

# Beneficial Ownership of Listed Companies in the United States

*European Corporate Governance Network*

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# I. Introduction

This note analyses the control of control rights exerted by “beneficial owners” of listed companies in the United States. The stylised facts have been recently summarised by Mark Roe (1994, pg. 223):

Institutions owned only 8 percent of the stock of the largest American firms in 1950. Now they only own half, but in small, unconcentrated blocks. The five largest holders rarely together own much more than 5% of the largest U.S. firms. The rarities are mainly the large blocks held by Berkshire Hathaway. Even with their weaker holdings, some institutions have been active, seeking to elect directors, making shareholder proposals, petitioning the SEC to loosen constraints on their activity.

Aggregate concentration already makes the U.S. look like a pale comparison of its foreign counterparts. The top twenty-five institutional investors on average vote 16% of the stock of the largest twenty-five U.S. corporations. While U.S. concentration trends tended to slow down in the early 1990s, and the U.S. concentration is a far cry from the five banks in Japan that vote 20 percent of the stock, or the three German banks that vote 40 percent, large firm ownership is no longer that of an atomised Berle-Means corporation. ... The United States is now in an intermediate stage, whose future is uncertain.

I do not aim to challenge Roe’s assessment. As he argues elsewhere in his book, the dispersion of ownership in the United States is the result of banking, insurance, investment company and pension fund regulation. Hence, the ownership of listed companies, when taking into account all shareholders, is dispersed by law and regulation. On the other hand, Roe observes that recent developments have lead to an aggregate concentration that “already makes the U.S. ownership look like a pale imitation of its foreign counterparts” (Roe, *opus cit.*). How pale a comparison is the U.S. ownership concentration?

I shall argue that the widely cited U.S. summary statistics that have been used for making comparisons between the U.S. and Europe are not entirely suitable for answering this question. The U.S. studies are often based on data that, with the same degree of detail, is not available in other countries. This poses a fundamental problem for comparing ownership concentrations. If one is able to trace ownership to individuals, as is often the case in the United States, European ownership too would be more dispersed than the available figures suggest.

The idea that is implemented in this note is very simple. Instead of using ownership data from *all* available US sources I shall concentrate on *one* source that is comparable to the national

laws that result from the transposition of the EU Transparency Directive (88/627/EEC). By limiting myself to analysing the portfolios of 5% beneficial owners whose holdings we can observe in Europe the results obtained for the United States become comparable.

The EU Transparency Directive is very similar in spirit to the Williams Act of 1968 and Section 13(d) of the Securities and Exchange Act (SEA). The Williams Act requires “beneficial owners” of voting blocks exceeding 5% of the outstanding shares of a listed company to make regular filings with the stock exchanges where the company is traded and the Securities and Exchange Commission. Section 13(d)(1) of the SEA stipulates that:

Any person who, after acquiring directly or indirectly the beneficial ownership of any equity security of a class which is registered pursuant to [section 12](#) of this title, . . . , is directly or indirectly the beneficial owner of more than 5 per centum of such class shall, within ten days after such acquisition, send to the issuer of the security at its principal executive office, by registered or certified mail, send to each exchange where the security is traded, and file with the Commission, a statement containing such of the following information, and such additional information, as the Commission may by rules and regulations prescribe as necessary or appropriate in the public interest or for the protection of investors—

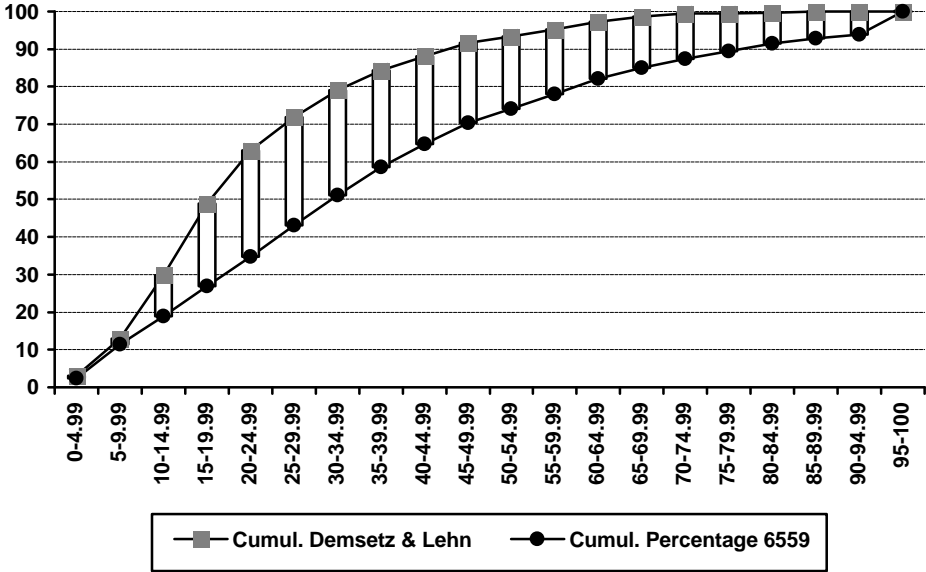
Hence, the data generated by Section 13(d) and the corresponding Rules and Forms is very similar to the data one can obtain from the provisions of the EU Transparency Directive.

Previous work on ownership patterns for the United States, for example Demsetz and Lehn (1985), made use of all ownership data that is available for the United States (proxy statements, insider declarations, filings of institutional investors) and concentrated on the largest firms, for example the Fortune 500. In this note I shall deliberately limit myself to data originating from Forms 13D and 13G and cover 6559 listed companies from all U.S. exchanges for which such data is available. I apply the same sample selection on the U.S. data that is imposed on European research by the lack of proxy statements, insider declarations and filings of institutional investors.

A first comparison of the cumulative frequency distribution reported in Demsetz and Lehn (1985, pg. 1157) shows that the samples do have different properties. Ownership in the detailed Fortune 500 sample of Demsetz and Lehn is less concentrated than in my 6559 company, beneficial owner sample. Since the Demsetz and Lehn data contains stakes that are smaller than 5% (from proxy statements and insider filings) this is hardly surprising. Also, many of the Fortune 500 companies might not have a 5% beneficial owner and, hence, do not

appear in Figure 1 (complete dispersion). European beneficial ownership data has the same properties and the U.S. data I use here. Figure 1 confirms that comparing European data to the Demsetz and Lehn data potentially exaggerates the differences in ownership concentration between the United States and Europe.

**FIGURE 1. FREQUENCY DISTRIBUTION OF C5**



Note: The figure shows the cumulative percentages of the frequency distribution of a C5 concentration measure (the sum of the percentage of outstanding shares held by the top 5 beneficial owners) for our sample and the Demsetz and Lehn Fortune 500 sample. The Demsetz and Lehn sample is more concentrated. For their sample, 91.59% of the companies have a C5 measure of less than 50%, compared to 70.3% for our sample. The cumulative percentage curve rises more steeply and levels off just after the 50-54.99% range. For our sample the curve levels off in the 65-75% range but is still below 100% (their curve reaches 100% in the 85-89.99% range).

The summary statistics reported here are comparable to those reported in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1996, Table 10). These authors concentrate on the three largest stakes in the 10 largest non-financial domestic firms. The concentration ratios I find for the larger sample are higher than those reported in La Porta *et. Al.* (1996). However, the mean and the median over the stakes held by the largest three beneficial owners I report are actually lower; see Table 1.

**TABLE 1. OWNERSHIP BY LARGEST THREE BENEFICIAL OWNERS**

	La Porta, Lopez-de-Silanes, Shleifer, Vishny (1996, Table 10), 10 Large Firms	6559 Firms
Sum of stakes held by largest 3 shareholders (C3)		
mean	0.20	0.32
median	-	0.24
All stakes held by 3 largest shareholders		
mean	0.20	0.15
median	0.12	0.01

Note: For the 6559 firms more data can be found in the appendix.

The sensitiveness of the results the type of summary measure and to the sample definition is a warning. To concentrate on a few indicators derived from highly selective samples can be misleading, especially when conducting international comparisons.

The remainder of this note is organised as follows. Section II provides a more detailed discussion of Section 13(d) of the SEA, the concept of “beneficial owner”, the format of the relevant SEC filings and the data source used for obtaining the descriptive statistics. Section III summarises the main results. An Appendix contains tables and figures with the descriptive statistics (that should be comparable to similar tables and figures for the EU). The full text of Rule 13d-3 that defines “beneficial ownership” is reproduced in a second Appendix. All relevant legal documents, for example Sections 13(d) SEA, Rules 13d-1 to 13-5 and electronic filings made on Forms 13D and 13G can be found on the internet (see References).

## **II. Data**

### **A. Regulatory Basis**

For companies incorporated in the United States and traded on at least one of the U.S. stock exchanges there are numerous and often overlapping sources of ownership information:

- 1     Declarations by companies (registration with the SEC, periodic reporting, proxy statements);
- 2     Declarations by 5% Beneficial Owners (13D, 13G and 14D-1 filings) based on Williams Act that regulates takeovers;
- 3     Insider filings (Form 3, 4, 5, 144). Although these are called “insider filings” they include filings by outsiders who are 5% beneficial owners and have a claim on more than 10% of a company’s cash flow rights.
- 4     Portfolio disclosure by institutional investors
  - 4.1    General institutional holdings filed on Form 13F (going back to 1978 when this measure was introduced)
  - 4.2    Mutual Fund holdings
  - 4.3    Insurance Company holdings
  - 4.4    Pension Fund holdings

In this note I limit myself to declarations filed by 5% beneficial owners on Forms 13D, 13G and 14D-1 filings.

When a beneficial owner buys up more than 5% of the outstanding voting stock of a company (less any treasury stock) the holder must, within 10 days, file with the SEC and the stock exchanges where the company is traded. The beneficial owner must report on the reason for the purchase of the block any make subsequent filings when the size of the block increases or decreases by more than 1 percent. If the beneficial owner acts in concert with other institutions or persons their names and the relationship with the beneficial owners must be disclosed. The relevant section of the Securities and Exchange Act of 1934 and the corresponding forms are reproduced in an Appendix. They are clearly written and I shall not discuss them further here.

For the purposes of the present analysis the most important question is: What is the definition of “beneficial owner”? Rule 13d-3 provides a clear definition:

- (a) 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, through any contract, arrangement, understanding, relationship, or otherwise has or shares:
  - (1) Voting power which includes the power to vote, or to direct the voting of, such security; and/or
  - (2) Investment power which includes the power to dispose, or to direct the disposition of, such security.
- (b) Any person who, directly or indirectly, creates or uses a trust, proxy, power of attorney, pooling arrangement or any other contract, arrangement, or device with the purpose or effect of divesting such person of beneficial ownership of a security or preventing the vesting of such beneficial ownership as part of a plan or scheme to evade the reporting requirements of Section [13\(d\)](#) or [13\(g\)](#) of the [Act](#) shall be deemed for purposes of such sections to be the beneficial owner of such security.
- (c) 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.

A fourth provision (d) is less important, lengthy and reported in the Appendix. The definition of beneficial ownership is very similar to the spirit of the EU Transparency Directive (88/627/EEC). Hence, as far as the legal definition of beneficial owner is concerned, we can be sure that the definition of owner for the United States is very similar to the definition that should apply throughout the European Union.

## ***B. Data Source***

The data used in this note is taken from the Global Researcher Database assembled by Disclosure Inc (<http://www.disclosure.com>) and produced by Bureau van Dijk (<http://www.bvd.com>). The ownership data originates with CDA Technologies Inc (<http://www.cda.com>) and their CDA/Spectrum database. I use what CDA call “5% owner” information that is taken from Forms 13D, 13G and 14D.

The Global Research Database contains an identification record for 12,000 U.S. registered companies that are listed on at least one of the US Exchanges. For 8864 companies at least one of four types of ownership information was available (information from proxy statements, portfolio filings of institutional investors, 5% owners or insider filings). For 6559 companies 5% beneficial ownership information was reported.

The quality of US ownership was investigated by Anderson and Lee (1997) and must be considered exemplary for this type of research. Their paper also shows that it is possible to

publish rigorous data surveys in academic journals, at least in the United States.<sup>1</sup> **Anderson and Lee (1997) find that the CDA 5% ownership information suffers from a “stale data” problem. The database is not updated completely at all times. Hence, the results reported here should be treated with great caution.** In particular, very large blocks of 99.99% are likely to be “leftovers” from takeovers and it is likely that the companies are no longer listed and/or the blocks have been diluted.

**TABLE 2. DISTRIBUTION OF FILINGS BY YEAR AND FORM**

Year	No. of Filings	Form	No. of Filings
n.a.	1	13D	8279
70	1	13G	15477
85	1	14D	22
86	2		
88	2		
89	239		
90	411		
91	582		
92	1120		
93	1432		
94	2474		
95	8900		
96	7587		
97	1026		
<b>Total</b>	<b>23778</b>		<b>23778</b>

Most filings were made on Form 13G and 13D. In 22 cases CDA obtained the beneficial ownership information from Form 14D. Most of the forms were filed between 1992 and 1997, but one filing dates back as far as 1970. I do not interpret this dispersion as a failure of CDA to collect the latest forms, but as an indicator of the relative stability of 5% ownership in the United States. More detailed information on this aspect of the data and a dynamic analysis would be important, but are beyond the scope of this note.

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<sup>1</sup> I am very grateful to Roberta Romano for pointing me to this article that appeared in the September issue of the Journal of Financial and Quantitative Analysis.

### III. Results

Tables with detailed results are reported in an appendix. The main findings are summarised here. I began the analysis by computing summary statistics of beneficial ownership for each of the 6559 companies (minimum stake, maximum, mean, median, dispersion and concentration measures). In the next step I analysed the portfolios of the 11442 individuals and institutions who hold blocks in the 6559 companies. I report similar statistics to those reported for the companies.

#### A. *Beneficial Ownership of Companies*

A number of observations emerge from analysing 5% ownership by company.

1. There are 701 companies with a “float” (percentage of outstanding shares that are not in the hands of a 5% beneficial owner) of less than 10%. They represent 10.7% of all companies considered (6559) and more companies than are listed on most European markets.
2. For each company the blocks were ranked. The mean of the 6559 largest blocks is 22.8%, the median is 15.1%, the minimum 0.05% and the maximum 99.9%. For the second largest block the mean is 11.3%, the median 9%, the minimum 0.001% and the maximum 49.99%.
3. The frequency distribution of the concentration ratios obtained here lies above the distributions reported in Demsetz and Lehn (1985). This is true for C5 (the sum of the percentage of shares outstanding for the three largest blocks) and C20 (the of shares outstanding for the 20 largest blocks).
4. The mean of C3 (the sum of the shares outstanding for the three largest shareholders) is 32.3%. The mean of C5 is 39.8%, the of C20 is 43.6% and almost identical to the sum of all blocks ( $C_{all}$ ). This is not surprising since the largest number of blocks per company is 22.
5. The five concentration measures are highly correlated. The lowest correlation of 0.7437 can be observed for C1 and C20 (and  $C_{all}$ ). This is, of course, the result of the 5% truncation introduced by the 5% beneficial owner disclosure rule.

## **B. Portfolios of 5% Beneficial Owners**

Apart from their name and geographical origin, no further information (for example activity) of the beneficial owners is available. Due to the high number of beneficial owners it was not possible to add such information “by hand”. Hence, the present analysis focuses on the distribution of summary statistics for the individual portfolios.

1. Most 5% beneficial owners are registered in the United States. The European Union has a strong presence in terms of the number of blocks held. “Offshore” places of incorporation also have a visible presence. There are surprisingly few beneficial owners that are registered in Japan.
2. Mark Roe (1994, page 223) states that in the world of U.S. block ownership, “the rarities are mainly the large blocks held by Berkshire Hathaway”. I could only find one block of 9.8% that is held by Berkshire Hathaway Inc.<sup>1</sup> Instead, the company with the largest number and largest size blocks (in terms of percentage of outstanding shares held per company) is FMR Corp, the acronym for Fidelity Management & Research Company (registered at 82 Devonshire Street, Boston, Massachusetts 02109, <http://www.fidelity.com/>). Fidelity holds 1174 blocks with a mean size of 7.3% (the median size 6.9%). Fidelity is followed by Putnam Investments Inc that holds 352 blocks with mean size 8.5% (median 7.4%). The Wisconsin Investment Board (<http://badger.state.wi.us/agencies/invbd/>) is the 5<sup>th</sup> most important blockholder (273 stakes, mean 7.2%, median 7.1%). It is followed by the French Axa Group with 160 participations (mean 7.7%, median 6%). These institutions, in particular Fidelity, could be playing an important role in corporate governance in the United States.
3. Most beneficial owners hold one stake (86.7%). Most of the beneficial owners who hold more than one stake hold stakes that are similar in size. For 75% of the 1594 owners who hold more than one stake the interquartile range of their holdings is 75%. For 90% the interquartile range is less than 27.8%. The extreme case is a single portfolio with an interquartile range of 97.2%.

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<sup>1</sup> This could be due to a stale data problem, but this is not very likely.

## IV. References

Anderson, R. C. and D. S. Lee (1997), "Ownership Studies: The Data Source Matters", *Journal of Financial and Quantitative Analysis*, 32, September 1997.

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## V. Appendix: Tables and Figures

### A. Analysis by Company

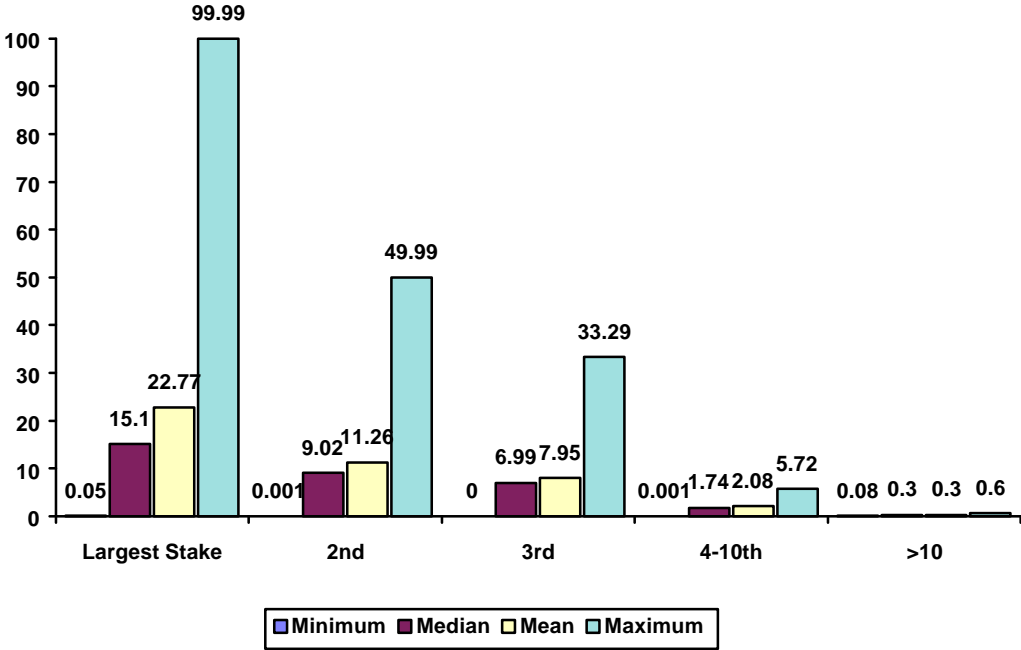
**TABLE 3. COMPANIES WITH A BENEFICIAL OWNER LARGER THAN 90 PERCENT**

Company Name	No. of Blocks	Min. Block	Max. Block	Mean Block	Std.	Median	Interqr.	Float
ADVANCED MEDICAL INC	1	99.99	99.99	99.99	0	99.99	0	0.01
ASPEN EXPLORATION CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
CODED COMMUNICATIONS CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
COSMETIC SCIENCES INC	1	99.99	99.99	99.99	0	99.99	0	0.01
COSTA RICA INTERNATIONAL INC	1	99.99	99.99	99.99	0	99.99	0	0.01
CUSA TECHNOLOGIES INC	1	99.99	99.99	99.99	0	99.99	0	0.01
DEVELOPMENT BANCORP LTD	1	99.99	99.99	99.99	0	99.99	0	0.01
ENCORE COMPUTER CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
ESCO TRANSPORTATION CO	1	99.99	99.99	99.99	0	99.99	0	0.01
EUTRO GROUP HOLDING INC	1	99.99	99.99	99.99	0	99.99	0	0.01
FIRST COMMONWEALTH CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
FOOD TECHNOLOGY SERVICE INC	1	99.99	99.99	99.99	0	99.99	0	0.01
GOLDEN INTERSTATE MEDICAL MANAGEMENT INC	1	99.99	99.99	99.99	0	99.99	0	0.01
GOLDEN OIL CO	1	99.99	99.99	99.99	0	99.99	0	0.01
GRAND UNION CO	1	99.99	99.99	99.99	0	99.99	0	0.01
GYRODYNE CO OF AMERICA INC	1	99.99	99.99	99.99	0	99.99	0	0.01
MAKO MARINE INTERNATIONAL INC	1	99.99	99.99	99.99	0	99.99	0	0.01
NATIONAL AFFILIATED CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
NATIONAL MEDICAL FINANCIAL SERVICES CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
RADYNE CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
REDOX TECHNOLOGY CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
RPM INC	1	99.99	99.99	99.99	0	99.99	0	0.01
SIXX HOLDINGS INC	1	99.99	99.99	99.99	0	99.99	0	0.01
TANGRAM ENTERPRISE SOLUTIONS INC	1	99.99	99.99	99.99	0	99.99	0	0.01
TV COMMUNICATIONS NETWORK INC	1	99.99	99.99	99.99	0	99.99	0	0.01
U S MEDICAL PRODUCTS INC	1	99.99	99.99	99.99	0	99.99	0	0.01
VAC TEC SYSTEMS INC	1	99.99	99.99	99.99	0	99.99	0	0.01
VITAFORT INTERNATIONAL CORP	1	99.99	99.99	99.99	0	99.99	0	0.01
STYLES ON VIDEO INC	2	0.77	99.22	49.99	69.62	49.99	98.46	0.01
WEST COAST BANCORP NEW	3	0.1	98.97	33.33	56.85	0.92	98.88	0.01
FIDELITY BANCORP INC PA	4	0.23	98.83	25	49.22	0.47	49.48	0.01
IMMUNOTHERAPEUTICS INC	2	1.27	98.72	50	68.9	50	97.44	0.01
HEALTH MANAGEMENT INC DE	2	1.43	98.56	50	68.68	50	97.13	0.01
SABRE GROUP HOLDINGS INC	2	2.34	97.65	49.99	67.39	49.99	95.3	0.01
HUNGARIAN TELEPHONE & CABLE CORP	2	2.76	97.23	49.99	66.8	49.99	94.47	0.01
PORTSMOUTH BANK SHARES INC	4	0.89	97.2	25	48.14	0.95	48.17	0.01
ICIS MANAGEMENT GROUP INC	2	3.64	96.35	49.99	65.55	49.99	92.71	0.01
THERMO ECOTEK CORP	2	3.86	96.13	50	65.24	50	92.26	0.01

**COMPANIES WITH A BENEFICIAL OWNER LARGER THAN 90 PERCENT (CONTINUED)**

Company Name	No. of Blocks	Min. Block	Max. Block	Mean Block	Std.	Median	Interqr.	Float
SAN FRANCISCO CO	2	4.58	95.41	50	64.22	50	90.82	0.01
SOUND SOURCE INTERACTIVE INC	2	5.62	94.37	49.99	62.75	49.99	88.74	0.01
VECTOR AEROMOTIVE CORP	2	5.66	94.33	50	62.7	50	88.67	0.01
READING ENTERTAINMENT INC	2	5.82	94.17	49.99	62.47	49.99	88.34	0.01
MCLEOD INC	3	1.21	94.05	33.33	52.61	4.74	92.84	0.01
BENTLEY INTERNATIONAL INC	2	6.19	93.8	50	61.95	50	87.61	0.01
PENN AMERICA GROUP INC	2	6.21	93.78	50	61.92	50	87.57	0.01
R&G FINANCIAL CORP	3	2.56	93.66	33.33	52.25	3.77	91.1	0.01
SUPER VISION INTERNATIONAL INC	2	6.86	93.13	49.99	61.01	49.99	86.28	0.01
ROADWAY EXPRESS INC	2	6.92	93.07	49.99	60.92	49.99	86.15	0.01
FOODQUEST INC	2	6.99	93	49.99	60.82	49.99	86.01	0.01
DELTA COMPUTEC INC	2	7.38	92.61	49.99	60.26	49.99	85.23	0.01
GROUP TECHNOLOGIES CORP	2	7.39	92.6	49.99	60.26	49.99	85.22	0.01
FIRST ENTERTAINMENT INC	2	7.75	92.24	50	59.74	50	84.49	0.01
VALLICORP HOLDINGS INC	3	1.72	92.2	33.33	51.03	6.06	90.48	0.01
MEDCROSS INC	2	8.73	91.26	50	58.36	50	82.53	0.01
XYVISION INC	2	8.76	91.23	49.99	58.32	49.99	82.47	0.01
TELETEK INC	2	8.9	91.09	50	58.11	50	82.18	0.01
MBF USA INC	2	9.17	90.82	49.99	57.74	49.99	81.65	0.01
ENRON OIL & GAS CO	2	9.87	90.12	49.99	56.74	49.99	80.24	0.01

**FIGURE 2. BLOCKS BY RANK OF BLOCKS FOR ALL LISTED COMPANIES**



Note: For each of the 6559 companies for which data was available the stakes were ranked. For observations with the same value the average rank was assigned. This was never the case for the largest stake. These ranks were attributed to the larger category (e.g. 2.5 in second largest, 10.5 in 4-10th largest). Larger average ranks were attributed to the category 10th largest stake or bigger. For each category the minimum, median, mean and maximum were computed for all stakes in the category.

**TABLE 4. FREQUENCY DISTRIBUTION OF C1, C3, C5, C20 AND C<sub>ALL</sub>**

Range	C1		C3		C5		C20		C <sub>all</sub>	
	Frequency	Cum. Pct.	Frequency	Cum. Pct.	Frequency	Cum. Pct.	Frequency	Cum. Pct.	Frequency	Cum. Pct.
0-4.99	219	3.34	168	2.56	157	2.39	157	2.39	157	2.39
5-9.99	1742	29.90	636	12.26	586	11.33	583	11.28	583	11.28
10-14.99	1308	49.84	730	23.39	500	18.95	493	18.80	493	18.80
15-19.99	750	61.27	980	38.33	520	26.88	496	26.36	496	26.36
20-24.99	506	68.99	877	51.70	518	34.78	466	33.47	466	33.47
25-29.99	374	74.69	612	61.03	550	43.16	440	40.17	440	40.17
30-34.99	316	79.51	417	67.39	516	51.03	381	45.98	381	45.98
35-39.99	262	83.50	320	72.27	500	58.65	382	51.81	382	51.81
40-44.99	204	86.61	281	76.55	401	64.77	377	57.55	377	57.55
45-49.99	203	89.71	236	80.15	363	70.30	359	63.03	359	63.03
50-54.99	147	91.95	178	82.86	254	74.17	281	67.31	281	67.31
55-59.99	114	93.69	200	85.91	257	78.09	304	71.95	304	71.95
60-64.99	76	94.85	154	88.26	266	82.15	295	76.44	295	76.44
65-69.99	66	95.85	133	90.29	184	84.95	238	80.07	238	80.07
70-74.99	74	96.98	114	92.03	163	87.44	183	82.86	183	82.86
75-79.99	49	97.73	91	93.41	134	89.48	153	85.20	153	85.20
80-84.99	47	98.44	92	94.82	127	91.42	145	87.41	145	87.41
85-89.99	24	98.81	66	95.82	91	92.80	125	89.31	125	89.31
90-94.99	34	99.33	54	96.65	73	93.92	79	90.52	79	90.52
95-100	44	100.00	220	100.00	399	100.00	622	100.00	622	100.00
<b>Total</b>			<b>6559</b>		<b>6559</b>		<b>6559</b>		<b>6559</b>	

**TABLE 5. SUMMARY STATISTICS AND CORRELATION OF C1, C3, C5, C20 AND C<sub>ALL</sub>**

Measure	Mean	Std. Dev.	Min.	Max.		C1	C3	C5	C20	C <sub>All</sub>
C1	22.75	19.48	0.05	99.99		1				
C3	32.26	23.85	0.05	99.99		0.8541	1			
C5	39.80	26.47	0.05	99.99		0.8155	0.8932	1		
C20	43.60	28.95	0.05	99.99		0.7437	0.7804	0.9313	1	
C <sub>All</sub>	43.60	28.95	0.05	99.99		0.7437	0.7804	0.9313	1	1

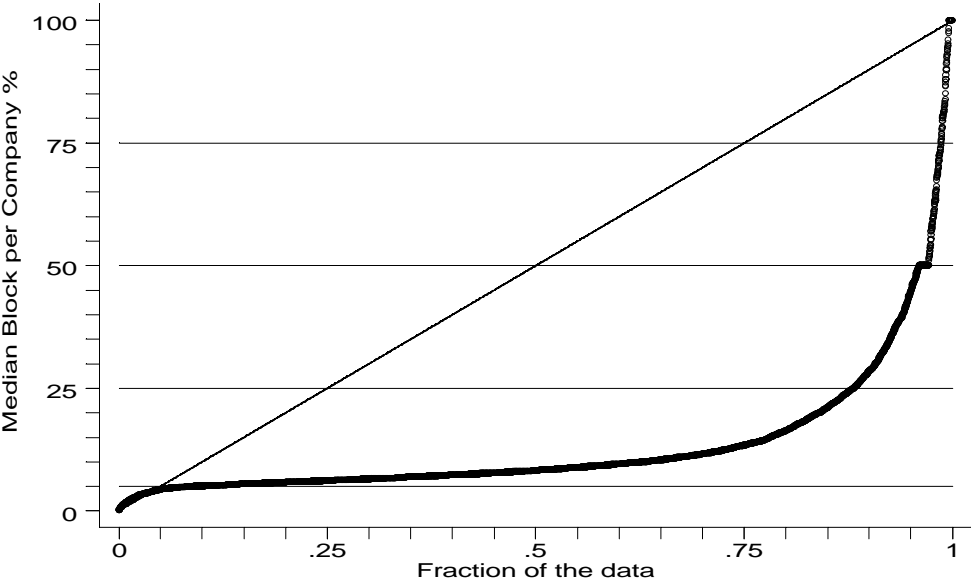
The first 4 columns show the mean, standard deviation, minimum and maximum of the five concentration measures for 5% beneficial owner blocks. The last five columns show a correlation matrix for the five measures.

**TABLE 6. DISTRIBUTION OF SUMMARY STATISTICS**

	<i>Min. Stake</i>	<i>Max. Stake</i>	<i>Median Stake</i>	<i>Interq. Range</i>	<i>Mean Stake</i>	<i>Std. Dev. Stake</i>
<b>Minimum</b>	0.00	0.05	0.05	0.00	0.05	0.00
<b>1%</b>	0.02	2.75	1.86	0.00	2.37	0.00
<b>5%</b>	0.50	5.41	4.30	0.00	4.59	0.00
<b>10%</b>	1.49	6.45	5.05	0.00	5.33	0.00
<b>25%</b>	3.86	9.31	6.13	0.89	6.87	0.85
<b>50%</b>	5.37	15.05	8.20	4.11	9.71	3.46
<b>75%</b>	7.88	30.30	13.32	10.59	16.66	8.51
<b>90%</b>	16.43	50.34	28.41	26.99	29.31	18.93
<b>95%</b>	34.26	65.90	44.62	41.34	43.08	26.85
<b>99%</b>	81.25	92.37	81.25	71.19	81.25	47.29
<b>Maximum</b>	99.99	99.99	99.99	98.88	99.99	69.62
<b>Obs</b>	6559	6559	6559	6559	6559	6559

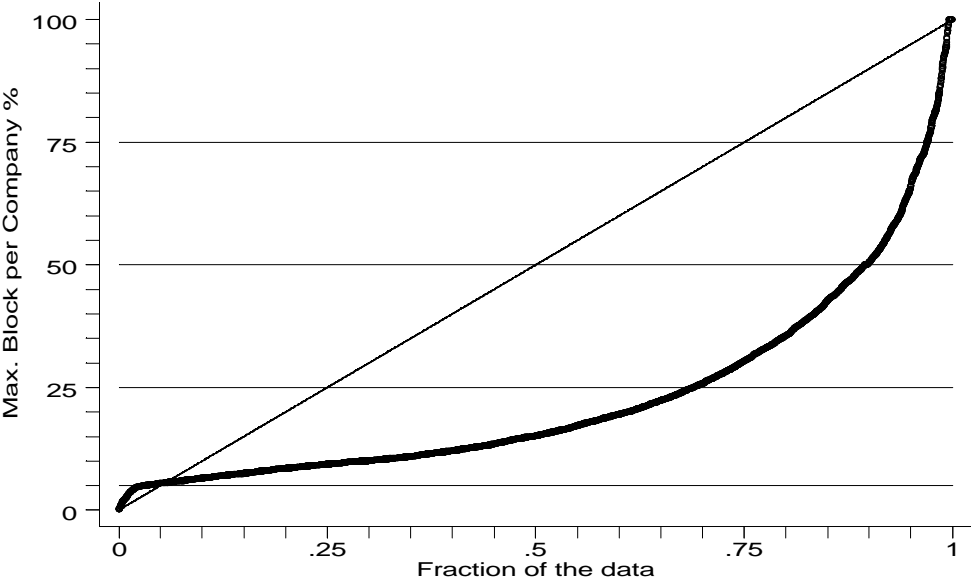
Note: The table shows the distribution of summary statistics that were computed for each of the 6559 companies in the sample (e.g. the minimum stake per company, the mean stake per company).

**FIGURE 3. PERCENTILE PLOT OF MEDIAN BLOCK HELD BY BENEFICIAL OWNERS**



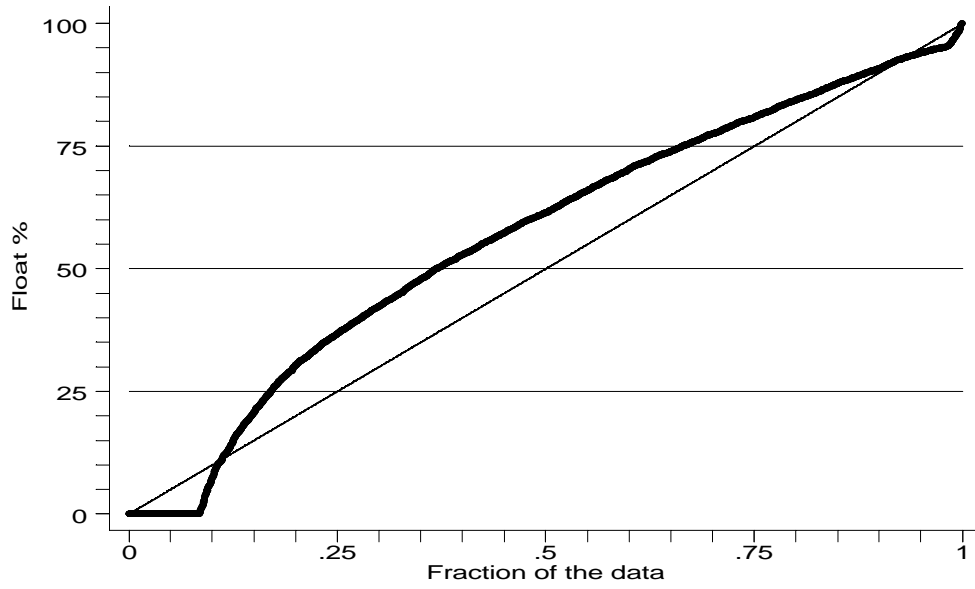
Note: Percentile plot of the median 5% beneficial owner who filed under the Regulations set out in Section 13(d) of the Securities Exchange Act. The horizontal axis shows the fraction of the 6559 companies and the vertical axis shows the corresponding median ownership stake.

**FIGURE 4. MAXIMUM BLOCK HELD BY BENEFICIAL OWNERS**



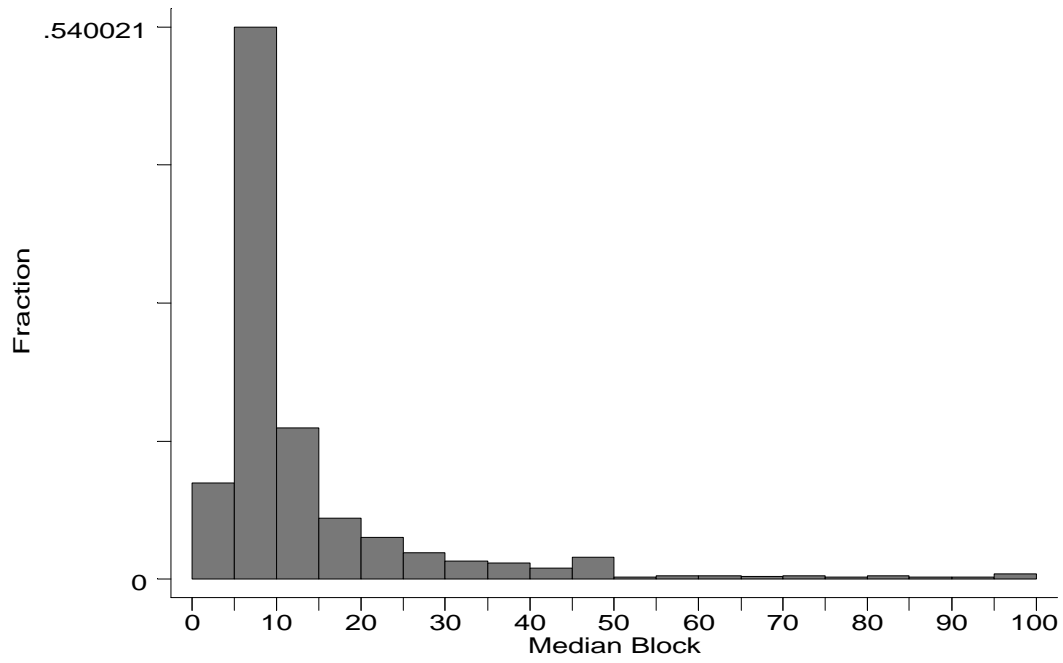
Note: Percentile plot of the maximum stake held in each of the 6559 companies with at least one 5% beneficial owner. . The horizontal axis shows the fraction of the 6559 companies and the vertical axis shows the corresponding median ownership stake. In the United States, 90% of the maximum stakes (per company) held by 5% beneficial owners are smaller than 50%.

**FIGURE 5. PERCENTILE PLOT OF “FLOAT”**

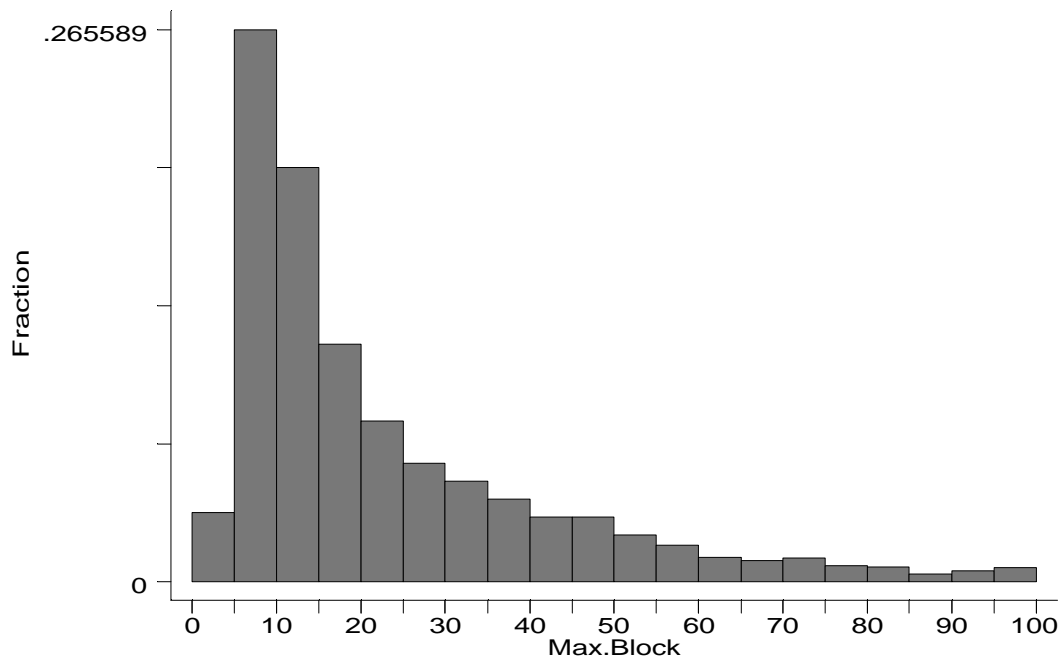


Note: There are a surprisingly large number of companies with a float just over zero percent.

**FIGURE 6. HISTOGRAM OF MEDIAN BLOCK HELD BY BENEFICIAL OWNERS**



**FIGURE 7. HISTOGRAM OF MAXIMUM BLOCK HELD BY BENEFICIAL OWNERS**



## B. Origin and Portfolios of 5% Beneficial Owners

**TABLE 7. COUNTRY OF ORIGIN OF BENEFICIAL OWNERS**

<i>Index</i>	<i>Country of Origin</i>	<i>Frequency</i>	<i>Percent</i>	<i>Index</i>	<i>Country of Origin</i>	<i>Frequency</i>	<i>Percent</i>
1	ALGERIA	1	0.01	38	ITALY	9	0.08
2	ANTIGUA	1	0.01	39	JAPAN	46	0.4
3	AUSTRALIA	21	0.18	40	JORDAN	1	0.01
4	AUSTRIA	2	0.02	41	KUWAIT	2	0.02
5	BAHAMAS	10	0.09	42	LEBANON	2	0.02
6	BARBADOS	2	0.02	43	LIBERIA	9	0.08
7	BELGIUM	13	0.11	44	LIECHTENSTEIN	8	0.07
8	BELIZE (BRITISH)	3	0.03	45	LUXEMBOURG	11	0.1
9	BERMUDA	30	0.26	46	MALAYSIA	2	0.02
10	BOTSWANA	1	0.01	47	MAURITIUS & DEPE	1	0.01
11	BRAZIL	1	0.01	48	MEXICO	7	0.06
12	BRITISH INDIAN	1	0.01	49	MYANMAR (BURMA)	1	0.01
13	BRITISH ISLES	1	0.01	50	NETHERLANDS	28	0.24
14	BRITISH VIRGIN ISLANDS	41	0.36	51	NETHERLANDS ANTILLES	21	0.18
15	CANADA	143	1.25	52	NEW ZEALAND	1	0.01
16	CAYMAN ISLANDS	20	0.17	53	NORTH KOREA	4	0.03
17	CHANNEL ISLANDS	11	0.1	54	NORWAY	5	0.04
18	CHILE	1	0.01	55	PANAMA	7	0.06
19	CHINA	4	0.03	56	PARAGUAY	1	0.01
20	COOK ISLANDS	2	0.02	57	PERU	1	0.01
21	COSTA RICA	2	0.02	58	PUERTO RICO	4	0.03
22	DENMARK	1	0.01	59	ROMANIA	1	0.01
23	EGYPT	1	0.01	60	RUSSIA	2	0.02
24	EL SALVADOR	1	0.01	61	SAUDI ARABIA	6	0.05
25	FINLAND	2	0.02	62	SINGAPORE	16	0.14
26	FRANCE	44	0.38	63	SOUTH AFRICA	3	0.03
27	GERMANY	40	0.36	64	SPAIN, CANARY &	3	0.03
28	GIBRALTAR	1	0.01	65	SUDAN	1	0.01
29	GREECE	2	0.02	66	SWEDEN	11	0.1
30	GUERNSEY	6	0.05	67	SWITZERLAND	32	0.28
31	HONG KONG	17	0.15	68	TAIWAN	8	0.07
32	INDIA	4	0.03	69	THAILAND	2	0.02
33	INDONESIA	3	0.03	70	TURKEY	1	0.01
34	IRAN	4	0.03	71	TURKS & CAICOS ISLANDS	3	0.03
35	IRELAND (REPUBLIC)	9	0.08	72	UNITED KINGDOM	96	0.84
36	ISLE OF MAN	2	0.02	73	UNITED STATES	10615	92.76
37	ISRAEL	21	0.18	74	VENEZUELA	2	0.02
<b>Total</b>						<b>11442</b>	<b>100</b>

Note: Inspecting the European owners the State of Wisconsin Investment Board was listed with Germany as the country of origin. This mistake was corrected. No other such mistakes were found through visual inspection of the data. Even if the mistake had not been discovered, the number of beneficial owners of German origin would have been 41 instead of 40.

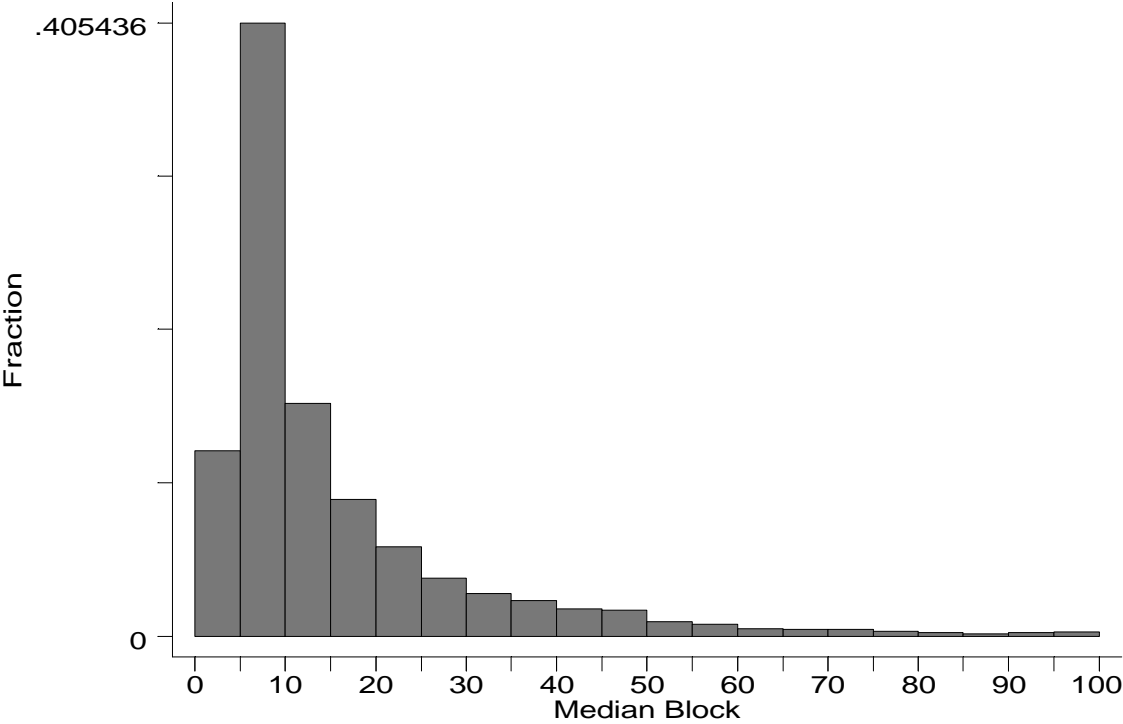
**TABLE 8. FREQUENCY DISTRIBUTION OF 5% BENEFICIAL OWNERS' STAKES**

<i>Cell No.</i>	<i>No. of Blocks</i>	<i>Freq.</i>	<i>%</i>	<i>Cumul.</i>	<i>Cumul. %</i>	<i>Cell No.</i>	<i>No. of Blocks</i>	<i>Freq.</i>	<i>%</i>	<i>Cumul.</i>	<i>Cumul. %</i>
1	1	9848	86.07	9848	86.07	41	43	1	0.01	11392	99.56
2	2	751	6.56	10599	92.63	42	46	2	0.02	11394	99.58
3	3	249	2.18	10848	94.81	43	47	1	0.01	11395	99.59
4	4	135	1.18	10983	95.99	44	48	3	0.03	11398	99.62
5	5	76	0.66	11059	96.65	45	51	1	0.01	11399	99.62
6	6	54	0.47	11113	97.12	46	53	2	0.02	11401	99.64
7	7	25	0.22	11138	97.34	47	56	3	0.03	11404	99.67
8	8	49	0.43	11187	97.77	48	57	1	0.01	11405	99.68
9	9	31	0.27	11218	98.04	49	58	3	0.03	11408	99.70
10	10	20	0.17	11238	98.22	50	59	1	0.01	11409	99.71
11	11	10	0.09	11248	98.30	51	60	2	0.02	11411	99.73
12	12	10	0.09	11258	98.39	52	61	1	0.01	11412	99.74
13	13	18	0.16	11276	98.55	53	63	1	0.01	11413	99.75
14	14	10	0.09	11286	98.64	54	65	1	0.01	11414	99.76
15	15	9	0.08	11295	98.72	55	71	1	0.01	11415	99.76
16	16	10	0.09	11305	98.80	56	72	1	0.01	11416	99.77
17	17	5	0.04	11310	98.85	57	74	3	0.03	11419	99.80
18	18	8	0.07	11318	98.92	58	77	1	0.01	11420	99.81
19	19	3	0.03	11321	98.94	59	80	1	0.01	11421	99.82
20	20	4	0.03	11325	98.98	60	81	1	0.01	11422	99.83
21	21	6	0.05	11331	99.03	61	87	2	0.02	11424	99.84
22	22	4	0.03	11335	99.06	62	88	1	0.01	11425	99.85
23	23	1	0.01	11336	99.07	63	90	1	0.01	11426	99.86
24	24	4	0.03	11340	99.11	64	97	1	0.01	11427	99.87
25	25	7	0.06	11347	99.17	65	103	1	0.01	11428	99.88
26	26	5	0.04	11352	99.21	66	114	1	0.01	11429	99.89
27	27	6	0.05	11358	99.27	67	120	1	0.01	11430	99.90
28	28	4	0.03	11362	99.30	68	121	1	0.01	11431	99.90
29	29	5	0.04	11367	99.34	69	127	1	0.01	11432	99.91
30	30	2	0.02	11369	99.36	70	134	1	0.01	11433	99.92
31	31	1	0.01	11370	99.37	71	153	1	0.01	11434	99.93
32	32	2	0.02	11372	99.39	72	160	1	0.01	11435	99.94
33	33	1	0.01	11373	99.40	73	173	1	0.01	11436	99.95
34	34	1	0.01	11374	99.41	74	181	1	0.01	11437	99.96
35	35	6	0.05	11380	99.46	75	273	1	0.01	11438	99.97
36	36	2	0.02	11382	99.48	76	337	1	0.01	11439	99.97
37	37	4	0.03	11386	99.51	77	352	1	0.01	11440	99.98
38	38	1	0.01	11387	99.52	78	393	1	0.01	11441	99.99
39	39	2	0.02	11389	99.54	79	1174	1	0.01	11442	100.00
<b>Total</b>								<b>11442</b>	<b>100.00</b>		

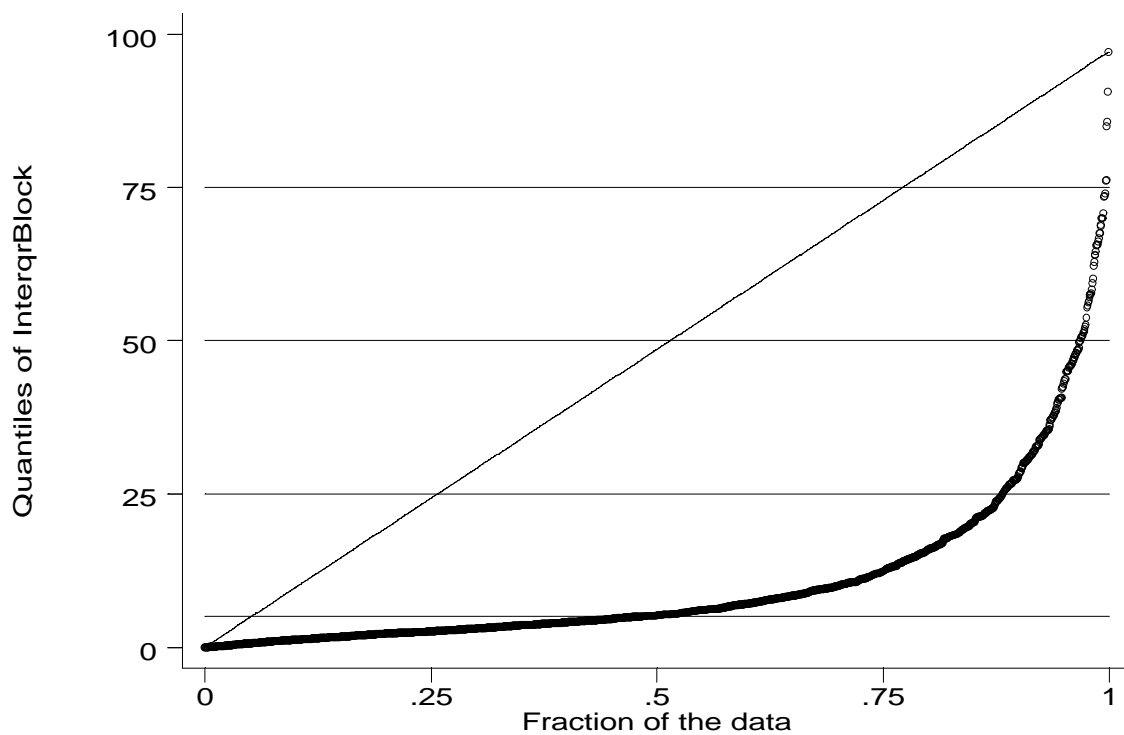
**TABLE 9. 5% BENEFICIAL OWNERS WITH MORE THAN 50 STAKES**

<i>Name of Beneficial Owner</i>	<i>No. Stakes</i>	<i>Min. Stake</i>	<i>Max. Stake</i>	<i>Mean Stake</i>	<i>Std. Stake</i>	<i>Median Stake</i>	<i>Intqr. Stake</i>
FMR CORP	1174	0.00	76.74	7.33	4.60	6.93	5.13
DIMENSIONAL FUND ADVS.	393	0.09	9.71	5.34	1.31	5.31	1.34
PUTNAM INVT INC ET AL	352	0.00	94.05	8.52	6.90	7.41	5.45
WELLINGTON MGMT CO	337	0.07	19.06	7.37	3.22	7.06	4.34
STATE OF WISCONSIN INVEST BD	273	0.11	42.29	7.21	3.48	7.12	3.70
PRUDENTIAL INS CO OF AMER	181	0.00	30.25	6.15	4.45	5.59	4.38
MORGAN J P & CO INC	173	0.00	48.88	6.92	5.36	5.95	4.45
AXA ET AL	160	0.00	73.15	7.66	9.18	5.95	5.01
PIONEERING MGMT CORP	153	0.53	17.97	7.34	2.52	7.21	3.87
MELLON BANK ET AL	134	0.24	41.29	7.81	7.46	6.04	6.16
NEUBERGER & BERMAN	127	0.02	18.14	6.27	2.88	5.68	2.96
HEARTLAND ADVISORS INC	121	1.30	24.71	9.98	4.82	9.58	6.06
CAPITAL GROUP INC.	120	0.15	22.78	6.02	3.43	5.69	3.03
QUEST ADVISORY CORP ET AL	114	1.02	31.14	7.07	3.19	6.67	2.61
KENNEDY CAPITAL MGMT INC	103	0.55	76.34	7.58	8.11	6.03	2.95
CAPITAL GROUP COS INC ET AL	97	1.65	88.54	8.66	9.26	6.49	5.07
PRICE T ROWE ASSOCIATES	90	0.11	19.44	6.29	2.83	5.90	3.70
PRICE T ROWE ASSOC INC ET AL	88	1.46	16.65	6.86	2.88	6.14	3.91
MERRILL LYNCH & CO ET AL	87	0.00	46.05	8.89	8.08	7.21	5.21
GOLDMAN SACHS & CO ET AL	87	0.50	44.99	8.18	6.65	6.06	5.83
BABSON DAVID L & CO	81	0.27	99.99	8.30	10.71	6.94	3.51
GAMCO INVESTORS INC ET AL	80	0.51	78.35	12.29	10.61	10.62	10.60
AMERICAN CENTURY COS INC	77	0.86	15.44	6.75	1.98	6.58	1.85
JANUS CAPITAL CORP ET AL	74	0.61	22.95	7.44	4.40	6.11	4.93
RCM CAPITAL MANAGEMENT	74	0.03	15.05	6.57	3.24	6.68	4.50
AMERICAN EXPRESS CO ET AL	74	0.01	19.02	5.04	3.26	4.58	3.21
TCW GROUP	72	0.48	52.42	7.12	7.67	5.87	2.38
NICHOLAS APPLGATE CAP MGMT	71	0.01	15.18	5.50	2.73	5.41	1.92
AIM MGMT GROUP INC ET AL	65	0.91	14.03	6.10	2.42	5.49	2.55
BRINSON PARTNERS INC	63	0.36	17.76	6.63	2.91	6.30	2.80
INVESCO PLC ET AL	61	0.87	18.49	6.69	3.22	6.11	4.08
TRAVELERS GROUP INC ET AL	60	0.01	47.65	9.83	10.67	5.84	8.93
SANFORD C BERNSTEIN & CO	60	0.05	9.37	6.31	2.49	6.28	3.51
KOPP INVESTMENT ADVISORS	59	0.95	64.10	13.71	9.69	11.64	9.08
RYBACK MANAGEMENT CORP	58	0.27	47.10	9.29	7.85	7.55	4.59
FRANKLIN RESOURCES INC	58	0.30	24.33	6.57	3.69	6.02	2.53
FIRST UNION CORP	58	0.02	29.83	6.20	4.31	5.62	3.24
HANCOCK JOHN MUT LIFE ET AL	57	0.01	34.65	7.51	5.45	6.13	3.21
LGT ASSET MANAGEMENT INC	56	3.26	16.50	7.91	2.85	7.20	3.80
PILGRIM BAXTER & ASSOC	56	1.00	17.20	6.34	2.72	6.16	2.94
METROPOLITAN LIFE INSUR	56	0.00	30.42	5.83	4.65	5.55	4.87
DRESDNER BANK AG	53	4.96	15.05	8.18	2.21	8.16	3.61
CHANCELLOR CAP MGMT ET AL	53	0.68	13.42	6.76	2.51	6.44	2.79
WARBURG PINCUS COUNSELLR	51	2.88	17.48	7.93	3.20	6.84	4.62

**FIGURE 8. HISTOGRAM OF MEDIAN VOTING BLOCK PER 5% BENEFICIAL OWNERS**



**FIGURE 9. PERCENTILE PLOT OF PORTFOLIO INTERQUARTILE RANGE S**



Note: The figure shows the interquartile range for the 1594 portfolios with more than one stake (in the case of one stake the interquartile range is obviously zero).

## VI. Rule 13d-3. Determination of Beneficial Owner

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- (a) 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, through any contract, arrangement, understanding, relationship, or otherwise has or shares:
- (1) Voting power which includes the power to vote, or to direct the voting of, such security; and/or
  - (2) Investment power which includes the power to dispose, or to direct the disposition of, such security.
- (b) Any person who, directly or indirectly, creates or uses a trust, proxy, power of attorney, pooling arrangement or any other contract, arrangement, or device with the purpose or effect of divesting such person of beneficial ownership of a security or preventing the vesting of such beneficial ownership as part of a plan or scheme to evade the reporting requirements of Section [13\(d\)](#) or [13\(g\)](#) of the [Act](#) shall be deemed for purposes of such sections to be the beneficial owner of such security.
- (c) 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.
- (d) Notwithstanding the provisions of paragraphs [\(a\)](#) and [\(c\)](#) of this rule:
- (1)
    - (i) A person shall be deemed to be the beneficial owner of a security, subject to the provisions of [paragraph \(b\)](#) of this rule, if that person has the right to acquire beneficial ownership of such security, as defined in [Rule 13d-3\(a\)](#) within sixty days, including but not limited to any right to acquire:
      - (A) through the exercise of any option, warrant or right;
      - (B) through the conversion of a security;
      - (C) pursuant to the power to revoke a trust, discretionary account, or similar arrangement; or
      - (D) pursuant to the automatic termination of a trust, discretionary account or similar arrangement;provided, however, any person who acquires a security or power specified in paragraphs (A), (B) or (C), above, with the purpose or effect of changing or influencing the control of the issuer, or in connection with or as a participant in any transaction having such purpose or effect, immediately upon such acquisition shall be deemed to be the beneficial owner of the securities which may be acquired through the exercise or conversion of such security or power. Any securities not outstanding which are subject to such options, warrants, rights or conversion privileges shall be deemed to be outstanding for the purpose of computing the percentage of outstanding securities of the class

owned by such person but shall not be deemed to be outstanding for the purpose of computing the percentage of the class owned(?) by any other person.

- (ii) [Paragraph \(i\)](#) remains applicable for the purpose of determining the obligation to file with respect to the underlying security even though the option, warrant, right or convertible security is of a class of equity security, as defined in [Rule 13d-1\(c\)](#), and may therefore give rise to a separate obligation to file.
- (2) A member of a national securities exchange shall not be deemed to be a beneficial owner of securities held directly or indirectly by it on behalf of another person solely because such member is the record holder of such securities and, pursuant to the rules of such exchange, may direct the vote of such securities, without instruction, on other than contested matters or matters that may affect substantially the rights or privileges of the holders of the securities to be voted, but is otherwise precluded by the rules of such exchange from voting without instruction.
- (3) A person who in the ordinary course of business is a pledgee of securities under a written pledge agreement shall not be deemed to be the beneficial owner of such pledged securities until the pledgee has taken all formal steps necessary which are required to declare a default and determines that the power to vote or to direct the vote or to dispose or to direct the disposition of such pledged securities will be exercised, provided that:
- (i) The pledgee agreement is bona fide and was not entered into with the purpose nor with the effect of changing or influencing the control of the issuer, nor in connection with any transaction having such purpose or effect, including any transaction subject to [Rule 13d-3\(b\)](#);
  - (ii) The pledgee is a person specified in [Rule 13d-1\(b\)\(1\)\(ii\)](#), including persons meeting the conditions set forth in [paragraph \(G\)](#) thereof; and
  - (iii) The pledgee agreement, prior to default, does not grant to the pledgee:
    - (A) The power to vote or to direct the vote of the pledged securities; or
    - (B) The power to dispose or direct the disposition of the pledged securities, other than the grant of such power(s) pursuant to a pledge agreement under which credit is extended subject to Regulation T (12 CFR 220.1 to 220.8) and in which the pledgee is a broker or dealer registered under [Section 15](#) of the [Act](#).
- (4) A person engaged in business as an underwriter of securities who acquires securities through his participation in good faith in a firm commitment underwriting registered under the [Securities Act of 1933](#) shall not be deemed to be the beneficial owner of such securities until the expiration of forty days after the date of such acquisition.