Trading Rules and Transaction Costs Across the Spot and Commodities Markets

An Honors Thesis (ID 499)

by

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Introduction

Accounts of a covert FBI investigation of the Chicago Futures Exchanges began appearing in the press in late January 1989. For the past two years FBI agents have been posing as brokers at the Chicago Board of Trade (CBOT) and Chicago Mercantile Exchange (CME). The agents have infiltrated the soybean and Treasury bond pits at the CBOT, and the S&P 500, Japanese yen, and Swiss franc pits at the CME in an attempt to discover whether trading rules are being violated. More than 100 persons at the CME are currently being investigated.¹ As of this date, however, no indictments have been filed by authorities.

Various allegations concerning rules violations have been made. They range from "bucketing" to "front-running" and include noncompetitive trading, trading after the bell, and sloppy trades. Even the open outcry system itself is being investigated for encouraging violations.² Since the main focus of the current investigation is on trading rules violations, proposed reforms will no doubt contain suggested rules modifications. The CME is already revising the structure of its rules and plans to implement the changes immediately.³


²See Appendix 1 for a discussion of these violations.

The purpose of this paper is to discuss the effect of the trading rules on the transaction costs in these markets and to compare transaction costs across markets that employ different types of trading rules.
Rules On The Spot And Futures Markets

History Of The Exchanges

In 1848, the Chicago Board of Trade was founded by 82 Chicago merchants. Their intention was to standardize the weight system, inspect the grains and provide an official exchange in the city that had become a natural crossroad for farmers. With the intention of creating a continuous market, "to arrive" contracts were developed. As trade volume increased, farmers wanted a guarantee that they could continue trading and that their products could always be bought or sold at some later date. In this way "to arrive" contracts were created as the first form of futures, assuring farmers of the future purchase or delivery of their crops. Today the Chicago Board of Trade is the world's largest futures exchange. Last year it traded twenty-six futures and futures options with an average daily volume of 2.4 million and a contract volume of 118 million.

The Chicago Mercantile Exchange was founded in 1919 as the Chicago Butter and Egg Exchange. Today it is the second-largest futures exchange, trading thirty futures and futures options. In 1988 it had a contract volume of 78 million, averaging 400,000 per day.

4Options On Agricultural Futures. 2nd ed. Board of Trade of the City of Chicago. 1986. p. 5.


6Ibid.
The New York Stock Exchange (NYSE) was officially organized on May 17, 1792, when twenty-four men signed a stock exchange agreement. Their positions evolved from the need to facilitate security speculation after the First Bank of the United States began issuing stocks.7

The exchanges have become sophisticated and complex organizations since their inception nearly 150 and 200 years ago. They are heavily policed and regulated by the their own law making bodies and the U.S. Government itself. The structure of the law making bodies of these markets is slightly different. The Chicago Mercantile Exchange is composed of a thirty-one member board with twenty-five, or eighty-one percent, of these board members being members who trade on the exchange. The Chicago Board of Trade's twenty-four member board has twenty-one, or eighty-eight percent, insiders. While of the twenty-seven member board on the New York Stock Exchange, only fifteen, or fifty-six percent, trade on the exchange.8

The composition of the rules may favor more lenient trading regulation than on the NYSE. The futures market is not as heavily influenced by government regulation as is the NYSE which may influence the reform proposals that follow the FBI investigation. Traders on the CBOT and CME, responding to a Wall Street Journal survey concerning trading violations, acknowledged

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that violations occur. They felt that outdated rules on the CBOT and CME encouraged these violations.\textsuperscript{9} Because of the rapid growth in the markets, the rules are not equipped to cover all transactions.

The differences in rules include the open-outcry system versus the specialist. Computerized trading is currently not used on the futures markets as it is on the New York spot market. No prearranged trading is allowed on the Chicago futures market, neither is block trading permitted. A futures broker can, however, trade for his own account after he has first completed a customer's transaction.

Contrasting with the New York Stock Exchange, no "uptick" rule exists in the futures market. The uptick rule prevents a broker from entering a short position when the trading price is falling. In contrast to the New York Stock Exchange, an offer or bid is only binding as it is being announced on the commodity exchanges.\textsuperscript{10}

Each exchange has an extensive set of rules. For example, the rule book for the Chicago Board of Trade is hundreds of pages in length, contains twenty-four chapters with 1,190 rules. The Chicago Mercantile Exchange is governed by sixty-three chapters averaging ten pages in length. It contains separate chapters


addressing solely the enforcement of rules, trading practices, and arbitration. There are 791 rules governing the New York Stock Exchange, with most rules being at least a page in length.

Each exchange enforces its rules and disciplines infractions. A rules violation on the New York Stock Exchange may result in suspension, expulsion, cancellation of registration, or a fine of up to $25,000 for an individual or $100,000 for an organization. The Chicago Mercantile Exchange may, by majority vote of a hearing committee, impose probation, impose a fine not in excess of $50,000, suspend a member for less than seven months, or terminate their registration.

A similar process takes place at the Chicago Board of Trade. Members may be suspended, expelled, or fined. The maximum fine that may be imposed for any one violation is $5,000 by majority vote of the hearing committee, up to a maximum of $12,500 for all fines. A stiffer aggregate fine of up to $50,000 may be imposed by a two-thirds vote. The fines imposed last year for insider trading in New York and the current fines and penalties being imposed in Chicago are evidence that these rules are actually enforced and not simply listed as formality.


Appendix 3 contains a list of the trading practices for the Chicago Board of Trade and the Chicago Mercantile Exchange, because these are the rules allegedly being violated and the ones traders seem to bypass for further financial gain. Various rules from the New York Stock Exchange have been listed which are similar to the rules on the futures Exchanges. Explanations and paraphrasing have been given for the rules most closely related to the violations and the paper. The rule books themselves provide a detailed explanation of each.
Why The Rules Are Important

Trading rules standardize the contract between the principal and agent. The rules outline how a transaction is to occur once a decision to buy or sell has been made—the channels it must go through, the people involved, and the fees charged. Rules specify the relationship between the traders. They delineate what each party can expect from entering into the transaction. Standardized trading practices reduce the cost of trading.

Guarantee of transaction is one of the main features of an organized exchange. Trading rules ensure this. For example, buyers do not have to be concerned that the seller has legitimate title to the item traded. The seller need not be concerned about the purchaser's ability to pay, because the transaction is guaranteed by the exchange itself and enforced by the exchange authorities.

Transaction costs are also reduced by the rules that standardize the item traded. For example if customers allow brokers to trade for them and do not require examination of the goods beforehand, transaction costs are lowered.

Trading rules are important because they specifically outline the procedures to be followed in carrying out the transaction. Parties are not left to fill their orders by their own means. Rules govern the exact steps all the parties in the

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transaction must follow. In the futures market, they describe the actions of the pit and open-outcry system. Rules determine the distribution of the proceeds of the trade. In the New York spot market, the rules outline the procedures of the brokers and specialists; they govern the bid-ask spread and at what price orders must be filled.

Rules lower transactions costs for buyers and sellers. Of course, the mere existence of a trading rule does not insure that transaction costs are lowered. In fact, some trading rules may raise these costs. However, since buyers and sellers are always free to engage in direct exchange, they will only employ the services of an organized exchange if doing so results in lower transaction costs.
Some Discussion of the Transaction Costs

In the case of stock trades, transaction costs can be defined as the cost of exchanging ownership titles to stock shares and money. Brokerage fees and bid-ask spreads make up the majority of these transaction costs. Brokers fees are the commission charges paid for executing buys and sells.

The bid-ask spread is more complex than straight commission fees. The spread is the difference in the price that the buyer pays and seller receives. Roughly, this spread is the specialist's compensation, whose job is to continually maintain the market in the stock. The specialist must hold stocks in inventory until someone wants to buy or sell them. This puts his capital at risk since the inventory may be maintained for relatively long periods of time.

Specialists maintain a market for buyers and sellers. Specialists profit from this activity by filling customers' orders at a cost lower than the cost of direct exchange between buyers and sellers.

The following diagram illustrates the role the specialist plays in reducing transaction costs. Assume that \( S' \) is the supply curve associated with direct exchange. The curve includes

\[ S' \] 


18 Ibid.
the cost of transacting. The quantity exchanged is $Q_0$. Sellers supply that quantity at $P_S$ and buyers purchase that quantity at $P_B$.

Using a specialist, or any other middleman, reduces the transaction cost. This lowers the supply curve to $S_M$. The result is a greater quantity exchanged, $Q_1$. At the same time, the price received by sellers rises to $P_S'$ and the price paid by buyers falls to $P_B'$.
Use of the middleman benefits both parties to the exchange. Buyers pay a lower price. Their gain is represented by the area $P_B P'_B C$. Sellers receive a higher price. Their gain is represented by the area $P_S P'_S A D$.

The effect of using a specialist on the NYSE has been to increase the gain to buyers by decreasing the price per stock transaction that they must pay, while at the same time increase the gain to sellers by increasing the price per stock transaction that they receive. This illustrates the Fundamental Theorem of Exchange—that trade is mutually beneficial for all parties in the exchange.\(^\text{19}\)

Middlemen services will only be used as long as the transaction cost of using the middleman is lower than the transaction cost of buyers and sellers trading directly. The lower the transaction costs, the greater the volume exchanged and the greater the demand for the middleman. Point A on the diagram represents the bid price that the specialist offers and point B reflects the asked price. The line AB approximates the transaction cost per unit exchanged. If the bid-ask spread, $P'_B - P_S$, approached or became larger than the original distance $P_B - P_S$ there would be no demand for the specialist.

While the cost of transacting through a specialist may be lower than direct exchange, there is no guarantee that this is the actual cost incurred by the specialist. This results from

the rule that permits only one specialist to trade each security. Furthermore, the information contained in the specialist's book of limit orders is not generally available to market participants.

This special information and the lack of direct competition may result in a bid-ask spread that contains economic rents in addition to transaction costs. Diagrammatically, the height of AB may represent the sum of the specialists cost of executing transactions and economic rent. Unless the specialist faces strong competition from brokers who trade among themselves, for example, there is no assurance that the transaction costs equal the bid-ask spreads.

Competition limits monopoly power, however. This moves the bid-ask spread closer to the actual transaction costs. Depending upon the degree of competition, the gains to buyers and sellers are increased if the specialist faces stiffer competition. Such competition limits his ability to exercise monopoly power.

While these factors are important, the degree of competition among traders in the futures market would seem to be greater than among specialists at the New York Stock Exchange. For example, there are no specialists in Chicago. No single person maintains an order book for each commodity. No limit to the number of


21 Ibid. pp. 42-44.
order books exists. All trades are made using the open-outcry system, whereby each broker must fill his buy or sell order by yelling or using signals before the entire pit. This permits other brokers, upon hearing a desired price, to accept the price immediately. Whereas on the NYSE, a member may not be able to immediately fill his order at the price he desires, given the bid-ask spread of the specialist. He may have to fill his order a portion at a time at different prices as the price approaches his desired price.²²

Seat prices which allow brokers to trade on these exchanges, like stocks and commodities, are competitively determined. Any rents that are earned will be reflected in the price of the seats. To compare the extent of competition commodities brokers face to the competition specialists on the NYSE face, an examination of their membership costs would indicate which markets face more extensive competition or receive more economic rent.

Seat Prices and Trading Volume

Seat Prices

The last full membership sold on the Chicago Board of Trade at a price of $420,500. This membership allows the holder to trade anything listed on the exchange. The same membership on the Chicago Mercantile Exchange sells for approximately $480,000. A seat on the New York Stock Exchange sells for nearly $200,000 more. One sold for $620,000 in late December 1988. To become a specialist on the NYSE a person must not only be a member of the exchange but he must also pass rigorous tests and hold one million dollars in capital. This is in addition to purchasing the membership seat.

These prices are the discounted value of expected future income flows. The expected value appears to be higher in New York, indicated by the 1.6 million dollars required to become a specialist as compared to the roughly $450,000 required to become a commodities broker. Economics rents may account for the difference. Furthermore, it is well documented that the transaction costs of trading equivalent baskets of stock are higher in the spot market than in the futures market.


24Appendix 2 lists the types of membership and 1988 prices for these memberships on the Chicago Board of Trade and the Chicago Mercantile Exchange.

Trading Volume

A comparison of the growth in trading volume on the commodity exchanges to the NYSE can be used as an indicator of transaction costs. If transaction costs were high in a particular market, then one would expect the trading volume in that market to be low or declining relative to a market with lower transaction costs.

Appendix 4 lists the yearly trading volume, a statistical comparison and a graph of the trading volume over time for the commodity exchanges and the New York Stock Exchange. The volume of financial instruments and currencies traded on the commodity exchanges has also been listed. Financial instruments are an especially important indicator because they include the S & P 500 futures contract traded on the CME. Trading the S & P 500 futures contract is a substitute for trading the equivalent basket of stocks on the NYSE. The sample period begins in 1977. Financial futures contracts were first traded in 1975, and their growth rate is exceptionally high the first two years given the small starting base.

Comparing the average annual percentage growth rates in trading volume, it is apparent that trading in financial futures has grown much more rapidly than trading on the NYSE. The average annual growth rate for financial instruments is 60% with the currencies futures growing at a rate of 45.7%. The average annual growth rate in volume on the NYSE has only been 18%.

Note the inverse correlation between growth in financial futures
trading and trading volume on the NYSE. This is consistent with the notion that the two markets offer competing (substitute) products.

Summary

Effective trading rules lower transaction costs for buyers and sellers, eliminating their need to engage in direct exchange. The theory and data in this paper support the idea that transaction costs are lower on the Chicago futures exchanges than on the New York Stock Exchange. Indicative of this are the much higher growth rates on the commodities market relative to the NYSE.

Rules governing these exchanges directly and indirectly establish what the transaction costs will be. The NYSE uses a specialist as a middleman. The CBOT and CME use the open-outcry method of exchange, bypassing the middleman. The rules govern the actions and responsibilities of these trading members. Depending upon the type of rules employed, transaction costs can be lowered. While a few may abuse the rules, they are written to encourage trade among buyers and sellers. The FBI investigation will no doubt produce rule reforms on these exchanges in an attempt to make the markets more efficient, while at the same time reducing the incentive for violations and improving policing abilities.


Board of Trade of the City of Chicago Rules and Regulations. 1982.


Options On Agricultural Futures. 2nd ed. Board of Trade of the City of Chicago. 1986.


APPENDIX 1
TRADING VIOLATIONS

Bucketing  Taking the opposite side of a customer. Instead of executing the customer's trade on the open market, a brokerage firm secretly takes a position opposite of the customer.

Front-Running  Trading for oneself in advance of customer order. Before executing a customer's order, a broker trades for himself first, executes the customer's order, then sells after the price has risen.

Noncompetitive Trading  Trading before large customer orders are filled to take advantage of the order's impact on the market.

Trading After the Bell  Making a trade outside of official trading hours.

Sloppy Trades  Not executing a customer's order when the market reaches the requested price.

Open Outcry System  Traders and locals form close relationships such that they start trading among themselves and not with the whole pit.

These trading violation are discussed in the New York Times (2-15-89) and in the Wall Street Journal (3-14-89).
APPENDIX 2
SEAT PRICES BASED UPON TYPE OF MEMBERSHIP

Chicago Board of Trade

--Full Membership: $400,000. Can trade any futures or options on the exchange. 1,402 memberships.

--Associate Membership: $215,000. Can trade financial futures, precious metals, and all futures' options. 722 memberships.

--Membership Interests:
  - Commodity Options Market: $87,000. Can trade only futures options. 583 memberships.
  - Evening trading permits: $180,000. Can trade Treasury note bonds, bond futures and options, 10-year Treasury note futures and options, 100-ounce gold futures, and 5,000-ounce silver futures.

Chicago Mercantile Exchange

--Full Membership: $480,000. Can trade any futures or options listed on the exchange. 625 memberships.


--Index and Options Market: $124,000. Can trade stock-index futures, random length lumber and all futures' options. 1,287 memberships.

This information was reprinted in the Muncie Star from the Chicago Tribune 2-12-89.
APPENDIX 3
TRADING RULES

Chicago Mercantile Exchange

Trading Practices

520. Trading Confined To Exchange Floor.

521. Pit Trading--All transactions, including spread transactions, shall be by open outcry in the established pit for that commodity.

522. Board Trading.
523. Acceptance of Offers and Bids.
524. Responsibility For Trades.
525. Confirmation Of Trades.
526. Errors Discovered During Trading Session.
527. Errors Discovered After A Trading Session.
528. Change In Last Sale Price.
529. Withholding Orders Prohibited.
530. Priority Of Customers' Orders.

531. Trading Against Customers' Order Prohibited--A member having in hand a customer order shall not knowingly enter into a transaction on behalf of that customer in which the member assumes the opposite side.

532. Disclosing Orders Prohibited--A member shall not disclose another person's order to buy or sell, except to an officer of the market or CFTC. Violation of this rule is a major offense.

533. Simultaneous Buying And Selling Orders For Different Principals Executed By One Trader.
534. Simultaneous Buying And Selling Orders For The Same Principals Prohibited.
535. Responsibility Of Traders And Brokers.
536. Records For Orders And Personal Transactions.
537. Confirmations To Customers.
538 Transfer Of Spot For Futures.

539. Pre-Arranged Trades Prohibited--A member shall not make any purchase or sale which has been pre-arranged except a transfer of spot for futures.

540. Liability On Limit Orders.
542. Simultaneous Spread Transactions.
543. Bona Fide Hedging, Arbitrage And Intercommodity Spread Positions.
544. Closing Day Orders.
545. Closing Bid And Offers In Blackboard Trading.
546. Opening And Closing Ranges.
547. Discretionary Orders.
548. Priority Of Execution.

This is the complete list of "Trading Practices" as listed in Chapter 5 of the Consolidated Rules of The Chicago Mercantile Exchange.
Chicago Board Of Trade

Trading Practices

330.00 Floor Brokers
331.01 Price of Execution Binding

331.02 Acceptable Orders
1. Market orders to buy or sell
2. Closing order to buy or sell
3. Limit order to buy or sell
4. Stop order to buy or sell

332.00 Orders Must Be Executed in The Public Market—all orders received by members must be executed competitively by open outcry in the open market.

332.01 Open Market Execution Requirement
332.01A Bidding and Offering Practices
332.01B Conformation with Section 1.39 of The Commodity Exchange Act

332.02 Trade Data
332.03 Lost Orders
333.00 Trades of Non-Clearing Members
335.00 Bids and Offers in Commodities Subject to First Acceptance
336.00 Bids and Offers in Commodities Subject to Partial Acceptance
337.01 Orders and Cancellations Accepted on A 'Not Held" Basis
350.00 Trade Checking Penalties
350.01 Failure to Check Trades
350.02 Checking and Reporting Trades
350.03 Identification of Floor Trading Personnel and Floor Traders
350.04 Errors and Mishandling of Orders

350.05 Floor Practices--The following acts are detrimental to the welfare of the Association
a) for a floor broker to purchase any commodity for future delivery for his own account, while holding an order of another person for the purchase of the same commodity.

b) for a broker to sell any commodity for future delivery for his own account, while holding an order of another person for the sale of the same commodity.

c) for a floor broker to execute any transaction for any account of another person without the prior specific consent of the account owner.
d) for a member to disclose at any time that he is holding an order of another person or from divulging any order revealed to him by reason of his relationship to such other person.

e) for a member to take, directly or indirectly, the other side of any order of another person revealed to him by reason of his relationship to such other person, except with such other person's prior consent and in conformity with Exchange rules.

f) for a member to make any purchase or sale which has been pre-arranged.

g) for a member to withhold or withdraw from, the market any order or part of any order of another person for the convenience of another member.

h) for a member to execute any order after the closing bell is sounded except in a call market close.

i) for a member to buy and sell as an accommodation at any time or to use one order to fill another order.

j) for parties to a transaction to fail to properly notify the pit recorder of the price at which trades have been consummated.

k) for a floor broker to allocate executions of orders in any manner other than an equitable manner.

350.06 Give-Ups
350.07 Confirming and Recording Trades
350.08 Notification of Unchecked Trades
352.01 Spreading Transactions
352.01A Spreading Transactions

This is the complete list of "Floor Practices" as listed in Chapter Three of the Board of Trade of the City of Chicago Rules and Regulations.
New York Stock Exchange

Rule 435.
Miscellaneous Prohibitions

Excessive Trading by Members

Successive Transactions by Members
No member shall execute or cause to be executed on the Exchange the purchases or sale of any security at successively higher or lower prices for the purpose of creating misleading activity in a security, or improperly influencing the market price of the security.

Manipulative Operations
No member shall participate in manipulating for the purpose of unfairly influencing the market price for the purpose of making a profit.

Circulation of Rumors
Reopening a Contract
Loans for Account of Non-Members

Dealings upon the Exchange

Rule:
51. Hours for business

52. Dealings on Floor--Hours
Dealings shall be limited to the hours during which the Exchange is open for the transaction of business.

53. Dealings on Floor--Securities
54. Dealings on Floor--Persons
55. Unit of trading--Stocks and Bonds
56. Unit of trading--Rights

Auction Market--Bids and Offers

60. Dissemination of quotation
61. Recognized quotations
62. Variations
63. "When issued"--"when distributed"
64. Bonds, rights and 100-share unit stocks
65. Less than 100-share unit stocks
66. U.S. Government Securities
70. Below best bid--Above best offer
71. Precedence of highest bid and lowest offer
72. Priority and precedence of bids and offers
73. "Seller's option"
74. Publicity of bids and offers
   A claim by a member who states that he had on the Floor
   a prior or better bid or offer shall not be sustained
   if the bid or offer was not made with the publicity and
   frequency necessary to make the existence of such bid
   or offer generally known at the time of the
   transaction.

75. Disputes as to Bids and Offers
76. "Crossing" orders

77. Prohibited Dealings and Activities
   1) to buy or sell securities "on stop" above or below
      the market
   2) to buy or sell securities "at the close"
   3) to buy or sell dividends
   4) to bet upon the course of the market
   5) to buy or sell privileges to receive or deliver
      securities

78. Sell and buy orders coupled at same price
79. Bids and offers--Binding

Members Dealing for Their Own Account

90. Dealings by members on the Exchange
91. Taking or supplying securities named in order

92. Limitation on members' trading because of customers' orders
   1) no member shall buy or sell any security for his own
      account with the knowledge that his member organization
      holds an unexecuted market order to buy or sell that
      security
   2) no member shall buy or sell any security below or
      above the price at which he or his member organization
      holds an unexecuted limited price order to buy or sell
      such security

93. Trading for joint account
94. Specialists' or odd-lot dealers' interest in joint-accounts
95. Discretionary transactions
96. Limitation on members' trading because of options
97. Limitation on members' trading because of block trading
98. Restrictions on persons affiliated with specialist and odd-
    lot dealer member organizations

The above is a list of various sections throughout the New York
Stock Exchange Constitution and Rules that are related to the
paper or the investigation in Chicago.
## APPENDIX 4

### TRADING VOLUME AND GROWTH

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Financial Currencies</th>
<th>Total Volume</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Futures Trading</td>
<td>Instruments</td>
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<tr>
<td></td>
<td>thousands of contracts</td>
<td>NYSE millions of shares</td>
</tr>
<tr>
<td>1974</td>
<td>27,733</td>
<td>--</td>
</tr>
<tr>
<td>1975</td>
<td>32,200</td>
<td>20</td>
</tr>
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<td>1976</td>
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<td>1977</td>
<td>42,847</td>
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<td>72,127</td>
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<tr>
<td>1986</td>
<td>183,098</td>
<td>96,887</td>
</tr>
</tbody>
</table>

### Growth Rates

- Mean: 0.16024, 0.60048, 0.45671, 0.18755
- Standard Deviation: 0.09386, 0.34973, 0.33876, 0.12819
- Maximum: 0.31074, 1.18283, 1.08505, 0.32714
- Minimum: 0.02500, 0.23913, -0.01719, -0.01828

### Covariance and Correlation

- **Covariance**
  - TC,TC: 0.0079288
  - TC,CUR: 0.0109345
  - TC,FI: 0.0142457
  - TC,NV: 0.0001764
  - CUR,CUR: 0.1032875
  - CUR,FI: 0.0881599
  - CUR,NV: -0.0061394
  - FI,FI: 0.1100828
  - FI,NV: -0.0115429
  - NV,NV: 0.0147904

- **Correlation**
  - TC,TC: 1.0000000
  - TC,CUR: 0.3820942
  - TC,FI: 0.4821945
  - TC,NV: 0.0162924
  - CUR,CUR: 1.0000000
  - CUR,FI: 0.8267753
  - CUR,NV: -0.1570765
  - FI,FI: 1.0000000
  - FI,NV: -0.2860658
  - NV,NV: 1.0000000

### Source

Statistical Abstract Of The United States.
VOLUME OF TRADE

NV—Millions of stock shares
TC
CUR
FI
Thousands of futures contracts

Year