000. The published version of the *Forbes* 2005 survey only lists the top 250 companies, but this data is supplemented with additional information on the top 500 from their website. The website does not contain all of the data fields in the published version. (F1 through F7 are codes used in subsequent tables for indicated data fields.)

	N	Mean	Std Dev	Skewness	Kurtosis	Min	25%	Median	75%	Max
Salary (\$ Thousands) (F1)	24,679	533	519	8.47	172.19	0	225	434	708	15,832
Bonus (F2)	6,300	843	2,332	26.44	998.97	0	158	450	923	102,015
Salary plus bonus (F3)	8,054	1,744	2,494	18.12	597.02	0	775	1,241	2,026	102,449
Contingent (F4)	3,223	71	187	7.08	76.44	0	0	9	68	3,183
Other (F5)	15,964	623	5,976	84.37	8,670	0	6	49	331	645,448
Stock gains (F6)	18,386	1,407	10,274	33.44	1,818	0	0	0	149	706,077
Total comp (F7)	26,691	2,288	10,360	33.78	1,848.87	0	277	643	1,629	706,077
Sales (\$ Millions)	12,664	6,955	14,594	7.57	83.14	-6	1,248	2,960	7,061	286,103
Total assets (\$ Millions)	12,664	17,213	57,246	10.81	161.55	0	2,039	4,802	12,150	1,484,101
Market to book	12,520	2.00	3.47	16.84	405.71	0.28	1.07	1.28	1.93	125.01
Return on assets	12,310	0.13	0.12	4.63	268.15	-2.39	0.05	0.12	0.18	4.65

Table 5. Distribution of CEO compensation data in the WSJ Annual Compensation Survey

The distribution of CEO compensation data in the WSJ Annual Compensation Survey is reported. (W1 through W15 are codes used in subsequent tables for indicated data fields.)

	N	Mean	Std Dev	Skewness	Kurtosis	Min	25%	Median	75%	Max
Salary (W1)	4,589	825	341	1.97	10.90	0	628	800	987	4,000
Bonus (W2)	4,589	1,219	2,105	6.35	57.01	0	314	715	1,350	31,300
Salary + bonus (W3)	4,613	2,044	2,220	5.56	45.59	0	987	1,508	2,305	32,000
Restricted stock grants (W4)	354	1,326	2,502	3.12	11.99	0	0	0	1,627	16,851
Present value of option grants (W5)	1,703	2,313	6,979	26.11	868.02	0	485	1,075	2,500	244,532
Long term incentive grants (W6)	354	1,214	2,908	5.58	40.64	0	0	0	1,425	27,459
Long term incentive plans (W7)	354	772	1,807	3.36	13.51	0	0	0	504	13,695
Long term compensation other (W8)	4,262	1,025	3,215	11.86	229	0	0	0	885	87,281
Total direct compensation realized (W9)	4,614	6,055	18,574	20.68	649.96	0	1,354	2,511	5,261	706,077
Total direct compensation potential (W10)	2,850	29,641	100,713	18.63	542.47	0	3,300	8,733	23,615	3,509,045
Stock options exercised (W11)	3,908	2,885	18,583	23.67	765.61	0	0	0	916	706,077
Realized option gains (W12)	354	3,943	9,027	4.28	24.32	0	0	264	3,458	83,622
Unrealized option gains (W13)	2,496	25,018	96,488	20.81	652.06	0	735	4,947	19,460	3,433,812
Total realized long term incentives (W14)	354	6,061	9,842	3.59	17.33	0	661	2,761	7,350	83,622
Total expected long term incentives (W15)	354	5,660	5,479	2.04	5.93	0	2,211	4,058	7,880	35,602
Sales (\$ Millions)	4,306	10,129	14,016	4.16	24.23	0	2,865	5,363	11,619	151,299
Total assets (\$ Millions)	4,306	27,453	79,096	8.40	96.95	1	2,758	6,869	20,468	1,484,101
Market to book	4,258	1.84	1.38	6.15	66.08	0.66	1.15	1.43	2.00	25.470
Return on assets	4,241	0.13	0.09	-4.88	88.03	-1.92	0.08	0.13	0.18	0.47

Table 6. Summary statistics for CEO compensation data by year in *Execucomp*

Means and medians (reported below means) of CEO compensation data are reported by year for *Execucomp* (where CEOANN is “CEO”).

Panel A: Execucomp

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
N	434	1158	1551	1604	1655	1681	1738	1819	1799	1677	1677	1675	764
Salary	623 594	542 500	514 454	531 471	549 500	564 519	581 525	583 529	607 550	646 579	634 603	688 642	769 381
Bonus	513 344	428 246	436 250	489 250	594 300	620 345	604 320	692 330	735 332	664 296	714 361	880 425	1,310 835
Salary + bonus (constructed)	1,136 949	970 738	951 706	1,020 747	1,143 800	1,184 875	1,185 858	1,275 876	1,342 903	1,309 879	1,377 995	1,568 1,056	2,079 1,596
Other annual compensation	41 0	37 0	38 0	33 0	45 0	42 0	42 0	47 0	53 0	76 0	70 0	69 0	85 0
Restricted stock grants	203 0	140 0	126 0	153 0	209 0	259 0	674 0	311 0	422 0	478 0	543 0	716 0	1,030 0
Options granted (Black Scholes)	704 293 N=364	701 197 N=1154	871 245 N=1543	869 246 N=1600	1,473 369 N=1646	1,968 486 N=1671	2,252 623 N=1731	3,194 751 N=1807	4,464 800 N=1789	4,109 1,015 N=1661	2,574 909 N=1661	1,793 678 N=1669	2,396 944 N=762
Options granted (as valued by company) (SOPTVAL)	1,110 449 N=364	995 287 N=1150	985 283 N=1535	1,170 334 N=1595	1,842 464 N=1641	2,358 607 N=1663	2,579 760 N=1724	3,809 845 N=1798	4,379 861 N=1785	4,820 1,113 N=1656	2,793 987 N=1657	2,044 755 N=1667	2,772 1,093 N=759
Long term incentive payouts (LTIP)	144 0	101 0	81 0	118 0	167 0	189 0	163 0	187 0	172 0	156 0	172 0	220 0	402 0
All other paid compensation (ALLOTHPD)	9 0	33 0	28 0	30 0	44 0	120 0	85 0	116 0	149 0	87 0	75 0	86 0	86 0
Total current compensation (TCC)	1,136 949	970 738	951 706	1,020 747	1,143 800	1,184 875	1,185 858	1,275 876	1,342 903	1,309 879	1,377 995	1,568 1,056	2,079 1,596
Total compensation including option grants (TDC1)	2,324 1,729 N=364	2,044 1,258 N=1154	2,150 1,255 N=1543	2,287 1,312 N=1600	3,142 1,589 N=1646	3,856 1,929 N=1671	4,485 1,967 N=1731	5,234 2,192 N=1807	6,708 2,442 N=1789	6,335 2,525 N=1661	4,908 2,608 N=1661	4,540 2,492 N=1669	6,229 4,011 N=762
Value realized from options exercised (SOPTEXER)	1,232 0 N=431	818 0 N=1158	369 0	592 0	916 0	1,682 0	2,381 0	2,179 0	3,888 0	2,257 0	1,431 0	1,812 0	3,518 58
Total compensation including options exercised (TDC2)	2,806 1,481	2,158 1,078	1,645 963	2,009 1,054	2,585 1,204	3,565 1,381	4,612 1,459	4,210 1,420	6,124 1,583	4,482 1,540	3,760 1,622	4,562 1,876	7,351 3,272
Sales (\$ Millions)	6,005 2,972 N=433	3,611 1,224 N=1149	3,009 825 N=1540	3,250 900 N=1584	3,483 994 N=1632	3,733 1,062 N=1667	3,869 1,116 N=1715	4,035 1,037 N=1799	4,542 1,104 N=1776	4,878 1,177 N=1665	4,651 1,147 N=1666	5,035 1,230 N=1620	6,713 1,982 N=758

Table 6 (contd.)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total assets (\$ Millions)	13,102 4,077 N=433	7,800 1,489 N=1149	6,331 986 N=1540	6,767 1,002 N=1584	7,429 1,124 N=1632	8,271 1,208 N=1667	9,078 1,303 N=1715	9,705 1,253 N=1799	10,777 1,360 N=1776	12,418 1,464 N=1665	13,110 1,595 N=1666	14,208 1,762 N=1620	21,630 2,634 N=758
Market to book	1.88 1.41 N=431	1.87 1.47 N=1147	1.74 1.37 N=1538	1.90 1.48 N=1578	1.97 1.53 N=1624	2.23 1.63 N=1659	2.36 1.51 N=1708	3.10 1.48 N=1788	2.26 1.47 N=1764	1.95 1.43 N=1661	1.69 1.31 N=1663	1.97 1.51 N=1609	2.04 1.64 N=756
Return on assets	0.15 0.14 N=414	0.14 0.14 N=1118	0.13 0.12 N=1522	0.14 0.14 N=1568	0.133 0.14 N=1611	0.13 0.14 N=1648	0.13 0.13 N=1693	0.12 0.13 N=1785	0.12 0.12 N=1753	0.11 0.11 N=1642	0.10 0.11 N=1639	0.10 0.11 N=1583	0.13 0.12 N=749

Table 7. Summary statistics for CEO compensation data by year in *Forbes*

Means and medians (reported below means) of CEO compensation and financial data by year in *Forbes* are reported. Salary plus bonus was calculated by adding salary and bonus items from *Forbes* for the years 1993-2000 (and shown in italics). This sum is reported in *Forbes* after 2000. The published version of the *Forbes* 2005 survey only lists the top 250 companies. Data were supplemented from the *Forbes* website but not all data fields are on the web site.

Panel A: 1970-1981

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
N	737	775	850	841	828	822	800	796	802	801	817	797
Salary (\$ Thousands) (F1)	142 126	144 130	166 147	178 161	199 180	213 195	244 220	270 245	305 277	352 324	390 209	435 400
Bonus (F2)												
Salary plus bonus (F3)												
Contingent (F4)										113 19	56 8	61 7
Other (F5)												
Stock gains (F6)											89 0	124 0
Total comp (F7)	153 138	157 144	182 158	197 175	219 193	232 206	270 238	299 264	386 332	531 406	559 432	652 483
Sales (\$ Millions)												
Total assets (\$ Millions)												
Market to book												
Return on assets												

Table 7. (Contd.)

Panel B: 1982-1993

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
N	808	805	785	793	798	786	793	778	788	791	788	792
Salary (\$ Thousands) (F1)	449 389	499 446	556 344	605 521	712 593	762 635	839 681	917 740	947 759	943 775	1,022 806	613 569
Bonus (F2)												518 325
Salary plus bonus (F3)												1,130 883
Contingent (F4)	53 5											
Other (F5)		35 5	76 10	86 12	118 15	90 12	117 15	136 18	317 37	285 37	450 93	510 101
Stock gains (F6)	190 0	129 0	152 0	152 0	183 0	453 0	367 0	375 0	353 0	537 0	1,198 0	1,177 0
Total comp (F7)	730 484	663 509	784 562	842 625	1,014 707	1,305 762	1,323 844	1,427 921	1,617 984	1,764 1,013	2,670 1,207	2,817 1,305
Sales (\$ Millions)			3,567 2,247 (N=43)	3,802 1,720 (N=594)	3,691 1,734 (N=602)	4,018 1,866 (N=594)	4,382 2,066 (N=608)	4,568 1,972 N=617	4,928 2,127 M=635	4,926 2,092 M=653	5,006 2,275 N=667	5,069 2,438 N=695
Total assets (\$ Millions)			1,770 1,226 (N=43)	6,281 2,742 N=594	6,800 2,980 N=602)	7,288 3,086 (N=594)	8,205 3,308 (N=608)	8,807 3,390 N=617	9,293 3,572 N=635	9,708 3,539 N=653	10,317 3,558 N=667	11,221 3,893 N=695
Market to book			1.68 1.50 (N=43)	1.38 1.10 N=586	1.45 1.16 N=596	1.49 1.13 N=589	1.48 1.14 N=603	1.57 1.20 N=608	1.47 1.12 (N=627)	1.75 1.23 N=651	1.72 1.28 N=658	1.75 1.30 N=683
Return on assets			0.15 0.16 (N=43)	0.12 0.12 N=589	0.12 0.12 N=594	0.14 0.14 N=573	0.14 0.13 N=591	0.13 0.13 N=597	0.13 0.13 N=609	0.13 0.12 N=627	0.12 0.12 N=634	0.13 0.09 N=659

Table 7. (Contd.)

Panel C: 1994-2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
N	794	794	788	782	785	780	785	505	498	502	249	
Salary (\$ Thousands) (F1)	635 594	661 609	699 650	716 679	733 700	711 700	546 624					
Bonus (F2)	655 400	726 436	935 490	920 551	910 584	1,026 550	1,065 255					
Salary plus bonus (F3)	1,290 974	1,387 1,011	1,634 1,132	1,635 1,226	1,642 1,287	1,737 1,295	1,610 990	2,193 1,650	2,258 1,834	2,523 2,034	4213 3719	
Contingent (F4)												
Other (F5)	456 116	543 144	863 180	976 209	1,009 229	2,204 136	973 24	1,096 264	1,152 303	1,509 302	3,154 1,581	
Stock gains (F6)	426 0	875 0	1,892 0	2,395 0	3,960 0	3,606 0	3,951 0	6259 0	2,565 0	2,640 0	10,051 3,254	
Total comp (F7)	2,171 1,322	2,805 1,511	4,178 1,883	5,006 2,306	6,611 2,474	7,547 2,244	7,772 2,439	9,561 3,021	6,152 3,318	6,622 3,383	9,941 4,679	
Sales (\$ Millions)	5,439 2,637 N=714	5,943 2,928 N=718	6,469 3,202 N=716	7,156 3,554 N=716	7,485 3,486 N=735	8,091 3,649 N=738	9,400 3,957 N=745	13,612 7,409 N=482	13,138 6,963 N=484	14,212 7,041 N=471	14,572 7,181 N=437	
Total assets (\$ Millions)	11,919 4,152 N=714	12,868 4,393 N=718	14,774 4,814 N=716	17,222 5,145 N=716	18,922 5,528 N=735	20,900 6,088 N=738	24,216 6,479 N=745	38,073 12,205 N=482	40,236 13,034 N=484	44,403 13,434 N=471	49,513 14,345 N=437	
Market to book	1.61 1.25 (N=701)	1.84 1.37 N=703	1.89 1.43 N=706	2.12 1.53 N=706	2.56 1.44 N=727	5.16 1.49 N=729	2.37 1.39 N=742	2.00 1.33 N=477	1.78 1.27 N=482	1.87 1.40 N=468	1.95 1.45 N=435	
Return on assets	0.13 0.13 N=700	0.14 0.13 N=702	0.13 0.13 N=704	0.13 0.13 N=704	0.12 0.12 N=721	0.10 0.11 N=727	0.12 0.12 N=734	0.12 0.11 N=465	0.12 0.11 N=463	0.12 0.11 N=453	0.13 0.11 N=421	

Table 8. Summary statistics for CEO compensation data by year in the WSJ Annual Compensation Survey

Means and medians (medians are reported below means) for CEO compensation data by year in the WSJ Annual Compensation Survey are reported.

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
N	327	353	353	353	353	352	356	356	358	361	358	355	354
Salary (W1)	703 680	713 685	726 700	759 700	786 477	792 773	823 800	832 806	859 847	907 900	913 921	937 946	961 950
Bonus (W2)	603 426	665 450	788 576	905 657	1,023 740	1,167 780	1,163 763	1,363 829	1,596 928	1,173 647	1,390 888	1,714 1,050	2,242 1,379
Salary + bonus (W3)	1,293 1,072	1,378 1,135	1,514 1,292	1,665 1,403	1,810 1,423	1,959 1,557	1,986 1,521	2,201 2,224	2,455 1,773	2,080 1,536	2,303 1,770	2,650 2,065	3,254 2,351
Restricted stock grants (W4)													1,326 0
Present value of option grants (W5)	1,469 769	1,402 760	1,739 875	1,840 1,160	3,949 1,530								3,102 2,208
Long term incentive grants (W6)													1,214 0
Long term incentive plans (W7)													772 0
Long term compensation other (W8)		475 0	522 38	611 172	801 222	978 240	1,119 207	1,332 58	1,756 149	1,494 35.4	1,142 27	2,023 360	18 0
Total direct compensation realized (W9)	3,368 1,502	3,247 1,734	2,511 2,513	2,960 2,000	4,257 2,385	5,845 3,035	8,416 2,587	8,046 2,696	10,003 2,816	8,205 2,845	5,412 2,984	6,981 3,588	9313 5730
Total direct compensation potential (W10)						26,346 11,973	33,262 8,315	40,478 7,239	53,802 9,023	29,423 8,321	16,905 7,236	27,776 13,340	8,914 6,808
Stock options exercised (W11)		1,394 0	477 0	685 0	1,646 0	2,907 17	5,311 0	4,519 0	5,793 0	4,631 0	1,966 0	2,307 0	
Realized option gains (W12)													3,943 264
Unrealized option gains (W13)						20,501 7,684	24,846 4,410	32,433 3,384	43,799 5,331	21,221 4,616	11,493 2,660	20,795 7,591	
Total realized long term incentives (W14)													6,061 2,761

Table 8 (contd.)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total expected long term incentives (W15)													5,660 4,058
Sales (\$ Millions)	7,847 4,229 N=314	7,808 4,290 N=313	7,679 4,555 N=319	8,293 5,044 N=326	8,924 5,257 N=327	9,336 5,326 N=332	9,715 5,520 N=339	10,466 5,962 N=336	12,108 6,891 N=342	11,704 6,089 N=349	11,234 5,756 N=347	12,245 6,132 N=332	13,745 6,756 N=330
Total assets (\$ Millions)	15,231 5,413 N=314	16,753 5,552 N=313	16,289 5,464 N=319	17,791 5,804 N=326	18,886 5,825 N=327	21,674 6,160 N=332	28,532 6,134 N=339	30,181 7,614 N=336	33,849 8,683 N=342	35,637 8,084 N=349	35,743 7,977 N=347	38,419 8,264 N=332	44,959 9,016 N=330
Market to book	1.60 1.30 N=310	1.63 1.39 N=311	1.55 1.35 N=314	1.712 1.45 N=318	1.81 1.51 N=321	2.04 1.62 N=327	2.10 1.49 N=336	2.27 1.36 N=335	2.03 1.43 N=340	1.82 1.40 N=345	1.68 1.31 N=345	1.80 1.45 N=328	1.82 1.56 N=328
Return on assets	0.13 0.13 N=305	0.14 0.14 N=302	0.14 0.14 N=313	0.15 0.15 N=319	0.14 0.15 N=321	0.14 0.15 N=329	0.13 0.13 N=333	0.14 0.13 N=334	0.14 0.14 N=338	0.12 0.12 N=346	0.11 0.12 N=344	0.11 0.11 N=329	0.13 0.12 N=330

Table 9: Potential overlap between CEO compensation data compilations, 1992-2004

The estimated overlap between executive compensation data fields for three data compilations (*Execucomp*, *Forbes*, and the *WSJ*) is reported in this table, together with the years of coverage of each data field in each compilation.

<i>Execucomp</i> (where CEOANN is "CEO")		<i>Forbes</i>		<i>WSJ/Mercer</i>	
Data field	Coverage	Data field	Coverage	Data field	Coverage
Salary (SALARY)	1992-2004	Salary F1	1970-2000	Salary W1	1992-2004
Bonus (BONUS)	1992-2004	Bonus F2	1970-2000	Bonus W2	1992-2004
Salary plus bonus (artificially constructed for entire period)	1992-2004	Salary + bonus (artificially constructed until 2000, reported after 2001) F3	1970-2004	Salary + bonus W3	1992-2004
Other annual (OTHANN)	1992-2004				
Total current compensation (TCC)	1992-2004				
Restricted stock grants	1992-2004	Stock gains F6		Restricted stock grants W4	2004
Options granted (Black Scholes) (BLK_VALU)	1992-2004			Stock option grants (binomial) W5	1992-1996, 2004
Options granted (valued by coy) (SOPTVAL)	1992-2004				
Long term incentive payouts (LTIP)	1992-2004			Long term incentive grants (restricted stock and options) W6	2004
Long term incentive payouts (LTIP)	1992-2004			Long term incentive payouts W7	2004
All other compensation (ALLOTHPD)	1992-2004	Other compensation F5		Long term compensation other W8	1992
Total compensation including option grants (TDC1)	1992-2004	Total compensation F7	1970-2004	Total direct compensation realized W9	1992-2004
Total compensation including option grants (TDC1)	1992-2004	Total compensation F7	1970-2004	Total direct compensation potential W10	1992-2004
Value realized from options exercised (SOPTEXER)	1992-2004			Realized option gains W11	1993-2003

Table 9. (Contd.)

<i>Execucomp</i> (where CEOANN is "CEO")		<i>Forbes</i>		<i>WSJ/Mercer</i>	
Data field	Coverage	Data field	Coverage	Data field	Coverage
Value realized from options exercised (SOPTEXER)	1992-2004			Stock option gains W12	2004
				Unrealized option gains W13	1997-2003
				Total realized long term incentives W13	2004
				Total expected long term incentives W15	2004
Total compensation including options exercised (TDC2)	1992-2004	Total compensation F7	1970-2004	Total direct compensation realized W9	1992-2004

Table 10. Reporting discrepancies between *Execucomp* and *Forbes*

Reporting discrepancies for CEO compensation data matched by firm and year are shown for *Execucomp* and *Forbes*. Reporting discrepancies are the difference between the value of the data item in *Execucomp* and that of *Forbes*, scaled by the value of the item in *Forbes*.

	N (1)	Pearson correlation coefficient (p-value) (2)	Reporting discrepancies		Absolute Value of Reporting Discrepancies		Proportion of Sample with Reporting Discrepancies			Mean t-test (median Wilcoxon test) (p-value)
			Mean (3)	Median (4)	Mean (5)	Median (6)	0-2% (7)	2-5% (8)	>5% (9)	
Salary F1	493	0.6344 0.0001	0.024	0	0.095	0	0.8545	0.0147	0.1296	0.0003 0.0003
Bonus F2	4156	0.6603 0.0001	0.163	0	0.255	0	0.8539	0.0043	0.1417	0.2926 0.0028
Salary plus bonus F3	6175	0.7889 0.0001	0.100	0	0.147	0	0.8329	0.0092	0.1579	0.0001 0.0001
All other compensation (ALLOTHPD) F5	6150	0.1777 0.0001	0.991	-1	2.907	1	0.9881	0	0.0119	0.0001 0.1115
Restricted stock (RSTKGRNT) F6	2793	0.0201 0.2892	-0.726	-1	2.388	1	0.8969	0.0014	0.1017	0.0001 0.0036
Total compensation (TDC1) F7	6786	0.2515 0.0001	1.988	0.328	2.180	0.507	0.3307	0.0162	0.6531	0.0001 0.0001
Total compensation (TDC2) F7	6844	0.5117 0.0001	1.022	0.000	1.137	0.058	0.6394	0.0248	0.3358	0.0002 0.0001

Table 11. Reporting discrepancies between *Execucomp* and the *WSJ* Annual Compensation Survey

Reporting discrepancies for CEO compensation data matched by firm and year are shown for *Execucomp* and the *WSJ* Annual Compensation Survey. Reporting differences are the difference between the value of the data item in *Execucomp* and that of the *WSJ*, scaled by the value of the item in the *WSJ*.

	N (1)	Pearson correlation coefficient (p-value) (2)	Reporting discrepancies		Absolute Value of Reporting Discrepancies		Proportion of Sample with Reporting Discrepancies			Mean t-test (median Wilcoxon test) (p-value)
			Mean (3)	Median (4)	Mean (5)	Median (6)	0-2% (7)	2-5% (8)	>5% (9)	
Salary (SALARY) W1	4021	0.9220 0.0001	0.072	0	0.087	0	0.9269	0.0104	0.0622	0.0001 0.0003
Bonus (BONUS) W2	3514	0.8029 0.0001	0.251	0	0.359	0	0.9038	0.0034	0.0928	0.0069 0.0005
Salary + bonus (constructed) W3	4041	0.8152 0.0001	0.104	0	0.163	0	0.8886	0.0064	0.1049	0.1341 0.0005
Restricted stock grants (RSTKGRNT) W4	144	0.7102 0.0001	0.147	0	0.375	0	0.8681	0	0.1319	0.4409 .
Options granted (Black Scholes) (BLK_VALU) W5	1322	0.9489 0.0001	-0.098	-0.176	0.325	0.205	0.8381	0.0219	0.1399	0.0001 0.0317
Options granted (coy value) (SOPTVAL) W5	1322	0.9248 0.0001	0.394	0.145	0.625	0.390	0.4274	0.0212	0.5514	0.0001 0.0243
Long term incentive payouts (LTIP) W6	130	0.0569 0.5203	-0.243	-0.917	0.999	1	0.7615	0	0.2385	0.0001 .
Long term incentive payouts (LTIP) W7	97	0.8786 0.0001	0.536	0	0.898	0	0.9588	0	0.0412	0.0015 .
All other compensation (ALLOTHPD) W8	1928	0.0430 0.0592	-0.752	-1	1.171	1	0.9798	0.0005	0.0197	0.0001 0.0001

Table 11. (Contd.)

	N (1)	Pearson correlation coefficient (p-value) (2)	Reporting discrepancies		Absolute Value of Reporting Discrepancies		Proportion of Sample with Reporting Discrepancies			Mean t-test (median Wilcoxon test) (p-value)
			Mean (3)	Median (4)	Mean (5)	Median (6)	0-2% (7)	2-5% (8)	>5% (9)	
Total compensation including option grants (TDC1) W10	2632	0.1872 0.0001	0.797	-0.337	1.542	0.555	0.7101	0.0190	0.2709	0.0001 0.0029
Total compensation including option grants (TDC1) W11	1535	0.2736 0.0001	22.490	2.365	22.647	2.365	0.1785	0.0059	0.8156	0.0647 0.0639
Value realized from options exercised (SOPTEXER) W12	167	0.9766 0.0001	0.144	0.000	0.190	0.000	0.9760	0.0000	0.0240	0.1668 0.4762
Value realized from options exercised (SOPTEXER) W13	2038	0.6585 0.0001	0.567	0.033	0.613	0.042	0.3913	0.2092	0.3995	0.0317 0.2566
Total compensation including options exercised (TDC2) W9	4048	0.6255 0.0001	0.567	0.033	0.613	0.042	0.3913	0.2092	0.3995	0.0317 0.2566

Table 12. Reporting discrepancies between *Forbes* and the *WSJ* Annual Compensation Survey

Reporting discrepancies in CEO compensation data between *Forbes* and the *WSJ* Annual Compensation Survey are reported. Reporting discrepancies are the difference between the value of the data item in *Forbes* and that of the *WSJ* Annual Compensation Survey, scaled by the value of the item in *Forbes*.

	N (1)	Pearson correlation coefficient (2)	Reporting discrepancies		Absolute Value of Reporting Discrepancies		Percent of Sample with Reporting Discrepancies			Mean t-test (median Wilcoxon test) (p-value)
			Mean (%) (3)	Median (%) (4)	Mean (%) (5)	Median (%) (6)	0-2% (7)	2-5% (8)	>5% (9)	
Salary F1 W1	2831	0.4821 0.0001	0.128	0	0.208	0	0.8799	0.0039	0.1162	0.0001 0.0101
Bonus F2 W2	2264	0.9091 0.0001	0.202	0	0.384	0	0.9585	0.0009	0.0406	0.0004 0.2899
Salary plus bonus F3 W3	3399	0.8518 0.0001	0.029	0	0.152	0	0.9409	0.0041	0.0550	0.0001 0.0718
All other compensation F5 W5	1364	0.0907 0.0008	0.131	-0.732	1.293	0.860	0.7808	0.0051	0.2141	0.0001 0.0573
Total compensation F7 W9	3847	0.9326 0.0001	0.202	0.020	0.398	0.099	0.5014	0.1227	0.3751	0.0024 0.5805
Total compensation F7 W10	2220	0.4972 0.0001	-0.082	-0.640	1.021	0.677	0.8797	0.0126	0.1077	0.0001 0.7442

Table 13. Pearson correlation coefficients for reporting discrepancies, all three databases

Pearson correlation coefficients showing the correlation between reporting discrepancies and lagged reporting discrepancies are shown, together with p-values and the number of lagged observations available. Reporting discrepancies are the difference between the value of the data item in the first data source less that of the item in the second, all scaled by the value of the item in the second. Column headings always show two data item identifiers (from two data sources). Observations with less than 5 were caused by lack of lags. Refer to tables 4 and 5 for F and W codes.

Panel A: *Execucomp vs. Forbes*

	N	Pearson correlation coefficient	P-value
Salary F1	4023	0.1170	0.0001
Bonus F2	3257	0.0517	0.0032
Salary plus bonus F3	5171	0.0164	0.2388
All other compensation (ALLOTHPD) F5	5195	-0.0006	0.9684
Restricted stock (RSTKGRNT) F6	2063	0.0771	0.0005
Total compensation (TDC1) F7	5734	0.0211	0.1105
Total compensation (TDC2) F7	5791	-0.0022	0.8685

Panel B: *Execucomp vs. WSJ*

	N	Pearson correlation coefficient	P-value
Salary (SALARY) W1	3477	0.0145	0.3942
Bonus (BONUS) W2	2987	0.0007	0.9685
Salary + bonus (constructed) W3	3497	0.0193	0.2537
Restricted stock grants (RSTKGRNT) W4	3	1	0.0034
Options granted (Black Scholes) (BLK_VALU) W5	907	0.0245	0.4608
Options granted (coy value) (SOPTVAL) W5	907	0.1485	0.0001
Long term incentive payouts (LTIP) W6	1	1	0
Long term incentive payouts (LTIP) W7	1	1	0
All other compensation (ALLOTHPD) W8	1514	-0.0012	0.9630
Total compensation including option grants (TDC1) W9	3473	0.12569	0.0001
Total compensation including option grants (TDC1) W10	2136	0.4848	0.0001
Total compensation including option grants (TDC1) W11	1136	0.0591	0.0463
Value realized from options exercised (SOPTEXER) W12	3	-0.4998	0.6667
Value realized from options exercised (SOPTEXER) W13	1579	0.6017	0.0001
Total compensation including options exercised (TDC2) W9	3504	0.4047	0.0001

Panel C: *Forbes vs. WSJ*

	N	Pearson correlation coefficient	P-value
Salary F1 W1	2323	0.0033	0.8752
Bonus F2 W2	1789	0.0004	0.9875
Salary plus bonus F3 W3	2870	0.0040	0.8322
All other compensation F5 W5	968	-0.0016	0.9605
Total compensation F7 W9	3294	0.3412	0.0001
Total compensation F7 W10	1761	0.3346	0.0001

Table 14. OLS regressions of reporting discrepancies on lagged reporting discrepancies and control variables

Reporting discrepancies regressed on lagged reporting discrepancies and controls are reported. Reporting discrepancies are the difference between the value of the data item in the first data source less that of the item in the second, all scaled by the value of the item in the second. Column headings always show two data item identifiers (from two data sources). Refer to tables 4 and 5 for F and W codes. t statistics are shown below coefficients. *, **, *** refer to significance at 10%, 5%, 1% levels.

Panel A: Execucomp vs. Forbes

	Salary F1	Bonus F2	Salary plus bonus F3	All other compensation F4	Restricted stock grants F5	Total direct comp. F6	Total direct comp. F7
Intercept	-0.032 -0.710	-0.126 -1.020	-0.093 -1.100	9.327 1.100	-11.770 -0.370	3.495 1.310	-0.364 -0.150
Lagged discrepancy	0.107*** 6.99	0.065*** 3.05	0.274* 1.92	-0.001 -0.060	0.020 1.440	0.019 1.400	-0.003 -0.190
Log of total assets	0.008* 1.77	0.023* 1.81	0.019** 2.25	-0.604 -0.720	2.212 0.710	-0.080 -0.300	0.120 0.490
Market to book	0.001 0.490	0.009 1.020	0.003 0.520	-0.009 -0.010	0.440 0.200	0.488*** 2.8	0.277* 1.72
Return on assets	0.057 0.880	0.072 0.400	0.089 0.710	-18.305 -1.450	9.666 0.200	-13.43*** -3.42	-1.299 -0.360
F	13.22***	30.48***	2.27*	0.62	0.65	4.27***	0.78
Adj. R-squared	0.0123	0.0031	0.0010	0	0	0.0023	0
N	3926	4156	5035	5058	5058	5575	5632

Panel B: Execucomp vs. WSJ

	Salary W1	Bonus W2	Salary plus bonus W3	Options granted (Black Scholes) W5	Options granted (valued by company) W5	All other compensation W8	Total compensation including option grants (TDC1) W10
Intercept	0.133 1.170	1.053 0.740	0.224 1.450	-0.169 -0.440	0.106 0.240	-1.914 -1.580	1.894 0.630
Lagged discrepancy	0.014 0.780	0.002 0.120	0.021 1.210	0.022 0.680	0.153*** 4.390	-0.002 -0.080	0.483*** 25.17
Log of total assets	-0.001 -0.120	-0.067 -0.490	-0.009 -0.600	0.020 0.550	0.790 0.431	0.127 1.100	-0.097 -0.330
Market to book	-0.005 -0.400	0.260 1.710	0.001 0.060	-0.009 -0.100	-0.060 -0.570	-0.088 -0.580	-0.153 -0.480
Return on assets	-0.257 -1.040	-4.840 -1.570	-0.322 -0.970	-0.409 -0.420	0.554 0.500	1.270 0.480	-1.343 -0.200
F	0.87	0.85	0.720	0.450	5.1***	0.380	159.86***
Adj. R-squared	0	0	0	0	0.018	0	0.234
N	3393	2916	3413	888	888	1473	2083

Table 14 (contd.)

Panel B (contd.)

	Total compensation including option grants (TDC1) W11	Total compensation including options exercised (TDC2) W9	Options granted (valued by the company) W11
Intercept	20.273 0.710	-1.138 -1.420	-40.845 -1.090
Lagged discrepancy	0.059* 1.94	0.407*** 25.86	0.5999*** 29.310
Log of total assets	0.142 0.050	0.122 1.580	3.621 1.010
Market to book	2.285 0.640	0.011 0.120	-3.796 -1.030
Return on assets	-30.453 -0.480	2.670 1.550	141.811 1.790
F	1.080	170.61***	218.63***
Adj. R-squared	0	0.166	0.362
N	1118	3419	3587

Regressions for restricted stock grants (W4), long term incentive plans (W6 and W7), and stock options exercised (W12) were not possible owing to a lack of lagged variables.

Panel C: Forbes vs. WSJ

	Salary F1 W1	Bonus F2 W2	Salary plus bonus F3 W3	Total compensation F7 W9	Total compensation F7 W10
Intercept	0.054 0.420	1.117 0.470	0.195 0.880	-0.123 -0.270	1.430 0.780
Lagged discrepancy	0.001 0.140	0.002 0.080	0.004 0.180	0.410*** 19.970	0.320*** 14.420
Log of total assets	-0.003 -0.200	-0.065 -0.280	-0.012 -0.560	0.026 0.600	-0.107 -0.620
Market to book	-0.001 -0.090	0.272 1.270	-0.001 -0.030	-0.003 -0.060	0.081 0.500
Return on assets	-0.042 -0.170	-5.282 -1.210	-0.332 -0.810	0.272 0.310	-4.480 -1.360
F	0.03	0.52	0.26	100.33***	52.94***
Adj. R-squared	0.000	0	0	0.116	0.111
N	2122	1652	2671	3041	1668

Appendix I: Execucomp Standardized Assumptions for Modified Black-Scholes Option Pricing Model

Year	Mean volatility	Low volatility	High volatility	High yield	Risk free rate
1992	0.313	0.154	0.552	7.586	6.43
1993	0.312	0.150	0.547	6.819	5.53
1994	0.357	0.168	0.627	5.721	7.84
1995	0.331	0.157	0.599	5.851	5.49
1996	0.319	0.155	0.590	5.826	6.34
1997	0.319	0.163	0.590	5.510	5.77
1998	0.358	0.179	0.645	5.093	4.73
1999	0.395	0.198	0.706	4.582	6.55
2000	0.458	0.236	0.850	4.741	5.16
2001	0.486	0.245	0.913	5.048	4.84
2002	0.497	0.250	0.916	5.006	3.36
2003	0.471	0.229	0.881	4.796	3.77
2004	0.438	0.207	0.850	4.879	3.94