Legislating on a False Foundation: The Erroneous Academic Underpinnings of the Private Securities Litigation Reform Act of 1995

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The statistical information contained in this Article was compiled with the help of Princeton Venture Research, Inc. (PVR), an economic consulting firm with offices in Princeton, New Jersey and San Diego, California. We wish to convey special thanks to John Torkelsen, Candace Preston, and Dr. William Bassin for their extremely able assistance. PVR has served as consultants to our firm and our clients, and as expert witnesses for plaintiffs in many securities class actions. Although PVR, like the authors, spends far more professional time on behalf of securities plaintiffs than defendants, we are confident that the data it has provided is comprehensive, neutral in selection, and unbiased.

We would also like to acknowledge the assistance from the staff at *Securities Class Action Alert*, particularly publisher James Newman and Mel Cantor, in analyzing the case filing statistics from the Administrative Office of the United States Courts. *See infra* notes 156-158 and accompanying text.

I. INTRODUCTION

Congress recently passed the most sweeping revision of the federal securities laws since 1933-34.[1] The view that the securities litigation system was broken, and needed fixing, provided the impetus for this legislation. The system's supposed failings included the proposition that cases were filed too often, based merely upon the fact that the stock price had dropped rather precipitously.[2] In addition, it was asserted that almost all cases settled, with settlement terms which did not relate to the "merits" of the suit, but rather were "formulaic."[3]

Proponents of securities legislation reform relied heavily upon Professor Janet Cooper Alexander's article, *Do The Merits Matter? A Study of Settlements in Securities Class Actions*, published in the *Stanford Law Review* (Alexander Study).[4] Professor Alexander, after studying a group of securities cases involving initial public offerings (IPOs) in computer-related businesses, asserted that:

i) Lawsuits were filed "against every company in the industry whose stock declined significantly in the months following its initial stock offering";[5]

ii) virtually every suit settled;[6] and

iii) most cases settled for almost precisely 25 percent of the damage exposure, and where they did not, the deviations could be "accounted for by non-merits-related factors."[7]

Prior to Congress' sweeping revision of the federal securities laws, Professor Alexander's article met with broad interest but mixed reactions. Several courts cited it, assuming explicitly or implicitly that

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1. Private Securities Litigation Reform Act of 1995, 15 U.S.C.A §§ 77k-78 (West Supp. 1996).
2. 140 CONG. REC. S3695, 3706 (daily ed. Mar. 24, 1994) (statement of Sen. Dodd).
3. *Id.*
4. Janet C. Alexander, *Do the Merits Matter? A Study of Settlements in Securities Class Actions*, 43 STAN. L. REV. 497 (1991); *see also* S. REP. NO. 104-98, 104th Cong., 1st Sess. 98 (1995); 141 CONG. REC. S1075 (daily ed. Jan. 18, 1995) (statement of Sen. Domenici); 139 CONG. REC. S16662-63 (daily ed. Nov. 20, 1993) (statement of Sen. Domenici); 141 CONG. REC. S8895-98 (daily ed. June 22, 1995) (statement of Sen. D'Amato); H.R. REP. NO. 104-50, 104th Cong., 1st Sess., pt. 1 (1995).
5. Alexander, *supra* note 5, at 500.
6. *Id.*
7. *Id.*

its data were reliable and its conclusions valid.[8] Several law review articles have relied upon Professor Alexander's article as proof of the existence of meritless claims in the securities litigation area.[9]

As discussion of the need for securities litigation reform continued, Arthur Levitt, the Chairman of the Securities and Exchange Commission (SEC) and a key spokesman on this issue, referred to the substance of Professor Alexander's conclusions as an indication of flaws in the manner in which securities cases were litigated, supporting the need for legislative action.[10] Other commentators have suggested, in scholarly articles,[11] specialized publications,[12] and Congressional testimony,[13]

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8. *E.g.*, Kamen v. Fin. Servs., 939 F.2d 458, 462 (7th Cir. 1991), *cert. denied*, 502 U.S. 974 (1991); Weinberger v. Great N. Nekoosa Corp., 925 F.2d 518, 524 (1st Cir. 1991); *In re* Urcarco Sec. Litig., 148 F.R.D. 561, 566 (N.D. Tex. 1993); *In re* VeriFone Sec. Litig., 784 F. Supp. 1471, 1485 (N.D. Cal. 1992), *aff'd*, Halkin v. VeriFone Inc., 11 F.3d 865 (9th Cir. 1993); Mirkin v. Wasserman, 5 Cal. 4th 1082, 1107 (1993).

9. *See, e.g.*, Anthony Q. Fletcher, *Curing Crib Death: Emerging Companies, Nuisance Suits, and Congressional Proposals For Securities Litigation Reform*, 32 HARV. J. ON LEGIS. 493, 503 (1995); Jill E. Fisch, *As Time Goes By: New Questions About The Statute Of Limitations For Rule 10b-5*, 61 FORDHAM L. REV. S101, S125 (1993); Margaret A. Berger, *Civil Litigation In The Twenty-First Century: A Panel Discussion*, 59 BROOK. L. REV. 1199, 1215-16 (1993); Bryant Garth, *From Civil Litigation To Private Justice: Legal Practice At War With The Profession And Its Values*, 59 BROOK. L. REV. 931, 943 (1993); Stephen E. Morrissey, *State Settlement Class Actions That Release Exclusive Federal Claims: Developing A Framework For Multijurisdictional Management Of Shareholder Litigation*, 95 COLUMB. L. REV. 1765-6 (1995).

10. Chairman Arthur Levitt, U.S. Securities and Exchange Commission, Remarks at Securities Regulation Institute, University of California, San Diego held in Coronado, California (Jan. 26, 1994) (transcript available from authors). According to Levitt, "some allege that settlements often fail to reflect the underlying merits of the cases. If true, this means that weak claims are overcompensated and strong claims are undercompensated." *Id.*

11. Lester B. Snyder & Jerry G. Gonick, *The Interrelationship of Securities Class Action Litigation and Pension Plan Tax Policy: What's Really at Stake?*, 21 SEC. REG. L.J. 123, 126 n.4 (1993); Steven P. Marino & Renee D. Marino, *An Empirical Study of Recent Securities Class Action Settlements Involving Accountants, Attorneys, or Underwriters*, 22 SEC. REG. L.J. 115, 142 (1994); Adam F. Ingber, *10b-5 or Not 10b-5?: Are the Current Efforts to Reform Securities Litigation Misguided?*, 61 FORDHAM L. REV. S351, S361-62 (1993).

12. *In Camera*, 14 CLASS ACTION REP. 1, 70 (1991).

13. *What We Know and Don't Know: A Very Short Primer on Securities Class Actions, Before the Subcomm. on Telecommunications and Finance of the Committee on Energy and Commerce*, United States House of Representatives (Aug. 10, 1994) (testimony of Professor John C. Coffee, Jr., Columbia University Law School) (available from the authors). Labeling as a "myth" Professor Alexander's conclusion that "[t]he merits don't matter," Professor Coffee offers his personal judgment "that the merits do

that Professor Alexander might be wrong, but none have carefully reviewed her data or provided a counterstudy of their own.

With this backdrop of general acceptance of Professor Alexander's work, the 104th Congress addressed the issue of securities litigation reform, and enacted the Private Securities Litigation Reform Act of 1995 (PSLRA or Act). As noted above, in advocating the need for legislation, proponents frequently referred to Professor Alexander's conclusions.[14] Ultimately, this assertion prevailed, as bills passed the House and Senate, were reconciled, and despite President Clinton's veto, were enacted into law by a two-thirds override vote of each House.[15]

Because of the importance of this matter, we have undertaken a careful review of Professor Alexander's statistical analysis. The results are startling and suggest that Congress has legislated on the basis of false and/or misleading data. Not only is Professor Alexander's study fundamentally flawed, but her conclusions are inconsistent with both a replication of her study done with the most obvious flaws corrected, and a broader, more reliable study.

In sum, it appears that Congress has legislated on the basis of data which was erroneous. Although it remains to be seen what Congress has wrought with this Act, it is clear that the Act cannot solve the "problem" identified by Professor Alexander, because the "problem" she described does not exist. Whatever one's view on securities litigation and the recent Act, the history of Professor Alexander's study should be carefully scrutinized as it provides a cautionary tale about the use of seemingly objective academic studies as a basis for legislation.[16]

II. SUMMARY OF OUR REVIEW OF PROFESSOR ALEXANDER'S STUDY

As experienced practitioners in the field of securities law, we found Professor Alexander's conclusions surprising and contrary to both our intuition and our experience. Our view was that strong cases generally settle for more than weak ones, other things being equal. Having settled dozens of such cases, we could recall that the strength of a case is often the first matter discussed in settlement talks and, along with defendants'

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matter—but not enough." *Id.* at 1, 5.

14. *See supra* note 5.

15. Private Securities Litigation Reform Act of 1995, 15 U.S.C.A §§ 77k-78 (West Supp. 1996).

16. Compounding the problems caused by Professor Alexander's *Stanford Law Review* article, she has published two additional articles which utilize the same data, and has relied on her prior conclusions in addressing other related topics. *See* Janet C. Alexander, *The Value of Bad News in Securities Class Actions*, 41 UCLA L. REV. 1421, 1422-23, 1439 (1994); Janet C. Alexander, *The Lawsuit Avoidance Theory of Why Initial Public Offerings Are Underpriced*, 41 UCLA L. REV. 17, 53, 57 (1993).

ability to pay, typically drives the discussion. If Professor Alexander was right, all of that talk was posturing or self-delusion.

Moreover, there are examples in the real world of strong cases settling for far more than weak cases. Settlements in *In re American Continental Corp./Lincoln Savings and Loan Securities Litigation*[17] yielded approximately $250 million, over 85 percent of total damages of $288 million. As one of approximately 100 defendants in that case, Ernst & Young alone paid $63 million to settle the case. Did the merits matter in *Lincoln Savings*? It certainly appears so.

At the opposite end of the spectrum, cases where discovery or motion practice demonstrate that the merits are questionable often settle for small amounts or are dismissed voluntarily.[18] Again, we have sat through numerous settlement conferences where defense counsel, insurance carriers' counsel, or a settlement judge pointed out the infirmities in the case and convinced plaintiffs to settle for a tiny portion of the damage exposure.[19]

However, we do not expect the reader to accept our anecdotal evidence as against Professor Alexander's purportedly scientific study. Rather, we chose to undertake a scientific review of Professor Alexander's work. We approached that task in the following fashion:

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17. MDL Docket No. 834 (D. Az.). *See generally In re* Am. Continental Corp./Lincoln Sav. & Loan Sec. Litig., 794 F. Supp. 1424 (D. Ariz. 1992) (detailing facts of the underlying cases).

18. In conjunction with 1993 hearings before the Senate Committee on Banking, Housing and Urban Affairs, our firm provided the Committee with information on 18 cases which were voluntarily dismissed in the four-year period between 1990 and 1993 and not subsequently refiled. Letter from Melvyn I. Weiss to the Honorable Donald W. Riegle, Jr., Chairman of the Senate Committee on Banking, Housing and Urban Affairs (Oct. 12, 1993) (on file with authors). Some of those dismissals have been reported in the press. *See, e.g.*, Mark V. Boennighausen, *Discovering Cooperation*, THE RECORDER, Mar. 30, 1994, at 1 ("In a second 3Com case filed in 1993, [defense attorney Tower] Snow says, he persuaded the plaintiffs to drop the suit by providing them documents which showed they didn't have a case."); Lawrence Aragon, *Know Thy Enemy*, PC WEEK, Sept. 13, 1993, at A1 ("3Com provided Lerach with all the current analysts' reports. . . . Lerach dropped the suit.").

19. Certainly an extreme example of the merits affecting a settlement is provided by the recent case of Assad v. Hibbard Brown & Co. [1993-1994 Transfer Binder] Fed. Sec. L. Rep. ¶ 98,127, at 98,961 (E.D. Pa. Feb. 16, 1994), which involved a class action against a brokerage firm alleging overcharging and market manipulation. In approving a minuscule settlement, the court explained that "after extensive discovery, it is reasonably clear that the plaintiffs had no valid claims in the first place. If that is so, then the proposed settlement would indeed benefit the class members, since they would be achieving a (slight) benefit they would not otherwise obtain." *Id.*

First, we closely reviewed her study and found several significant methodological errors. By summary:

1. The sample utilized in Professor Alexander's study is far too small and too homogeneous to prove anything conclusive.
2. Professor Alexander did not apply consistent principles to the samples contained in the study, but rather made ad hoc adjustments which tend to conform the data to her thesis.
3. Professor Alexander made several errors in data gathering and calculation which further undermine her conclusions.

Second, we have repeated Professor Alexander's study as she defined it (still too small and homogeneous) but without the data errors and omissions. The resulting eleven settlements range from a high of nearly 70 percent to a low of 2 percent, with only five of the settlements falling within Professor Alexander's 20-30 percent range. Further, if the damage "stakes" are adjusted to account for the general movement of the market, the eleven settlements range from a high of nearly 80 percent to a low of less than 3 percent, with only three of the settlements falling within Professor Alexander's 20-30 percent range. Thus, the corrected Alexander Study tells a very different story than the one presented in Professor Alexander's article.

Third, rather than simply critiquing and re-analyzing Professor Alexander's work, we have performed our own study in a broader but still limited subset of the universe for which Alexander seeks to draw conclusions: all securities class actions. The purpose of our study was to see if the results of the Alexander Study could be replicated in a larger sample. If Professor Alexander's conclusions are valid, they should apply not only to her sample—venture capital-backed computer companies which went public in early 1983—but also to other industries and to other time periods. Our data suggests Professor Alexander's results cannot be replicated.

Finally, we sought to test Professor Alexander's hypotheses by looking at data from the economy as a whole. None of the data over the past twenty years is consistent with results we would expect to see if Professor Alexander's conclusions were correct.

Because her study contains methodological flaws and her findings cannot be replicated in a broader, more representative sample, the scientific method strongly suggests that Professor Alexander's conclusions are incorrect. Our conclusion is that the merits *do* matter in settling securities cases, or more incontrovertibly, that Professor Alexander's contrary hypothesis is not supported by the objective data.

III. CRITIQUE OF THE ALEXANDER STUDY'S METHODOLOGY

A. Summary of the Alexander Study

Professor Alexander sought to study the settlement of securities cases, and particularly whether "strong" cases settled for more (proportional to damage exposure) than "weak" cases. As a preliminary inquiry, Professor Alexander also proposed to study the extent to which the filing of a securities fraud lawsuit is dependent on the amount of damages at stake. To resolve these questions, Professor Alexander chose a sample of "initial public offerings by computer or computer-related companies during the first six months of 1983."[20] Of seventeen IPOs which she determined met these criteria,[21] Alexander found that nine of the companies had been subject to a class action lawsuit arising out of the offering and that eight of these cases had settled at the time the article was written. Thus, to test her principal thesis, Professor Alexander analyzed the settlements in only *eight* securities class action lawsuits.[22]

The Alexander Study and its conclusions can be summarized as follows:

1. Lawsuits were filed "against every company in the industry whose stock declined significantly in the months following its initial stock offering";[23]
2. virtually every suit settled;
3. most cases settled for approximately 25 percent of the damage exposure;

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20. Alexander, *supra* note 5, at 506.

21. In addition, Professor Alexander limited her sample to venture capital-backed IPOs, which was apparently based on the source of her information. *See infra* text accompanying note 40.

22. As noted, suits were filed against nine companies in Professor Alexander's sample and eight of those cases had settled at the time Professor Alexander's article was written. The ninth case, *TeleVideo Systems*, settled shortly thereafter. *See* Cooper v. Hwang, No. C-86-20146-WAI (N.D. Cal. 1986) (TeleVideo). Inclusion of the *TeleVideo Systems* settlement, which was apparently unavailable to Professor Alexander, is one of many factors which casts doubt on her conclusions. *See infra* text accompanying note 112.

23. Alexander, *supra* note 5, at 500.

4. in the few cases where settlements deviated from the purported "going rate" of 25 percent, the deviations could be "accounted for by non-merits-related factors";[24] and
5. therefore, since these eight cases were presumed by Professor Alexander to vary in strength,[25] "[t]he strength of the plaintiffs' case on the merits [] [does] not appear to be a significant factor in determining the outcome of these cases."[26]

Having drawn these conclusions, Professor Alexander proposed some solutions to the "problem" of non-merits-related settlements. Interestingly, these "solutions" are quite different from the provisions of the PSLRA. Although we disagree with many of her solutions as a matter of policy, because her identification of a problem has generated so much interest, in Congress and elsewhere, we will focus our initial attention on whether there is any such problem.

B. Methodological and Theoretical Deficiencies in the Alexander Study

The Alexander Study is marred by several deficiencies in methodology. They fall roughly into four categories:

1. inappropriate sample size, selection, and homogeneity;
2. inappropriate and/or subjective interpretation and editing of key data;
3. omissions and arithmetic errors; and
4. improper calculation of damage exposure or "stakes" by failing to adjust for movements in the overall market during the relevant period.

Some of these errors impact the data from which Professor Alexander draws her conclusions. Others suggest that whatever the data shows, her conclusions cannot be extended to securities class actions generally.

We discuss each of these deficiencies below.

1. Sample Selection Deficiencies

Sampling is a statistical technique that is used when the data required to prove a hypothesis for an entire population are either too difficult or too expensive to obtain.[27] Where the researcher seeks to draw inferenc-

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24. *Id.*
25. *Id.* at 500, 506, 522-23.
26. *Id.* at 500.
27. *See, e.g.*, GEORGE W. SUMMERS ET AL., BASIC STATISTICS IN BUSINESS AND ECONOMICS 11 (4th ed. 1985).

es about a large population, the objective of sample selection is to replicate the characteristics of the *entire* population which is being examined.[28] The stated goal of the Alexander Study was to explain the incidence of securities class action suits and examine the settlements in those suits. Indeed, the title of the article expresses as much: "A Study of Settlements in Securities Class Actions." The conclusion reached by the Alexander Study is that generally the merits do not matter in securities class actions.[29] Therefore, the population which the Alexander Study sought to examine was *all securities class action suits.*

Assuming that comprehensive data for such a population would be difficult and expensive to obtain, sampling would be an appropriate means of estimating the population's characteristics. Random selection of a significant number of examples from the entire population is the preferred technique for selecting a sample.[30] A "convenience" or "judgment" sample—one selected because it can easily be obtained by the researcher—is considered the least representative and least scientific sampling technique.[31] "Convenience sampling is not widely used in circumstances other than preliminary or exploratory studies, or where representativeness is not a crucial factor."[32]

Professor Alexander chose to look at suits arising (a) from computer and computer-related company IPOs, (b) in the first half of 1983, (c) which had received venture capital financing. This is clearly a convenience sample. Professor Alexander, a Northern California law professor, chose to include in her sample only a particular species of Northern California securities suit with which she was likely familiar: struggling computer-related IPOs listed in the April 1984 *Venture Capital Survey*. The dates chosen narrow the field even further. Indeed, Professor Alexander recognizes that 1983 brought a spate of ill-fated Silicon Valley IPOs generating similar suits with many similar issues.[33]

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28. *See, e.g.*, LYMAN OTT & DAVID K. HILDEBRAND, STATISTICAL THINKING FOR MANAGERS 177-78 (1983).
29. Alexander, *supra* note 5, at 499-500.
30. *See* OTT & HILDEBRAND, *supra* note 29, at 177.
31. DONALD L. HARNETT & JAMES L. MURPHY, STATISTICAL ANALYSIS FOR BUSINESS AND ECONOMICS 320 (1985).
32. *Id.*; *see also* RICHARD I. LEVIN, STATISTICS FOR MANAGEMENT 275 (4th ed. 1987) ("But if a study uses judgment sampling and loses a significant degree of 'representativeness,' it will have purchased convenience at too high a price.").
33. Alexander, *supra* note 5, at 507-09.

It is extraordinarily unlikely that such a convenience sample would be *representative of all securities class actions in the early 1980's, let alone all such actions over all time.* Indeed, Professor Alexander's sample selection can be critiqued on three independent bases.

a. Size of Sample

In 1983 there were approximately 10,000 publicly traded companies in the United States.[34] Slightly more than 1,500 of those companies made common stock offerings in that year.[35] Six hundred eighty-six of those offerings were IPOs.[36] Between July 1983 and June 1984, there were a total of 149 securities class action lawsuits filed.[37]

Against this large population, Professor Alexander studied a total of seventeen IPOs and nine resulting class action suits, eight of which settled. Intuitively, the sample seems far too small to support any conclusions drawn regarding the incidence of suits or the amounts of the settlements which resulted, and statistical principles confirm this intuitive reaction.[38]

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34. S.E.C., DIRECTORY OF COMPANIES REQUIRED TO FILE ANNUAL REPORTS WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES EXCHANGE ACT OF 1934 1 (July 31, 1984).

35. Search of Effective New Issues (Public) Database, IDD Information Services, Securities Data Company, New York, N.Y.

36. *Id.*

37. 1984 DIRECTOR ADMIN. OFF. U.S. CTS. ANN. REP. 448. Even these figures grossly understate the size of the relevant population which Professor Alexander is attempting to measure. Because Professor Alexander is seeking to draw inferences about settlements generally across time (and not just in 1983), the population actually consists of suits filed during a multi-year period. For instance, focusing on the ten-year period between 1984 and 1993, the Administrative Office statistics show a total of 1,921 securities class action lawsuits filed in federal courts. *See infra* tbl. 7.

38. The inadequacy of the sample size can be demonstrated mathematically by comparing the variation in Professor Alexander's sample of 8 cases with the variation in our expanded sample of 18 cases. *See infra* tbl. 4-B1. Using the corrected data from Table 4-B1, the sample standard deviation for Professor Alexander's 8 cases is a relatively narrow 7.30%. The standard deviation for the expanded set of 18 cases (which includes all of Professor Alexander's eight cases) is a much wider 18.52%.

Neither of the samples is a truly random selection from the universe of securities class actions. Yet, as we later explain, the homogeneity of Professor Alexander's selection technique would tend to minimize the amount of sample variability, making it even less likely that her small sample of 8 cases even remotely represents the characteristics of the population she has attempted to measure.

There is a small probability—between 0.5 and 1%—that a random sample of 8 from a population with a true standard deviation of 18.52% would generate a sample standard deviation of 7.30%. This can be demonstrated by a formula in which a ratio of the sample variance (s^2) multiplied by the appropriate degrees of freedom divided by the true variance is compared with a table showing percentage points of the Chi-square distribution. (Note that the variance is the square of the standard deviation and the degrees of freedom is one less than the sample size.) Calculating the ratio

Moreover, it is unclear why Professor Alexander found it necessary to impose certain limitations on her study which had the effect of drastically reducing its size. For instance, Professor Alexander notes that her sample included only venture capital-backed IPOs, apparently because her source, the *Venture Capital Survey*, was limited to this type of offering.[39] Other than convenience, she never offers any substantive explanation for this limitation. From other readily available sources we were able to compile a list of forty-two computer and computer-related IPOs during the first half of 1983 which met all of Professor Alexander's other criteria.[40]

It is similarly unclear why computer-related companies should be studied separately. Even accepting Professor Alexander's asserted need for similarity, her description of the unique business environment of early 1983 applies generally to high-technology companies.[41] Using this somewhat broader category, we identified ninety-three IPOs from the first half of 1983 which could have been studied without completely discarding Professor Alexander's concept of homogeneity or her basic universe—IPOs in a high-risk period for companies in high-risk industries.[42] Therefore, Professor Alexander's study is far too small to provide grounds for a realistic assessment of all securities lawsuits.

$.0730^2(8\text{-}1)/.1852^2$ yields a value of 1.0875. We utilize the lower end of the distribution because we are calculating the probability of an abnormally low sample standard deviation. The calculated value falls almost squarely between the Chi-square values at the 0.5 (.9893) and 1% (1.2390) levels. OTT & HILDEBRAND, *supra* note 29, at 748-49.

Conversely, there is virtually no possibility that a random sample of 18 from a population with a true standard deviation of 7.30% would generate a sample standard deviation of 18.52%. Applying the same formula we get a ratio of $.1852^2(18\text{-}1)/.0730^2$ yielding a value of 110.0189. Focusing now on the upper end of the distribution (because we are calculating the probability of an abnormally high sample standard deviation), the calculated value is more than three times greater than the Chi-square value at the 0.5% level (35.7185).

39. The principal function of venture capital is to provide "seed and startup financing for new businesses" in exchange for a long term equity investment in those businesses. *See* Jane Morris, *An Overview of the Venture Capital Industry*, *in* PRATT'S GUIDE TO VENTURE CAPITAL SOURCES 17 (Testa et al. eds., 1993). Typically, venture capital is provided by small venture capital investment companies organized for the purpose of locating attractive investments.

40. Professor Alexander also limited her sample to offerings of at least 3 million shares priced at $12 per share or more. Alexander, *supra* note 5, at 517. We do not criticize these limitations. For a listing and discussion of the 42 cases, *see infra* tbls. 2-A1, 2-A2 and text accompanying notes 109-110.

41. Alexander, *supra* note 5, at 508.

42. *See infra* app. B and text accompanying notes 115-118.

b. Homogeneity of the Sample

The most glaring problem in the sample selected by Professor Alexander is its homogeneity. Professor Alexander seeks to test a hypothesis about the effect of the "merits" on settlements of securities class actions generally. Typically, a study would seek a random sample drawn from the entire population, or at least from as large a subset as is reasonably possible. To the extent non-merit factors might be expected to affect settlement values, a model could be designed to explicitly account for those other factors.[43]

Instead, Professor Alexander selected an exceedingly limited and homogenous sample. She describes the similarities of her sample cases as follows:

> The factual allegations and legal theories of these suits were virtually identical. The companies were in the same industry and the events complained of were contemporaneous, so external economic and market factors relevant to the lawsuits were the same for all cases. All but one of the suits were filed in the same judicial district, and there was significant overlap among the lawyers in the cases, especially on the plaintiffs' side.[44]

Professor Alexander defends this selection by arguing that she has thereby provided control for variables other than the merits which might affect the value of the settlement:

> [T]hese cases are as similar as any set of actual complex cases is ever likely to be.
>
> Differences among the cases should thus be largely restricted to differences on the merits. If the actual outcomes (adjusted for the size of the claim) are the same, or if differences can be accounted for by factors other than the merits, this will strongly suggest that the merits did not affect the outcomes—contrary to both the economic model and the "common sense" view of settlement behavior.[45]

In a simplistic fashion, the Alexander Study is attempting to statistically test the hypothesis that there is a correlation between the substantive merit of a case (the independent variable) and the value at which it will settle (the dependent variable). The asserted justification for choosing

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43. *See, e.g.*, OTT & HILDEBRAND, *supra* note 29, chs. 13, 15-16; SUMMERS ET AL., *supra* note 28, chs. 13-14.

44. Alexander, *supra* note 5, at 506; *see also id.* at 509.

45. *Id.* at 506. Professor Alexander never explains what it is about the similarities she identifies that would lead one to conclude they might affect a case's settlement value. Later in the article she makes an unpersuasive attempt to address the more important aspect of that question, why it is that those similarities do not also suggest a similarity in the substantive merit of the eight cases, or more accurately, a similarity in the quality of evidence available to prove substantive merit. *Id.* at 522-23.

a narrow sample implicitly accepts that such a study should provide control for as many other relevant variables as possible.[46] The economic settlement model, which Professor Alexander seeks to test in the securities class action context, posits that a party to litigation "makes its settlement decisions by comparing its expected economic position after a trial with its position if the settlement proposal is accepted, taking into account the costs of litigation and settlement."[47] The model would suggest that the factors which affect the amount of a settlement should include the strength of the case on the merits, the likelihood that any resulting judgment can be satisfied, the skill of the lawyers (both in terms of litigating the case and convincing their counterparts to settle), and, to a certain extent, the attitudes of the particular judge and jury who will hear the case.

In contrast to her goal, Professor Alexander designed homogeneity controls for a host of irrelevant or marginally relevant characteristics while disregarding significant non-merits factors which could be expected to affect settlement value. By limiting her sample to suits arising from computer-related venture capital-backed IPOs in the first half of 1983, Professor Alexander arguably controls to a certain extent for the influence of lawyers, although hardly in a comprehensive fashion. She concludes there was "substantial overlap among the plaintiffs' lawyers"[48] and some, but "less striking," overlap on the defense side.[49] Perhaps the similar geographic location of most of the cases may control for the attitudes of potential jurors.

In all other respects, however, the similarities in Professor Alexander's sample do not control for the variables that one would expect might affect the amount of a settlement.[50] Similar settlements,

46. *Id.* at 506. While in theory all variables (other than those being tested) should be held constant, in practical terms it is only relevant variables which pose a concern. For instance, to study the mechanical durability of various automobile makes, it should not be necessary to limit the sample to only cars of one particular color.

47. *Id.* at 502.

48. *Id.* at 509.

49. *Id.* at 521.

50. Professor Alexander does make the conclusionary assertion that "[s]ince the cases were brought in the same district, differences in expected outcomes based on differences in applicable law or the predilections of particular judges should also have been slight." *Id.* at 521. The case files reflect, however, that the nine cases were assigned to seven different judges. The fact that all of the cases were filed in district courts within the Ninth Circuit might control for differences in the law between circuits,

therefore, do not necessarily mean that the merits of the case are irrelevant. Professor Alexander completely disregards the possibility that in her small sample of cases, these uncontrolled-for factors (such as limited insurance coverage and a defendant's inability to satisfy a judgment) may mean that a strong case on the merits sometimes settles for about the same amount as a weaker case without similar problems.[51]

More importantly, Professor Alexander has created a sample of cases which there is good reason to believe may *not* vary substantially on the merits.[52] By selecting cases that are similar in a variety of irrelevant respects, Professor Alexander may have also selected cases which are similar in "merit" as well. If this is true, it would not be surprising to find that settlement values did not show significant variation.

The nine cases studied by Professor Alexander are, by her own admission, a group of companies in the same business that went public at the same time and were exposed to similar market forces affecting their products and their stock. Moreover, they were sued under section 11 of the Securities Act of 1933, a statute that affixes strict liability to issuers and a negligence standard to other defendants.[53] Professor

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although Professor Alexander does not cite any relevant intercircuit conflicts. It certainly does not control for the "predilections of particular judges."

51. Interestingly, in her most current article Professor Alexander expressly recognizes this phenomenon in a slightly different context, but fails to appreciate its implications for her original study:

> [I]n judging the effectiveness of a particular lawsuit in obtaining a recovery for the class, one must consider not only what a jury might have awarded, but also what could realistically be collected. Settlements, unlike judgments, are agreements on amounts that will actually be paid. If defendants do not have the assets to satisfy a judgment, it is not a fair criticism of the settlement that it is less than a potential judgment. Indeed, settlement for a lower amount may be in the class's best interest by preserving assets for payment to the class that would otherwise have been expended in litigating the case.

Alexander, *The Value of Bad News*, *supra* note 17, at 1467 (footnotes omitted). In a footnote she goes on to assert that "[t]he prevalent economic models of settlement thus are incomplete in that they take into account the amount of a potential judgment and the probability that the plaintiff will prevail at trial, but do not include the amount of the potential judgment that can actually be collected." *Id.* at 1467 n.165. Whether this assertion is technically true as to developed theories of law and economics, certainly lawyers and courts have long recognized the importance of considering a defendant's ability to satisfy a judgment in realistically evaluating a settlement figure. *See infra* text accompanying notes 82-83.

52. As we have previously indicated, the inadequate size of the sample merely compounds the problems engendered by its homogeneity. *See infra* note 39 and accompanying text. In many respects, the Alexander Study—focusing on 17 computer related IPOs from the first half of 1983—is comparable to conducting a pre-election poll of 25 voters drawn exclusively from either churchgoers in Peoria or social activists in Berkeley, and attempting to make national predictions.

53. 15 U.S.C. §§ 77k(a)-(b) (1933) (amended 1934); *see* Herman & MacLean v. Huddleston, 459 U.S. 375, 381-82 (1983).

Alexander does not allow for the possibility that, in the hot IPO market of the first part of 1983, a number of computer companies may have opportunistically rushed toward the perceived IPO "window" too soon and made similar overly optimistic claims about their firm's prospects. When the result was negative for these companies, suits followed that all presented parallel questions as to whether the optimistic statements in the prospectuses were misleading given the competitiveness and other risks in the industry.

There is at least anecdotal evidence to support such a theory.[54] The speculative public offering boom of 1982-1984—which encompasses the whole of the Alexander Study—is widely viewed as a "rip off" of public investors. Some of the primary participants in bringing these short-lived, high-tech successes to market have admitted their excesses:

> In the 1983 public offering frenzy, many high-tech companies sold newly issued stock to the public at top prices. Shortly afterward, the prices collapsed because of the shakeout in the computer industry or mismanagement. Investors were burned, and numerous shareholder lawsuits were filed against the companies and their underwriters. Hambrecht & Quist acted as underwriter for its share of such companies—Eagle, Diasonics and Wicat Systems, for example—although it was by no means alone.
>
> Mr. Volpe, who joined Hambrecht in 1981, about five years into a career as an East Coast investment banker, *acknowledges that many such offerings probably should not have been made. "We wear hair shirts a lot around here," he said.*[55]

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54. In fact, the evidence may be more than anecdotal. A recent report describes studies by economists at UCLA which suggest an interesting but perhaps not completely surprising pattern for IPOs.

> Analyzing the long-term performance of flotations that took place between 1980 and 1984, [these economists] found, in the first study, that firms typically went public after an unusually good set of results. After-tax profits of the firms in the sample on average rose in the financial year before the offering, then fell continuously until six years after it. Cash flow, too, rose in the year before the IPO, and fell during the one in which it took place, but then remained stable.
>
> Such deft timing could of course be due simply to good luck, or perhaps to demand from investors after a firm has performed well. However, there is a more sinister possibility, explored in the second study: that managers boost earnings artificially around the time of an offering in order to get the best possible price for their shares.

Initial Public Offerings: Sheep and Goats, THE ECONOMIST, Oct. 8, 1994, at 88.

55. Andrew Pollack, *Hambrecht & Quist Loses Its Edge*, N.Y. TIMES, Mar. 31, 1985, §3 at 1, 27 (emphasis added).

Similarly, Ronald Koenig, Chairman of Ladenburg, Thalmann & Co., has acknowledged, "[a] lot of companies went public that never should have gotten public money."[56]

> "Things came public that shouldn't have come public. Or they came public too soon," concedes Sandy Robertson of Robertson, Colman & Stephens, the San Francisco brokerage firm that did its share of high-tech new issues. (Some of which, like TeleVideo, he wishes in hindsight he hadn't done.)
>
> The amounts of dollars raised were vast. "Companies were given the impression—both from corporate finance departments and venture cap people—that money was no object," says one seasoned money manager who follows the stocks. "You need money, we'll get it for you."[57]

The Wall Street underwriters made millions on these public offerings, and the entrepreneurial controlling shareholders of the new public companies made many times more.[58] Unfortunately, many of these new public companies had brilliant, but brief, careers. The huge losses suffered by investors were cited as a principal cause of the downturn in new offerings, which made entrepreneurial capital more difficult to obtain.[59]

Professor Alexander argues that the merits should vary among her eight cases because the "degree of culpability and the evidence available to prove it" should differ.[60] This assertion not only ignores the factors discussed above, but also the impact of section 11 and its strict liability standard.[61] "Culpability" is irrelevant. If a breezy prospectus failed to identify the risks in the volatile computer market, and that same general failure was present in each prospectus prepared by the same set of underwriters and outside counsel, the claims under section 11 may well

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56. Michael Blumstein, *Investors More Wary*, N.Y. TIMES (City Ed.), Sept. 19, 1984, at D1.

57. Rhonda Brammer, *IPO-R.I.P.?*, BARRON'S, Oct. 14, 1985, at 16.

58. *See* Alexander L. Taylor III, *Making a Mint Overnight; "I Can Smell the Ferrari Now," Chants a Fresh Crop of Instant Multi-Millionaires*, TIME, Jan. 23, 1984, at 44.

59. Scott McMurray, *Slumping Market In Initial Stock Offerings Squeezes Some Investment Banking Firms*, WALL ST. J., Oct. 16, 1984, at 7.

60. Alexander, *supra* note 5, at 514.

61. *See* Robert A. Spanner, *Limiting Exposure in the Offering Process*, 20 REV. SEC. & COMMODITIES REG. 59 (1987):

> Everything that fails . . . [the] test of hindsight then reappears in a securities class action complaint, which often consists of dozens of alleged inaccuracies and omissions concerning every conceivable aspect of the issuer's operations. It is a not an exaggeration to say that the typical prospectus lawsuit concerns not fraud, but simply mistakes or errors of judgment.
>
> This does not make such lawsuits ipso facto without merit. Section 11 makes actionable *every* material misrepresentation or omission; scienter, or intent, need not be shown. That is, the issuer is strictly liable, regardless of what efforts it made to insure accuracy.

have been comparably strong. This is especially true when one factors in the necessarily imprecise nature of the settlement process. Thus, Professor Alexander's argument would be more credible if the applicable liability standard included a scienter requirement.[62]

The Alexander Study preemptively rejects the possibility that a common error in the offering materials could lead to strict liability under section 11.[63] It must be remembered, however, that the companies were all immature firms in the same business, at the same time, headquartered in the same geographic area, suggesting at least the possibility of a common entrepreneurial culture.[64] When one adds to this mix the fact that the prospectuses in question were drafted with the assistance of virtually the same investment bankers and outside counsel, the probability of similar vulnerabilities—and comparably strong lawsuits—becomes even greater. L.F. Rothschild was the underwriter in five of the six offerings that Professor Alexander found had settled at the 20-30 percent range. Pillsbury, Madison & Sutro was issuer's counsel on two of the offerings and underwriters' counsel on two others, while Wilson, Sonsini, Goodrich & Rosati was underwriters' counsel on two offerings and issuer's counsel on another. In total, two of these three firms of professionals were involved in five of the six deals.

This likelihood that the homogeneity of the suits affected the outcome becomes even greater when one examines the prospectuses for the six IPOs in which the suits did settle near 25 percent. Four of those prospectuses (Diasonics, Victor Technologies, Priam, and Activision)

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62. One commentator has criticized Professor Alexander on precisely this ground:

> Professor Alexander's analysis involved a study of class actions that were not predicated exclusively on violations of Rule 10b-5. The cases were also predicated on violations of section 11 of the Securities Act of 1933—a critical distinction. Under section 11, an issuer of securities is held strictly liable for material misstatements and must prove nonnegligence. Thus, in contrast to Rule 10b-5, actions under section 11 often render the usual facts of a case irrelevant. It is therefore not surprising to see similar settlement values in these cases.

Ingber, *supra* note 12, at S361-62.

63. Alexander, *supra* note 5, at 523.

64. The homogeneity of Professor Alexander's study raises a host of issues which would not be present in a broader sample. For instance, is it possible a common business culture can foster securities law violations? *See* Ron Wolf, *Valley Executives Flout SEC Rules—Agency's Failure To Curtail Delinquent Reporting of Stock Sales Breeds Contempt in Investment Community*, SAN JOSE MERCURY NEWS, June 28, 1993, at 1C.

disclosed no risk factors at all, while the fifth (Masstor) contained only two perfunctory "risk" paragraphs. This aggressive approach to risk disclosure makes these five cases quite similar on a crucial point, and quite different from the current crop of high-tech IPOs, which are typically accompanied by prospectuses identifying several generic risk factors.

Thus, the homogeneity of the sample undercuts Professor Alexander's central point. If one attempted to measure whether personal injury settlements varied according to the merits of the lawsuit, comparing eight cases involving students hit in crosswalks would not be adequate. Such cases might well settle in a narrow range of percentages of monetary damage, but the assumption that the merits varied substantially from case to case would be flawed. Here too, Professor Alexander's assumption that her eight cases must vary substantially on the merits is unfounded.

c. Selective Inclusion and Exclusion

Having created an abnormally small sample by design, Professor Alexander compounds the error by excluding some IPOs which appear to meet all her criteria.[65] We found five additional venture capital-backed IPOs which, from database summaries confirmed by company descriptions found in their prospectuses or annual reports, seem to fit her

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65. We say "appear" because it cannot be determined from Professor Alexander's article exactly how she decided which companies were "computer related." In a footnote following Table 1, she explains how the seventeen IPOs listed in the table were assembled:

> "The list is largely derived from the annual survey of initial public offerings in *Venture Capital Survey*. . . . It includes all companies classified under the survey's industry headings 'Computers,' 'Computer Software and Services,' and 'Peripherals and Computer Related Products'. . . . (The *Venture Capital Survey* does not list the specific firms in each of the industry headings. The list was reconstructed by working with the staff of the *Venture Capital Survey* and using the company descriptions in prospectuses and VENTURE CAPITAL JOURNAL 1983 YEARBOOK 35-44)."

Alexander, *supra* note 5, at 510 n.38. Thus, it is unclear whether responsibility for the omissions lies primarily with Professor Alexander or the staff of the *Venture Capital Survey*.

description on any objective basis.[66] This omission calls into question the statistical rigor of even a properly designed study.

Professor Alexander also includes one case which does not meet the criteria for her study as defined by her source publication, but is nonetheless cited as it shows results consistent with her hypothesis. According to Professor Alexander:

> Diasonics, Inc., is included in the sample although it is not classified within the computer-related industry headings in the *Venture Capital Survey*. The survey classified the company based on its product line of magnetic resonance imagery (MRI). I have included Diasonics as a computer-related company based on its product line of computer-enhanced X-ray equipment, which was more important to the company's near-term financial prospects than its MRI line and was the main source of the company's downfall. Diasonics was regarded as a comparable case by lawyers on both sides of the other sample cases. It was one of the largest IPOs of 1983, at $122 million, and resulted in one of the largest IPO-related securities class actions, filed in the same district as all but one of the other sample cases.[67]

Professor Alexander never explains how she came to question the characterization of Diasonics and she certainly never suggests she

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66. These five companies were initially identified by the descriptions in the *Investment Dealer's Digest* database as follows: Automatix ("develop robotics/software"), Daisy Systems ("mnfr engineering computer syst"), LSI Logic ("mnfr semiconductors circuits"), Scientific Systems Services ("computer software services"), and VLSI Technology ("mnfr integrated circuits"). *See infra* note 115.

The descriptions of the companies' business activities found in the prospectuses and annual reports were used to confirm that the companies were indeed computer related. AUTOMATIX INC., 1983 10-K REPORT 1 (1984) ("Automatix develops, manufactures, markets and services industrial robotic systems and artificial vision systems based on the Company's state-of-the-art computer hardware and software technology."); DAISY SYS. CORP., 1983 10-K REPORT 3 ("Daisy designs, manufactures, markets, and services computer-aided engineering (CAE) design systems for the electronics industry."); LSI LOGIC CORP., 1983 10-K REPORT 2 (1984) ("LSI Logic Corporation designs, manufactures and markets application-specific computer-designable integrated circuits primarily based on gate array technology using a proprietary computer-based design automation system." (parentheticals omitted)); SCIENTIFIC SYS. SERVS., INC., PROSPECTUS FOR OFFERING MARCH 22, 1983, at 3 (1983) ("[T]he Company's business continued its evolution from providing software development and software support to the Company's customers to designing and implementing integrated computer systems for complex monitoring and control applications."); VLSI TECHNOLOGY, INC., PROSPECTUS FOR OFFERING FEBRUARY 24, 1983, at 4 ("VLSI Technology, Inc. develops and markets a comprehensive system of products and services for the design of custom and semicustom very large scale integrated ("VLSI") circuits.").

Each of the five companies is listed in our Table 1-A. *See infra* text accompanying notes 103-106.

67. Alexander, *supra* note 5, at 510-11 n.38.

reviewed all high-technology IPOs which occurred during the first half of 1983 to determine whether there were other companies more appropriately classed as "computer or computer-related."[68] The problem, of course, is one of consistency. When performing a statistical study, either the data should be taken as it is given in the source material or, if the source is questionable on a point, comprehensive adjustments should be made in a consistent and neutral fashion. Professor Alexander's adjustments appear to be anything but comprehensive or consistent.

2. *Adjustment and Omission of Key Data*

Having begun with unrepresentative data, Professor Alexander then proceeded to adjust and edit the limited data available until it was consistent with her hypothesis.

Consider first Professor Alexander's manipulation of the "stakes" in *WICAT*.[69] The WICAT initial public offering of 4 million shares was at $18 per share. If the IPO price was used to calculate the "stakes"—as was done with the other companies—the $6.25 million settlement would have been 14.2 percent, a substantial deviation from the 25 percent hypothesis. Professor Alexander, however, suggests it would be appropriate to substitute what she calls the "stabilized" post-offering price of WICAT ($13 per share) for the initial price. With this adjustment, "the settlement equals 26 percent of the adjusted stakes,"[70] consistent with her hypothesis.[71]

Similar subjective adjustments, however, could be made in many of the cases, undermining the evidence of a purported "going rate." Strikingly similar to *WICAT* is the case of *Fortune Systems*,[72] in which the stock price declined immediately after the offering and "stabilized"

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68. We applied our consistent criteria to check on the exclusion of Diasonics. *See infra* note 118. The *Investment Dealer's Digest* database describes the company business as "Mfr Med Imaging Sys," which does not suggest a computer-related endeavor. Diasonics is included in our expanded study of all 1983 high technology IPOs. *See infra* app. B, tbls. 4-B1, 4-B2, notes 115-124 and accompanying text.

69. *In re* WICAT Sec. Litig., No. C-83-11176 (D. Utah 1983); *see* Alexander, *supra* note 5, at 518-19.

70. *Id.*

71. Curiously, in a footnote, Professor Alexander expresses "some hesitation" in suggesting a selective adjustment, acknowledging that the same sort of argument could be made in two other cases. *Id.* at 519 n.71. She nonetheless relies on the adjustment in the text of her article without considering the impact of similar adjustments in the other cases.

72. *In re* Fortune Sys. Sec. Litig., 680 F. Supp. 1360, 1362 (N.D. Cal. 1987).

at $16 per share.[73] Indeed, as Professor Alexander recognizes in another portion of her article,[74] defendants in *Fortune Systems* successfully brought a motion for summary judgment to exclude any damages attributable to the decline in stock price between March 4, the date of the offering, and May 12, the date the company made the first adverse disclosure.[75] Instead of recognizing this fact pattern as analogous to *WICAT*, Professor Alexander treats the summary judgment as though it was indicative of a weak case on the merits and argues the *Fortune Systems* settlement demonstrates that the merits had no effect.[76]

The stock price movement in a third case, *Activision*,[77] exhibits a pattern similar to that in *WICAT* and *Fortune Systems*. From an offering price of $12 per share, the stock declined to $10 in the two weeks following the offering, and remained between $8 and $10 until the adverse disclosures, which led to suit. Again, as in *Fortune Systems*, the result in *Activision* would not fit Professor Alexander's "25 percent" settlement hypothesis if the "stakes" were adjusted by using $8-10 as the "stabilized" price.

Thus, the central principle of consistency was once again not adhered to in the Alexander Study. If a statistical study requires adjustments in the data, the same adjustment must be made for all similar circumstances. If a fact is treated as merits-related in one case, that same fact cannot be treated as non-merits-related in another.[78]

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73. If the $16 "stabilized" price is used to calculate the market loss, the Fortune Systems settlement was a striking 64 % of the theoretical "stakes." *See* In Camera, *supra* note 13, at 70.

74. *See* Alexander, *supra* note 5, at 519-21.

75. *Fortune Sys.*, 680 F. Supp. at 1362.

76. Alexander, *supra* note 5, at 519-21. Part of the problem here may be definitional. When we colloquially speak of the "merits," we are generally referring to the strength of the evidence in establishing a defendant's liability under the applicable substantive standard. Thus, the "merits" may be strong but the damages minimal. On the other hand, even when liability is certain, a case may be viewed as weak on the "merits" where the plaintiff is unable to prove causation or substantial damages. From the perspective of the Alexander Study, the problem with the latter approach is that it incorporates multiple variables under a single heading. A case with substantial damages but questionable liability might settle for roughly the same amount as one with near certain liability but much lesser provable damages. To say that the "merits" had no effect under these circumstances would be to ignore the impact of two quite different considerations.

77. *In re* Activision Sec. Litig., No. C-83-4639(A)-MHP (N.D. Cal. 1987).

78. As Professor Alexander clearly recognizes elsewhere, adjustments of this sort introduce a subjective element into the process. Alexander, *supra* note 5, at 516. Did

Similar deficiencies exist in Professor Alexander's treatment of the data regarding Eagle Computers. The $1.95 million *Eagle Computers*[79] settlement, which yielded a low settlement percentage of 8.6 percent, is deemed irrelevant by Professor Alexander due to the lack of available defendant funds or insurance coverage.[80] We cannot take issue with the notion that collectability problems often result in settlements which are lower than they might otherwise be.[81] Indeed, experienced attorneys and judges would undoubtedly confirm the fact that recoverable assets are one of the first two factors discussed in almost any settlement negotiation, and typically (along with Professor Alexander's focus, the "merits") drive the talks.[82] But Professor Alexander, having analyzed this issue as to *Eagle Computers*, fails to examine the remaining cases to see if similar collectability problems were present in any of those.

As was the case with the stakes adjustment in *WICAT* and *Fortune Systems*, Professor Alexander's treatment of the issuer insolvency factor appears to vary depending on the destination of her argument. In *Eagle Computers*, the company's bankruptcy was deemed a non-merits explanation for an unusually low settlement.[83] Later, however, in

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the price actually stabilize and, if so, at what price? In reality, "stabilized" price adjustments are merely one variant of the central causation issue present in virtually every securities action: What portion of the price inflation of the stock is attributable to the misstatement or nondisclosure?

79. *In re* Eagle Computers Sec. Litig., No. C-84-20382(A)SW (N.D. Cal. 1984).

80. *Id.* at 517-18.

81. *See, e.g.*, Protective Comm. for Indep. Stockholders of TMT Trailer Ferry, Inc. v. Anderson, 390 U.S. 414, 424 (1968) (judge approving settlement must consider "possible difficulties of collecting on any judgment which might be obtained"); Class Plaintiffs v. City of Seattle, 955 F.2d 1268, 1295 (9th Cir. 1992) ("settling defendant's ability to pay may be a proper factor to be considered in evaluating a proposed class action settlement"), *cert. denied*, 506 U.S. 953 (1992); Grunin v. Int'l House of Pancakes, 513 F.2d 114, 124 (8th Cir.) (court reviewing proposed class action settlement "should consider such factors as the defendant's overall financial condition and ability to pay"), *cert. denied*, 423 U.S. 864 (1975). Fans of baseball, in particular, should see also N. County Contractor's Ass'n, Inc. v. Touchstone Ins. Servs., 27 Cal. App. 4th 1085, 1094, 33 Cal. Rptr. 2d 166, 172 (1994) ("settlement took into account all available [insurance] coverage").

82. *See, e.g.*, Jack W. Londen, *Counseling Clients on Securities Litigation Risk*, *in* CALIFORNIA MCLE MARATHON 1994 SECURITIES LAW UPDATE 7, 51 (David Siegel & Bruce G. Vanyo co-chairs, 1994) (on file with authors). In fact, the provision of Fed. R. Civ. P. 26(a)(1)(D) (formerly subdivision (b)(2)), requiring automatic disclosure of any insurance policies potentially providing coverage for a judgment, was expressly designed to facilitate settlement. *See* Fed. R. Civ. P. 26 advisory committee note on subdivision (b)(2), 1970 amendment. *See generally* Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399, 426 (1973).

83. Alexander, *supra* note 5, at 517-18.

Professor Alexander's discussion of *Victor Technologies*,[84] issuer insolvency was listed as a "significant litigation event" which "surprised" Professor Alexander because it did not cause the settlement to vary from the 25 percent range.[85] If a company's bankruptcy explains why an 8 percent settlement is lower than it otherwise would have been, why does it not also suggest that a 27 percent settlement would have been two or three times greater had funds been available?

The unavailability of funds to satisfy a judgment was hardly unique to *Eagle Computers* and *Victor Technologies*. Another portion of Professor Alexander's article notes that the issuer in *Priam* was also in bankruptcy.[86] Poor issuer financial condition was also present in the *Activision*, *Masstor*, and *TeleVideo* cases.[87] Nonexistent or impaired director and officer insurance coverage was a factor in those cases and in *Priam*[88] as well.[89] Thus, several of Professor Alexander's "going rate" 25 percent settlements might well have been higher if adequate funds were available. To return to a familiar theme, Professor Alexander's adjustments are not consistent.

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84. *In re* Victor Technologies Sec. Litig., No. C-83-3906(A)RFP(FW) (N.D. Cal. 1983).

85. Alexander, *supra* note 5, at 519-21.

86. *Id.* at 519.

87. *See* Application For and Memorandum in Support of an Award of Attorneys' Fees, Costs and Expenses at 28, 38, *In re* Activision Sec. Litig., No. C-83-4639(A)-MHP (N.D. Cal. document filed Apr. 13, 1987); Declaration of Paul F. Bennett Re: History and Nature of This Litigation at 6-7, *In re* Masstor Sys. Corp. Sec. Litig., No. C-84-20559(A)-RPA (N.D. Cal. document filed Oct. 6, 1988); Declaration of Leonard B. Simon in Support of Final Approval of Settlement at 6, Cooper v. Hwang, No. C-86-20146-WAI (N.D. Cal. document filed Feb. 15, 1991) (TeleVideo).

88. Weinberger v. Schroeder, No. C-84-20757-WAI (N.D. Cal. 1990) (Priam).

89. *See* Application For and Memorandum in Support of an Award Of Attorneys' Fees, Costs and Expenses at 28, *In re* Activision Sec. Litig., No. C-83-4639(A)-MHP (N.D. Cal. document filed Apr. 13, 1987); Declaration of Paul F. Bennett Re: History and Nature of This Litigation at 6-7, *In re* Masstor Sys. Corp. Sec. Litig., No. C-84-20559(A)-RPA (N.D. Cal. document filed Oct. 6, 1988); Memorandum of Points and Authorities in Support of Application for Attorneys' Fees and Reimbursement of Expenses at 5, Weinberger v. Schroeder, No. C-84-20757-WAI (N.D. Cal. document filed July 20, 1990) (Priam); Declaration of Leonard B. Simon in Support of Final Approval of Settlement at 6, Cooper v. Hwang, No. C-86-20146-WAI (N.D. Cal. document filed Feb. 15, 1991) (TeleVideo).

3. *Arithmetic and Data Errors*

The Alexander Study also contains a number of arithmetic and data errors which are listed in Appendix A of this Article. The majority are minor, although taken as a whole they tend to undermine the scientific rigor of the study. Several of the errors, however, are significant enough to warrant specific comment.

In Professor Alexander's critical Table 4, *Victor Technologies* is shown with a settlement percentage of 26.87 percent[90] when the actual percentage should be 29.63 percent.[91] Thus, one of Professor Alexander's "25 percent results" is actually 30 percent.

Professor Alexander's Table 3 employs a different data set—the twelve worst-performing IPOs of 1983. This includes cases other than those listed in her initial sample of seventeen (for example, non-computer companies and IPOs from the second half of 1983) and is used to support her conclusion that every company whose IPO generated "stakes" of more than $20 million was sued, while none that generated lesser "stakes" were sued. She goes on to hypothesize that "stakes" of $20 million are necessary to generate an attorneys' fee award of sufficient size to justify the time and expense of a class action.[92]

Professor Alexander's alternate data set of worst-performing IPOs is simply inaccurate. Far from confirming her conclusion, the correct data suggests lawsuits are filed based on something other than the theoretical "stakes" in the case. Of the six IPOs in Table 3 (of the Alexander Study) with "stakes" less than $20 million, we discovered that two (ATV Systems and Clinical Data) resulted in lawsuits.[93] Each had hypothetical "stakes," as defined by Professor Alexander, of less than $5 million.[94]

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90. Alexander, *supra* note 5, at 517.

91. *See infra* app. A, at 4. A lesser, but nonetheless significant, error in the case of Priam results in an increase in the settlement percentage from 20.63 to 22.62%. *Id.*

92. Alexander, *supra* note 5, at 513 n.46.

93. Professor Alexander explained that she examined the annual reports of these companies from 1983-1989 to determine whether suits had been filed. *Id.* at 511 n.41. This does not explain the omission of the *Clinical Data* lawsuit, which was revealed in Clinical Data's 10-K for 1985. CLINICAL DATA CORP., 1985 10-K REPORT 15 (1986). In any event, we question Professor Alexander's decision to rely solely on self-disclosure. Securities class action lawsuits are not universally revealed in annual reports because corporate managers exercise discretion in determining whether a lawsuit is "material" to the company. For instance, the *ATV* suit was not disclosed in the 1987 10-K even though the company was sued in January of that year. We were aware of the case because it was prosecuted by our office. *See* Class Action Complaint, Knapp v. Gomez (ATV) No. 87-0067 (S.D. Cal. document filed Jan. 20, 1987).

94. As can be determined from our expanded study, the *ATV* case is inconsistent with Professor Alexander's conclusions in other ways. *See infra* text accompanying

4. Failure to Adjust for Potential Damages

The "stakes" for a lawsuit or potential lawsuit are important to the Alexander Study in two ways. In analyzing IPOs as potential lawsuits to determine when companies are sued, Professor Alexander argues that a lawsuit was filed whenever the gross damages or market loss ("stakes") were at least $20 million. Calculating the "stakes" for this purpose, Professor Alexander uses an arbitrary date of March 30, 1984 as the "closing" price for the stock, subtracts that number from the IPO price, and multiplies it by the number of shares in the offering.[95]

In analyzing the lawsuits that were filed, the "stakes" also provide the baseline from which the settlement percentage is calculated. For this purpose, the "stakes" are calculated in a somewhat different fashion, as the "closing" price for the stock is determined as of the last day of the class period in the lawsuit rather than the arbitrary date of March 30, 1984.[96]

Professor Alexander recognizes her method of calculating "stakes" provides only a "rough" approximation of the theoretical damages in a particular case.[97] She explains that taking into account other admittedly relevant factors "would require determinations about the merits, and would thereby introduce the possibility of disagreement about the amount at stake. The amount that plaintiffs could reasonably *claim* as damages is the most objective, least controversial, and most easily calculated approach."[98]

Unfortunately, the gross losses or "stakes" employed by Professor Alexander are not particularly significant to an experienced securities lawyer and, contrary to her assertion, this figure could *not* "reasonably

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notes 115-124. After partial settlements of $1.953 million with ATV's underwriters and some venture capital firms and individual defendants, the case was tried against certain of ATV's officers and its independent public accountants, resulting in a plaintiffs' verdict which was affirmed on appeal. *See* Knapp v. Ernst & Whinney, 90 F.3d 1431 (9th Cir. 1996). Thus it was a small case which nonetheless resulted in a suit. It went to trial, which is contrary to Professor Alexander's findings that this virtually never happens with small cases. It yielded partial settlements far in excess of 25% of the "stakes."

95. Alexander, *supra* note 5, at 511.
96. *Id.* at 515.
97. *Id.*
98. *Id.* at 515-16.

[be] claim[ed] as damages."[99] As Professor Alexander recognizes, section 11 generally provides that a plaintiff may only recover the difference between the price paid and the value on the date the lawsuit is filed, less any amount defendants can prove was caused by factors other than the misrepresentations or omissions in the registration statement.[100] Thus, any experienced practitioner must look at what the market (or the relevant segment of the market) was doing during the same time period, understanding that only the investors' losses *net of the relevant market* are likely recoverable.[101] A stock which loses 15 percent of its value during a period in which the entire market loses 20 percent of its value (as was the case in October 1987) will not likely generate a successful lawsuit. Using a less extreme scenario, a stock which loses 15 percent of its value while the relevant market loses 10 percent of its value has probably suffered only a 5 percent recoverable loss. These rules are not immutable, but they apply in the vast majority of cases and are an important part of the damage and settlement calculus.

Thus, in determining the "stakes" in a case, the Standard & Poors 500 or, more often, a narrower sector index is generally plotted against the stock in question to estimate the recoverable loss. There can, of course, be dispute as to which index to use, and different indices will yield somewhat different damages. But the fact that there may be differences of opinion as to *which* index to utilize in making a conceptually necessary adjustment is hardly a justification for dispensing with any attempt.

IV. REPERFORMING THE ALEXANDER STUDY

Having critiqued the methodology of the Alexander Study in several significant respects, we now endeavor to present the statistical results which the study yields when the errors are corrected. In the first instance, we correct errors but maintain the essential design of the Alexander Study, focusing on computer-related IPOs during the first half of 1983. In the second section, we expand the study to include all high-tech IPOs during all of 1983.

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99. *Id.* at 516 (emphasis omitted).

100. 15 U.S.C. § 77k(e) (1995); *see* Alexander, *supra* note 5, at 515 n.55.

101. *See, e.g.*, Beecher v. Able, 435 F. Supp. 397, 408 (S.D.N.Y. 1977); Feit v. Leasco Data Processing Equip. Corp., 332 F. Supp. 544, 586 (E.D.N.Y. 1971); *see also* Entin v. Barg, 412 F. Supp. 508, 515 (E.D. Pa. 1976) (approving a settlement and, in noting the general decline of similar stocks, observing that "full recovery at trial would [likely] have only been a fraction of our $6,530,000 base figure").

A. The Study as Designed

Table 1 in the Alexander Study provides general information about the seventeen IPOs during the first half of 1983 which the study classed as "computer and computer-related."[102] Our Table 1-A (*following page*) provides the same information for the forty-two computer and computer-related IPOs we found.[103] The table includes sixteen cases from Professor Alexander's list but excludes *Diasonics*.[104] It also adds five venture capital-backed offerings that Alexander did not include and twenty-one non-venture capital-backed offerings. These data will provide the basis for our attempts to reperform the Alexander Study as she designed it, but without the errors, omissions, and adjustments we previously identified.[105]

1. Incidence of Suits

The first question Professor Alexander seeks to address is when a company will be sued for securities law violations arising from an IPO. Table 2 lists Professor Alexander's seventeen cases by the decline in market capitalization and attempts to show that any company with a theoretical gross market loss in excess of $20 million was sued while no company with a gross market loss of less than $20 million was sued. This conclusion is purportedly buttressed by Professor Alexander's Table 3, which claims to show the twelve worst-performing IPOs of 1983 ranked in order of percentage decline in market value.[106] Although the decline in market capitalization is not calculated for the companies in Table 3, Professor Alexander suggests the two charts together show "that

102. Alexander, *supra* note 5, at 510.
103. *See supra* note 41 and accompanying text.
104. *See supra* notes 68-69 and accompanying text.
105. The first seven tables are enumerated to correspond to the tables in the Alexander Study. Thus, Table 1-A corresponds to Professor Alexander's Table 1, Tables 2-A1 and 2-A2 are variations on Professor Alexander's Table 2, and Tables 4-A1, 4-A2, 4-B1, and 4-B2 are successive variations on Alexander's Table 4. Beginning with Table 5, there is no correlation between the tables here and those in the Alexander Study.
106. Alexander, *supra* note 5, at 511-513.

Table 1-A: Analysis of Computer-Related IPOs -- First Half of 1983

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Market Cap. as of 3/30/84 ($mil.)	(10) Venture Capital Backed?
Fortune Systems	Mfr desktop computers	04-Mar-83	5.000	$22.00	$110.000	$5.125	$25.625	$84.375	Yes
Victor Technologies	Mfr microcomputers	23-Mar-83	4.500	$17.50	$78.750	$0.875	$3.938	$74.813	Yes
Wicat Systems	Mfr microcomputer sys	30-Jun-83	4.000	$18.00	$72.000	$3.750	$15.000	$57.000	Yes
Activision	Mfr computer games	09-Jun-83	4.000	$12.00	$48.000	$1.875	$7.500	$40.500	Yes
Priam	Mfr disk drives	02-Jun-83	3.850	$17.00	$65.450	$8.750	$33.688	$31.763	Yes
MASSTOR Systems	Mfr computer mass storage	25-Mar-83	3.000	$16.00	$48.000	$6.250	$18.750	$29.250	Yes
LSI Logic	Mfr semiconductor circuits	13-May-83	7.000	$21.00	$147.000	$17.000	$119.000	$28.000	Yes
Televideo Systems	Mfr video display terminals	15-Mar-83	6.250	$18.00	$112.500	$13.750	$85.938	$26.563	Yes
Eagle Computer	Mfr microcomputer sys	15-Jun-83	2.750	$12.00	$33.000	$3.625	$9.969	$23.031	Yes
Micropolis	Mfr disk drives	03-Jun-83	2.363	$17.00	$40.171	$9.375	$22.153	$18.018	Yes
DST Systems	Dev mutual fund softwr	16-Mar-83	1.250	$26.00	$32.500	$15.500	$19.375	$13.125	No
Computer Language Research	Tax processing softwr/svc	27-May-83	2.000	$21.00	$42.000	$14.750	$29.500	$12.500	No
American Software	Develop computer softwr	24-Feb-83	1.750	$24.00	$42.000	$17.125	$29.969	$12.031	No
Cook Data Services	Dev computer softwr	01-Feb-83	0.650	$16.00	$10.400	$3.375	$2.194	$8.206	No
Automatix	Develop robotics/softwr	01-Mar-83	1.293	$19.00	$24.567	$12.750	$16.486	$8.081	Yes
Penta Systems International	Computer typography sys	15-Mar-83	1.188	$12.50	$14.854	$7.000	$8.318	$6.536	Yes
Hale Systems	Satellite/radar sys/softwr	21-Jun-83	0.900	$13.00	$11.700	$6.000	$5.400	$6.300	No
Norsk Data (ADR)	Mfr minicomputers	27-May-83	1.500	$37.75	$56.625	$34.000	$51.000	$5.625	No
BGS Systems	Develop/market software	03-Jun-83	1.200	$18.00	$21.600	$13.500	$16.200	$5.400	No
Spectravideo	Mkt videogames/eqp/softwr	11-May-83	1.000	$6.25	$6.250	$0.875	$0.875	$5.375	No
Teleram Communications	Mfr portable computer/eqp	26-May-83	0.700	$7.50	$5.250	$1.000	$0.700	$4.550	No
Scientific Systems Services	Computer softwr svc	22-Mar-83	1.000	$11.75	$11.750	$7.750	$7.750	$4.000	Yes
Key Tronic	Mfr computer keyboards	22-Jun-83	2.260	$19.50	$44.070	$17.750	$40.115	$3.955	No
CONSCO Enterprises	Dev softwr sys	11-May-83	0.714	$7.00	$4.998	$1.750	$1.250	$3.749	No
MacNeal-Schwendler	Dev engineering softwr	05-May-83	1.300	$23.00	$29.900	$20.250	$26.325	$3.575	No
Status Game	Mfr videogame machines	25-Mar-83	0.775	$5.50	$4.263	$2.250	$1.744	$2.519	No
Quality Micro Systems	Mfr graphic processor	14-Jan-83	0.950	$17.00	$16.150	$15.875	$15.081	$1.069	Yes
Interand	Mf televideo graphic sys	02-Jun-83	0.950	$10.00	$9.500	$9.250	$8.788	$0.713	No
Astro-Med	Mfr computer graphic sys	25-May-83	0.350	$9.00	$3.150	$8.125	$2.844	$0.306	No
Sterling Software	Dev/mkt softwr prods	04-May-83	1.700	$9.00	$15.300	$8.875	$15.088	$0.212	No
Primages	Mfr daisy wheel printer	11-May-83	0.900	$7.00	$6.300	$7.500	$6.750	($0.450)	Yes
Systems Associates	Dev hospital comp sys	20-May-83	0.900	$16.00	$14.400	$17.250	$15.525	($1.125)	No
Amherst Associates	Hospital computer svc	08-Jun-83	0.770	$15.00	$11.550	$17.000	$13.090	($1.540)	Yes
Avant-Garde Computing	Mkt data network softwr	30-Jun-83	1.880	$16.00	$30.080	$17.000	$31.960	($1.880)	No
VLSI Technology	Mfr integrated circuits	24-Feb-83	4.000	$13.00	$52.000	$13.500	$54.000	($2.000)	Yes
Distributed Logic	Mfr disk/tape controllers	02-Jun-83	0.800	$7.00	$5.600	$10.500	$8.400	($2.800)	No
Integrated Software Systems	Dev softwr/graphics	23-Mar-83	1.402	$16.00	$22.424	$18.500	$25.928	($3.504)	Yes
MPSI Group	Dev softwr	02-Mar-83	1.000	$12.00	$12.000	$16.500	$16.500	($4.500)	No
Xebec	Mfr disk drives	01-Mar-83	1.300	$17.00	$22.100	$22.000	$28.600	($6.500)	No
Daisy Systems	Engineering computer sys	01-Jun-83	2.000	$15.50	$31.000	$24.250	$48.500	($17.500)	Yes
Information Resources	Dev softwr consumer goods	04-Mar-83	1.150	$23.00	$26.450	$49.000	$56.350	($29.900)	Yes
Apollo Computer	Mfr computer sys	03-Mar-83	4.000	$22.00	$88.000	$34.875	$139.500	($51.500)	Yes

Number of cases = 42

suits alleging securities violations were filed whenever the stock price declined sufficiently following the IPO to support an award of attorneys' fees that would make it worthwhile to bring a case."[107]

The conceptual approach of Professor Alexander's Table 2 has been reproduced and the data corrected in our Tables 2-A1 and 2-A2 (*following pages*). Table 2-A1 shows the twenty-one venture capital-backed computer related IPOs during the first half of 1983 ranked according to the decline in market capitalization as of March 30, 1984. Although there is certainly a correlation between the decline in market capitalization and whether a company is sued, the starkness of Professor Alexander's $20 million "magic line" has begun to disappear. LSI Logic, a company which suffered a $28 million decline in market capitalization, was not sued. Automatix, a company which suffered a mere $8 million decline, was sued. Even relying on this small sample, it cannot be said that decline in market capitalization is the only factor which determines whether a company is sued.

Expanding the size of the sample confirms this conclusion. The next table, Table 2-A2 lists all forty-two computer-related IPOs during the first half of 1983. Two more cases appear which are inconsistent with Alexander's $20 million threshold.[108] Cook Data Services, which suffered an $8 million decline in market capitalization, and Avant-Garde Computing which is shown with an *increase* in market capitalization, were both subject to securities class action lawsuits.[109]

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107. *Id.* at 513.

108. This inconsistency is confirmed when Professor Alexander's Table 3 is corrected. *See supra* text accompanying notes 94-95. Of the six worst-performing IPOs of 1983 with market capitalization losses of less than $20 million, two (or one-third of the total) were nevertheless sued for securities law violations.

109. *See* Betje Partners v. Cook Data Services, Inc., No. CA-3-83-2310-F (N.D. Tex. 1983); *In re* Avant-Garde Computing Sec. Litig., No. 85-4149 (D.N.J. 1985). These two companies also illustrate another problem in Professor Alexander's Table 2 methodology. The "stakes" in any given case are properly defined not by the decline in market capitalization on some particular arbitrary date (*e.g.*, March 30, 1984), but rather by the market loss on the last day of the class period or, where no lawsuit is filed, on the day which could have been selected as the last day of the class period. For instance, in the case of *Cook Data Services*, using the market price in March 1984 is misleading because the class period ended in July 1983. The actual decline in market capitalization for purposes of the suit was $3.6 million, a far cry from Alexander's $20 million "magic" line. Illustrating the other side of the coin is *Avant-Garde Computing*, which had an extraordinarily long class period ending in July 1985. The decline in market capitalization at that point was $13.1 million, a significant decrease but still less than Professor Alexander's $20 million figure.

Table 2–A1: Analysis of Computer–Related IPOs -- First Half of 1983 (Venture Capital Backed)

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Market Cap. as of 3/30/84 ($mil.)	(10) Percentage Loss (or Gain)	(11) Sued?
Fortune Systems	Mfr desktop computers	04–Mar–83	5.000	$22.00	$110.000	$5.125	$25.625	$84.375	76.7%	Yes
Victor Technologies	Mfr microcomputers	23–Mar–83	4.500	$17.50	$78.750	$0.875	$3.938	$74.813	95.0%	Yes
Wicat Systems	Mfr microcomputer sys	30–Jun–83	4.000	$18.00	$72.000	$3.750	$15.000	$57.000	79.2%	Yes
Activision	Mfr computer games	09–Jun–83	4.000	$12.00	$48.000	$1.875	$7.500	$40.500	84.4%	Yes
Priam	Mfr disk drives	02–Jun–83	3.850	$17.00	$65.450	$8.750	$33.688	$31.763	48.5%	Yes
MASSTOR Systems	Mfr computer mass storage	25–Mar–83	3.000	$16.00	$48.000	$6.250	$18.750	$29.250	60.9%	Yes
LSI Logic	Mfr semiconductor circuits	13–May–83	7.000	$21.00	$147.000	$17.000	$119.000	$28.000	19.0%	No
Televideo Systems	Mfr video display terminals	15–Mar–83	6.250	$18.00	$112.500	$13.750	$85.938	$26.563	23.6%	Yes
Eagle Computer	Mfr microcomputer sys	15–Jun–83	2.750	$12.00	$33.000	$3.625	$9.969	$23.031	69.8%	Yes
Micropolis	Mfr disk drives	03–Jun–83	2.363	$17.00	$40.171	$9.375	$22.153	$18.018	44.9%	No
Automatix	Develop robotics/softwr	01–Mar–83	1.293	$19.00	$24.567	$12.750	$16.486	$8.081	32.9%	Yes
Penta Systems International	Computer typography sys	15–Mar–83	1.188	$12.50	$14.854	$7.000	$8.318	$6.536	44.0%	No
Scientific Systems Services	Computer softwr svc	22–Mar–83	1.000	$11.75	$11.750	$7.750	$7.750	$4.000	34.0%	No
Quality Micro Systems	Mfr graphic processor	14–Jan–83	0.950	$17.00	$16.150	$15.875	$15.081	$1.069	6.6%	No
Primages	Mfr daisy wheel printer	11–May–83	0.900	$7.00	$6.300	$7.500	$6.750	($0.450)	–7.1%	No
Amherst Associates	Hospital computer svc	08–Jun–83	0.770	$15.00	$11.550	$17.000	$13.090	($1.540)	–13.3%	No
VLSI Technology	Mfr integrated circuits	24–Feb–83	4.000	$13.00	$52.000	$13.500	$54.000	($2.000)	–3.8%	No
Integrated Software Systems	Dev softwr/graphics	23–Mar–83	1.402	$16.00	$22.424	$18.500	$25.928	($3.504)	–15.6%	No
Daisy Systems	Engineering computer sys	01–Jun–83	2.000	$15.50	$31.000	$24.250	$48.500	($17.500)	–56.5%	No
Information Resources	Dev softwr consumer goods	04–Mar–83	1.150	$23.00	$26.450	$49.000	$56.350	($29.900)	–113.0%	No
Apollo Computer	Mfr computer sys	03–Mar–83	4.000	$22.00	$88.000	$34.875	$139.500	($51.500)	–58.5%	No

Number of cases = 21

Table 2–A2: Analysis of All Computer–Related IPOs – – First Half of 1983

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Market Cap. as of 3/30/84 ($mil.)	(10) Percentage Loss (or Gain)	(11) Sued?	(12) Venture Capital Backed?
Fortune Systems	Mfr desktop computers	04–Mar–83	5.000	$22.00	$110.000	$5.125	$25.625	$84.375	76.7%	Yes	Yes
Victor Technologies	Mfr microcomputers	23–Mar–83	4.500	$17.50	$78.750	$0.875	$3.938	$74.813	95.0%	Yes	Yes
Wicat Systems	Mfr microcomputer sys	30–Jun–83	4.000	$18.00	$72.000	$3.750	$15.000	$57.000	79.2%	Yes	Yes
Activision	Mfr computer games	09–Jun–83	4.000	$12.00	$48.000	$1.875	$7.500	$40.500	84.4%	Yes	Yes
Priam	Mfr disk drives	02–Jun–83	3.850	$17.00	$65.450	$8.750	$33.688	$31.763	48.5%	Yes	Yes
MASSTOR Systems	Mfr computer mass storage	25–Mar–83	3.000	$16.00	$48.000	$6.250	$18.750	$29.250	60.9%	Yes	Yes
LSI Logic	Mfr semiconductor circuits	13–May–83	7.000	$21.00	$147.000	$17.000	$119.000	$28.000	19.0%	No	Yes
Televideo Systems	Mfr video display terminals	15–Mar–83	6.250	$18.00	$112.500	$13.750	$85.938	$26.563	23.6%	Yes	Yes
Eagle Computer	Mfr microcomputer sys	15–Jun–83	2.750	$12.00	$33.000	$3.625	$9.969	$23.031	69.8%	Yes	Yes
Micropolis	Mfr disk drives	03–Jun–83	2.363	$17.00	$40.171	$9.375	$22.153	$18.018	44.9%	No	Yes
DST Systems	Dev mutual fund softwr	16–Mar–83	1.250	$26.00	$32.500	$15.500	$19.375	$13.125	40.4%	No	No
Computer Language Research	Tax processing softwr/svc	27–May–83	2.000	$21.00	$42.000	$14.750	$29.500	$12.500	29.8%	No	No
American Software	Develop computer softwr	24–Feb–83	1.750	$24.00	$42.000	$17.125	$29.969	$12.031	28.6%	No	No
Cook Data Services	Dev computer softwr	01–Feb–83	0.650	$16.00	$10.400	$3.375	$2.194	$8.206	78.9%	Yes	No
Automatix	Develop robotics/softwr	01–Mar–83	1.293	$19.00	$24.567	$12.750	$16.486	$8.081	32.9%	Yes	Yes
Penta Systems international	Computer typography sys	15–Mar–83	1.188	$12.50	$14.854	$7.000	$8.318	$6.536	44.0%	No	Yes
Hale Systems	Satellite/radar sys/softwr	21–Jun–83	0.900	$13.00	$11.700	$6.000	$5.400	$6.300	53.8%	No	No
Norsk Data (ADR)	Mfr minicomputers	27–May–83	1.500	$37.75	$56.625	$34.000	$51.000	$5.625	9.9%	No	No
BGS Systems	Develop/market software	03–Jun–83	1.200	$18.00	$21.600	$13.500	$16.200	$5.400	25.0%	No	No
Spectravideo	Mkt videogames/eqp/softwr	11–May–83	1.000	$6.25	$6.250	$0.875	$0.875	$5.375	86.0%	No	No
Teleram Communications	Mfr portable computer/eqp	26–May–83	0.700	$7.50	$5.250	$1.000	$0.700	$4.550	86.7%	No	No
Scientific Systems Services	Computer softwr svc	22–Mar–83	1.000	$11.75	$11.750	$7.750	$7.750	$4.000	34.0%	No	Yes
Key Tronic	Mfr computer keyboards	22–Jun–83	2.260	$19.50	$44.070	$17.750	$40.115	$3.955	9.0%	No	No
CONSCO Enterprises	Dev softwr sys	11–May–83	0.714	$7.00	$4.998	$1.750	$1.250	$3.749	75.0%	No	No
MacNeal–Schwendler	Dev engineering softwr	05–May–83	1.300	$23.00	$29.900	$20.250	$26.325	$3.575	12.0%	No	No
Status Game	Mfr videogame machines	25–Mar–83	0.775	$5.50	$4.263	$2.250	$1.744	$2.519	59.1%	No	No
Quality Micro Systems	Mfr graphic processor	14–Jan–83	0.950	$17.00	$16.150	$15.875	$15.081	$1.069	6.6%	No	Yes
Interand	Mf televideo graphic sys	02–Jun–83	0.950	$10.00	$9.500	$9.250	$8.788	$0.713	7.5%	No	No
Astro–Med	Mfr computer graphic sys	25–May–83	0.350	$9.00	$3.150	$8.125	$2.844	$0.306	9.7%	No	No
Sterling Software	Dev/mkt softwr prods	04–May–83	1.700	$9.00	$15.300	$8.875	$15.088	$0.212	1.4%	No	No
Primages	Mfr daisy wheel printer	11–May–83	0.900	$7.00	$6.300	$7.500	$6.750	($0.450)	–7.1%	No	Yes
Systems Associates	Dev hospital comp sys	20–May–83	0.900	$16.00	$14.400	$17.250	$15.525	($1.125)	–7.8%	No	No
Amherst Associates	Hospital computer svc	08–Jun–83	0.770	$15.00	$11.550	$17.000	$13.090	($1.540)	–13.3%	No	Yes
Avant–Garde Computing	Mkt data network softwr	30–Jun–83	1.880	$16.00	$30.080	$17.000	$31.960	($1.880)	–6.2%	Yes	No
VLSI Technology	Mfr integrated circuits	24–Feb–83	4.000	$13.00	$52.000	$13.500	$54.000	($2.000)	–3.8%	No	Yes
Distributed Logic	Mfr disk/tape controllers	02–Jun–83	0.800	$7.00	$5.600	$10.500	$8.400	($2.800)	–50.0%	No	No
Integrated Software Systems	Dev softwr/graphics	23–Mar–83	1.402	$16.00	$22.424	$18.500	$25.928	($3.504)	–15.6%	No	Yes
MPSI Group	Dev softwr	02–Mar–83	1.000	$12.00	$12.000	$16.500	$16.500	($4.500)	–37.5%	No	No
Xebec	Mfr disk drives	01–Mar–83	1.300	$17.00	$22.100	$22.000	$28.600	($6.500)	–29.4%	No	No
Daisy Systems	Engineering computer sys	01–Jun–83	2.000	$15.50	$31.000	$24.250	$48.500	($17.500)	–56.5%	No	Yes
Information Resources	Dev softwr consumer goods	04–Mar–83	1.150	$23.00	$26.450	$49.000	$56.350	($29.900)	–113.0%	No	Yes
Apollo Computer	Mfr computer sys	03–Mar–83	4.000	$22.00	$88.000	$34.875	$139.500	($51.500)	–58.5%	No	Yes

Number of cases = 42

2. *Settlements As a Percentage of Market Losses*

Professor Alexander's Table 4 is the heart of her statistical study. It purports to show that six of the eight cases settled for amounts near 25 percent of the decline in market capitalization. Professor Alexander then attempts to explain the results for the two cases which do not fit her hypothesis, *WICAT* and *Eagle Computers*.[110]

Our Table 4-A1 (*following page*) provides the corrected and unadjusted settlement data for the eleven lawsuits arising from computer-related IPOs during the first half of 1983.[111] Eight of the eleven cases appear in Professor Alexander's Table 4.

The results in Table 4-A1 are startlingly different from Professor Alexander's. They show that the eleven settlements varied from a high of nearly 70 percent of gross market loss to a low of 2 percent. Only five of the eleven settlements fell in the 20-30 percent range.

Table 4-A2 (*following Table 4-A1*) analyzes the same data but adjusts the "stakes" using the *Hambrecht and Quist Technology Index* to account for price variation due to general market forces.[112] Now the settlement figures vary from a high of nearly 80 percent to a low of slightly less than 3 percent. Only three of eleven cases fall in the 20-30 percent range. The fact that 45 percent of the unadjusted sample and only 27 percent of the adjusted sample falls within that range does not support

110. Alexander, *supra* note 5, at 517.

111. The settlement amount in *TeleVideo* was missing from Alexander's chart but is included here. Automatix is the one venture capital-backed IPO lawsuit missing from Alexander's data. *See supra* note 67. Both Cook Data Services and Avant-Garde Computing were non-venture capital-backed IPOs which appear in our Tables 1A and 2-A2.

112. *See supra* notes 101-102 and accompanying text.

Table 4–A1: Computer–Related IPO Cases
Recoveries as a Percentage of Market Capitalization – –
Unadjusted Losses (Excluding Diasonics but including Automatix, Cook, and Avant–Garde)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					Unadjusted Price Day After Last	IPO Market	Market Cap. Day After	Unadjusted	– – Settlement – –	
Issuer	Issue Date	Last Day of Class Pd.	Shares (mil.)	Issue Price	Day of Class	Cap. ($mil.) (4)*(5)	Last Day of Class($mil) (4)*(6)	Loss ($mil.) (8)–(7)	Amount ($mil.)	Percentage (10)/(9)
Cook Data Services	01–Feb–83	01–Jul–83	0.650	$16.000	$10.500	$10.40	$6.83	$3.575	$2.50	69.93%
Avant–Garde	30–Jun–83	29–Jul–85	1.880	$16.000	$9.000	$30.08	$16.92	$13.160	$4.20	31.91%
Victor Technologies	23–Mar–83	16–Aug–83	4.500	$17.500	$7.750	$78.75	$34.88	$43.875	$13.00	29.63%
MASSTOR Systems	25–Mar–83	01–Apr–84	3.000	$16.000	$6.250	$48.00	$18.75	$29.250	$8.00	27.35%
Activision	09–Jun–83	16–Sep–83	4.000	$12.000	$7.250	$48.00	$29.00	$19.000	$4.75	25.00%
Fortune Systems	04–Mar–83	03–Jun–83	5.000	$22.000	$12.250	$110.00	$61.25	$48.750	$12.00	24.62%
Priam	02–Jun–83	13–Feb–84	3.850	$17.000	$9.250	$65.45	$35.61	$29.838	$6.75	22.62%
Wicat Systems	30–Jun–83	19–Sep–83	4.000	$18.000	$6.500	$72.00	$26.00	$46.000	$6.25	13.59%
Eagle Computer	15–Jun–83	24–Mar–84	2.750	$12.000	$3.875	$33.00	$10.66	$22.344	$1.95	8.73%
Automatix	01–Mar–83	13–Mar–84	1.293	$19.000	$13.000	$24.57	$16.81	$7.758	$0.34	4.38%
Televideo Systems	15–Mar–83	23–Jul–84	6.250	$18.000	$4.000	$112.50	$25.00	$87.500	$1.80	2.06%
Number of cases = 11									Average =	23.62%
									Std. Dev. =	18.51%

Table 4A–2: Computer–Related IPO Cases
Recoveries as a Percentage of Market Capitalization – –
Adjusted Losses (Excluding Diasonics but including Automatix, Cook, and Avant–Garde)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
					Unadjusted Price Day	---- H&Q Tech. Index ----			Adjusted Day After	IPO Market	Market Cap. Day After	Adjusted	-- Settlement --	
Issuer	Issue Date	Last Day of Class Pd.	Shares (mil.)	Issue Price	After Last Day of Class	Issue Date	Day After Last Day of Class	Ratio: (7)/(8)	Last Day of Class Price (6)*(9)	Cap. ($mil.) (4)*(5)	Last Day of Class($mil) (4)*(10)	Loss ($mil.) (11)–(12)	Amount ($mil.)	Percentage (14)/(13)
Prism	02–Jun–83	13–Feb–84	3.850	$17.000	$9.250	889.43	555.81	1.600	$14.802	$65.45	$56.99	$8.461	$6.75	79.77%
Cook Data Services	01–Feb–83	01–Jul–83	0.650	$16.000	$10.500	724.98	899.04	0.806	$8.467	$10.40	$5.50	$4.896	$2.50	51.06%
Automatix	01–Mar–83	13–Mar–84	1.293	$19.000	$13.000	780.72	554.02	1.409	$18.319	$24.57	$23.69	$0.880	$0.34	38.64%
MASSTOR Systems	25–Mar–83	01–Apr–84	3.000	$16.000	$6.250	782.72	547.94	1.428	$8.928	$48.00	$26.78	$21.216	$8.00	37.71%
Victor Technologies	23–Mar–83	16–Aug–83	4.500	$17.500	$7.750	785.07	776.96	1.010	$7.831	$78.75	$35.24	$43.511	$13.00	29.88%
Activision	09–Jun–83	16–Sep–83	4.000	$12.000	$7.250	871.09	790.01	1.103	$7.994	$48.00	$31.98	$16.024	$4.75	29.64%
Fortune Systems	04–Mar–83	03–Jun–83	5.000	$22.000	$12.250	864.04	911.24	0.948	$11.615	$110.00	$58.08	$51.923	$12.00	23.11%
Wicat Systems	30–Jun–83	19–Sep–83	4.000	$18.000	$6.500	911.83	797.74	1.143	$7.430	$72.00	$29.72	$42.282	$6.25	14.78%
Eagle Computer	15–Jun–83	24–Mar–84	2.750	$12.000	$3.875	915.81	547.72	1.672	$6.479	$33.00	$17.82	$15.182	$1.95	12.84%
Televideo Systems	15–Mar–83	23–Jul–84	6.250	$18.000	$4.000	762.24	450.13	1.693	$6.774	$112.50	$42.33	$70.166	$1.80	2.57%
Avant–Garde	30–Jun–83	29–Jul–85	1.880	$16.00	$9.000	911.83	503.93	1.809	$16.285	$30.08	$30.62	($0.536)	$4.20	N/A
Number of cases = 11													Average =	32.00%
													Std. Dev. =	21.96%

Professor Alexander's hypothesis, particularly given the small sample and poor selection technique.

It must also be recognized that 20-30 percent is a broad range, as the realistic settlement range for most such cases does not run from 0 to 100 percent of maximum damages. First, maximum damages are often understood by both sides to be unattainable, because of defenses, collectability problems, or for other reasons, and the maximum realistic recovery is often 50 to 75 percent of the mathematical "exposure." Second, because settlements are compromises, sophisticated defendants, often well-heeled, do not capitulate and pay 90 to 100 percent of even the realistic exposure.[113] The time value of money, the possibility of a favorable jury verdict even on "bad" facts, lawyer and/or client pride, and other factors, cause defendants to go to trial rather than settle at top dollar. Similar factors cause plaintiffs to accept less than top dollar rather than face the risks and delays of trial. Thus, even the strongest case may settle for 75 percent of realistic exposure, and that exposure may be only 60 percent of unadjusted damages, meaning that a handsome settlement might compute to a mere 45 percent on Professor Alexander's terms.

Thus, it should not be surprising that the bulk of settlements range between 5 and 50 percent of Professor Alexander's "stakes," and that many settle between 20 and 30 percent. It appears that the Alexander Study merely shows something akin to a standard bell-shaped statistical distribution ranging from 0 to 50 percent of "stakes," an entirely predictable result.

B. The Study Using Expanded Data

To this point, we have critiqued Professor Alexander's methodology and have pointed out reasons why her study is unconvincing even on the small level upon which it was designed and performed. We have gone further, however, and tested her results on a somewhat larger scale by studying all high-technology IPOs during 1983.

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113. *See, e.g.*, McDermott, Inc. v. AmClyde, 114 S. Ct. 1461, 1467 (1994) ("The settlement figure is likely to be significantly less than the settling defendant's equitable share of the loss."); Tech-Bilt, Inc. v. Woodward-Clyde & Assocs., 38 Cal. 3d 488, 499, 698 P.2d 159, 166, 213 Cal. Rptr. 256, 263 (1985) (California's procedure for approving good faith settlements "recogni[zes] that a settlor should pay less in settlement than he would if he were to be found liable after a trial.").

We began by identifying the 686 IPOs which occurred in 1983, as reported by the *Investment Dealer's Digest* electronic database, a comprehensive source of public offering information.[114] In the high-technology field alone, we found ninety-three IPOs from the first-half of 1983[115] and 130 IPOs from the second-half[116] for a total initial pool of 223 companies.[117] In this group we found a total of nineteen companies which were sued on the basis of the offering. This methodology broadens the grouping used by Professor Alexander, but does not completely discard her concept of homogeneity, or her basic universe—IPOs in a high-risk period for companies in high-risk industries.

We recognize that this methodology retains several of the deficiencies we identified in the Alexander Study, albeit to a lesser extent. The sample of settlements, while more than twice the size of the Alexander Study sample, is still too small to draw conclusions about securities class action suits generally. Similarly, although expanded to include non-computer IPOs in a wider time frame, the sample is still limited in type (high-technology IPOs) and time (1983), making it difficult to generalize about all securities class actions. We accept these deficiencies because our purpose is not to prove any particular proposition, but rather to test whether, when her sample is expanded, Professor Alexander's statistical conclusions survive.

For each of the 223 high-tech IPOs we gathered the following information:

(a) issuer;
(b) industry of the issuer;
(c) offering date;
(d) number of shares offered;

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114. Search of Effective New Issues (Public) Database, IDD Information Services, New York, N.Y. Search of LEXIS, Cmpny library, IDD file (July 15, 1996).

115. *See infra* app. B.

116. *See infra* app. C.

117. We defined high technology as:

1. Computers, including hardware, software, systems, and information processing;
2. Biomedical and biotechnology companies, including medical equipment and instrumentation and pharmaceutical;
3. Communications and fiber optics, including equipment, components, transmission, and service; and
4. Electronics.

We determined the primary business of the companies by examining the data in the *Investment Dealer's Digest* on-line database and the data contained in the issuer's Form 10-K filings. Excluded from our expanded study were: home builders, manufacturers and suppliers of building supplies, airlines and aircraft, publishing equipment, delivery services, wholesalers and retailers (except for retailers of computer products), financial institutions, health care providers, rental car companies, food and clothing companies, consulting services, and wheelchair lift producers.

(e) IPO issue price;[118]
(f) market capitalization at offering;[119]
(g) stock price as of March 30, 1984 (for first-half IPOs) or September 30, 1984 (for second-half IPOs), as reported in the *Daily Stock Price Record*.[120]
(h) market capitalization as of March 30 or September 30, 1984;[121]
(i) decline in market capitalization between the initial offering and March 30 or September 30, 1984;[122] and
(j) whether or not a suit was later filed in connection with the IPO.[123]

By studying this expanded data set we made the following observations, all of which are inconsistent with Professor Alexander's conclusions:

1. It is not unusual for IPOs to suffer a significant decline in stock price and nevertheless not generate a suit;
2. it is not unusual for IPOs to suffer a small decline but generate a lawsuit; and
3. most significantly, securities class actions which settle are not resolved at a consistent rate near 25 percent, but rather at levels which vary widely.

In sum, each of the phenomena purportedly revealed by the Alexander Study is inconsistent with the results from a broader sample.

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118. Note that this price is not the price at which the first market trade takes place, but is rather the offering price.
119. This is the IPO price multiplied by the number of shares offered. This calculation corresponds with the "Offering Size in Millions of Dollars" column in Table 1 of the Alexander Study.
120. This corresponds with the March 30, 1984 price column in Table 1 of the Alexander Study.
121. The price per share as of March 30, 1984 or September 30, 1984, multiplied by the number of shares offered.
122. Corresponding to the Alexander Study's Table 2 "Market Loss" column.
123. Searches encompassed Daily Stock Price Record sheets, the Wall Street Journal Index, and Dow Jones on-line database. These searches were conducted to ascertain the status of these companies in order to complete the empirical investigation. Based on status, Form 10-K's were reviewed as appropriate. For those companies that did not have Form 10-K's for the entire period, due to a name change, mergers, acquisitions, bankruptcy, or delisting, that otherwise disappeared, an exhaustive search was conducted through other means.

1. *Incidence of Suits*

The ninety-three first half 1983 high-tech IPOs are listed in Appendix B of this Article. Similar information for the one hundred thirty IPOs in the second-half of 1983 is collected in Appendix C of this Article. The companies are listed in descending order based on decline in market capitalization. Of the sixteen companies in Appendix B with market losses greater than $20 million, almost half (seven) were *not* sued. In addition, six companies with market losses of less than $20 million *were* sued. The second half of 1983 (Appendix C) brought more IPOs but fewer suits. Of the seven companies with market losses of more than $20 million, only two were sued. Furthermore, of the companies with market losses of less than $20 million, the same number, two, were sued. Combining the figures for the entire year, we find that of the twenty-three companies with market losses greater than $20 million, less than half (eleven) were subject to suit, while of the two hundred companies with market losses less than $20 million, eight were sued.

2. *Settlements as a Percentage of Market Losses*

Tables 4-B1 and 4-B2 (*following pages*) in this Article present the settlement data for the nineteen IPOs that resulted in lawsuits during 1983. Of those nineteen cases, one, *ATV*, went to trial after a partial settlement and two, *Margaux Controls* and *Clinical Data*, were voluntarily dismissed without any payment to the class.[124] Including the partial settlement in *ATV*, Table 4-B1 shows the nineteen settlements as a percentage of the unadjusted losses, the methodology Professor Alexander used in her article. The average (mean) value for the settlements is 20.68 percent. Yet, the settlement percentages vary greatly from a high of nearly 70 percent to a low of 0 percent in the case of *Clinical Data* and *Margaux Controls*. Chart 1 (*following Table 4-B1*), depicts this table graphically. Only six of the cases (or approximately 35

124. *See* Menge v. Margaux Controls, Inc., No. C-863-485 (N.D. Cal.). In Clinical Data, which was never certified as a class action, the negotiated dismissal included a $3,500 payment of expenses to the named plaintiff. *See* Motion for Approval of Settlement of Class Suit at 2, Ackerman v. Clinical Data, Inc., No. 85-3061-S (D. Mass. Jan. 9, 1987).

Table 4–B1: Expanded Study – – All 1983 "High Tech" IPOs
Recoveries as a Percentage of Market Capitalization – –
Unadjusted Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					Unadjusted Price Day After Last	IPO Market	Market Cap. Day After	Unadjusted	– – Settlement – –	
Issuer	Issue Date	Last Day of Class Pd.	Shares (mil.)	Issue Price	Day of Class	Cap. ($il.) (4)*(5)	Last Day of Class($mil) (4)*(6)	Loss ($mil.) (7)–(8)	Amount ($mil.)	Percentage (10)/(9)
Cook Data Services	01–Feb–83	01–Jul–83	0.650	$16.000	$10.500	$10.40	$6.83	$3.575	$2.50	69.93%
ATV Systems	18–Oct–83	15–Feb–84	0.600	$10.000	$3.250	$6.00	$1.95	$4.050	$1.95	48.22%
Kaypro	25–Aug–93	13–Dec–84	4.000	$10.000	$2.875	$40.00	$11.50	$28.500	$9.95	34.91%
Avant–Garde	30–Jun–83	29–Jul–85	1.880	$16.000	$9.000	$30.08	$16.92	$13.160	$4.20	31.91%
Victor Technologies	23–Mar–83	16–Aug–83	4.500	$17.500	$7.750	$78.75	$34.88	$43.875	$13.00	29.63%
MASSTOR Systems	25–Mar–83	01–Apr–84	3.000	$16.000	$6.250	$48.00	$18.75	$29.250	$8.00	27.35%
Diasonics	23–Feb–83	31–Jan–84	5.588	$22.000	$5.375	$122.94	$30.04	$92.901	$25.00	26.91%
Activision	09–Jun–83	16–Sep–83	4.000	$12.000	$7.250	$48.00	$29.00	$19.000	$4.75	25.00%
Fortune Systems	04–Mar–83	03–Jun–83	5.000	$22.000	$12.250	$110.00	$61.25	$48.750	$12.00	24.62%
Priam	02–Jun–83	13–Feb–84	3.850	$17.000	$9.250	$65.45	$35.61	$29.838	$6.75	22.62%
Trilogy	09–Nov–83	14–Aug–84	5.000	$12.000	$1.375	$60.00	$6.88	$53.125	$7.79	14.66%
Wicat Systems	30–Jun–83	19–Sep–83	4.000	$18.000	$6.500	$72.00	$26.00	$46.000	$6.25	13.59%
Eagle Computer	15–Jun–83	24–Mar–84	2.750	$12.000	$3.875	$33.00	$10.66	$22.344	$1.95	8.73%
Gambro (ADR)	08–Jun–83	18–Jun–84	1.100	$45.000	$21.500	$49.50	$23.65	$25.850	$1.75	6.77%
Automatix	01–Mar–83	13–Mar–84	1.293	$19.000	$13.000	$24.57	$16.81	$7.758	$0.34	4.38%
Televideo Systems	15–Mar–83	23–Jul–84	6.250	$18.000	$4.000	$112.50	$25.00	$87.500	$1.80	2.06%
Satelco	12–Jul–83	22–May–84	1.820	$12.000	$2.375	$21.84	$4.32	$17.518	$0.30	1.71%
Margaux Controls	24–Jun–83	30–Aug–83	1.500	$16.500	$13.500	$24.75	$20.25	$4.500	$0.00	0.00%
Clinical Data	27–Apr–83	22–May–84	1.000	$6.000	$1.625	$6.00	$1.63	$4.375	$0.00	0.00%
Number of cases = 19									Average =	20.68%
Note: The $1.95 million ATV settlement is exclusive of amount won at trial.									Std. Dev. =	18.20%

Chart 1: Distribution of Settlement Percentages
Taken From Table 4-B1 (Unadjusted Losses)

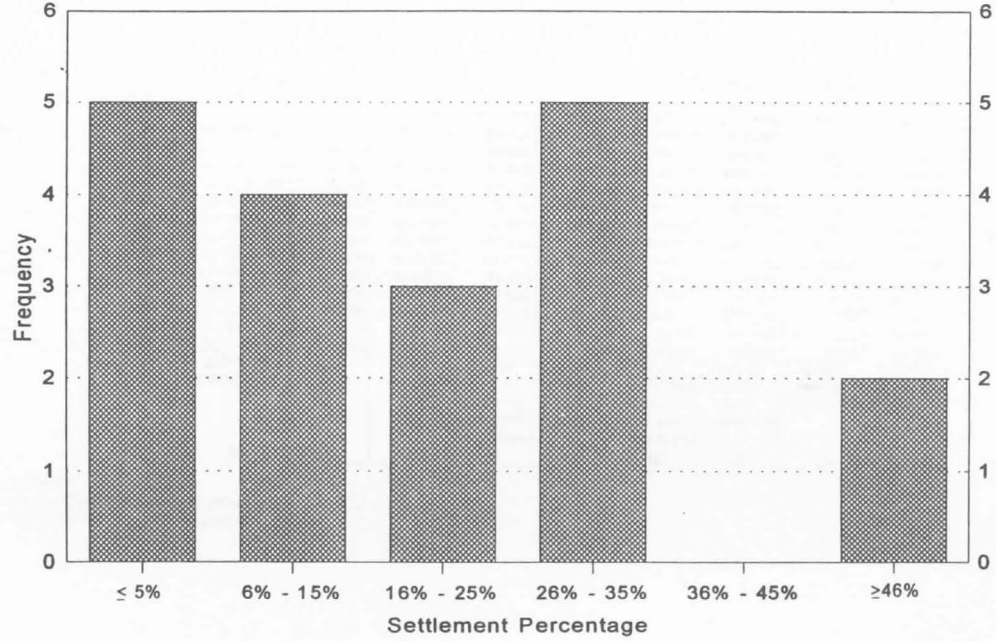
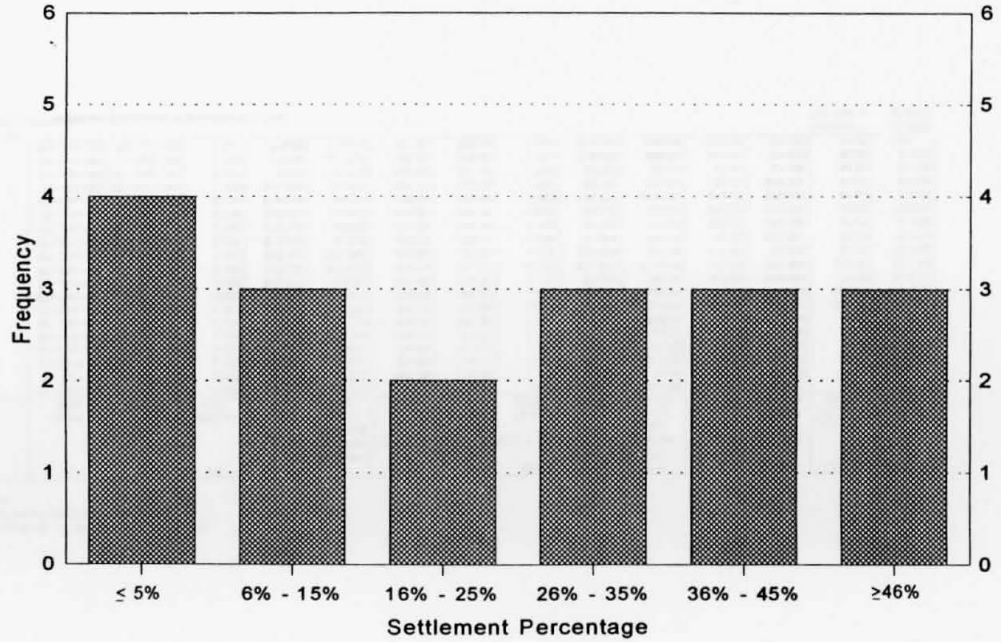


Table 4 – B2: Expanded Study – – All 1983 "High Tech" IPOs
Recoveries as a Percentage of Market Capitalization – –
Adjusted Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
					Unadjusted Price Day	---- H&Q Tech. Index ----			Adjusted Day After	IPO Market	Market Cap. Day After	Adjusted Loss	– – Settlement – –	
Issuer	Issue Date	Last Day of Class Pd.	Shares (mil.)	Issue Price	After Last Day of Class	Issue Date	Day After Last Day of Class	Ratio: (7)/(8)	Last Day of Class Price (6)*(9)	Cap. ($mil.) (4)*(5)	Last Day of Class($mil) (4)*(10)	($mil.) (11) – (12)	Amount ($mil.)	Percentage (14)/(13)
Priam	02 – Jun – 83	13 – Feb – 84	3.850	$17.000	$9.250	889.43	555.81	1.600	$14.802	$65.45	$56.99	$8.461	$6.75	79.77%
ATV Systems	18 – Oct – 83	15 – Feb – 84	0.600	$10.00	$3.250	691.46	552.28	1.252	$4.069	$6.00	$2.44	$3.559	$1.95	54.88%
Cook Data Services	01 – Feb – 83	01 – Jul – 83	0.650	$16.000	$10.500	724.98	899.04	0.806	$8.467	$10.40	$5.50	$4.896	$2.50	51.06%
Keypro	25 – Aug – 93	13 – Dec – 84	4.000	$10.000	$2.875	740.98	470.78	1.574	$4.525	$40.00	$18.10	$21.900	$9.95	45.43%
Automatix	01 – Mar – 83	13 – Mar – 84	1.293	$19.000	$13.000	780.72	554.02	1.409	$18.319	$24.57	$23.69	$0.880	$0.34	38.64%
MASSTOR Systems	25 – Mar – 83	01 – Apr – 84	3.000	$16.000	$6.250	782.72	547.94	1.428	$8.928	$48.00	$26.78	$21.216	$8.00	37.71%
Victor Technologies	23 – Mar – 83	16 – Aug – 83	4.500	$17.500	$7.750	785.07	776.96	1.010	$7.831	$78.75	$35.24	$43.511	$13.00	29.88%
Diasonics	23 – Feb – 83	31 – Jan – 84	5.588	$22.000	$5.375	782.75	602.35	1.299	$6.985	$122.94	$39.03	$83.905	$25.00	29.80%
Activision	09 – Jun – 83	16 – Sep – 83	4.000	$12.000	$7.250	871.09	790.01	1.103	$7.994	$48.00	$31.98	$16.024	$4.75	29.64%
Fortune Systems	04 – Mar – 83	03 – Jun – 83	5.000	$22.000	$12.250	864.04	911.24	0.948	$11.615	$110.00	$58.08	$51.923	$12.00	23.11%
Gambro (ADR)	08 – Jun – 83	18 – Jun – 84	1.100	$45.000	$21.500	869.22	507.91	1.711	$36.794	$49.50	$40.47	$9.026	$1.75	19.39%
Trilogy	09 – Nov – 83	14 – Aug – 84	5.000	$12.000	$1.375	665.75	550.17	1.210	$1.664	$60.00	$8.32	$51.681	$7.79	15.07%
Wicat Systems	30 – Jun – 83	19 – Sep – 83	4.000	$18.000	$6.500	911.83	797.74	1.143	$7.430	$72.00	$29.72	$42.282	$6.25	14.78%
Eagle Computer	15 – Jun – 83	24 – Mar – 84	2.750	$12.000	$3.875	915.81	547.72	1.672	$6.479	$33.00	$17.82	$15.182	$1.95	12.84%
Televideo Systems	15 – Mar – 83	23 – Jul – 84	6.250	$18.000	$4.000	762.24	450.13	1.693	$6.774	$112.50	$42.33	$70.166	$1.80	2.57%
Satelco	12 – Jul – 83	22 – May – 84	1.820	$12.000	$2.375	891.40	558.24	1.597	$3.792	$21.84	$6.90	$14.938	$0.30	2.01%
Clinical Data	27 – Apr – 83	22 – May – 84	1.000	$6.00	$1.625	800.62	517.97	1.546	$2.512	$6.00	$2.51	$3.488	$0.00	0.00%
Margaux Controls	24 – Jun – 83	30 – Aug – 83	1.500	$16.50	$13.500	940.21	749.48	1.254	$16.936	$24.75	$25.40	($0.653)	$0.00	0.00%
Avant – Garde	30 – Jun – 83	29 – Jul – 85	1.880	$16.00	$9.000	911.83	503.93	1.809	$16.285	$30.08	$30.62	($0.536)	$4.20	N/A
Number of cases = 19													Average =	27.03%
Note: The $1.95 million ATV settlement is exclusive of amount won at trial.													Std. Dev. =	21.69%

Chart 2: Distribution of Settlement Percentages
Taken From Table 4-B2 (Adjusted Losses)



percent) settled in the 20-30 percent range.[125] Even if the dismissals without payment are excluded, five of the cases settled for less than 10 percent of the unadjusted market loss.

Table 4-B2 presents the same data with the market loss figures adjusted using the *Hambrecht and Quist Technology Index*.[126] Typically the settlement percentages improve, reflecting the declining performance of high-tech stocks generally during this period.[127] The average (mean) value for the settlements is 27.03 percent.[128] Again, however, the settlement percentages vary considerably from a high of almost 80 percent to a low of 0 percent. See Table 4-B2 on following page. Chart 2 (*preceding page*), displays this variation graphically.

V. A REEXAMINATION OF THE ALEXANDER STUDY'S CONCLUSIONS IN LIGHT OF THE CORRECTED AND EXPANDED DATA

From the Alexander Study as originally published, one gets a portrait of a segment of the litigation system out of kilter. Virtually every case settles for approximately 25 percent of the "stakes" in the lawsuit without regard to merit. Under these circumstances, "the mere filing of a complaint appears to be a ticket to a guaranteed and substantial recovery."[129] Because good cases settle for no more than frivolous ones, the strength of a case does not determine whether an action is

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125. The standard deviation of the sample is 18.20 percent. Standard deviation is a statistical concept which describes the variation in a sample which has a normal (symmetrical bell-shaped) distribution. By definition, 68.3% of the observed values in the sample will be within one standard deviation of the mean. *See, e.g.*, SUMMERS, *supra* note 28, at 73-74. Where the standard deviation is small, the curve is tall and thin with the values clustered closely about the mean. Where the standard deviation is large, the curve is flat and the values are spread significantly. Here, a standard deviation of 18.20% from a mean of 20.68% indicates that based on this sample, one would expect that approximately 68% of the cases would settle for between 2.48% and 38.88% of the unadjusted market loss. Because this standard deviation is relatively large, the settlement percentages vary considerably and the mean is not an accurate predictor of the settlement percentage in any given case.

126. *See supra* notes 101-102 and accompanying text.

127. All the foundational data for *Margaux Controls* and *Avant-Garde Computing* are provided but no settlement percentage figures are included because those cases had no adjusted loss. This may help explain the voluntary dismissal in *Margaux Controls*. The $4.2 million settlement in *Avant-Garde Computing* looks both curious and extremely beneficial to the class.

128. The standard deviation of the sample using adjusted damage figures is 21.69%, which is even larger than that of the unadjusted sample. *See supra* note 126.

129. Alexander, *supra* note 5, at 569.

filed. Rather, the determining factor is whether the "stakes" are high enough to generate a settlement of sufficient magnitude to justify a substantial attorney's fee award. Thus, one could expect that a suit would be filed whenever a drop in stock price generates a market loss of more than $20 million. In such circumstances, Professor Alexander suggests, shareholder class action suits have become a partial insurance system against substantial market losses—accompanied by high transaction costs—rather than protection for shareholders against fraud or other corporate misconduct.[130] Indeed, these are the charges which spurred congressional scrutiny and action.[131]

Because the data we have collected contrast with the results presented by Professor Alexander, we will now reexamine Professor Alexander's conclusions in light of the corrected and expanded data.

A. Incidence of Suits

Professor Alexander's sample purports to show that large declines in market capitalization (over $20 million) inevitably result in securities class action suits, while smaller declines (under $20 million) never result in suits. A chink in Professor Alexander's statistical armor first appeared when the data was expanded to include five computer-related venture capital-backed IPOs that were missed in the Alexander Study. One IPO with a market loss less than $20 million was sued and one with a market loss greater than $20 million was not sued.[132] Two more IPOs inconsistent with Professor Alexander's $20 million threshold were identified when the sample was expanded to include the twenty-one non-venture capital-backed computer-related offerings during the first half of 1983.[133]

The chink is confirmed and Professor Alexander's hypothesis disintegrates with the expanded sample of all 1983 high-tech IPOs. Fewer than half of the twenty-three companies with market losses greater than $20 million were sued while eight with market losses of less than $20 million were sued.

To be sure, even our expanded data set of 223 IPOs shows a correlation between the extent of market loss and the filing of a lawsuit. But this is not surprising for two reasons. First, the contingent fee system, whether in the securities class action context or in other types of cases, such as personal injury and business torts, is designed to give

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130. *See id.* at 570.
131. *See supra* note 5 and accompanying text.
132. *See supra* text accompanying tbl. 2-A1.
133. *See supra* text accompanying tbl. 2-A2.

lawyers greater economic incentive in cases with more serious damages and greater potential recovery.[134] If Professor Alexander has simply demonstrated that large cases draw more interest from plaintiffs' lawyers than small ones, that is surely no surprise. Second, a precipitous decline in the price of a stock which follows negative corporate disclosures suggests that investors were surprised by the disclosures, and the market is likely to be particularly surprised when it has been misled by management's prior statements about the company or its failure to disclose material information.

Quite clearly then, Professor Alexander's $20 million "magic" line simply does not exist.[135] This conclusion, in turn, undermines another of her hypotheses. If all securities class actions settled for a set percentage of the "stakes" without regard to merit, why is it that over half of the companies exhibiting a market loss of more than $20 million are *not* sued? If even meritorious cases never recover more than 25 percent of the "stakes," why is it that a significant number of companies with market losses of less than $10 million *are* sued? A likely explanation is that the "merits" of the case *do* matter.

B. Incidence of Settlements

All nine lawsuits in Professor Alexander's sample were settled. From this and other data she infers that "securities class actions are adjudicated considerably less often than other types of cases."[136] Later in the article she posits how the unavailability of trial or other adjudicatory resolution helps to explain her principal thesis: The cases settle without regard to merit.

In our expanded sample of nineteen cases, one, *ATV*, went to trial. However, the fact that only one out of nineteen cases (5.3 percent) was tried can hardly be considered surprising. Citing statistics from the

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134. *See generally* RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 524-25 (3d ed. 1986).

135. As we would have predicted, the correlation is incremental, increasing gradually with the size of the market loss. For instance, of the 7 companies which suffered a loss greater than $50 million, 6 (or 86%) were sued. Of the 16 companies suffering a loss between $20 million and $40 million, 5 (or 31%) were sued. Of the 22 companies with losses between $10 million and $20 million, 3 (or 14%) were sued. Finally, of the 118 companies suffering losses less than $10 million, only 4 (or 3%) were sued.

136. Alexander, *supra* note 5, at 526.

Administrative Office of the Courts, the Supreme Court recently noted that "[l]ess than five percent of cases filed in federal court end in trial."[137] Also, the two statistical studies cited by Professor Alexander—which show trials in 2 and 6 percent of the cases studied—do not deviate substantially from the "less than five percent" ballpark figure referred to by the Supreme Court.[138] Thus, trial is no less frequent here than in other areas of civil litigation, and any congressional sense that a high incident of settlements indicated a need for reform appears misplaced.

Perhaps more critical is Professor Alexander's assertion that securities class actions are not adjudicated pretrial by means of motions to dismiss, motions for summary judgment, and the like. Professor Alexander cites two studies estimating, respectively, that 35 and 22.5 percent of cases in federal court are adjudicated by motion without trial.[139] Another source mentioned by Professor Alexander, and cited recently by the Supreme Court, indicates that only 15 percent of federal cases are adjudicated pretrial.[140]

Although Professor Alexander's data (and our expanded study) show no cases adjudicated pretrial, broader and subsequent studies indicate that a 1983 high-tech sample is simply too small and homogeneous to be representative. Figures from one recent broad study indicate that nearly 20 percent of securities class action cases between 1991 and 1996 were resolved by judgment or dismissal rather than settlement.[141] Another study by a defense law firm which specializes in defending high-tech corporate clients found that 30 percent of the securities cases resolved in 1992 were involuntarily dismissed by the court.[142] Two

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137. McDermott, Inc. v. AmClyde, 511 U.S. 202, 212 n.22 (1994).

138. Alexander, *supra* note 5, at 526. A recent study by the Federal Judicial Center reaches a consistent conclusion. *See* Thomas E. Willging et al., *An Empirical Study of Class Actions in Four Federal District Courts: Final Report to the Advisory Committee on Civil Rules* (1996) ("The trial rates in class actions in each of the four districts was not notably different from the 3% to 6% trial rate for nonprisoner nonclass civil actions . . . .").

139. Alexander, *supra* note 5, at 524-25.

140. *See* Herbert M. Kritzer, *Adjudication to Settlement: Shading in the Gray*, 70 JUDICATURE 161, 163-64 (1986), cited in *McDermott, Inc.*, 511 U.S. at 212 n.22; *see also* Alexander, *supra* note 5, at 525 n.94.

141. DENISE N. MARTIN ET AL., RECENT TRENDS IV: WHAT EXPLAINS FILINGS AND SETTLEMENTS IN SHAREHOLDER CLASS ACTIONS? Table 5 (1996).

142. Lawrence Aragon, *Know Thy Enemy*, PC WEEK, Sept. 13, 1993, at A1. Bruce Vanyo, a prominent member of the same defense firm which conducted the study, has been quoted as saying that "a *majority* of recent reported projections/forecasts cases have been disposed of at the pleading stage." Marino & Marino, *supra* note 12, at 158 (emphasis added).

defense attorneys recently wrote that "[f]ederal courts have displayed a *striking willingness* to dismiss" shareholder class action lawsuits.[143]

In sum, Professor Alexander's contention that "securities class actions are adjudicated *considerably less often* than other types of cases"[144] appears to be inaccurate. At best, she captured a temporary phenomenon in an exceedingly narrow market segment.[145]

C. *Settlements as a Percentage of Gross Losses*

When we reperformed the Alexander Study in a consistent and rigorous fashion with necessary corrections and adjustments, we found a pattern of settlements in eleven cases which varied to a considerably greater extent than the data presented by Professor Alexander.[146] In our expanded study of nineteen suits resulting from high-tech IPOs during all of 1983, the settlement percentages showed even more variation.[147] The variation is so substantial that no conclusions can be drawn about a value around which settlements tend to cluster.

Statistical analysis confirms the extent of variation. The standard deviation of the original Alexander Study (Table 4) was 6.83 percent on a sample mean of 21.67 percent. This relatively small deviation was consistent with the claim that settlement values clustered about the 25 percent figure.[148] However, using the corrected data found in our Tables 4-A1 and 4-A2 (eleven and ten cases), the standard deviation increased markedly to 18.51 percent and 21.96 percent, respectively. These figures are confirmed using the expanded data in Tables 4-B1 and 4-B2 (nineteen and eighteen cases), when the standard deviation is

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143. Harvey L. Pitt & Karl A. Groskaufmanis, *Directors' Liability: No Fraud By Hindsight*, 14 CORP. BOARD 7, 8 (1993) (emphasis added).

144. Alexander, *supra* note 5, at 526 (emphasis added).

145. More recently, Professor Alexander appears to give conflicting signals on this point. In her most current article, she acknowledges that, "[r]ecently, courts have been somewhat more willing to grant motions to dismiss and for summary judgment, but such dispositions are still the exception . . . ." Alexander, *The Value of Bad News*, *supra* note 17, at 1435. She fails to acknowledge that adjudication is the exception in virtually every type of case. Moreover, in the text of her article she continues to assert that because securities class actions are rarely dismissed, "[o]nce the suit *is filed*, substantial economic consequences are *virtually certain*." *Id.* at 1435 (emphasis added).

146. *See supra* text accompanying tbls. 4-A1, 4-A2.

147. *See supra* text accompanying tbls. 4-B1, 4-B2, charts 1, 2.

148. *See supra* note 126 for a simple explanation of the meaning of standard deviation.

calculated at 18.20 percent and 21.69 percent, respectively. All of the corrected and expanded data shows substantially less clustering and more variation in the settlement percentages than in Professor Alexander's original sample of eight cases.[149] Significantly, the variation is greatest when the gross market loss damages are realistically adjusted. Using either statistical approach, however, the results are fundamentally inconsistent with Professor Alexander's hypothesis.

VI. THE ALEXANDER STUDY'S CONCLUSIONS ARE INCONSISTENT WITH BROADER DATA CONCERNING THE INCIDENCE OF PUBLIC OFFERINGS AND THE INCIDENCE OF SECURITIES CLASS ACTION SUITS

If Professor Alexander was correct that securities class actions routinely settle for 25 percent of market losses regardless of their merits and have, in effect, become a litigation tax on the capital markets, then there should be some empirical evidence of several phenomena suggested by Professor Alexander. We have been unable, however, to uncover any such support for Professor Alexander's hypotheses and conclusions. Indeed, the data is to the contrary.

First, one would expect the imposition of this "litigation tax" to have some discernible negative impact on the capital formation process. Are there fewer public companies or, at least, fewer IPOs by companies "going public?" Are public offerings, initial or otherwise, raising less money? In each case, the answer to these questions is a resounding and unequivocal "no."

Contrary to what would be expected if meritless securities class action suits were operating as a hidden tax on stock offerings, public offerings have increased dramatically over the last twenty years. Initial public offerings of stock, the exact situation Professor Alexander focused on as being subject to meritless claims, have soared. *See Table 5 (Initial Public Offerings of Common Stock 1974-1993) on the following page.*[150]

Similarly, the number of common stock offerings generally, and the amount of money raised in them has grown dramatically over the last

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149. The limited empirical evidence available supports our conclusion. The Assistant General Counsel for the State of Wisconsin Investment Board (SWIB) recently reported that SWIB's recoveries from securities class action lawsuits in the past year "averaged about 16% of its court-certified losses. Recoveries in individual cases ranged from 1% to 100% of losses." Keith Johnson, *Institutional Investor Participation in Class Actions After the Private Securities Litigation Reform Act of 1995, in*, Current Issues in Corporate Governance 2 (ALI-ABA 1996) (program material on file with authors).

150. Search of Effective New Issues (Public) Database, IDD Information Services, Securities Data Company.

Table 5: **Initial Public Offerings of Common Stock 1974 – 1993**

Year	Number of Issues	Proceeds
1974	9	$98,800,000
1975	6	$189,400,000
1976	40	$337,200,000
1977	32	$221,600,000
1978	38	$225,400,000
1979	62	$398,400,000
1980	149	$1,387,100,000
1981	348	$3,114,700,000
1982	122	$1,339,100,000
1983	686	$12,466,400,000
1984	357	$3,868,900,000
1985	355	$8,497,600,000
1986	726	$22,211,300,000
1987	556	$26,847,300,000
1988	291	$23,807,500,000
1989	254	$13,706,100,000
1990	213	$10,117,400,000
1991	402	$25,144,200,000
1992	603	$39,940,800,000
1993	819	$57,439,500,000
Percent Increase 1974 – 1993	9000.0%	58037.1%

twenty years, as evidenced by Table 6 (*following page*).[151]

These figures appear to contradict Professor Alexander's conclusions. But, critics of class actions might argue, perhaps the markets might be even stronger if it weren't for the impact of an excessive number of securities suits.

There is another way to test the thesis. If Professor Alexander is correct, and if the conditions supposedly leading to securities class action suits (for example, stock offerings, stock trading, and price volatility) are increasing, then securities class actions filings should also be increasing. After all, according to the implications of the Alexander Study, these suits are a virtually riskless way for lawyers to profit. Indeed, if all cases with substantial gross market losses settle for about 25 percent of those losses, lawyers should file suit in virtually all such cases.

The statistics, however, do not validate this conclusion. Notwithstanding the huge increases in stock offerings (and stock trading) over the last twenty years, the number of securities class action suits filed in 1993 is slightly less than the number filed in 1974. Moreover, this decline has occurred during a period when total federal court civil filings have increased 122 percent. *See Table 7 (Securities Class Action Lawsuits 1974-1993) following Table 6.*[152] When the information in Tables 5, 6, and 7 is combined and presented graphically in Chart 3 (*following Table 7*), the lack of any significant growth in securities class action suits over the past twenty years is quite clear.

Although these general market statistics are convincing, we tried to develop an even more direct way to test Professor Alexander's hypothesis that $20 million in damage "stakes" invariably generates a securities class action lawsuit. This proved to be a difficult task because there was no readily available source for determining the number of times a decline in stock price yielded $20 million in theoretical damages short of performing a company-by-company trading and market capitalization analysis.

One figure we did have access to was the number of instances in which a stock suffered a one-day 10 percent loss in value. We accordingly decided to use a modified sampling technique focusing on

151. *Id.*
152. 1975-1994 ADMIN. OFF. U.S. CTS., ANN. REP. DIRECTOR.

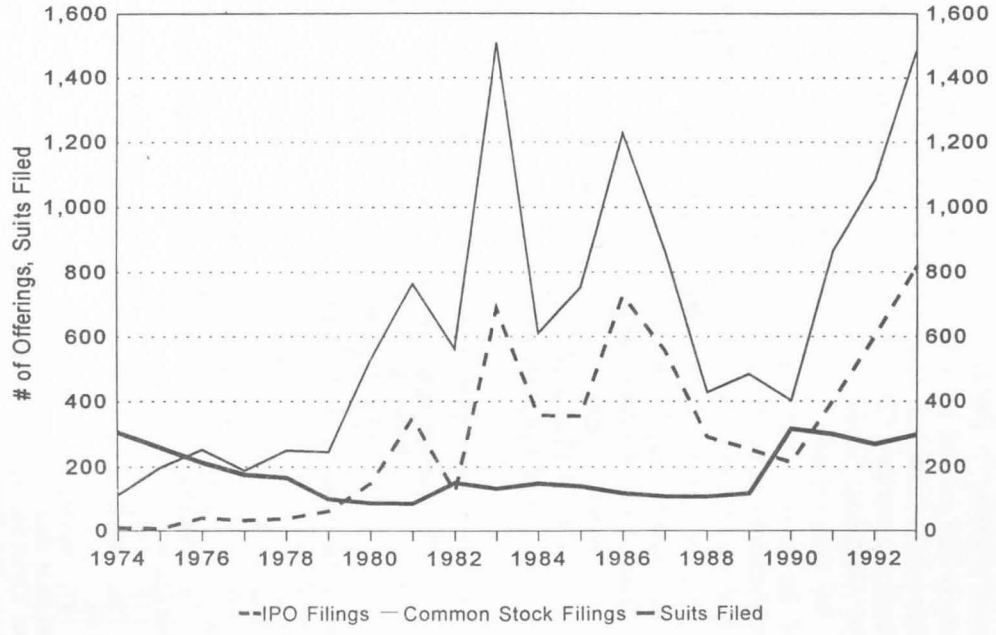
Table 6: **Common Stock Offerings 1974 – 1993**

Year	Number of Issues	Proceeds
1974	114	$2,361,600,000
1975	197	$6,088,300,000
1976	252	$7,734,000,000
1977	188	$5,964,900,000
1978	249	$5,847,100,000
1979	245	$5,242,800,000
1980	528	$12,840,500,000
1981	763	$14,602,500,000
1982	562	$16,473,000,000
1983	1,509	$38,737,200,000
1984	610	$10,012,800,000
1985	752	$24,695,400,000
1986	1,227	$43,122,900,000
1987	866	$41,473,000,000
1988	428	$29,852,000,000
1989	484	$23,051,100,000
1990	402	$19,153,300,000
1991	867	$56,012,600,000
1992	1,085	$72,825,100,000
1993	1,489	$102,334,100,000
Percent Increase 1974 – 1993	1206.1%	4233.3%

Table 7: **Securities Class Action Lawsuits 1974 – 1993**

Year	Securities Class Action Lawsuits Filed	Total Federal Court Civil Cases Filed	Securities Class Actions As A Percentage of Total Federal Filings
1974	305	103,530	0.29%
1975	258	117,320	0.22%
1976	212	130,597	0.16%
1977	176	130,567	0.13%
1978	167	138,770	0.12%
1979	100	154,666	0.06%
1980	87	168,789	0.05%
1981	86	180,576	0.05%
1982	151	206,193	0.07%
1983	133	241,842	0.05%
1984	149	261,485	0.06%
1985	140	273,670	0.05%
1986	118	254,828	0.05%
1987	108	239,185	0.05%
1988	108	239,634	0.05%
1989	118	233,529	0.05%
1990	315	217,879	0.14%
1991	299	210,890	0.14%
1992	268	230,509	0.12%
1993	298	229,850	0.13%
Percent Increase 1974 – 1993	−2.3%	122.0%	−56.0%

Chart 3: Initial Public Offerings, Common Stock Offerings and Securities Class Action Lawsuits 1974 - 1993



companies listed on the New York Stock Exchange (NYSE) in a year, 1991, in which the average value per issue was nearly $2 billion.[153] This means that a 10 percent loss in value for an average NYSE company would result in "stakes" of almost $200 million or nearly ten times Professor Alexander's $20 million threshold.

In calendar year 1991, there were a total of 434 one-day price declines on the NYSE which constituted a 10 percent-or-greater reduction in the stock's value.[154] Because a mere *1 percent* reduction would result in nearly $20 million in "stakes" for the "average" NYSE company, we feel supremely confident there were at least 434 cases in which a price decline generated $20 million in potential damages under the criteria of the Alexander Study.

We then turned to case filing statistics from the Administrative Office of the United States Courts as analyzed by one of the preeminent publications in the field, *Securities Class Action Alert* (*SCAA*). For the fiscal year ending September 30, 1992, the Administrative Office reports a total of 268 securities class action suits filed.[155] Because multiple suits are often filed when a company's stock price collapses as a result of fraud or other wrongdoing, *SCAA* determined that the 268 class action filings actually represented suits against only 113 different companies.[156] *SCAA* then analyzed those 113 cases individually to ascertain that only 34 of the suits were filed against NYSE companies.[157] Thus,

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153. The average value per issue was $1,968,427,957. NEW YORK STOCK EXCHANGE, FACT BOOK FOR THE YEAR 1991, at 10 (1992). We chose calendar year 1991 because the breakdown of case filing statistics from the Administrative Office of the United States Court provided by *Securities Class Action Alert* was for the fiscal year ending September 30, 1992. Although many of our critics suggest that the filing of a lawsuit almost instantaneously follows a significant decline in the price of a stock, no one of whom we are aware has thus far attributed to the plaintiffs' securities bar the prescience to file suits *before* the price decline. It was thus necessary, to assure a reasonable degree of correspondence, to use the stock price figures for calendar year 1991 which overlapped but preceded the case filing statistics.

154. Search of Daily U.S. Equity Database, Center for Research in Security Prices, Chicago, IL (July, 1993).

155. 1993 ADMIN. OFF. U.S. CTS., ANN. REP. DIRECTOR A1-313.

156. *See What Litigation Explosion?*, SECURITIES CLASS ACTION ALERT, July 1993, at 40.

157. According to *SCAA*, the following NYSE companies were subject to a securities class action lawsuit during fiscal 1992: Medical Care, Oryx Energy, Centel, Ann Taylor Stores, International Recovery, Triton Energy, U.S. Surgical, Crystal Brands, Home Fed Corp., Jenny Craig, Nicolet Instruments, Westinghouse, Humana Inc., American Express Co., Commodore International Ltd., CSX Corp., Intellicall, Inc., Browning-Ferris Industries, Inc., Sanifill Inc., Zapata Corp., El Paso Refinery, Upjohn Co., Owens-Corning Fiberglass Corp., Specialty Equipment Companies, Inc., Household International, Inc., Abbott Laboratories, Safety-Kleen Corp., Cypress Semiconductor Corp., National Media Corp., Community Psychiatric Centers, Price Co., Cal Fed Inc., First Financial Management Corp., and Harley-Davidson, Inc. (The breakdown of all

using an extraordinarily conservative estimate of 434 instances in which the "stakes" exceeded $20 million for NYSE companies, we still find that only 34 suits were filed during a comparable time period, a rate of less than 13 percent.

As was the case with the results of our revised study, these raw numbers are compelling, but their implications for the hypotheses underlying Professor Alexander's article are more than significant; they are devastating. Professor Alexander's principal thesis is that securities class action lawsuits are virtually always settled at or near a set percentage of the theoretical damage "stakes" without regard to merit. If this is accurate, then it is the amount of those "stakes" which primarily determine whether it is economically rational for plaintiffs' counsel to prosecute a case. The Alexander Study finds support for its principal thesis by using a limited sample of cases, one in which all companies whose stock suffered market losses of $20 million were sued. The Alexander Study, therefore, concludes that $20 million appears to be the threshold level at which a securities class action becomes profitable to litigate.

The *SCAA* figures, particularly when combined with the results of our revised study,[158] demonstrate that lawsuits are not filed every time (or even one-fifth of the time) a stock suffers a $20 million loss. Certainly the plaintiffs' class action bar has rarely been accused of being a timid lot. Thus, although Professor Alexander's data are inaccurate, one aspect of her logic remains unassailable: If securities class actions *were* settled for a set percentage of the "stakes" without regard to merit, the "stakes" should be the principal determinant of when a lawsuit is filed, such that a reasonably consistent threshold is observable. If there is no consistent threshold, then cases must not settle at or near a set percentage.

VII. CONCLUSION

Professor Alexander paints a portrait of both sides of the securities bar, plaintiffs' and defense, which although benign in tone is excoriating in substance. Instead of the model of lawyers in the adversary system—energetically representing diverse interests in a search for the truth and negotiating reasonable compromises based on risks and

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268 cases provided by SCAA is on file with the authors.)

158. *See supra* notes 133-136 and accompanying text.

achievable benefits—Professor Alexander suggests there are overwhelming economic and institutional pressures on both lawyers and their clients that produce a system in which everyone "goes along to get along." The result, according to Professor Alexander, is a process in which the merits of the cases are irrelevant; a "bad" case produces the same level of recovery as a "good" one. Congress appears to have accepted this criticism of the system as valid in enacting significant new legislation.

Having suggested such fundamentally critical conclusions that have gained wide acceptance, it is unfortunate that the methodology of Professor Alexander's research was not more thoughtful, the performance of her study more rigorous, and the analysis of her results more searching. We believe the contrary data we have presented, and the conclusions we suggest, are considerably more neutral, objective, and rigorous, and thus will materially contribute to the ongoing debate on this important topic.

APPENDIX A: ARITHMETIC AND DATA ERRORS

The Alexander Study contains a number of clerical and arithmetic errors that detract from its credibility. The errors are of two types: (1) errors in the computation of declines in market capitalization as of March 30 1994 and (2) errors in the computation of declines in market capitalization as of the day following the last day of the class period. The second type of error, in turn, causes errors in computing the settlements as a percentage of "stakes."

A. Errors in the Computation of Declines in Market Capitalization

Table A1 documents the errors in the computation of declines in market capitalization as of March 30, 1984. The following is a case by case analysis:

1. *Eagle Computers.* Table 1 of the Alexander Study lists the IPO price per share as $23,[159] when it is in fact $12. This error implies an erroneous IPO market capitalization of $63.25 million (2.75 million shares @ $23). (Table 1 *does* list the offering size correctly as $33 million.) However, the pricing error leads to the computation of the decline in market capitalization of $53.280 million ($63.25 million — $9.689 million), a figure that is listed in Table 2.[160]
2. *Penta.* Table 1 of the Alexander Study lists the IPO price per share as $17,[161] when it is in fact $12.50. It also lists the IPO market capitalization as $16.15 million[162] when it is in fact $14.85 million (1.1828 million shares @ $12.5). Note that the $16.15 million IPO market capitalization figure implies that the number of shares in the IPO is 0.95 million shares ($16.15 million/$17 per share), which is also incorrect. These errors would yield a IPO market capitalization as of March 30, 1984, of $6.650 million (0.95 million shares @ $7.00 per share). In turn, this leads to a computed decline in market capitalization as of

159. Alexander, *supra* note 5, at 510.
160. *Id.* at 512.
161. *Id.* at 510.
162. *Id.*

March 30, 1984, of $9.500 million — $6.65 million), a figure that is listed (incorrectly) in Table 2.[163]

3. *Priam.* Table 2 of the Alexander Study lists the decline in market capitalization as $32.76 million,[164] when in fact the computations should have yielded $31.76 million ($65.45 million — $33.69 million).
4. *Primages.* Table 1 of the Alexander Study lists the IPO market capitalization as $14.880 million,[165] when it is in fact $6.300 million (0.900 million shares @ $7.00 per share). This $14.880 million IPO market capitalization figure implies that the number of shares in the IPO is 2.126 million shares ($14.880 million/$7 per share), which is also incorrect. This 2.126 million figure would imply a market capitalization as of March 30, 1984, of $15.945 million (2.126 million shares @ $7.50 per share). This, in turn, would imply a decline in market capitalization as of March 30, 1984 of — $1.063 million ($14.880 million — $15.943 million). Table 2, however, does list correctly the decline in market capitalization as of March 30, 1984, as — $0.45 million.[166]
5. *Quality Micro Systems.* Table 1 of the Study lists the IPO market capitalization as $6.300 million,[167] when it is in fact $16.15 million (0.950 million shares @ $17.00 per share). This $6.300 million IPO market capitalization figure implies that the number of shares in the IPO is 0.371 million shares ($6.300 million/$17 per share), which is also incorrect. This 0.371 million figure would imply a market capitalization as of March 30, 1984, of $5.883 million (0.371 million shares @ $15.875 per share). This, in turn, would imply a decline in market capitalization as of March 30, 1984 of $0.471 million ($6.300 million — $5.883 million). Moreover, Table 2 erroneously lists the decline in market capitalization as of March 30, 1984, as $1.010 million.[168] (Note that the "IPO shares" and "IPO market capitalization" figures for Penta are actually the correct figures for Quality Micro Systems.)

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163. *Id.* at 512.
164. *Id.*
165. *Id.* at 510.
166. *Id.* at 512.
167. *Id.* at 510.
168. *Id.* at 512.

B. Errors in the Computation of Declines in Market Capitalization as of the Day Following the Last Day in the Class Period

Tables A2 and A3 document that in six of the nine lawsuits, Table 4 of the Alexander Study lists the "class close" price incorrectly. These errors in turn lead to errors in the market capitalization as of the day following the last day in the class period, and in the computation of the "stakes." Finally, these errors also lead to errors in the computation of the settlement as a percentage of the stakes. In the case of Priam and Victor, the differences are in excess of two percentage points.

For the nine IPOs resulting in suits, Table A2 shows bid/asked, or as appropriate, high/low/close prices for the day before, day of, and day following the last day of the class period. Table A3 isolates those prices which match the figures listed in Table 4 of the Alexander Study. Because of variation in the way different lawyers plead class periods, the bid or close price as of the day following the last day of the class period should be utilized to insure that the entire price effect of the alleged misstatement or omission is captured. Alexander's choices, however, are not consistent. In three of the cases (*Fortune, Activision and Masstor*), she lists the correct price. In four of the cases (*Diasonics, Victor, Priam and TeleVideo*), the low price for the day after is listed. In the *Wicat* case, Professor Alexander lists the high price on the last day of the class period, and in the *Eagle* case she lists the close price on the day before the end of the class period.

Table A1. Errors In the Decline in Market Capitalization as of 3/30/84.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Issuer	IPO Shares		IPO Price		IPO Mkt. Cap.		3/30/84 Price		3/30/84 Mkt. Cap.		Decline in Market Capitalization		
	Study	Actual	*Study*	Actual	*Study*	Actual	*Study*	Actual	*Study*	Actual	*Study* (6) – (10)	Table 2	PVR (7) – (11)
Eagle*	2.750	2.750	$23.000	$12.000	$33.000	$33.000	$3.625	$3.625	$9.969	$9.969	$23.031	$53.280	$23.031
Penta	0.950	1.188	$17.000	$12.500	$16.150	$14.850	$7.000	$7.000	$6.650	$8.316	$9.500	$9.500	$6.534
Priam	3.850	3.850	$17.000	$17.000	$65.450	$65.450	$8.750	$8.750	$33.688	$33.688	$31.763	$32.760	$31.763
Primages	2.126	0.900	$7.000	$7.000	$14.882	$6.300	$7.500	$7.500	$16.945	$6.750	($1.063)	($0.450)	($0.450)
Quality Micro	0.371	0.950	$17.000	$17.000	$6.307	$16.150	$15.875	$15.875	$5.890	$15.081	$0.417	$1.010	$1.069

Table A2. Errors In the Decline in Market Capitalization as of the Day Following the Last Day of the Class Period.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
			Price Day After Last Day of Class		Mkt. Cap. Day After Last Day of Class		Stakes		Settlement	Settlement Percentage		
Issuer	IPO Mkt. Cap.	IPO Shares	*Study*	Actual	*Study*	Actual	*Study*	Actual	Amount	*Study*	Actual	Difference
Diasonics	$122.940	5.568	$4.875	$5.375	$27.242	$30.036	$95.699	$92.905	$25.00	26.12%	26.91%	−0.79%
Eagle*	$33.000	2.750	$3.750	$3.875	$10.313	$10.656	$22.688	$22.344	$1.95	8.60%	8.73%	−0.13%
Priam	$65.450	3.850	$8.500	$9.250	$32.725	$35.613	$32.725	$29.838	$6.75	20.63%	22.62%	−2.00%
Televideo	$112.500	6.250	$3.875	$4.000	$24.219	$25.000	$88.281	$87.500	$1.80	2.04%	2.06%	−0.02%
Victor	$78.750	4.500	$6.750	$7.750	$30.375	$34.875	$48.375	$43.875	$13.00	26.87%	29.63%	−2.76%
Wicat	$72.000	4.000	$7.000	$6.500	$28.000	$26.000	$44.000	$46.000	$6.25	14.20%	13.59%	0.62%

Table A3. "Class Close" Prices Used in Table 4 of the Study

Issuer	Last Day Of Class	Day After Last Bid/Close	*Study* "Class Close" Price	Day Before Last Bid	Day Before Last Ask	Day Before Last High	Day Before Last Low	Day Before Last Close	Last Day Bid	Last Day Ask	Last Day High	Last Day Low	Last Day Close	Day After Last Bid	Day After Last Ask	Day After Last High	Day After Last Low	Day After Last Close
Diasonics	01/31/84	5.375	4.875														4.875	
Fortune	06/03/83	12.250	12.250							12.250				12.250				
Victor	08/16/83	7.750	6.750														6.750	
Wicat	09/19/83	6.500	7.000	7.000						7.000								
Eagle*	03/24/84	3.875	3.750				3.750	3.750										
Activision	09/16/83	7.250	7.250											7.250				
Priam	02/13/84	9.250	8.500					8.500				8.500					8.500	
Maxstor*	04/01/84	6.250	6.250			6.250		6.250								6.250		6.250
Televideo	07/23/84	4.000	3.875														3.875	

* Last day of class on a weekend, when markets are closed.

Appendix B: Listing of IPOs Examined (First Half of 1983).

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Mkt Cap as of 3/30/84 ($mil.)	(10) Sued?
Diasonics	Mfr medical imaging sys	23-Feb-83	5.588	$22.00	$122.936	$5.000	$27.940	$94.996	Yes
Fortune Systems	Mfr desktop computers	04-Mar-83	5.000	$22.00	$110.000	$5.125	$25.625	$84.375	Yes
Victor Technologies	Mfr microcomputers	23-Mar-83	4.500	$17.50	$78.750	$0.875	$3.938	$74.813	Yes
Wicat Systems	Mfr microcomputer sys	30-Jun-83	4.000	$18.00	$72.000	$3.750	$15.000	$57.000	Yes
Erbamont	Mfr anti-cancer drugs	21-Jun-83	6.200	$18.00	$111.600	$10.750	$66.650	$44.950	No
Activision	Mfr computer games	09-Jun-83	4.000	$12.00	$48.000	$1.875	$7.500	$40.500	Yes
Priam	Mfr disk drives	02-Jun-83	3.850	$17.00	$65.450	$8.750	$33.688	$31.763	Yes
MASSTOR Systems	Mfr computer mass storage	25-Mar-83	3.000	$16.00	$48.000	$6.250	$18.750	$29.250	Yes
Amgen	Biological research	17-Jun-83	2.350	$18.00	$42.300	$6.000	$14.100	$28.200	No
LSI Logic	Mfr semiconductor circuits	13-May-83	7.000	$21.00	$147.000	$17.000	$119.000	$28.000	No
Televideo Systems	Mfr video display terminals	15-Mar-83	6.250	$18.00	$112.500	$13.750	$85.938	$26.563	Yes
Biogen	Biotechnology R&D	22-Mar-83	2.500	$23.00	$57.500	$13.000	$32.500	$25.000	No
Huntingdon Research Centre (ADR)	Bio safety evaluation devices	14-Jun-83	4.000	$15.00	$60.000	$9.000	$36.000	$24.000	No
Damon Biotech	Mfr biomed prods	03-Jun-83	2.400	$17.00	$40.800	$7.250	$17.400	$23.400	No
Eagle Computer	Mfr microcomputer sys	15-Jun-83	2.750	$12.00	$33.000	$3.625	$9.969	$23.031	Yes
Combined Network	Lng dst voice & data trnsmn	20-Apr-83	3.700	$11.00	$40.700	$5.000	$18.500	$22.200	No
Smith Laboratories	Drug for intervertebral disc	27-Jun-83	3.039	$16.50	$50.144	$10.125	$30.770	$19.374	No
Micropolis	Mfr disk drives	03-Jun-83	2.363	$17.00	$40.171	$9.375	$22.153	$18.018	No
Cosmo Communications	Mfr electronic prods	20-May-83	1.800	$22.00	$39.600	$12.000	$21.600	$18.000	No
CooperVision	Optholmlgy/optomtry devices	21-Jan-83	3.000	$20.00	$60.000	$14.300	$42.900	$17.100	No
Gambro (ADR)	Extracorporeal purificatn sys	08-Jun-83	1.100	$45.00	$49.500	$31.500	$34.650	$14.850	Yes
Ungermann-Bass	Mfr communctions ntwrk sys	23-Jun-83	2.682	$18.00	$48.276	$12.750	$34.196	$14.080	No
U. S. Telephone	Long dist phone svc	02-Feb-83	1.436	$14.00	$20.104	$4.375	$6.283	$13.822	No
DST Systems	Dev mutual fund softwr	16-Mar-83	1.250	$26.00	$32.500	$15.500	$19.375	$13.125	No
Margaux Controls	Mfr energy mgmnt sys	24-Jun-83	1.500	$16.50	$24.750	$7.750	$11.625	$13.125	Yes
Computer Language Research	Tax processing softwr/svc	27-May-83	2.000	$21.00	$42.000	$14.750	$29.500	$12.500	No
American Software	Develop computer softwr	24-Feb-83	1.750	$24.00	$42.000	$17.125	$29.969	$12.031	No
Cook Data Services	Dev computer softwr	01-Feb-83	0.650	$16.00	$10.400	$3.375	$2.194	$8.206	Yes
Automatix	Develop robotics/softwr	01-Mar-83	1.293	$19.00	$24.567	$12.750	$16.486	$8.081	Yes
Penta Systems International	Computer typography sys	15-Mar-83	1.188	$12.50	$14.854	$7.000	$8.318	$6.536	No
Telerate	Computer financial svcs	27-Apr-83	4.000	$20.00	$80.000	$18.375	$73.500	$6.500	No
Hale Systems	Satellite/radar sys/softwr	21-Jun-83	0.900	$13.00	$11.700	$6.000	$5.400	$6.300	No
202 Data Systems	Lease softwr/computers	14-Jun-83	0.840	$12.00	$10.080	$4.750	$3.990	$6.090	No
BR Communications	Mfr communications equip	16-Mar-83	1.000	$21.00	$21.000	$15.000	$15.000	$6.000	No
Norsk Data (ADR)	Mfr minicomputers	27-May-83	1.500	$37.75	$56.625	$34.000	$51.000	$5.625	No
BGS Systems	Develop/market software	03-Jun-83	1.200	$18.00	$21.600	$13.500	$16.200	$5.400	No
Spectravideo	Mkt videogames/eqp/softwr	11-May-83	1.000	$6.25	$6.250	$0.875	$0.875	$5.375	No
Teleram Communications	Mfr portable computer/eqp	26-May-83	0.700	$7.50	$5.250	$1.000	$0.700	$4.550	No
Clinical Data	Mfr medical electronic prods	27-Apr-83	1.000	$6.00	$6.000	$1.500	$1.500	$4.500	Yes
Scientific Systems Services	Computer softwr svc	22-Mar-83	1.000	$11.75	$11.750	$7.750	$7.750	$4.000	No
Key Tronic	Mfr computer keyboards	22-Jun-83	2.260	$19.50	$44.070	$17.750	$40.115	$3.955	No
CONSCO Enterprises	Dev softwr sys	11-May-83	0.714	$7.00	$4.998	$1.750	$1.250	$3.749	No

Appendix B: Listing of IPOs Examined (First Half of 1983).

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Mkt Cap as of 3/30/84 ($mil.)	(10) Sued?
MacNeal–Schwendler	Dev engineering softwr	05–May–83	1.300	$23.00	$29.900	$20.250	$26.325	$3.575	No
Telecrafter	Cable TV	22–Mar–83	0.637	$9.00	$5.733	$3.500	$2.230	$3.504	No
First Financial Management	Fin'l data processing svc	29–Mar–83	0.875	$17.00	$14.875	$13.250	$11.594	$3.281	No
Selecterm	Lease/sell comp terminals	14–Jun–83	0.675	$18.00	$12.150	$13.250	$8.944	$3.206	No
Mobile Communications–America	Telecommunications svc	31–Mar–83	1.500	$10.13	$15.188	$8.250	$12.375	$2.813	No
Vega Biotechnologies	Mfr biochem synthesis eqp	24–Jun–83	1.225	$6.00	$7.350	$3.750	$4.594	$2.756	No
Status Game	Mfr videogame machines	25–Mar–83	0.775	$5.50	$4.263	$2.250	$1.744	$2.519	No
Teleci	WHL phone interconnect sys	26–Apr–83	0.700	$5.00	$3.500	$1.750	$1.225	$2.275	No
Cambridge BioScience	Dev/mfr/mkt biomed prods	31–Mar–83	1.000	$5.00	$5.000	$3.000	$3.000	$2.000	No
Endata	Info processing svc	02–Jun–83	0.800	$13.00	$10.400	$10.750	$8.600	$1.800	No
Sentry Data	Dev hospital info sys	22–Mar–83	0.550	$7.50	$4.125	$4.750	$2.613	$1.512	No
Magnetic Information Technolgy	Magnetic recording heads	02–Jun–83	0.820	$6.25	$5.125	$4.500	$3.690	$1.435	No
Electronic Financial Systems	Own/operate ATMs	25–May–83	0.600	$7.00	$4.200	$5.000	$3.000	$1.200	No
Quality Micro Systems	Mfr graphic processor	14–Jan–83	0.950	$17.00	$16.150	$15.875	$15.081	$1.069	No
BioTechnica International	Biotechnical research	28–Mar–83	0.800	$8.75	$7.000	$7.500	$6.000	$1.000	No
Medar	Mfr welding controls	17–Jun–83	0.750	$5.00	$3.750	$3.750	$2.813	$0.938	No
Bio–Logic Systems	Dev/mkt electrodiognstic sys	07–Jun–83	0.600	$6.75	$4.050	$5.250	$3.150	$0.900	No
Ensun	Mfr control sys	15–Jun–83	0.600	$5.00	$3.000	$3.750	$2.250	$0.750	No
Interand	Mf televideo graphic sys	02–Jun–83	0.950	$10.00	$9.500	$9.250	$8.788	$0.713	No
Spectran	Mfr flexible glass fiber	02–Jun–83	1.300	$7.00	$9.100	$6.750	$8.775	$0.325	No
Quantech Electronics	Mfr electronic components	07–Apr–83	0.825	$5.50	$4.538	$5.125	$4.228	$0.309	No
Astro–Med	Mfr computer graphic sys	25–May–83	0.350	$9.00	$3.150	$8.125	$2.844	$0.306	No
Sterling Software	Dev/mkt softwr prods	04–May–83	1.700	$9.00	$15.300	$8.875	$15.088	$0.212	No
BoMed Medical Manufacturing	Mfr medical instruments	30–Jun–83	0.800	$5.00	$4.000	$5.000	$4.000	$0.000	No
Primages	Mfr daisy wheel printer	11–May–83	0.900	$7.00	$6.300	$7.500	$6.750	($0.450)	No
Giga–tronics	Mfr microwave instruments	20–Jun–83	0.850	$16.00	$13.600	$16.750	$14.237	($0.637)	No
Galileo Electro–Optics	Mfr optical components	01–Feb–83	0.700	$10.00	$7.000	$11.500	$8.050	($1.050)	No
Systems Associates	Dev hospital comp sys	20–May–83	0.900	$16.00	$14.400	$17.250	$15.525	($1.125)	No
Laser Photonics	Mfr laser products	05–Jan–83	0.800	$5.00	$4.000	$6.750	$5.400	($1.400)	No
Amherst Associates	Hospital computer svc	08–Jun–83	0.770	$15.00	$11.550	$17.000	$13.090	($1.540)	No
BFI Communications Systems	Mfr telephones/parts	07–Apr–83	0.900	$5.00	$4.500	$6.750	$6.075	($1.575)	No
Scan–Tron	Mf optical mark read equip	16–Mar–83	1.000	$12.50	$12.500	$14.250	$14.250	($1.750)	No
Avant–Garde Computing	Mkt data network softwr	30–Jun–83	1.880	$16.00	$30.080	$17.000	$31.960	($1.880)	Yes
Applied Biosystems	mfr biomed/biochem prods	29–Jun–83	1.295	$17.00	$22.015	$18.500	$23.958	($1.942)	No
VLSI Technology	Mfr integrated circuits	24–Feb–83	4.000	$13.00	$52.000	$13.500	$54.000	($2.000)	No
Compushop	Retail personal computers	12–May–83	1.250	$8.00	$10.000	$10.000	$12.500	($2.500)	No
Powertec	Mfr electric power supplies	10–Jun–83	0.600	$10.75	$6.450	$15.250	$9.150	($2.700)	No
Distributed Logic	Mfr disk/tape controllers	02–Jun–83	0.800	$7.00	$5.600	$10.500	$8.400	($2.800)	No
Artel Communications	Mfr fiber optic transmit sys	02–Jun–83	1.150	$6.00	$6.900	$9.000	$10.350	($3.450)	No
Integrated Software Systems	Dev softwr/graphics	23–Mar–83	1.402	$16.00	$22.424	$18.500	$25.928	($3.504)	No
Hytek Microsystems	Mfr microcircuits	13–Apr–83	1.100	$7.00	$7.700	$10.500	$11.550	($3.850)	No
Vanzetti Systems	Mfr electronic equip	03–Jun–83	0.650	$8.00	$5.200	$14.000	$9.100	($3.900)	No

Appendix B: Listing of IPOs Examined (First Half of 1983).

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 3/30/84	(8) Market Cap at 3/30/84 ($mil.)	(9) Decline in Mkt Cap as of 3/30/84 ($mil.)	(10) Sued?
Burr–Brown	Mfr electronic components	24–Mar–83	1.200	$17.00	$20.400	$20.500	$24.600	($4.200)	No
MPSI Group	Dev softwr	02–Mar–83	1.000	$12.00	$12.000	$16.500	$16.500	($4.500)	No
Xebec	Mfr disk drives	01–Mar–83	1.300	$17.00	$22.100	$22.000	$28.600	($6.500)	No
LyphoMed	Mfr micronutrients	13–May–83	1.515	$12.00	$18.180	$18.000	$27.270	($9.090)	No
Digital Communications	Mfr data communications sys	10–Feb–83	1.750	$17.50	$30.625	$24.000	$42.000	($11.375)	No
Daisy Systems	Engineering computer sys	01–Jun–83	2.000	$15.50	$31.000	$24.250	$48.500	($17.500)	No
Time Energy Systems	Dev energy mngmnt sys	18–Feb–83	2.800	$15.00	$42.000	$21.500	$60.200	($18.200)	No
Information Resources	Dev softwr consumer goods	04–Mar–83	1.150	$23.00	$26.450	$49.000	$56.350	($29.900)	No
Apollo Computer	Mfr computer sys	03–Mar–83	4.000	$22.00	$88.000	$34.875	$139.500	($51.500)	No

Number of cases = 93

Appendix C: Listing of IPOs Examined (Second Half of 1983).

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 9/28/84	(8) Market Cap at 9/28/84 ($mil.)	(9) Decline in Mkt Cap as of 9/28/84 ($mil.)	(10) Sued?
Applied Communications	Dev softwr	07-Jul-83	1.275	$14.50	$18.487	$10.750	$13.706	$4.781	No
CTG	Telephone system	08-Dec-83	0.770	$8.00	$6.160	$2.125	$1.636	$4.524	No
Applied Data Communications	Mfr disk drives	18-Nov-83	1.000	$11.00	$11.000	$6.500	$6.500	$4.500	No
Zygo	Laser measuring instrumnt	13-Dec-83	0.950	$14.00	$13.300	$9.750	$9.263	$4.038	No
Andover Controls	Mfr building control sys	15-Nov-83	1.000	$10.00	$10.000	$6.000	$6.000	$4.000	No
Frey Associates	Develop software	27-Jul-83	0.375	$12.00	$4.500	$1.500	$0.563	$3.938	No
E-Z-EM	Medical imaging supplies	20-Oct-83	1.000	$14.00	$14.000	$10.250	$10.250	$3.750	No
ComputerCraft	Retail microcomputers	02-Aug-83	0.750	$9.50	$7.125	$4.750	$3.563	$3.563	No
Zitel	Computer memory sys	22-Dec-83	1.000	$10.00	$10.000	$6.500	$6.500	$3.500	No
Advanced Telecommunications	Long dist phone svc	21-Dec-83	0.900	$8.00	$7.200	$4.250	$3.825	$3.375	No
ILC Technology	Lght source/sensor prod	13-Jul-83	1.000	$13.00	$13.000	$9.625	$9.625	$3.375	No
Diagnon	Clinical test kits	13-Jul-83	1.000	$6.00	$6.000	$2.750	$2.750	$3.250	No
CompuTrac	Develop computer systems	19-Jul-83	0.500	$12.00	$6.000	$5.500	$2.750	$3.250	No
Key Image Systems	Computer equip/softwr	03-Aug-83	0.765	$6.50	$4.973	$2.500	$1.913	$3.060	No
Cambrian Systems	Computer disk test equip	16-Dec-83	0.800	$5.00	$4.000	$1.250	$1.000	$3.000	No
CHAD Therapeutics	Respiratory care devices	20-Jul-83	0.750	$6.00	$4.500	$2.000	$1.500	$3.000	No
Satellite Syndicated Systems	Satellite communications	04-Aug-83	0.850	$12.00	$10.200	$8.500	$7.225	$2.975	No
CMC International	Computer systems	08-Jul-83	0.673	$6.25	$4.206	$2.125	$1.430	$2.776	No
Renal Systems	Medical devices/supplies	20-Sep-83	0.500	$11.00	$5.500	$5.500	$2.750	$2.750	No
Telecommunications Specialists	Dev satellite comm sys	05-Oct-83	1.000	$5.00	$5.000	$2.375	$2.375	$2.625	No
Terak	Microcomputer	03-Nov-83	0.600	$5.00	$3.000	$0.750	$0.450	$2.550	No
Paragon Communication System	Mkt private phone sys	29-Sep-83	0.700	$5.00	$3.500	$1.500	$1.050	$2.450	No
Medstat Systems	Mkt on-line computer sys	09-Nov-83	0.575	$7.00	$4.025	$2.750	$1.581	$2.444	No
Physio Technology	Biomed/orthopedic prods	10-Nov-83	0.536	$8.00	$4.288	$3.500	$1.876	$2.412	No
Worlco Data Systems	Dev/mkt softwr packages	22-Nov-83	0.800	$5.00	$4.000	$2.000	$1.600	$2.400	No
Lane Telecommunications	Computer terminals	02-Nov-83	1.050	$7.50	$7.875	$5.250	$5.513	$2.363	No
Comptek Research	Develop computer software	14-Jul-83	0.710	$13.00	$9.230	$9.750	$6.922	$2.308	No
Datacopy	Computer graphic sys	06-Oct-83	1.600	$6.00	$9.600	$4.625	$7.400	$2.200	No
IMRE	Biomedical research	14-Dec-83	0.600	$5.00	$3.000	$1.500	$0.900	$2.100	No
Information Solutions	Mkt computer sys	07-Oct-83	0.600	$5.00	$3.000	$1.500	$0.900	$2.100	No
Continental Healthcare Systems	Dev hospital computer sys	27-Sep-83	1.100	$5.75	$6.325	$3.875	$4.263	$2.063	No
Termiflex	Computer terminals	15-Sep-83	0.400	$8.00	$3.200	$3.000	$1.200	$2.000	No
Leeco Diagnostics	Medical diagnostic kits	13-Oct-83	0.600	$6.00	$3.600	$2.750	$1.650	$1.950	No
International Medical System	Dev intravenous pump	12-Jul-83	0.700	$5.00	$3.500	$2.375	$1.662	$1.838	No
SEEQ Technology	Integrated circuits	12-Oct-83	1.800	$10.00	$18.000	$9.000	$16.200	$1.800	No
Stanford Telecommunications	Telecomm equipment	06-Oct-83	0.900	$13.00	$11.700	$11.250	$10.125	$1.575	No
Cableguard	Mkt cable TV security sys	18-Aug-83	0.700	$5.00	$3.500	$2.750	$1.925	$1.575	No
Isomedix	Sterilize medical prods	14-Jul-83	1.250	$13.00	$16.250	$11.750	$14.688	$1.563	No
TLS	Comp info processing svc	04-Nov-83	0.600	$8.00	$4.800	$5.750	$3.450	$1.350	No
Radionics	Computer alarm sys	07-Oct-83	1.050	$11.00	$11.550	$9.750	$10.238	$1.313	No
Pancretec	Desgn/mnfr infusion pumps	17-Nov-83	0.650	$6.00	$3.900	$4.250	$2.763	$1.138	No
Gull	Computer equip/sys	16-Aug-83	1.107	$10.50	$11.624	$9.750	$10.793	$0.830	No

Appendix C: Listing of IPOs Examined (Second Half of 1983).

(1) Issuer	(2) Business	(3) Issue Date	(4) Shares (mil.)	(5) Issue Price	(6) Market Cap. at IPO ($mil.)	(7) Price at 9/26/84	(8) Market Cap at 9/26/84 ($mil.)	(9) Decline in Mkt Cap as of 9/26/84 ($mil.)	(10) Sued?
Cermetek Microelectronics	Computer modem/equip	07-Dec-83	0.845	$8.00	$6.760	$7.125	$6.021	$0.739	No
System Integrators	Computer editing sys	03-Nov-83	1.350	$10.00	$13.500	$9.500	$12.825	$0.675	No
Endotronics	Biotech research equip	21-Jul-83	0.640	$7.00	$4.480	$6.000	$3.840	$0.640	No
StarTel	Computer telecomm sys	22-Nov-83	0.900	$5.00	$4.500	$4.375	$3.938	$0.563	No
CardioSearch	Biomedical devices	03-Aug-83	0.550	$6.50	$3.575	$5.500	$3.025	$0.550	No
Parlex	Semicond components	05-Oct-83	0.500	$14.50	$7.250	$13.500	$6.750	$0.500	No
Sterivet Laboratories	Dev equine pharmaceutcals	22-Sep-83	0.600	$5.75	$3.450	$5.000	$3.000	$0.450	No
Diceon Electronics	Computer circuit board	30-Nov-83	1.800	$16.00	$28.800	$15.750	$28.350	$0.450	No
IntelliCorp	Dev computer software	14-Dec-83	1.600	$6.00	$9.600	$5.750	$9.200	$0.400	No
Interactive Radiation	Crystal laser prod	07-Jul-83	0.500	$8.00	$4.000	$7.250	$3.625	$0.375	No
Western Micro Technology	WHL semicond cmpnents	18-Nov-83	0.850	$10.00	$8.500	$9.750	$8.288	$0.213	No
Mediflex Systems	Softwr/DP svcs-hospitals	04-Oct-83	0.850	$15.00	$12.750	$14.750	$12.538	$0.213	No
Innovative Software	Dev computer software	15-Sep-83	0.530	$8.50	$4.505	$8.250	$4.373	$0.132	No
Lasers for Medicine	Medical laser system	16-Dec-83	0.500	$6.25	$3.125	$6.000	$3.000	$0.125	No
Cincinnati Microwave	Radar warning receiver	13-Dec-83	1.800	$12.00	$21.600	$12.000	$21.600	$0.000	No
KMW Systems	Computer process equip	21-Sep-83	0.450	$10.00	$4.500	$10.500	$4.725	($0.225)	No
Synbiotics	Biomed products	25-Aug-83	0.400	$10.00	$4.000	$10.750	$4.300	($0.300)	No
Ciprico	Disk controllers/adapter	01-Jul-83	0.627	$12.00	$7.524	$12.500	$7.838	($0.314)	No
Entre Computer Centers	Franchise computer stores	06-Dec-83	1.400	$12.00	$16.800	$12.250	$17.150	($0.350)	No
Compucare	Hospital info processing svc	10-Nov-83	1.000	$12.50	$12.500	$13.000	$13.000	($0.500)	No
Datakey	Portable info sys	28-Oct-83	0.750	$5.00	$3.750	$6.250	$4.688	($0.938)	No
Thermedics	Biomed products	10-Aug-83	0.650	$9.50	$6.175	$11.000	$7.150	($0.975)	No
Vodavi Technology	Electronic phone sys	29-Nov-83	1.400	$8.00	$11.200	$8.750	$12.250	($1.050)	No
Total Systems Services	Bank card data sys	10-Aug-83	0.500	$15.00	$7.500	$17.250	$8.625	($1.125)	No
Reid-Ashman	Semiconductor test equip	20-Dec-83	0.600	$5.00	$3.000	$7.000	$4.200	($1.200)	No
Personal Computer Products	Circuit cards	09-Nov-83	0.640	$5.00	$3.200	$7.000	$4.480	($1.280)	No
BKW Systems	Dev computerized bank sys	09-Sep-83	1.000	$5.00	$5.000	$6.625	$6.625	($1.625)	No
Comp-U-Card International	Consumer info database	14-Sep-83	1.250	$20.50	$25.625	$22.000	$27.500	($1.875)	No
Fibronics International	Data communications equip	11-Oct-83	0.650	$9.00	$5.850	$12.000	$7.800	($1.950)	No
Valid Logic Systems	Comp engineering sys	04-Oct-83	2.660	$12.50	$33.250	$13.375	$35.578	($2.328)	No
International Technology	Environmental mgmnt svc	14-Dec-83	1.450	$15.50	$22.475	$17.250	$25.013	($2.538)	No
Component Technology	Thermoplastic prods	15-Dec-83	0.450	$7.00	$3.150	$13.250	$5.963	($2.813)	No
Filtertek Companies	Mnfr filtration elements	31-Aug-83	1.000	$12.00	$12.000	$15.488	$15.488	($3.488)	No
Richardson Electronics	Electr tube/semicond	27-Oct-83	0.700	$16.00	$11.200	$22.500	$15.750	($4.550)	No
Telxon	Portable microcomputers	21-Jul-83	1.600	$13.00	$20.800	$16.000	$25.600	($4.800)	No
Chargit	Telephone ticket svc	30-Nov-83	1.350	$5.00	$6.750	$8.625	$11.644	($4.894)	No
VMX	Voice message exch sys	02-Dec-83	2.500	$9.00	$22.500	$11.000	$27.500	($5.000)	No
International Hydron	Contact lenses	07-Oct-83	1.000	$11.00	$11.000	$16.875	$16.875	($5.875)	No
Electro Scientific Industries	Laser instruments	18-Oct-83	1.200	$15.00	$18.000	$20.000	$24.000	($6.000)	No
Bel Fuse	Electronic components	06-Dec-83	0.510	$13.00	$6.630	$29.000	$14.790	($8.160)	No
Lotus Development	Dev software	06-Oct-83	2.600	$18.00	$46.800	$22.000	$57.200	($10.400)	No
Equatorial Communications	Satellite receivers	13-Sep-83	2.200	$14.00	$30.800	$18.750	$41.250	($10.450)	No

Appendix C: Listing of IPOs Examined (Second Half of 1983).

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Trilogy	Computer systems	09-Nov-83	5.000	$12.00	$60.000	$1.313	$6.565	$53.435	Yes
COMPAQ Computer	Personal computers	09-Dec-83	6.000	$11.00	$66.000	$4.625	$27.750	$38.250	No
Zymos	Integrated circuits	21-Jul-83	3.750	$12.50	$46.875	$2.375	$8.906	$37.969	No
Kaypro	Portable computer sys	25-Aug-83	4.000	$10.00	$40.000	$2.875	$11.500	$28.500	Yes
Micro D	Distr computer softwr/eqp	12-Jul-83	2.000	$16.00	$32.000	$4.625	$9.250	$22.750	No
Applied Circuit Technology	Disk drive test equip	04-Aug-83	2.150	$11.00	$23.650	$0.875	$1.881	$21.769	No
Circon	Medical video cameras	07-Jul-83	1.250	$22.00	$27.500	$5.250	$6.563	$20.938	No
CooperBiomedical	Medical lab prods	04-Aug-83	2.750	$11.00	$30.250	$4.375	$12.031	$18.219	No
Information Science	Mkt softwr/DP svc	03-Aug-83	1.482	$17.00	$25.194	$5.250	$7.781	$17.414	No
MiniScribe	Computer disk drives	03-Nov-83	2.000	$11.50	$23.000	$3.125	$6.250	$16.750	No
Integrated Genetics	Dev medcl/diagnostic prod	19-Jul-83	1.600	$13.00	$20.800	$4.125	$6.600	$14.200	No
Kolff Medical	Artificial human organs	15-Jul-83	1.500	$12.50	$18.750	$3.625	$5.438	$13.313	No
Archive	Mfr computer tape drives	16-Dec-83	2.500	$10.00	$25.000	$5.000	$12.500	$12.500	No
Imatron	Dev diagnostic scanner	03-Aug-83	6.000	$5.00	$30.000	$3.000	$18.000	$12.000	No
Marquest Medical Products	Disposable medical prod	01-Jul-83	1.300	$17.00	$22.100	$8.000	$10.400	$11.700	No
Satelco	Voice & data telecomm svc	12-Jul-83	1.100	$12.00	$13.200	$1.625	$1.788	$11.413	Yes
Protocol Computers	Computer equip	28-Sep-83	1.200	$12.00	$14.400	$3.500	$4.200	$10.200	No
Formaster	Computer systems	15-Dec-83	1.250	$10.00	$12.500	$1.875	$2.344	$10.156	No
Chiron	Biopharmaceuticals prods	02-Aug-83	1.500	$12.00	$18.000	$5.500	$8.250	$9.750	No
Immunex	Immunological prods	01-Jul-83	1.500	$11.00	$16.500	$4.750	$7.125	$9.375	No
Ashton-Tate	Dev computer softwr	30-Nov-83	1.700	$14.00	$23.800	$8.500	$14.450	$9.350	No
Stratus Computer	Computers	26-Aug-83	3.000	$12.00	$36.000	$9.000	$27.000	$9.000	No
GTECH	Computer-based ntwrks	20-Jul-83	2.050	$13.25	$27.162	$8.875	$18.194	$8.969	No
Datasouth Computer	Computer printers	25-Aug-83	1.100	$12.00	$13.200	$4.250	$4.675	$8.525	No
Lifeline Systems	Emergency response sys	27-Jul-83	1.000	$13.00	$13.000	$4.750	$4.750	$8.250	No
Advanced Genetic Sciences	Agricultural biotechnology	22-Sep-83	0.750	$15.00	$11.250	$4.000	$3.000	$8.250	No
FDP	Develop software sys	12-Aug-83	1.300	$13.00	$16.900	$7.000	$9.100	$7.800	No
Iomega	Cartridge disk drives	07-Jul-83	2.200	$10.00	$22.000	$6.875	$15.125	$6.875	No
Cell Products	Fermentation prods	01-Sep-83	1.000	$8.00	$8.000	$1.750	$1.750	$6.250	No
Bio-Technology General	R&D labs	29-Sep-83	0.800	$13.00	$10.400	$5.313	$4.250	$6.150	No
PerfectData	Comp maintenance prods	12-Jul-83	1.085	$8.50	$9.223	$3.000	$3.255	$5.968	No
Ault	Power conversion prods	25-Aug-83	0.850	$10.50	$8.925	$3.500	$2.975	$5.950	No
Baron Data Systems	Computer transcription sys	13-Jul-83	1.000	$15.00	$15.000	$9.250	$9.250	$5.750	No
Esprit Systems	Develop video terminal	07-Oct-83	1.100	$8.00	$8.800	$2.875	$3.163	$5.638	No
Businessland	Retail computer stores	14-Dec-83	5.000	$10.00	$50.000	$8.875	$44.375	$5.625	No
California Amplifier	Mfr/mkt microwave amps	13-Dec-83	1.000	$10.00	$10.000	$4.750	$4.750	$5.250	No
ATV Systems	Mfr computer sys	18-Oct-83	0.600	$10.00	$6.000	$1.250	$0.750	$5.250	Yes
California Biotechnology	Biotechnological research	26-Oct-83	1.000	$12.00	$12.000	$6.750	$6.750	$5.250	No
ComGen Technology	Electronic products	11-Aug-83	1.300	$5.00	$6.500	$1.000	$1.300	$5.200	No
Supertex	Semiconductors	06-Dec-83	1.500	$9.00	$13.500	$5.625	$8.438	$5.063	No
Instrumentarium	Medical/consumer prods	18-Aug-83	1.300	$13.00	$16.900	$9.250	$12.025	$4.875	No
P.C. Telemart	Dev softwr distr sys	03-Aug-83	1.000	$5.00	$5.000	$0.125	$0.125	$4.875	No

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STAAR Surgical Company	Intraocular lenses	07-Jul-83	0.640	$6.25	$4.000	$23.875	$15.280	($11.280)	No
American Educational Computer	Dev educational softwr	06-Oct-83	0.600	$5.00	$3.000	$24.000	$14.400	($11.400)	No
First Data Resources	On-line database	13-Sep-83	4.000	$14.00	$56.000	$17.375	$69.500	($13.500)	No
CopyTele	Graphic display sys	06-Oct-83	0.600	$10.00	$6.000	$34.000	$20.400	($14.400)	No

Number of cases = 130