

NBER WORKING PAPER SERIES

LARGE BLOCKS OF STOCK:
PREVALENCE, SIZE, AND MEASUREMENT

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Working Paper 10671
<http://www.nber.org/papers/w10671>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 2004

We thank Sith Chaisurote, Ashton Hawk, Allison Lowenstein, Jason O'Connor, Colleen Pontious, and Rebecca Yang for excellent research assistance. Gompers and Metrick acknowledge support from NSF grant #SES-0136791. Gompers acknowledges support from the Division of Research, Harvard Business School. Ishii acknowledges support from an NSF Graduate Research Fellowship. The data set built in this paper can be downloaded from <http://finance.wharton.upenn.edu/~metrick/data.htm>. The views expressed herein are those of the author(s) and not necessarily those of the National Bureau of Economic Research.

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JEL No. G3

ABSTRACT

Large blocks of stock play an important role in many studies of corporate governance and finance. Despite this important role, there is no standardized data set for these blocks, and the best available data source, Compact Disclosure, has many mistakes and biases. In this paper, we document these mistakes and show how to fix them. The mistakes and bias tend to increase with the level of reported blockholdings: in firms where Compact Disclosure reports that aggregate blockholdings are greater than 50 percent, these aggregate holdings are incorrect more than half the time and average holdings for these incorrect firms are overstated by almost 30 percentage points. We also demonstrate that our fixes are economically and statistically significant in an analysis of the relationship between firm value and outside blockholders.

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I. Introduction

Large-block shareholders play an important role in corporate governance. For this reason, the presence of such “blockholders” and the size of their holdings is a common explanatory variable in financial research. In just the last few years, a representative sample of such studies includes analyses of the role of blockholders in executive turnover, executive compensation, firm diversification, discretionary expenses, market liquidity, and corporate performance.¹ Furthermore, blockholder data is a crucial input in the analysis of the relationship between ownership structure and firm value, where seminal works by Demsetz and Lehn (1985) and Morck et al. (1988) gave rise to a vast and growing literature.

Despite the common use of large shareholder data, there does not exist a clean off-the-shelf database to facilitate research. Many of the papers cited above required their authors to gather their own data. This time-consuming task is necessary because of several weaknesses in the available databases. Of course, decentralized data gathering causes duplication of effort and lack of standardization across projects. Also, because of the large time commitment necessary to clean the data for each firm, most researchers have gathered data for a relatively small number of firms. This paper aims to fill this data gap by documenting the problems with the currently available data, proposing a consistent set of solutions to these problems, and making a “clean” database freely available to all researchers.² Furthermore, we demonstrate the superiority of clean (vs. raw) data with a representative study on the relationship between outside blockholders and firm value.

¹ For examples of papers on these listed topics, see Denis et. al (1997), Ryan and Wiggins (2001), Anderson et. al (2000), Ang et. al (2000), Singh and Davidson (2003), Heflin and Shaw (2000), Cremers and Nair (2004), and Shivdasani (1993).

² The database can be downloaded from <http://finance.wharton.upenn.edu/~metrick/data.htm>.

The Securities Exchange Act of 1934 (SEA) lays out the ownership disclosure requirements for public corporations in Regulation 14A and Schedule 14A. Virtually everything we know about blockholders in the United States comes from these disclosure requirements, which are described in detail in Appendix A of this paper. The two main types of data produced by the SEA are for holdings (once per year, reported in the annual proxy statement), and for transactions by corporate insiders and beneficial owners (updated through Forms 3, 4 and 5). While the trading data would appear to provide the most current and comprehensive information, past research has demonstrated that this data is difficult to work with and cannot be relied upon to infer the holdings of individual blockholders (Anderson and Lee (1997a and 1997b), Jeng et al. (2003)). Thus, we focus in this paper on the annual proxy data, which is more reliable and more commonly used by researchers.

Proxy data is available from many sources, including direct electronic access using the SEC’s “Edgar” tool for all corporate filings since the mid-1990s. For large-scale data downloads, however, it is necessary to use a commercial product. The most widely used product is the *Compact Disclosure* database of Standard & Poor’s. Anderson and Lee (1997a and 1997b) focus their analysis on the holdings of corporate officers and directors, and show that *Compact Disclosure* accurately reproduces the information in proxy statements for all firms except those with multiple classes of stock. While *Compact Disclosure* also reproduces data on blockholders from the tables in the proxy statement, there are additional problems with these data. We discuss these problems and their solutions in Section II, and summarize the changes for a large sample of firms from 1996 to 2001.

In Section III, we perform a representative study using both raw *Compact Disclosure* data and a “clean” data set where these problems have been fixed. We find that the raw

data is much noisier: in annual regressions of Tobin's Q on outside blockholder ownership and other control variables, the clean data set is far more likely to yield statistically significant point estimates for the ownership variables. Section IV summarizes our conclusions. Two appendices supplement the text. Appendix A provides details on the 1934 SEA and the disclosure requirements it created, and Appendix B provides details on the construction of our sample.

II. Data

A. Sample Firms

Our initial sample of firms consists of firms that are covered by the Investor Responsibility Research Center (IRRC) for both their publication *Corporate Takeover Defenses* (Rosenbaum 1995, 1998, 2000) and their director's database which provides details on the board of directors for about 1,500 of the largest U.S. companies. The IRRC's universe is drawn from the Standard & Poor's (S&P) 500 as well as the annual lists of the largest corporations in the publications of *Fortune*, *Forbes*, and *Businessweek*. We use the IRRC sample as a starting point because a wide range of governance data is available for this group of companies and our goal is to make this set of data as comprehensive as possible for this group.³ A special subset of the IRRC companies – less than 10 percent in all years – have multiple classes of common stock. For these companies, Anderson and Lee (1997a) showed there are many problems with the *Compact Disclosure* data, and these problems are very difficult to fix. In this paper, we eliminate all multiple-class companies from the database and

³ The IRRC data has been used as a starting point by Gompers et al. (2003), Cremers and Nair (2004), and Gillan et al. (2003).

start with the approximately 1300 firms per year (7,873 firm-years) for the single-classed companies in the IRRC sample from 1996 to 2001.⁴

The initial ownership data comes from the *Compact Disclosure* CD-ROMs. Based on the results of Anderson and Lee (1997a, 1997b) we build our sample from the information on large shareholders that *Compact Disclosure* derives directly from the proxies and ignore the insider-trading data that is also available through *Compact Disclosure*. Appendix B provides details on the construction of the initial database.

We next check the initial database by comparing the *Compact Disclosure* data to the original proxy statements, which we obtain from *Livedgar*,⁵ making changes to the ownership percentages of large shareholders where appropriate. All firms in the sample were checked – even those with no reported blockholders in *Compact Disclosure*. We employ the following general rules when deciding on share ownership. The SEC defines beneficial ownership as either voting or investment power, and sometimes companies report both measures in their proxies. We use voting power as opposed to investment power for our database when a distinction is made between the two. Also, even if individuals disclaim beneficial ownership of some portion of their holdings in the proxy, we treat these holdings as if the individual had the voting power. Under the terms of SEC Rule 13d-3, shares of common stock that may be acquired within 60 days are deemed outstanding for the purposes of computing the percentage of common stock owned by a shareholder. We follow this SEC rule and include these options. In the rare cases of a company having a temporary ownership structure resulting from a recent merger or acquisition, we remove these companies from our

⁴ The dual-class companies are analyzed in a companion paper, Gompers et al. (2004), where we attempt to build a comprehensive sample of all dual-class companies with any share-class trading on any major exchange in the United States.

⁵ *Livedgar* is an online data service, provided by Global Securities Information, Inc., that enables users to obtain source documents as filed with the SEC.

sample for that year. For 229 (2.9%) sample firms, proxy information could not be obtained, and these firm-years were removed from our sample. Our final sample consists thus of 7,649 firm-years and covers 1,913 unique firms. Table 1 shows summary statistics of our sample firms. The table is based on cross-sectional averages of time-series means.

Many researchers are interested in knowing whether a specific blockholder is an “insider” or an “outsider” to the firm. The role of large shareholders in corporate governance is often treated differently depending on the classification of the shareholder. Since our work required the examination of all blockholders, the marginal cost of coding these classifications was relatively low, so we did so. The results are summarized in Table 2. The possible classifications are (1) officer, (2) director, (3) affiliated entity, (4) ESOP, and (5) outside blockholder. Category (1) includes all officers, even if they are also directors. Category (2) only includes non-officer directors. Category (3) includes any individual, trust, or company whose voting outcome is partially influenced, but not completely controlled, by an officer or director of the company. If the shares are completely controlled by the officer or director, then these shares would be counted under category (1) or (2), respectively. Category (4) is the aggregate number shares held by Employee Share Ownership Plans, but does not include employee shares held through non-ESOP retirement plans (such as non-ESOP 401(k) plans). Category (5) includes all blockholders not elsewhere classified. This final category makes up about two-thirds of the aggregate amount of blockholding, and will be examined in the analysis of Section III.

B. Problems with the *Compact Disclosure* Data

Two main biases are introduced if researchers were to work directly with the benchmark *Compact Disclosure* database: **overlaps** and **preferred shares**. The SEC requires that all beneficial owners of more than 5% of a company's common stock be listed in the proxy, and consequently shares are often double or triple counted under different people or entities.⁶ While the SEC requires firms to detail the ownership structure of jointly held block in the footnotes, *Compact Disclosure* ignores all of the footnotes detailing joint or cross ownership of shares and lists every blockholder and ownership percentage exactly as it appears in the summary table of the proxy section "Security Ownership of Management and Certain Beneficial Owners." This leads to the overlap of reported ownership, which might be either a full overlap or a partial overlap. Examples of these two cases are documented below in Subsection 1. Second, *Compact Disclosure* sometimes misrepresents preferred shares as common equity ownership. This problem is illustrated below in Subsection 2.

1. Overlaps

Full overlaps can arise in two types of situations. In the first scenario, two or more blockholders are listed in the ownership table with the same shareholdings and the joint ownership of these shares is disclosed only by the footnotes. In the second scenario, the proxy separates the beneficial ownership of directors and officers from that of large shareholders and *Compact Disclosure* reproduces entries from both tables without cross-checking identities. Figures 1 and 2 display an example of the latter case. Figure 1 shows the *Compact Disclosure* data for Coca Cola Co. from the October 1999 CD, and Figure 2 shows an excerpt of the proxy statement from March 4th, 1999 on which the data is based. While

⁶ See Appendix A for details of these disclosure requirements.

Compact Disclosure's blockholder data is accurate in a literal sense with respect to the two tables in the proxy, the vital information of the proxy footnote is ignored. Figure 1 lists Berkshire Hathaway and Warren Buffett individually as 8.10% owners of the common stock. Referring to the footnote 4 of Figure 1 (the ownership table from the proxy statement), we find that all of the shares listed under Warren Buffett are owned indirectly through Berkshire Hathaway. Tallying the beneficial ownership percentages without referencing the table footnotes in the proxy would suggest that 22.3% of Coca Cola's common stock is held by blockholders when actually 14.2% is the correct figure.

Overlaps are not always easy to recognize. In the second and more common scenario, multiple blockholders have joint-ownership of stock but also own shares over which they have sole voting or investment power. This type of overlap does not result in identical ownership figures for multiple shareholders. For example, there is no obvious overlap in the *Compact Disclosure* listing for Outback Steakhouse, Inc. (Figure 3). However, footnotes 1, 2 and 4 to the proxy beneficial ownership table (Figure 4) reveal that 8,242,125 shares (16.85%) owned by Multi-Venture Partners, Ltd. are also listed under Chris T. Sullivan, Robert D. Basham, and J. Timothy Gannon. This means that beneficial owners hold 26.98% of the common stock, rather than 77.53%, which is the straightforward sum of *Compact Disclosure*'s ownership statistics. Note that the Spectrum data does not report the 5% blockholders correctly. At the bottom of Figure 3, where the Spectrum data is listed after the delimiter '***^', it is stated that there are five 5% owners who hold an aggregate of 62.06% of common stock.

Both of the above examples are relatively easy to spot and correct. However, many companies have more complex overlaps which translate into more detailed footnotes and

longer amounts of time that a researcher must spend examining them. These types of overlaps include those among companies, subsidiaries, individuals, and trusts. When the information in the footnotes is insufficient to determine the ultimate control of these shares, we follow the rule of assigning these shares to the partial owner who is closest to control of the company: officers first, then directors, and then outsiders.

2) Preferred Stock

There are two ways in which preferred shares can erroneously enter into the beneficial ownership figures. A company may report ownership of common stock and preferred stock separately but side by side in the same proxy table. In this case, *Compact Disclosure* will pick up all of the percentages in the table without distinguishing between the two categories of stock, giving us two different ownership figures for shareholders holding both preferred and common stock. Figure 5 shows one example from the original *Compact Disclosure* database, and Figure 6 shows the corresponding proxy statement. Some companies structure their proxy statements by listing common and preferred ownership side by side, but also giving an aggregated ownership figure. In these cases, *Compact Disclosure* tends to erroneously pick up just the aggregate ownership figure, without doing any adjustment for the relative voting power between the common and preferred. In our corrected data, we include only the common-stock component of voting.

C. The Corrected Data

The first four rows of Table 3 show the frequency of the corrections we made by groups of overall shares held by blockholders. Using a non-parametric Wilcoxon difference

test, we show that the corrected and raw percentages of rows three and four are statistically different for all 6 groups of blockholders at the one percent level. The remainder of Table 3 shows the frequency of each of the problems. It is evident from Table 3 that the overlap problem becomes more pronounced the higher is the overall share of common stock held by blockholders. For companies where the reported ownership in *Compact Disclosure* is between five and ten percent, the frequency of errors is 0.4 percent. This error rate rises to 4.5 percent for the 10-15 percent ownership range, 8.5 percent for the 15-25 percent range, 13.5 percent for the 25-50 percent range, and 53.1 percent for the >50% range. The category with no reported blockholders in *Compact Disclosure* is a special case: there, the 31.7 percent of errors is caused by either *Compact Disclosure* erroneously reporting no blockholder or by the company choosing to omit a blockholder table from the proxy, and instead putting blockholder information into the text.

Errors tend to increase with aggregate blockholdings in *Compact Disclosure* for the simple reason that the errors themselves tend to increase the aggregates: e.g., an overlap for a jointly held block of 25 percent will lead to a *Compact Disclosure* aggregate of 50 percent. While the errors are rare for low levels of aggregate holdings, they are common at higher levels and are economically significant. In the most extreme category (>50% in *Compact Disclosure*), the average holdings in the raw data for firms with errors fall from over 100 percent (clearly impossible) to under 50 percent.

III. A Representative Analysis: Outside Blockholders and Firm Value

In this section, we analyze the relationship between firm value and outside blockholdings using both raw and cleaned data. Specifically, for each year t , we estimate

$$Q_{it} = a + b_1OWN_{it} + b_2OWN_{it}^2 + cX_{it} + e_{it}, \quad (1)$$

where Q is a measure of industry-adjusted Tobin's Q , OWN and OWN^2 are the fraction and fraction squared held by outside blockholders, X is a vector of control variables, and e is an iid error term, all measured for firm i at time t . We follow Kaplan and Zingales (1997) and measure Q as the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes. The X vector includes a Delaware incorporation dummy (Daines, 2001), an S&P 500 inclusion dummy (Morck and Yang, 2001), the log of sales for the previous fiscal year, and the log of firm age (months since first public listing).

We make no claims for any causal relationship here. Any regression of firm value on ownership will be fraught with endogeneity concerns, a point first made by Demsetz and Lehn (1985) and followed up by many other authors.⁷ Rather, we intend only to test whether all this cleaning effort yields any meaningful differences in coefficient estimates or statistical significance. To do so, we start with a simple and obvious regression.

Table 4 summarizes the results of regression (1) estimated separately for each year from 1996 to 2001, with each regression estimated using both raw and cleaned data. The results suggest that the raw data is much noisier, as the coefficients on the OWN variables are

⁷ For examples, see Loderer and Martin (1997), Himmelberg et al. (1999), Palia (2001), and Coles et al. (2003).

almost always closer to zero and lower in statistical significance than are the corresponding coefficients using cleaned data. Overall, the cleaned data demonstrate a far more robust relationship between outside block ownership and firm value. While the economic interpretation of this result is clouded by endogeneity concerns, the research importance of using the cleaned data is clear.

IV. Conclusion

Researchers rely on ownership data for many studies. The lack of a standardized source of data on large blockholders is an impediment to this work. In this paper, we document the weaknesses with the commonly used data, show how to fix them, and demonstrate that these fixes are both quantitatively large and also important for the analysis of a typical question.

Appendix A – Legal Rules

The Securities Exchange Act of 1934, rules 13d-1 to 13d-7 (§240.13d) and rules 16a-1 to 16e-1 (§240.16a-e), contain the legal definitions and filing requirements for what the corporate finance literature has termed “blockholders”. While 13D defines beneficial ownership and describes the disclosure requirements of these shareholders, rules 16a-e detail the reporting requirements on transactions made by corporate insiders. The company in turn is required to disclose blockholder information to shareholders via proxies under Regulation and Schedule 14a (§240.14a), commonly called the “proxy” statement.

Rule 13d-1(a) sets the threshold for beneficial ownership at 5% or more of a class of stock. According to Rule 13d-3(a) a beneficial owner “includes any person who, directly or

indirectly, through any contract, understanding, relationship, or otherwise, has or shares” voting or investment power. This rule has been interpreted to include shares that may be obtained through the exercising of options, warrants, or rights in the next 60 days a part of the beneficial ownership calculation. Any individual or group that has acquired a beneficial stake in a class of equity is required to file the form SC 13D [see rule 13d-1(a)]. According to Rule 13d-3(a), the form SC 13D must be filed within 10 days after the acquisition of the equity position, and any material change in the position must be promptly filed in an amended SC 13D [see 13d-1(a)]⁸. This form contains information about the person’s relationship with the company and the nature of the holding. A select category of “persons” such as banks, brokers and dealers, and insurance companies can file an abbreviated form, the SC 13G. The SC 13G can only be used if the equity securities were acquired in the ordinary course of business, and without the purpose or effect of changing or influencing the control of the issuer [see 13d-1(b)].

Rule 13d-3 details how to determine beneficial ownership. For the purposes of sections 13(d) and 13(g) of the Act, a beneficial owner of a security includes any person who, directly or indirectly has or shares either voting or investment power over the security. Rule 13d-3 also specifies that creating trusts or pooling arrangements are not valid constructs to avoid filing a form 13D. In fact, rule 13d-3(c) specifies, “all securities of the same class beneficially owned by a person, regardless of the form which such beneficial ownership takes, shall be aggregated in calculating the number of shares beneficially owned by such person”. Rule 13d-7 regulates the dissemination of form 13D. For our purposes, it is important that the issuer of the security must be notified of the existence of a large shareholder at its principal executive office, by registered or certified mail.

⁸ According to rule 13d-2(a), The SEC deems a 1% change in the ownership position as material.

The second set of laws of the Securities Exchange Act of 1934 regulating filing requirements for blockholders is detailed in rules 16a-1 to 16e-1 (“Reports of Directors, Officers, and Principal Shareholders”). Pursuant to this section, a person (“principal shareholder”) deemed a beneficial owner of more than 10% of any class of equity securities registered under section 12 of the Act (“Registration Requirements for Securities”), as well as any director or officer of the company needs to file forms 3, 4, and 5. Initial statements of beneficial ownership of equity securities required by section 16(a) of the Act are filed on Form 3. Statements of changes in beneficial ownership required by that section are filed on Form 4, and annual statements are filed on Form 5. While the 13D/G forms are laid out to disclose the size and nature of the holdings of a large blockholder (who owns more than five percent, what their purpose is, whether they intend to buy more, their voting power, etc.), the 3,4,5 forms are structured to disclose any transactions made by a company insider. Without discussing anything about the intent of the shareholder, the 3,4,5 forms list what was bought or sold and when, making them more transaction oriented than disclosure oriented.

The laws regulating a company’s disclosure requirements of large blockholder information to shareholders are detailed in Regulation 14A (“Solicitation of Proxies”) and Schedule 14A of the Securities Exchange Act of 1934 (§240.14a). Pursuant to Schedule 14A(6-d) with reference to Item 403 of Regulation S-K (§229.403) entitled “Security Ownership of Certain Beneficial Owners and Management,” a company is required to disclose two types of tables in proxies: one listing shareholders who own more than 5% of any class of the company’s equity securities, and another listing any ownership of equity securities by all directors and officers of the company. The tables can be combined at the company’s option and should list the number of shares beneficially owned and the

percentage of the class owned. Item 403 does specify a tabular format to be used, but it does not specify the location where this information should appear in the proxy. Item 403 also explains that a company may rely on the information disclosed in the SC 13D/G forms by beneficial owners when preparing this information for proxies.

Item 403 refers to Rule 13d-3 for the determination of beneficial ownership, and it details specific guidelines for disclosing the nature of the beneficial ownership. Information in sub-columns or footnotes must be included and reflect the number of shares of which a beneficial owner has sole or shared voting power as well as sole or shared investment power. Similarly, the number of shares a beneficial owner has the right to acquire must be listed in a footnote, as well as any arrangements or pledges that could lead to a change of control of shares. Item 403 also specifies that a company must use appropriate disclosure to avoid confusion where more than one beneficial owner is listed for the same securities. When a beneficial owner owns shares pursuant to a voting trust or agreement, the company must state in a table or footnote the title of the securities, the amount held or to be held according to the trust or agreement, and the duration of the agreement. The company must also disclose the names and addresses of the voting trustees and outline briefly their voting rights and powers under the trust or agreement.

Appendix B – Details on the Sample Construction

In a first step, we matched the IRRC database with data from *Compact Disclosure* pertaining to large shareholders and directors and officers. *Compact Disclosure* stores company data on CDs that are updated monthly. The month of the update depends on the company's fiscal year end, and, for data pertaining to the board of directors, on the

company's proxy meeting date. Since *Compact Disclosure* often does not keep information until the next update, but rather removes stale data from the monthly CDs, searching the right month after the proxy meeting is important. In the earlier sample years, a lag of 6 months from proxy meeting month to issuance of data CD yielded the most reliable results. Starting in 2000, *Compact Disclosure* data are usually updated in the month following the annual meeting.

We then sort, for each sample year, all IRRC firms by proxy meeting month. We download through a ticker merge the large shareholder data (field SH) and information on directors (field DO) and officers (field NA) from the appropriate monthly *Compact Disclosure* CD in the tagged format. Figure 1 shows an example of our raw database. The search string automatically yields a summary of the insider-trading data compiled by *Spectrum* (Form 3, 4, and 5), which we discard.⁹ Note from Figure 1 that *Compact Disclosure* mentions the source and source date of the director and ownership information in parentheses. We control in the sample construction that all ownership information is taken from proxy statements. We are able to match 94% of all firm-years with our search strategy through *Compact Disclosure*. The remaining firms were looked up directly from the proxies.

In a next step, we use a SAS program to convert the data of Figure 1 into an easy-to-use SAS database. The SAS program loops through the information on officers and directors, provided by *Compact Disclosure* in the fields NA- and DO-, and identifies a large

⁹ Anderson and Lee (1997a) caution that the proxy's definition of an insider (an officer or director) is not the same as the definition used for the insider-trading filings (any shareholder of 10% or more) compiled by *Spectrum*. When they compare *Spectrum* data to the benchmark proxy data on management ownership, they find that 40.7% of their sample has a reporting discrepancy of over 5% (p. 316). They also refute the claim that the *Spectrum* data are more current than the most recent proxy data, showing that the filing dates listed in the *Spectrum* section of the *Compact Disclosure* data are sometimes "stale" by two or more years (Anderson and Lee (1997b), p. 3-4). An additional concern for us is a date mismatch, as the *Spectrum* data is updated at various points during the year, while the director's database stems from the annual proxy statements. Indeed, the *Spectrum* data of Figure 1 is incorrect.

shareholder entry as either director or officer if the character string for a blockholder (in the SH- section of the *Compact Disclosure* data) matched a character string in the officer or director sections (NA-, DO-) of the data. *Compact Disclosure* is extremely accurate and consistent in the spelling of names across fields, as it takes the names exactly as they appear in the proxy statements.¹⁰

¹⁰ However, the automated process will not correctly match variations such as “The Smith family trust” with a director named Peter H. Smith. These corrections are done manually in the data cleaning process.

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Table 1
Sample Summary Statistics

	<u>Mean</u>	<u>Median</u>
Firm Characteristics		
Firm Age (in years)	23	18
Market Value	5,966	1,216
Assets - Total (MM\$)	8,843	1,374
Sales (Net) (MM\$)	3,601	1,088
Common Equity – Total (MM\$)	1,586	477
Book-to-Market Ratio	0.61	0.50
Capex-to-Sales Ratio	0.15	0.05
Valuation and Performance		
Tobin's Q	1.97	1.41
Annualized Stock Return	-1.0%	6.3%
Return on Assets	3.8%	4.8%
Return on Equity	11.6%	11.2%
Governance Characteristics		
G-Score of Gompers, Ishii, and Metrick	9.0	9.0
Number of Directors	9.5	9.0
% Independent Directors	61.2%	63.6%
% Dependent Directors	38.8%	36.4%
% Employee Directors	22.2%	19.4%

The table describes summary statistics of key sample firm characteristics. The sample period is 1996 – 2001. The total sample consists of large publicly listed U.S. firms, a total of 7,649 firm-years and 1,913 unique firms. The table contains cross-sectional means and medians of firm time-series averages. Firm age is measured as months since first listing. Market value, total assets, sales, and common equity are taken from Compustat. The book-to-market ratio is book value of common equity to market value of common equity. Book value of common equity is the sum of book common equity (Compustat item 60) and deferred taxes (item 74). The capex-to-sales ratio is capital expenditures (item 128) divided by net sales. Q is the market value of assets divided by the book value of assets (item 6), where the market value of assets is computed as book value of assets plus the market value of common stock less the sum of the book value of common stock (item 60) and balance sheet deferred taxes (item 74). All book values for fiscal year *t* (from Compustat) are combined with the market value of common equity at the calendar end of year *t*. Return on assets (equity) is calculated as income before extraordinary items (item 18) divided by item 6 (item 60). G-score is an equal weighted index that measures the restrictions of shareholder rights, and is provided through Wharton Research Data Services (WRDS). All director variables are from the director database of the Investor Responsibility Research Center (IRRC).

Table 2
Affiliation of Large Shareholders

	1996	1997	1998	1999	2000	2001
Total Firms in Sample	1,130	1,046	1,510	1,387	1,336	1,240
Number of Blockholders	2.12	2.10	2.41	2.44	2.53	2.50
Sum of Blockholdings (%)	21.7%	21.3%	24.5%	24.9%	25.5%	25.0%
Held by						
Officers						
<i>Number</i>	0.16	0.15	0.20	0.20	0.21	0.20
<i>% Held</i>	2.2%	2.1%	2.7%	2.7%	2.8%	2.5%
Directors						
<i>Number</i>	0.09	0.10	0.11	0.12	0.12	0.11
<i>% Held</i>	1.1%	1.1%	1.3%	1.4%	1.5%	1.3%
Affiliated entities						
<i>Number</i>	0.14	0.14	0.13	0.14	0.13	0.13
<i>% Held</i>	2.6%	2.5%	2.3%	2.2%	2.0%	2.1%
ESOPs						
<i>Number</i>	0.12	0.13	0.09	0.09	0.09	0.10
<i>% Held</i>	1.3%	1.3%	0.9%	0.9%	1.0%	1.0%
Outside Blockholders						
<i>Number</i>	1.60	1.58	1.87	1.90	1.97	1.97
<i>% Held</i>	14.4%	14.3%	17.2%	17.7%	18.2%	18.0%

The first three rows of this table contain summary statistics for the cleaned sample by calendar year. The sample construction is explained in Appendix B. The bottom part of the table shows the frequency of each category of large shareholders. **Officers** are officers, and possibly also directors of the firm. **Directors** are all non-officer directors. **Affiliated entities** are individuals, trusts or companies whose voting outcome is at least partially influenced or outright determined by an officer or director of the company. **ESOPs** are Employee Stock Ownership Plans. **Outside Blockholders** are all individuals or entities that are none of the above.

Table 3**Occurrence of Full and Partial Overlap and Wrong Attribution of Preferred Shares**

	Fraction of Common Stock Held by Large Shareholders						
	no BH	5-10%	10-15%	15-25%	25-50%	>50%	Total
Overall Sample							
No. of Firms before cleaning	1,365	802	738	1,469	2,251	1,024	7,649
% of Firms that required cleaning	31.7%	0.4%	4.5%	8.5%	13.5%	53.1%	18.8%
% Held as Blocks before cleaning after cleaning	0.0%	7.0%	12.6%	19.9%	35.4%	82.4%	27.2%
	7.9%	6.9%	12.4%	19.5%	33.6%	52.6%	24.0%
Situations that required cleaning:							
Full Overlap	0	0	1	20	47	122	190
% Held as Blocks before cleaning			14.8%	21.3%	37.6%	99.9%	
after cleaning			6.9%	14.6%	24.2%	48.6%	
Partial Overlap	0	0	5	43	216	377	641
% Held as Blocks before cleaning			12.0%	21.6%	39.8%	97.3%	
after cleaning			6.2%	14.0%	27.4%	47.4%	
Preferred Shares	0	3	10	11	12	79	115
% Held as Blocks before cleaning		6.4%	12.6%	18.8%	34.1%	125.8%	
after cleaning		0.0%	3.2%	12.2%	11.5%	26.2%	
Other	433	0	22	25	24	22	526
% Held as Blocks before cleaning	0.0%		12.2%	19.8%	36.1%	85.4%	
after cleaning	24.7%		11.9%	19.0%	28.5%	42.2%	
Overall sample after cleaning							
Number of firms by category	963	952	854	1,640	2,518	722	7,649
% Held as Blocks by category	0%	7%	13%	20%	35%	62%	24.0%

This table reports the occurrence of the four problems associated with using the raw large shareholder database available through *Compact Disclosure*. We classify the firms into six different categories based on the sum of the blockholdings. The first row shows the number of firms by blockholding category. The second row shows the fraction of entries by category that needed to be corrected. The third and fourth row contain the average sum of blockholdings by category before and after cleaning, where the categorization is done by the sum of blockholdings as they appear in the raw data. The second part of the table describes the four situations that required cleaning. The four problems are full overlap, partial overlap, the treatment of preferred shares, and other problems. The second and third row of each reported problem show how the percentage holdings change given we observe the problem.

Table 4
Q Regressions Using Raw *Compact Disclosure* and Our Cleaned Data

	1996	1997	1998	1999	2000	2001
Raw <i>Compact Disclosure</i> data						
Intercept	2.78** (0.40)	2.98** (0.44)	4.22** (0.50)	5.44** (0.75)	6.15** (0.63)	3.09** (0.31)
% held through outside blocks	-1.04* (0.44)	-1.10* (0.46)	-0.81 (0.46)	-1.85** (0.72)	-2.46** (0.70)	-0.96** (0.30)
% held through outside blocks squared	0.71 (0.60)	0.89 (0.58)	0.44 (0.34)	0.89 (0.62)	1.85* (0.72)	0.43 (0.28)
Cleaned data						
Intercept	2.95** (0.41)	3.19** (0.44)	4.59** (0.52)	5.94** (0.77)	6.73** (0.65)	3.42** (0.32)
% held through outside blocks	-1.45* (0.65)	-2.25** (0.70)	-2.69** (0.91)	-4.49** (1.33)	-4.78** (1.09)	-2.15** (0.54)
% held through outside blocks squared	0.96 (1.24)	2.33 (1.35)	3.29* (1.57)	5.60** (2.22)	5.75** (1.80)	1.98* (0.93)

This table presents the coefficients of the sum of outside blockholdings and squared outside blockholdings, before and after our cleaning procedure, from annual cross-sectional regressions of industry-adjusted Tobin's Q on the blockholdings and control variables. The control variables include a Delaware dummy, S&P 500 affiliation, the natural logarithm of firm age in months (measured as months since first listing, obtained from CRSP), and the natural logarithm of firm sales (obtained from Compustat). For simplicity, the coefficients on the control variables are omitted from the table. Standard errors are reported in parentheses and significance at the one-percent and five-percent levels is indicated by ** and * respectively. Entries in **bold** demonstrate a difference in statistical significance between the raw *Compact Disclosure* and the cleaned data. Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes. The market value of equity is measured at the end of the current calendar year, and the accounting variables are measured in the current fiscal year. Industry adjustments are made by subtracting the industry median, where medians are calculated by matching the four-digit SIC codes from December of each year to the 48 industries designated by Fama and French [1997].

Figure 1

Compact Disclosure's October 1999 Director and Large Shareholder Data for Coca Cola Co.

```

CO- COCA COLA CO|
TS- KO|
CU- 191216100|

NA- (SOURCE: 10K)^
  IVESTER, M. DOUGLAS/ 51/ CHAIRMAN OF THE BOARD, CHIEF EXECUTIVE OFFICER,
  EXECUTIVE VICE PRESIDENT (PRX 03-04-99) / $12,872,587^
  CHESTNUT, JAMES E./ 48/ GENERAL OFFICER (PRX 03-04-99) / NA^
  STAHL, JACK L./ 46/ GENERAL OFFICER (PRX 03-04-99) / NA^
  DAFT, DOUGLAS N./ 56/ GENERAL OFFICER (PRX 03-04-99) / NA^
  WARE, CARL/ 55/ SENIOR VICE PRESIDENT, GROUP PRESIDENT / NA^
  HAAS, TIMOTHY J./ 52/ SENIOR VICE PRESIDENT, GROUP PRESIDENT / NA^
  COOPER, RALPH H./ 59/ GENERAL OFFICER (PRX 03-04-99) / NA^
  CASEY, WILLIAM P./ 58/ SENIOR VICE PRESIDENT, GROUP PRESIDENT / NA^
  GLADDEN, JOSEPH R., JR./ 56/ SENIOR VICE PRESIDENT, LEGAL COUNSEL / NA^
  FRENETTE, CHARLES S./ 46/ SENIOR VICE PRESIDENT / NA^
  AMON, ANTON/ 55/ SENIOR VICE PRESIDENT, MANAGER / NA^
  GOURLAY, GEORGE/ 57/ SENIOR VICE PRESIDENT, MANAGER / NA^
  WALTERS, MICHAEL W./ 52/ VICE PRESIDENT / NA^
  SHAW, SUSAN E./ NA/ SECRETARY (PRX 03-04-99) / NA|

DO- (SOURCE: PROXY 03/04/1999)^
  IVESTER, M. DOUGLAS/ 51/ CHAIRMAN OF THE BOARD, CHIEF EXECUTIVE OFFICER,
  EXECUTIVE VICE PRESIDENT / $12,872,587^
  ALLEN, HERBERT A./ 59/ DIRECTOR / NA^
  ALLEN, RONALD W./ 57/ DIRECTOR / NA^
  BLACK, CATHLEEN P./ 54/ NA/ NA^
  BUFFETT, WARREN E./ 68/ NA/ NA^
  KING, SUSAN B./ 58/ NA/ NA^
  MCHENRY, DONALD F./ 62/ DIRECTOR / NA^
  NUNN, SAM/ 60/ DIRECTOR / NA^
  OREFFICE, PAUL F./ 71/ DIRECTOR / NA^
  ROBINSON, JAMES DIXON, III/ 63/ DIRECTOR / NA^
  UEBERROTH, PETER V./ 61/ DIRECTOR / NA^
  WILLIAMS, JAMES B./ 65/ DIRECTOR / NA|

SH-
  BUFFETT, WARREN E., 8.10% (PRX 03-04-99)^
  SUNTRUST BANKS INC, 6.10% (PRX 03-04-99)^
  BERKSHIRE HATHAWAY INC, 8.10% (PRX 03-04-99)^

  ***^
  TYPE          DATE(Q,M)  OWNERS  CHANGE (000S)  HELD  %OWN^
  INSTITUTIONS  03/31/1999(Q)  1      NIL           NIL    0.00^
  5% OWNERS     05/31/1999(M)  0      NA           0      0.00^
  INSIDERS      05/31/1999(M)  0      NA           0      0.00 ||

```

This figure reproduces the results of a string search of the October 1999 *Compact Disclosure* CD ROM. The database was searched based on Ticker Symbol, and the fields CO – company name, TS – Ticker Symbol, CU – Cusip number, NA – Officers, DO – Directors, and SH – large shareholders were requested in the tagged format. Below the symbol “***^” at the bottom, the *Spectrum* data are listed automatically by *Compact Disclosure*.

Figure 2

Beneficial Ownership Table from the March 4th, 1999 Proxy of Coca Cola Co.

The following table sets forth information regarding beneficial ownership of Company Common Stock by each Director, the Company's five most highly compensated executive officers and the Directors and executive officers of the Company as a group, all as of February 22, 1999.

NAME -----	AGGREGATE NUMBER OF SHARES BENEFICIALLY OWNED -----	PERCENT OF OUTSTANDING SHARES/18/ -----
Herbert A. Allen.....	9,368,875/1/	*
Ronald W. Allen.....	13,194/2/	*
Cathleen P. Black	15,541/3/	*
Warren E. Buffett.....	200,004,396/4/	8.1%
Susan B. King.....	12,915/5/	*
Donald F. McHenry.....	29,023/6/	*
Sam Nunn.....	2,039/7/	*
Paul F. Orefice.....	109,252/8/	*
James D. Robinson III.....	16,298/9/	*
Peter V. Ueberroth.....	88,605/10/	*
James B. Williams.....	106,053,931/11/	4.3%
M. Douglas Ivester.....	5,334,915/12/	*
Jack L. Stahl.....	1,282,326/13/	*
Douglas N. Daft.....	969,748/14/	*
James E. Chestnut.....	437,379/15/	*
Ralph H. Cooper.....	1,031,801/16/	*
All Directors and Executive Officers as a Group (25 Persons)	329,575,298/17/	13.4%

[...]

/4/ Shares owned indirectly through subsidiaries of Berkshire Hathaway Inc., the capital stock of which is owned 31.5% by Mr. Buffett and three trusts of which he is trustee but in which he has no beneficial interest and 2.4% by his wife. Also includes 4,396 phantom shares accrued under the Deferred Compensation Plan for Non-Employee Directors.

[...]

SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

PRINCIPAL SHARE OWNERS

Set forth in the table below is information as of December 31, 1998 with respect to persons known to the Company to be the beneficial owners of more than five percent of the Company's issued and outstanding stock:

NAME AND ADDRESS -----	NUMBER OF SHARES BENEFICIALLY OWNED -----	PERCENT OF CLASS -----
Berkshire Hathaway Inc./1/ 1440 Kiewit Plaza Omaha, Nebraska 68131	200,000,000	8.1%
SunTrust Banks, Inc./2/ 303 Peachtree Street Atlanta, Georgia 30308	151,135,261	6.1%

/1/ Berkshire Hathaway Inc., a diversified holding company, has informed the Company that certain of its subsidiaries hold an aggregate of 200,000,000 shares of Company Common Stock. The capital stock of Berkshire Hathaway Inc. is beneficially owned 31.5% by Warren E. Buffett and three trusts of which he is a trustee but in which he has no beneficial interest and 2.4% by his wife. All of such shares of the Company are included in the share ownership of Mr. Buffett disclosed in the table of beneficial ownership of securities above.

/2/ [...]

Figure 3

Compact Disclosure's 1998 Large Shareholder Data for Outback Steakhouse, Inc.

```

CO- OUTBACK STEAKHOUSE INC|
TS- OSSI|
CU- 689899102|

DO- (SOURCE: PROXY 03/13/98)^
SULLIVAN, CHRIS T./ 50/ CHAIRMAN OF THE BOARD, CHIEF EXECUTIVE OFFICER / $400,000^
BASHAM, ROBERT D./ 50/ PRESIDENT, CHIEF OPERATING OFFICER / $400,000^
MERRITT, ROBERT S./ 46/ CHIEF FINANCIAL OFFICER, SENIOR VICE PRESIDENT, TREASURER /
$270,000^
BRABSON, JOHN A., JR./ 57/ DIRECTOR (10-Q 06-30-98)/ NA^
BRIDGES, CHARLES H./ 67/ DIRECTOR (10-Q 06-30-98)/ NA^
GANNON, J. TIMOTHY/ 49/ SENIOR VICE PRESIDENT, DIRECTOR (10-Q 06-30-98)/$290,000^
SELMON, LEE ROY/ 43/ DIRECTOR (10-Q 06-30-98)/ NA^
CAREY, W. R., JR./ 50/ DIRECTOR / NA^
FIELDS-ROSE, DEBBI/ 41/ DIRECTOR / NA^
FLOM, EDWARD L./ 68/ DIRECTOR / NA^
SCHNEID, NANCY/ 39/ DIRECTOR / NA^
WILT, TOBY S./ 53/ DIRECTOR / NA^
AVERY, PAUL E./ 38/ SENIOR VICE PRESIDENT, DIRECTOR (10-Q 06-30-98)/$579,213^
FIELDS, DEBBI/ 41/ DIRECTOR (PRX 03-13-98) / NA^
GANNON, TIMOTHY J./ 49/ SENIOR VICE PRESIDENT (PRX 03-13-98) / NA|

SH-
BASHAM, ROBERT D., 17.09% (PRX 03-13-98)^
SULLIVAN, CHRIS T., 17.39% (PRX 03-13-98)^
GANNON, TIMOTHY J., 17.12% (PRX 03-13-98)^
MULTI VENTURE PARTNERS LTD, 16.85% (PRX 03-13-98)^
T ROWE PRICE ASSOCIATES INC, 9.08% (PRX 03-13-98)^

    ***^
    TYPE          DATE(Q,M) OWNERS  CHANGE (000S) HELD  %OWN^
    INSTITUTIONS  06/30/98(Q)  152      1,406      31,204 63.68^
    5% OWNERS     09/30/98(M)    5         NA      30,409 62.06^
    INSIDERS      06/30/98(M)    9         NA      8,741 17.84 ||
  
```

This figure reproduces the results of a string search of the September 1998 *Compact Disclosure* CD ROM. The database was searched based on Ticker Symbol, and the fields CO – company name, TS – Ticker Symbol, DO – Directors, CU – Cusip number, and SH – large shareholders were requested in the tagged format. Below the symbol “***^” at the bottom, the *Spectrum* data are listed automatically by *Compact Disclosure*.

Figure 4

Beneficial Ownership Table from March 13th, 1998 Proxy of Outback Steakhouse, Inc.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the beneficial ownership of the Company's Common Stock as of February 27, 1998 (except as noted) by each person known to the Company to own beneficially more than five percent of the Company's Common Stock, each director, each nominee for election as a director, each executive officer, and all executive officers and directors as a group.

Name of Beneficial Owner	Amount Beneficially Owned	Percent of Class	
Chris T. Sullivan	8,505,490	17.39%	1)
Robert D. Basham	8,360,875	17.09%	2)
J. Timothy Gannon	8,373,761	17.12%	3)
[...]			
Multi-Venture Partners, Ltd.	8,242,125	16.85%	0)
T. Rowe Price Associates, Inc.	4,442,400	9.08%	4)

[...]

- 0) Multi-Venture Partners, Ltd. ("MVP") is an investment partnership formed by Chris T. Sullivan, Robert D. Basham and J. Timothy Gannon. Messrs. Sullivan, Basham and Gannon are the only limited partners in MVP and are the only members of MVP's sole general partner, SBG Investments, L.L.C. ("SBG"), a limited liability company.

[...]

- 1) Includes (i) 8,242,125 shares owned by MVP; (ii) 231,292 shares owned by Sullivan Family Investments, Ltd., a family limited partnership of which Mr. Sullivan serves as general partner; and (iii) 1,712 shares owned by Mr. Sullivan's children for whom Mr. Sullivan serves as custodian. Mr. Sullivan shares voting and dispositive power with respect to Common Stock owned by MVP

- 2) Includes 8,242,125 shares owned by MVP. Mr. Basham shares voting and dispositive power with respect to Common Stock owned by MVP.

- 3) Includes 8,242,125 shares owned by MVP. Mr. Gannon shares voting and dispositive power with respect to Common Stock owned by MVP.

[...]

- 4) Based on a Schedule 13G filed by T. Rowe Price Associates, Inc. ("T. Rowe Price") with the Securities and Exchange Commission on February 10, 1998, these securities are owned by various individual and institutional investors for which T. Rowe Price serves as investment adviser with power to direct investments and/or sole power to vote the securities. For purposes of the reporting requirements of the Securities Exchange Act of 1934, T. Rowe Price is deemed to be a beneficial owner of such securities; however, T. Rowe Price expressly disclaims that it is, in fact, the beneficial owner of such securities.

Figure 5

Compact Disclosure's 2000 Large Shareholder Data for Tribune Co.

```

CO- TRIBUNE CO|
TS- TRB|
CU- 896047107|

SH-
  NORTHERN TRUST CO,  9.10% (PRX 03-27-01)^
  NORTHERN TRUST CO, 100.00% (PRX 03-27-01)^
  ROBERT R MCCORMICK TRIBUNE FOUNDATION, E, 14.95% (PRX 03-27-01) ^
  CHANDLER TRUST NO 1, 12.29% (PRX 03-27-01)^

```

Figure 6

Beneficial Ownership Table from the March, 27th, 2000 Proxy of Tribune Co.

Principal Shareholders

The following table sets forth information as of February 28, 2001 with respect to each person who is known to Tribune management to be the beneficial owner of more than 5% of any class of Tribune stock entitled to vote:

NAME AND ADDRESS OF OWNER	COMMON STOCK		SERIES B PREFERRED STOCK	
	NUMBER OF SHARES	PERCENT OF CLASS	NUMBER OF SHARES	PERCENT OF CLASS
Robert R. McCormick Tribune Foundation Cantigny Foundation(1) Room 770 435 North Michigan Avenue Chicago, IL 60611	44,825,676	14.95%	--	--
The Chandler Trusts(2) 350 West Colorado Boulevard Suite 230 Pasadena, CA 91105	36,861,190	12.29	--	--
The Northern Trust Company(3) 50 South LaSalle Street Chicago, IL 60675	28,962,648 (4)	9.10%	1,150,456	100%

(1) The investment and voting power of each of the Robert R. McCormick Tribune Foundation and the Cantigny Foundation is vested in a board of six directors, consisting of Dennis J. FitzSimons, Jack Fuller, John W. Madigan and three former Tribune officers.

(2) [...]

(3) On February 28, 2001, The Northern Trust Company, as ESOP trustee, held 2,046,670 shares of Tribune common stock on behalf of the ESOP and was deemed to hold 18,407,296 shares of Tribune common stock into which the Tribune Series B preferred stock is convertible, which shares are included in determining the percent of class owned. All ownership attributed to Northern Trust in its capacity as ESOP Trustee is shared with the participants in the ESOP.

(4) Holdings based upon information contained in a Schedule 13G filed with the Securities and Exchange Commission on February 8, 2001 by Northern Trust, which indicated that Northern Trust had sole voting power with respect to 6,325,093 shares; shared voting power with respect to 22,553,329 shares; sole dispositive power with respect to 6,029,468 shares; and shared dispositive power with respect to 22,564,887 shares.