Faculty Working Papers

BLOCK TRADES AND STOCK PRICE VOLATILITY

Frank K. Reilly

#279

College of Commerce and Business Administration
University of Illinois at Urbana-Champaign

FACULTY WORKING PAPERS

College of Commerce and Business Administration

University of Illinois at Urbana-Champaign

October 9, 1975

BLOCK TRADES AND STOCK PRICE VOLATILITY

Frank K. Reilly

#279

August, 1975

BLOCK TRADES AND STOCK PRICE VOLATILITY*

Frank K. Reilly**

INTRODUCTION

There has been a substantial increase in institutional trading during the last decade paralleled by an increase in block trading (i.e., trades of 10,000 shares or more). Because of the impact of block trades on the specialist there has been concern regarding the effects of block trades on trading liquidity and stock price volatility [1,4,5,8,11,12,21]. This concern has prompted several studies on the impact of block trades on the price volatility of individual stocks. These studies will be discussed in a subsequent section. The current study is a macro-analysis of this question--does an increase in the proportion of block trades to aggregate volume result in an increase in aggregate price volatility?

Following a discussion of the reasoning behind the contention that block trades will increase stock price volatility, there is a consideration of prior studies dealing with the impact of block trades on stock price movements. Subsequently there is an analysis of the relationship between the proportion of total NYSE volume accounted for by block trades, and several alternative measures of stock price volatility. Finally, because prior studies have indicated the influence of interest rate volatility and total trading volume there is a consideration of these variables.

---

*The author acknowledges the data on block trades generously provided by Merrill Lynch, Pierce, Fenner and Smith. Also the data processing help of Joe Michand and the use of the computer facilities at the University of Wyoming.

**Professor of Finance, University of Illinois at Urbana-Champaign.

GENERAL REASONING

Several studies have clearly demonstrated an increase in institutional trading over the past decade [1,5,8,13,16,17,20]. The data indicated that the average shares per sale more than doubled from 1961 through 1973; and the percentage of blocks traded as a proportion of total volume increased from 3.1 percent in 1965 to 18.5 percent in 1972. In addition public trading by individuals and institutions' reversed themselves from 1952 to 1971--institutions initially represented 30.8 percent of public volume, but their share increased to 62.4 percent in 1971.

A special report in Business Week [1] documented this growth trend when they observed that the institutions percent in public volume has grown to over 70 percent in 1973. This figure exceeds Freund and Minor's predicted figure of 66 percent in 1972 and associates closely with their 1980 prediction of 72 percent [6]. The general trend and long-run outlook is also confirmed by Soldofsky [20], in spite of the temporary slowdown during 1974 [21].

The increase in institutional trading especially in the area of trading large blocks, has created a different atmosphere on Wall Street [2,5,8,19]. The floor specialist, whose formal duty is the maintenance of a fair and orderly market, has traditionally made markets for trades involving a maximum of a few thousand shares. Recently, most specialists have not been able to provide large block traders with the desired liquidity because they lacked capital, they were unwilling to take risks, or because rules restricted their solicitation of orders [4,11,22]. Therefore, institutions began looking toward the Third Market to provide liquidity and lower commission rates on block trades. The Exchanges subsequently were directed by the Securities and Exchange Commission to provide lower minimum commissions for block trades. Meanwhile, block trading houses

emerged with communications networks for providing institutions with liquidity while still utilizing the talents of specialists in positioning blocks [22].

The question then arises as to whether or not stock exchange systems are capable of providing liquidity for large block transactions. An examination of the non-empirical literature indicates that most observers doubt the ability of the current market to provide the liquidity required by large blocks [1,4, 11,12].

Generally, the literature indicates that block trades, especially when liquidity is desired, will usually result in some price reductions with significant declines when information is conveyed by the trade [9,10]. If price declines are not due to information conveyed, then block trades create problems for individual investors and for corporations.

Much of the literature on the effects of block trading on stock price volatility indicates that large blocks are initiating changes on Wall Street and that stock prices are influenced by large blocks regardless of whether information is conveyed. If liquidity is demanded, then price fluctuations can and will occur. However, these prior studies considered specific instances rather than generalized empirical investigations. The following section discusses studies on the effects of blocks traded on stock price movements.

PRIOR EMPIRICAL STUDIES ON BLOCK TRADES AND STOCK PRICE VOLATILITY

Effect of Secondary Offerings

Myron Scholes [17] studied the question of potential price volatility associated with large block secondary sales and derived three hypotheses of possible effects of large block transactions on stock prices:

1. The substitution hypothesis--prices should not change as a result of a large transaction because shares are not unique.
2. The price pressure hypothesis--the market can absorb small trades but prices will adjust for larger blocks to compensate for the increased effort and inducement required to consummate the transaction. Depending upon the relative size of the trade, the price will react and recover shortly after.
3. The information hypothesis--the party initiating the block trade has some unique information and, therefore, one should anticipate a price adjustment which will be relatively permanent, reflecting the new information and the equilibrium price.

Scholes employed a large number of secondary distributions which occurred between July, 1961 and December, 1965, in which an investment banker acquired a block and sold the shares after trading hours. He examined the residuals around the time of the trade by applying the Sharpe Market Model [18]. An abnormal performance index (API) isolated the return above or below the market achieved by owning securities which experienced secondaries.

A decline in the API on the trading day supported the price pressure hypothesis but, since there was no price recovery, a better explanation of the results might be the information hypothesis. Also, there was no relationship between the size of the block and the prediction error on the trading date. Further support for the information hypothesis was derived from an analysis of the API for differences in the seller. These results showed that sales by corporate officers and investment companies resulted in the largest declines. The notion that the price adjustment took place at the point of information

was further supported by an analysis of registered and unregistered secondary trades. Overall, the results were contrary to the price pressure hypothesis and supported a combination of the information and substitution theories.

Effect of Block Trades

Kraus and Stoll [9] also studied price volatility resulting from institutional trades by examining about 7,000 block trades on the NYSE in excess of $1 million from July, 1968 to September, 1969. The hypotheses tested included an information effect in which price would be expected to change if the variables affecting values changed and a distribution effect which called for a price change to induce participation and to compensate the intermediaries for services. The authors hypothesized that minus tick trades were initiated by sellers; plus tick trades were initiated by buyers; and zero tick trades were caused by a need to bring the specilist's book to the block price.

Some price recovery by the day's close for minus tick trades was interpreted as partially supporting the distribution theory. For plus tick trades, there was virtually no price declines until the close. This finding was viewed as consistent with the information hypothesis and with the distribution hypothesis. Block traders usually do not sell short to aid buyers, and, therefore, they require less compensation relative to seller-initiated trades. When daily prices around a block trade were adjusted for the market effect, the results showed a permanent change which is consistent with the information hypothesis.

A test by Kraus and Stoll of the relationship between price impact and size indicated a significant relationship, contrary to Scholes' results. However, Kraus and Stoll acknowledged that because big blocks may simply prompt more institutional study, the results may not have actually supported the

distribution hypothesis. They also pointed out that the differences in conclusions may stem from the mechanics by which the two blocks were moved. Notably, both studies concurred that no major increase in price volatility was evident following block trades. Rather, prices changed in one direction and subsequently traced a stable pattern relative to the market.

A subsequent study by Nielsen and Joehnk [14] examined price changes surrounding block trades and hypothesized that the price changes would differ depending on the market environment (i.e., rising or falling markets). Their results indicated some slight liquidity costs for the trades, but no significant differences in price changes for alternative market environments. In terms of the current study, it is notable that all the price changes after the block trade were significantly smaller than the price change that accompanied the trade (i.e., the change from the pre-block price to the trade price). While there was some small liquidity effect, the major influence apparently was an information effect.

Finally, a recent study by Grier and Albin [7] examined price changes immediately surrounding a block trade in search of non-random price changes. Their analysis of reversals versus continuations for trades immediately after a block trade and 15 minutes after the block trade indicated a much higher proportion of reversals than in normal trading. This non-random price pattern is consistent with other studies that have always found reversals from the trade price to the close on the day of the trade. The authors attempted to use this information to develop a profitable trading rule. They found that they could make money on 10 percent of the trades (the highest decile of trades based upon price changes before the trade), assuming that they could buy at the

trade price and that they could determine which trades experienced the greatest price changes from the open to the trade before the block trade. Their final test is of greatest concern to the current study because it directly tested the effect of a block trade on the price volatility of the stocks involved. A negative coefficient for the block trade dummy variable indicated that block trades had a dampening effect on price variability.

Analysis of Parallel Block Transactions

The potential price impact of secondary distributions and block trades prompted an investigation into the possible disruptive force of institutions. Kraus and Stoll [10] questioned whether institutions tended to act in concert--an activity termed "parallel trading." If all securities are not perfect substitutes and expectations differ, the intensity on one side of the trade could cause a price impact.

Parallel trading due to chance was estimated by two separate simulations. The percent net imbalance was calculated for each month for each institution. The analysis of parallel trading alone found a substantial imbalance per stock-month. The comparison of the actual activity with the simulated results disclosed greater than chance parallel trading by banks and investment companies in large NYSE stocks. However, since these two groups were on opposite sides of the market, their combined parallel trading was less than expected by chance. An examination of the effect on individual stocks when parallel trading occurred indicated a price impact. But a test of serial correlation indicated that the price impact was quickly reversed.

Summary of Individual Block Trade Studies

The several studies of stock price movements surrounding individual block transactions would not lead one to expect an overall increase in stock price volatility because of block trades. Specifically, the Scholes, Kraus-Stoll and Nielsen-Joehnk studies indicated that the typical price pattern surrounding a block transaction was a significant price change on the block transaction, a subsequent small reversal by the close, and insignificant price changes thereafter. Such results indicate a large information effect, a small liquidity cost, and generally random price changes. Those results might be interpreted as symptomatic of an efficient capital market in which prices adjust rapidly to new information and the adjustment is fulfilled in the block trade. In contrast, those who feel that block trades cause major liquidity problems would expect a major reversal after the trade as a reflection of the significant liquidity costs. These results indicating no increase in volatility were confirmed by the Kraus-Stoll study on parallel trading which indicated that institutions tended to trade on opposite sides of the market and that there was actually less parallel trading than one would expect. The final confirmation came from the Grier-Albin study which found that block trades have a dampening effect on the price variability of individual stocks.

Therefore, one could hypothesize from these findings that an increase in the proportion of block trades should not cause an increase in stock price volatility. The reasoning is simply that block trades are the ultimate liquidity problem caused by institutional trading since they provide the maximum pressure on the market system. If this "ultimate" pressure does not cause an increase in volatility for the stocks directly involved, it is difficult to

envision why all stocks should become more volatile because of such trades. One might even speculate that if institutions provide liquidity for one another (as indicated by Kraus and Stoll), stock price volatility would be reduced (as indicated by Grier and Albin).

Aggregate Stock Price Volatility

In addition to the studies on individual stock price volatility, three studies have examined aggregate stock price volatility over time. Fisher and Lorie [3] studied the variability of returns on common stock for the period of 1926 through 1965. Though they were not primarily concerned with changes in stock price volatility over time, Table 5 of their study contained various measures of variability which indicated that stock prices were substantially less variable during the period 1945-1965, than during the period 1926-1945. Unfortunately, their study terminated in 1965 when the institutional impact was gathering momentum.

A subsequent study by Robert Officer [15] analyzed moving averages of the variance in stock price returns from 1897 to 1969 and related stock price variance to selected economic variables. A major finding was that the decline in variability noted by Fisher and Lorie was not a secular decline but rather, a return to the normal variability that existed before the 1930-38 period.

The Securities and Exchange Commission, the imposition of margin requirements, and the composition of stocks did not explain the change in variability over time. Officer also tested the explanatory power of industrial production, wholesale prices, new orders, and the M2 money supply and concluded that stock price variability could best be explained by the variability of industrial production as a surrogate for business fluctuation.

Finally, a study by Reilly and Drzycimski [16] specifically examined changes in daily stock price volatility during the 14 year period, 1960-73 when the change in the market environment was taking place. The analysis indicated that daily stock price changes had become significantly more volatile in the recent period but monthly stock price changes were not significantly more volatile. The authors analyzed the relationship between changes in stock price volatility and changes in volatility for a number of economic variables one would expect to influence stock price movements such as earnings, dividends, industrial production, money supply, interest rates, and consumer and wholesale prices. An analysis of the individual series indicated that there had been an increase in interest rate volatility that far exceeded the increase in stock price volatility. In addition, the correlation of moving variances among the alternative economic series and stock prices indicated that stock price variance was most highly correlated with interest rate variance. Therefore, it was concluded that, although there was an increase in stock price volatility, the increase could easily be explained by the very substantial increase in interest rate volatility during the period.

In summary, while the results indicate an increase in stock price volatility, there is certainly no direct evidence that the increase is attributable to institutional trading or specifically to block trades. In contrast, the evidence for individual issues would indicate no such increase.

THE CURRENT STUDY

As noted in the introduction, the current study analyzes the question whether institutional trading contributes to an increase in stock price volatility

as contended by Wall Street folklore. Both the efficient market hypothesis and prior empirical evidence would argue against such a relationship. Specifically, in an efficient market with rational profit maximizing investors, one would expect stock prices to react only to the introduction of new information and the price adjustment should be rather swift. There is no reason one should expect more new information to be coming to the market simply because institutions are doing more of the trading, so this would argue for no change in price volatility. If one were to argue that institutions are better investors, this would imply that prices would adjust faster to new information, but the number of price changes and the magnitude of price changes should not be affected. Therefore, the efficient market hypothesis would not support the contention of a more volatile market with an increase in institutional trading.

In addition, most prior empirical evidence likewise would not support such a contention. Specifically, the several studies of the price effects of block trades have generally supported the information hypothesis. These results would argue that because of block trades stock prices may be adjusting faster than before, but they are not necessarily more volatile. The Reilly-Drzycimski results indicated a secular increase in stock price volatility that could be explained by the increase in interest rate volatility.

The Hypothesis

Based upon the foregoing it is hypothesized that there is not a significant relationship between institutional trading (as measured by the percent of block trades) and stock price volatility. Further, because of the Reilly-Drzycimski results, one might expect interest rate volatility to be a superior explanatory

variable. Finally, some might expect a significant relationship between absolute trading volume and price volatility irrespective of institutional activity.

DATA AND METHODOLOGY

This study examines monthly and daily measures of stock price volatility, percentage of block trading, trade volume in millions of shares, and measures of interest rate volatility for the period between November 10, 1971 and July 14, 1974. Data were taken from weekly issues of Barron's and Standards and Poor's Trade and Securities Statistics. The data on block trades were provided by Merrill,Lynch, Pierce, Fenner and Smith, Inc.

Daily stock price volatility was measured in the following ways: 1) close on day zero minus close on day -1 as a percent of close on day -1 (close t-close t-1/close t-1); 2) high minus low as a percent of low (high-low/low); and 3) daily stock price close on day zero minus open on day zero as a percent of open on day zero (close t-open t/open t). These various measures will hereafter be referred to as: close/close (Cl-Cl), high/low (Hi-Lo), and open/close (Op-Cl), stock price volatility, respectively.

Monthly interest rate volatility measures employed were: 1) percent change in average interest rate figures during a month for long-term government bonds (AIRV), 2) high yield minus low yield as a percent of the low yield (high-low/low (IRV), and 3) percent change in average interest rate during the last week in each month (MIRV).

Block percentage and trade volume figures were obtained on a daily basis. Monthly figures are an average of daily figures.

Bivariate regression analyses of monthly data considered two measures of stock price volatility (close/close and high/low) as dependent variables in comparison to block percentage, trade volume, and the three measures of interest rate variability.[1] The multivariate regression analyses compared these two measures of stock price volatility with block percentage, aggregate block shares trades, interest rate volatility, and trade volume in a stepwise fashion.

Similar analyses were made for daily data with the third measure of stock price volatility considered (close/open). It was not possible to include interest rate volatility for daily data.

DISCUSSION OF RESULTS

A complete summary of statistics on individual variables, such as mean values, standard deviations and coefficients of variation, is shown for daily and monthly data in Tables 1 and 2, respectively. Results of the regression analyses between daily variables are shown in Tables 3 and 4, while results using monthly data are contained in Tables 5, 6, and 7.

Descriptive Stacistics

The figures in Table 1 for the daily data indicate that the C1-C1 variable was the most volatile of the stock price measures in terms of the coefficient of variation and the straight standard deviation. As one would expect, the absolute value measures were always less volatile. The absolute value measures were employed because it is not clear how important the sign is in this study--i.e., whether the price change is positive or negative is not as important as the size of the change.

---

[1]The close to open measure of stock price volatility was not considered because it would almost be identical to the close to close measure.

The percent of block trade figures (PBV) varied from below 10 percent to over 20 percent and averaged about 16.5 percent. The PBV was beginning to climb at the end of the study period to about the mean value. The relative volatility of the series was fairly large given the range and indicated the presence of positive skewness. Total trading volume averaged almost 16 million shares a day and likewise was fairly volatile during this period.

The statistics for the monthly data were consistent with the daily figures except less volatile as one might expect because of the averaging process. The IRV figure that was not available daily indicated an average 2 percent spread during the period and also a fair amount of volatility in this spread--i.e., a CV of .80 is large for a series that cannot become negative.

Daily Bivariate Correlations

The daily bivariate correlations between the several measures of stock price volatility, block trading volume and total trading volume are contained in Table 3. The results definitely do not support the belief that an increase in institutional trading in the form of block trades is correlated with an increase in stock price volatility. Only two of the correlations between stock price volatility and PBV were positive but these were insignificant, while the largest correlation was minus .213 indicating that a higher than average percent of block trades was associated with a lower than average spread between the high and low stock price for the day. These negative results were consistent with the moving average PBV correlations--all of these were negative with the strongest association with the hi-lo price volatility measure.

In contrast, there was support for the contention that overall trading volume has an effect on stock price volatility. In this regard, all the correlations

were positive indicating that stock prices become more volatile with higher trading volume.

The final line that contains the correlations between block trading and total volume indicates virtually no relationship between the two variables and any relationship that does exist is negative. This would indicate that as overall volume increased during this period, there was not an increase in the proportion of block trading. If anything, the proportion of block trading declined below average.

Multivariate Daily Results

The multivariate regression results that related alternative measures of daily stock price volatility to block trading volume and total trading volume are contained in Table 4. The best results in terms of the correlation coefficient was the Hi-Lo variable that had an R of .4. Notably, the first variable to enter was MAPBV, the coefficient was highly significant but negative. The second variable to enter was overall trading volume and the coefficient was significant and positive. The PBV variable entered third, but the coefficient was insignificant and negative.

The rest of the results can be summarized as indicating that the total volume variable always entered either first or second and always was very significant, and positive. The PBV variable entered either second or third, was usually positive but was never significant at the .05 level. Finally, the MAPBV variable entered either first or third, always had a negative coefficient, and was significant in three of five cases.

These results indicate that total trading volume is the most important variable and that the relationship is positive as implied by the bivariate

results. The PBV variable has a positive relationship, but it is not statistically significant. Finally, the MAPBV variable is likewise fairly significant, but the relationship is not consistent with the expectations of those who hypothesize that block trading increases volatility. These results indicate that during a period of generally high block trading, there is a lower level of stock price volatility.

Monthly Bivariate Correlations

The bivariate correlations between the three measures of monthly stock price volatility and the measures of block trades, total trading volume and alternative measures of interest rate volatility are contained in Table 5. The correlations between the measures of stock price volatility and PBV were all negative and the Hi-Lo correlation was significant at the .05 level. The relationship between stock price volatility and total block trading volume (TBV) was mixed. The two Cl-Cl variables and TBV were positive but not significant, while the Hi-Lo and TBV correlation was negative. All the correlations with TTV were positive but not significant at the .05 level.

The correlations among stock price volatility and interest rate volatility were likewise inconclusive. The two largest correlations were negative and almost significant, while all other correlations were positive, but not significant.

In summary, the bivariate correlations with monthly data definitely support the hypothesis that there is not a positive correlation between stock price volatility and the proportion of block trading because all correlations were negative. The relationship between stock price volatility and total block volume was inconclusive with offsetting relationships. The results continued to support the notion of a positive relationship between stock price volatility and

TTV. Finally, the relationship with interest rate volatility was mixed with the strongest results indicating a negative relation, while the majority of correlations indicated a positive relationship.

Monthly Multivariate Results

The multivariate correlation results that related the alternative stock price volatility variables to percent block volume, total trading volume and alternative interest rate volatility variables are contained in Table 6. The results between the stock price volatility variables and the PBV variable continued to support the hypothesis that there is not a positive relation between the two variables. The only statistically significant relationships were between the Hi-Lo variable and PBV and all of these were negative. The few positive coefficients were quite insignificant.

The relationship between the stock price volatility variables and the TTV variable varied depending on the stock price variable used. For either Cl-Cl or Abs Cl-Cl the coefficients were positive but none were statistically significant. With the Hi-Lo variables the coefficients were generally negative but very insignificant. Apparently the inclusion of the PBV variable in the model had a definite impact on these coefficients.

Finally, the majority of the coefficients for the interest rate volatility variables were positive but not significant. The two cases where the coefficients were negative the t-value was larger but still not significant at the .05 level.

Table 7 contains the results for similar multivariate models except the block trading variable employed is total block volume (TBV) rather than the percent of block volume (PBV). The results were virtually the same except for the TTV coefficients. In these correlations even when the TBV coefficients

were negative and significant, the TTV coefficients remained positive and were almost significant.

In summary, the multivariate correlation results using monthly data likewise supported the hypothesis of no positive relation between block trading (either as a percent or in the aggregate) and stock price volatility. In fact, the results continue to point toward a strong negative relationship, which is completely at odds with the prevailing folklore. There is also continuing evidence of a positive relation between stock price volatility and total trading volume especially in the models that employed TBV. The interest rate volatility results were mixed with the majority of coefficients being positive but very insignificant and some being negative and insignificant.

SUMMARY, CONCLUSION AND IMPLICATIONS

Summary

Along with the general increase in trading by institutions in the stock market during the last decade has been an increase in the amount and proportion of block trades. The increase in block trades has caused many observers to expect that such an increase has led to an increase in stock price volatility. The purpose of this study has been to test this contention directly by examining the relationship between block trades on the NYSE and stock price volatility on the Exchange.

A discussion of several past empirical studies that examined the impact of individual block trades and aggregate stock price volatility led to the hypothesis that there should not be a relationship between block trades and stock price volatility. It was pointed out that some observers have felt that total trading

volume may have an impact on price volatility and a prior study had also pointed toward the influence of interest rate volatility as a factor. Therefore, both of these variables were considered when possible.

The daily bivariate correlation results between stock price volatility, PBV, MAPBV, and TTV indicated a generally negative relationship between stock price volatility and block trading and a positive relationship between price volatility and total trading volume. The multivariate daily results were consistent with the bivariate results -- when the block trading variable entered early, it was negative while the total trading variable always entered as a significant positive variable.

The bivariate correlations with monthly data indicated a negative relationship between stock price volatility and the proportion of block trading. The relationship between stock price volatility and the total number of shares involved in block trades was mixed. Again, there was a positive relationship between price volatility and total volume. Finally, the relationship with interest rate volatility was mixed -- the strongest relationships were negative while the majority were positive. The multivariate results were consistent because they likewise had a negative relation between price volatility and block trading, a positive relationship with total trading volume and mixed results with interest rate volatility.

Conclusion

The results strongly support the hypothesis that there is not a positive relationship between stock price volatility and the proportion of block trading as the absolute number of shares involved in block trades. In fact, all the significant correlations indicate a negative relationship. This is consistent

with the results derived by Grier and Albin for individual stocks [7]. There was some definite support for the belief that total trading volume has a positive relationship with stock price volatility. Finally, the results did not support the existence of a significant positive relationship between stock price volatility and interest rate volatility.

Implications

The folklore that institutional trading causes an increase in the volatility of stock prices is quite persuasive on Wall Street and elsewhere, but has received very little empirical support. If anything, quite the opposite has been shown. It appears that greater institutional trading in a stock or in the stock market in general is associated with a lower level of stock price volatility. Apparently, greater institutional involvement provides that much needed characteristic of an efficient capital market -- liquidity. Moreover, as has been shown by Kraus and Stoll [10], when institutions trade, they do not generally tend to trade in parallel as typically feared, but trade on both sides of a market and, therefore, provide liquidity for one another.

Although there have been dramatic changes in our capital markets over the past decade we continue to observe the ability of the participants to adapt to the new environment. Our main concern should be to allow the markets to remain free to adapt.

Definition of Terms

Cl-Cl = Closing Price(t) minus Closing Price(t-1)/Closing Price(t-1)

Abs Cl-Cl = Absolute value of Cl-Cl.

Cl-Op = Closing Price(t) minus Opening Price(t)/Opening Price(t).

Abs Cl-Op = Absolute value of Cl-Op.

Hi-Lo = High Price(t) minus Low Price(t)/Low Price(t)

PBV = Block trading volume during the period as a percent of total volume on the NYSE.

MAPBV = Ten day moving average of PBV.
TBV = Total block volume--i.e., total shares involved in block trades.
TTV = Total trading volume in millions of shares.

IRV = High interest rate minus Low interest rate/Low interest rate.

MIRV = Average rate for last week in month t minus average rate for last week in month t-1/average rate for last week in month t-1.

Abs MIRV = Absolute value of MIRV.

AIRV = Average interest rate in month t minus the average interest rate in month t-1/average interest rate in month t-1.

Abs AIRV = Absolute value of AIRV.

TABLE 1

DESCRIPTIVE STATISTICS FOR DAILY DATA
VARIABLES: NOVEMBER 10, 1971-JUNE 14, 1974

Variable	Mean	Standard Deviation	Coeff. of Variation
Cl-Cl	.00005	.00937	187.400
Abs Cl-Cl	.00716	.00604	.844
Cl-Op	-.00026	.00803	- 30.885
Abs Cl-Op	.00614	.00517	.842
Hi-Lo	.01907	.00515	.270
PBV	.16567	.03629	.219
MAPBV	.16569	.02069	.125
TTV	15.82522	3.55302	.225

TABLE 2

DESCRIPTIVE STATISTICS FOR MONTHLY DATA
VARIABLES: DECEMBER, 1971-MAY, 1974

Variable	Mean	Standard Deviation	Coeff. of Variation
Cl-Cl	.00035	.04097	117.057
Abs Cl-Cl	.02847	.02898	1.018
Hi-Lo	.06181	.03624	.586
PBV	.16576	.01950	.118
TBV	2.62953	.43474	.165
TTV	15.43637	2.46147	.154
IRV	.02427	.01945	.801
AIRV	.00615	.03004	4.887
Abs AIRV	.02288	.02000	.874
MIRV	.00720	.03848	5.346
Abs MIRV	.02728	.02765	1.014

TABLE 3

CORRELATION COEFFICIENTS BETWEEN MEASURES OF DAILY STOCK PRICE VOLATILITY, BLOCK TRADING VOLUME, AND TOTAL TRADING VOLUME
NOVEMBER 10, 1971-JUNE 14, 1974 (654 OBSERVATIONS)

	PBV	MAPBV	TTV
Cl-Cl	.062	-.012	.234
Abs Cl-Cl	-.098	-.217	.167
Op-Cl	.046	-.027	.120
Abs Op-Cl	-.019	-.147	.121
Hi-Lo	-.213	-.381	.336
TTV	-.005	-.133	--

TABLE 4

RESULTS OF CORRELATIONS BETWEEN STOCK PRICE VOLATILITY
AND TOTAL TRADING VOLUME, PERCENT OF BLOCK VOLUME
AND 10 DAY MOVING AVERAGE OF PERCENT BLOCK VOLUME
DAILY DATA: NOVEMBER 10, 1971-JUNE 14, 1974

Dependent Variable	Interc.	PBV		MAPBV		TTV		R	SEE	V-N
		Coeff.	T-Value	Coeff.	T-Value	Coeff.	T-Value			
Cl-Cl	-.0112	.0194	1.64	-.0101	-0.48	.0006	6.02	.244	.009	1.50
Abs Cl-Cl	.0130	.0030	0.40	-.0609	-4.54	.0002	3.64	.260	.006	1.72
Op-Cl	-.0036	.0169	1.63	-.0212	-1.16	.0003	2.87	.135	.008	1.74
Abs Op-Cl	.0094	.0113	1.71	-.0445	-3.81	.0001	2.51	.190	.005	1.75
Hi-Lo	.0267	-.0046	-0.78	-.0817	-7.85	.0004	8.38	.481	.005	0.85

TABLE 5

CORRELATION COEFFICIENTS BETWEEN MEASURES OF
MONTHLY STOCK PRICE VOLATILITY, BLOCK TRADING VOLUME,
TOTAL TRADING VOLUME, AND MEASURES OF INTEREST RATE VOLATILITY

DECEMBER, 1971-MAY, 1974 (30 OBSERVATIONS)

	PBV	TBV	TTV	IRV	AIRV	Abs AIRV	MIRV	Abs MIRV
C1-C1	-.038	.228	.262	.032	-.337	--	-.337	--
Abs C1-C1	-.242	.093	.304	.020	--	.161	--	.145
Hi-Lo	-.360	-.207	.069	.044	.079	.098	.145	.087

TABLE 6

RESULTS OF MULTIVARIATE CORRELATIONS OF STOCK PRICE VOLATILITY, PERCENT BLOCK VOLUME, TOTAL TRADING VOLUME AND INTEREST RATE VOLATILITY: DECEMBER, 1971-MAY, 1974 (30 OBS.)

Dependent Variable	Interc.	PBV Coeff.	PBV T-Value	TTV Coeff.	TTV T-Value	IRV Coeff.	IRV T-Value	Coeff.	T-Value	R	SEE	V-N
Cl-Cl	-.0898	.0872	0.21	.0046	1.39	.0800	0.20			.269	.042	2.09
Abs Cl-Cl	.0286	-.2501	-0.87	.0030	1.33	.0570	0.21			.345	.029	2.45
Hi-Lo	.1843	-.6988	-1.97	-.0006	-0.22	.1230	0.36			.367	.036	1.92
		PBV		TTV		MIRV		Abs MIRV				
Cl-Cl	-.0597	.0650	0.16	.0032	0.97	-.3037	-1.51			.381	.040	1.95
Abs Cl-Cl	.0186	-.2496	-0.88	.0030	1.32			.1474	0.77	.371	.028	2.45
Hi-Lo	.1733	-.6770	-2.04	*		.1005	0.60			.375	.035	1.91
Hi-Lo	.1840	-.6940	-1.96	-.0007	-0.23			.1185	0.50	.373	.036	1.92
		PBV		TTV		AIRV		Abs AIRV				
Cl-Cl	- .0590	.0345	0.09	.0035	1.08	-.4027	-1.60			.392	.040	1.94
Abs Cl-Cl	.0203	-.2482	-0.87	.0028	1.25			.1880	0.71	.367	.029	2.45
Hi-Lo	.1807	-.6807	-1.91	-.0004	-0.14	-.0779	0.35			.368	.036	1.89
Hi-Lo	.1852	-.6931	-1.96	-.0008	-0.28			.1694	0.51	.374	.036	1.91

*Variable did not enter regression

TABLE 7

RESULTS OF MULTIVARIATE CORRELATIONS OF STOCK PRICE VOLATILITY, TOTAL BLOCK VOLUME, TOTAL TRADING VOLUME AND INTEREST RATE VOLATILITY: DECEMBER, 1971-MAY, 1974 (30 OBS.)

Dependent Variable	Interc.	TBV		TTV		IRV				R	SEE	V-N
		Coeff.	T-Value	Coeff.	T-Value	Coeff.	T-Value	Coeff.	T-Value			
C1-C1	-.0765	.0075	0.29	.0034	0.76	.0073	0.19			.271	.042	2.09
Abs C1-C1	-.0197	-.0175	-1.00	.0058	1.87	.0610	0.22			.356	.029	2.50
Hi-Lo	.0691	-.0446	-2.05	.0067	1.74	.1300	0.38			.381	.035	1.98
		TBV		TTV		MIRV		Abs MIRV				
C1-C1	-.0508	.0071	0.29	.0021	0.48	-.3040	-1.51			.383	.040	1.96
Abs C1-C1	-.0214	-.0181	-1.04	.0058	1.91			.1568	0.82	.384	.028	2.50
Hi-Lo	.0642	-.0438	-2.03	.0070	1.81	.1060	0.60			.390	.035	1.98
Hi-Lo	.0696	-.0448	-2.07	.0067	1.74			.1412	0.60	.390	.035	1.99
		TBV		TTV		AIRV		Abs AIRV				
C1-C1	-.0550	.0049	0.20	.0028	0.64	-.4010	-1.59			.393	.040	1.95
Abs C1-C1	-.0194	-.0180	-1.03	.0057	1.85			.2010	0.76	.379	.028	2.49
Hi-Lo	.0684	-.0435	-2.00	.0067	1.75	.0832	0.37			.380	.035	1.95
Hi-Lo	.0712	-.0448	-2.07	.0065	1.70			.2014	0.61	.390	.035	1.97

REFERENCES

[1] "Are the Institutions Wrecking Wall S reet?" Business Week, June 2, 1973, pp. 58-61.

[2] Farrar, Donald E., "The Coming Reform on Wall Street," Harvard Business Review, Vol. 50, No. 5 (September-October, 1972), pp. 108-17.

[3] Fisher, Lawrence and James H. Lorie, "Some Studies of Variability of Returns on Investments in Common Stocks," The Journal of Business, Vol. 43, No. 2 (April, 1970), pp. 99-134.

[4] Fiske, Heide, "Can the Specialist Cope with the Age of Block Trading?" Institutional Investor Vol. 3, No. 8 (August, 1969), pp. 29-34, 89.

[5] Francis, Jack C., "Economic Pressures Reshape America's Stock Markets," Federal Reserve Bank of Philadelphia Review (June, 1973), pp. 12-18.

[6] Freund, William F. and David F. Minor, Perspectives on Planning No. 10, "Institutional Activity on the NYSE: 1975 and 1980," New York Stock Exchange, Inc., June, 1972.

[7] Grier, Paul C. and Peter S. Albin, "Nonrandom Price Changes in Association with Trading Large Blocks," The Journal of Business, Vol. 46, No. 3 (July, 1973), pp. 425-33.

[8] Klemkosky, Robert C. and David F. Scott, Jr., "Withdrawal of the Individual Investor from the Equity Markets," MSU Business Topics, Vol. 21, No. 2 (Spring, 1973), pp. 7-14.

[9] Kraus, Alan and Hans R. Stoll, "Price Impact of Block Trading on the New York Stock Exchange," Journal of Finance, Vol. 27, No. 3 (June, 1972), pp. 569-88.

[10] Kraus, Alan and Hans R. Stoll, "Parallel Trading by Institutional Investors," Journal of Financial and Quantitative Analysis, Vol. 7, No. 5 (December, 1972), pp. 2107-38.

[11] Lyons, John F., "What Happens When Liquidity Disappears?" Institutional Investor, Vol. 3, No. 11 (November, 1969), pp. 29-36, 98.

[12] McClintick, David, "Illiquid Stocks--Lack of Ready Buyers and Sellers Imperils the Stock Market," Wall Street Journal, December 10, 1971.

[13] Murray, Roger F., "Institutionalization of the Stock Market to be Feared or Favored?" Financial Analysts Journal, Vol. 30, No. 2 (March-April, 1974), pp. 18-20, 22.

[14] Nielsen, James F. and Michael D. Joehnk, "Further Evidence on the Effects of Block Transactions on Stock Price Fluctuations," Mississippi Valley Journal of Business and Economics, Vol. 9, No. 2 (Winter, 1973-1974), pp. 27-34.

[15] Officer, Robert R., "The Variability of the Market Factor of the New York Stock Exchange," The Journal of Business, Vol. 46, No. 3 (July, 1973), pp. 434-453.

[16] Reilly, Frank K. and Eugene F. Drzycimski, "Institutional Trading and Stock Price Volatility," University of Wyoming, Research Paper No. 60 (January, 1975).

[17] Scholes, Myron S., "The Market for Securities: Substitution Versus Price-Pressure and the Effects of Information on Share Prices," The Journal of Business, Vol. 45, No. 2 (April, 1972), pp. 179-211.

[18] Sharpe, William F., "Capital Asset Prices: Theory of Market Equilibrium Under Conditions of Risk," Journal of Finance, Vol. 19, No. 3 (September, 1964), pp. 425-442.

[19] Smidt, Seymour, "The Changing Relative Roles of Individuals and Institutions in the Stock Market," Journal of Contemporary Business, Vol. 3, No. 1 (Winter, 1974), pp. 13-23.

[20] Soldofsky, Robert M., Institutional Holdings of Common Stock, 1900-2000 (Ann Arbor, Michigan: Bureau of Business Research, University of Michigan, 1971).

[21] Thackray, John, "Is Time Running Out for the Big Block?" Institutional Investor, Vol. 8, No. 6 (June, 1974), pp. 57-61, 142.

[22] West, Richard R., "Institutional Trading and the Changing Stock Market," Financial Analysts Journal, Vol. 27, No. 3 (May-June, 1971), pp. 17-24, 71, 72, 78.