

THE IMMEDIATE PRICE AND VOLUME EFFECTS
OF INVESTMENT ADVISORY SERVICES
ON STOCKS RECOMMENDED

by

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INTRODUCTION

The Nature of Investment Advisers and Advisory Services

The Investment Advisers Act of 1940, Title II, sec. (2) (11) defines an investment adviser as:

Any person who for compensation, engages in the business of advising others either directly or through publications or writings, as to the value of securities or as to the advisability of investment in, purchasing, or selling securities, or who for compensation and as a part of a regular business, issues or promulgates analyses or reports concerning securities, but excepts specified categories such as banks, any broker or dealer whose performance of such service is solely incidental to the conduct of his business as a broker or dealer and who receives no special compensation therefor, and the publisher of any bona fide newspaper, news magazine or business or financial publication of general and regular circulation.¹

In a special study published in 1963 the Securities and Exchange Commission indicated that at June 30, 1962, there were 1,836 investment advisers registered with the Commission. Less than one-tenth of this group published advisory materials at all and even fewer published with regularity and with fair sized circulations on a subscription basis.²

People subscribing to a subscription service generally receive four to twelve pages of material weekly,

biweekly or monthly. A typical issue starts with views of the current market situation and comments about conditions affecting the economy generally or those industries in which it purports to specialize.³ The major part of each issue is then devoted to the discussion and recommendation of specific securities. In most cases one or two of the recommendations are discussed in detail, while a brief account, only a paragraph or two, is given to the other recommended securities.

What do the recommendations compiled by the advisory service actually provide to the subscriber? At the core of almost all recommendations is the projection. Projections range in form from the blatant prediction of a market price to be expected in the future to the more subdued insertion of an asterisk after an earning figure, keyed to the explanation that earnings were estimated.⁴ Most recommendations contain a projection of estimated earnings of the security under consideration. This projection briefly explains why earnings could be expected to increase and often goes on to state the anticipated increase.⁵ Besides the projection, the recommendation usually gives some brief description of the business of the company and its prospects--often glowing--in its industry. In many cases the security is also classified

in terms of a general investment goal, "for growth," "for growth and income," or "for the speculative investor."⁶

It should be noted that most of the recommendations provided by the advisory services are for the buying of securities; very few recommendations are made to sell or switch securities.

Although it comprises only a small segment of all investment advisers, the group that publishes market information on a subscription basis reaches a larger group than just their own subscribers. The recommendations of the services are recirculated by broker-dealer firms. Broker-dealers' market letters frequently quote the services and report their recommendations. In addition, many investment firms provide salesmen with reprint copies of Standard and Poor's, Moody's and other services for distribution to customers.

Purpose of this Study

This thesis is concerned with investment advisory services, and in particular, the published recommendations they provide to their subscribers.

This study's primary objective is to investigate what immediate effects the recommendation of an investment

advisory service has on the price and volume movement of a stock. Furthermore, this study will attempt to measure how much effect the service's recommendation has on the price and volume movement of the stocks being studied.

Hypotheses

In this study two hypotheses are offered:

1. Stock recommendations published by investment advisory services do in fact have an immediate effect on the price movement of the recommended stocks.

2. Stock recommendations published by investment advisory services do in fact have an immediate effect on the volume movement of the recommended stocks.

CHAPTER I

REVIEW OF LITERATURE

There is a general lack of information available regarding studies related to the main problem, the immediate price, and volume effects of investment advisory services on recommended stocks.

In a letter received from the Securities and Exchange Commission regarding literature pertaining to the subject under study, the Commission recommended three articles concerning the subject, which the author had already reviewed and investigated. They included the Commission's own Report of Special Study of Securities Markets of the Securities and Exchange Commission. This study provided a general background of advisory services. It concluded that published advisory materials have been produced in large and increasing volume and, as might be expected, appeared to have an influence on investors and the security markets.⁷ Other studies were more concerned with the problem of price effects of recommendations. None of the studies contained any information concerning volume effects of recommendations.

The studies concerned with the problem of price effects of recommendations included one published in 1958

by Robert Ferber.⁸ Ferber selected the recommendations of four advisory services and followed them through the first three months of 1953. His study included both the buy and sell recommendations of the services. Ferber concluded that, in the very short run, stock market service recommendations tended to influence the prices of approximately two-thirds of the stocks in the direction indicated even after allowance for the movement of stock in general or of other stocks in the same industry classification. These movements were generally greater than would be expected solely as a result of erratic variations in market prices, and the price effect of the recommendation on most stocks lasted at least four weeks after the recommendation date.

Another similar study that concentrated on the problem of price effects of recommendations was published in 1963 by Raymond T. Ruff.⁹ This study dealt with twenty-nine "Stock of the Month" recommendations from Standard and Poor's Outlook for the period 1959 through 1961. Ruff concluded that an immediate price effect was evident as a result of the recommendation and the effect lasted about seven trading days after the recommendation date. On the eighth day a declining trend became evident.

A third study that investigated the area of price effect of recommended stocks was published in 1966 by

John D. Stoffels.¹⁰ In his study Stoffels examined only the buy recommendations of three major services during the period 1959 through 1963. Unique in his study was Stoffels' selection of recommendations for each service. The recommendations published by the first service were divided into weak and strong categories. Stoffels determined the category by the directness of the recommendation to buy. Stoffels explained that the directness with which the word buy is used in a recommendation is the basic distinction between a strong and a weak recommendation. The imperative "Buy" is for instance, a good deal more direct than "May be bought." The second service considered only growth stock recommendations. The recommendations of the third service were divided into weekly selections or monthly selections.

In his analysis, Stoffels developed an index number from the raw stock prices of each of the recommendations for a period of eleven trading days before the recommendation date and fifteen trading days after that date. A final index number, desensitized for market movement, was derived for each of the twenty-six trading days. The index numbers were then subjected to various tests to determine how effective the recommendations of each service were separately and in the aggregate.

Stoffels concluded that the recommendation of a stock by an investment advisory service appeared to have an effect on the price of the stock at least through the third or fourth day following the recommendation. Possibly some effects continue through the tenth or eleventh day following recommendation when two of the services reached a second maximum.

CHAPTER II

METHODOLOGY

With the purpose of this study defined and the hypotheses formulated, the question arises as to exactly how to approach the problem of determining the effect of investment advisory services on recommended stocks. The essence of this chapter is to present the techniques used to ascertain and analyze the effect of investment advisory services on recommended stocks. In short, this chapter demonstrates the method used to accomplish this task; describes selection of services, selection of recommended stocks, and the analytical techniques used.

Selection of Services

The publications of three major investment advisory services were selected for study--Value Line Investment Service, Moody's Investor Survey, and Standard and Poor's Outlook. Since the services selected are among the largest in the industry, presumably they are among the most influential of such firms. The larger advisory services were selected for this study because any effects that these services exert on the price or

volume movement of a recommended stock would be most easily detected.

The circulation figures of the services selected for this study were hard to determine with accuracy, since they varied considerably from month to month often in proportion to market activity and public participation therein.¹¹ Regular subscribers are frequently substantially supplemented by people accepting special introductory offers. The Securities and Exchange Commission in their Report of Special Study of Securities Markets of the Securities and Exchange Commission cited as an example of the impact of market conditions on subscriptions the case of Investors Intelligence, an advisory service which digests the materials of some 70 investment advisory firms slipped from a circulation of 20,000 in the 1959 bull market to about 10,000 in the spring of 1962.¹²

The Securities and Exchange Commission Report briefly described the services under study and approximate circulation figures of their published material. The study reported that Value Line, a weekly publication with an annual subscription rate of \$100 in 1961, claimed some 30,000 regular subscribers plus 10,000 to 15,000 additional readers through trial subscriptions; Standard and Poor's Outlook with a subscription rate of \$65 a year had a

weekly circulation of 33,000; and the third service considered in this study, Moody's Stock Survey, carried a weekly circulation to approximately 6,200 subscribers at \$144 a year.¹³

Availability also governed the selection of the three services used in this study; complete files on the recommendations of the services for the period covered were available in the library of Virginia Polytechnic Institute or in the Roanoke College Library.

Selection of Recommended Stocks

The recommendations of the three advisory services used in this study were not randomly selected but chosen for a specific purpose. It was felt that only recommendations that met certain established requirements could provide a clear picture of the effect that is exerted on recommended stocks by investment advisory services. The process by which the recommendations were selected is explained below.

Since the last published study in the area of concentration was conducted from 1959 to 1963, a more current time period in which to observe the movement of the recommended stocks was considered relevant. The

recommended stocks used in this study were published by the three services from January to June, 1967.

In selecting recommended stocks for study during the period, only advice to "buy" a stock was considered pertinent. Any "hold" or "sell" advice was ignored. Likewise, any stocks included in master lists, supervised lists, or industry lists were excluded. If a particular stock was recommended more than once during the period by the same service it was also excluded.

Also taken into consideration in the selection of recommended stocks was the particular exchange on which the stock was traded. Only recommended stocks traded on the New York Stock Exchange were considered in this study. This procedure was used because the price and volume indices published by the New York Stock Exchange for the market as a whole provided a more concise basis for adjusting price and volume figures of individual recommendations. The adjustment of price and volume figures will be explained more fully in the discussion of analytical techniques.

Each of the services selected for study uses different methods of selecting and presenting recommended stocks. Value Line, in addition to their review of specific stocks and comment on the stock market in general,

publishes two or three times monthly an "Especially Recommended" stock, which describes in great detail the stock's present and future prospects, as well as pertinent financial data. All of Value Line's "Especially Recommended" stocks published for the period under study were used for analysis, provided they were listed on the New York Stock Exchange.

The recommended stocks of the other two services, Moody's and Standard and Poor's, were selected in like manner. As mentioned earlier, the service's degree of commitment to a recommendation varies considerably. For this reason the buy recommendations of both Moody's and Standard and Poor's were further subdivided into two classes, strong recommendations and weak recommendations.¹⁴ The difference between strong and weak recommendations is in the directness with which the word buy or sell is used. To better illustrate the point, examples of strong and weak recommendations were taken from issues of Moody's Investors Survey, and are shown below:

Strong Recommendation

Peoples Gas Light and Coke

April 24, 1967

Peoples Gas Light and Coke is at its lowest price in years. High in quality, and offering an above average yield and some appreciation potential, the stock is attractive to buy.¹⁵

Weak Recommendation

Robertshaw Controls

April 3, 1967

First-half earnings of Robertshaw Controls will probably be down, but growth should resume either in the second half or, at latest next year. For the investor willing to look ahead, we suggest purchase of the stock for eventual appreciation.16

The group of recommended stocks of both Moody's and Standard and Poor's were selected from all the buy recommendations of the two services during the period under study. Included in the buy recommendations of Standard and Poor's Outlook was a special feature called the "Stock of the Month." This recommendation was considered along with all the other recommendations, and was given no special priority when selecting recommended stocks for further study. The recommended stock was only considered if it adhered to the criteria developed for selecting recommended stocks in this study.

A total of sixty-four individual stock recommendations was chosen for final study. As indicated in Table 2-1 each classification of recommendations contains an almost equal number.

TABLE 2-1

Classification of Recommended Stocks
According to Service

Service	Number of Stocks
Value Line	13
Moody's Strong	13
Moody's Weak	13
Standard & Poor's Strong	13
Standard & Poor's Weak	<u>12</u>
Total	64

Analytical Techniques

One of the most difficult tasks in a study of this type is to develop and describe the analysis to which the data will be subjected to arrive at the findings.

This study is similar to the one conducted by John D. Stoffels in that it develops a series of index numbers for analysis in order to determine the effects of the recommendations.¹⁷ The difference lies in the time period studied, the number of recommended stocks selected, and the manner in which the data are collected and treated. There is no way to determine if the same advisory services were

used in both studies, as Stoffels disguised the names of the services in order to emphasize that price effects in general had been studied, and not the performance of recommendations by any one service. This study also goes a step beyond Stoffels and develops a technique for the study of the volume movement of the recommended stocks.

The method of analysis developed in this thesis was to study the price and volume effect on a particular recommendation by developing a series of index numbers using a twenty-one day centered moving average. This was done by collecting and tabulating the data described below for each of the sixty-four recommended stocks.

1. Closing market price for the stock for a period of fifty-six market days. In selecting this time period two factors are considered important. First, the period should extend far enough before the recommendation date to present a clear picture of the recent price and volume movements of the stock. Second, the period of observation should extend far enough beyond the recommendation date in order that any effect caused by the recommendation could be adequately observed. The fifty-six trading days selected for observation cover a period of twenty-two trading days before the publication date of the recommended stock, the publication date itself, and the thirty-three

days afterward. If holidays occurred during the normal business week they were ignored and the time period adjusted to include the full fifty-six day trading period. Actual observations for all sixty-four stocks covered a period of one hundred and sixty-two trading days, from November 30, 1966 until July 21, 1967.

Although the selected recommendations were published by the services from January until June, 1967, in order to follow the recommendations published at the beginning and end of the period for the full fifty-six trading day cycle, observations were made in the periods indicated above for those recommended stocks. In actuality, a total of thirty-six index numbers were developed for further analysis, because, when a twenty-one day moving average was applied to the fifty-six trading days cycle, the first ten and last ten days were eliminated.

2. Total shares traded of the particular stock for each of the fifty-six trading days.

3. Closing average of the appropriate Index of the New York Stock Exchange, industrial, financial, utility, or transportation, for each of the fifty-six trading days.

4. Total shares traded on the New York Stock Exchange for each of the fifty-six trading days.

After compiling these data, the first step in deriving the index numbers was to obtain a price and volume figure adjusted for general market movement of each of the recommended stocks. The appropriate New York Stock Exchange Index on the date (R-date) that each stock was recommended was divided into the New York Stock Exchange Index for each of the fifty-six days under consideration. This computation represents an adjustment of the New York Stock Exchange Index to an index with a base at R-date equal to 1.000. This ratio for each day was then divided into the closing price of the stock on each of the fifty-six days, resulting in a stock price adjusted for general market movement.

The same procedure was followed for volume. The New York Stock Exchange volume of shares traded on the date (R-date) that each stock was recommended was divided into the total New York Stock Exchange volume of shares traded for each of the fifty-six days under consideration. This computation represented an adjustment of the New York Stock Exchange total volume of shares traded to an index with a base at R-date equal to 1.000. This index for each day was then divided into the shares traded of the recommended stock on each of the fifty-six days, and the result is a volume of shares traded adjusted for general market movement.

A twenty-one day moving average was then computed for adjusted price and volume. The result of this application was a series of thirty-six adjusted price and volume figures for each of the sixty-four stocks.

The final price index numbers were derived by dividing the adjusted price for the day (AP_t) by the twenty-one day moving average of the adjusted price (MAP_{t21}) for the thirty-six days. The result of the final calculation was a total of thirty-six price index numbers for each of the sixty-four recommended stocks.

The same ratio was derived from the adjusted volume figures, by using the adjusted volume for the day (AV_t) and the twenty-one day moving average of the adjusted volume (MAV_{t21}) for thirty-six days. The result was volume index numbers for thirty-six days for each of the sixty-four recommended stocks.

The thirty-six index numbers of both the price and volume data covered a period of twelve trading days before recommendation, the recommendation date, and twenty-three days afterward.

The final price and volume index numbers were grouped in two ways, according to service (as shown in Table 2-1) and according to average daily trading volume in round lots, in order to analyze the data to arrive at

the findings. It should be emphasized that these groupings were made primarily to analyze price and volume effects in general, although the performance of recommendations by services was evaluated.

In order to group the price and volume index numbers of each recommended stock according to each stock's average daily trading volume in round lots, an average daily trading volume was calculated for each stock by taking the number of round lots traded daily for a period of fifty-one market days. The time period corresponded to the fifty-six trading day period used in calculating the thirty-six price and volume index numbers for each stock excluding the number of round lots traded on the recommendation date and the following four trading days. The five trading days were not included in calculating the average daily trading volume in order to present a better picture of the average volume of round lots traded daily by each stock. It was felt that if the recommendation made by an advisory service did affect the trading volume of a particular stock, the effect would be the greatest around the recommendation date of each stock. If the trading volume for these days had been included in computing an average daily trading volume, it would have

tended to distort the true picture of the average volume of round lots traded daily by each stock.

After calculating the average daily trading volume in round lots for each of the sixty-four stocks, the stocks were then divided into four classifications according to the average number of round lots traded daily as shown in Table 2-2. The particular service that recommended the stock was not considered in dividing the stocks into the various categories.

TABLE 2-2

Classification of Recommended Stocks According to Average Daily Trading Volume in Round Lots

Round Lots Traded Daily	Number
Over 125	17
75-125	11
25- 75	22
Under 25	<u>14</u>
Total	64

The four classifications of average daily trading volume were determined arbitrarily. The recommended

stocks with an average daily trading volume of over one hundred and twenty-five round lots were considered high volume stocks. In each succeeding classification the recommended stock had a smaller average daily volume of shares traded. The last category, which was considered low average daily trading volume, included recommended stocks with an average daily trading volume of under twenty-five round lots.

An analysis of variance--fixed effects model--a frequently used and versatile statistical tool, was then applied to the data. The fixed effects model assumes that there is no difference among the means or that the means are equal. The various F-ratios determine if a significant difference exists among the means. The findings of the analysis of variance on each of the two groupings are presented and interpreted in the following section. Also, various questions are discussed concerning different aspects of the stock recommendation and its significance to the price and volume movements of stocks.

CHAPTER III

PRESENTATION AND INTERPRETATION OF FINDINGS

By applying an analysis of variance to the two classifications of price and volume index numbers, two pertinent sources of information are obtained. First, the means of the price and volume index numbers in each classification, whether it be according to service or average daily trading volume, are determined. Since the means are of price and volume index numbers adjusted for general market movements, they should fairly well represent the price and volume movement resulting from random and specific factors other than general market movements. Second, from these data the analysis of variance determines the various F-ratios in each classification.

Classification According to Service

The classification of price and volume index numbers according to the advisory service that recommended the stock provides the basis for one method of statistical analysis in this study.

Price Index Numbers. The price index means of each service's recommendations for the thirty-six day

period are presented in Figures 3-1 through 3-5 in the Appendix. Any significant movement of the mean line in each chart over 1.000 occurring on day 13 (R-date) or after should indicate the effect of the stock recommendation on price and volume. In each chart the recommendation date of all stocks takes place on day 13. The F-ratios determined for each category are presented in Table 3-1.

TABLE 3-1

Analysis of Variance of Price Index
Numbers According to Service

Source	Price Index F-Ratio*	Significant
Value Line	1.6136	Yes
Moody's Strong	1.1061	No
Moody's Weak	1.0098	No
Standard and Poor's Strong	2.2692	Yes
Standard and Poor's Weak	1.5574	Yes

*Tested at the 5% significance level, any ratio above 1.4265 is considered significant. At a 5% level of significance one would expect on the average one test in every twenty to yield an erroneous verdict of significance purely as a result of chance variation.

In reviewing the charts of the price index means (Figures 3-1 through 3-5), it is apparent that the service which exhibits the greatest immediate price movement after recommendation is Value Line (Figure 3-1). After reaching a maximum on day 14 (which is one day after recommendation) the Value Line mean line remains at a relatively high level for the next two days, then follows a somewhat irregular pattern that fluctuates around 1.000 through the end of the period under study. The F-ratio indicates that there is a significant difference among the means of the thirteen Value Line recommendations. The results of the F-ratio test tend to support the findings previously presented. Both the movements in the price index means and the finding of a significant difference among the index means over the thirty-six day period for the recommendations of Value Line tend to support the hypothesis that the recommendations are contributing to the price movement of these stocks.

Although Moody's recommendations are divided into strong and weak categories (Figures 3-2 and 3-3) neither category indicates much price movement after recommendation. The mean lines of the two categories fluctuate near 1.000 for almost the entire period, although the mean line of Moody's weak category shows a sharp drop below 1.000

around the recommendation date. The F-ratios indicate that there is not a significant difference among the means of the two categories. The findings suggest that the stock recommendations of these services, on balance, have very little effect on the price of the stocks during the period under investigation. Since there is no evidence that a significant price effect has been isolated in these categories, any variation in the price index means appears to be caused by random factors that affect the day-to-day movement of the market, or specific factors that this study does not consider. One similar factor in the two categories is that they reach a maximum on day 30 (seventeen days after R-date), which in itself does not indicate that the recommendations have a great deal of effect on price movement.

The last two categories of price index means classified according to service are Standard and Poor's strong and weak categories (Figures 3-4 and 3-5). Although the mean line of Standard and Poor's strong category is materially below Value Line's mean line at the recommendation date, it also shows an apparent price movement caused by the recommendation. The mean line starts a sharp upward movement on the recommendation date and reaches a maximum on day 15 (two days after R-date). The mean

line then follows an irregular downward movement until day 23, when an upward movement occurs lasting through day 28 (fifteen days after R-date), and then gradually declines through the end of the period studied. The findings of the F-ratio test, coupled with this observation, tend to support the hypothesis that recommendations have an immediate effect on the price movement of these stocks. Also, the results suggest that the recommendations may cause a secondary price movement anywhere from ten to fifteen days after recommendation.

The price index means of Standard and Poor's weak group follow a very erratic pattern after the recommendation date (Figure 3-5). Although the mean line remains above 1.000 after recommendation, it does not reach a maximum until day 21 (eight days after recommendation), then it goes into a declining movement until very near the end of the period when it approaches the maximum on day 33 (twenty days after recommendation). Even though the F-ratio indicates there is a significant difference among the index means, the pattern of the price index mean line does not show a significant movement during the period of the recommendation date and the days immediately following to indicate that the recommendation has caused an immediate price effect on the stocks. This finding

suggests that the stock recommendation does not significantly affect price movement in this category, and that other factors not determined in this study may affect the movement of the price index mean line.

Volume Index Numbers. The means of the volume index numbers classified according to advisory service, Figures 3-10 through 3-14 in the Appendix, present a different picture than means of the price index numbers in the same classification. The variation of the mean volume indices is considerably larger and more erratic than that of the price indices. The mean line of the volume index numbers ranged from a low of 0.750 to a high of almost 2.000 on some charts (Figures 3-10, 3-11, and 3-13). The various F-ratios for each category are presented in Table 3-2.

From observing the charted volume index means, it is apparent that a large variation in their day-to-day movement is evident throughout the entire thirty-six day period. The F-ratios of the volume index numbers indicate that there is a significant difference among the index means of Value Line, Moody's weak, and Standard and Poor's strong categories, while the other two categories, Moody's strong and Standard and Poor's weak, indicate no significant difference among the means.

TABLE 3-2

Analysis of Variance of Volume Index
Numbers According to Service

Source	Volume Index F-Ratio*	Significant
Value Line	1.6354	Yes
Moody's Strong	1.3748	No
Moody's Weak	1.5610	Yes
Standard and Poor's Strong	1.5324	Yes
Standard and Poor's Weak	0.8376	No

*Tested at the 5% significance level, any ratio above 1.4265 is considered significant. At a 5% level of significance one would expect on the average one test in every twenty to yield an erroneous verdict of significance purely as a result of chance variation.

The results of the F-ratio tests would tend to indicate that the recommendations of the three categories are contributing to the volume movement of the stocks. But, in fact, observation of the volume index mean line of these three categories shows that only Standard and Poor's strong category follows a pattern that would indicate that the most significant volume variation

occurs during the period of the recommendation date and the days immediately following.

The findings suggest that only the recommendations of Standard and Poor's strong category appear to contribute to the volume movements of these stocks. There is far too much variation in the volume index mean lines of the other categories occurring at times other than the period of the recommendation date and the immediately following days to indicate that the recommendation causes the volume index mean line to be significantly higher during that period than at other times.

Classification According to Average

Daily Trading Volume

In order to determine further if the stock recommendation of an investment advisory service does affect the price and volume movement of a particular stock, the adjusted price and volume index numbers for each recommended stock, used in earlier testing, are divided into four categories according to their average daily trading volume in round lots as shown in Table 2-2. As stated previously, the service that recommended the stock was not considered in categorizing the recommended issues, for this part of the study. The four categories of price

and volume index numbers were subjected to the same tests as the index numbers classified according to service.

Price Index Numbers. The movements of the price index means for the thirty-six day period of each category classified according to average daily trading volume are presented in Figures 3-6 through 3-9 in the Appendix.

From observation the charted price index means suggest that three categories: (1) those stocks with an average daily trading volume of over one hundred and twenty-five round lots, (2) those between seventy-five and one hundred and twenty-five round lots, and (3) those between twenty-five and seventy-five round lots (Figures 3-6, 3-7, and 3-8), show very little significant price movement on or shortly after the recommendation date. The category with an average daily trading volume of between seventy-five and one hundred and twenty-five round lots does indicate a significant movement in the price mean line starting around day 19 and reaching a maximum on day 22 (nine days after recommendation).

The charted price index means of the recommended issues with an average daily trading volume of under twenty-five round lots does indicate a significant movement beginning on day 13 (R-date) and reaching a maximum on day 16 (three days after recommendation), and continues

at a relatively high level until day 20 (seven days after recommendation), and then goes into a sharp decline before making a gradual, but very small, recovery lasting through the end of the period.

The price index F-ratios for each category are presented in Table 3-3. The results of the F-ratio test to a great extent support the findings previously presented.

TABLE 3-3

Analysis of Variance of Price Index Numbers

According to Average Daily Trading Volume

Average Daily Trading Volume in Round Lots	Price Index F-Ratio*	Significant
Over 125	0.6161	No
75-125	1.7722	Yes
25- 75	0.5671	No
Under 25	3.1074	Yes

*Tested at the 5% significance level, any ratio above 1.4265 is considered significant. At a 5% level of significance one would expect on the average one test in every twenty to yield an erroneous verdict of significance purely as a result of chance variation.

The finding of a significant difference among the index means over the thirty-six day period for the recommended issues with an average daily trading volume of under twenty-five round lots, along with the movements in the price index means of this category, tend to support the hypothesis that the recommendations do have an immediate effect on the price of these stocks. This might suggest that the people that made use of these recommendations had a speculative motive for investing in the stocks, which because of their low average daily trading volume are presumably little known stocks, and conceivably speculative in nature.

Although the F-ratio indicates there is a significant difference among the means of the category with an average daily trading volume of between seventy-five and one hundred and twenty-five round lots, the movement of the price index means does not indicate that the recommendations have an immediate effect on the price movement of these stocks. The fact that the movement of the price index means in this category do not show a significant movement until day 19 (six days after recommendation) while the F-ratio does show a significant difference among the means suggests several possible explanations: (1) a delayed action response to the recommendation, and (2) the small

sample size may have caused unwarranted results. These explanations are only assumptions, and conceivably the reason for this finding is caused by factors not determined by this study.

The findings of the F-ratio indicate that there is no significant difference among the means over the thirty-six day period of those recommended issues with an average daily trading volume of over one hundred and twenty-five round lots and between twenty-five and seventy-five round lots. These results support the findings of the price index means, indicating that the recommendations have no immediate effect on the price of the stocks in these categories.

Volume Index Numbers. The means of the volume index numbers classified according to average daily trading volume are presented in Figures 3-15 through 3-18 in the Appendix. The variation of the mean volume indices, which follows a similar pattern to those classified as to service, is considerably larger than that of the price indices of this classification.

The movements of the volume index means suggest that only the category with an average daily trading volume of under twenty-five round lots (Figure 3-18) shows a pattern that would indicate that the recommendation

contributes to the volume movement on the recommendation date and the days immediately following.

As was the case when the index numbers were classified according to service, there is too much variation in the volume indices of the other categories occurring at times other than during the period of the recommendation date and the days immediately following to indicate that the recommendation causes the volume indices to be significantly higher during that period than at other times. This great variation suggests that other factors are influencing volume movement of these categories throughout the thirty-six day period.

The findings of the F-ratios are presented in Table 3-4. The results of the volume index F-ratios tend to support the findings previously presented. Both the finding of a significant difference among the index means over the thirty-six day period and the movements in the volume index means for the recommendations with an average daily trading volume of under twenty-five round lots support the hypothesis that the recommendations do have an immediate effect on the volume movement of stocks.

The F-ratios in the other categories indicate no significant difference among the index means. This result supports the findings of the charted volume

indices of these categories, indicating that the recommendations are not contributing to the immediate volume movement of these stocks.

TABLE 3-4

Analysis of Variance of Volume Index Numbers
According to Average Daily Trading Volume

Average Daily Trading Volume in Round Lots	Price Index F-Ratio*	Significant
Over 125	1.0070	No
75-125	1.1648	No
25- 75	1.1944	No
Under 25	1.5162	Yes

*Tested at the 5% significance level, any ratio above 1.4265 is considered significant. At a 5% level of significance one would expect on the average one test in every twenty to yield an erroneous verdict of significance purely as a result of chance variation.

Hypotheses Accepted or Rejected

Price Effect. The findings of this study regarding the immediate effect of investment advisory services on the price of recommended stocks presents an inconsistent pattern throughout the categories examined.

The classification of the price data according to service indicates that only two of the five categories tested show that the recommendations appear to have a significant immediate effect on the price of the recommended stock. The classification of the price data according to average daily trading volume indicates that only one of the four categories tested shows that the recommendations are significantly contributing to immediate price movement. The one category that indicates a significant immediate price effect consists of those recommended issues with an average daily trading volume of under twenty-five round lots. This category represents approximately one-fourth of the recommended stocks tested. All of the other categories that are used in this study, whether they are classified according to service or average daily trading volume, indicate that the recommendations have very little immediate effect on the price of recommended stocks.

The findings indicate that in less than one-half of the recommendations tested is there evidence to support the initial hypothesis. Therefore, it is concluded that on an over-all basis, the recommendations in this study

are inconsistent in showing an immediate effect on the price of the stocks recommended.

Volume Effect. The findings of the study concerning the immediate effect of investment advisory services on the volume movement of recommended stocks follows a pattern similar to price movement, insofar as it presents an inconsistent picture throughout the categories examined.

The classification of the volume index data according to service indicates that only one category of the five tested shows that the recommendations have an apparent immediate effect on the volume movement of the recommended stocks. The findings of the volume index data classified according to average daily trading volume reveal that only in the category with an average daily trading volume of under twenty-five round lots is there evidence to support the hypothesis that the recommendations by an advisory service do have an immediate effect on the volume of recommended stocks. The findings for the other categories in this classification offer little evidence that would indicate the recommendation has an immediate effect on volume.

Consequently, as is the case of the price index data, the findings of this study indicate that on an

over-all basis the evidence is inconsistent in showing an immediate effect on the volume movement of the stocks recommended.

Various Aspects of the Effect
of Stock Recommendations

Various other questions remain concerning both price and volume effects. Why is the apparent effect on price and volume movement so inconsistent throughout the study? In the categories that do indicate that the recommendation does appear to have an immediate effect on price and volume movements, how large is the effect of the recommendation? When does the effect begin? How long does the effect last? These questions and their implications are discussed in this section.

Price Effect. The findings presented thus far reveal that the recommendations apparently cause an immediate price movement in only a small portion of categories tested, while the other categories tested did not indicate a significant movement during the period of the recommendation date and the days immediately following to say that the recommendation causes an immediate effect on price. Why is the apparent immediate effect on price not consistent throughout all the stock

recommendations? The earlier studies conducted on this subject indicate that the recommendation of a stock by an investment advisory service appeared to have an immediate effect on price movement, starting on R-day and lasting anywhere from three to seven days afterward. The inconsistent findings of this study suggest the possibility that the inconsistency is due to the people who have access to the published recommendations, the investing public. The stock recommendation supposedly acts as a stimulus to the investor to buy the stock in question. If this is considered a feasible point, then the possibility exists that the investing public was not sufficiently stimulated to buy a large portion of the recommended stocks used in this study, thereby indicating the inconsistent effect on price throughout most of the recommendations. Undoubtedly there are other factors not determined in this study that cause the inconsistent price effect throughout the recommendations.

In the categories that did appear to have a significant effect on price, the pattern of the charted price index means indicates that the initial effect of the stock recommendation on price movement is apparent on day 13 (R-day), as a sharp upward movement is evident. The effect on the price movement of the recommended stock

is apparent through the second or third day following recommendation. In an absolute sense the immediate effect on price is small, as the highest movement of the price index mean is to slightly above 1.03. There is some indication that the effects may carry through for a few weeks more, as the charted price means show an apparent secondary price movement anywhere from seven to twenty days after recommendation. This apparent secondary price movement suggests that some of the people who are aware of an advisory service's recommendation wait until after the immediate price movement has subsided, and the price of the stock has possibly declined before buying the stock and thereby causing a secondary price movement well after the recommendation date.

Volume Effect. The reason for the inconsistent findings of the effect on volume at the time of recommendation is that in most of the categories tested there is far too much variation in the day-to-day volume movement occurring at times other than during the period of recommendation and the days immediately following to indicate that the recommendation causes a significantly higher movement in this period than at other times. The cause of the great variation in the day-to-day volume

movement throughout the thirty-six day period could not be determined by this study.

In only two of the categories tested, Standard and Poor's strong group and those issues with an average daily trading volume of under twenty-five round lots, does the findings indicate that the recommendations appear to affect volume movement. In these categories the apparent effect begins on day 13 (R-day) and continues for a period of two or three trading days, in a very similar manner to price movement. Unlike price movement, the immediate volume movement is marked by a very sharp increase, with the volume index means ranging from approximately one and one-half to two times above the base of 1.000. The volume movement is too erratic throughout the remainder of the period to indicate any other effects from the recommendation.

Prior Movement of Recommended Stocks

The causes of prior movement of a recommended stock are considered an important area, not only in this study, but for stock recommendations in general, in determining how stock recommendations affect price movement in particular, and volume movement. The

significant upward movement of a recommended stock prior to publication date points to one of two possibilities. First, for various reasons, the price of the stock may already have been moving upward. Thus, the information concerning the recommendation may have been available to others who had come to the conclusion to buy. The publication of the recommendation only supplies added emphasis to a movement that is already under way. A second possible cause of prior movement of recommended stocks is advanced notice of the recommendation, enabling enough people to buy the stock to cause an upward movement in the price of the stock.

By examining the charted index means of the price and volume figures already adjusted for market movement, it is evident that there is no apparent movement to indicate that the recommended stocks are outpacing the market in either price or volume movement immediately prior to recommendation. This result would tend to rule out the possibility that people have advance notice of the recommendation.

Since the recommendations do not appear to show any substantial effect on price and volume movement immediately after recommendation, a question arises concerning the action that the investment advisory

services take to insure that prior knowledge of recommended stocks is not used to financial advantage. In order to better illustrate the investment advisory services' policies concerning prior knowledge of recommended stocks by employees, an excerpt from a letter received from the Moody's Investors Service is presented:

To make sure that individuals with prior knowledge of to-be-published material do not benefit at the expense of "outsiders," officers and employees of Investment Advisory organizations are governed by certain regulations. One of these is SEC Rule 204-2 which requires that we report, within a specified time limit, all purchase and sale transactions, the specific dates, amounts involved, and the broker, dealer or bank through whom effected. There is also another rule to which we are subjected as it relates to the purchase by officers and employees of securities which are being recommended for the first time. That is, if a stock is being suggested for purchase, and has not been previously recommended, no Moody's officer or employee is allowed to purchase this security within five days of actual publication date of the recommendation. This waiting period is considered adequate for our Stock Survey to reach our subscribers.¹⁹

Although this information might make one tend to think that there are sufficient controls to prevent advance notices of recommended stocks, a notice in the May 26, 1967 issue of Value Line indicates that this is not so, and states how the advisory service is trying

to protect their subscribers against advanced notice of the recommended stock. The statement relates:

Hereafter, any subscriber who notifies the Value Line Investment Survey that he wishes to have it will receive telegraphic advice of the name of the "Especially Recommended" stock that is to be published in the subsequent Selection & Opinion section. A collect telegram will be sent out on the Friday prior to the date of publication of each "Especially Recommended" stock. Whereas this service was previously provided on Monday night, it is felt that the additional day's safeguard against dishonest leaks will be in the best interest of subscribers. We regret the necessity of offering this service. The reason we do is simply that despite all efforts to prevent dishonest disclosure, individuals in some sections of the country continue to receive the name of the "Especially Recommended" stock sometimes as early as Tuesday morning, although the published recommendation is not scheduled to be in the hands of subscribers until Friday.²⁰

Limitations

The findings of this study are based on an analysis of the selected recommendations of only three investment advisory services covering a period of six months. No claim is made regarding the representativeness of the services, which were chosen because of their wide coverage and availability.

One notable limitation is that the effect of the stock recommendation is not isolated from all the other

influences the stock market and the economy bring to bear on an individual security. Even though the data are adjusted for each appropriate New York Stock Exchange Index, the fact remains that no consideration is given to the various industries that make up each index. Also disregarded in this study is the recommendation of another advisory service and the effect it could have on the price and volume movement of a stock during a period of observation.

Although the price index mean values of Value Line and the category with an average daily trading volume of under twenty-five round lots indicate the greatest apparent price effect, this indication does not mean that one should buy all of Value Line's recommendations or recommendations that have a low average daily trading volume made by an advisory service in this study. The fact is that a certain single Value Line recommendation will not do better than a single Standard and Poor's recommendation, or that a single low average daily trading volume recommendation will do better than a single recommendation with a higher average daily trading volume. The mean line suggests that, as a usual case Value Line's recommendations, or recommendations with a low average daily trading volume will indicate a greater

immediate price effect than other groups in their respective classifications.

Although the charted price means, adjusted for market movement, indicate an upward movement, this fact does not assure the price of the stock actually rose after recommendation. Index number means would rise above the significance level of 1.000 as the stock price falls at a slower rate than the market average.

CHAPTER IV

SUMMARY AND CONCLUSION

The findings of this study are inconclusive in providing general support for the initial hypotheses that a recommendation by an investment advisory service has an immediate effect on the price and volume of the stock recommended.

The findings reveal that when the data are classified according to service only the recommendations of Value Line and Standard and Poor's strong category indicate that they significantly contribute to the immediate price movement of the stocks. Likewise, when the data are classified according to average daily trading volume only the category with an average daily trading volume of under twenty-five round lots provides support to indicate that the recommendation has an immediate effect on price movement. The immediate effect evidenced by these recommendations appears to begin on the recommendation date (day 13) and continue for two or three trading days. There is some indication that a secondary price effect may exist anywhere from seven to twenty days following the day of recommendation. In the other categories of the two classifications a

strong price effect could not be isolated to indicate that the recommendation causes an immediate price movement.

The same inconclusive results are evident in the findings concerning what immediate effect the recommendation has on volume movement. Only in the Standard and Poor's strong category and the category with an average daily trading volume of under twenty-five round lots is there evidence that the recommendations do have an immediate effect on volume movement. As is the case with the effect on price movement, these recommendations have an effect on volume movement beginning on recommendation date (day 13) and continuing for two or three days. After this period the volume movement is too erratic to indicate any lasting effect from the recommendations. The variation in the day-to-day movement of the volume index means of the other categories tested is too great to indicate that the recommendations are contributing to immediate volume movement.

Although the purpose of this study is to study price and volume effects in general, there is a difference in the performance of the services, insofar as how effective their recommendations reacted in this study.

Recommended stocks with low average daily trading volume indicate the greatest immediate price and volume effect.

Although the analysis proved inconclusive, it is felt that the technique developed in this study should be further pursued as a method for studying the effect of stock recommendations on the price and volume movement of recommended stocks. The technique developed and the findings of this study may suggest many new ideas to the experienced investor and at the same time provide an introduction to a person unfamiliar with the workings of investment advisory services.

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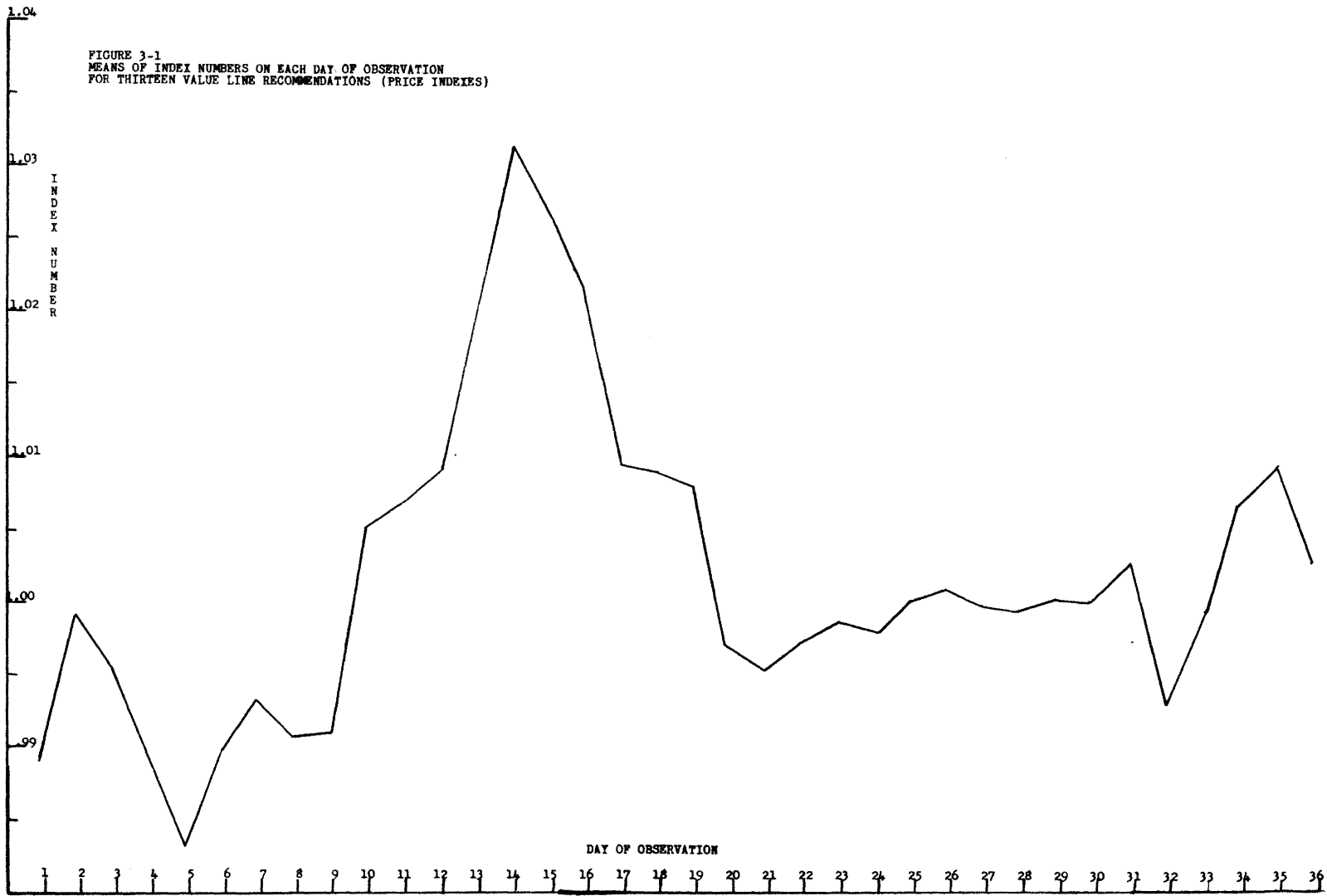
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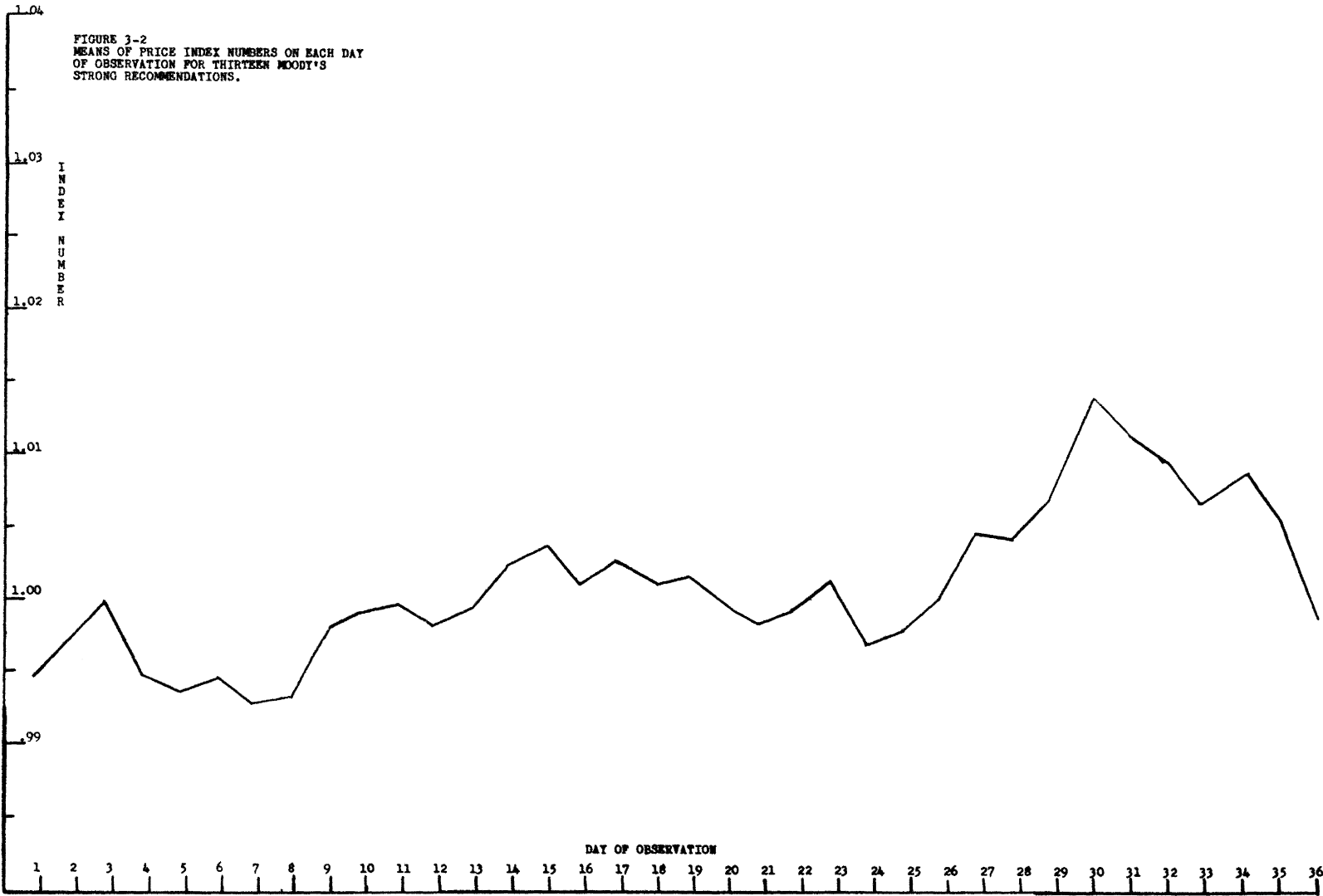
1. U. S. Congress, Investment Advisers Act of 1940, Title II, 76th Cong., 3rd Sess., 1940, Sec. 202(a) (11).
2. U. S. Congress, House, Report of Special Study of Securities Market of the Securities and Exchange Commission, 88th Cong., 1st Sess., (1963), Document No. 95, Pt. 1, Chapter III, p. 359.
3. Ibid., p. 360.
4. J. W. Hazard and M. Christie, The Investment Business, (New York, Evanston, and London: Harper and Row, Publishers, 1964), p. 80.
5. Ibid.
6. Ibid., p. 81.
7. U. S. Congress, House, loc. cit., p. 383.
8. R. Ferber, "Short-Run Effects of Stock Market Services on Stock Prices," Journal of Finance, (March, 1958), pp. 80-95.
9. R. T. Ruff, "The Effect of Selection and Recommendation of a Stock of the Month," Financial Analysts Journal, (April, 1963), pp. 41-43.
10. J. D. Stoffels, "Stock Recommendations by Investment Advisory Services: Immediate Effects on Market Price," Financial Analysts Journal, (March, 1966), pp. 77-85. This study contained some similarities to the author's approach to the subject. A brief explanation is contained in the review of literature, but more will be said about his approach in the next chapter which discusses the methodology of this study and differences between the two approaches will be cited.
11. U. S. Congress, House, loc. cit., p. 359.

12. U. S. Congress, House, loc. cit., p. 359.
13. Ibid.
14. At this time it should be noted that the recommendations of Value Line unlike the other two services are not subdivided as all of their "Especially Recommended" stocks are considered in the strong category.
15. Moody's Investor Survey, April 24, 1967.
16. Moody's Investor Survey, April 3, 1967.
17. Stoffels, loc. cit., pp. 77-86.
18. At this point it should be mentioned that in doing earlier research in attempting to develop a method of analysis for this study a five day moving average was applied to a small sample of the collected data. The fluctuations in the five day moving average when applied to both price and volume data were too volatile to reveal any conclusive results.
19. Moody's Investor Service, Inc., Letter dated June 30, 1967.
20. Value Line Investment Service, May 26, 1967.

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APPENDIX





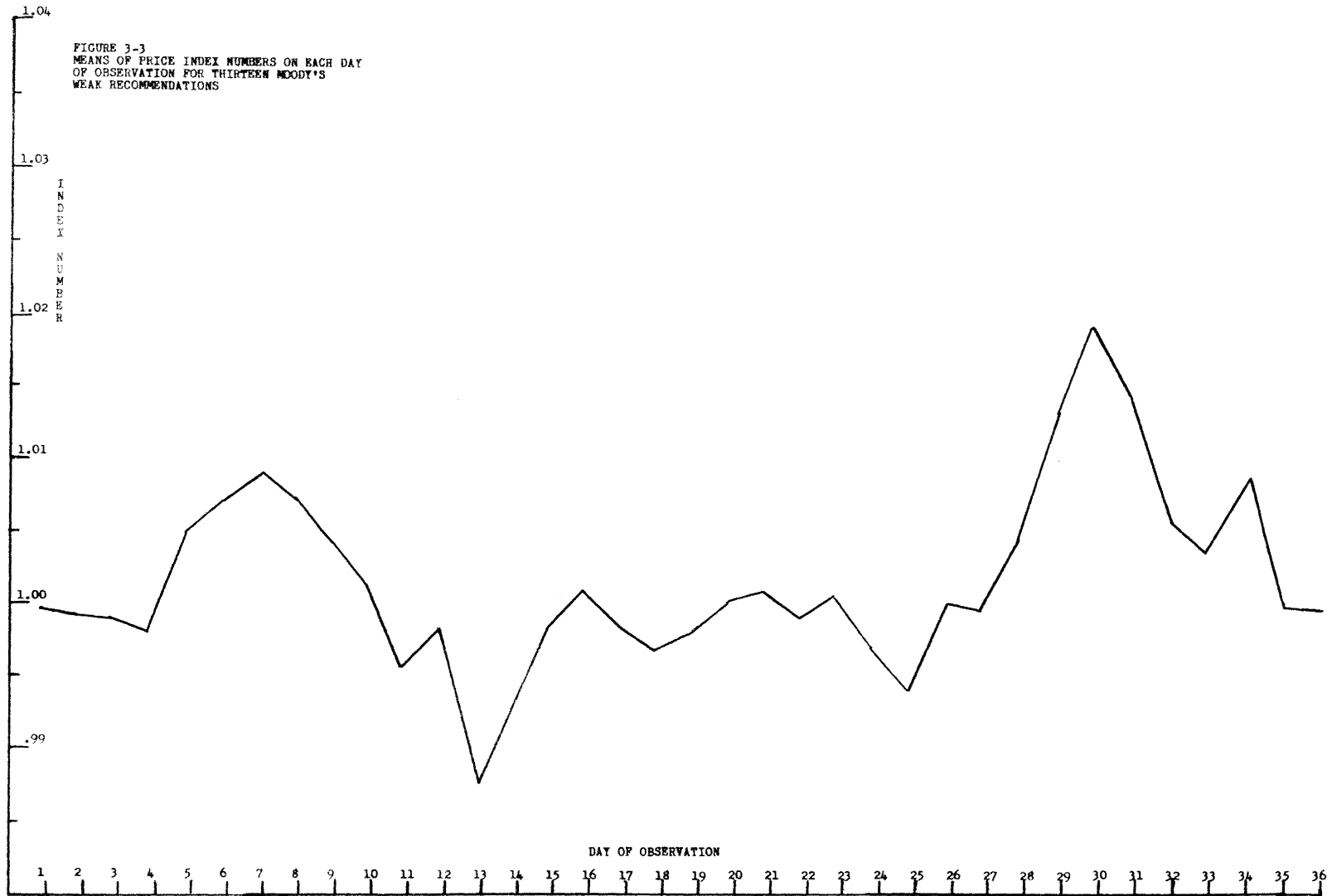


FIGURE 3-4
MEANS OF PRICE INDEX NUMBERS ON EACH DAY
OF OBSERVATION FOR THIRTEEN STANDARD & POOR
STRONG RECOMMENDATIONS

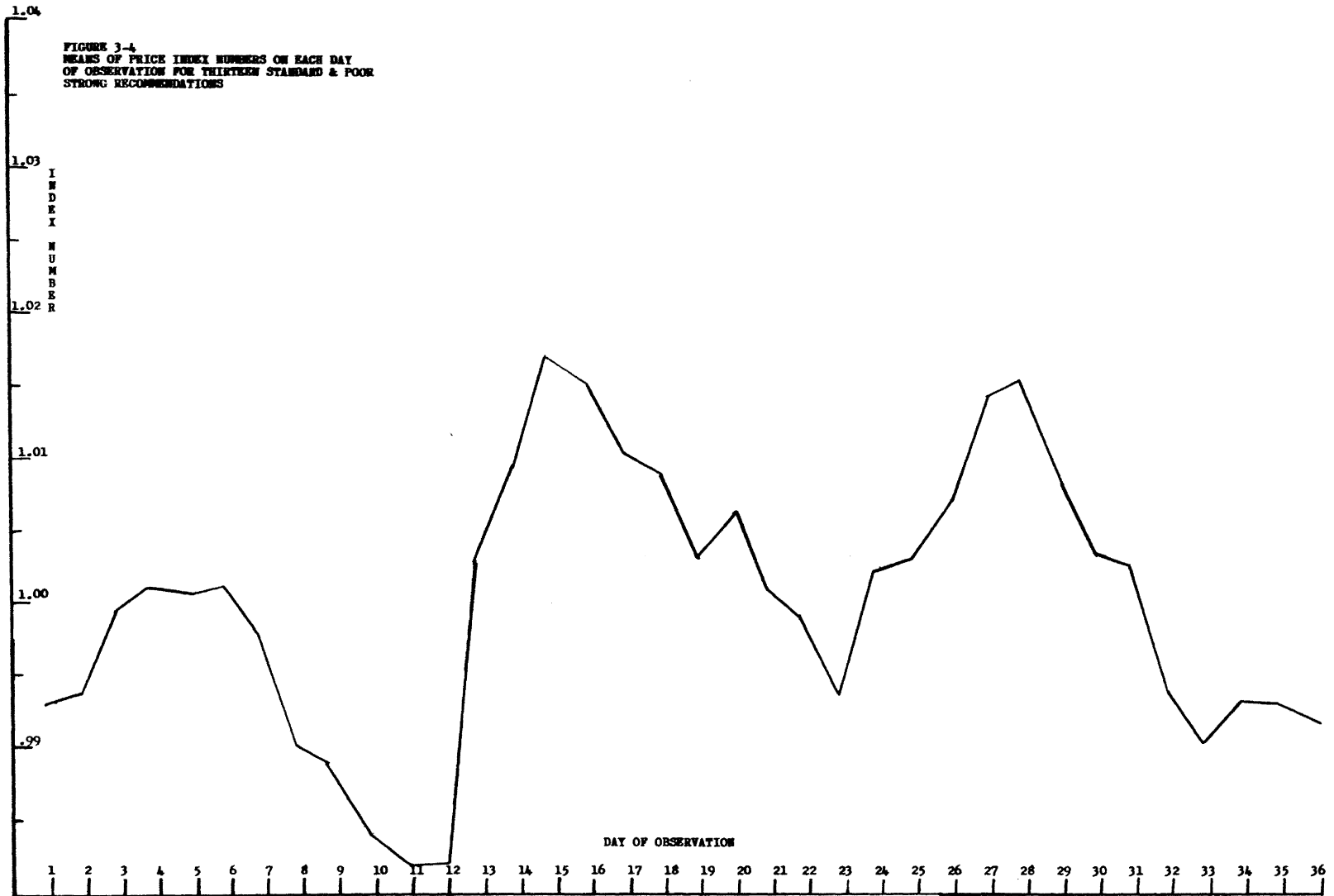


FIGURE 3-5
MEANS OF PRICE INDEX NUMBERS ON EACH DAY
OF OBSERVATION FOR TWELVE STANDARD & POOR
WEAK RECOMMENDATIONS

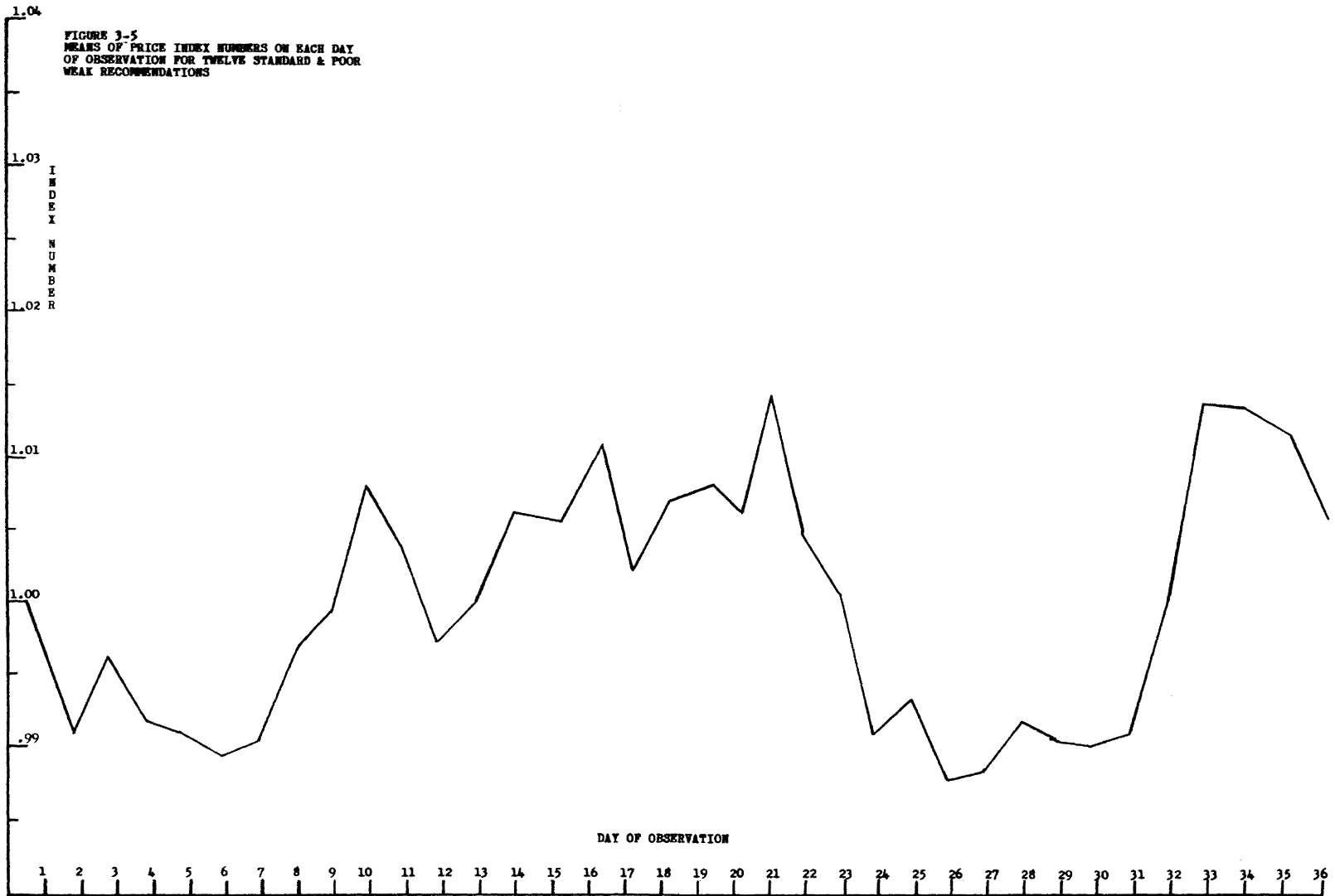


FIGURE 3-6
MEANS OF PRICE INDEX NUMBERS ON EACH DAY
OF OBSERVATION FOR SEVENTEEN RECOMMENDED
STOCKS WITH AN AVERAGE DAILY TRADING
VOLUME OF OVER 125 ROUND LOTS

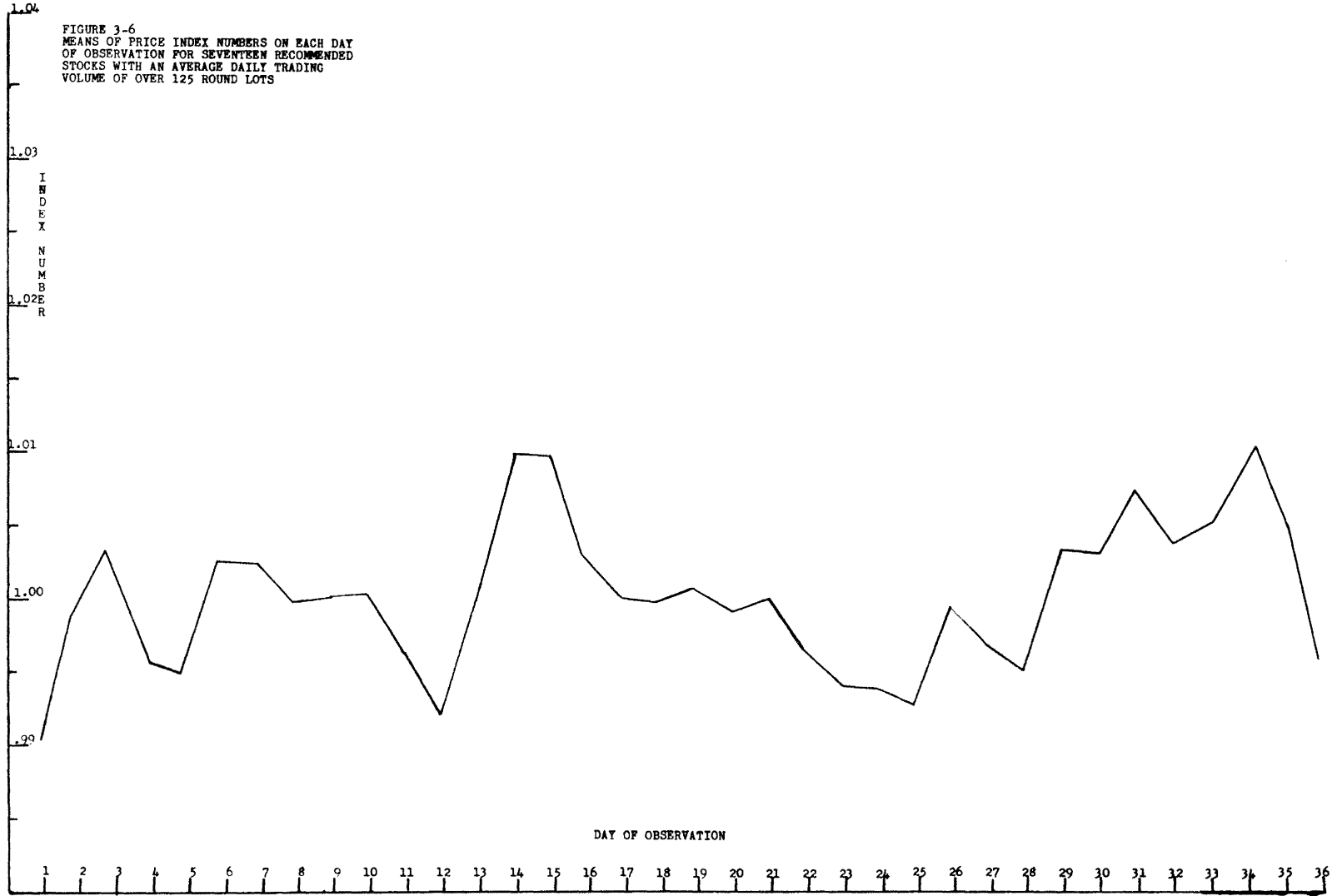
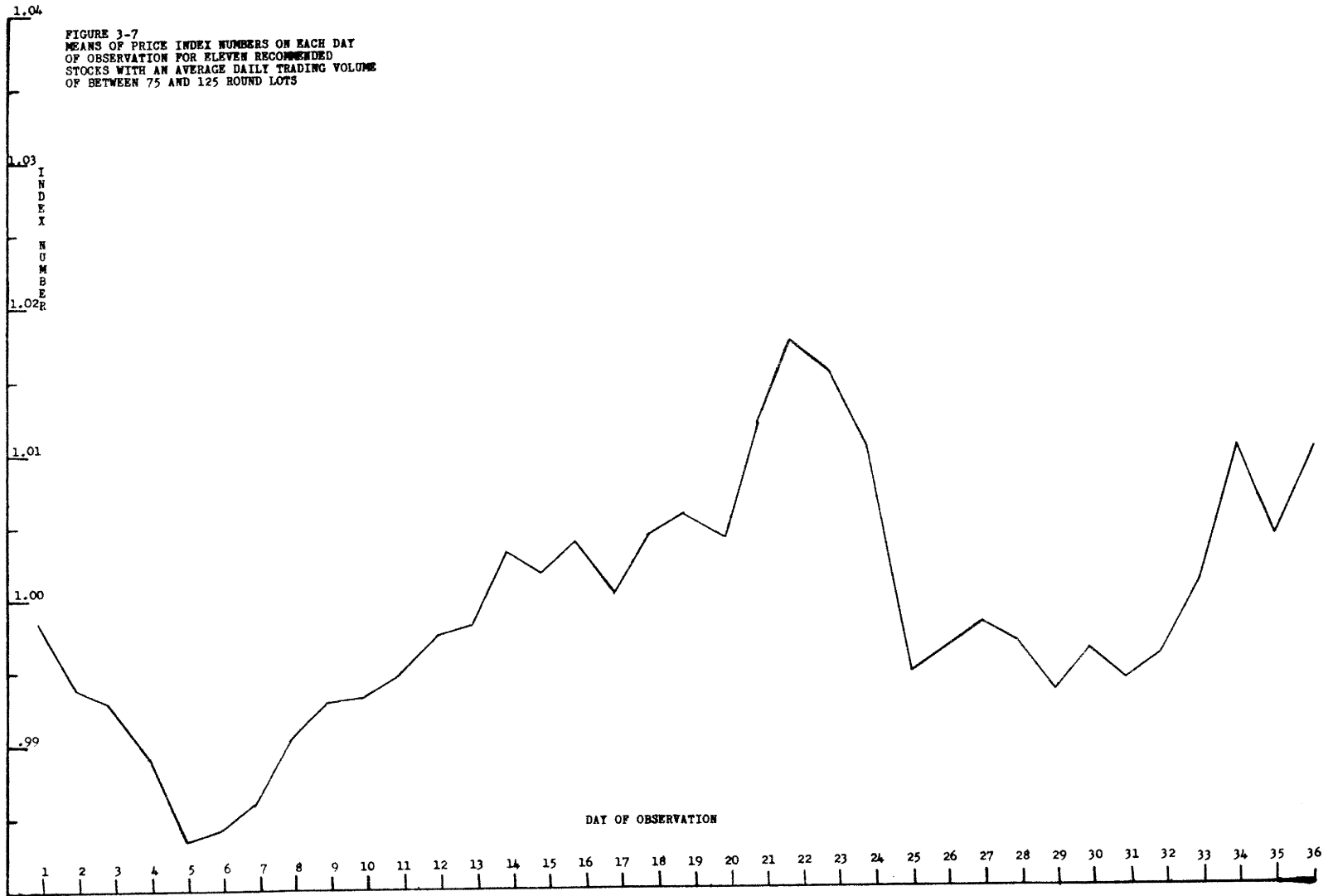
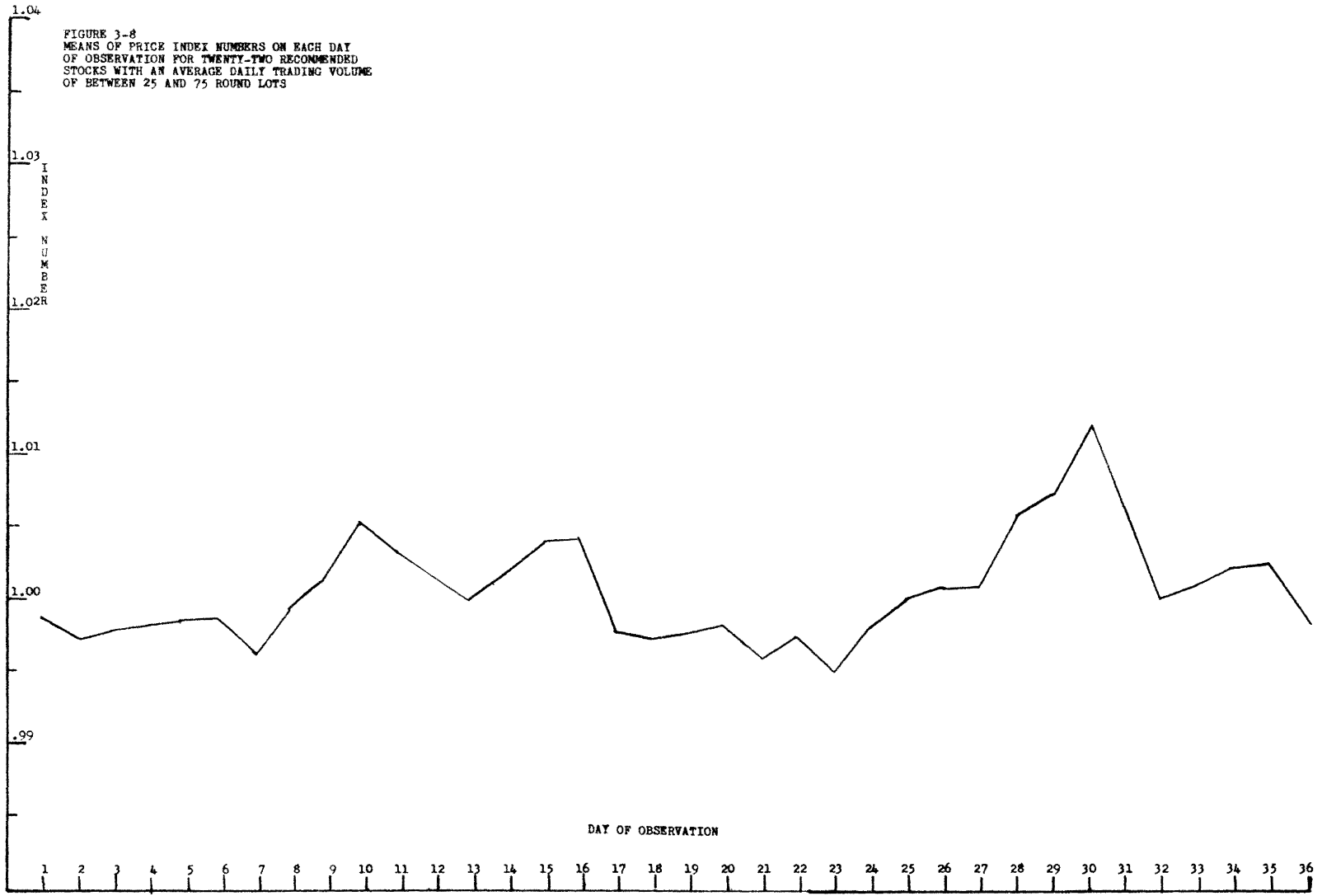
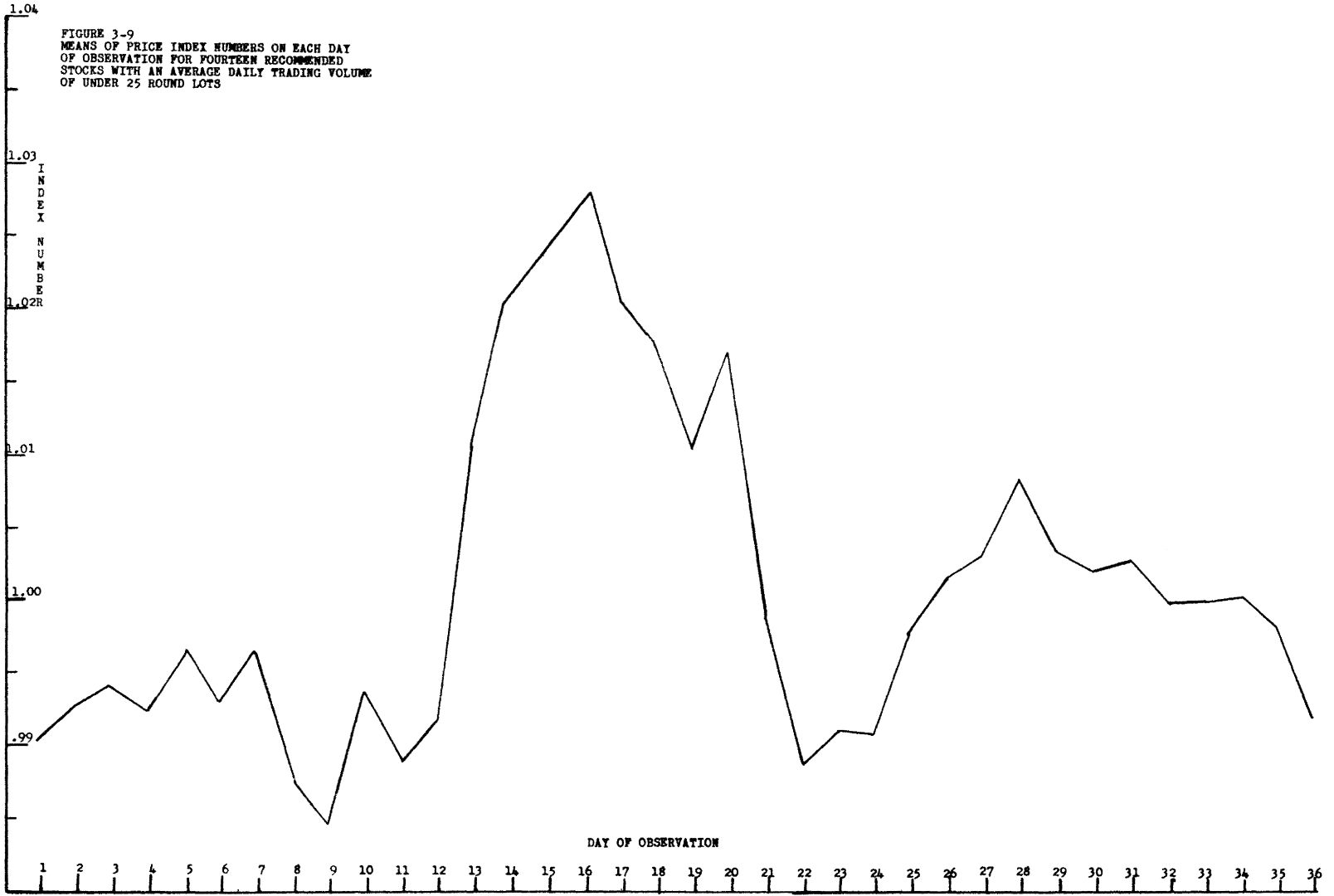
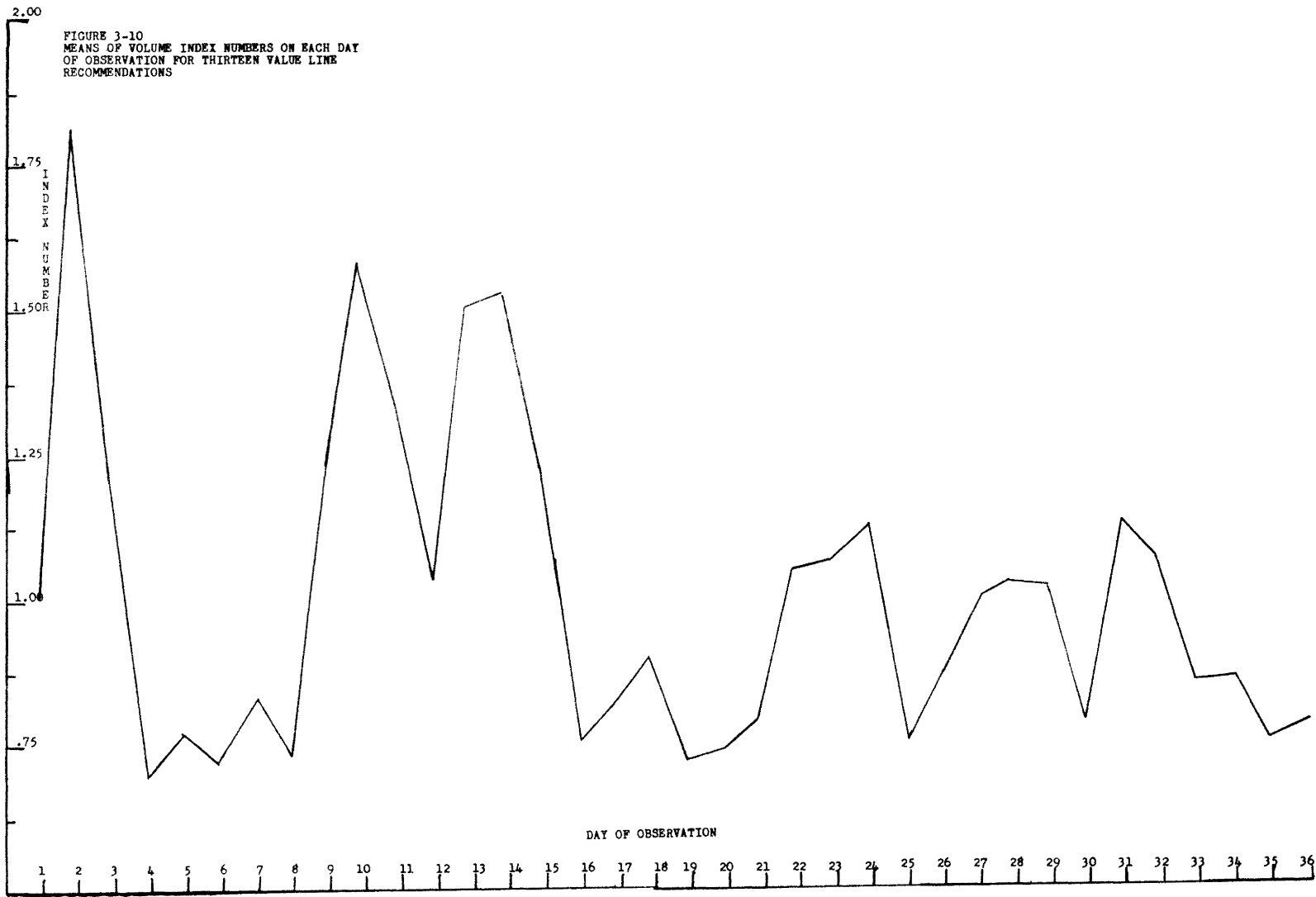


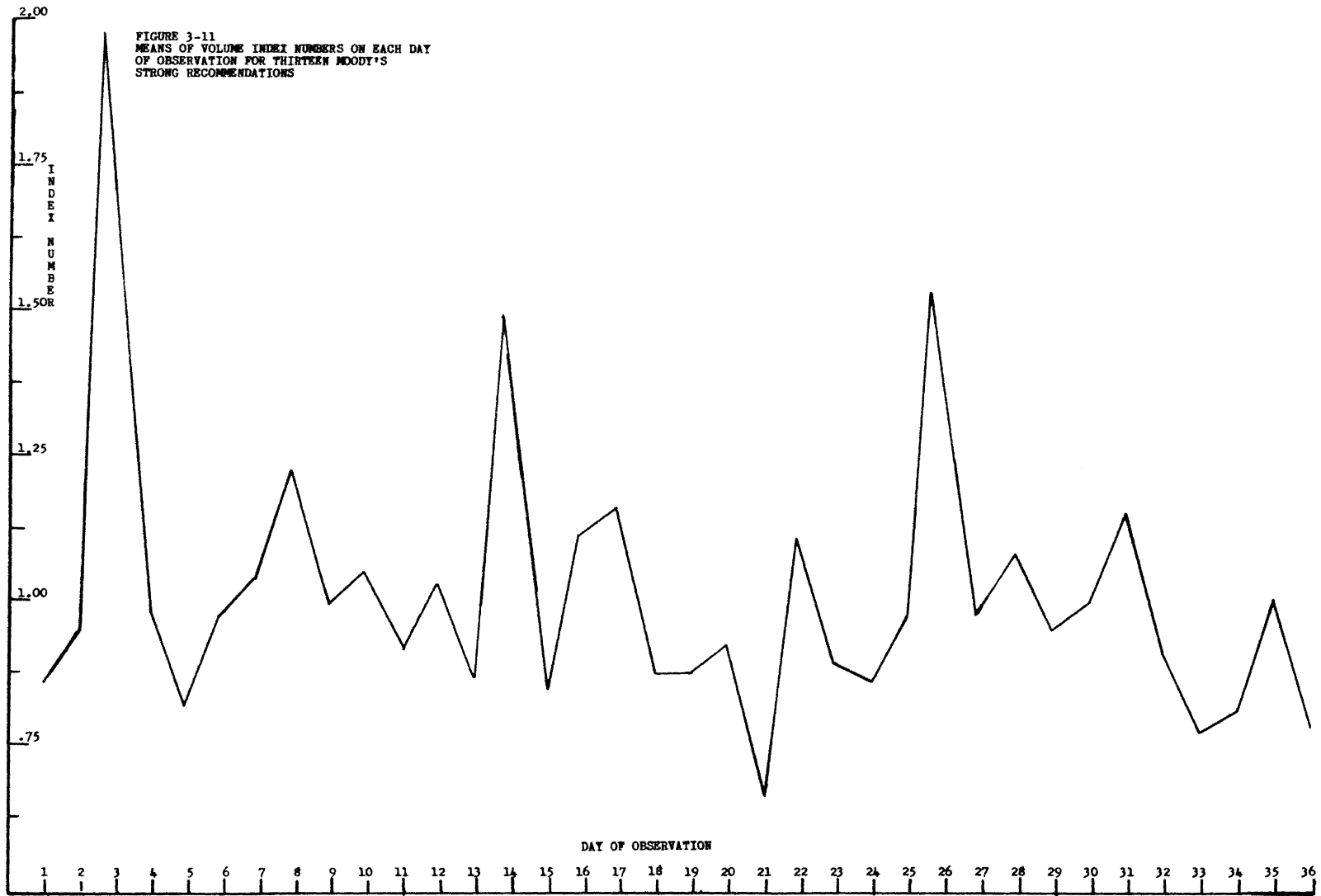
FIGURE 3-7
MEANS OF PRICE INDEX NUMBERS ON EACH DAY
OF OBSERVATION FOR ELEVEN RECOMMENDED
STOCKS WITH AN AVERAGE DAILY TRADING VOLUME
OF BETWEEN 75 AND 125 ROUND LOTS

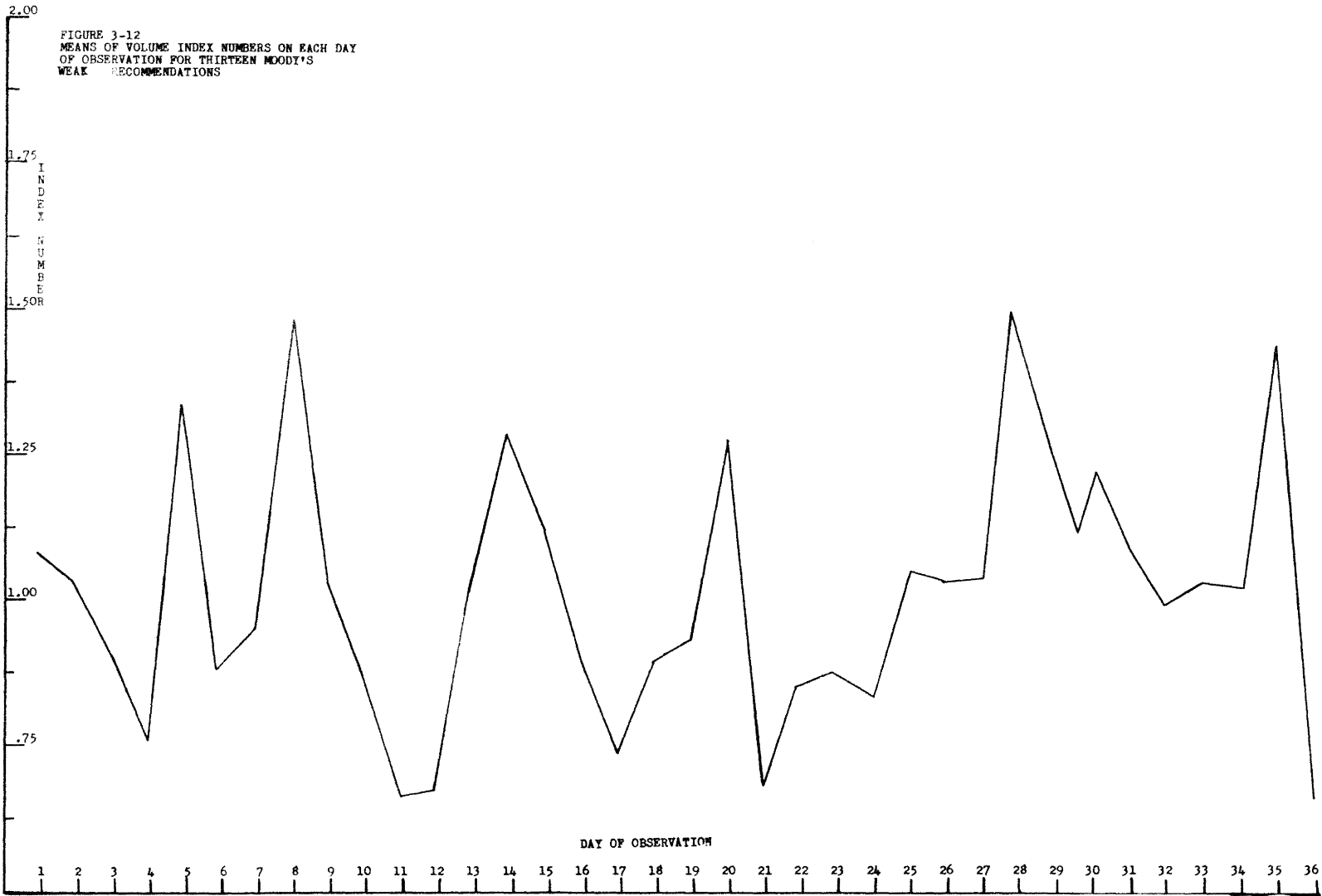


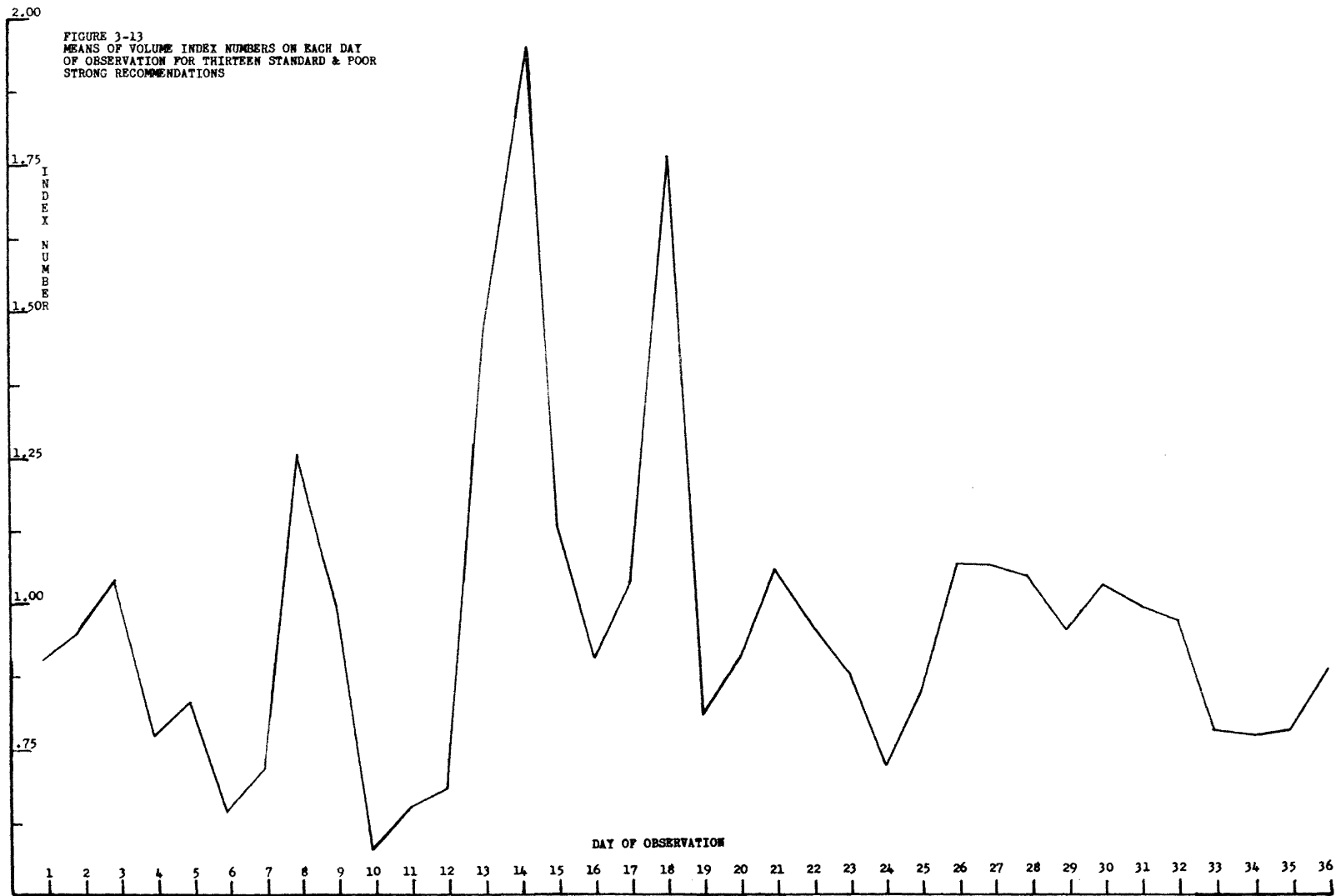


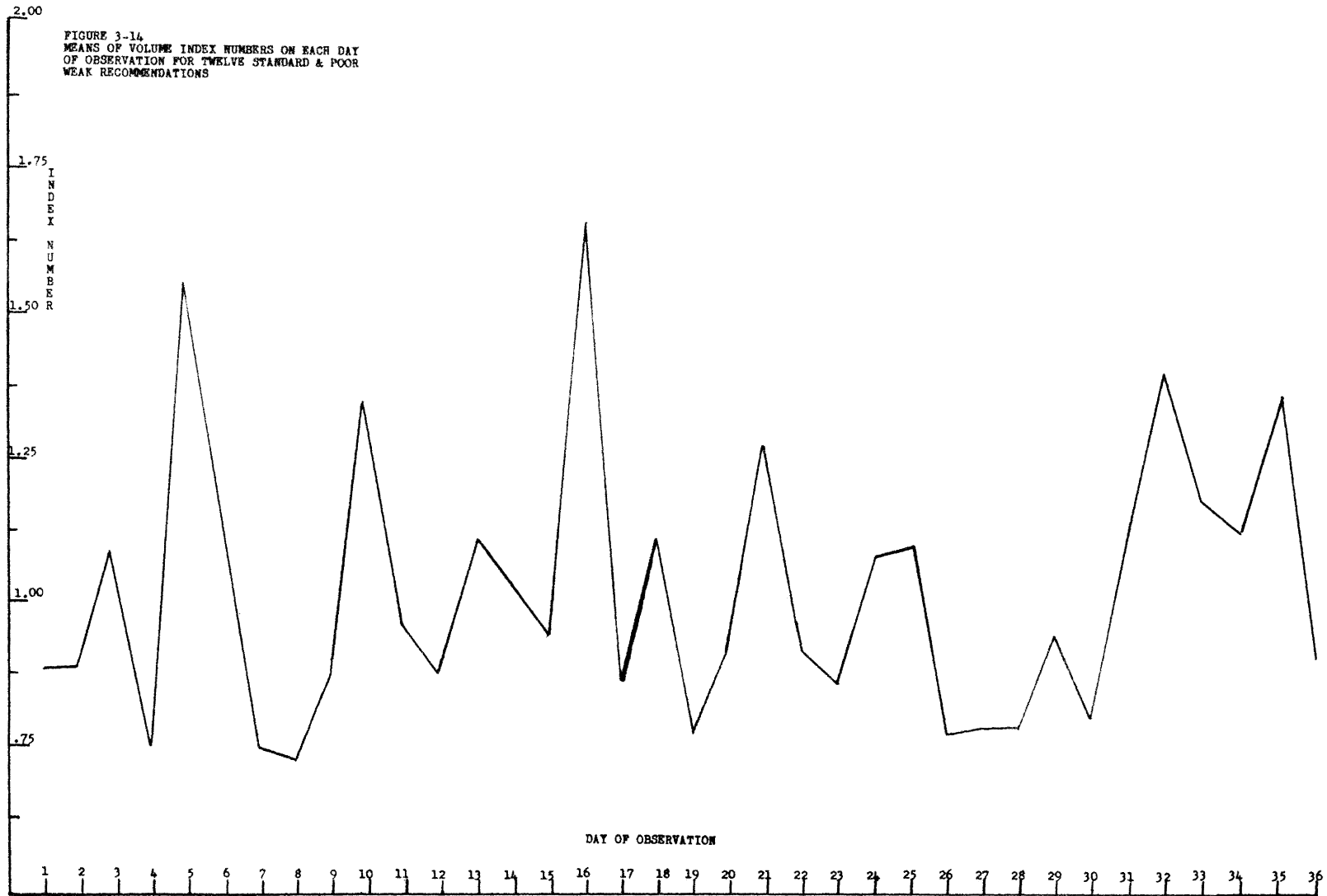












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FIGURE 3-15
MEANS OF VOLUME INDEX NUMBERS ON EACH DAY
OF OBSERVATION FOR SEVENTEEN RECOMMENDED
STOCKS WITH AN AVERAGE DAILY TRADING VOLUME
OF OVER 125 ROUND LOTS

1.75
I
N
D
E
X

N
U
M
B
E
R

1.50

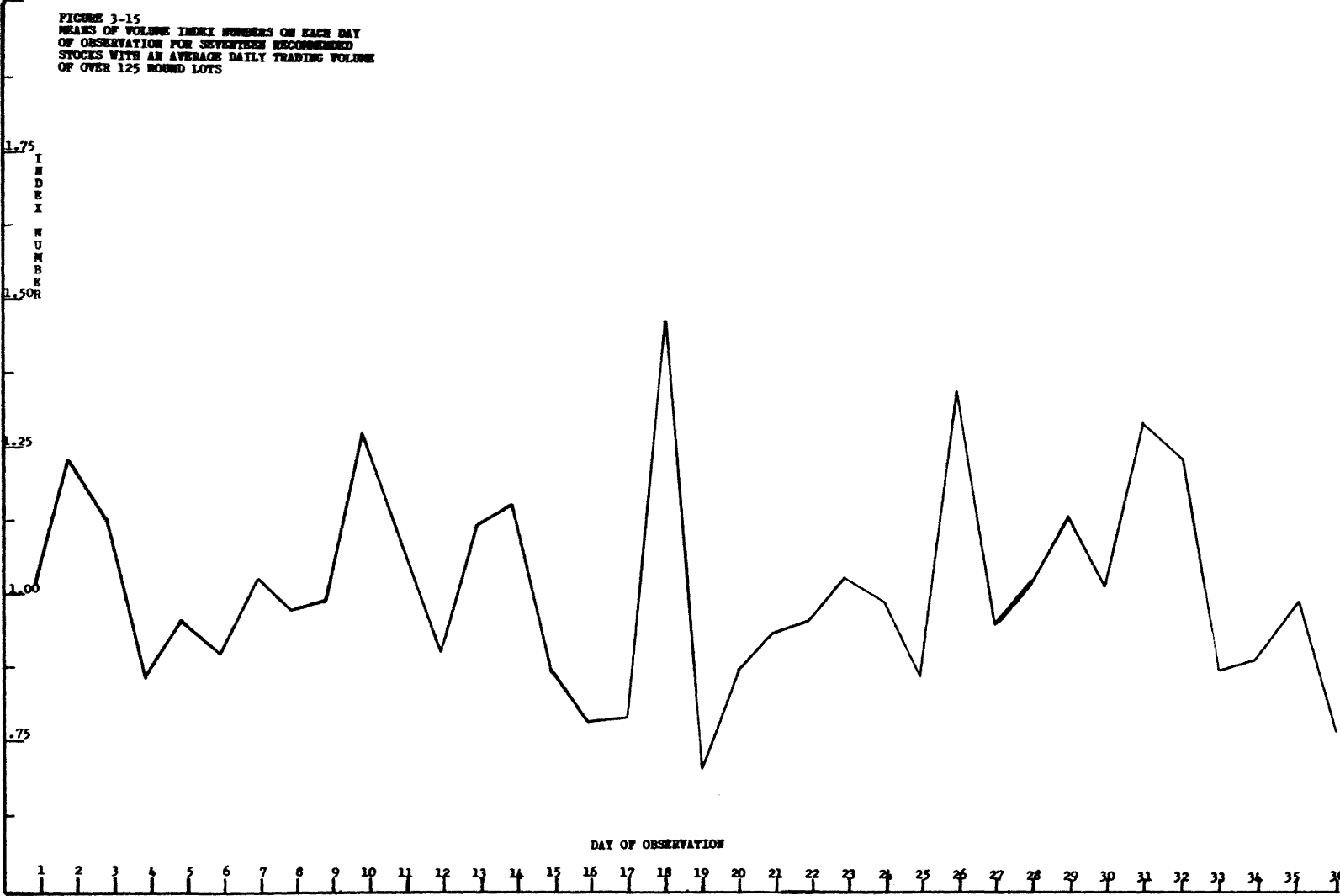
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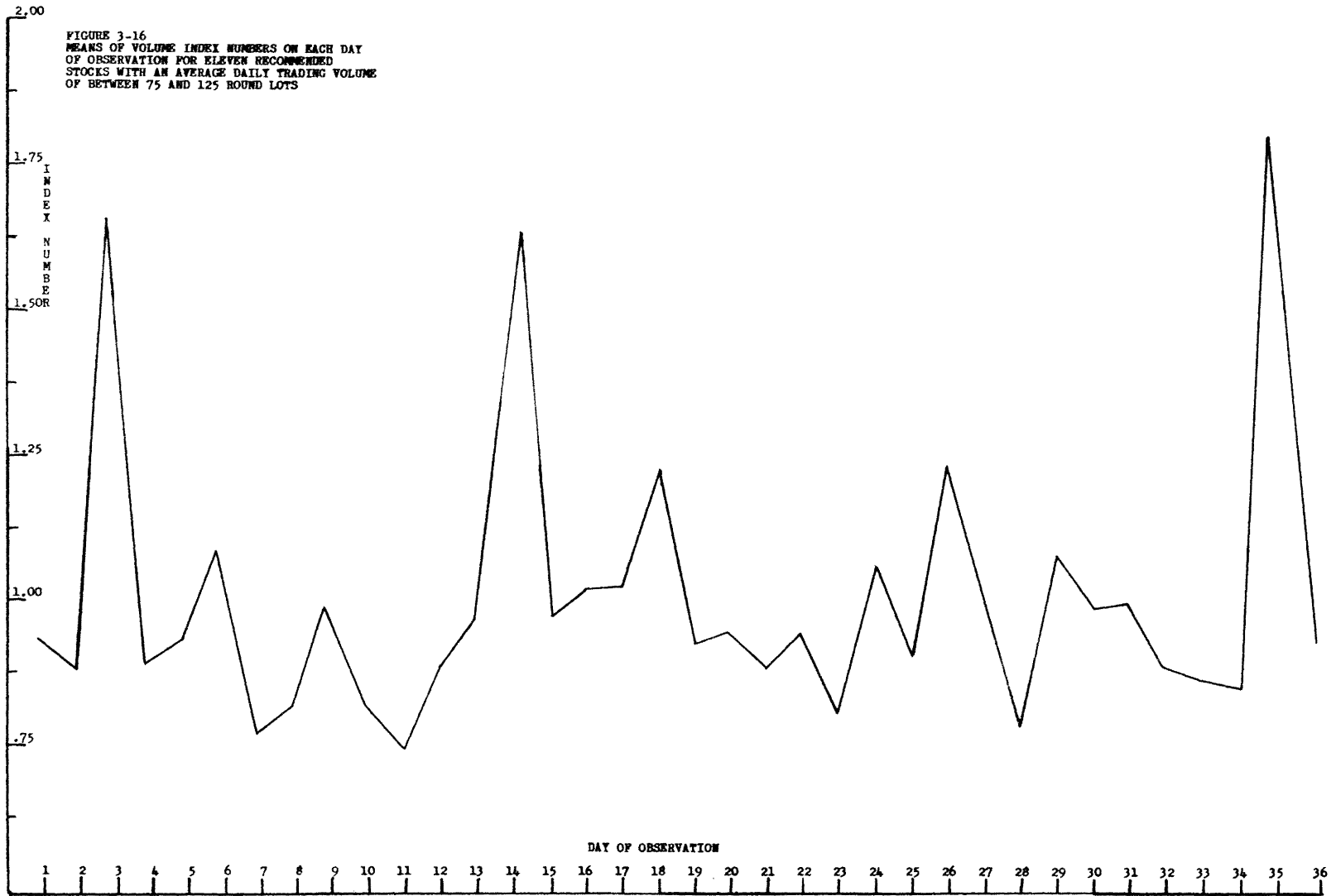
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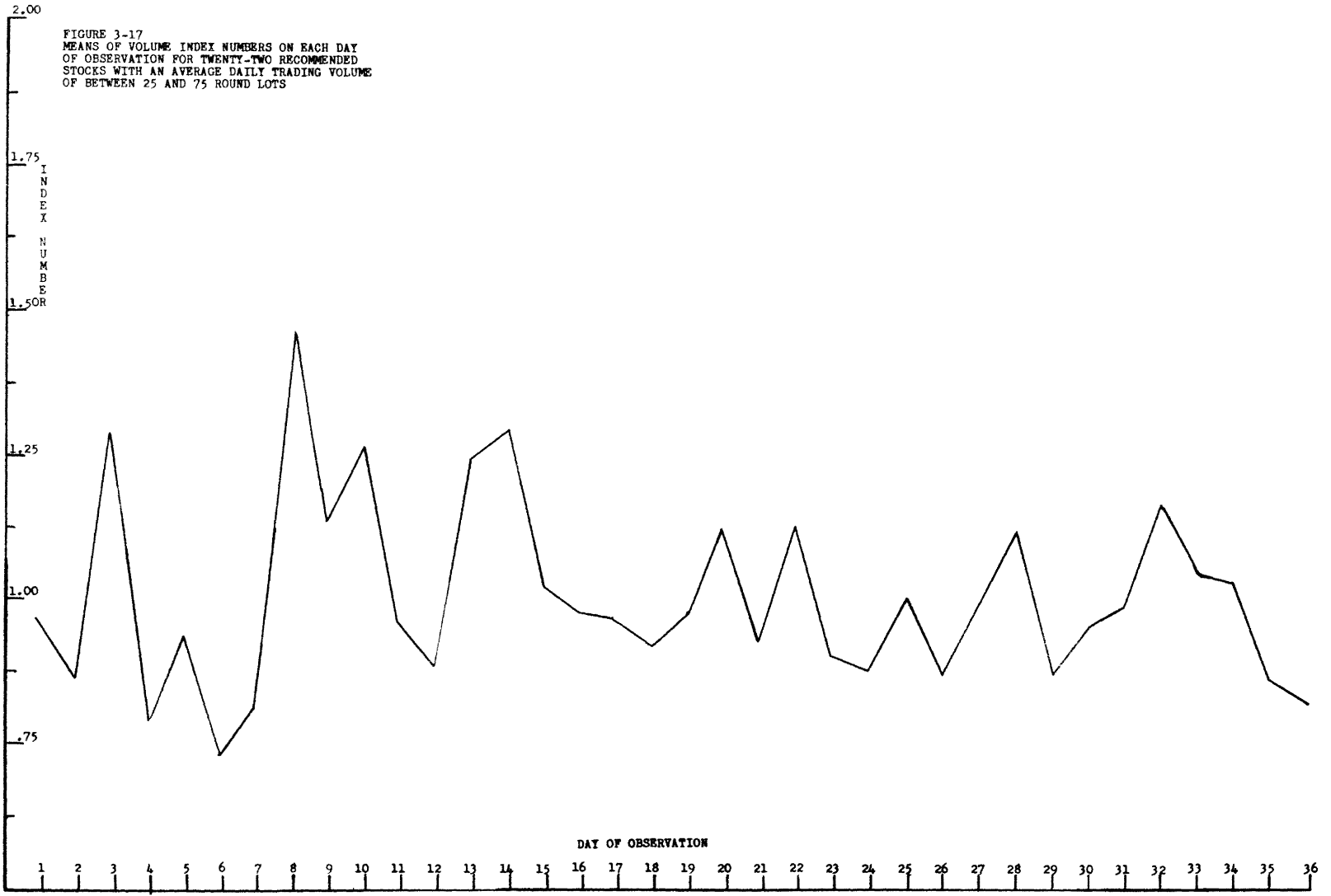
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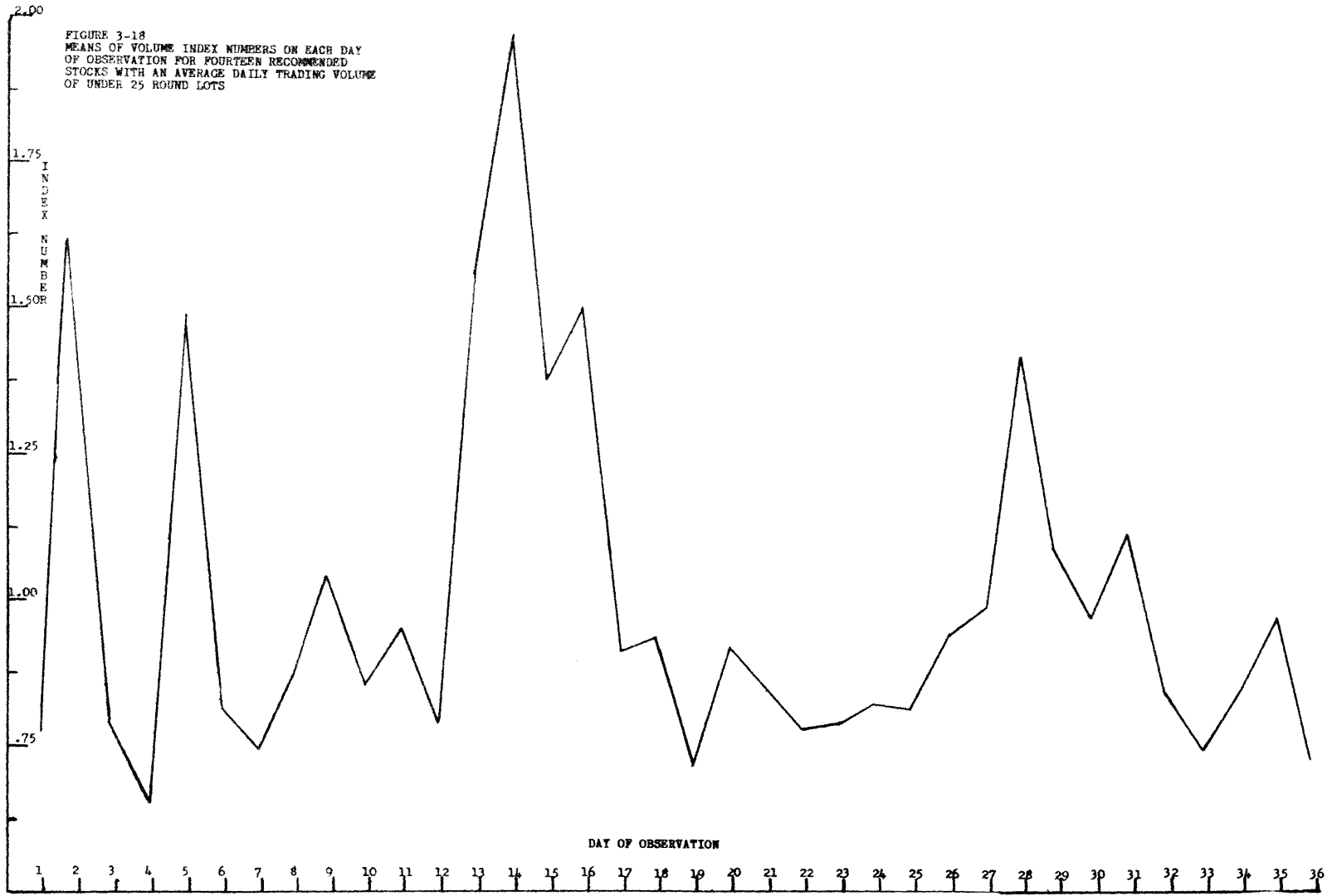
DAY OF OBSERVATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36









THE IMMEDIATE PRICE AND VOLUME EFFECTS
OF INVESTMENT ADVISORY SERVICES
ON STOCKS RECOMMENDED

by

E. William Troiano

Abstract

The primary purpose of this study was to investigate the immediate price and volume effects of investment advisory services on stocks recommended.

The methodology used in this study consisted of the selection of sixty-four stock recommendations published by three major advisory services, Value Line Investment Service, Moody's Investors Survey, and Standard and Poor's Outlook. The recommendations of Moody's and Standard and Poor's were divided into strong and weak categories for testing purposes.

Price and volume data for each stock were collected and adjusted for general market movements for a period of fifty-six days--twenty-two days prior to the date of recommendation and thirty-three days after that date. Twenty-one day centered moving averages were computed for each stock from the fifty-six adjusted price and volume observations. Thirty-six price and volume

indices were developed for each stock from the ratios of the adjusted price and volume data to its corresponding twenty-one day average.

The price and volume index numbers were then grouped into classifications according to service and according to average daily trading volume. An analysis of variance was utilized to test the data in order to determine the findings.

The findings proved to be inconclusive in showing an immediate price and volume effect in general. The findings did indicate that stocks with a low average daily trading volume appeared to show significant movement as the result of being recommended.