# Economic Foundations of Stock Market Regulation

by

Irwin Friend*

Working Paper No. 4-75

RODNEY L. WHITE CENTER
FOR FINANCIAL RESEARCH

University of Pennsylvania
The Wharton School
Philadelphia, Pa. 19174

## 1. Introduction

Before considering the economic impact of stock regulation in the U.S.A. which has pioneered in this area,it is desirable to review briefly the general purposes of such regulation. The two basic aims of the original legislation--the Securities Act of 1933 and Securities and Exchange Act of 1934--were protection of investors and promotion of the broader public interest as this interest is affected by trading in securities. The first aim has an equity orientation, and the second an economic orientation since the public interest in the area of securities regulation relates largely to the impact of regulation on the economic performance of securities markets.

These two aims were to be achieved largely by policies designed to require full disclosure of material facts on securities sold in the primary and secondary markets, to prevent manipulation of securities prices, to curb unfair trading practices, to maintain orderly and liquid markets, and to control "excessive" use of credit. This listing of the main categories of policies is not intended to indicate mutually exclusive groups since there can be broad overlapping. Similarly, while some of the specific policies followed are directed primarily to either an equity or an economic objective, others are directed to both. Some apply to the market for new issues, a number to the market for outstanding issues, and still others to both.

The period subsequent to the original legislation which set up the U.S. Securities and Exchange Commission (SEC) to implement these

---

*Richard K. Mellon Professor of Finance, University of Pennsylvania.
The author wishes to acknowledge the financial support of the Rodney L. White Center for Financial Research. This paper was presented at the Buckingham Conference, London, June 23, 1975.

objectives and policies has seen that agency, both through new legislation and new regulations, greatly expand its powers and assume a much more active and direct role in the regulation of securities issuance and trading. This trend has culminated in the recently enacted Securities Act Amendments of 1975 which gives the SEC substantial new powers to structure the central market system and represents another major move away from industry self-regulation.

My comments in this paper will be directed first to the economic rationale of stock market regulation and second to the available evidence relating to the economic impact of such regulation. I shall largely confine my attention to economic effects though equity considerations are obviously also relevant. I shall not consider here several peripheral areas of securities regulation, including mutual funds, holding companies, and the recent extension of corporate disclosure requirements to social policy issues.

Before considering the technical materials to follow, I should point out that it is my belief that securities legislation in the U.S.A. has had as a whole a beneficial impact on the economy totally apart from its effect in reducing inequities among different participants in the securities markets. This does not mean that the economic case for every major facet of securities legislation has been proved beyond doubt, but simply that the economic case for some major facets is rather strong and that for other facets the case for seems to be stronger than the case against.

It has always amused me that the most vociferous economic critics of securities legislation have taken the tack that the case for such legislation must rest on irrefutable evidence that it has

benefitted the economy, not that the evidence for should be stronger than the evidence against. I would further argue that even if this legislation, with due consideration given to the costs involved, were neutral in its effect on the economy, much of it would be desirable on equity grounds.

To summarize my own views as to the effectiveness of different facets of securities regulation, the evidence that fuller disclosure has benefitted the market for new securities issues seems to me rather strong. The position that fuller disclosure has improved the market for outstanding issues seems more defensible on the basis of the available evidence than the position that it has not, though the case is not as strong as for new issues. My evaluation of the success of the policies designed to maintain orderly and liquid markets and to control "excessive" use of credit in the stock market is that they probably have done have done more economic good than harm, but the case again is not very strong. The economic rationale for some specific measures taken by the SEC to prevent manipula-

more economic good than harm, but the case again is not very strong. The economic rationale for some specific measures taken by the SEC to prevent manipulation of securities prices and to curb unfair trading practices might be questioned, without much empirical support either way, but such policies can frequently be justified on equity grounds. In the subsequent discussion of the available evidence relating to the economic impact of securities regulation, I shall present only selected highlights and refer to the literature for further support of my position.

[illegible] rationale for believing that stock

market regulation would favorably affect the market (Section 3), and the empirical evidence relating to the performance of such regulation in furthering its economic goals (Section 4). Parts of these sections rely heavily on earlier studies by myself and others but new material is also presented including a brief discussion of some recent, relevant literature.

## 2. Theory of Market Impact on Economy[1]

The stock market affects the functioning of the economy in two principal ways. First, market developments may affect the national income through their influence on the aggregate propensities to consume, to save, and to invest. Second, even with a given level of saving and investment, market arrangements can affect the efficiency of the allocation of investment funds. This paper will be concerned primarily with the second of these two potential influences, viz., the impact of the market on economic efficiency--the type of impact to which economists have directed most of their attention.

It might be noted here, however, that economists have given inadequate consideration to the fact that a highly volatile stock market may decrease aggregate investment by increasing the cost of capital to business enterprises[2] and may also result in substantial swings in the level of consumption and hence income through an asset effect. Thus

---

[1]Part of this discussion is based on Irwin Friend, "The Economic Consequences of the Stock Market," The American Economic Review, May 1972.

[2]In completely efficient markets, the volatility may of course simply reflect the influence of different economic forces affecting investment risks and prospective returns.

a less volatile stock market might stimulate a higher secular level of investment and less pronounced cyclical swings in the level of consumption and income. Presumably, since all available evidence suggests that people are risk averse, their expected utility would be increased by smaller cyclical fluctuations, perhaps even if the average level of the national income were lowered somewhat in the process.

## Concepts of market efficiency

Economic theorists have shown that making assumptions they consider reasonable--including management acting in the stockholders' interests and the costless and immediate availability of all information to all investors--a firm's output decisions under capital market equilibrium will be optimal for all its stockholders and will also be optimal in the sense that in long-run equilibrium each firm will be operating at minimum average costs.[1] Perhaps the most common conception of an efficient market in recent studies of stock market phenomena is one in which every price fully reflects all the available information so that any new relevant information is reflected in prices extremely rapidly (and cannot be used to make abnormal returns). There are, however, a number of difficulties with this definition.

First, the market must in some fashion reflect all available information. The important question is the relevance of the information to the subsequent earnings or riskiness of the stock. How is information to be distinguished from misinformation? Second, is a market in

---

[1] E.g., see Hayne E. Leland, "Production Theory and the Stock Market," The Bell Journal of Economics and Management Science, Spring 1974. See also Robert C. Merton and Marti G. Subrahmanyam, "The Optimality of a Competitive Stock Market," in the same issue of The Bell Journal.

which prices fully reflect the scanty information available as efficient as a market in which much more information is available and reflected in stock prices? In other words, what is the justification for considering the information set fixed? Third, is the efficiency of the market independent of the costs incurred? It seems desirable to have two measures of efficiency, one measuring the quality of the service rendered (sometimes referred to as "allocational efficiency"), the other its cost (or "operational efficiency").

Finally, even if the markets are efficient according to any reasonable definition, this would not ensure a flow of economic resources into the most productive real investment. However, efficient markets should ensure that the markets are providing the appropriate guidelines for the flow of capital.

Another approach to appraising market efficiency has been to set up two standards: (1) the extent to which short-run fluctuations in price--that is, those not matched by changes in equilibrium price--are eliminated, or alternatively, the extent to which transaction costs to the public are minimized; and (2) the success with which changes in equilibrium prices are anticipated.[1] The first of these standards may be considered to lead to an appropriate measure of the market's operational efficiency. For a given volume and quality of services, and for given factor costs, operational efficiency may be measured by, and is an inverse function of, underwriting and other flotation costs of new issues and transaction costs in public transfer of outstanding issues

---

[1]George Stigler, "Public Regulation of the Securities Markets," Journal of Business, April 1964, p. 117.

(including any relevant regulatory costs). The transaction costs in the transfer of outstanding issues from a public buyer to a public seller include not only two commissions but also either all or part of the bid-ask spread.

The second of these standards, which is addressed to the market's allocational efficiency, introduces all of the difficulties in defining, and in attempting to measure, equilibrium price.[1] The latter is apparently taken to represent the intersection of the investors' demand schedule for a security with the amount outstanding--no matter how temporary or ill-advised retrospectively that price turns out to be. Again, no consideration is given to the market role of misinformation or of the adequacy of the information set.

Probably the most satisfactory way of evaluating the allocational efficiency of decisions made in the securities markets is to inquire whether the outcomes are the best obtainable with the information that was available at the time the decisions were made or that could have been made available at that time (with the costs involved reflected in the measurement of operational efficiency). The best outcomes would be obtained if the markets maintained equivalent rates of return and hence equivalent costs of financing on comparable investments. This quality of the markets would help to ensure that funds are channeled from savers to those users who will apply them most profitably and that portfolio shifts can be made to the mutual advantage of different investors. The efficiency of this allocation process can be assessed in

---

[1] See Irwin Friend and Edward S. Herman, "The SEC Through a Glass Darkly," Journal of Business, October 1964, p. 399 and January 1965, p. 109.

retrospect by the extent to which there are variations in market return and by the extent to which these variations can be explained by differentials in risk.

While it is not too difficult to obtain a retrospective view of allocational efficiency by analyzing returns and risks associated with different investments, it is virtually impossible to tell how the outcomes compare with the best obtainable at the time the decisions were made. Retrospective data permit an absolute appraisal of the optimality of outcomes only with the benefit of hindsight. Yet they do provide an indication of the departure of outcomes from ex post optimality. If ex ante measures of return and risk at the beginning of a period bear little relationship to ex post measures at the end of the period, the value of the ex ante magnitudes would be quite limited.

In spite of the deficiencies in reliance on retrospective data to supply an adequate measure of absolute market efficiency, they probably do provide a reasonably satisfactory index of relative market efficiency which can be used to analyze the impact on efficiency of different financial developments and practices, including the impact of securities regulation.

## 3. Economic Rationale of Market Regulation

The economic justification for disclosure, which is perhaps the most basic mechanism of securities regulation, is the belief that the provision of information to prospective investors is a necessary condition for efficient markets. "With full disclosure we would expect less drastic shifts in estimates of expected profitability of a given

issue as a result of the greater initial level of economic information (and, presumably, the reduction in the possibility of surprises from this source), a greater scope for scientific investment analysis, a diminished reliance on and use of rumors, and a reduction in the scale of manipulative practices."[1] Information is a basic ingredient for rational economic behavior. We would therefore expect improved disclosure to increase allocational efficiency. Less important, it might increase operational efficiency as a result of greater public knowledge concerning underwriting and other transaction costs, and the reduction in private expenses of investigation facilitated by the required disclosure of information. However, the provision of new information entails additional costs which may offset some or all of the operational savings referred to. Most people would also regard disclosure as enhancing equity among different groups in the market.

The economic as well as non-economic justification of regulations designed to prevent the more flagrant types of manipulation of securities prices requires little explanation. Theoretically, such regulations might be expected to improve both efficiency and equity in the capital markets, and perhaps also general economic stability, even though empirical evidence is required to assess whether the benefits achieved are worth the cost. Restrictions on certain types of speculation to maintain orderly and liquid markets and limitations on the use of securities credit are frequently rationalized on similar grounds, but even the existence of economic benefits from such policies is not clear from theory alone and must depend on evidence. For example, it is easy enough to use theoretical considerations to "demonstrate"

---

[1] "The S.E.C. Through a Glass Darkly," op. cit.

that under plausible conditions speculators on the average must stabilize stock prices so long as it is assumed that their activities do not affect the demand schedules of investors. This, however, is a heroic assumption and requires direct or indirect empirical verification.

## 4. Economic Performance of Market Regulation[1]

Some of the most convincing evidence on the SEC's accomplishments in the markets for new and outstanding issues is provided in the Pecora hearings,[2] two other U.S. Government pre-World War II studies,[3] and the postwar SEC Special Study,[4] with their documentation of the massive securities abuses of the earlier period and the much healthier post-SEC experience. This evidence provides substantial reason for believing that the effects of disclosure and related aspects of securities legislation have been beneficial. Vast amounts of money were demonstrably lost in the pre-SEC period as a result of activities which have been greatly reduced by securities legislation. These amounts would appear to dwarf any reasonable estimate of the costs of such legislation.

Stock market pools, bucket shop operation, misuse of insider

---

[1] Part of this discussion is based on Irwin Friend, "The S.E.C. and the Economic Performance of Securities Markets," in Henry G. Manne, Ed., Economic Policy and the Regulation of Corporate Securities, American Institute for Public Policy Research, 1969.

[2] Stock Exchange Practices: Hearings before the Senate Committee on Banking and Currency (72d and 73d Cong., Parts 1-17), Washington, D.C., 1933-34.

[3] Report of the Federal Trade Commission on Utility Corporations (70th Cong., 1st sess., Sen. Doc. 92), Washington, D.C., 1935, esp. Parts 22, 71A, 72A, and 73A; and Report of the Securities and Exchange Commission on Investment Trusts and Investment Companies, Washington, D.C., 1939-42.

[4] Report of Special Study of Securities Markets of the Securities and Exchange Commission, U.S. Government Printing Office, 1963.

information and other types of manipulation and fraud, which frequently relied on the deliberate use of misinformation and the absence of full disclosure, were widespread in the pre-SEC period, involved vast sums of money and seem less prevalent today. In the earlier period, enormous losses were absorbed by the public in excessively leveraged, highly speculative, and frequently manipulated new issues of public utility holding companies, investment companies, and foreign bonds, each of which was frequently sold under disclosure conditions bordering on fraud. It is undoubtedly true that a substantial share of the blame for such losses lies elsewhere, but an important share is attributable to inadequate and deliberately misleading information, and widespread violations of fiduciary responsibilities by market and corporate insiders.

The Pecora investigation catalogued 107 issues on the New York Stock Exchange and 71 issues on the New York Curb in which members of these exchanges participated in pools in 1929. It also documented an impressive number of cases of new issue sales in the mid- to late 1920's with inadequate disclosure and disastrous results.

no ¶ Both the nature of the facts and statements by the investment bankers involved make it quite clear that with a modicum of disclosure of known facts these issues could not have been sold.

Impact on new issues

There is additional evidence in the postwar Special Study suggesting a beneficial effect on new isssues of the full disclosure requirement under the SEC. For example, during 1960-61 a law firm representing 17 issuers filed 13 Regulation A statements, which do not require full disclosure, and four registration statements which do. Eleven of the 13 Regulation A statements but none of the four regis-

stration statements became effective. Of the 11 Regulation A issues subsequently marketed, all went to a premium immediately after the offering but by November 1962 eight were no longer mentioned in the quotation sheets and three were quoted below their offering price. Through a variety of arrangements, the public monies raised through these offerings were substantially siphoned off to persons affiliated with the law firm representing the 17 issuers. The Special Study also shows that while Regulation A issues in 1959-61 fared better than registered issues in the immediate post-offering period (up to one month after offering), they fared worse by September 30, 1962. This can be construed as suggesting that in the short-run full disclosure may prevent unwarranted price rises and in the longer-run ensure a closer coincidence between initial price and intrinsic value.

One of several tests of the effect of full disclosure which I carried out in the past in conjunction with Edward Herman is provided by a comparison of the market experience from 1958 to 1963 of unregistered new industrial common stock below $300,000 in size issued in 1958 with the smaller registered issues over $300,000 where both groups of stocks are adjusted by movements in the market averages.[1] Only non-rights, publicly offered, primary issues were included to maintain comparability. While this test was of rather limited scope, it pointed to a superior after-issue price performance of the registered issues. The price relatives for the registered small issues were not very different from those typically found for the larger issues, but they were appreciably better than the price relatives for

---

[1] "The S.E.C. Through a Glass Darkly," op. cit.

the very small issues not subject to registration.

Another test of the effect of full disclosure which we carried out in connection with our criticism of a similar earlier test by George Stigler[1] is to compare the price performance relatives of comparable large new stock issues in the pre-SEC 1923-28 and post-SEC 1949-55 periods over a five-year period subsequent to their offering.[2] These price performance relatives were obtained by adjusting the price trends of new issues for the price trends of outstanding issues (as measured by the Standard and Poor's Industrial Index) in an attempt to eliminate the effects of general market conditions. Such a test assumes that any differences in the relation of the markets for new and outstanding issues in the two periods were mainly a reflection of the SEC, with the disclosure provisions for new issues likely to be particularly important.[3] The deficiencies in this assumption are obvious, but the results of this test are still of interest.

In this comparison of the 1923-28 and 1949-55 periods, we found that the price performance of new issues was inferior to that of outstanding issues, but was closer to outstanding issues in the post-SEC than in the pre-SEC period suggesting an increase in allocational efficiency. The price performance of new issues relative to outstanding issues was, as a result, superior in the post-SEC period. This superiority was least marked in the first year

---

[1] "Public Regulation of the Securities Markets," op. cit.

[2] "The S.E.C. Through a Glass Darkly," op. cit.

[3] While the SEC has effected significant increases in disclosure for both new and outstanding issues, the disclosure requirements for new issues are more extensive and started in the pre-SEC period at a much lower base.

or so after the issue date,but this finding can be explained by two facts--the extensive price pegging and numerous manipulative pools in the 1920's which might be expected to be particularly active in the first year after the public sale of a new issue; and the extreme difficulty of securities valuation in the absence of full disclosure until there is some record of operating experience. In connection with the first of these two points, it might be noted that a sample of new issues which according to the Pecora hearings were subject to pool operations in the 1920's had an above-average price performance in the first year after the issue date.[1]

We extended the pre-SEC and post-SEC comparisons, in which we had covered the same time period and size categories of issues used by Stigler, to include 1958 and the first half of 1959 and also to include small issues for 1923, the first half of 1928 and the first half of 1958. Again we obtained the same qualitative results when comparing the pre-SEC and post-SEC periods.

Another significant result of this comparison of pre-SEC and post-SEC price performance of new common stock issues relative to outstanding issues is that the variances of the price ratios for each of the five years after issue date were much larger in the pre-SEC period. In other words, there was much less dispersion in relative price performance of new issues in the post-SEC period, which is another result consistent with theoretical expectations of the effects of improved information and a reduction of manipulative

---

[1] "The S.E.C. Through a Glass Darkly," op. cit.

activity. This again could be construed as evidence that securities legislation has improved the structure of stock prices.

In a subsequent analysis, we pointed out that another measure of performance advanced by Stigler suggested a statistically significant improvement in the structure of new issue prices from the pre-SEC to post-SEC periods.[1] Thus the correlation in the pre-SEC period between new issue prices and prices one year later (with all new issue prices deflated by the price index for outstanding issues) seems to have been significantly lower than the average correlation for adjacent pairs of years after issue, whereas these correlations are identical (and higher) in the post-SEC period.

The only comprehensive data updating the comparative performance of new and outstanding issues appears in an unpublished Ph.D. dissertation by Roger Ibbotson.[2] That study, which covers the price performance of SEC registered underwritten unseasoned common stock issued during each month of the period 1960-69 over a post-issuance five year period through 1971, finds that after a short-lived initial premium these new issues are indistinguishable from other outstanding stock. If these results are taken at face value, they would seem to suggest the virtual disappearance in the post-SEC period of the inferior performance of new issues. Thus, to the extent such data are relevant, they support an improvement in the efficiency of the new-issue market in the post-SEC period.

---

[1] Irwin Friend and Edward S. Herman, "Professor Stigler on Securities Regulation: A Further Comment," Journal of Business, January 1965, and George J. Stigler, "Comment," Journal of Business, October 1964.

[2] Roger G. Ibbotson, Price Performance of Common Stock New Issues, University of Chicago, 1973.

In the light of all these findings, it is not surprising that Randolph Westerfield and I stated in the June 1975 issue of The American Economic Review that "We interpret the evidence on the 1933 Act as clearly favorable to disclosure."[1] It may be useful, therefore, to consider a different evaluation by George Benston which appeared in that same issue,[2] both to examine its validity and perhaps its conformance with elementary standards of full disclosure. Benston in referring to the papers by Stigler, Herman, and myself, which cover all the results summarized above except those obtained by Ibbotson, states that "The data presented in these papers indicate an insignificant difference in the mean rate of return (relative to the market) on stocks floated in the years 1923-27 compared to flotations in the period 1949-55. However, the standard deviations of the returns are higher in the pre-Securities and Exchange Commission (SEC) period, which F-W assume is favorable." He then proceeds to attack the relevance of the standard deviations and concludes that from such evidence "one should not interpret the evidence as clearly favorable to disclosure."

Benston clearly states (1) that the 1923-27 and 1949-55 comparisons provide insignificant differences in mean rates of return and strongly implies (2) that these are the only relevant results available and (3) that our conclusion is exclusively or primarily based on the respective standard deviations, which do not constitute terribly relevant evidence. The first point is grossly misleading, the sec-

---

[1] Irwin Friend and Randolph Westerfield, "Required Disclosure and the Stock Market: Comment."

[2] George J. Benston, "Required Disclosure and the Stock Market: Rejoinder."

ond and third false. I can begin to understand Benston's distaste for full disclosure.

Turning to the first point, both Stigler and Friend and Herman make two different comparisons of the pre-SEC and post-SEC performance of new issues. The first covered 1923-28 for the pre-SEC period and included Class A stock as common, following Stigler's original procedures. The second covered 1923-27 and excluded Class A stock from common, following Stigler's revision of his original procedures when we pointed out that the original results appropriately corrected suggested a favorable SEC effect in the new issue market.

What Benston does not point out--and this would seem to be a glaring omission--is that for the first set of comparisons the post-SEC period was superior in the performance of new issues for each of the five years tested subsequent to their offering and was significantly superior (at the 5 percent level) for four of the five years. When the pre-SEC period is terminated at 1927, which had the best relative price experience of the pre-SEC years included, instead of 1928 which had the worst, and when Class A stock is excluded, it is true that the differences between the pre-SEC and post-SEC results for the five years subsequent to the offering are not statistically significant in any year, but Benston neglects to point out that the post-SEC performance is superior in four of the five years. While the differences in two of the five years are quite small, they range from 6 to 17 percent in the other three, with the post-SEC results superior in these years. If 1928 is retained in the earlier period, but Class A stock still omitted, the post-SEC performance of new issues in all of the five years rose by from 9 to 37 percent a year. Moreover, even for the pre-SEC comparison which

is least unfavorable to Benston's position, a serial correlation measure of performance commented on earlier in this paper seems to show a statistically significant superiority of the post-SEC period.[1]

Turning to the second point implied by Benston, that the 1923-27 and 1949-55 comparisons to which he refers are the only evidence in the papers cited on mean relative rates of return on new issues, I have already indicated that this view is without any foundation. Totally apart from the several other 1923-27 and 1923-28 comparisons to which I have just referred, and the comparison of standard deviations of returns to which Benston does refer, it may be recalled that I previously discussed five other reasonably independent statistical tests and a substantial amount of qualitative information all favorable to the efficacy of the 1933 Act disclosure requirements and all cited in the literature referred to by Benston.

The last point implied by Benston, that our favorable conclusion on 1933 Act disclosure depended basically on the comparison of standard deviations of returns in the pre-SEC and post-SEC periods, is thus completely incorrect. As for the relevance of such a comparison, the reduction in the variance of the new issue price ratios from the pre-SEC to the post-SEC periods, since it was clearly not associated with a reduction in relative return, can be regarded from the investor's viewpoint as a positive achievement of the SEC, making the usual assumption that investors are risk averse. Benston advances the strange argument

---

[1] I will not comment here on the appropriateness of a longer vs. a shorter period for assessing the performance of new issues since Benston does not raise it, and it is fully covered in "Professor Stigler on Securities Regulation: A Further Comment," op. cit.

that such evidence has no relevance to the effectiveness of the SEC, relative to private individuals, in screening out fraudalent issues and, apparently in view of the covariance problems, in measuring potential risk. The evidence would seem to be directly relevant to the effectiveness of the securities regulation in screening out fraudulent issues, and I would assume that in the theoretical world to which covariances apply any desired level of risk could be obtained by a suitable combination of the market portfolio and the "risk-free" asset. If Benston is implying that the variance of the market portfolio has increased over this period as a result of covariance developments in the new issues markets, this seems far-fetched and in any case the available data do not support this hypothesis.[1]

A question might be raised as to the effect of securities regulation on the costs of new issues. In other words, has the apparent increase in allocational efficiency been offset by a reduction in operational efficiency or an increase in new issue costs, including the costs of the SEC as well as private costs? To the extent of course that registration costs are already reflected in price performance, our performance relatives have already adjusted for any difference in registration costs in the pre-SEC and post-SEC periods. However, in any case the evidence suggests a decline in underwriting compensation from the pre-SEC

---

[1]See Irwin Friend and Marshall E. Blume, "The Demand for Risky Assets," The American Economic Review, December 1975. The data there indicate that the standard deviation of return on New York Stock Exchange stocks as a whole was smaller in each of the decades 1942-51, 1952-61 and 1962-71 than for the decades 1922-31 and 1932-41 or than for the entire period 1872-71 or for the period 1926-71 for which the data are much more reliable.

and the early SEC to the subsequent period,[1] and other information points to an inconsequential upward movement--in the aggregate a fraction of 1%--in other expenses associated with new issues.[2] The cost of SEC registration activities is estimated at well under one-tenth of 1% of the proceeds of registered issues. There are some other social costs as well as savings associated with required disclosure but these are not readily quantified, are not clear in direction and in my opinion are not very large. The costs of disclosure would seem to be a small fractionof the savings suggested by the various tests referred to earlier.

Impact on market for outstanding issues[3]

Several direct tests of the market's relative allocational efficiency in different periods have been derived from market equilibrium theory which demonstrates that under plausible assumptions the return on an individual stock over time should bear a simple linear relation to the return on the stock market as a whole (or on all risky assets), while the return of an individual stock in a cross section should be linearly related to its risk as measured by the covariance of its return with that on the market. The residual variation in these relationships provides a basis for assessing the efficiency implications of changes in the market structure. Thus a study which regresses the monthly individual returns for 251 NYSE

---

[1] Irwin Friend, James Longstreet, Morris Mendelson, Ervin Miller, and Arleigh Hess, Jr., Investment Banking and the New Issues Market, The World Publishing Company, 1967.

[2] "The S.E.C. Through a Glass Darkly," op. cit.

[3] Part of this discussion is based on "The Economic Consequences of the Stock Market," op. cit.

stocks against the average market return for all of them finds that the variance of the residuals for 247 issues was smaller in the post-World War II period than in the period from 1926 through the 1930's.[1] The total variance of return on these 247 issues, which measures variance in the market return as well as residual variance, was also smaller in the post-war period.

A supplementary analysis which I carried out several years ago[2] regresses on time the standard deviation of residuals from a series of cross-section relationships of portfolio monthly return and risk for twenty-one periods of twenty-four months each from July, 1926, through June, 1968. Each of the twenty-one cross-section relationships regressed the average monthly return on the estimated beta[3] of ten or so portfolios, each consisting of approximately eighty NYSE stocks stratified by beta in a preceding period. The twenty-one standard deviations of residuals obtained from these relationships were then regressed on time. A significant downward time trend was found in these standard deviations.

Both of these last two tests derived from market equilibrium theory suggest an improvement in market structure from the 1920's to the period after World War II. Since they abstract from factors affecting return on the market as a whole, they supply some support to the thesis that changes in securities regulation may have improved efficiency in the market for outstanding stock. However, the evidence here is not very strong.

---

[1] Marshall E. Blume, The Assessment of Portfolio Performance: An Application to Portfolio Theory, Ph.D. Dissertation, University of Chicago, 1967.

[2] "The Economic Consequences of the Stock Market," op. cit.

[3] Beta is a measure of an asset's risk based on the covariance of its rate of return with that on the market (normalized by dividing this covariance by the variance of the market's rate of return).

There are moreover two more recent studies which purport to provide evidence that securities regulation in the market for outstanding stock has had no significant impact on market efficiency. The first, carried out by R. R. Officer, [1] concludes that the decline from the pre-SEC to the post-SEC periods in the one year standard deviation of monthly returns on the New York Stock Exchange (NYSE) stock as a whole was "not attributable to the SEC." The second by Benston[2] concludes that empirical evidence provides no support for the belief that the disclosure and related provisions of the Securities and Exchange Act of 1934 had any effect on the market for outstanding issues.

The conclusion by Officer, which as he notes differs from that reached in earlier analyses of the variability of returns of NYSE stocks as a whole, is to a substantial extent dependent on an extension back to February 1897 of the series on NYSE average returns from the reasonably satisfactory data covering all NYSE stocks starting with January 1926 back to January 1915 on the basis of a 20-stock Dow Jones index and then prior to 1915 on the basis of a 12-stock Dow Jones index. In view of the major incomparabilities between the data before and after January, 1926, and presumably the much higher quality of the Dow Jones stocks as compared to the market as a whole, the new evidence by Officer does not appear at all cogent, though he asserts that the biases introduced by these incomparabilities are rela-

---

[1] R. R. Officer, "The Variability of the Market Factor of the New York Stock Exchange," Journal of Business, July 1973.

[2] "Required Disclosure and the Stock Market: An Evaluation of the Securities and Exchange ACt of 1934," op. cit.

tively unimportant. Moreover, it should be noted that Officer addresses himself only to variance in the market return and not at all to variance in residual returns.

The analysis by Benston is of somewhat greater interest since it is directed specifically at measuring the impact of SEC-mandated disclosure on the market for outstanding stocks on the basis of two tests of the impact of the 1934 Act disclosure. The first estimates the impact of changes in accounting data on common stock prices by deriving cross sectional regressions in the year 1964 between changesin prices of individual stocks on the New York Stock Exchange (adjusted for movements in the market) and "unexpected" changes in each of a number of different financial variables (net sales, cash flow, net operating income and adjusted net income). Expected changes in these financial variables were obtained from several simple auto-regressive models based on past data and then compared with subsequent published data to obtain estimates of unexpected changes. A similar but more limited analysis was carried out for 1963.

As Westerfield and I pointed out in a comment[1] on this analysis in the most recent issue of The American Economic Review, Benston for reasons which are obscure does not use more than one of these unexpected changes in financial variables in the same regression, but only one at a time. Even so, his findings point to statistically significant relations between price changes and the unexpected changes in each of these financial variables. Nevertheless, in view of what he considers the

---

[1] "Required Disclosure and the Stock Market: Comment," op. cit.

small size of the regression coefficients, he concludes that "this evidence is not consistent with the underlying assumption, that the financial data made public are timely or relevant, on average." There does not seem to be any justification for his willingness to dismiss out of hand the economic importance of these statistically significant results. Thus, he in effect considers not too relevant for stock prices knowledge about changes in financial variables in spite of the fact that he finds an increase of 100% in the annual rate of net sales is associated with an increase in price of 10.4% in the month of the announcement, and that changes in other variables are also associated with significant though proportionally smaller changes in price.

Moreover, it seems clear that Benston's regressions considerably understate the usefulness of published financial statements. They do not allow for the joint effects of unexpected changes in the different financial variables, and they make no adjustment for the substantial understatement of the relevant regression coefficients arising from the very large random measurement errors associated with any empirical measures of unexpected change.

Finally, we pointed out that on the basis of independent analyses "... many writers have concluded that published accounting profile variables can be useful in making investment decisions and contribute to market efficiency." We cited two articles as examples, one by A. Martin,[1] the other by R. G. May.[2] Benston had alleged that almost all

---

[1] A. Martin, "An Empirical Test of the Relevance of Accounting Information for Investment Decisions," J. Accounting Research, Empirical Research in Accounting: Selected Studies, 1971.

[2] R. G. May, "The Influence of Quarterly Earnings Announcements on Investor Decisions as Reflected in Common Stock Price Changes," J. Accounting Research, Empirical Research in Accounting, Selected Studies, 1971.

previous empirical work relating published accounting data to stock price changes also leads to the conclusion that the data are not useful or are redundant.

In attempting to refute our comments on the first of his two tests discussed immediately above, Benston's rejoinder[1] advances six arguments (2-7) of which three (2, 3 and 5) might be regarded as substantive and shall be considered here. In reply to our above quotation on earlier analyses of the utility of published accounting profiles, Benston states categorically that "No such conclusions are drawn in the articles they cite." Since Benston has a propensity for interpreting not only financial and statistical theory but also the English language differently from the way I do, let me quote directly from the Martin article we cited. Martin concludes (pp. 20-21) "We have presented empirical evidence in support of the decision-relevance of accounting annual report data for investment decisions. In our view, this evidence is complementary to evidence provided by existing studies examining various aspects of accounting information utility. This study uniquely provides an explicit test of the usefulness of a series of accounting variables taken together.... Finally, we consider legislation to increase the scope and amount of reported data as potentially beneficial to investors, based on the ability of current information to explain investor expectations..."

---

[1] "Required Disclosure and the Stock Market: Rejoinder," op. cit.

Clearly Benston's categorical assertion is unwarranted. May's summarization of the two implications of his results (p. 151) again seems consistent with the above quotation to which Benson takes exception.

Interestingly enough, even Nicholas J. Gonedes whom Benson cites in his continued refutation of the above quotation, and indeed at several different points in his rebuttal, concludes in a recent paper,[1] "The results of our tests--which involved tests on means, variances, and covariances--are consistent with the statement that special accounting items convey information pertinent to establishing firms' equilibrium values. Also, our results are not consistent with the statement that no effect is associated with the disaggregation represented by the separate disclosure treatment accorded to special accounting items...."

In reply to our criticism that "...Benston does not use more than one of these expected changes in financial variables in the same regression...," he agrees this criticism is correct but says that Gonedes in an unpublished manuscript dated September 1973 obtained similar results when he used a number of accounting data ratios simultaneously. Surely, it is disingenuous of Benston to make such a statement without pointing out the main conclusion which Gonedes reached in this manucript[2]: "Our major purpose was to determine whether the accounting numbers jointly reflect new information. The results of our multivariate

---

[1] Nicholas J. Gonedes, Risk, Information, and the Effects of Special Accounting Items in Capital Market Equilibrium, Report 7429, Center for Mathematical Studies in Business and Economics, University of Chicago, June 1974.

[2] This manuscript, "Capital Market Equilibrium and Annual Accounting Numbers: Empirical Evidence," is to be published in the Journal of Accounting Research, Spring, 1974.

tests assign a high probability to the statement that the numbers do jointly provide information pertinent to assessing equilibrium expected returns."

From the viewpoint of statistical theory and elementary logic, perhaps the strangest point made by Benston is in response to our reference to the "... substantial understatement of the relevant regression coefficients arising from the very large random measurement errors associated with any empirical measures of unexpected change." The clear import of this reference is that under plausible and well-known statistical assumptions substantial random errors in an independent variable in a regression will bias substantially downward the absolute value of the coefficient of that variable. As a result the impact of disclosure which Benston found statistically significant in spite of this problem is clearly understated in his analysis, and probably substantially. Benston's reply, apart from referring again to the unpublished study by Gonedes which uses a grouping technique to reduce this measurement error, is that we "should question why the SEC has done so little to reduce these errors, or even to provide investors with some indication of their magnitude and effect." Nothing in Benston's analysis casts any light on the SEC's accomplishments in these areas since this would require comparable results for the pre-SEC period.

Benston's second set of tests of the impact of SEC-mandated disclosure on the market for outstanding stocks is similarly flawed. This set attempts to determine whether a large sample of individual NYSE stocks which were affected by sales disclosure provisions of the 1934 Act subsequently behaved "better" relative to the market as a whole than stocks for which such sales data were already available prior to the Act. The deficiencies in these tests were spelled out in some detail in the comment by Westerfield and myself in the June, 1975 issue of The American Economic Review referred to earlier and were responded to in the rejoinder by Benston in the same Review. I shall not here repeat the arguments pro and con made in that issue except again to point out the errors in the more important relevant points made in Benston's rejoinder.

First, he objects to our statement that "We have indicated that Benston's analysis suggests that the 1934 Act did improve estimates of expected return." He goes on to state "I have been unable to detect where in their analysis F-W so indicate." I am afraid that Benston here is forgetting his first set of tests where as I indicated earlier he does find a statistically significant effect of accounting disclosure of such financial items as sales and net income on stock prices. If we assume as Benston does that the effect of disclosure on risk evaluation is marginal, then the effect on stock prices must reflect change in expected return.

Second, Benston states that "F-W then somewhat overstate the reported usefulness of accounting data [in several external studies] for forecasting betas." This point is significant since his finding that the market evalution of risk as measured by beta did not change more in the post-SEC period for pre-SEC "non-disclosure" firms than

for pre-SEC "disclosure" firms is essentially the only evidence Benston has to support his position that disclosure had no effect. We pointed out that "there are several external studies showing that current accounting data can be used to make at least as good and possibly superior forecasts of future asset risk (as measured by beta) than forecasts dependent only on historically estimated asset risks ..." and "The accounting data which turn out to be useful for this purpose are balance sheet and income account items other than sales." Sales it will be recalled is the only variable Benston used in estimating the value of disclosure in this second set of tests. Benston's rejoinder is that the analysis in the external studies we referred to is flawed and again refers to the unpublished study by Gonedes which asserts that some of the results we relied on may reflect "spurious correlation."

Nothing Benston says or that we have seen in the literature is inconsistent with our assertion that the available external studies[1] can be used to make "as good and possibly superior forecasts of future asset risk" as can be obtained from past market derived betas. Our view was and is that there is some weak evidence to support the position that disclosure can and does help in the assessment of risk of outstanding stock as measured by beta, and stronger evidence that disclosure

---

[1]The most comprehensive listing (and summary) I have seen of such studies appears in Stewart C. Myers, "The Relation Between Real and Financial Measures of Risk and Return," forthcoming in Risk and Return in Finance, ed. I. Friend and J. Bicksler (Cambridge: Ballinger Publishing, 1975).

affects stock price in the theoretically expected and desired direction. Such a price effect even in the absence of a beta effect would be sufficient to justify 1934 Act disclosure unless associated costs were excessive.

The last consequential point in Benston's rejoinder takes issue with our statement (quoted here more fully): "Contrary to Benston's assertions, none of the assumptions that the portfolio approach depends upon appears strictly correct and empirical evidence on the validity of the beta coefficient is not conclusive. Therefore, it might have been illuminating to have included total variability estimates to supplement the analysis." Benston objects both to our criticism of the assumptions and to our evaluation of the empirical evidence. Both the simple capital asset pricing theory which he relies on and the portfolio approach he uses to justify almost exclusive reliance on beta assume that investors will attempt to minimize risk of their portfolio for given expected rate of return. The relevant measure of risk is total variability of return on the portfolio they hold. If investors hold a perfectly diversified portfolio of risky assets as is implied by the capital asset theory, each will hold a microcosm of all stock and other risky assets in the same proportion to the total of their risky assets. Under these circumstances, the total variability in the portfolio would be mainly determined by the betas of the individual assets held, but this is no longer true for portfolios which are not well diversified so that for such investors the average standard deviation or some other measure of total variability of returns on individual assets is also important.

Therefore, it is highly relevant to point out that convincing

statistical evidence is available which indicates that a high proportion of portfolios are dominated by a small number of assets and thus are not well diversified.[1] Nearly one-third of all stock owned by U.S. individuals in 1971 was held in portfolios with fewer than five stocks, over 55% in portfolios with less than 10 stocks, and one or two stocks dominated not only such portfolios but a surprisingly high proportion of portfolios with a larger number of stocks. To assume that investors with such portfolios would use beta to the exclusion of total variability as the measure of risk is to assume they are irrational and to vitiate both capital asset pricing and portfolio theory.

Turning to Benston's objections to our evaluation of the empirical evidence on the desirability of a total variability measure "to supplement the analysis", he quotes or paraphrases Merton Miller and Myron Scholes (whom we also cited),[2] Michael Jensen,[3] and Eugene Fama and James MacBeth[4] to the contrary. He clearly misinterprets Miller and Scholes and Fama and MacBeth and presumably also Jensen. Miller and Scholes and Fama and MacBeth state in reasonably clear language

---

[1]Marshall E. Blume, Irwin Friend and Jean Crockett, "Stockownership in the United States: Characteristics and Trends," Survey of Current Business, November 1974; and Marshall E. Blume and Irwin Friend, "The Asset Structure of Individual Portfolios and Some Implications for Utility Functions," Journal of Finance, May 1975.

[2]Merton H. Miller and Myron Scholes, "Rates of Return in Relation to Risk: A Re-examination of Some Recent Findings," in M.C. Jensen, ed., Studies in the Theory of Capital Markets (New York: Praeger, 1971).

[3]Michael Jensen, "Capital Markets: Theory and Evidence," Bell Journal of Economics, Autumn 1972.

[4]E.F. Fama and J. MacBeth, "Risk, Return and Equilibrium: Empirical Tests," J. Political Economy, May 1973.

that it is possible though not proved that the empirical data they investigate are consistent with capital asset pricing theory which implies that beta of an individual stock if we could properly measure it is the only relevant measure of its risk. Jensen whom Benston quotes out of context (see rest of footnote 35, p. 367 to which Benston refers) is making the statement quoted about portfolios rather than individual securities and depends on Fama and MacBeth for its extension to individual assets. It seems to me, at the present state of the arts in capital asset pricing theory, that if we are concerned with realistic explanation of real world phenomena--not the most elegant theory which may or may not be applicable--it is unfortunate that Benston did examine total variability estimates.

Impact of margin regulation

Of the various regulatory policies which have been directed towards the maintenance of orderly markets, the one of perhaps greatest interest to the general economist is the regulation of margin trading, which originally reflected Congressional concerns about the possibly excessive use of securities credit on the economy as a whole as well as on the stock market itself. Neoclassical economists in the U.S.A. seem to consider this type of securities regulation as especially distasteful presumably because it interferes with the freedom of behavior of the beneficient speculators, substitutes selective credit controls for the free market, and has no obvious strong equity rationale.

I have indicated in an earlier paper[1] that my casual empiricism

---

[1] "The S.E.C. and the Economic Performance of Securities Markets," op. cit.

led me to the conclusion that margin requirements have probably tended to reduce stock price volatility and increase market efficiency, though such evidence is obviously not at all convincing. I also pointed out in that study that a rather comprehensive analysis of margin trading completed a little earlier,[1] which concluded that "margin requirements have failed to achieve any of their objectives," were subject to deficiencies which when corrected appear to present a more favorable case for margin regulation.

Since that time, I have seen three other studies of the effectiveness of margin regulation, two of them--one by George Douglas[2] and the other by James Largay[3]--presenting favorable evidence, the third by Officer[4] arguing for the ineffectiveness of such regulation. The Officer argument is based on two annual time-series regressions, apparently over the 1934-68 period, between each of two forms of the standard deviation of stock market return and both margin requirements and the standard deviation of industrial production. The two forms of the market return variable lead the margin requirements in one regression and follow them in the other, with the lead and lag both one year in duration. The lead form turns out to have a much higher correlation

---

[1]Thomas Gale Moore, "Stock Market Margin Requirements," The Journal of Political Economy, April 1966.

[2]George W. Douglas, "Risk in the Equity Markets: An Empirical Appraisal of Market Efficiency," Yale Economic Essays, Spring 1969.

[3]James A. Largay III, "100% Margins: Combating Speculation in Individual Security Issues," Journal of Finance, September 1973.

[4]"The Variability of the Market Factor of the New York Stock Exchange," op. cit.

and the margin requirement variable is statistically insignificant in both, with the same negative coefficient and a t-value of somewhat over one.

The Douglas analysis regresses the standard deviation of the rate of change in price both on the standard deviation of the rate of change in dividends and on margin requirements for the period 1926-60, where each observation is a subperiod of 5-year length (with the exception of 4-year for the last) for each of 100 stocks. The coefficient of margin requirements is again negative but now highly significant which according to the author "suggests that margin requirements tend to reduce price volatility."

The Largay paper analyzes the price and volume characteristics of 71 NYSE and 38 AMEX stocks placed under special margin requirements during 1968-69. The price and volume characteristics of these stocks are explained both around the times when 100% margins were imposed and, subsequently, when they were removed. The author concludes that "The empirical results support the a priori hypothesis that banning the use of credit for transactions in individual issues is associated with a moderation or "cooling off" of speculative activity in these stocks." This conclusion is based on several key findings: Imposition of 100% margin was associated with the termination of the marked upward price movement and a reduction of the heavy volume of trading, both of which had typically preceeded the new margin restriction. As the author notes, the NYSE stocks actually declined in price after they were placed under this restriction. Prices of the restricted stocks generally declined preceding removal of the special margin

requirement. After removal only prices of the AMEX stocks tended to rise again though the volume of trading began to accelerate both for the NYSE and AMEX stocks.

My own appraisal of this material is that the evidence of a favorable effect of margin regulation on at least stock market volatility is stronger than the evidence on the other side. However, this assessment may reflect my personal biases, and I would agree that the evidence is far from conclusive.

Impact of other restrictions on trading activity

I will comment only briefly on the other major restrictions on trading activity effected by securities regulation apart from margin requirements--viz., restrictions on short sales, on ordinary floor trading by members of an exchange, on stock specialists' activities, and on trading by corporate insiders (officers, directors and principal stockholders) in stocks of the corporations with which they are affiliated. Since specialists are considered as having a responsibility for helping to maintain fair and orderly markets, their trading activity has not been subjected to as severe regulatory restrictions as those imposed on the other types of speculative activity.

In the paper referred to earlier,[1] I pointed out that my interpretation of the available evidence was that the trading activity of NYSE floor traders appeared as a whole more likely to be destabilizing than stabilizing; the reverse was true of NYSE specialists, and perhaps

---

[1] "The S.E.C. and the Economic Performance of Securities Markets," op. cit.

also of corporate insiders, at least in the post-SEC period; the evidence on short selling was mixed; and that none of this evidence was terribly strong. I also noted that even if restrictions on insider trading did not have a favorable impact on stock market volatility and market efficiency, they might be justified on equity grounds.

Since that earlier paper, an interesting new analysis of insider trading has been published by J.F. Jaffe[1] which indicates that three legal actions which might have been expected to lead corporate insiders to expect stricter enforcement of the SEC insider trading rules (specifically SEC Rule 10(B)-5) did not in fact have a statistically significant effect on the profitability and volume of insider trading. Actually, the two legal actions which might have been expected to have the largest impact (the Cady, Roberts and Texas Gulf Sulphur decisions) were associated with drops in insider profitability while the third (the Texas Gulf Sulphur indictment) was associated with an increase in profitability. However, the changes were not statistically significant and the volume of insider trading increased slightly after all three actions (again without statistical significance). As a result, at least these specific changes in the prospects for implementation of regulatory constraints on insider trading seemed to have very little effect on the profitability and volume of such activity.

While this new evidence is certainly relevant to the effectiveness of these three legal actions all involving the SEC, it is not clear how much relevance it has for the broader effectiveness of

---

[1] J.F. Jaffe, "The Effect of Regulation Changes on Insider Trading," The Bell Journal of Economics and Management Science, Spring 1974.

Section 16B of the 1934 Act (relating to corporate recovery of short-term profits by insiders) and it would seem to have very little relevance for the effectiveness of Section 16A (relating to full disclosure provisions for insiders).[1] Thus, if these provisions of the 1934 Act had been extremely effective well in advance of the first of the three legal actions, i.e. the November 1961 Cady, Roberts decision, Jaffee would have obtained the results he did, but the interpretation of his results would be radically different. Given the extreme variability of stock price changes and rates of return, it would not be surprising to find apparently little effect of new evidence of stricter enforcement of the SEC insider trading rules. Even prior to Cady, Roberts, there were both the prospect and I suspect actuality of private litigation for recovery of insider profits.

Clearly what is required for a more convincing answer to the overall effect of insider regulation is a careful comparison of pre-SEC and post-SEC insider behavior from the scattered pieces of evidence available. My own reaction to a reading of the major U.S. Government investigations of the stock market and related abuses of the 1920's cited earlier in this paper makes me believe that insider abuses have declined substantially subsequent to that period, and I think that this is attributable at least in part to the disclosure provisions and restrictions imposed on insiders by the 1934 Act. A careful documentation of all such evidence would provide more relevant evidence than we now have available for assessing the effectiveness of the insider provisions of the 1934 Act.

Finally, I have not commented here on the ultimate type of

---

[1] Actually Cady,Roberts involved activities which did not require corporate insider disclosure.

interference with free market processes in the securities markets when trading in individual stocks or on rare occasions in the market as a whole is temporarily stopped in the face of major disruptions in the market. I have indicated elsewhere that under certain extreme circumstances (e.g., the assasination of President Kennedy) I consider such action desirable.[1]

To conclude, it is my view that securities legislation in the U.S.A. has as a whole benefitted the stock market and the economy. However, as I have stated in the past, it is not yet clear whether a number of specific policies have been beneficial, and further exploration of the impact of such policies would be highly desirable.

---

[1] "The S.E.C. and the Economic Performance of Securities Markets," op. cit.