The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues

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This paper examines the effects of changes in financial disclosure mandated by the Securities Act of 1933 on the distribution of returns earned by investors in new stock issues. Empirical tests control for prior seasoning (experience) and the existence of third-party appraisal. Findings suggest that prior to regulation investors held rational price expectations in markets characterized by low information costs. The dispersion of abnormal returns (investors' forecast errors) is significantly lower following the Securities Act.

The economic effects of the 1933 Securities Act have previously been studied by George Stigler [1964] and Gregg Jarrell [1981]. Motivated by the assertion that misrepresentation and fraud were consequences of unregulated markets, both studies focussed on whether the mandated disclosure of financial information required by the Act increased the average return earned by new-issues investors. Neither study finds evidence of a significant increase in average returns following disclosure regulation, leading both authors to conclude that federal regulation of new issues markets was ineffective, or at least superfluous given existing private market sources of financial information.[1]

The existence of substantial uncertainty about the true value of a security need not imply that the issue will be, on average, over-valued or under-valued. Rather, the expectations of rational investors should be unbiased. The availability of quality information will, however, affect the riskiness of the purchase. As such, the effects of legislation aimed at

increasing investor information should be reflected in changes in the dispersion of market-adjusted returns.[2] Accordingly, this study examines regulation-induced changes in both the means and variances of the distributions of returns earned by new-issues investors.

This paper also evaluates the extent to which private sources of investment-quality information were available in the absence of regulated disclosure. In general, consumers may obtain quality information directly from sellers, through experience with the good, or from third-party appraisers. Prior to SEC regulation, investors formed expectations of future returns by relying on information obtained directly from brokers and underwriters, by observing a security's historic performance (if any) and/or through the reports and actions of independent appraisers -- most notably the Listing Committee of the NYSE. The economic effects of minimum disclosure would be expected to be the greatest where the private costs of obtaining and verifying information were highest. Specifically, this paper examines the effectiveness of the Act conditional upon the prior market seasoning of a security (experience) and whether the issue had been approved for listing by the NYSE (third-party appraisal).

I. The Role of Government Intervention

Many economists have addressed the problem of market performance where sellers are better informed than buyers and product attributes (quality, durability, safety) can not be accurately assessed prior to purchase. There are at least two conditions which suggest a role for public intervention.

First, when sellers jointly produce the good itself and quality information about the good there is an incentive to overstate the quality of the product. This was the logic advanced by the framers of the Securities

Act. Quality shading, or "cheating", however, can be deterred though the use of market mechanisms. In particular, the development of third-party appraisers is a logical supply response in markets characterized by asymmetric information. Appraisal and other independent information services may be supplied by an agency of the government or by independent private parties. It is difficult to identify scale economies or externalities which would give public authorities a relative advantage over private parties in the efficient production of financial information.

Second, information has many characteristics of a public good. Low resale costs and free-rider problems may prevent private producers of information from contracting with consumers at prices that reflect the value of the information and cover production costs. Where private market forces may be inadequate to assure that socially optimal quantities of information are produced government regulation may be warranted.[3]

II. The Securities Act of 1933

Federal regulation of the securities markets began with the signing of the Securities Act of 1933. Passed by Congress in the wake of the market crash of 1929 and the ensuing Great Depression, the Act aspired to "provide full and fair disclosure of the character of securities sold in interstate commerce".[4] Underlying the rational for the Act was the belief that investors in new issues had been misled by exaggerated claims and inadequate disclosure of the true financial position of corporations. Presumably, lack of information had enoouraged speculative purchases of stock, which fueled the euphoric boom of the 1920's and contributed to the sharp market contraction of the early 1930's.

The Act established uniform standards for the pre-sale disclosure of pertinent financial information by issuers and their agents, and set forth

legal remedies and fixed penalties against parties failing to make full disclosure. The salient features of the 1933 Act were:

1. **Registration requirements.** All new issues that are publicly traded on a national exchange must have a registration statement approved by the SEC. The statement includes balance sheets, audited profit and loss statements, description of the business and intended use of funds. This information must be provided to investors in the form of a prospectus prior to sale.

2. **Waiting Period.** A 20 day waiting period was required between the filing date and the date of first sale for the purpose of giving investors time to study the registration statement.

3. **Civil Liabilities.** The buyer was empowered to sue any person signing the registration statement (underwriters directors, accountants, etc.) for losses due to "omissions of fact" or "misleading" statements. The burden of proof rests with the defendants.

It is unclear what effects these provisions had on the material disclosure of financial information.[5] First, by 1933, all states (except Nevada) had enacted some form of Blue-Sky Laws regulating the intrastate sale of securities [Vincent Carosso 1970, p. 160-65;John Hilke 1984]. Kansas had the most comprehensive consumer protection statute of the day, with extensive financial disclosure requirements and significant penalties. However, the laws governing security sales in those states which made up the bulk of the corporate finance market -- New York, Delaware and Pennsylvania -- amounted to nothing more than vehicles for the registration of dealers and taxation of their activities. These state statutes suffered from the lack of uniform standards and under-funded enforcement agencies.

Inadequacies in state statutes notwithstanding, the investing public had information available from a number of private market sources prior to 1933. First, the Act applied uniformly to all new equity issues -- seasoned and unseasoned. Seasoned issues are securities sold by a corporation that was trading on an organized exchange prior to the date of the new offering. Unseasoned issues are initial public offerings (IPO's). Investors in seasoned issues may draw upon past corporate performance and security trading histories in estimating future returns. Investors in unseasoned issues, however, must rely almost exclusively upon the information and judgments produced by underwriters and brokers. Hence, investors in unseasoned issues face greater risks and bear higher information costs. No distinction was made by the SEC.

Second, prior to 1933, the NYSE supplied financial information on listed securities and, in part, signaled investment quality through its decisions on which securities to list. It is difficult to identify information required by the 1933 Act that had not been previously required by the NYSE. Table 1 presents a partial chronology of the development of listing requirements on the NYSE. Members of the investment industry argued that financial disclosure "appropriate to the situation" was generally provided by brokers and its validity monitored by the exchanges [6].

> ...a brokers circular may be regarded as the most important document in the early history of a security....There are roughly three types of circulars. The first may be called full disclosure; it sets out the name of the corporation the security offered, the financial plan of the corporation, its capitalization, assets and a history, more or less complete, of its earnings. The second type approximates the first but it does not purport to give a full history of the company; confining its disclosure to the position

> of the security offered. The third type discloses very little, save the particular rights of the security. It is frequently used for public utilities; it is not a persuasive method,and can only be used by corporations well known to the market...In the case of a new issue the first type is almost essential...The disclosure is cross-checked where the stock is at the same time introduced to a respectable exchange, most notably the New York Stock Exchange, whose listing committee requires a most pains-taking disclosure of the material facts prior to a stock's trading. The NYSE insists on certain expert data, notably the opinion of independent counsel as to the validity of the securities and financial statements and a report of a qualified engineer covering the physical condition of the assets at a recent date...
>
> [Adolph Berle and Gardiner Means 1932, p.64].

If Berle and Means are correct regarding the monitoring function of major exchanges, then the effects of the 1933 Act would tend to be concentrated on issues traded on the smaller, regional exchanges for which no comparable listing requirements existed.

Finally, it is important note that there are confounding events during the period of study which add to the difficulties in evaluating the effects of the 1933 Securities Act. The period 1923-1939 corresponds to what was the most severe boom-to-bust financial cycle witnessed in modern history. Figures 1 and 2 illustrate trends in stock prices and volume during this era. Activity in both new and outstanding issues reached a peak in 1929, not to be surpassed until 1959 (U.S. Congress 1963). In contrast, the market for new equity issues ground to a virtual standstill in the early 1930's, recovering slowly by the close of the decade. The method developed in Section IV

addresses the influence of changing economic conditions on the performance of new equity issues.[7]

III. Evidence on the Performance of Firms Making New Issues

To provide an intuitive feel for the fortunes of new issues investors the failure rates of firms making equity offerings over 1926-1940 are presented in Table 2. Failure reflects, at the extreme, the magnitude of downside risk borne by investors. Failure rates are computed over 5 years following the date of issue. Firms are classified according to the exchange on which they traded and whether the issue was seasoned or unseasoned. For purposes of comparison, failure rates are also presented for all NYSE issues and for the smallest 20% of NYSE listed firms.[8] To abstract from the effects of the Crash of '29, failure rates prior to October 1929 are also provided.

The results are quite interesting. While, the failure rates for all samples of new issues are higher in the Pre-SEC period, much of the difference appears due to the effects of the market crash. Excluding the crash years, only unseasoned issues (IPO's) that were <u>not</u> traded on the NYSE appear to have significantly better prospects for survival in the post-regulatory era. In general, these are issues made by newer firms. Lacking market history and NYSE oversight, these are the issues for which pre-SEC information costs are expected to be greatest.

IV. Using Capital Markets Data To Evaluate the Effects of SEC Regulation

The discussion in the preceding sections suggests that the effects of the Securities Act may be captured in terms of changes in the means and dispersion of returns earned by investors in new issues. Capital market data are used to evaluate the pre versus post-Act performance of publicly traded new issues of common stock. Abnormal returns are measured using a multi-beta asset pricing

model. The returns on new issues are modeled as a function of the overall market, industry-specific effects, and changes in the relative risk of equity securities. Market beta parameters are permitted to fluctuate over the business cycle.

Two samples of issues are constructed. The "pre-regulation" sample contains new issues from the period 1926-33. The "post" sample is composed of common stock issues floated between 1934 and 1939. Monthly returns for the 5-year period following the date of issue have been collected for all issues in the sample. Both samples contain seasoned and unseasoned issues as well as stocks traded on the NYSE and stocks listed exclusively on regional exchanges. Recall, an issue is "seasoned" if the stock traded on an exchange prior to the offering. A detailed discussion of the data is contained in Section V and Appendix A.

The efficient markets/rational expectations hypothesis posits that the price of a security incorporates all information available at a given point in time, yielding an unbiased estimate of future returns to investors. To identify abnormal returns arising from the disclosure of unanticipated firm-specific information it is necessary to control for changes in security returns that are related to economic factors that are unrelated to the event in question. A massive literature in the field of finance has addressed the specification and estimation of equilibrium security pricing models. Empirical tests of the capital asset pricing model (CAPM) -- a linear specification of equity returns as a function of a single "market" index[9] -- motivated researchers to consider theoretical models based on multiple factors. The Arbitrage Pricing Theory (APT), formulated by Stephen Ross (1976) posits that each security return is linearly related to one or more global factors plus an idiosyncratic disturbance. Empirical tests of the APT -- using factor

analysis or a multivariate regression approach -- have generally supported a multiple factor approach to modeling stock returns[10]. A multifactor linear regression model is used below.

The difference between the realized return on a security and the expected return predicted by the asset pricing model is defined as the abnormal return. Under the null hypothesis -- i.e. the absence of regulated disclosure had no effect on the average returns earned by investors -- we expect to find abnormal returns distributed with a mean equal to zero. Under the alternative hypothesis -- i.e. that the absence of regulation permitted excessive claims on the part of underwriters and brokers -- significant losses are expected. Abnormal returns are modeled by including a set of event-time specific dummy variables in the asset pricing equation.[11]

Let the return-generating process for each firm be given by

$$(1) \qquad R_{i,t} - R_{f,t} = \alpha_i - \beta_i (R_{m,t}-R_{f,t}) + \sum_{j=1}^{4} \gamma_{j,i} D_{j,t}$$

$$+ \delta_i [RIND_{i,t}-R_{m,t}-R_{f,t}] + \theta_i UVAR_t$$

$$+ \phi_i [CYCLE_t * (R_{m,t}-R_{f,t})] + \epsilon_{i,t}$$

where

$R_{i,t}$ - Return on the i^{th} firm in time t, where t refers to the number of months since the date of issue.

$R_{f,t}$ - Risk free rate

$R_{m,t}$ - Return on a value weighted market portfolio.

$D_{j,t}$ - Time-specific dummies, designed to pick up abnormal returns

$D_{1,t}$ - 1 for t=1,..,12 months following the date of issue

$D_{2,t}$ - 1 for $t = 13,\ldots,18$ months following the date of issue

$D_{3,t}$ - 1 for $t = 19,\ldots,24$ months following the date of issue

$D_{4,t}$ - 1 for $t = 25,\ldots,36$ months following the date of issue

α_i - the constant, measures average abnormal performance over the estimation period. Under the efficient markets hypothesis the expected value of α_i is zero.

$RIND_{s,t}$ - the return on an equally-weighted portfolio of firms in the same 2-digit SIC as the firm issuing stock, is included to capture industry-specific returns. In this manner the firm-specific component of the abnormal returns -- i.e., that portion related to the new issue itself -- is clearly separated from any unanticipated changes in the fortunes of the industry.[12]

$UVAR_t$ - unanticipated component of the market variance in time period t. $UVAR_t$ is estimated as the residual from an ARIMA (1,0,1) model on the market variance (VAR_t). I.e.,

$$UVAR_t = VAR_t - .979VAR_{t-1} + .084e_{t-1}$$

and

$$(2) \qquad VAR_t = \sum_{i=-11}^{0} [R_{m,t+i} - \bar{R}_{m,t}]^2 / 12$$

where $\bar{R}_{m,t}$ = average return on the market over $t = -11,\ldots,0$. Unanticipated changes in the variance of the market induce changes in the returns earned by equity investors. Because asset pricing models (CAPM, APT) assume constant variance, and anticipated changes are presumably already factored into a security's price, the unanticipated component of market variance is included to control for subperiod changes in the market variance that shift

the equilibrium return on common equity assets. Unanticipated increases in the variance of equity assets would make holding equity less desirable to the risk-averse investor than holding other marketable assets that have unchanged error variances.[13]

$CYCLE_t$ - cyclical component of general economic activity. Cycle is computed as the detrended value of the Index of Industrial Production over the period 1925-1945. $CYCLE_t$ is interacted with $(R_{m,t}-R_{f,t})$ to capture cyclical variations in beta due to changes in financial leverage over the business cycle.[Robert Hamada, 1973; K.C. Chan, Nai-fu Chen and David Hsieh 1985] As shown in Simon [1985], β may be expected to fluctuate (pro) countercyclically as the firm debt/equity ratio (D/E) is (less than) greater than the market average D/E.[14]

The pattern of abnormal returns is captured, in a stepwise fashion, by the estimated values of the $\gamma_{1,i},\ldots,\gamma_{4,i}$, and α_i coefficients. Figure 3 illustrates the pattern for a hypothetical firm that suffers abnormal losses in the early months following the date of issue, with the magnitude of the losses declining over time.

A. Hypothesis Testing

The empirical hypotheses can be divided into two subsets: (1) tests of the effects of disclosure regulation on the <u>average</u> return earned by investors and (2) tests regarding regulation-induced shifts in the <u>variance</u> of abnormal gains and losses. All tests control for prior seasoning of the issue (market information) and the exchange on which the security traded (third-party appraisal).

Two sets of average abnormal returns hypotheses are tested:

1. For each event-time period, j, dummy variable $\gamma_{i,j}$,

$$H_o: \sum_{i=1}^{n} \gamma_{i,j} = 0 \quad N = \# \text{ firms.}$$

That is, on average no abnormal returns are earned in a specific event-time period, j, over all issues, i.

2. $$H_o: \sum_{i=1}^{N} \alpha_i + \sum_{i}^{N} \sum_{j}^{4} \gamma_{i,j} = 0.$$

I.e., on average no abnormal returns are generated over the 60 months following the date of issue. Test statistics are calculated using the estimated covariance matrix of the errors in (1).[15] Significance levels are bases on asymptotic properties of the tests.

In this manner abnormal returns can be directly compared across the pre and post-regulation subsamples of firms. By disaggregating the pre/post samples into samples of seasoned and unseasoned, or NYSE and non-NYSE issues the same method can be used to examine the effects of minimum disclosure regulation where information costs are expected to differ markedly.

To test for changes in the dispersion of returns, cross-sectional estimates of the variance of excess returns are computed. Separate variance estimates are calculated according to the time that has elapsed since the issue date -- e.g. 1-12 months, 13-24 months, etc. Again, issues are disaggregated according to prior seasoning and exchange. Let:

S_T = estimated cross-sectional variance of excess returns.

(3) $$S_T = \Sigma[AR_{T,i} - \overline{AR}_T]^2/(N-1)$$

where AR_T = abnormal return for issue i, over the first T months.

The Goldfeld-Quandt test can be used to examine the hypothesis that information regulation affected the dispersion of excess returns. [16] Specifically,

$$(4) \qquad S_1^2/S_2^2 \sim F(n_1-1, n_2-1)$$

where, S_1^2 = estimated variance sample 1; S_2^2 = estimated variance, sample 2.

V. The Data

The data used in this study include virtually all new issues of common stock exceeding $1.95 million sold by manufacturing firms, railroads, retail and service establishments between 1926 and 1940. Salient characteristics of the pre and post-SEC samples are compared in Table 3.

Monthly returns data were collected for each security for 60 months following the date of issue. For issues traded on the NYSE, data were obtained from the Monthly Stock Returns tapes of the Center For Research in Securities Prices (CRSP). Prices of new issues listed exclusively on other exchanges were obtained from the Commercial and Financial Chronicle.[17] Returns were computed from the price data.[18] Issues with less than 30 months of data were dropped from the analysis.[19] If data for a single month is missing, the 2-month return is interpolated over the period.[20] A more detailed discussion of data collection procedures is found in Appendix A.

VI. Empirical Results

The intent of the Securities Act was to improve investor information. It has been postulated that such effects would be subsequently reflected in changes in the distribution of returns earned by investors. Accordingly, empirical tests may be categorized as follows:

1. Tests for changes in average gains or losses. Did investors earn, on average, superior returns given the disclosure provisions of the '33 Act? Average abnormal returns on post-SEC issues are compared to

average abnormal returns on pre-SEC issues, disaggregating on the basis of prior seasoning and the exchange where traded.[21]

2. Tests for changes in the dispersion of abnormal returns, again, distinguishing between pre and post-SEC issues on the basis of exchange and seasoning.

A. Did Disclosure Regulation Change the Average Returns?

Using the method outlined in Section IV, abnormal gains and losses can be detected by examining the estimated values of the intercept (α) and dummy variable coefficients (γ_i) in the asset pricing regression model.

Table 4 summarizes the main empirical results. Briefly, there is no evidence that, on average, either seasoned or unseasoned issues traded on the NYSE were significantly over or under-priced. Table 4 compares average excess (risk and market adjusted) monthly returns for various portfolios of new issues over 1-12 months, 13-18 months, 19-24 months and 25-36 months following the date of issue, as well as a 60-month cumulative average abnormal return. For both the samples of NYSE issues and the sample of seasoned issues traded on regional exchanges no significant excess returns are measured prior to the SEC.[22] There is no evidence that investors were systematically misinformed in these markets.

The evidence is quite different for unseasoned issues traded on the smaller regional exchanges. Prior to 1933, unseasoned, non-NYSE issues suffer statistically significant risk-adjusted losses. Over the first 12 months these issues lose a cumulative 15%, on average, and suffer another 24% cumulative loss over the second year. Cumulative 60-month excess risk-adjusted returns are equal to -52%.[23] Over 85% of the firms in the sample (30 of 35) suffer significant losses. Cumulative losses are statistically significant.

In contrast, there is no evidence of abnormal gains or losses among seasoned or unseasoned, NYSE or regional issues following 1933. Differences between the pre-SEC versus post-SEC are also reported in Table 4. Note that not only do post-SEC issues earn normal risk-adjusted returns, but there is a highly significant increase in the average returns earned on non-NYSE IPO's following regulation. Complete empirical results are presented in Tables B1-B4 in Appendix B.[24]

The results differ from the earlier findings of Jarrell and Stigler. Differences may be attributed to this study's higher degree of issue disaggregation and more extensive specification of the return generating process. Briefly, Stigler compared the average returns on new issues floated between 1925 and 1929 with those issued in 1949-1953. Market fluctuations were controlled for by deflating the ratio of the value of the new issues portfolio by the value of a broad market index. While both the Pre and Post-SEC samples exhibit significant losses in the five years following the date of issue (i.e. the ratio < 1.0) there is no difference between returns earned prior to regulation and those realized following the SEC. This leads Stigler to conclude that the provisions of the SEC Act are, at best, ineffective.

Jarrell reinvestigates the performance of new issues by employing the CAPM to estimate risk-adjusted abnormal returns. Consistent with Stigler, he finds no difference between average returns earned before and after the Act. Jarrell's new issues suffer risk-adjusted losses in the first 3 years following the date of issue. Abnormal returns turn positive in the 4th year, generating cumulative <u>positive</u> excess returns by year 5.[25] Neither study distinguishes between seasoned and unseasoned issues, nor are differences in the listing requirements of the exchanges evaluated. The

results of this study suggest that only unseasoned issues floated on exchanges other than the NYSE earn significantly greater risk-adjusted returns following the 1933 SEC Act.

B. Specification Tests

That unseasoned, non-NYSE issues would be persistently and repeatedly overpriced is inconsistent with the notion that investors held even weakly rational expectations of future returns. Do confounding factors drive the results in the preceding section? In particular:

1. The pre-SEC period includes the market crash of '29 and the early years of the Great Depression. Severe economic shocks may disproportionately affect newer and smaller enterprises. The asset pricing model may perform poorly over extreme swings and economic cycles. Changing probabilities of bankruptcy may not be accurately captured in the pricing model.
2. The abnormal returns documented for unseasoned issues trading on regional exchanges may be attributed to unspecified characteristics of small firms, or small exchanges, and not to new issues, as posited.
3. The abnormal returns may be an artifact of the non-standard asset pricing model used in the analysis. Will a simpler specification yield the same results?

Excluding the Market Crash

In order to address the first issue, the empirical model was re-estimated on a subsample of new issues selected in a manner that purges the market crash from the data. Only new issues floated in 1926-27 are included. Returns from the period October 1929 - September 1930 are excluded from the analysis. It was between 10/29 and 10/30 that the market lost nearly 40% of its value.

Results for the "no crash" subsample are summarized in Table 5. Complete results are presented in Tables B5 and B6 in Appendix B. Comparing the "no-crash" estimates with the full sample estimates strongly suggests that the previous results were not driven by the market crash. The pattern, magnitude and timing of the abnormal returns in the '26-27 sample are very similar to those of the complete sample. Again, only unseasoned issues traded on regional exchanges earn significant abnormal returns. In the "no-crash" sample, unseasoned, non-NYSE issues lose 39% over the first 60 months following the date of issue. Losses are concentrated over the first 24 months, as in the full sample. The fact that the aggregate loss is smaller for the '26-27 subsample is consistent with the theory that the quality of a good is more difficult to detect in markets characterized by rapid increases in the number of first-time buyers and sellers.[26]

Small Firm Biases

Are the results merely picking up characteristics of small firms traded on less liquid exchanges? A baseline sample of 35 issues traded on the Chicago or Philadelphia Stock Exchanges was constructed for the period 1926-1933. Securities met the following criteria:

1. The security was common stock, trading exclusively on a single regional exchange.
2. The firm did not issue additional stock from 1926-33.
3. At least 30 months of price data were available over a 5 year window in the Commercial and Financial Chronicle.
4. Smaller firms were preferred to larger firms (measured by the market value of equity and/or trading volume).

Price data were collected for sixty consecutive months for each stock. Starting dates for the 60-month estimation window were selected randomly so

to approximated the distribution of offering dates in the new issues sample. Equation (1) was estimated for each firm in the sample.

There is no evidence that the large significant losses documented for unseasoned, non-NYSE issues are characteristic of an "exchange effect" as opposed to a "new issues effect". Over the 60 months following the date of issue the non-NYSE sample earns normal risk adjusted returns. The 60 month cumulative abnormal return equals -7.6% and is not significantly different from zero. (See Table B7) Recall that the unseasoned, non-NYSE sample of new issues lost over 50% on a risk-adjusted basis.

A Simpler Specification: Net-of-Market Returns

The asset pricing model used in this study is motivated by concern that numerous macroeconomic factors affected security returns from 1926-1940. Stephen Brown and Jerold Warner (1980) have shown that a simple method performs at least as well as more complex models where , ex ante, there is uncertainty over the timing of the event. In particular, net-of-market returns captured abnormal performance quite well under a variety of circumstances.

To examine the robustness of the previous results with respect to model specification simple net-of-market returns are analyzed for the Pre and Post-SEC samples. Net of market returns are defined as $R_{i,t} - R_{m,t}$, where R_i is the return on the individual security and R_m equals the return on the market. No adjustment is made for systematic risk or other factors. The net-of-market returns are presented in Table 6.

Results preserve the findings of the more extensive model. Unseasoned, non-NYSE issues perform significantly worse in all time periods than do other new issues samples. Average net-of-market returns increase for all samples following the SEC, however, the difference is only statistically

significant for the unseasoned issues -- most strongly for unseasoned, Non-Nyse issues. While the overall direction of the findings is the same, the loss of power in identifying changes should not be surprising. The simple analysis ignores systematic risk, industry factors, and parameter shifts -- all found to be significant in the broader analysis.

VII. The SEC and Issue-Specific Risk

The results of the previous sections suggest that there was not a universal rise in the return earned by new issues investors following the 1933 Act. Investors -- exclusive of those in non-NYSE, unseasoned issues -- held unbiased expectations of future returns both before and after the SEC Act. The analysis of average returns, however, is inadequate for assessing potential changes in risk borne by investors.

Using the method discussed above, the dispersion of excess returns (issue-specific risk) is analyzed across regulatory regimes. Owing to differences in the costs of obtaining prior information we would expect that the variance of excess returns is higher for unseasoned than for seasoned issues, and that investors' forecasts of issue performance are less informed for non-NYSE issues than they are for NYSE securities.

Test results are presented in Table 7. To provide a benchmark for comparing variance changes between periods, the cross-sectional variance of excess returns for a randomly selected sample of NYSE firms (not issuing stock) was computed for the pre and post-SEC eras.[27]

Results suggest that the dispersion of abnormal returns was smaller in the period following the SEC than prior to the SEC. All subsamples of issues -- seasoned, unseasoned, NYSE and non-NYSE -- exhibit significantly smaller forecast errors in the post 1934 era. If the lower variance reflects increases in information regarding future issue performance, these

results support the contention that the information effects of securities regulation should be reflected in the risk borne by investors, and not the average risk-adjusted returns. While most investors held unbiased expectations of future returns before disclosure regulation, the information supporting the expectations was relatively poor. Priors were diffuse.

Between the pre and post SEC periods issue-specific risk falls by 45% in the baseline market portfolio. This suggests that part of the decline in dispersion is due to factors unrelated to the Securities Act. Whether these factors are sufficient to explain risk reduction in new issues samples is unclear. All new issues samples exhibit a substantially larger degree of risk reduction than does the baseline sample. Specifically, the variance of the forecast errors for seasoned NYSE issues falls, on average, by 60%. For unseasoned NYSE issues the decline is approximately 56%. Similarly seasoned, non-NYSE issues exhibit an average decline in error variance equal to 75%, while for unseasoned, non-NYSE issues post-SEC forecast errors are 85% lower. Segments of the market where private information may have been most costly before the SEC exhibit the largest declines in return forecast errors following the '33 Act.

The cross regime variance tests suggest that investors enjoyed significantly less exposure to issue-specific risk following the SEC Act of 1933. There is a similar, though smaller, decline in the variance for the market as a whole. The effects of the SEC cannot be readily separated from those forces which led to a decline in market risk. In particular:

1. Is the high variance in Pre-SEC stock prices due to the stock market crash. Undoubtedly the crash resulted in large changes in the distribution of expected stock prices. Present attempts to capture these may be inadequate.

2. More generally, is the observed change in the variance related to changes in the business, or financial, cycle? The Pre-SEC sample covers a strong bull market followed by a stronger bear market. The Post-SEC sample is characterized by steady market gains through 1937, followed by ratcheting periods of decline.

Economic theory provides us with little insight on how equity risk might be expected to behave over business or financial cycles. Therefore, the issue is examined empirically. First, the pattern of issue-specific risk is examined across market cycles. Results, reported in Section A, below, suggest a significant relationship between issue-specific risk and market cycles. Second, the changes in new issue variances are re-examined controlling for cyclical factors. The new issue sample is stratified according to stage in the market cycle -- comparing pre-SEC bull market issues with post-SEC Bull market issues and Pre-SEC Bear market issues with post-SEC bears. Results are presented in Section B.

A. Issue-Specific Risk and the Business Cycle

The variance of abnormal returns from the asset pricing model is tracked over several market cycles. To avoid confounding events associated with the SEC Act the period from 1946-1960 is analyzed. Variance estimates are computed by fitting equation (1) to a sample of 250 firms listed on the CRSP files between 1946 and 1960.[28] To proxy for the small size characteristics of the new issues samples, the sample was selected randomly from the smallest 20% of CRSP-listed issues.[29]

Three complete stock market cycles are covered in the 1946-1960 data. Twelve month subperiods corresponding to definite bull or bear markets are identified. Issue-specific variance is computed for each subperiod and comparisons are made across adjacent bull and bear markets.[30]

Results are presented in Table 8. Issue-specific variance varies counter-cyclically across market cycles. Variance estimates are 38 - 86% greater in periods during which the market is falling than in periods where the market is rising. Differences are statistically significant. Note that all three cycles are characterized by bear market periods in which the market falls by 13-15% in 12 months. Bull markets are of a longer duration. In all three cycles the market rises by over 30% in the early bull market months. Appreciation slows as the bull market matures. Periods characterized by rapid appreciation are, in general, more volatile than those experiencing more gradual gains. The magnitude of the relative variance changes, however, are not significantly related to the magnitude of the relative rise or fall in the market.

B. Cross-regime Variances Re-examined

The pre and post-SEC periods respectively cover at least one bull and bear market. The following method is adopted to control for apparent cyclical differences in the variance of abnormal returns.

(1) New issues are classified according to "bull" or "bear" market conditions. A bull (bear) market issue is defined as: (i) one which is floated during a rising (falling) market and (ii) the subsequent 12 months of trading cover a rising (falling) market.

(2) Cross-regime variance changes are examined by contrasting pre-SEC bull market issues with post-SEC bull market issues and likewise, pre-SEC bear market issues with post-SEC bear issues.

Table 9 examines issue-specific risk before and after the SEC for bull markets. The pre-SEC bull market sample covers 1/26 - 12/27. During this time the market rose 29% and 70 new issues were floated. The post-SEC bull market covers 6/34 - 3/36. It includes 26 new issues and spans a rise of 39%

in the overall market. Note these samples permit risk changes to be analyzed over time periods that exclude the market crash.

Results indicate that market cycle differences alone do not account for the reduction in dispersion following the SEC. Comparing bull markets issues to bull market issues, issue-specific risk is significantly lower in the post-SEC era. Results are similar to those reported for the full sample. Across bull markets, risk declines most significantly for unseasoned issues traded off the NYSE.

Table 10 examines issue-specific risk for bear markets. The pre-SEC bear market sample extends from 8/29 through 9/30. Fifty seven new issues were floated during this period when the market lost 31%. The post-SEC bear market covers 3/37 - 3/38. There were 23 new issues floated during this period when the market fell 20%. A high percentage of the new issues sold during bear markets are floated in the first 3 months of the period -- often before the sharpest stage of market decline.

Again there is evidence of a significant decline in issue-specific risk following the passage of the Securities Act. All subsamples of issues exhibit lower residual variance in the post-SEC period. Risk falls the most for unseasoned, non-NYSE issues. Prior to the SEC this subsample exhibits the highest issue-specific risk. The reduction in risk for unseasoned NYSE issues is smaller than might be expected and is only significant for one post-issue time period. Overall, the small bear market sample size reduces the power of all tests in Table 10.

There are alternative explanations for these results. In particular, if the asset pricing model suffers from left-out factors and these factors were less volatile in the post-SEC era then inferences suggesting that the SEC Act contributed to risk reduction are incorrect. Specifically, the post-

SEC period follows the Great depression. Prior to the Crash of '29, when times were euphoric, issues in general may have been more speculative -- and more volatile. It is by no accident that the SEC Act closely followed the Market Crash and ensuing depression. The coincident timing of these events, however, makes it difficult to fully disentangle competing hypotheses.

VIII. Summary

This paper has examined the effects of changes in financial disclosure attributed to the Securities Act of 1933. The regulation's effects should be most pronounced where, in the absence of the Act, private information costs were the greatest. Accordingly, the empirical tests for changes in the distribution of returns to investors are designed to control for: (1) differences between seasoned issues and initial public offerings, and (2) the extent to which the major exchange of the day, the NYSE had adopted its own disclosure requirements prior to 1933. The major empirical findings were:

1. On average, investors in seasoned securities and securities traded on the NYSE earned normal risk-adjusted returns both before and after the Securities Act. There is strong evidence, however, that initial public offerings on regional exchanges were significantly overpriced. The measured persistance of overpricing is robust with respect to econometric specifications, unrelated to the market crash and is uniquely attributed to initial public offerings. From a rational perspective, it is a mystery. There is no evidence of similar mis-pricing following the Securities Act. Hence, investors appeared to hold rational expectations in markets characterized by low information cost or the existence of 3rd-party appraisers.

2. The dispersion of abnormal returns (investors' forecast errors) is significantly lower following the Securities Act. This holds for all issues: seasoned and unseasoned, traded on or off the NYSE. The effect is strongest for unseasoned non-NYSE issues. Thus, even in markets where investors held unbiased expectations, evidence suggests that these expectations were not particularly well informed. Reductions in investor error may be linked to post-Act improvements in the quantity and quality of available financial information.

The introduction of mandatory disclosure under the SEC was a one-time event. Its timing coincided with a great many other economic events -- the effects of which may only be imperfectly controlled. While the results of this research suggest that a change in investment returns followed the SEC Act of 1933, confounding factors abound.

A significant portion of this paper has focused on the robustness of the results with respect to empirical methodology, sample selection and the effects of the Market Crash of 1929 and the ensuing Great Depression. The major results hold up throughout the specification tests -- lending support to the contention that uniform regulation lowered new issues risk and, in some cases, increased expected returns.

This paper does not address the costs of SEC regulation. It does suggest that the gains from regulation were small for seasoned issues, and for many issues traded on the NYSE. In fact, the '33 Act and subsequent regulation contributed to the growth of the Over-the-Counter market as issuers sought lower cost, unregulated markets. Excluding the OTC from this study imparts a selection bias on the findings.[31] The extent to which SEC regulation shifted riskier securities to unregulated markets is an important issue to be addressed in future research.

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[1]A considerable body of theoretical and empirical literature has developed in the field of finance concerning the problem of the pricing of new stock issues. In general, these studies take as given the contemporary regulatory framework. The interested reader is referred to work by Roger Ibbotson [1975], Roger Ibbotson and Jeffrey Jaffee [1975], Kevin Rock [1982] and Jay Ritter [1984].

[2]Consider a security which has a 50% chance of being worth $100 and a 50% chance of being worthless. The rational investor will be willing to pay $50 for the issue. (All risk is diversifiable.) Ex post, if ex ante expectations are correct 50% of the investor's portfolio is worth $0 and 50% is worth $100. There are no <u>average</u> "abnormal" gains or losses. The effects of the investor's uncertainty, however, are reflected in the dispersion of returns. She has earned 100% on half of the securities and lost 100% on the remaining issues.

[3]The information produced by purely private market sources must be assessed in evaluating the role of public authorities. The seller's incentive to cheat is mitigated by the loss of repeat business and depreciation of reputation capital. Under the usual zero-profit assumptions of competitive markets repeat sales are not sufficient to prevent fraud (Benjamin Klein and Keith Leffler 1981). Rather, firms signal high quality by investing in non-salvageable firm-specific capital such that any short-run gains from cheating are inadequate to offset the costs of lost future business. In investment banking specific capital is mostly intangible, taking the form of long-term client relationships, human resources and extensive branding in products and services [Samuel Hayes, A. Michael Spence and David Marks 1983, Vincent Carosso 1970]. While intangible assets may be difficult to quantify they still serve to bond seller performance.

[4] Securities Act of 1933, Preamble, para, II[a].

[5]The costs imposed by the Act resulted in significant changes in other aspects of the organization of new issues markets. With respect to underwriting, the use of private placements increased sharply [Paul Gourrich 1937, Carosso]. A trend towards the use of larger underwriting syndicates emerged. Through the syndicate underwriters could limit both the risk of civil liabilities and diversify the risk of adverse changes in specific business conditions during the waiting period. There is evidence of a decline in the proportion of underwriting contracts based on firm commitments in favor of best effort offerings. Prior to the Act the use of firm commitments, coupled with willingness of underwriters to maintain substantial inventory positions in a security could be viewed as a quality signal.

[6]The Investment Bankers Association was formed during the 1920's, calling for voluntary self-policing of underwriters and brokers. IBA members were required to maintain minimum equity positions and were urged to disclose

pertinent financial information before making sales. "Fraudulent" practices and cases of poor price performance on issues floated by non-member firms were published in IBA investment newsletters [Carosso, R.W. Goldschmidt 1937].

[7]Confounding economic events will lead to econometric problems, affecting the results of previous studies [Stigler 1963, Jarrell 1981]. While earlier studies controlled for variations in the return on the market, other characteristics of the firms issuing stock (size, industry, etc.) varied between the pre and post periods. To the extent that multiple factors are required to explain equilibrium security returns, shifts in the composition of firms will confound the measured effects of the regulation. In addition, the notable volatility of the market during the 1920's-1930's will contribute to a lack of stationarity in the CAPM parameters [Carol Simon 1985]. Parameter shifts can be attributed to cyclical variations in firm leverage, default probabilities or fluctuations in the variability of the market return. Again, estimated residuals will be affected, and conclusions based on the direction and magnitude of the abnormal returns are subject to question.

[8]A firm is defined as failing if :(1) It is delisted from the exchange on which it traded , does not return, and does not appear on any other exchange; and (2) the last prices at which trades were reported approached zero (e.g. 2.00, 1.00, .50 ,....). There are no authoritative sources which directly identify bankrupt firms during 1926-1940.

[9] The CAPM (derived by William Sharp 1964, and John Lintner 1965) quantifies the equilibrium return on an asset as a function of its systematic (market-related) risk. According to the CAPM, we can write the expected return on security, s, as a linear function of the return on the riskless asset and the expected return on a portfolio of all marketable assets.

$$E[R_{s,t}] = R_{f,t} + \beta_s(E[R_{m,t}] - R_{f,t}) \qquad (1)$$

where, $E[R_{s,t}]$ is the expected return on security s in time t, conditional

on information in time period t-1. $R_{f,t}$ is the return on the risk-free asset, $E[R_{m,t}]$ is the expected return on the market portfolio, and β_s captures the systematic component of risk.

[10]See Richard Roll and Stephen Ross (1980) and Nai-Fu Chen (1983) for empirical tests of the APT based on factor analysis. Replacing unobservable orthogonal factors with observable macroeconomic variables, Nai-fu Chen, Stephen Ross and Richard Roll (1986); K.C. Chan, Nai-fu Chen and David Hsieh (1985), and Marjorie McElroy and Edwin Burmeister (1988) have recast the APT in terms of a multivariate regression model.

[11]This is a variant of the standard event-study framework. In most event-studies the CAPM is estimated over a period of time prior to the event in question. Abnormal performance is measured by using the model estimated over the prior period to generate forecast errors over the "event window". For unseasoned new issues there are no prior periods over which parameters can be estimated. Furthermore, standard event studies are unable to take into account exogenous shifts in the CAPM parameters which may occur during the event window. Estimated over the event period, a dummy variable configuration on excess returns avoids specification errors while giving the researcher the same information on the pattern and timing of excess returns that would be obtained from the conventional cumulative residual approach of event studies. For further information see John Binder[1985], Katherine Schipper and Rex Thompson [1983] and Simon [1985].

12 [12]This index is computed from the returns on all firms listed on the CRSP Monthly Returns File. Firms included in this study have been excluded from the industry index computation.

[13]The importance of considering changes in the variance of the market return has been discussed previously by Robert Merton [1980] and Robert Pindyck [1984]. Neither study, however, has explicitly decomposed changes in the variance of the market return into anticipated and unanticipated components.

[14] By construction, the average values of the Cycle variable and the UVAR variable equal zero. This is in line with APT and CAPM theory which suggest that the expected value of additional factors should equal zero. Practically,it suggests that average abnormal returns generated by the model are not compensating the addition of extra variables (with positive means).

[15] See Theil, 1971, Chapter 7.

[16]See Stephen Goldfeld and Richard Quandt (1960).

17 [17]The non-NYSE exchanges are (in order of most to fewest issues) the New York Curb Market, The Philadelphia Exchange, The Chicago Exchange, The Boston Exchange, The San Francisco Stock Exchange, The Delaware Exchange, and Baltimore Exchange and the Los Angeles Stock Exchange.

[18]The hand-collected price data have been adjusted to account for stock splits and stock dividends. Since no authoritative source exists for corporate capital changes during this time period, the adjustments are likely to be incomplete.

[19]Issues had fewer than 30 months of data either because they were infrequently traded or they were delisted -- due to failure, merger, etc. The exclusion of firms which failed shortly after issue could bias the results towards finding no effect of the SEC Act. However, the number of

issues that were dropped due to early failure is quite small and the proportion is not significantly different between the Pre- and Post-SEC samples. Prior to 1933, 6 of the 35 "dropped" issues (17%) were made by firms that had failed or were immanently failing. Following the SEC Act, one of the 10 omitted issues (10%) was made by a failing firm. The remaining issues were dropped due to infrequent trading.

[20]On average, when prices were missing for one or more months the first price following the missing data was significantly lower than the last reported price. Omitting all months where the computed return depends on missing data would result, in price declines being edited out of the data more often than price increases.

[21]A security is defined as trading on the SEC is it was listed for more than 54 months during the 5 years following the date of issue. Results are not sensitive to the choice of the cut-off value within the range of 52-60 months. In general, companies listing on the NYSE within 6 months following the date of issue would frequently have begun listing procedures at the time of issue.

[22]The significance level reported are based on asymptotic properties of the tests. Binder [1983, 1985] has investigated the small sample properties of tests traditionally used in the multivariate regression model. In small samples the Wald, F and likelihood ratio tests are all biased in favor of rejecting the null hypothesis. The degree of bias decreases with the number of observations and increases with the number of estimated equations. Large sample results are reported in this paper. In general, in the results that follow, where the null is rejected, rejection is by a large margin. The conclusions are robust with respect to the test statistic. Nonetheless, the significance levels are biased towards rejecting the null. Reported significance levels should be better viewed as offering benchmarks for

comparison, rather than accurate statistical evidence.

[23]Cumulative abnormal returns are computed as the simple sum of the monthly average abnormal returns. This exaggerates the magnitude of the losses. The -52% return translates to a -39% loss on a continuously compounded basis.

[24]There are numerous other implications of the model which corroborate suspicions that previous studies suffered from specification errors. The CYCLE variable -- introduced to control for cyclical variation in beta -- is significant on average in all the subsample tests on unseasoned issues. Futhermore the estimated coefficient is negative, which is consistent with the fact that smaller, newer firms are more highly leveraged. The unanticipated market variance term, UVAR also contributes significantly to the explanation of equilibrium returns and is likewise consistent with theory. Finally, the industry beta enters significantly in all the subsample portfolios, again, confirming the importance of separating new-issue-specific events from the fortunes of the respective industries.

[25] The time series pattern of abnormal returns in Jarrell's study suggests specification problem in his asset pricing model. In particular, Jarrell does not control for documented changes in beta parameters , and ignores industry specific gains and losses which are correlated with new issues activity. Also, since the CAPM is estimated over the event period with a constant intercept, the occurrence of any time-specific abnormal return will bias the estimated regression constant. These potential problems may be behind the tendency of Jarrell's model to over-predict in early periods and under-predict in later periods. These issues have motivated the specification of the model used in this study.

[26]The height of the new issues market occurred during the latter part of 1928 and early 1929 (Figure 1). During this period the number of companies going public was over five times higher than in previous years. Rapid entry into the brokerage and underwriting businesses is documented by numerous sources for 1927-29 (Gourrich, Carosso).

[27]The benchmark portfolio of 300 firms was selected from issues listed on the CRSP Monthly Stock Returns files from 1926-1945. Equation (1), section 4 was fit for all issues. Within the sample the starting date for the 60-month estimation window was chosen to match the distribution of issue dates in the new issues samples. The benchmark sample was selected from NYSE firms that were smaller than the median size of all NYSE firms, ranked on the basis of the total market value of common equity during the relevant time period.

[28]Equation (1), excluding the dummy variables, was estimated for each firm in the sample. The direction and significance of the results are preserved if, alternatively, the analysis is conducted using a simple market model. Cyclical variance changes are larger for the market model estimates .

[29]All issues were ranked on the basis of market-value as of December 1950. TO be eligible for selection an issue had to have monthly data available for at least 12 of the 15 sample years.

[30] The duration of bull markets is typically longer than that of bear markets. In 2 of the 3 cycles examined the market steadily rose for more than 24 months. Accordingly, two 12-month bull market samples are constructed -- one corresponding to the beginning of the bull period, and the other covering 12 months at the end of the bull market.

[31]Over the period of this study OTC issues remained a small, but growing, fraction of total stock issues [Goldschmidt]. In 1925, OTC stocks accounted for 7% of the market value of traded equity, by 1935 this figure had risen to nearly 12% and by 1939 it was over 17% [irwin Friend, George Hoffman and Willis Winn 1958].

TABLE 1

Disclosure Requirements of the NYSE

Date	Requirement
1869	Committee on Stock List requires disclosure of financial conditions.
1870-1880	Committed on Stock List requires statement of condition and list of corporate officers.
1910	NYSE closes its Unlisted Department. Most firms apply for listing on the Exchange.
1910's	Committee on Stock List requests periodic financial statements and initial offering disclosure reports. Compliance is greatest among newer and smaller firms. Some established firms resist.
1924	Quarterly earnings statements become common in listing agreements.
1926	Increased detail in financial reporting required.
1927	Depreciation policies established.
1928	Independent audits required.
1930	Listing agreement includes pledge to supply "any reasonable" information requested by the Exchange.

Source: John C. Hilke, 1984.

TABLE 2

FAILURE RATES FOR FIRMS MAKING NEW ISSUES

BEFORE AND AFTER THE SEC ACT

	FAILURE RATES (Number of firms)		
	Pre-SEC		Post-SEC
	1926-33	1/26-9/29	1934-40
New Issues Sample			
Seasoned Issues:			
NYSE	.0505 (199)	.0320 (185)	.0000 (37)
Non-NYSE	.1750 (40)	.0935 (32)	.1000 (10)
Unseasoned Issues:			
NYSE	.1000 (20)	.0555 (18)	.0714 (14)
Non-NYSE	.3261 (46)	.2444 (45)	.1176 (17)
All NYSE Firms:			
Total Listed	.0677 (871)	.0471 (852)	.0633 (884)
Smallest 20 percent	.1206 (174)	.0823 (170)	.0966 (177)

Failure Rate = $\frac{\text{Total number failed}}{\text{Number in Sample}}$

Table 3

Characteristics of the Sample

	PRE-SEC	POST-SEC
Sample Size	325	78
Dropped (months < 30)	35	10
Remaining	290	68
Year Issued		
1926	34	-
1927	37	-
1928	95	-
1929	131	-
1930	20	-
1931	2	-
1932	3	-
1933	3	-
1934	-	3
1935	-	3
1936	-	25
1937	-	23
1938	-	10
1939	-	13
Seasoned	261	50
Unseasoned	64	28
NYSE - all months	191	36
NYSE - part	80	32
Non-NYSE	54	10
Utilities, R/R	20	3

Table 4

Summary of Excess Returns, Pre Versus Post-SEC New Issues

Disaggregated by Exchange

	NYSE			Non-NYSE		
Time	Pre-SEC	Post-SEC	Diffenence	Pre-SEC	Post-SEC	Difference
Seasoned Issues						
1-12 months	-.0085	-.0187	-.0102	-.0338	-.0641[a]	-.0303
13-18	-.0116	.0674[a]	.0790	-.0145	-.0331	-.0186
19-24	.0101	-.0115	-.0216	-.0312	.0012	-.0324
25-36	.0279	-.0423	-.0704	-.0304	.0360	.0664[a]
1-60	.0551	-.0023	-.0573	-.1215	-.1124	.0091
Unseasoned Issues						
1-12 months	.0521	-.0712	-.1232	-.1490[b]	.0266	.1756[b]
13-18	-.0140	.0765	.0905	-.1678[b]	.0775	.2453[b]
19-24	.0233	-.0285	-.0518	-.0777[a]	.0269	.1057
25-36	-.0431	.0234	.0665	-.0408	-.0516	-.0108
1-60	-.0116	.0684	.0800	-.5261[b]	.0574	.5835[b]

Note: All abnormal returns are expressed as decimal percentages, i.e., .1215 equals a 12.15% cumulative loss over the period noted in the far left column.

[a] Statistically significant from zero at the .10 level

[b] Statistically significant from zero at the .05 level.

TABLE 5

SUMMARY OF EXCESS RETURNS

"NO CRASH SAMPLE"

	NYSE		Non-NYSE	
Time	Seasoned	Unseasoned	Seasoned	Unseasoned
1-12 months	.0072	-.0111	-.0382[a]	-.0368
13-18	-.0320	-.0013	-.0555	-.2095[b]
19-24	.0021	.0007	-.0136	-.1480[b]
25-36	.0451	.0810	.0992	.0015
1-60 (cumulative)	.0640	.0569	.0284	-.3924[b]

[a] Statistically significant at α=.10

[b] Statistically significant at α=.05

Table 6

Summary of Net-of Market Returns, Pre- Versus. Post-SEC New Issues

Disaggregated by Exchange

	NYSE			Non-NYSE		
Time	Pre-SEC	Post-SEC	Difference	Pre-SEC	Post-SEC	Difference
Seasoned Issues						
1-12 month	-.0596	-.0516	-.0080	-.1868[a]	-.0210	.1658
13-18	-.0118	.1092	.1190	-.0330	-.0288	.0042
19-24	-.0666	-.0189	.0477	-.1052	.1122	.2274[a]
25-36	.0311	.0396	.0085	.0204	.0951	.0747
1-60	-.0959	.0884	.1843	-.2791	.1444	.4235
Unseasoned Issues						
1-12 month	.0352	-.0996	-.1352	-.2516[b]	.0948	.3464[b]
13-18	-.0692	.1302	.1894	-.3986[b]	.0553	.4488[b]
19-24	.0303	-.0072	-.0375	-.2817[a]	.0374	.3191[a]
25-36	-.2409[a]	.0809	.3218[a]	.0572	-.0249	-.0768
1-60	-.2212[a]	.1092	.3304[a]	-.7482[b]	.1190	.8672[b]

Note: All abnormal returns reflect the cumulative loss over the period

[a] Statistically significant from zero at the .10 level

[b] Statistically significant from zero at the .05 level.

Table 7

Issue Specific Risk, Before and After the SEC Act

Estimated Variance of Monthly Excess Return

		Pre-SEC	Post-SEC	F-statistic (for difference)
Seasoned Issues:				
NYSE:	1-12 months	.001852	.000854	2.16[c]
	13-18	.001633	.001590	1.03
	19-24	.001530	.000519	2.95[c]
	25-36	.001488	.000443	3.34[c]
	37-60	.000832	.000241	3.45[c]
Non-NYSE:	1-12	.002417	.001218	1.98[b]
	13-18	.004156	.001654	2.51[c]
	19-24	.002091	.000305	6.85[c]
	25-36	.002390	.000325	7.35[c]
	37-60	.001731	.000312	5.54[c]
Unseasoned Issues:				
NYSE:	1-12	.002501	.001272	1.97[b]
	13-18	.001815	.001108	1.80[b]
	19-24	.001665	.000705	2.36[b]
	25-36	.001026	.000876	1.17
	37-60	.000853	.000262	3.25[c]
Non-NYSE:	1-12	.004218	.001456	2.89[b]
	13-18	.007299	.000643	11.35[c]
	19-24	.003866	.000764	5.06[c]
	25-36	.003769	.000832	4.53[c]
	37-60	.001972	.000914	2.15[b]
Baseline Market Portfolio		.00049	.00028	1.75[b]

[b] Difference significant at .05

[c] Difference significant at .01.

TABLE 8

ISSUE-SPECIFIC RISK OVER BULL AND BEAR MARKETS

Period (percentage change S&P500)	Variance	F-Stat (σ_2 bear/σ_2 bull)
3/46-2/47 (-15:Bear)	.0003701	
6/49-5/50 (+32:Bull)	.0002691	1.375[a]
10/51-9/52 (+21:Bull)	.0001985	1.864[b]
10/52-9/53 (-13:Bear)	.0003697	
9/54-8/55 (+34:Bull)	.0002472	1.495[b]
9/55-5/56 (+14:Bull)	.0002986	1.617[b]
4/57 -3/58 (-14:Bear)	.0003981	
4/58-3/59 (+32:Bull)	.0002656	1.499[b]

[a] Statistically significant at the .05 level

[b] Statistically significant at the .01 level

TABLE 9

Issue Specific Risk Before and After the SEC Act

Bull Market to Bull Market Comparison

1/26-12/27 Issues Versus 6/34-3/36 Issues

	Pre SEC	Post SEC	Change (post-pre)
Seasoned Issues			
NYSE:			
1-12 month	.00172	.00052	-.00120[b]
13-18	.00162	.00079	-.00083[b]
19-24	.00142	.00081	-.00061[a]
25-36	.00103	.00032	-.00081
Non-NYSE:			
1-12 month	.00188	.00037	-.00151[b]
13-18	.00325	.00226	-.00099
19-24	.00250	.00042	-.00208[c]
25-36	.00226	.00034	-.00192[b]
Unseasoned Issues			
NYSE:			
1-12 month	.00284	.00113	-.00172[a]
13-18	.00288	.00064	-.00224[b]
19-24	.00119	.00075	-.00044
25-36	.00084	.00038	-.00046[a]
Non-NYSE:			
1-12 month	.00394	.00161	-.00233[b]
13-18	.00408	.00107	-.00301[b]
19-24	.00318	.00073	-.00345[c]
25-36	.00288	.00061	-.00227[b]

[a] Significant at .10

[b] Significant at .05

[c] Significant at .01

TABLE 10

Issue Specific Risk Before and After the SEC Act

Bear Market to Bear Market Comparison

8/29-9/30 Issues Versus 3/37-3/38 Issues

	Pre SEC	Post SEC	Change (post-pre)
Seasoned Issues			
NYSE:			
1-12 month	.00239	.00114	-.00125[b]
13-18	.00195	.00191	-.00004
19-24	.00160	.00032	-.00128[b]
25-36	.00165	.00062	-.00102[b]
Non-NYSE:			
1-12 month	.00284	.00175	-.00109[a]
13-18	.00503	.00139	-.00364[b]
19-24	.00198	.00030	-.00168[b]
25-36	.00251	.00031	-.00220[b]
Unseasoned Issues			
NYSE:			
1-12 month	.00203	.00134	-.00069
13-18	.00166	.00120	-.00046
19-24	.00213	.00068	-.00145[b]
25-36	.00121	.00099	-.00022
Non-NYSE:			
1-12 month	.00457	.00127	-.00330[b]
13-18	.00931	.00060	-.00871[c]
19-24	.00426	.00101	-.00315[b]
25-36	.00379	.00121	-.00257[a]

[a] Significant at .10

[b] Significant at .05

[c] Significant at .01

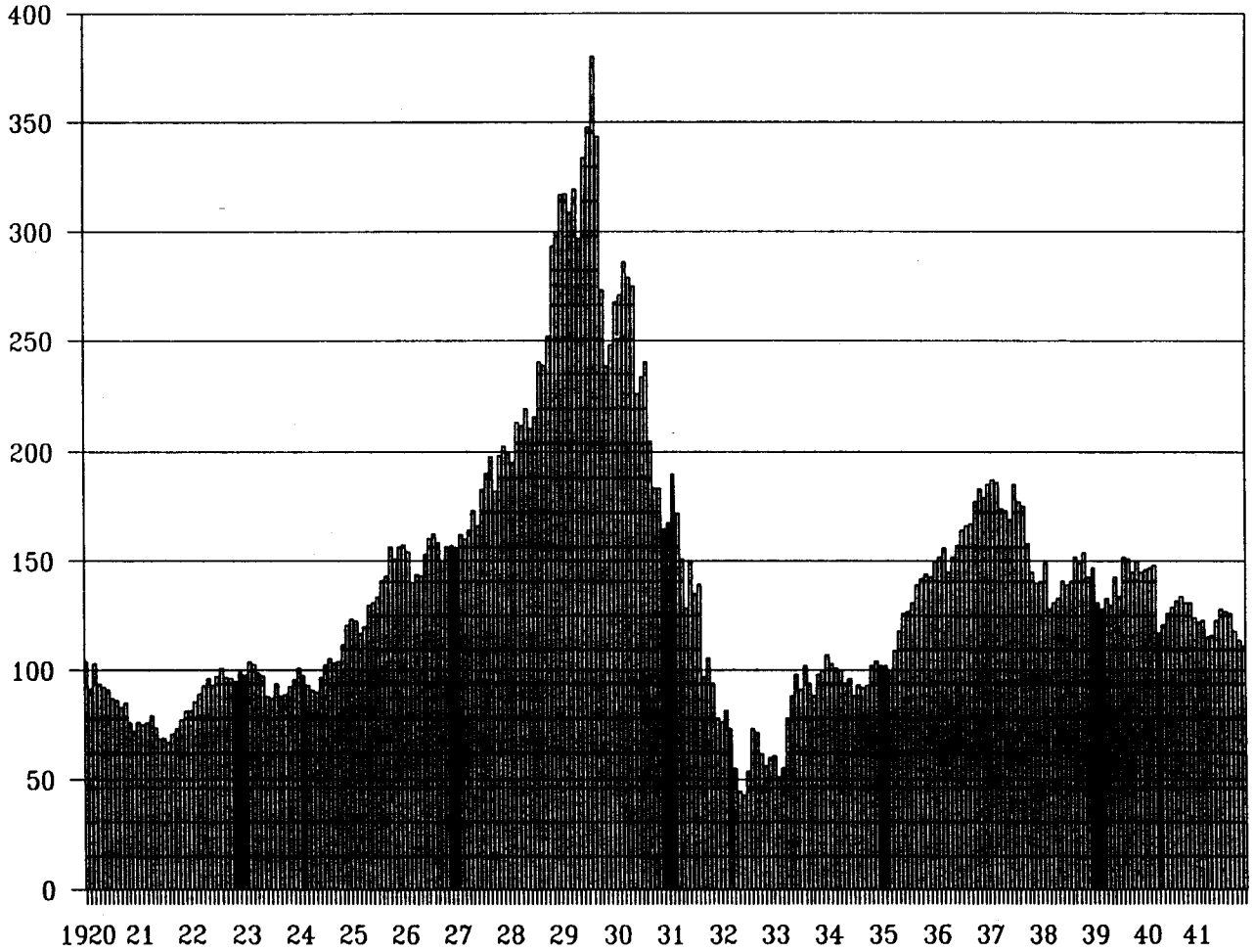

FIGURE 1: Dow Jones Industrial Average, 1920-1940

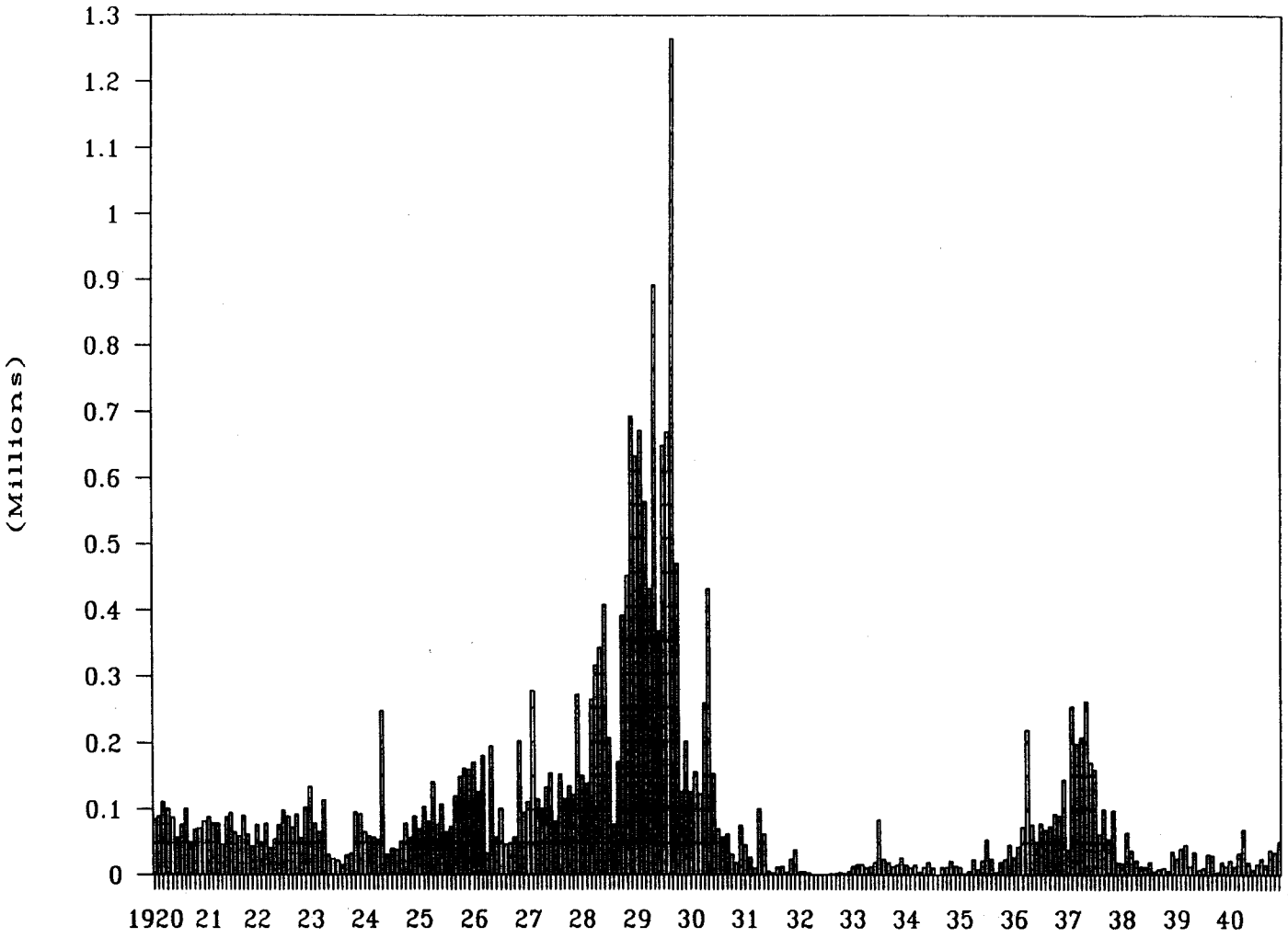

FIGURE 2: Monthly Volume of New Equity Issues ($ millions)

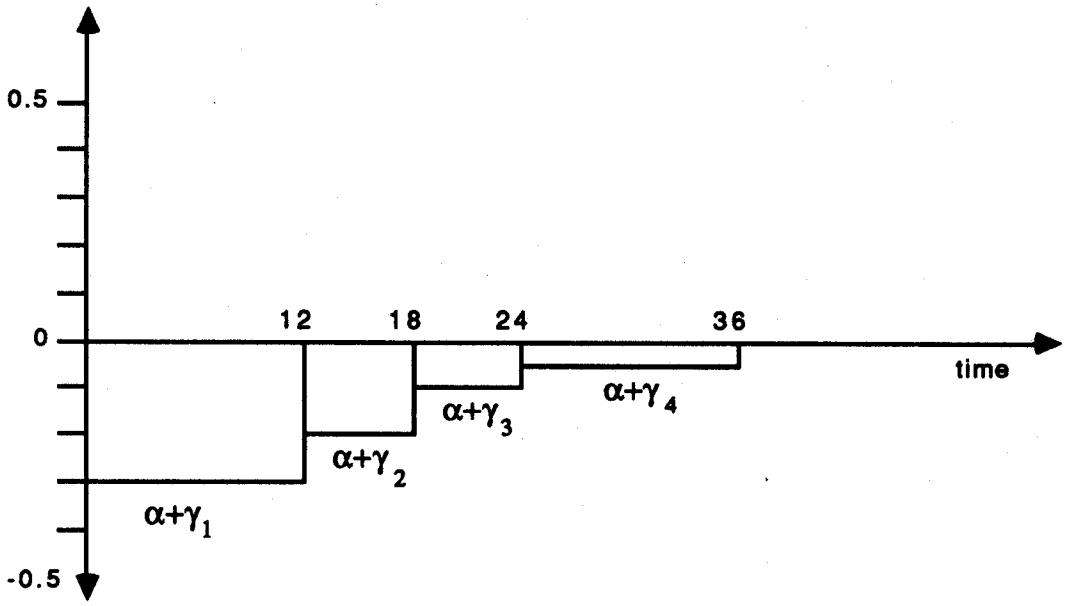

Fig. 3. Dummy Variable Representation of Excess Returns

APPENDIX A

Description of Data Collection Procedures

Issues of common stock floated between 1929 and 1939 were identified from the "New Capital Flotations" section of the Commercial and Financial Chronical (CFC). The CFC is a monthly publication and was the most authoritative source of information on public debt and equity issues prior to the 1933 SEC Act. Only issues with market value exceeding $1.95 million were selected. The size restriction was the same as that used by Jarrell (1981).

Issues were designated as seasoned or unseasoned based on (1)information provided in the CFC , or (2) the existence of a prior listing on the NYSE, New York Curb Market (later AMEX), or any regional exchange (see footnote 17). Listings were ascertained through information provided in Moody's Industrial Manuals, and/or price quotations found in the Wall Street Journal (WSJ), CFC, or Bank Quotation Record (BQR).

Where available, monthly returns were obtained from the Center For Research in Securities Prices (CRSP) Monthly Stock Returns Tape. All other returns were computed from month-end prices listed in the CFC, WSJ or BQR. Stock splits or stock dividends were identified from information appearing in the CFC and WSJ. Furthermore, any stock with a price change exceeding 15% in any month was flagged for investigation.

A file containing information on the issues used in the analysis, issue size, prior seasoning, SIC code, and hand-collected price data is available from the author on request.

APPENDIX B

TABLE B-1

Average Coefficient Values: Equation (1)

Seasoned New Issues, Pre-SEC [1926-1933],

Disaggregated by Exchange

	NYSE		REGIONAL EXCHANGES	
Variable	Avgerage Coefficient	χ^2	Average Coefficient	χ^2
Constant	.00219	.75	-.00058	.02
D_1 (1-12 months)	-.00292	.49	-.00275	3.63[a]
D_2 (13-18)	-.00555	1.12	-.00210	1.51
D_3 (19-24)	-.00052	.09	-.00536	.08
D_4 (25-36)	.00066	2.37	-.00261	2.17
R_m-R_f (Beta)	1.1166[c]	3936.35	.9285[c]	208.56
RIND-R_m-R_f (Industry)	.7735[c]	816.84	.6491[c]	68.36
(R_m-R_f)*Cycle (Cyclical Beta)	-.0082	3.55	-.03331[b]	4.78
UVAR (Unanticipated Market Variance)	-7.2049[c]	54.71	-1.50110[a]	3.14
1-60 month cumulative abnormal return	+.0551	0.48	-.1214	2.41
Number of Issues	196		43	

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-2

Average Coefficient Values: Equation (1)

Unseasoned New Issues, Pre-SEC [1926-1933],

Disaggregated by Exchange

	NYSE		REGIONAL EXCHANGES	
Variable	Avgerage Coefficient	x^2	Average Coefficient	x^2
Constant	-.00142	.04	-.00511[b]	4.06
D_1 (1-12 months)	.0069	.43	-.0082[a]	3.08
D_2 (13-18)	-.00092	.01	-.02544[b]	3.99
D_3 (19-24)	.00531	.69	-.00835[a]	2.78
D_4 (25-36)	-.00257	3.21	.00124	.23
R_m-R_f (Beta)	.8772[c]	175.90	.9275[c]	185.9
RIND-R_m-R_f (Industry)	.8824[c]	65.30	.6142[c]	34.41
(R_m-R_f)*Cycle (Cyclical Beta)	-.0173	1.80	-.02101[b]	4.78
UVAR (Unanticipated Market Variance)	-4.46[c]	19.97	-1.44706[c]	12.92
1-60 month cumulative abnormal return	-.0116	0.68	-.5261[b]	4.11
Number of issues		18		35

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-3

Average Coefficient Values: Equation. (1)

Seasoned New Issues, Post-SEC [1934-1940],

Disaggregated by Exchange

	NYSE		REGIONAL EXCHANGES	
Variable	Average Coefficient	χ^2	Average Coefficient	χ^2
Constant	.00012	.11	-.00540	.40
D_1 (1-12 months)	-.00198	.16	-.00205	1.31
D_2 (13-18 mos.)	.01315[a]	3.35	-.00089	.21
D_3 (19-24 mos.)	-.00211	.21	-.00563	.09
D_4 (25-36 mos.)	-.00370	0.64	.00181	.07
R_m-R_f (Beta)	.9687[c]	705.06	.7601[c]	41.11
RIND-R_m-R_f (Industry)	.8079[c]	247.27	1.0061[c]	31.87
(R_m-R_f)*Cycle Cyclical Beta	-.01183[a]	2.96	-.00315	1.93
UVAR (Unanticipated Market Variance)	-.71434[b]	4.46	-3.42775[a]	2.85
1-60 month cumulative abnormal return	-.0026	0.39	-.11237	1.36
Number of issues	37		9	

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-4

Average Coefficient Values: Equation. (1)

Unseasoned New Issues, Post-SEC [1934-1940],

Disaggregated by Exchange

	NYSE		REGIONAL EXCHANGES	
Variable	Average Coefficient	x^2	Average Coefficient	x^2
Constant	.00243	.19	-.00070	0.13
D_1 (1-12 months)	-.00898	.56	.00311	1.56
D_2 (13-18)	.01607	1.47	.01563	.54
D_3 (19-24)	-.00781	.37	.00609	.05
D_4 (25-36)	-.00034	.10	-.00411	.06
R_m-R_f (Beta)	.7774[c]	124.16	1.3617[c]	62.14
RIND-R_m-R_f (Industry)	.7711[c]	62.57	.2734	1.76
(R_m-R_f)*Cycle Cyclical Beta	.00209	1.02	-.0113[c]	8.42
UVAR (Unanticipated Market Variance)	-2.597[b]	3.67	-14.7933[b]	4.01
1-60 month cumulative abnormal return	.0684	.94	.0574	.73
Number of issues	9		11	

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-5

Average Coefficient Values

Seasoned Issues, Pre-SEC, 1926-1927 Issues Only,

October 1929 - September 1930 Excluded

("No-Crash Sample")

	NYSE		REGIONAL EXCHANGES	
Variable	Average Coefficient	χ^2	Average Coefficient	χ^2
Constant	.00171	.71	.00050	.11
D_1 (1-12 months)	-.00111	1.96	-.00285	1.92[a]
D_2 (13-18)	-.00706	.46	-.00960	.19
D_3 (19-24)	-.00138	1.49	-.00276	.01
D_4 (25-36)	.00213	.06	.00884	.22
R_m-R_f (Beta)	1.0277[c]	404.35	.6869[c]	28.9
RIND-R_m-R_f (Industry)	.8764[c]	148.33	.6181[c]	29.00
(R_m-R_f)*Cycle Cyclical Beta	-.0074	.23	-.10166[c]	9.09
UVAR (Unanticipated Market Variance)	-1.1817[c]	8.31	-2.20010[b]	5.44
1-60 month cumulative abnormal return	+.0640	0.26	+.0284	0.33
Number of issues	196		35	

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-6

Average Coefficient Values

Unseasoned Issues, Pre-SEC 1926-1927 Issues Only,

October 1929 - September 1930 Excluded

("No-Crash Sample")

	NYSE		REGIONAL EXCHANGES	
Variable	Average Coefficient	x^2	Average Coefficient	x^2
Constant	-.00136	0.68	-.00125	2.22
D_1 (1-12 months)	.00228	2.27	-.00196	1.42
D_2 (13-18)	.00114	.39	-.03735[b]	3.73
D_3 (19-24)	.00148	0.63	-.02581[b]	4.05
D_4 (25-36)	.00820	.31	.00133	.10
R_m-R_f (Beta)	.9543[c]	94.64	1.0258[c]	40.18
RIND-R_m-R_f (Industry)	.6586[c]	27.62	.7122[c]	18.95
(R_m-R_f)*Cycle Cyclical Beta	-.0482	2.32	-.07491[c]	6.23
UVAR (Unanticipated Market Variance)	-3.116[c]	27.57	1.0017	1.39
1-60 month cumulative abnormal return	.0569	0.91	-.3924[b]	3.92
Number of issues		8		7

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

TABLE B-7

Average Coefficient Values

Non-NYSE Baseline Sample, Pre-SEC 1926-1933

Variable	Average Coefficient	χ^2
Constant	-.0026	1.54
D_1 (1-12 months)	-.0131	1.15
D_2 (13-18)	.0027	1.84
D_3 (19-24)	-.0023	.84
D_4 (25-36)	.0115[a]	2.73
R_m-R_f (Beta)	.6126[c]	41.23
RIND-R_m-R_f (Industry)	.4701[c]	66.38
(R_m-R_f)*Cycle Cyclical Beta	.0161	.23
UVAR (Unanticipated Market Variance)	-1.870[b]	3.77
1-60 month cumulative abnormal return	-.0765	.89
number of issues	35	

[a] Significant at the .10 level.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

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