Appendix 1

Table 1: Summary of empirical studies from which inference can be made about the correlation of the absolute value of the price change with trading volume

Author(s)	Year of study	Sample data	Sample period	Differencing interval	Support positive ($\|\Delta P\|$, V) correlation?
Godfrey, Granger, Morgnstern	1963	Stock market aggregates, 2 common stocks	1939-61	Weekly	no
Godfrey, Granger, Morgnstern	1964	Stock market aggregates, 3 common stocks	1959-61 1951-53, 63	Weekly, daily transactions	no
Ying	1966	Stock market aggregates	1959-62 1951-53, 63	Daily	yes
Crouch	1970	5 common stocks	1963-68	Hourly and daily	yes
Clark	1973	Cotton futures contracts	1945-58	daily	yes
Epps and Epps	1976	20 common stocks	Jan, 1971	transactions	Yes
Morgan	1976	17 common stocks, 44 common stocks	1962-65 1926-68	4 days, monthly	Yes
Westerfield	1977	315 common stocks	1968-69	daily	yes
Cornell	1981	Futures contracts for 17 commodities	1968-79	daily	yes
Harris	1983	16 common stocks	1968-69	daily	Yes
Tauchen and Pitts	1983	T-bill futures contracts	1976-79	daily	yes
Comiskey, Waliking, and weeks	1984	211 common stocks	1976-79	yearly	Yes
Harris	1984	50 common stocks	1981-83	Transactions daily	Yes
Rutledge	1984	Futures contracts for 13 commodities	1973-76	Daily	Yes
Wood, Mchlnish, ord	1985	946 common stocks 1138 common stocks	1971-72 1982	minutes	yes
Grammatikos and Saunders	1986	Futures contracts for 5 foreign currencies	1978-83	daily	yes
Jain and Joh	1986	Stocks market aggregates	1979-83	hourly	yes

a) This table summarizes the general conclusions of these studies about the correlation of $|\Delta p|$ and V. Results that indicate no significant correlation are listed as not supporting a positive correlation. These studies employ various measures of the price change and trading volume.

b) The daily data are transformed into a series of estimated average daily volumes and daily return variances for successive two month intervals.

Source: Karpoff, "The Relationship Between Price Changes and Trading Volume: A Survey." Journal of Financial & Quantitative Analysis.Vol 22, no 1, March 1987.

Appendix 2

Table 2 : Summary of empirical studies from which inference can be made about the correlation of the price change with trading volume

Author(s)	Year of study	Sample data	Sample period	Differencing interval	Support positive ($\|\Delta P\|$, V) correlation?
Godfrey, Granger, Morgnstern	1963	Stock market aggregates, 2 common stocks	1939-61	Weekly	no
Godfrey, Granger, Morgnstern	1964	Stock market aggregates, 3 common stocks	1959-61 1951-53, 63	Weekly, daily transactions	no
Ying	1966	Stock market aggregates	1959-62 1951-53, 63	Daily	yes
Morgan	1976	17 common stocks, 44 common stocks	1962-65 1926-68	4 days, monthly	Yes
Epps and Epps	1976	20 common stocks	Jan, 1971	transactions	Yes
Rogalski	1978	10 common stocks and 10 associated warrants	1968-73	monthly	yes
James and Edminister	1983	500 common stocks	1975, 77-79	daily	no
Comiskey. Waliking and Weeks	1984	211 common stocks	1976-79	yearly	yes
Harris	1984	50 common stocks	1981-83	daily	Yes
Smirlock and Starks	1985	131 common stocks	1981	transactions	yes
Harris	1986	479 common stocks	1976-77	daily	Yes
Harris	1986	479 common stocks	1976-77	daily	yes
Jain and Joh	1986	Stocks market aggregates	1979-83	hourly	yes

a) This table summarizes the general conclusions of these studies about the correlation of $|\Delta p|$ and V. Results that indicate no significant correlation are listed as not supporting a positive correlation. These studies employ various measures of the price change and trading volume.

b) Support for a positive correlation between $|\Delta p|$ and V at the transactions level depends on the treatment of volume over transactions with no price changes.

c) Stocks are grouped into deciles ranked by average daily volume. Decile ranking is compared with mean daily return.

d) The data are consistent with a positive correlation between $|\Delta p|$ and V on days in which there is known information arrival. On other days, the correlation appears insignificant or negative.

Source: Karpoff, "The Relationship Between Price Changes and Trading Volume: A Survey." Journal of Financial & Quantitative Analysis. Vol 22, no 1, March 1987.