THE COMMON STOCK RETURNS OF CONGLOMERATE COMPANIES IN THE PERIOD 1968-1979

by

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B.S., New York University
(1979)

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF

MASTER OF SCIENCE

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

September 1981

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Submitted to the Alfred P. Sloan School of Management on August 7, 1981 in partial fulfillment of the requirements for the Degree of Master of Science in Management

ABSTRACT

Since unsystematic risk can be eliminated through portfolio diversification, some financial economists believe that investors do not want to pay a premium for the shares of diversified companies and that investors are not compensated for bearing unsystematic risk. This study investigates whether the shares of conglomerate companies provide diversification services to investors and whether unsystematic risk affects the average return on these securities before and after controlling for firm size and industry.

The data for this study are the monthly common stock returns of 28 conglomerate companies during the 12-year period January 1968 through December 1979. To determine whether investors are willing to pay for diversification services provided by securities, the conglomerates in the sample were duplicated as follows: 28 portfolios were constructed to match the sample companies, where each portfolio representing a hypothetical conglomerate consisted of shares of undiversified companies whose businesses were in the same economic sectors as the businesses of the real conglomerate. The undiversified companies were matched with the conglomerate as closely as possible by market capitalization, businesses in industries within particular economic sectors, and sales. The portfolio weight of each component in the hypothetical conglomerate was based on the proportion of sales derived by the real conglomerate in 1979 from the respective economic sectors.

A test of the Capital Asset Pricing Model was performed to determine the risk and return characteristics of the conglomerates in both sample groups. The fundamental proposition underlying this study is: if investors are willing to pay for diversification service, then securities that make it easier for investors to diversify, i.e., securities with lower unsystematic variance, should have lower expected returns than similar securities that do not provide the service because, in the presence of transactions costs, investors would be willing to trade off expected return for lower unsystematic variance. If unsystematic variance is a significant determinant of asset pricing, then returns below those predicted by the CAPM can be explained by the diversification services provided by the securities.

The results of the study indicate that, in general, the shares of conglomerate companies do not provide diversification services to investors and that unsystematic variance does not affect average returns. This finding is consistent with the results obtained by Fama and MacBeth (1973). The evidence is presented for both sample groups and for the combined group of real and hypothetical conglomerates.

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ACKNOWLEDGEMENT

I would like to thank my thesis committee - Professor Terry Marsh and Professor Franco Modigliani for their guidance and support. Their devoted interest in the topic of my research and their concern for my progress made the experience of working with them specially rewarding and enjoyable. Their comments and suggestions considerably improved the presentation of this report. I am also thankful to Doug Swanson for assisting in the computer work, to Francis LeCates of Donaldson, Lufkin & Jenrette for furnishing data on conglomerates, and to Lenner Laval and Debbie Hannon for helping me type the manuscript.

To Moran Santos

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Table of Contents

		Page
Abstract		2
Acknowledgement		4
List of Exhibits		7
Chapter 1:	Introduction	
	1.1 Theoretical Framework	8
	1.2 Objective of the Study	14
	1.3 Sources of Data	15
	1.4 Structure of the Report	16
Chapter 2:	Data and Sampling Methodology	
	2.1 Preliminary Procedures	17
	2.2 Sampling Criteria and General Information: Real Conglomerates	19
	2.3 Sampling Criteria and General Information: Hypothetical Conglomerates	30
Chapter 3:	Testing Procedures	56
Chapter 4:	Empirical Results and Conclusions	61
Chapter 5:	Summary	114
Footnotes		120
Appendix	I. Time Series Monthly Average Return	123
	II. Estimates of Systematic Risk	131
	III. Monthly Average Excess Return	163
	IV. Components of Total Variance	169
	V. Business Line of Conglomerate Companies	199
	VI. Business Line of Undiversified Companies	229
	VII. Monthly Rate of Return	275
References		336

List of Exhibits

		Page
I.	Classification of Industries by Economic Sector	18
II.	Composite of Conglomerate Companies	21
III-1.	Classification of Conglomerate Companies by Economic Sector	23
III-2.	Aggregate Sales of Conglomerate Companies by Economic Sector	28
IV.	Diversified Companies Which Were Screened but Subsequently Rejected	29
V.	Distribution of the Market Capitalization of Conglomerate Companies - December 1979	31
VI.	Distribution of the Market Capitalization of NYSE Companies - December 1979	32
VII-1.	Classification of Undiversified Companies by Economic Sector	38
VII-2.	Aggregate Sales of Undiversified Companies by Economic Sector	42
VIII.	Portfolio Composition of the Hypothetical Conglomerates	43
IX-1.	Market Capitalization - December 1967	52
IX-2.	Market Capitalization - December 1979	53
X.	Fiscal Year 1979 Sales	55
XI.	Histogram of Difference in Monthly Average Returns	63
XII-1.	Mean Leverage	73
XII-2.	Leverage	74
XIII-1.	Difference in Monthly Average Excess Returns	83
XIII-2.	Histogram of Difference in Monthly Average Excess Returns	86
XIV.	Results of the Cross-Sectional Regression (Fama-MacBeth Methodology) - Estimates of the Coefficient of the Unsystematic Risk Variable	93
XV.	Scatter Plot of the Relationship between Excess Return and Unsystematic Risk	97
XVI.	Results of the Cross-Sectional Regression (Fama-MacBeth Methodology) - Other	106

CHAPTER 1

INTRODUCTION

1.1 Theoretical Framework

Capital market theory under uncertainty postulates that investors make their portfolio decisions based on two parameters: expected return and risk, where risk is defined as the standard deviation or variance of returns. This two-parameter portfolio allocation model assumes that (i) the capital market is perfect, (ii) returns on all securities are normally distributed, and (iii) investors are risk averse. Within this framework, investors attempt to hold mean-variance efficient portfolios.[1]

The Sharpe-Lintner mean-variance model of market equilibrium, commonly referred to as the Capital Asset Pricing Model (CAPM), states that the expected return on securities, in a given period t, can be expressed as[2]

$$E(\tilde{R}_{jt}) = R_{ft} + \beta_{jm}[E(\tilde{R}_{mt}) - R_{ft}] \qquad j=1,\ldots,N \qquad (1)$$

where

$E(\tilde{R}_{jt})$ = expected rate of return on the jth security in period t,

R_{ft} = riskless rate of interest in period t,

$E(\tilde{R}_{mt})$ = expected rate of return on the market portfolio in period t, and

β_{jm} = $(\sigma_{jm}/\sigma^2(\tilde{R}_{mt}))$ where $\sigma_{jm} = E(\tilde{R}_{jt} - E(R_j)) \times (\tilde{R}_{mt} - E(R_m))$, $\tilde{R}_{jt}$ represents the stochastic rate of return on security j; $E(R_j)$ and $E(R_m)$ represent the expected rate of return on security j and the market portfolio respectively; $\sigma^2(\tilde{R}_{mt}) = E(\tilde{R}_{mt} - E(R_m))^2$, the variance of the return on the market portfolio. β_{jm} is the risk of security j relative to the risk of the market portfolio, also known as the systematic risk of security j. β_{jm} can be estimated by an ordinary least squares regression of the rate of return on security j on the market portfolio's rate of return:

$$\tilde{R}_{jt} = a_{jm} + \beta_{jm}\tilde{R}_{mt} + \tilde{\varepsilon}_{jt} \qquad j=1,\ldots,N;\ t=1,\ldots T \quad (2)$$

where

$\tilde{R}_{jt}$ = expected rate of return on security j at time t,

a_{jm} = intercept coefficient of the regression line,

β_{jm} = slope coefficient of the regression line = $\sigma_{jm}/\sigma^2(\tilde{R}_{mt})$ = systematic risk in (1), and

$\tilde{\varepsilon}_{jt}$ = random disturbance term, assumed to be uniformly distributed with an expected value equal to zero.

In the Sharpe-Lintner world, $a_{jm} = R_{ft}(1 - \beta_{jm})$; hence, (2) can be rewritten as

$$\tilde{R}_{jt} = R_{ft}(1 - \beta_{jm}) + \beta_{jm}\tilde{R}_{mt} + \tilde{\varepsilon}_{jt} \qquad (2a)$$

$$j=1,\ldots,N;\ t=1,\ldots,T$$

If we introduce R_{ft} in (2) and subtract it from both sides, we obtain

$$E(\tilde{R}_{jt}) - R_{ft} = \alpha_{jm} + \beta_{jm}(E(\tilde{R}_{mt}) - R_{ft}) + \varepsilon_{jt} \qquad (3)$$

$$j=1,\ldots,N;\ t=1,\ldots,T$$

where

E = expectation operator,

$E(\tilde{R}_{jt}) - R_{ft}$ = rate of return on security j at time t in excess of the risk-free rate,

$E(\tilde{R}_{mt}) - R_{ft}$ = excess rate of return on the market portfolio at time t, and

$\alpha_{jm} = a_{jm} - R_{ft}(1 - \beta_{jm})$, the excess return on security j.

According to the Sharpe-Lintner CAPM, if $\alpha_{jm} \neq 0$, then the pricing of security j is in disequilibrium.

As evident in the model, $\tilde{R}_{mt}$ is the only factor affecting the average rate of return on security j and $\tilde{\varepsilon}_{jt}$ explains the variation of the return on security j which is not related to $\tilde{R}_{mt}$. Since $\tilde{R}_{mt}$ and $\tilde{\varepsilon}_{jt}$ are assumed to be independent, the non-β_{jm} related risk can be expressed as $\sigma^2(\tilde{\varepsilon}_{jt})$, the variance of the random disturbance term; hence, the total variance of security j in period t can be written as

$$\sigma^2(\tilde{R}_{jt}) = \beta_{jm}^2\sigma^2(\tilde{R}_{mt}) + \sigma^2(\tilde{\varepsilon}_{jt}) \qquad (4)$$

That is, the variance of security j is equal to its systematic variance plus the unsystematic variance.

Since $\sigma^2(\tilde{\varepsilon}_{jt})$ can be reduced through portfolio diversification, investors are not compensated for bearing unsystematic risk; hence, in (2), β_{jm} is the only relevant measure of risk affecting the equilibrium pricing of securities.

Fama and MacBeth (1973) tested an alternative hypothesis concerning the valuation of shares in a two-parameter world. They introduced two variables not present

in (1); namely, β_{jm}^2 and $\sigma(\tilde{\varepsilon}_{jt})$ where the latter refers to the standard deviation of the random disturbance term in (2). Their competing model of (1) is as follows:

$$E(\tilde{R}_{jt}) = E(\tilde{R}_{0mt}) + [E(\tilde{R}_{mt}) - E(\tilde{R}_{0mt})]\beta_{jm} + q\beta_{jm}^2 + d\sigma(\tilde{\varepsilon}_{jt}) \qquad (5)$$

$$j=1,\ldots,N;\ t=1,\ldots,T$$

where, E is the expectation operator and $\tilde{R}_{0mt}$ refers to the rate of return on the security that is uncorrelated with the market. The remaining variables are as previously defined. The purpose of introducing the quadratic term β_{jm}^2 as an additional variable is to test whether the relationship between β_{jm} and $E(\tilde{R}_{jt})$ is, in fact, linear as the CAPM indicates. If it is, then q, the coefficient of β_{jm}^2 must be equal to zero. Similarly, $\sigma(\tilde{\varepsilon}_{jt})$ was introduced to test whether risk other than β_{jm} affect the valuation of securities. To test the implications of their competing proposition, Fama and MacBeth suggested that the return on security j in period t can be written as

$$\tilde{R}_{jt} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t}\,\beta_{jm} + \tilde{\gamma}_{2t}\,\beta_{jm}^2 + \tilde{\gamma}_{3t}\,\sigma(\tilde{\varepsilon}_{jt}) + \eta_{jt} \qquad (6)$$

$$j=1,\ldots,N;\ t=1,\ldots,T$$

(6) is the general version of the alternative model they presented. Under the assumption of a linear relationship

between β_{jm} and $E(\tilde{R}_{jt})$, $\tilde{\gamma}_{2t}\ \beta_{jm}^2$ can be eliminated from (6). A cross-sectional multiple regression can then be performed to determine the effect of unsystematic risk on the expected rate of return on securities. With this proposed modification, the variant model then becomes

$$R_{jt} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t}\ \beta_{jm} + \tilde{\gamma}_{2t}\sigma(\tilde{\varepsilon}_{jt}) + \eta_{jt} \qquad (7)$$

$$j=1,\ldots,N;\ t=1,\ldots,T$$

Fama and MacBeth performed a test on the CAPM to determine the relationship between average return and risk during the period January 1926 through June 1968 for all common stocks traded on the New York Stock Exchange (NYSE) using the alternative model they proposed. The results of their study indicate that the relationship between expected return and β_{jm} is linear and that no measure of risk, in addition to β_{jm}, is needed to explain differences in expected returns.

Roll [1977] has pointed out that there is always an ex-post "market portfolio m" for which an ex-post CAPM (5) holds with $q \equiv d \equiv 0$. Thus, the tests presented in this study could be viewed as part of an examination of the sensitivity of the CAPM relationship to the NYSE Index, the proxy used in this study to represent the market portfolio, when it is applied to conglomerate companies.

1.2 Objective of the Study

The objective of this study is to conduct a test on the monthly common stock returns of a sample of conglomerate companies to determine whether investors are willing to pay more, by accepting a lower return, for the shares of conglomerate companies that provide diversification service. That is, this study investigates whether returns below those predicted by the CAPM are related to the unsystematic variance of stock returns before and after controlling for firm size and industry. The period covered in this study is January 1968 through December 1979.

1.3 Sources of Data

The primary source of data is the file at the Center for Research in Security Prices (CRSP) at the University of Chicago. The additional reference sources include corporate annual reports, 10K statements, and publications by Standard & Poor's Corporation and Moody's Investors Service.

1.4 Structure of the Report

The remaining sections of this report are organized as follows: The procedures involved in the sampling/matching process are presented in Chapter 2, along with selected data on the companies comprising the two sample groups (real and hypothetical conglomerates). Testing procedures are discussed in Chapter 3, with reference to the underlying theories. Empirical results and conclusions are presented in Chapter 4 and a summary is outlined in Chapter 5. The appendices contain empirical data on monthly average return, excess return, estimates of systematic risk, components of total variance, and historical monthly rate of return. A description of the business line of each of the conglomerate companies and the undiversified companies (which were used as components in the portfolios of hypothetical conglomerates) is included in the Appendix.

CHAPTER 2

DATA AND SAMPLING METHODOLOGY

2.1 Preliminary Procedures

First, I compiled a list consisting of 70 diversified companies.[3] Then, I used as reference sources the Standard & Poor's Stock Reports and the Moody's Handbook of Common Stocks to review the business line of each of these diversified companies. In cases where the description of the businesses was not explicit, I used as reference sources the corporate annual reports and, in some cases, the 10K statements. Then, based on the sales data at the end of fiscal year 1979, I classified each company's business line by industry and by economic sector. Exhibit I lists the 9 economic sectors and the industries within each sector which I used as the basis for classifying the businesses of the 70 companies I initially screened.

EXHIBIT I

CLASSIFICATION OF INDUSTRIES BY ECONOMIC SECTOR

1. BUILDING AND CONSTRUCTION
   - Building Materials
   - Heavy Construction
   - Home Builders

2. CAPITAL GOODS
   - Aerospace
   - Electrical Equipment
   - Electronic Controls & Components
   - Machinery

3. CONSUMER DURABLES
   - Appliances
   - Automobiles
   - Household Durables
   - Leisure Products
   - Tire & Rubber

4. CONSUMER NONDURABLES
   - Apparel
   - Beverage
   - Cosmetics
   - Drugs/Health Care
   - Food
   - Hospital Supply
   - Photography
   - Publishing
   - Soap
   - Textile
   - Tobacco

5. CONSUMER SERVICES
   - Broadcasting
   - Entertainment
   - Lodging
   - Restaurants
   - Retailing

6. ELECTRONIC TECHNOLOGY
   - Computer Services
   - Electronics Instrumentation
   - Office Equipment
   - Semiconductors

7. INTERMEDIATE PRODUCTS
   - Auto Parts
   - Business Products & Services
   - Chemicals
   - Containers

8. NATURAL RESOURCES
   - Coal & Nuclear
   - Forest Products
   - Metals
   - Oil & Gas

9. TRANSPORTATION
   - Airlines
   - Railroads
   - Shipping
   - Trucking

2.2 Sampling Criteria and General Information: Real Conglomerates

The 28 conglomerates used as the sample in this study were selected from the group of 70 diversified companies on the basis of the following criteria: The companies

(i) were diversified companies in 1968, i.e., were already conglomerates at the time of the beginning of this study,

(ii) became conglomerates largely as a result of an active acquisition program particularly during the merger wave in the 1960's; the companies were involved not only in vertical and horizontal mergers but also in conglomerate mergers,

(iii) were listed on the NYSE as of the beginning of January 1968 and remained listed throughout the 12-year period covered in this study, i.e., the companies remained on-going concerns and were not acquired by another company,

(iv) had businesses, at the end of fiscal year 1979, in at least three sectors of the economy, where no particular business in an industry and total businesses in an industry and in a particular economic sector accounted for more than 50% of sales, and

(v) had monthly stock returns for the period January 1968 through December 1979 on the CRSP file. (Assumed in (iii).)

A list of the 28 conglomerates used as the sample in this study is presented in Exhibit II, along with sales and market capitalization data on each company. Collectively, the market value of the common stock of these companies at the end of December 1979 totalled $23.5 billion, which represented 2.5% of the market value of shares traded on the NYSE. In December 1967, the aggregate market value of the common stock of these companies was $17.7 billion, or 3% of the NYSE.

In certain sections of this report, the stock symbols (as listed in Exhibit II) are used, instead of the companies' names.

COMPOSITE OF CONGLOMERATE COMPANIES

EXHIBIT II

Stock Symbol	Company	Fiscal Year 1979 Sales ($ Million)	1979 Fortune 500 Rank (Based on Sales)	December 1979 Market Value of Common Stock ($ Million)
AME	Ametek, Inc.	$ 393	-	$ 255.3
AMA	Amfac, Inc.	1,689		316.4
CSL	Carlisle Corporation	324	-	108.9
CRO	Chromalloy American Corporation	1,536	209	286.9
COT	Colt Industries, Inc.	2,141	165	564.6
EPI	Eagle-Picher Industries, Inc.	590	406	195.5
FQA	Fuqua Industries, Inc.	2,017		235.2
GW	Gulf + Western Industries, Inc.	5,288	52	825.1
ICX	IC Industries, Inc.	3,735	91	390.8
IU	IU International Corporation	2,063		351.7
KDE	Kidde Inc.	2,275	155	348.1
LTV	The LTV Corporation	7,997	31	194.0
LSI	Lear Siegler, Inc.	1,327	233	345.2
LIT	Litton Industries, Inc.	4,088	81	1,518.3
ML	Martin Marietta Corporation	2,061	168	1,161.0
MMM	Minnesota Mining and Manufacturing Company	5,440	51	5,897.5
NRI	Norris Industries, Inc.	659	369	229.3
NWT	Northwest Industries, Inc.	2,580	133	1,046.0
OG	Ogden Corporation	2,241	161	289.6
REP	Republic Corporation	287	-	72.5
SCM	SCM Corporation	1,754	193	219.8
TRW	TRW Inc.	4,560	68	1,127.8
TDY	Teledyne, Inc.	2,706	126	1,804.0
TGT	Tenneco, Inc.	11,209	18	3,994.6
TXT	Textron, Inc.	3,393	100	871.1
USI	U.S. Industries, Inc.	1,274	240	213.5
VMC	Vulcan Materials Company	748	341	375.1
WKR	Whittaker Corporation	1,074	271	258.8
		$75,449		

The next exhibit lists the proportion of 1979 sales derived by each conglomerate from specific economic sectors. The aggregate sales of the sample companies in each sector are listed in Exhibit III-2. (As a group, the conglomerates derived 66.4% or $50 billion of their aggregate sales from the capital goods, intermediate products, and natural resources sectors.)

CLASSIFICATION OF CONGLOMERATE COMPANIES BY ECONOMIC SECTOR EXHIBIT III-1

Economic Sector	Company	% of 1979 Sales in Economic Sector
Building & Construction	CSL	13.0%
	CRO	13.0
	EPI	11.2
	FQA	2.2
	GW	5.4
	IU	2.9
	KDE	18.8
	LSI	6.1
	ML	18.2
	NRI	34.0
	OG	25.1
	TGT	6.0
	TXT	4.3
	USI	27.9
	VMC	42.4
Capital Goods	AME	20.1%
	CSL	21.0
	CRO	25.9
	COT	42.6
	EPI	40.0
	FQA	2.0
	GW	15.5
	IU	3.4
	KDE	23.6
	LTV	17.0
	LSI	42.3
	LIT	50.5

EXHIBIT III-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Capital Goods (Continued)	ML	47.1
	MMM	9.0
	NRI	17.1
	NWT	10.8
	OG	5.4
	SCM	1.9
	TRW	54.3
	TDY	46.8
	TGT	45.0
	TXT	49.0
	USI	32.7
	WKR	51.2
Consumer Durables	CSL	17.9%
	COT	2.1
	FQA	18.6
	GW	8.7
	KDE	24.8
	LIT	4.3
	MMM	8.0
	NRI	13.1
	SCM	18.3
	TDY	10.6
	TXT	25.8
	USI	24.9
	WKR	11.2

EXHIBIT III-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Consumer Nondurables	AMA	27.1%
	CRO	14.6
	FQA	4.6
	GW	25.2
	ICX	37.5
	IU	13.2
	LTV	29.0
	LIT	5.3
	MMM	20.0
	NWT	35.2
	OG	8.7
	REP	43.9
	SCM	25.5
	TXT	7.4
	USI	14.5
	WKR	16.9
Consumer Services	AMA	26.6%
	FQA	9.7
	GW	16.4
Electronic Technology	AME	32.1%
	KDE	4.4
	LSI	3.0
	LIT	21.2
	ML	2.5
	MMM	18.0
	SCM	3.4
	TRW	6.2
	TDY	5.8

EXHIBIT III-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Intermediate Products	AME	27.0%
	AMA	46.3
	CSL	48.1
	CRO	9.1
	COT	15.4
	EPI	37.6
	FQA	43.1
	GW	14.4
	IU	26.2
	KDE	28.4
	LSI	41.0
	LIT	5.1
	ML	11.8
	MMM	45.0
	NRI	35.8
	NWT	22.8
	OG	12.5
	REP	41.1
	SCM	36.9
	TRW	39.5
	TGT	25.0
	TXT	13.5
	VMC	31.0
	WKR	15.1

EXHIBIT III-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Natural Resources	AME	20.8%
	CRO	21.5
	COT	39.9
	EPI	11.2
	FQA	4.6
	GW	14.4
	IU	8.6
	LTV	50.0
	LSI	7.6
	LIT	13.6
	ML	20.4
	NWT	31.2
	OG	36.4
	REP	15.0
	SCM	14.0
	TDY	36.8
	TGT	24.0
	VMC	26.6
	WKR	5.6
Transportation	CRO	15.9%
	FQA	15.2
	IU	45.7
	LTV	4.0
	OG	11.9

EXHIBIT III-2

AGGREGATE SALES OF CONGLOMERATE COMPANIES BY ECONOMIC SECTOR

Economic Sector	Fiscal Year 1979 Sales ($ Million)	% of Total
Building and Construction	$ 3,859	5.11%
Capital Goods	20,572	27.27
Consumer Durables	4,117	5.46
Consumer Nondurables	10,237	13.57
Consumer Services	1,514	2.01
Electronic Technology	2,662	3.53
Intermediate Products	16,219	21.49
Natural Resources	13,294	17.62
Transportation	2,975	3.94
	$75,449	

The business line of each of the 28 conglomerates, classified by industry and by economic sector, are presented in Appendix V.

Most of the diversified companies were rejected because they derived more than 50% of their total sales in 1979 from one economic sector. Another common reason for rejecting them was that their businesses were in two economic sectors; hence, violating the three-sector requirement. 10 companies were rejected because their stock returns data on the CRSP file begin in periods later than January 1968.

EXHIBIT IV

DIVERSIFIED COMPANIES WHICH WERE SCREENED BUT SUBSEQUENTLY REJECTED

Date*	Company	Date*	Company
6/69	Alco Standard	7/35	Greyhound
12/25	American Standard	12/25	Ingersoll-Rand
1/30	Avco	12/25	International Telephone & Telegraph
7/73	Baldwin-United	12/44	Koppers
10/64	Bangor Punta	3/59	Loews
12/25	Bendix	5/69	Masco
4/29	Borg-Warner	7/68	Norton Simon
5/62	Chesebrough-Ponds	12/25	RCA
12/26	City Investing	9/52	Raytheon
	Core Industries	4/30	Rockwell International
8/29	Curtiss-Wright	7/68	Signal Companies
9/33	Dart & Kraft	7/60	Singer
12/56	Dover	10/69	Southdown
10/31	Dresser Industries	12/25	Sperry
7/35	Esmark	11/69	Standex International
2/29	Evans Products	12/25	Stewart Warner
4/31	FMC	7/30	Transamerica
12/25	General Electric	1/74	Tyco Laboratories
8/37	General Tire	5/29	United Technologies
1/46	Gould	3/27	White Consolidated
2/53	W. R. Grace	4/68	Zapata

*The CRSP file contains data on the company starting from this month/year.

2.3 Sampling Criteria and General Information: Hypothetical Conglomerates

To test whether conglomerates provide diversification service to investors, I duplicated the sample companies by constructing 28 portfolios which I called the hypothetical conglomerates.[4] Each hypothetical conglomerate portfolio consists of securities of undiversified companies in each of the economic sectors represented by the real conglomerate. The portfolio weight of each undiversified company in any hypothetical conglomerate portfolio is equal to the proportion of the real conglomerate's sales in 1979 obtained from the economic sector in which the undiversified company derived its businesses. The matching of the companies was designed such that the market capitalization of each security in a given portfolio is approximately equal to the market capitalization of the real conglomerate. Furthermore, the companies were matched with the conglomerate as closely as possible by businesses in industries within the economic sector and by sales.

In more detail, the process of duplicating the sample companies involved the following steps: First, by accessing the CRSP file, I obtained the market value of the common stock of each of the sample companies for the period ended December 1979.

The market value of equity, e_{jt}, is given by

$$e_{jt} = P_{jt}N_{jt} \qquad j=1,\ldots,N \qquad (8)$$

where

P_{jt} = market price per share of company j in period t, and

N_{jt} = number of shares of common stock outstanding of company j in period t.

The market capitalization of the sample companies in December 1979 ranged from $72.5 million to $5.9 billion.

EXHIBIT V

DISTRIBUTION OF
MARKET CAPITALIZATION OF
CONGLOMERATE COMPANIES

December 1979

Category ($ Million)	Number of Companies	Actual Value or Range ($ Million)
$ 100	1	$ 73
100-250	7	109-235
250-500	10	255-391
500-1,000	3	565-871
1,000-2,500	5	1,046-1,804
2,500-5,000	1	3,995
5,000	1	5,898
	28	

To construct the matched sample of hypothetical conglomerates, I then screened the NYSE for a list of companies that satisfied the following constraints:

(i) the market capitalization in December 1979 is within one of the following categories:[5]

(in $ million) $ 60- 249
250- 500
555- 645
800- 900
1,000-2,500
3,400-4,800
5,000-6,800 and

(ii) the stock return in January 1968 is on the CRSP file.

Overall, 599 companies satisfied these constraints.

EXHIBIT VI

DISTRIBUTION OF
MARKET CAPITALIZATION OF
NYSE COMPANIES

December 1979

Category ($ Million)	Number of Companies*
$ 60-249	243
250-500	161
555-645	30
800-900	23
1,000-2,500	117
3,400-4,800	15
5,000-6,800	10

*The 28 conglomerates are included in these classifications.

Then, I reviewed the business line of each of the 571 companies, again using as reference sources the Standard & Poor's Stock Reports and the Moody's Handbook of Common Stocks. When the description of the businesses was vague, I checked the corporate annual reports and, in some cases, the 10K statements. And, like the procedures I followed when I reviewed the 70 diversified companies, I used the 1979 sales data to classify the business line of each company by industry and by economic sector. Next, within the group of 571 companies, I identified those which satisfied the following criteria:

(i) were undiversified, i.e., the businesses were primarily derived from one of the 9 economic sectors[6],

(ii) were listed on the NYSE from January 1968 through December 1979, i.e., were not acquired by another company during the period covered in this study[7], and

(iii) monthly stock returns during the entire 144-month period were on the CRSP file.

Of the 571 companies, 84 satisfied the criteria outlined above. For convenience, the 84 companies are referred to as the undiversified companies. The components of the portfolios I constructed to duplicate the sample

companies were obtained from this group of undiversified companies. Collectively, the market value of these companies in December 1979 represented 8.3% of the shares traded on the NYSE. A description of their business lines is presented in Appendix VI, along with sales and market capitalization data.

As the next procedure, I classified the 84 undiversified companies by the economic sectors they represented, i.e., each of the undiversified companies was classified in the economic sector from which it derived at least 70% of its sales in 1979. To match a particular conglomerate, I took those undiversified companies (i) which were classified in the economic sectors in which the conglomerate derived its businesses and (ii) whose market value of equity in December 1979 was within the $\pm$30% of the market value of equity of the conglomerate. (This $\pm$30% constraint was imposed to control for size. It is interesting to note that, in most cases, the components of any one hypothetical conglomerate portfolio had market values within $\pm$10% of the market value of the real conglomerate. The relative market value of the value-weighted portfolio of hypothetical conglomerates in December 1979 was 1.03X.) Then, within the '$\pm$30% subgroup' in each of the economic sectors, I identified the portfolio component (which represents that particular

economic sector) by taking the company whose

(i) market capitalization at the end of December 1979 was approximately equal to that of the real conglomerate, and

(ii) business(es) within the economic sector in fiscal year 1979 were in the same industries as the real conglomerate.

In cases where there was more than one undiversified company within the subgroup that met these requirements, I imposed the following additional constraints:

(iii) product lines within industries were similar, and

(iv) sales in 1979 were approximately equal.[8]

When there were no companies in the ±30% subgroup with businesses in the same industries as the conglomerate, the matching decision was based on requirements (i) and (iv). (In this case, although the businesses of the companies were not in the same industries, they were in the same economic sector.) In cases where there were no companies that met the ±30% constraint in a particular subgroup, I ignored requirements (i) through (iv) and simply used the conglomerate itself as a component of the portfolio; e.g. in the case of Litton Industries, Minnesota Mining and Manufacturing, and Teledyne. The weight of the real conglomerate in the hypothetical conglomerate portfolio was based on the propor-

tion of its sales in 1979 which it derived from the economic sector it represented in the portfolio. Although this approach may have introduced a sampling bias, the magnitude of the resulting error should be insignificant since in all cases, the portfolio weight represented a minor portion of the total, i.e., LIT 4.3%, MMM 17.0%, and TDY 10.6%. I decided not to eliminate these 3 companies from the sample because they are well-established conglomerate companies. Also, MMM, a component of the Dow Jones Industrial Index, with a market capitalization of $5.9 billion in 1979, is the largest company in the sample and, due to its size, its performance should be an interesting basis for comparison.

Since the matching of the companies was based on results in 1979, any significant differences in the performance of the real and hypothetical conglomerates before 1979 may have been due to differences in business mix in earlier periods. For example, Castle & Cooke (a component of the hypothetical IC Industries), representing the consumer nondurable sector, derived 85% of its sales in 1979 from food-related operations from which ICX derived 38% of its sales. However, since ICX's operations in the food industry resulted from its acquisition of Pet Incorporated in August 1978, there was clearly a lack of similarity between the business mix of the real and hypothetical ICX during earlier periods.[9]

Despite a careful effort in matching the companies, a sampling bias based on size (market capitalization) may have occurred, i.e., if a company is relatively large in 1979, it more than likely had abnormal returns over the period. The requirement that the conglomerates survive for the 12-year period will tend to favor those which were ex-post successful. However, the survivorship requirement applies to both the real conglomerates and their hypothetical counterparts.

Exhibit VII-1 lists the classification of the undiversified companies by economic sector, the subgroups on which I imposed the $\pm 30\%$ constraint.

EXHIBIT VII-1

CLASSIFICATION OF UNDIVERSIFIED COMPANIES BY ECONOMIC SECTOR

Economic Sector	Company	% of 1979 Sales in Economic Sector
Building & Construction	Certain-teed	100%
	Fluor	85
	General Portland	99
	Lone Star Industries	93
	Masonite	73
	National Gypsum	79
	Owens-Corning Fiberglas	76
	Weyerhaeuser	70
Capital Goods	Acme Cleveland	100%
	Caterpillar Tractor	100
	Crouse-Hinds	100
	Curtiss-Wright	77
	Deere	100
	Dover	82
	EG&G	92
	General Signal	94
	Grumman	88
	International Harvester	100
	Massey-Ferguson	81
	McDonnell Douglas	100
	Rexnord	100
	Warner & Swasey	100

EXHIBIT VII-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Consumer Durables	American Motors	97%
	Beech Aircraft	100
	Maytag	100
	Sunbeam	81
	Uniroyal	82
	Warner Communications	
	Zenith Radio	100
Consumer Nondurables	Anderson, Clayton	76%
	Castle & Cooke	85
	Central Soya	100
	Edison Brothers Store	77
	Houghton Mifflin	88
	Procter & Gamble	92
	Ralston Purina	88
	Robins (A.H.)	100
	Rorer Group	100
	V.F. Corp.	100
	Walker (Hiram)	90
	Warner-Lambert	87

EXHIBIT VII-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Consumer Services	Associated Dry Goods	96%
	Great Atlantic & Pacfic Tea	100
	Hilton Hotels	100
Electronic Technology	Foxboro	100%
	Motorola	100
	NCR	100
	Tektronix	100
	Varian Associates	73
	Xerox	75
Intermediate Products	Air Products and Chemicals	100%
	Barnes Group	100
	Briggs & Stratton	100
	Clark Oil & Rifining	99
	Dana	100
	Dayco	86
	DuPont	100
	Echlin Manufacturing	100
	Engelhard Minerals & Chemicals	100
	Fruehauf	90
	Hercules	71
	Kennametal	97
	Libbey-Owens-Ford	99
	Lubrizol	100
	NL Industries	100
	Signode	94
	Texas Oil & Gas	75
	Timken	72

EXHIBIT VII-1
(Continued)

Economic Sector	Company	% of 1979 Sales in Economic Sector
Natural Resources	AMAX Inc.	98%
	ASARCO	87
	Dome Mines	100
	Freeport Minerals	100
	Handy & Harman	100
	Hecla Mining	100
	Homestake Mining	100
	Lukens Steel	100
	McIntyre Mines	100
	Northwestern Steel & Wire	100
	Quaker State Oil & Refining	94
	Rosario Resources	100
	Sun Company	100
	UNC Resources	100
Transportation	American Airlines	92%
	Eastern Air Lines	100

As a group, the undiversified companies derived 60.4% or $111 billion of their aggregate sales from the capital goods, consumer nondurables, and intermediate products sectors.

EXHIBIT VII-2

AGGREGATE SALES OF UNDIVERSIFIED COMPANIES BY ECONOMIC SECTOR

Economic Sector	Fiscal Year 1979 Sales ($ Million)	% of Total
Building & Construction	$ 13,562	7.37%
Capital Goods	35,651	19.39
Consumer Durables	10,798	5.87
Consumer Nondurables	25,953	14.11
Consumer Services	8,951	4.87
Electronic Technology	14,680	7.98
Intermediate Products	49,542	26.94
Natural Resources	18,634	10.13
Transportation	6,135	3.34
	$183,906	

The results of the matching process are presented in the next exhibit.

PORTFOLIO COMPOSITION OF THE HYPOTHETICAL CONGLOMERATES EXHIBIT VIII

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{AME}	Warner & Swasey	CG	100%	20.1%	1.02x
	Foxboro	ET	100	32.1	1.22
	Signode	IP	94	27.0	1.07
	Handy & Harman	NR	100	20.8	1.02
H_{AMA}	Castle and Cooke	CN	85%	27.1%	1.12x
	Associated Dry Goods	CS	96	26.6	0.90
	Fruehauf	IP	90	46.3	1.07
H_{CSL}	General Portland	BC	99%	13.0%	0.95x
	Acme Cleveland	CG	100	21.0	1.02
	Uniroyal	CD	82	17.9	1.04
	Barnes Group	IP	100	48.1	1.13
H_{CRO}	Lone Star Industries	BC	93%	13.0%	1.03x
	Rexnord	CG	100	25.9	1.13
	Edison Bros. Stores	CN	77	14.6	0.98
	Libbey-Owens-Ford	IP	99	9.1	0.94
	Rosario Resources	NR	100	21.5	1.11
	American Airlines	T	92	15.9	1.01
H_{COT}	Dover	CG	82%	42.6%	1.00x
	Beech Aircraft	CD	100	2.1	1.06
	Timken	IP	72	15.4	1.01
	Homestake Mining	NR	100	39.9	1.03

FOOTNOTES APPEAR ON PAGE 49.

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{EPI}	Certain-teed	BC	100%	11.2%	1.01x
	Curtiss-Wright	CG	77	40.0	0.89
	Clark Oil & Refining	IP	99	37.6	1.03
	Northwestern Steel & Wire	NR	100	11.2	0.96
H_{FQA}	Certain-teed	BC	100%	2.2%	0.84x
	Massey-Ferguson	CG	81	2.0	0.80
	Zenith Radio	CD	100	18.6	0.78
	Robins (A.H.) & Co.	CN	100	4.6	0.99
	Great Atlantic & Pacific Tea	CS	100	9.7	0.91
	Echlin Manufacturing	IP	100	43.1	1.05
	UNC Resources	NR	100	4.6	1.00
	Eastern Air Lines	T	100	15.2	0.82
H_{GW}	Owens-Corning Fiberglas	BC	76%	5.4%	1.05x
	General Signal	CG	94	15.5	1.09
	Warner Communications			8.7	1.08
	Walker (Hiram)	CN	90	25.2	0.99
	Hilton Hotel	CS	100	16.4	1.00
	Dana	IP	100	14.4	1.02
	Dome Mines	NR	100	14.4	1.07
H_{ICX}	Castle & Cooke	CN	85%	52.0%	0.90x
	Briggs & Stratton	IP	100	24.0	0.96
	American Airlines	T	92	24.0	0.74

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{IU}	National Gypsum	BC	>79%	2.9%	1.03x
	EG&G	CG	92	3.4	0.92
	Castle and Cooke	CN	85	13.2	1.01
	Briggs and Stratton	IP	100	26.2	1.07
	Quaker State Oil Refining	NR	94	8.6	0.97
	American Airlines	T	92	45.7	0.83
H_{KDE}	Masonite	BC	73%	18.8%	0.99x
	Rexnord	CG	100	23.6	0.93
	Maytag	CD	100	24.8	0.95
	Foxboro	ET	100	4.4	0.89
	Fruehauf	IP	90	28.4	0.97
H_{LTV}	Crouse Hinds	CG	100%	17.0%	1.17x
	Central Soya	CN	100	29.0	1.04
	Northwestern Steel & Wire	NR	100	50.0	0.97
	Eastern Air Lines	T	100	4.0	0.99
H_{LSI}	Masonite	BC	73%	6.1%	1.00x
	Rexnord	CG	100	42.3	0.94
	Foxboro	ET	100	3.0	0.90
	Briggs and Stratton	IP	100	41.0	1.09
	Quaker State Oil Refining	NR	94	7.6	0.98

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{LIT}	McDonnell Douglas	CG	100%	50.5%	0.90x
	Litton Industries	CD		4.3	1.00
	Warner Lambert	CN	87	5.3	1.05
	Motorola	ET	100	21.2	1.05
	Texas Oil & Gas	IP	75	5.1	0.87
	Freeport Minerals	NR	100	13.6	0.91
H_{ML}	Fluor	BC	85%	18.2%	1.05x
	International Harvester	CG	100	47.1	1.03
	Tektronix	ET	100	2.5	0.94
	Lubrizol	IP	100	11.8	0.94
	ASARCO	NR	87	20.4	0.97
H_{MMM}	Minnesota Mining & Mfg.	CG		9.0%	1.00x
	Minnesota Mining & Mfg.	CD		8.0	1.00
	Procter & Gamble	CN	92%	20.0	1.04
	Xerox	ET	75	18.0	0.89
	DuPont (E.I.) deNemours	IP	100	45.0	0.99
H_{NRI}	Certain-teed	BC	100%	34.0%	0.86x
	Grumman	CG	88	17.1	0.82
	American Motors	CD	97	13.1	0.91
	Echlin Manufacturing	IP	100	35.8	1.08

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{NWT}	International Harvester	CG	100%	10.8%	1.14x
	Ralston Purina	CN	88	35.2	1.14
	NL Industries	IP	100	22.8	1.09
	ASARCO	NR	87	31.2	1.08
H_{OG}	Lone Star Industries	BC	93%	25.1%	1.03x
	Rexnord	CG	100	5.4	1.12
	Anderson, Clayton	CN	76	8.7	1.05
	Fruehauf	IP	90	12.5	1.17
	Hecla Mining	NR	100	36.4	1.11
	American Airlines	T	92	11.9	1.00
H_{REP}	Houghton Mifflin	CN	88%	43.9%	1.21x
	Dayco	IP	86	41.1	0.99
	Lukens Steel	NR	100	15.0	0.91
H_{SCM}	Massey-Ferguson	CG	81%	1.9%	0.85x
	Zenith Radio	CD	100	18.3	0.84
	Central Soya	CN	100	25.5	0.92
	Varian Associates	ET	73	3.4	1.02
	Clark Oil & Refining	IP	99	36.9	0.91
	McIntyre Mines	NR	100	14.0	0.96

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{TRW}	International Harvester	CG	100%	54.3%	1.06x
	Tektronix	ET	100	6.2	0.97
	Air Products & Chemicals	IP	100	39.5	0.92
H_{TDY}	Deere	CG	100%	46.8%	1.32x
	Teledyne	CD		10.6	1.00
	NCR	ET	100	5.8	1.02
	AMAX	NR	98	36.8	1.33
H_{TGT}	Weyerhaeuser Company	BC	70%	6.0%	1.00x
	Caterpillar Tractor	CG	100	45.0	1.17
	Engelhard Minerals & Chems.	IP	100	25.0	1.07
	Sun Company	NR	100	24.0	1.03
H_{TXT}	Owens-Corning Fiberglas	BC	76%	4.3%	1.00x
	General Signal	CG	94	49.0	1.03
	Warner Communications			25.8	1.02
	Walker (Hiram)	CN	90	7.4	0.94
	Hercules	IP	71	13.5	1.00
H_{USI}	Certain-teed	BC	100%	27.9%	0.93x
	Massey-Ferguson	CG	81	32.7	0.88
	Zenith Radio	CD	100	24.9	0.86
	V.F. Corp.	CN	100	14.5	0.93

EXHIBIT VIII
(Continued)

Hypothetical Conglomerate	Portfolio Composition	Economic Sector Represented*	% of Sales in Sector	Portfolio Weight**	1979 Relative Market Value***
H_{VMC}	National Gypsum	BC	>79%	42.4%	0.97x
	Briggs and Stratton	IP	100	31.0	1.00
	Rosario Resources	NR	100	26.6	0.85
H_{WKR}	Warner & Swasey	CG	100%	51.2%	1.00x
	Sunbeam	CD	81	11.2	1.01
	Rorer Group	CN	100	16.9	1.13
	Kennametal	IP	97	15.1	1.06
	Handy and Harman	NR	100	5.6	1.00

*BC = building & construction
CG = capital goods
CD = consumer durables
CN = consumer nondurables
CS = consumer services
ET = electronic technology
IP = intermediate products
NR = natural resources
T = transportation

** Based on the proportion of the real conglomerate's sales in 1979 derived from specific economic sectors.

*** Market value of equity of the portfolio component divided by the market value of equity of the real conglomerate.

If one wants to examine how well the hypothetical conglomerates match the real conglomerates, one should refer to Appendix V for a description of the businesses of the real conglomerates and then, refer to Exhibit VIII for a list of undiversified companies comprising each of the 28 portfolios. Finally, one should compare the businesses of the real conglomerate to those of the undiversified companies by referring to Appendix VI. A comparison based on market capitalization and total sales can be made by referring to Exhibit IX-2 and Exhibit X.

Exhibits IX-1 and IX-2 present the market capitalization of the real and hypothetical conglomerates for the period ended December 1967 and December 1979 respectively. Despite a general lack of similarity in size in December 1967, wherein 18 out of the 28 hypothetical conglomerates had a market value of equity exceeding ±30% of the real conglomerates, each group's total market value of equity was approximately equal. The data for 1979, on which the matching process was based, show that the market capitalization of each of the hypothetical conglomerates was approximately equal to that of its real counterpart.

The market value of equity of the hypothetical conglomerates was derived by

$$e^H_{jt} = \sum_{k=1}^{Q} X^j_k \, N^j_{kt} \, P^j_{kt} \qquad j=1,\ldots,28;\ k=1,\ldots,Q \qquad (9)$$

where

e^H_{jt} = market value of equity of the j^{th} portfolio (hypothetical conglomerate) at time t,

X^j_k = weight of security k in portfolio j, where $\sum_{k=1}^{Q} x^j_k = 1$,

N^j_{kt} = number of shares of common stock outstanding of security k at time t, and

P^j_{kt} = closing price per share of security k at time t.

EXHIBIT IX-1

MARKET CAPITALIZATION
($ Thousands)

December 1967

	(1) Real Conglomerate	(2) % of Total	(3) Hypothetical Conglomerate	(4) % of Total	(5)=(3)/(1) Relative Market Value
AME	$ 103,951	0.58%	$ 163,342	0.96%	1.57X
AMA	106,655	0.60	341,406	2.01	3.20
CSL	86,980	0.49	149,220	0.88	1.72
CRO	102,312	0.58	244,232	1.44	2.39
COT	223,104	1.26	186,180	1.10	0.83
EPI	84,182	0.48	150,279	0.89	1.79
FQA	81,107	0.46	394,635	2.33	4.87
GW	668,162	3.78	278,512	1.64	0.42
ICX	384,558	2.18	300,551	1.77	0.78
IU	270,904	1.53	409,894	2.42	1.51
KDE	388,285	2.20	213,932	1.26	0.55
LTV	363,250	2.06	125,676	0.74	0.35
LSI	238,193	1.35	163,638	0.96	0.67
LIT	2,312,293	13.08	1,220,659	7.19	0.53
ML	390,812	2.21	711,798	4.19	1.82
MMM	5,079,847	28.75	6,138,098	36.17	1.21
NRI	103,212	0.58	104,835	0.62	1.02
NWT	95,472	0.54	781,603	4.61	8.19
OG	335,062	1.90	226,417	1.33	0.68
REP	197,102	1.12	92,925	0.55	0.47
SCM	373,598	2.11	341,546	2.01	0.91
TRW	1,083,663	6.13	641,328	3.78	0.59
TDY	1,179,447	6.67	838,607	4.94	0.71
TGT	1,360,047	7.70	1,715,884	10.11	1.26
TXT	1,365,350	7.73	250,233	1.47	0.18
USI	153,340	0.87	404,452	2.38	2.64
VMC	103,813	0.59	204,217	1.20	1.97
WKR	437,194	2.47	177,791	1.05	0.41
	$17,671,895		$16,971,890		0.96X
NYSE	$587,547,904				
% of NYSE	3.01%		2.89%		

EXHIBIT IX-2

MARKET CAPITALIZATION
($ Thousands)

December 1979

	(1) Real Conglomerate	(2) % of Total	(3) Hypothetical Conglomerate	(4) % of Total	(5)=(3)/(1) Relative Market Value
AME	$ 255,312	1.09%	$ 279,735	1.15%	1.10X
AMA	316,430	1.35	328,073	1.35	1.04
CSL	108,858	0.46	116,323	0.48	1.07
CRO	286,925	1.22	302,904	1.25	1.06
COT	564,584	2.40	574,948	2.37	1.02
EPI	195,451	0.83	188,606	0.78	0.96
FQA	235,154	1.00	220,471	0.91	0.94
GW	825,082	3.51	851,566	3.50	1.03
ICX	390,753	1.66	343,815	1.41	0.88
IU	351,650	1.50	328,622	1.35	0.93
KDE	348,128	1.48	333,468	1.37	0.96
LTV	194,040	0.83	199,298	0.82	1.03
LSI	345,161	1.47	347,680	1.43	1.01
LIT	1,518,296	6.46	1,433,903	5.90	0.94
ML	1,161,012	4.94	1,170,583	4.81	1.01
MMM	5,897,541	25.10	5,798,579	23.86	0.98
NRI	229,313	0.98	215,447	0.89	0.94
NWT	1,045,971	4.45	1,158,173	4.77	1.11
OG	289,618	1.23	312,412	1.29	1.08
REP	72,531	0.31	77,940	0.32	1.07
SCM	219,788	0.94	199,965	0.82	0.91
TRW	1,127,764	4.80	1,127,803	4.64	1.00
TDY	1,804,042	7.68	2,294,618	9.44	1.27
TGT	3,994,582	17.00	4,398,949	18.10	1.10
TXT	871,114	3.71	883,560	3.64	1.01
USI	213,538	0.91	191,020	0.79	0.89
VMC	375,122	1.60	354,852	1.46	0.95
WRK	258,838	1.10	267,475	1.10	1.03
	$23,496,598		$24,300,788		1.03X
NYSE	$943,418,880				
% of NYSE	2.49%		2.58%		

Exhibit X presents the 1979 sales data of the real and hypothetical conglomerates.

$$S^H_{jt} = \sum_{k=1}^{Q} X^j_k \, S^j_{kt} \qquad j=1,\ldots,28;\ k=1,\ldots,Q \qquad (10)$$

where

S^H_{jt} = total sales of the j^{th} hypothetical conglomerate at time t,

X^j_k = weight of component k in portfolio j, where $\sum_{k=1}^{Q} X^j_k = 1$, and

S^j_{kt} = total sales of component k in portfolio j at time t.

EXHIBIT X

FISCAL YEAR 1979 SALES
($ Million)

	Real Conglomerate	Hypothetical Conglomerate	Relative Sales*
AME	$ 393	$ 531.7	1.35X
AMA	1,689	2,040.8	1.21
CSL	324	776.5	2.40
CRO	1,536	1,144.9	0.75
COT	2,141	582.1	0.27
EPI	590	724.1	1.23
FQA	2,017	1,527.0	0.76
GW	5,288	1,249.5	0.24
ICX	3,735	1,750.9	0.47
IU	2,063	1,953.8	0.95
KDE	2,275	1,160.3	0.51
LTV	7,997	1,101.4	0.14
LSI	1,327	798.8	0.60
LIT	4,088	3,699.7	0.91
ML	2,061	5,059.0	2.45
MMM	5,440	9,712.9	1.79
NRI	659	1,081.2	1.64
NWT	2,580	2,476.5	1.35
OG	2,241	1,104.0	0.49
REP	287	424.8	1.48
SCM	1,754	1,328.7	0.76
TRW	4,560	5,102.9	1.12
TDY	2,706	3,824.0	1.41
TGT	11,209	10,771.1	0.96
TXT	3,393	1,579.7	0.47
USI	1,274	1,574.3	1.24
VMC	748	567.7	0.76
WKR	1,074	434.0	0.40
TOTAL	$75,449	$65,082.3	0.86%

*Sales of hypothetical conglomerate/sales of real conglomerate.

CHAPTER 3

TESTING PROCEDURES

First, by accessing the CRSP file, I computed the monthly stock returns[10] of (i) the 28 real conglomerates, (ii) the 28 hypothetical conglomerates, (iii) the value-weighted portfolio of all NYSE common stocks[11], (iv) the value-weighted portfolio of real conglomerates, and (v) the value-weighted portfolio of hypothetical conglomerates. The returns were computed for each month beginning January 1968 through December 1979. Then, estimates of the systematic risk of the sample companies (real and hypothetical) and of the value-weighted portfolios of both groups were derived by regressing the ex-post returns of the companies, $j=1,\ldots,28$, (or portfolio p) over time against the ex-post return of the market. The market model presented in (2), $R_{jt} = a_{jm} + \beta_{jm} R_{mt} + \varepsilon_{jt}$, was applied to derive the estimates of systematic risk. The first set of estimates was made for the subperiod ended December 1972.[12] The systematic risk of the companies and of the portfolios were re-estimated annually, using the preceding 5 years of monthly data. In addition, for each time series regression, the unsystematic risk was estimated by computing the variance of the estimated residuals.

The estimates of systematic risk and the components of total variance are presented in Appendix II and Appendix IV respectively.

Despite a careful effort in matching the companies, the β_{jm} of the real conglomerates were, in most cases, greater than the β_{jm} of the hypothetical conglomerates. As cited earlier, any differences in performance may be due to a lack of similarity in the business mix of these companies before 1979, e.g., due to acquisition and divestiture activities, although another reason could be differences in capital structure. So, for each year beginning in 1972, I noted the leverage of the real conglomerates and calculated the leverage of the hypothetical conglomerates. Most of the real conglomerates had higher leverage than their counterparts. This means that differences in systematic risk can be partly attributed to differences in financial risk. It should be noted that, since the debt instruments of the 28 conglomerates and the 84 undiversified companies varied in types and since there was no convenient source which provides the total market value of debt of these companies at any given time t, the leverage measure I used was based on the book value of total debt, i.e., the book value of current liabilities plus long-term debt divided by total capital, where total capital is equal to total assets minus

current liabilities (or equivalently, total liabilities plus shareholders' equity minus current liabilities). I would like to point out, though, that this measure of leverage might not be especially meaningful because it is overstated in periods of inflation.

Then, the regression model presented in (3), $R_{jt} - R_{ft} = \alpha_{jm} + \beta_{jm}(R_{mt} - R_{ft}) + \varepsilon_{jt}$, was applied to estimate the monthly average excess return on the securities and the portfolios of conglomerates in each subperiod and in the entire period. The risk-free rate used was the rate on Treasury bills which matured in a given month t.

Next, the difference in monthly returns between the j^{th} real and hypothetical conglomerate was regressed against the market's monthly return premium to determine whether investors were willing to pay a premium for the shares of the conglomerate company, i.e., whether the investors were willing to accept a lower average return. The regression model used was

$$R^R_{jt} - R^H_{jt} = \alpha'_{jm} + \beta'_{jm}(R_{mt} - R_{ft}) + \varepsilon_{jt} \qquad (11)$$

$$j=1,\ldots,28;\ t=1,\ldots,T$$

where

R^R_{jt} = ex-post rate of return on the j^{th} real conglomerate at time t,

R^H_{jt} = ex-post rate of return on the j^{th} hypothetical conglomerate at time t,

$\alpha'_{jm} = \alpha^R_{jm} - \alpha^H_{jm}$, the difference in excess returns between the j^{th} real and hypothetical conglomerate; $\alpha^R_{jm} = \alpha^H_{jm} = \alpha'_{jm} = 0$, if the CAPM is correct,

β'_{jm} = difference in systematic risk between the j^{th} real and hypothetical conglomerate; $\beta'_{jm} = 0$ if the systematic risk of the j^{th} real conglomerate and its counterpart is equal,

$R_{mt} - R_{ft}$ = excess return on the market, and

ϵ_{jt} = random disturbance term which is assumed to satisfy the OLS assumptions.

Securities that provide diversification service should have a statistically significant negative α'_{jm} and lower unsystematic variance.

As an alternative test of whether the shares of conglomerate companies provide diversification services to investors, i.e., whether unsystematic risk contributes to the average returns of these securities, the estimates of β_{jm} and $\sigma^2(\epsilon_{jt})$ were used as explanatory variables in the variant market model proposed by Fama and MacBeth, where the required rate of return on security j is equal to $R_{jt} = \gamma_0 + \gamma_1 \beta_{jm} + \gamma_2 \sigma^2(\epsilon_{jt}) + \eta_{jt}$. If $R_{ft} = \gamma_0$ = the expected

return on a zero beta security, the test $\alpha'_{jm} = 0$ should give equivalent results to the test $\gamma_2 = 0$ if diversification services are responsible for $\alpha'_{jm} \neq 0$. Monthly cross-sectional regressions were performed on three groups: (i) the real conglomerates, (ii) the hypothetical conglomerates, and (iii) the combined group of real and hypothetical conglomerates to test whether unsystematic variance matters before and after controlling for firm size and industry. The monthly returns of the companies in each group, from January 1973 through December 1979 (84 months), were regressed against the explanatory variables, which were held constant every 12 months. The t-statistics for the mean values of γ_2 were computed to test if $E(\gamma_2) = 0$.[13] Then, three observations from each group of 84 regressions were randomly selected to examine the properties of the cross-sectional error term and to determine whether it is correlated with β_{jm} and $\sigma^2(\varepsilon_{jt})$.

CHAPTER 4

EMPIRICAL RESULTS AND CONCLUSIONS

During the entire 12-year period, 17 conglomerates had monthly average returns lower than those of the matched portfolios. AME, AMA, CSL, ML, NWT, TDY, and VMC had higher average returns; EPI, LSI, MEM, and NRI had average returns equal to (or approximately equal to) those of the matched portfolios. The return on the value-weighted portfolio of real conglomerates was 0.42% less, per month, than the return on the portfolio of hypothetical conglomerates. (The portfolio of hypothetical conglomerates had an average return of 0.78% per month.) The average return on Treasury bills was 0.50% per month vis-a-vis the market's 0.53% per month.

In all subperiods, the return on the portfolio of hypothetical conglomerates exceeded the return on the market. The portfolio of real conglomerates had a higher return than the market only during the last 3 subperiods. Only 4 real conglomerates (NRI, NWT, TGT, and VMC) had positive average returns in all subperiods whereas, there were 14 in the hypothetical group. The monthly average return on the portfolio of hypothetical conglomerates was positive in all subperiods. The portfolio of real conglomerates had higher average returns than its counterpart only in the last 2

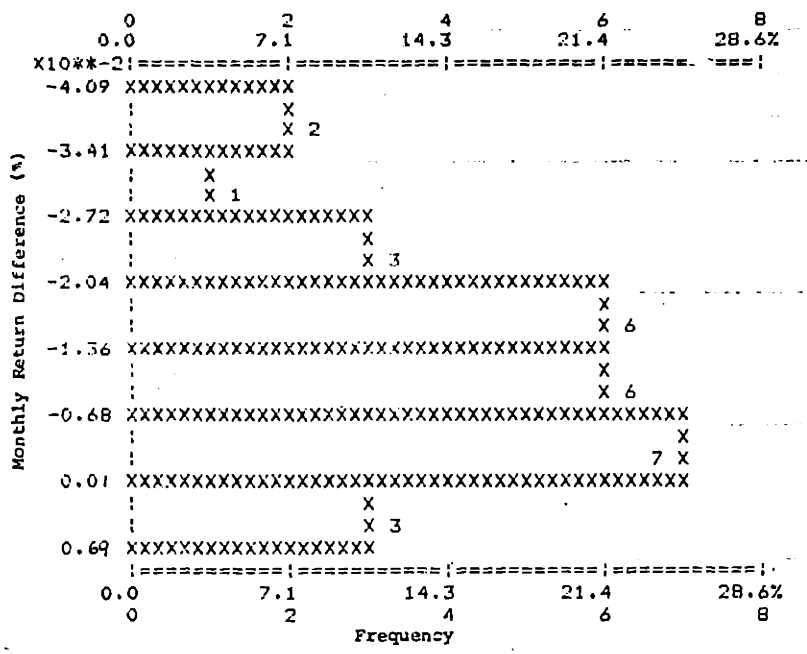
subperiods and its average return was negative in the subperiods 1/69-12/73 and 1/70-12/74. The market had a negative average return in the subperiod 1/70-12/74. Both portfolios of conglomerates were riskier than the market.

Histograms of the difference in average returns between the real and hypothetical conglomerates in each subperiod and in the entire period are presented in Exhibit XI. The data on the time series monthly average returns are shown in Appendix I.

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1968 through December 1972

EXHIBIT XI

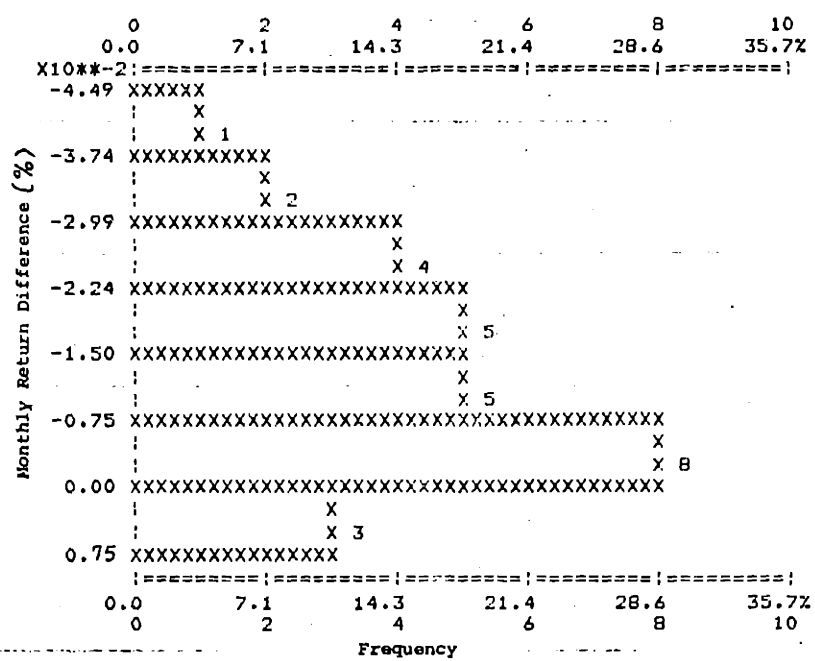


FROM	TO	COUNTS
-0.0409	-0.034071	2.
-0.034071	-0.027243	1.
-0.027243	-0.020414	3.
-0.020414	-0.013586	6.
-0.013586	-0.006757	6.
-0.006757	7.141382E-05	7.
7.141382E-05	0.0069	3.

$\bar{X} = -.0126$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1969 through December 1973



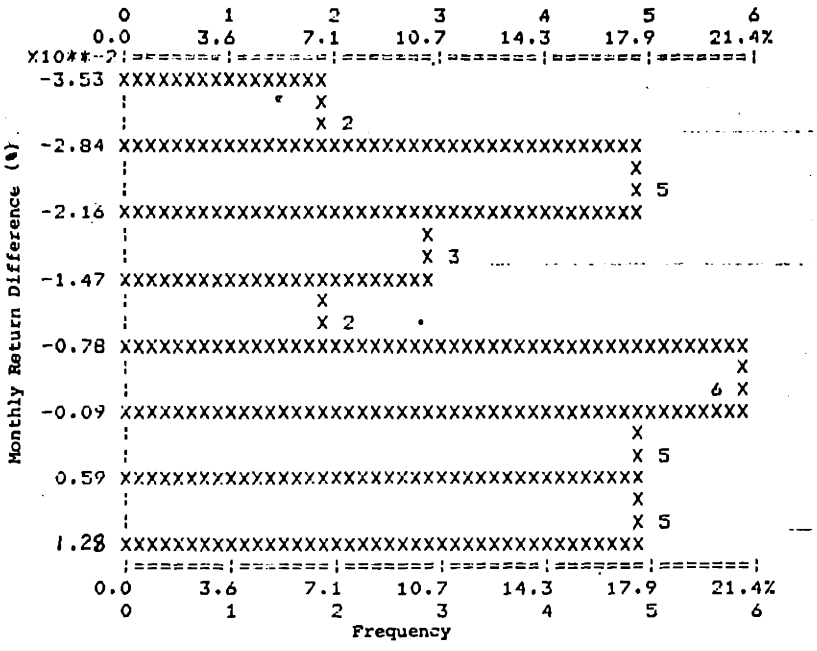
FROM	TO	COUNTS
-0.0449	-0.037414	1.
-0.037414	-0.029929	2.
-0.029929	-0.022443	4.
-0.022443	-0.014957	5.
-0.014957	-0.007471	5.
-0.007471	1.428276E-05	8.
1.428276E-05	0.0075	3.

$\bar{X} = -.0142$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1970 through December 1974

EXHIBIT X
(CONTINUED)

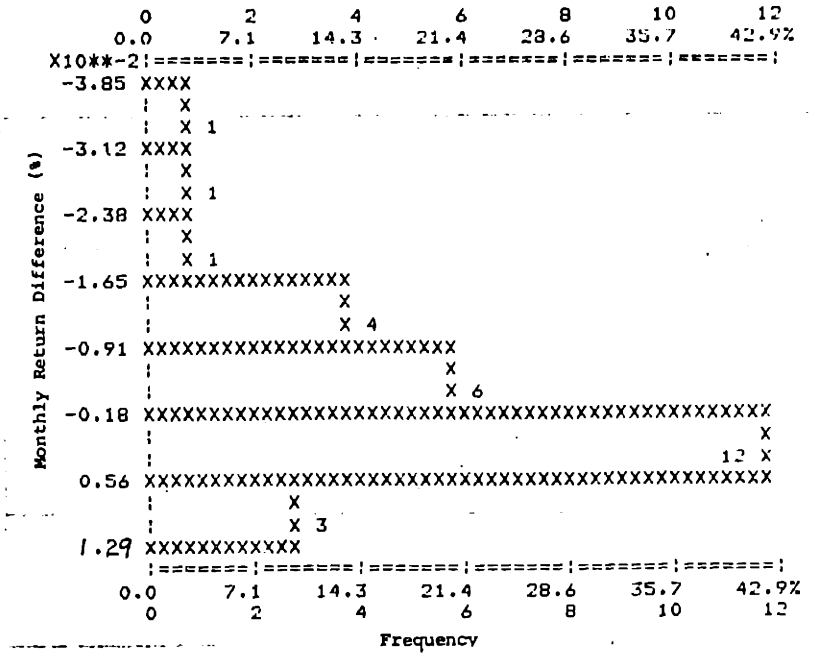


FROM	TO	COUNTS
-0.0353	-0.028429	2.
-0.028429	-0.021557	5.
-0.021557	-0.014686	3.
-0.014686	-0.007814	2.
-0.007814	-0.000943	6.
-0.000943	0.005929	5.
0.005929	0.0128	5.

$\bar{X} = -.0084$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 71 through December 1975



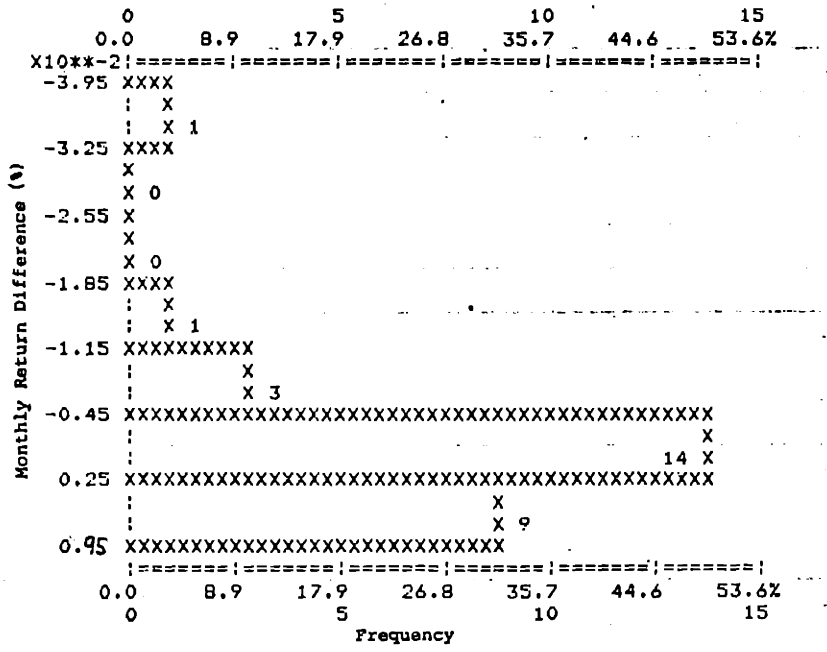
FROM	TO	COUNTS
-0.0385	-0.031157	1.
-0.031157	-0.023814	1.
-0.023814	-0.016471	1.
-0.016471	-0.009129	4.
-0.009129	-0.001786	6.
-0.001786	0.005557	12.
0.005557	0.0129	3.

$\bar{X} = -.0041$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 72 through December 1976

EXHIBIT X1
(CONTINUED)

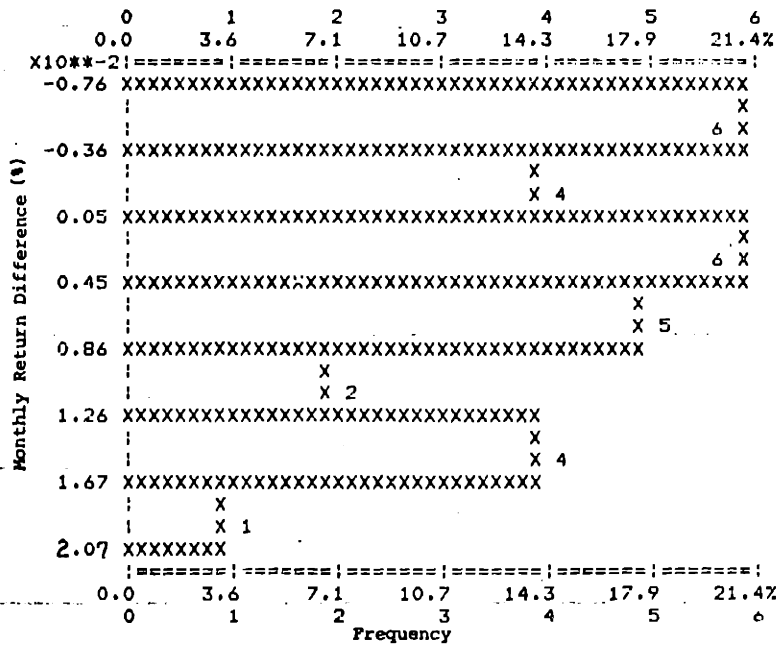


FROM	TO	COUNTS
-0.0395	-0.0325	1.
-0.0325	-0.0255	0.
-0.0255	-0.0185	0.
-0.0185	-0.0115	1.
-0.0115	-0.0045	3.
-0.0045	0.0025	14.
0.0025	0.0095	9.

$\bar{X} = -.0012$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1973 through December 1977



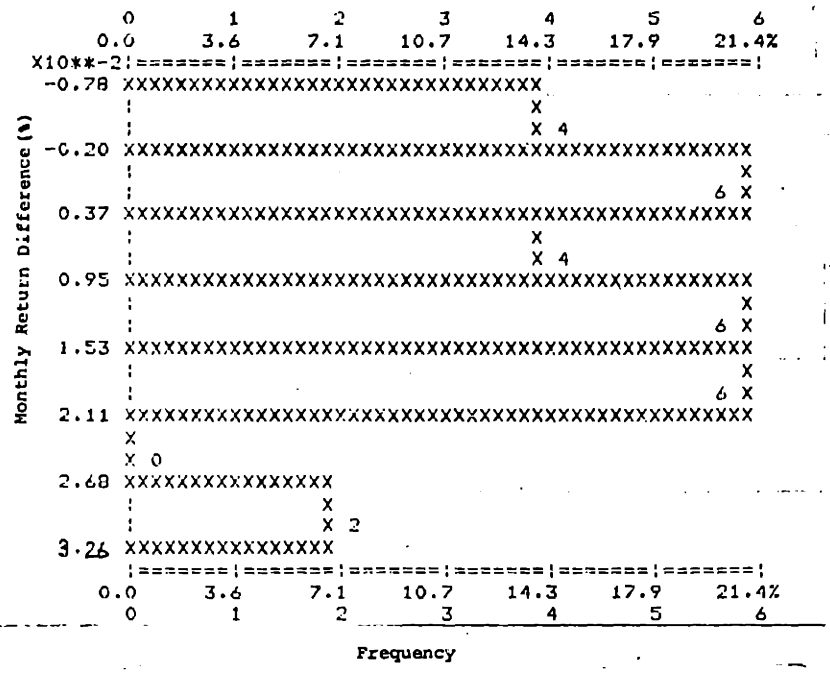
FROM	TO	COUNTS
-0.0076	-0.003557	6.
-0.003557	0.000486	4.
0.000486	0.004529	6.
0.004529	0.008571	5.
0.008571	0.012614	2.
0.012614	0.016657	4.
0.016657	0.0207	1.

$\bar{X} = .0039$

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1974 through December 1978

EXHIBIT XI
(CONTINUED)

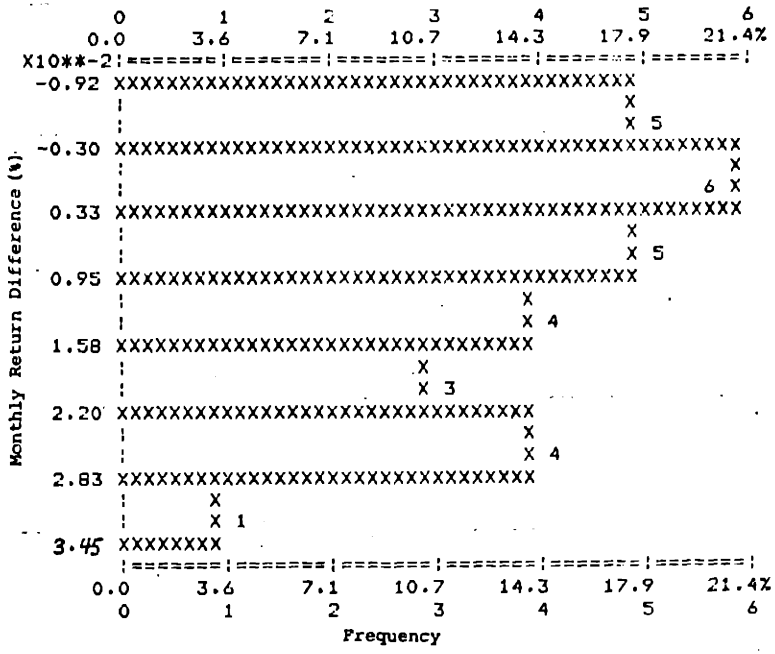


FROM	TO	COUNTS
-0.0078	-0.002029	4.
-0.002029	0.003743	6.
0.003743	0.009514	4.
0.009514	0.015286	6.
0.015286	0.021057	6.
0.021057	0.026829	0.
0.026829	0.0326	2.

$\bar{X}$ = .0097

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)

January 1975 through December 1979

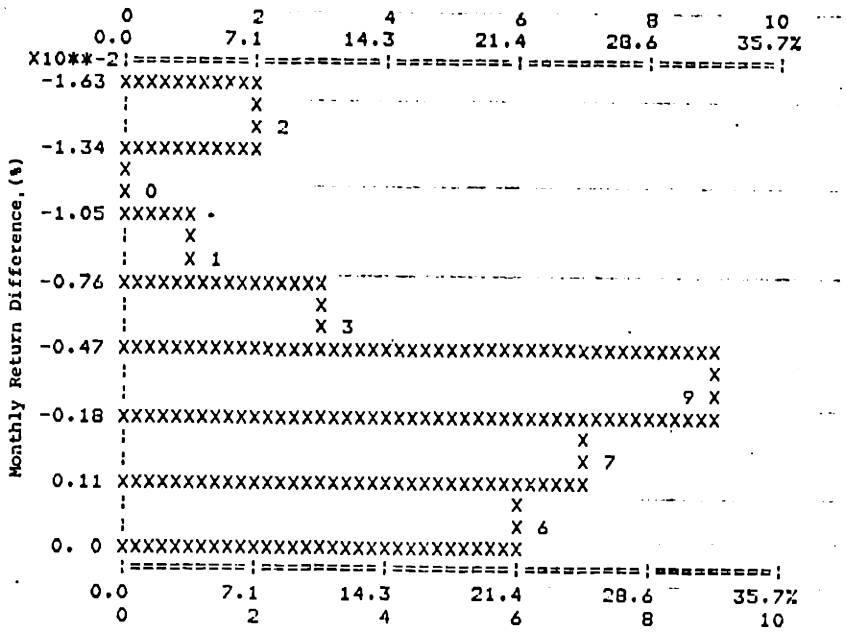


FROM	TO	COUNTS
-0.0092	-0.002957	5.
-0.002957	0.003286	6.
0.003286	0.009529	5.
0.009529	0.015771	4.
0.015771	0.022014	3.
0.022014	0.028257	4.
0.028257	0.0345	1.

$\bar{X}$ = .0089

EXHIBIT X1
(CONTINUED)

HISTOGRAM OF MONTHLY AVERAGE DIFFERENCE IN RETURNS,
REAL - HYPOTHETICAL (CROSS-SECTIONAL DATA)
JANUARY 1968 THROUGH DECEMBER 1979



FROM	TO	COUNTS
-.0163	-.0134	2
-.0134	-.0105	0
-.0105	-.0076	1
-.0076	-.0047	3
-.0047	-.0018	9
-.0018	.0011	7
.0011	.0040	6

$\bar{X}$ = -.0029

During the entire period, 1/68-12/79, 9 real conglomerates had negative excess returns (ICX, IU, KDE, LTV, MMM, REP, SCM, TRW, and USI) while only H_{MMM} had a negative excess return in the hypothetical group but, in all cases, the negative excess returns were not statistically significant. In the group of real conglomerates, only VMC had a positive excess return in all subperiods while there were 11 hypothetical conglomerates that consistently had positive excess returns. Within the group of companies that consistently had positive excess returns, only H_{COT}, H_{GW}, and H_{TDY} had statistically significant positive excess returns during the entire period. The excess return on the portfolio of hypothetical conglomerates was also positive in all subperiods but was statistically significant only in the entire period. Furthermore, the portfolio of hypothetical conglomerates generally had a higher excess return than the portfolio of real conglomerates, except during the last 2 subperiods. The excess return on the portfolio of real conglomerates was negative in the first 5 subperiods but was statistically significant only in the first subperiod.

ICX and LTV, which had the lowest average returns also had the lowest excess returns during the entire period. In the case of ICX, the company was unfavorably affected by events, unique to the company, which occurred in 1972. These unique events explain why ICX had the highest unsystematic

variance during the first 5 subperiods (these subperiods include 1972) (see page 296 for a graphical illustration of ICX's performance): (i) a tragic accident on the Illinois Central Gulf Railroad Chicago Commuter line in October; that mishap claimed several lives[14], (ii) the Federal Trade Commission challenged the company's acquisition of Midas International on the grounds of a possible restraint of trade and asked for its complete divestiture[15], (iii) the death in September of C. Harvey Bradley, who had been a director of ICX since 1962 and a director of the railroad subsidiary since 1957, (iv) management changes (2 new appointments to the Board were made in August), and (v) the delay in the Interstate Commerce Commission's approval of the company's request for a freight rate increase[16]. In addition, ICX was a named defendant in the court actions filed by REA Express in 1971 against approximately 65 railroads for anti-competitive practices. On the other hand, LTV had serious financial problems; the company's financial misfortune subsequently led to the forced resignation of James J. Ling, the company's founder, in 1970.

The data on monthly average excess returns are presented in Appendix III.

The conglomerates, on the average, did not diversify to minimize risk. In 1972, 20 out of the 28 real conglomerates had "betas" greater than 1.5; on the contrary, only 2 hypothetical conglomerates (H_{LIT} and H_{USI}) had betas greater than 1.5. (During that year, there were only 5 real conglomerates and 7 hypothetical conglomerates that had betas $\leq$ 1.0.) The beta of the portfolio of real conglomerates in 1972 was 1.42 whereas, the beta of the portfolio of hypothetical conglomerates was only 1.02. In fact, the portfolio of real conglomerates had greater systematic risk than the portfolio of hypothetical conglomerates in all subperiods but the last one, where both had a beta of 1.12. Despite the fact that the betas of the portfolios were equal in 1979, 17 real conglomerates had betas greater than those of their counterparts during that year. This is surprising because the companies were duplicated as well as possible; hence, it is reasonable to expect their market-related risk to be similar.

The beta <u>estimates</u> were not stable over time, but followed a somewhat uniform pattern across companies, i.e., increased in 1973 and declined thereafter but reversed its trend in 1979. In general, the beta <u>estimates</u> for the conglomerates and the respective matched portfolios were closer in later periods. This implies that the matching of the companies may not have been perfect in earlier periods.

The following reasons may explain the beta differences between the real and hypothetical conglomerates and the pattern of the beta estimates across companies: (i) difference in leverage, (ii) difference in business mix during the earlier periods, as a result of acquisition and divestiture activities[17], (iii) extent of diversification in international markets, (iv) difference in diversification of financial assets, i.e., most of the conglomerates, besides being diversified in their physical assets, are also diversified in their financial assets[18], and (v) sampling bias.

In the subperiod 1/70-12/74, the portfolio of hypothetical conglomerates had a beta of 1.0 but its monthly average return was 0.20% versus the market's return of -0.16%. In the same subperiod, the portfolio of real conglomerates had a beta of 1.25 and a monthly average return of -0.45%.

The estimates of systematic risk are presented in Appendix II, along with the standard error and the t-statistic of the beta estimates and the Durbin-Watson statistic and R^2 of the regressions. The values of the D-W statistic are generally high indicating the absence of first order serial correlation in the disturbance term. All estimates of systematic risk are statistically significant, except in the case of ICX (during the first 5 subperiods). The values of R^2, the coefficient of determination, are generally higher for companies in the hypothetical group. The standard error

of the beta estimates for the hypothetical conglomerates are lower because the hypothetical conglomerates had lower residual variance, i.e., had lower unsystematic risk. The unsystematic risk differences between the real conglomerates and the respective matched portfolios may be due to the fact that there is a common element in the real conglomerates and that is, there is only one top management. Because the real conglomerates, in most cases, had higher systematic risk than their counterparts, they had higher total variance since their unsystematic risk was generally higher, too. It is indeed surprising that the real conglomerates had higher unsystematic variance.

The components of total variance for companies in both sample groups are presented in Appendix IV. Leverage data are presented in the next section.

The leverage of the hypothetical conglomerates was derived as follows:

$$L^H_{jt} = \sum_{k=1}^{Q} X^j_k L^j_{kt} \qquad k=1,\ldots,Q;\ j=1,\ldots,28 \qquad (12)$$

where

L^H_{jt} = leverage of the jth hypothetical conglomerate at time t,

X^j_k = weight of component k in portfolio j, where

$\sum_{k=1}^{Q} X^j_k = 1$, and

L^j_{kt} = leverage of component k in portfolio j at time t.

In general, the real conglomerates had higher leverage than their counterparts. (Refer to page 79 for comments on the measure of leverage used in this study.)

EXHIBIT XII-1

MEAN LEVERAGE

Year	Real Conglomerates	Hypothetical Conglomerates
1972	68.40%	54.16%
1973	73.17	59.88
1974	76.10	65.23
1975	68.83	57.71
1976	67.58	57.15
1977	68.56	58.18
1978	72.80	79.81
1979	72.99	67.30

LEVERAGE*

EXHIBIT XII-2

Year	AME	H_{AME}	AMA	H_{AMA}	CSL	H_{CSL}
1972	62.6%	59.3%	70.8%	64.5%	48.3%	47.1%
1973	64.0	67.6	76.2	71.7	60.4	54.1
1974	69.8	76.5	77.1	77.1	57.2	63.3
1975	60.0	55.1	69.5	62.1	50.4	56.3
1976	54.9	53.8	70.4	62.8	54.4	54.7
1977	57.3	51.4	68.7	65.2	68.7	59.3
1978	51.9	54.3	76.5	72.2	58.1	69.3
1979	58.3	95.2	76.7	79.4	61.9	71.3

Year	CRO	H_{CRO}	COT	H_{COT}	EPI	H_{EPI}
1972	75.0%	55.5%	64.9%	28.7%	49.9%	53.4%
1973	77.8	61.9	69.6	36.2	53.4	64.3
1974	86.6	57.3	68.1	32.4	55.3	70.4
1975	82.5	55.0	66.2	24.2	47.7	64.1
1976	85.0	50.2	65.3	24.7	53.8	61.2
1977	80.7	50.0	62.5	24.2	51.3	61.4
1978	83.3	53.9	69.0	23.2	49.3	63.8
1979	81.1	48.4	63.7	32.3	47.9	70.1

*Footnote appears on page 79.

EXHIBIT XII-2
(continued)

Year	FQA	H_{FQA}	GW	H_{GW}	ICX	H_{ICX}
1972	78.2%	74.5%	80.4%	42.0%	43.2%	60.0%
1973	79.7	85.6	86.1	44.9	47.9	60.2
1974	80.2	84.4	91.9	52.1	54.8	61.4
1975	85.6	71.8	89.4	47.5	52.5	55.8
1976	79.0	69.7	80.5	42.5	53.6	59.8
1977	74.3	68.7	83.2	46.8	53.5	59.7
1978	106.7	72.0	83.2	49.8	70.2	66.0
1979	98.9	69.8	88.3	49.4	69.0	76.0

Year	IU	H_{IU}	KDE	H_{KDE}	LTV	H_{LTV}
1972	77.9%	54.4%	52.3%	44.5%	109.6%	34.3%
1973	75.9	57.5	69.2	50.0	110.2	43.5
1974	80.0	57.7	72.1	54.7	116.8	47.1
1975	76.4	54.4	61.4	45.0	112.0	34.3
1976	75.0	58.4	57.7	41.2	102.3	36.8
1977	76.2	57.2	66.4	42.3	112.9	37.7
1978	76.7	66.7	73.6	45.1	124.8	44.1
1979	80.5	73.3	90.2	48.5	117.7	46.4

EXHIBIT XII-2
(continued)

Year	LSI	H_{LSI}	LIT	H_{LIT}	ML	H_{ML}
1972	76.9%	40.9%	82.9%	73.6%	51.6%	54.7%
1973	78.5	50.0	86.3	73.6	49.9	60.4
1974	78.6	48.2	95.2	109.1	47.7	71.5
1975	68.0	40.5	92.3	85.2	44.5	71.2
1976	65.7	39.8	83.5	78.0	47.5	70.9
1977	88.5	39.8	81.4	86.5	51.4	71.1
1978	82.6	39.7	111.8	102.3	51.4	74.9
1979	81.4	44.5	138.0	97.4	55.3	69.4

Year	MMM	H_{MMM}	NRI	H_{NRI}	NWT	H_{NWT}
1972	39.0%	34.1%	50.0%	81.8%	48.9%	51.8%
1973	40.0	36.3	65.6	85.8	57.8	55.5
1974	55.2	46.4	70.5	77.5	57.3	57.7
1975	44.8	48.1	52.8	77.4	51.2	55.4
1976	43.2	46.7	49.2	81.3	55.2	55.0
1977	38.0	44.1	36.9	77.4	63.2	56.4
1978	40.0	44.4	38.5	74.8	60.9	57.6
1979	38.3	44.1	32.1	68.8	60.0	60.2

EXHIBIT XII-2
(continued)

Year	OG	H_{OG}	REP	H_{REP}	SCM	H_{SCM}
1972	95.9%	43.7%	126.0%	62.9%	66.5%	69.1%
1973	103.7	50.0	124.3	62.1	67.5	77.5
1974	112.8	53.7	111.8	63.4	79.6	89.3
1975	89.4	52.9	90.1	59.5	73.4	70.7
1976	85.3	54.7	94.5	60.6	72.3	69.3
1977	85.5	59.5	79.1	63.4	69.0	70.7
1978	103.1	556.7	76.6	67.7	72.6	70.4
1979	90.2	106.6	63.6	68.1	73.2	74.4

Year	TRW	H_{TRW}	TDY	H_{TDY}	TGT	H_{TGT}
1972	67.7%	67.3%	61.6%	63.5%	67.9%	67.6%
1973	79.0	70.2	64.3	63.2	75.0	79.1
1974	78.2	80.8	66.2	61.6	81.8	92.5
1975	69.5	74.2	63.1	62.5	72.9	74.9
1976	75.6	67.9	72.8	63.4	73.9	86.1
1977	76.6	65.1	63.4	64.4	75.8	90.4
1978	79.7	72.1	52.1	66.4	78.9	89.4
1979	82.9	71.8	40.5	64.3	89.1	126.0

EXHIBIT XII-2
(continued)

Year	TXT	H_{TXT}	USI	H_{USI}	VMC	H_{VMC}
1972	63.8%	45.7%	64.4%	63.3%	36.8%	32.6%
1973	68.5	55.5	65.1	71.7	39.3	34.6
1974	72.4	64.8	67.1	81.8	43.9	33.1
1975	64.1	60.7	60.2	73.4	43.5	29.8
1976	60.8	62.8	46.8	65.9	42.0	35.7
1977	63.8	64.5	46.1	72.4	43.6	32.7
1978	71.1	69.7	46.5	83.8	44.1	37.5
1979	68.4	63.4	46.7	95.8	40.2	26.9

Year	WKR	H_{WKR}
1972	102.1%	45.8%
1973	113.6	53.6
1974	102.7	60.6
1975	93.9	54.0
1976	92.1	46.2
1977	101.6	46.7
1978	105.3	46.8
1979	109.5	42.5

*Based on book value. (Current Liabilities + Long-term Debt)/ Total Capital. Total Capital is defined as Total Liabilities + Shareholders' Equity - Current Liabilities.

In most cases, the high level of short-term debt explains why the leverage of some of the companies exceeded total capital.

The leverage of H_{OG}, 556.7% in 1978, can be explained by the fact that Hecla Mining, a component of H_{OG}, with 36.4% portfolio weight, had a $102 million writeoff during that year (of which $96 million represented the writeoff of its 50% investment in Lakeshore Mine). The writeoff reduced Hecla Mining's common equity to $(473) million; in that year, the company's current liabilities totalled $5.8 million, long-term liabilities $51.0 million, and total capital $4 million.

The measure of leverage used here might not be especially meaningful since it is overstated in periods of inflation.

Exhibit XIII-1 shows the difference in monthly excess returns, α'_{jm}, (with the corresponding t-statistic) in each subperiod for each of the companies in the sample. As cited earlier, if costs associated with portfolio diversification matter to investors, we can expect the shares of conglomerate companies that provide diversification services to investors, i.e., those that have lower unsystematic variance than their counterparts, to have lower excess returns than the corresponding matched portfolios. As shown in Appendix IV, however, the real conglomerates, in general, had higher unsystematic variance than their counterparts in all subperiods; hence, reasons other than diversification service would explain cases where the excess returns of the real conglomerates were significantly lower than those of their counterparts.

During the entire period, 19 conglomerates had lower excess returns but the differences were not statistically significant. (Statistical significance is not measured precisely because the hypothetical conglomerates are not mutually independent (matching portfolios were drawn from a common pool of undiversified companies), and not independent of the real conglomerates (the cases in which the conglomerate was used in its own matching portfolio). 5 conglomerates, however, yielded statistically significant lower excess returns than their counterparts in certain subperiods

(the data in parentheses refer to the value of α'_{jm} and the subperiod in which the difference in monthly average excess returns was statistically significant): LTV (-4.36%, 1/68-12/72), LSI (-2.31%, 1/68-12/72; -2.32%, 1/69-12/73; -2.54%, 1/70-12/74), LIT (-2.88%, 1/68-12/72), REP (-4.37%, 1/69-12/73), and USI (-1.85%, 1/69-12/73; -3.08%, 1/70-12/74; -2.96%, 1/71-12/75). Since the unsystematic variance of these 5 companies was higher in all subperiods than those of their counterparts, we cannot attribute their lower excess returns to diversification service.

Exhibit XIII-2 shows the histogram of the differences in excess returns, α'_{jm}. The equally-weighted mean value of α'_{jm} in each subperiod is also presented but as shown, the values were not statistically significant. However, as shown in Exhibit XIII-1, the value-weighted portfolio of real conglomerates had statistically significant lower excess returns in the first two subperiods. In the entire period, the α'_{jm} of the value-weighted portfolio was -0.43% per month and was statistically significant; this result is attributable to strongly significant lower excess returns in the subperiods 1/68-12/72 and 1/69-12/73. It should be noted, however, that the unsystematic variance of the value-weighted portfolio of real conglomerates exceeded the unsystematic variance of its counterpart in all subperiods (see page 198); hence; as in the case of the individual securities, we cannot

attribute the lower excess return to diversification service.

The evidence presented here suggests that the shares of conglomerate companies did not provide diversification services but, in the earlier periods, investors were willing to trade off average return for some characteristic(s) of conglomerates. However, even if such an attraction to conglomerate stocks existed then, for reasons other than diversification service, the attraction did not persist.

EXHIBIT XIII-1

DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS (α'_{jm})

MODEL: $R^R_{jt} - R^H_{jt} = \alpha'_{jm} + \beta'_{jm}(R_{mt} - R_{ft}) + \varepsilon_{jt}$ $\quad j=1,\ldots,28;\ t=1,\ldots,T$

Period	AME		AMA		CSL		CRO		COT		EPI	
1/68-12/72	- .45%	(- .37)	.69%	(0.76)	-1.02%	(-0.92)	- .68%	(-0.64)	-1.93%	(-1.39)	- .57%	(-0.46)
1/69-12/73	-1.33	(-1.24)	- .43	(-0.41)	- .03	(-0.03)	- .66	(-0.63)	-1.67	(-1.24)	- .52	(-0.42)
1/70-12/74	- .95	(-0.86)	.41	(0.37)	1.06	(1.11)	-1.44	(-1.58)	.12	(0.09)	.24	(0.19)
1/71-12/75	.28	(0.25)	- .48	(-0.39)	.46	(0.51)	-1.27	(-1.57)	.24	(0.18)	.07	(0.06)
1/72-12/76	.25	(0.22)	-1.08	(-0.92)	- .07	(-0.08)	- .68	(-0.81)	.92	(0.69)	.09	(0.08)
1/73-12/77	.60	(0.57)	- .84	(-0.73)	.26	(0.31)	- .43	(-0.51)	.34	(0.28)	1.29	(1.42)
1/74-12/78	1.31	(1.26)	.04	(0.04)	.33	(0.40)	- .18	(-0.19)	1.40	(1.22)	1.14	(1.05)
1/75-12/79	.58	(0.59)	.15	(0.17)	1.10	(1.14)	.13	(0.12)	.13	(0.11)	.04	(0.04)
1/68-12/79	.06	(0.09)	.26	(0.40)	.17	(0.26)	- .24	(-0.37)	-.60	(-0.73)	.01	(0.01)

Period	FOA		GW		ICX		IU		KDE		LTV	
1/68-12/72	-1.93%	(-1.25)	-1.59%	(-1.54)	-4.12%	(-1.11)	- .02%	(-0.01)	-2.02%	(-1.54)	-4.36%	(-2.10)
1/69-12/73	-2.55	(-1.59)	- .52	(-0.52)	-3.35	(-0.90)	.72	(0.61)	-1.19	(-0.92)	-2.40	(-1.11)
1/70-12/74	-2.74	(-1.59)	1.42	(1.33)	-3.56	(-0.95)	.62	(0.51)	- .88	(-0.70)	- .35	(-0.17)
1/71-12/75	-1.25	(-0.87)	1.26	(1.15)	-3.87	(-1.06)	- .51	(-0.50)	- .03	(-0.03)	.14	(0.07)
1/72-12/76	- .35	(-0.22)	.50	(0.52)	-3.95	(-1.09)	- .33	(-0.32)	.15	(0.15)	.15	(0.11)
1/73-12/77	.14	(0.09)	- .52	(-0.55)	.20	(0.23)	- .44	(-0.45)	.81	(0.83)	- .35	(-0.29)
1/74-12/78	.89	(0.62)	- .21	(-0.23)	- .22	(-0.24)	-1.28	(-1.38)	.89	(0.95)	- .82	(-0.61)
1/75-12/79	1.98	(1.52)	- .94	(-1.09)	.46	(0.56)	.07	(0.07)	.89	(0.91)	-1.10	(-0.80)
1/68-12/79	- .20	(-0.21)	- .76	(-1.17)	-1.60	(-1.00)	- .14	(-0.20)	- .47	(-0.66)	-1.66	(-1.51)

EXHIBIT XIII-1
(CONTINUED)

Period	LSI		LIT		ML		MMM		NRI		NWT	
1/68-12/72	-2.31%	(-2.06)	-2.88%	(-2.26)	- .37%	(-0.42)	.19%	(0.38)	- .34%	(-0.28)	- .39%	(-0.31)
1/69-12/73	-2.32	(-2.05)	-2.53	(-1.90)	- .61	(-0.73)	.23	(0.45)	-1.09	(-0.93)	- .51	(-0.45)
1/70-12/74	-2.54	(-2.02)	-2.98	(-1.87)	- .14	(-0.14)	.14	(0.24)	- .70	(-0.54)	1.66	(1.57)
1/71-12/75	-1.28	(-1.01)	-1.28	(-0.70)	.04	(0.05)	.20	(0.32)	- .36	(-0.27)	1.37	(1.43)
1/72-12/76	.58	(0.46)	.14	(0.07)	.14	(0.15)	- .06	(-0.09)	.59	(0.41)	.26	(0.30)
1/73-12/77	1.53	(1.31)	1.40	(0.69)	.51	(0.58)	- .03	(-0.04)	.42	(0.29)	1.47	(1.76)
1/74-12/78	2.02	(1.82)	1.66	(0.83)	1.20	(1.39)	.12	(0.17)	1.46	(1.14)	2.04	(2.67)
1/75-12/79	1.65	(1.77)	2.35	(1.35)	.77	(0.94)	- .09	(-0.13)	1.11	(0.91)	1.02	(1.21)
1/68-12/79	- .22	(-0.03)	- .26	(-0.25)	.22	(0.40)	.06	(0.16)	- .01	(-0.01)	.30	(0.43)

	OG		REP		SCM		TRW		TDY		TGT	
1/68-12/72	-1.57%	(-1.35)	-2.83%	(-1.27)	-2.01%	(-1.78)	-1.18%	(-1.14)	-2.02%	(-1.72)	- .17%	(-0.25)
1/69-12/73	- .36	(-0.30)	-4.37	(-2.10)	-1.52	(-1.35)	-1.43	(-1.29)	-1.90	(-1.61)	- .48	(-0.71)
1/70-12/74	1.10	(0.87)	-2.82	(-1.23)	.77	(0.59)	-1.56	(-1.41)	-1.68	(-1.16)	.11	(0.15)
1/71-12/75	1.01	(0.96)	-1.70	(-0.72)	.37	(0.26)	- .73	(-0.73)	- .75	(-0.52)	.19	(0.26)
1/72-12/76	.95	(0.91)	-1.02	(-0.45)	.59	(0.47)	- .30	(-0.30)	.87	(0.55)	.07	(0.09)
1/73-12/77	1.57	(1.62)	- .16	(-0.08)	1.29	(1.05)	.16	(0.15)	2.32	(1.49)	.07	(0.09)
1/74-12/78	1.59	(1.74)	1.57	(0.73)	1.69	(1.44)	.71	(0.81)	3.11	(2.06)	.30	(0.42)
1/75-12/79	- .45	(-0.38)	.88	(0.46)	.07	(0.06)	.71	(0.86)	2.58	(2.01)	- .08	(-0.11)
1/68-12/79	- .40	(-0.52)	- .45	(-0.34)	- .34	(-0.44)	- .60	(-0.94)	.37	(0.43)	- .15	(-0.34)

EXHIBIT XIII-1
(CONTINUED)

Period	TXT		USI		VMC		WKR	
1/68-12/72	-1.59%	(-1.47)	- .95%	(-0.97)	.32%	(0.36)	-2.42%	(-1.34)
1/69-12/73	- .95	(-0.86)	-1.85	(-2.09)	.23	(0.26)	-3.19	(-1.62)
1/70-12/74	- .24	(-0.20)	-3.08	(-3.12)	.42	(0.42)	-2.32	(-1.04)
1/71-12/75	.01	(0.01)	-2.96	(-2.48)	.24	(0.26)	- .46	(-0.24)
1/72-12/76	- .20	(-0.17)	-1.61	(-1.27)	.42	(0.42)	- .37	(-0.19)
1/73-12/77	.14	(0.13)	- .56	(-0.41)	.69	(0.66)	.96	(0.51)
1/74-12/78	.07	(0.07)	.88	(0.67)	1.07	(1.03)	3.22	(1.99)
1/75-12/79	- .51	(-0.58)	2.06	(1.70)	.52	(0.53)	1.54	(1.12)
1/68-12/79	- .85	(-1.28)	- .28	(-0.38)	.31	(0.52)	- .47	(-0.41)

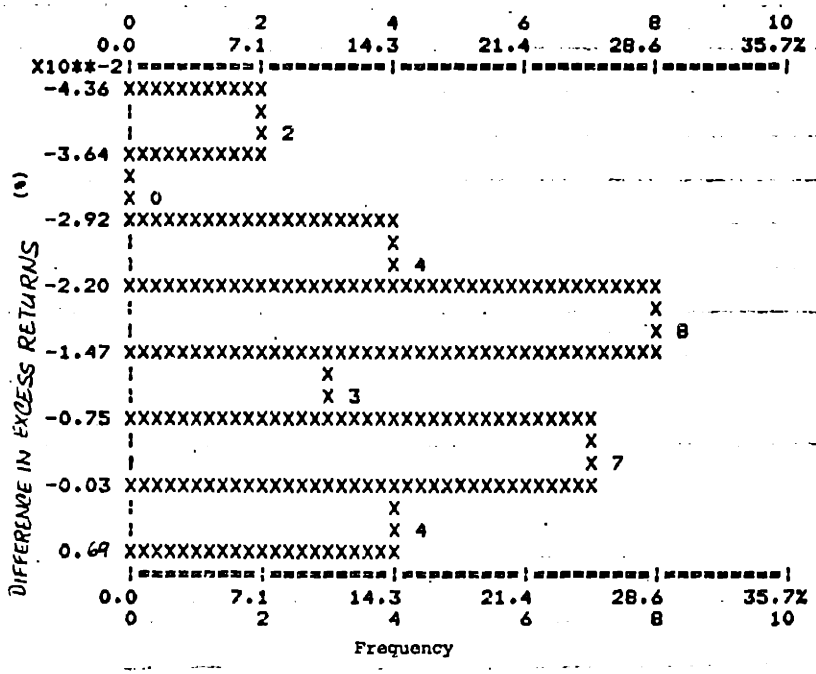
Period	Portfolio	
1/68-12/72	-.99 %	(-3.11)
1/69-12/73	-.76	(-2.41)
1/70-12/74	-.49	(-1.51)
1/71-12/75	-.31	(-1.01)
1/72-12/76	-.34	(-1.00)
1/73-12/77	-.03	(-0.10)
1/74-12/78	.18	(0.57)
1/75-12/79	.05	(0.17)
1/68-12/79	-.43	(-2.01)

EXHIBIT XIII-2

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA

January 1968 through December 1972



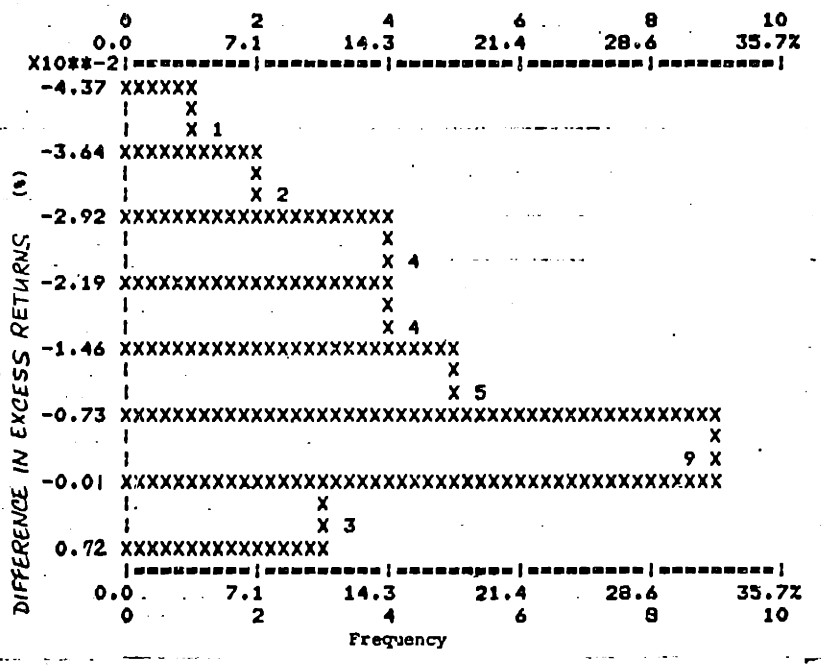
FROM	TO	COUNTS
-0.0436	-0.036386	2.
-0.036386	-0.029171	0.
-0.029171	-0.021957	4.
-0.021957	-0.014743	8.
-0.014743	-0.007529	3.
-0.007529	-0.000314	7.
-0.000314	0.0069	4.

$\bar{X} = -.0138$
(-1.09)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA

January 1969 through December 1973



FROM	TO	COUNTS
-0.0437	-0.036429	1.
-0.036429	-0.029157	2.
-0.029157	-0.021886	4.
-0.021886	-0.014614	4.
-0.014614	-0.007343	5.
-0.007343	-7.143244E-05	9.
-7.143244E-05	0.0072	3.

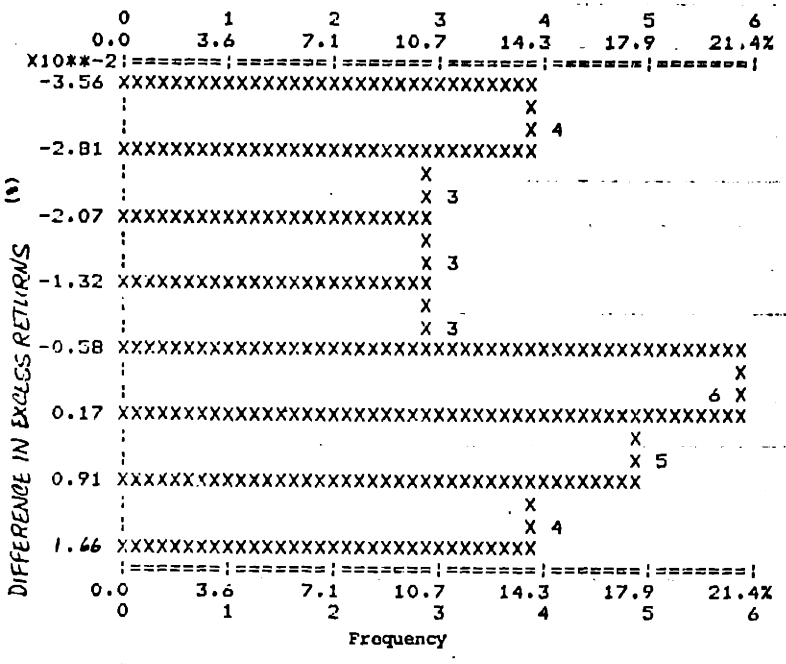
$\bar{X} = -.0131$
(-1.09)

(t-stat in parentheses)

EXHIBIT XIII-2
(CONTINUED)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS
CROSS-SECTIONAL DATA

January 1970 through December 1974

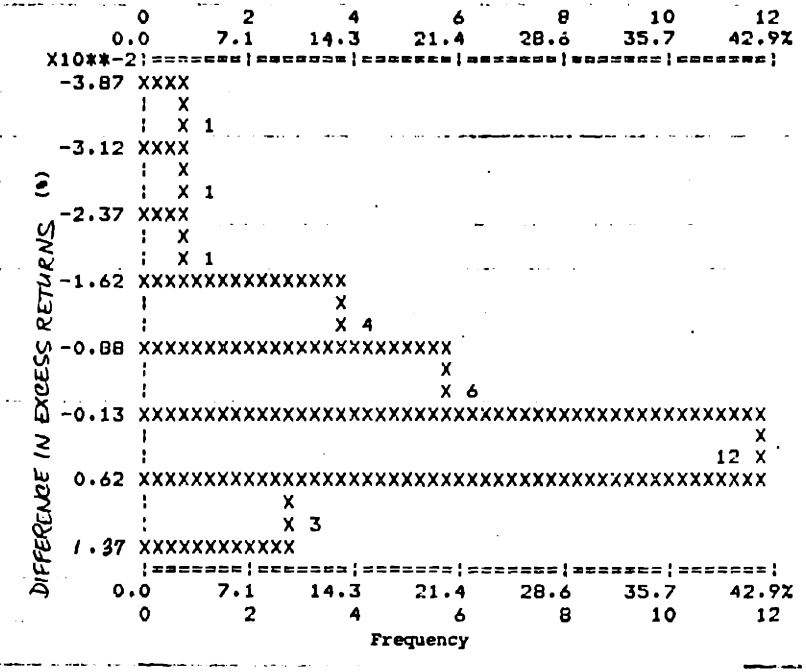


FROM	TO	COUNTS
-0.0356	-0.028143	4.
-0.028143	-0.020686	3.
-0.020686	-0.013229	3.
-0.013229	-0.005771	3.
-0.005771	0.001686	6.
0.001686	0.009143	5.
0.009143	0.0166	4.

$\bar{X} = -.0071$
(-0.47)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS
CROSS-SECTIONAL DATA

January 1971 through December 1975



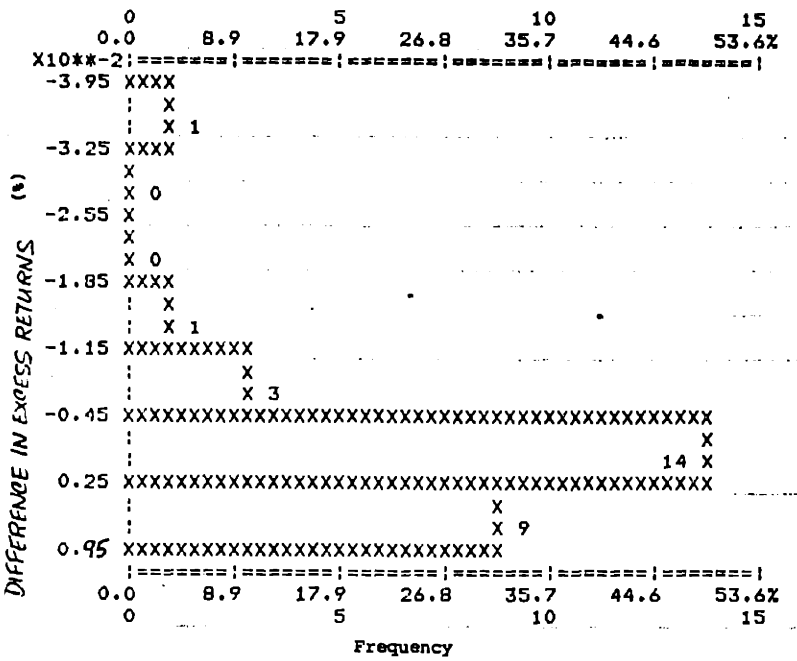
FROM	TO	COUNTS
-0.0387	-0.031214	1.
-0.031214	-0.023729	1.
-0.023729	-0.016243	1.
-0.016243	-0.008757	4.
-0.008757	-0.001271	6.
-0.001271	0.006214	12.
0.006214	0.0137	3.

$\bar{X} = -.0039$
(-0.34)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA

January 1972 through December 1976



FROM	TO	COUNTS
-0.0395	-0.0325	1.
-0.0325	-0.0255	0.
-0.0255	-0.0185	0.
-0.0185	-0.0115	1.
-0.0115	-0.0045	3.
-0.0045	0.0025	14.
0.0025	0.0095	9.

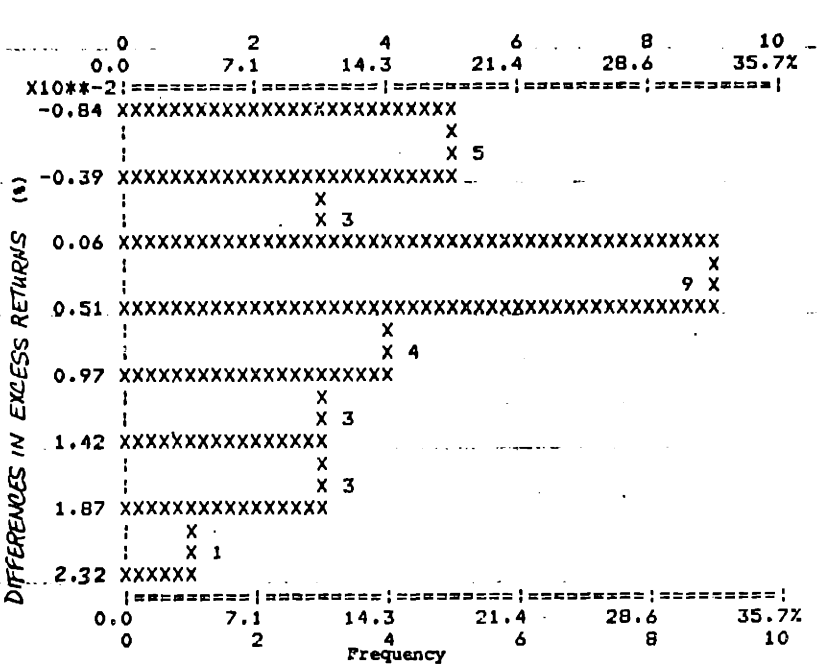
$\bar{X} = -.0018$ (-0.12)

EXHIBIT XIII-2 (CONTINUED)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA

January 1973 through December 1977



FROM	TO	COUNTS
-0.0084	-0.003886	5.
-0.003886	0.000629	3.
0.000629	0.005143	9.
0.005143	0.009657	4.
0.009657	0.014171	3.
0.014171	0.018686	3.
0.018686	0.0232	1.

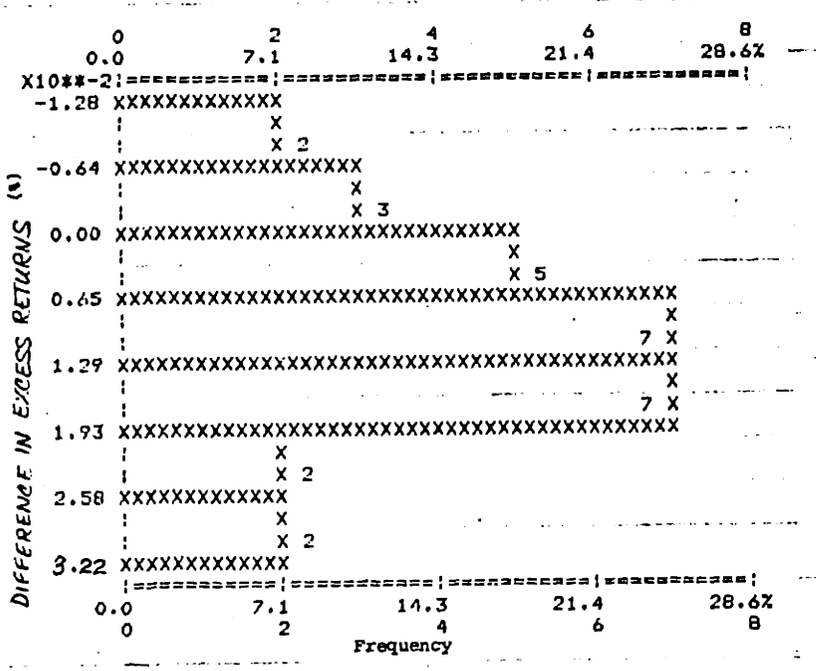
$\bar{X} = .00146$ (0.58)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA

January 1974 through December 1978

EXHIBIT XIII-2
(CONTINUED)

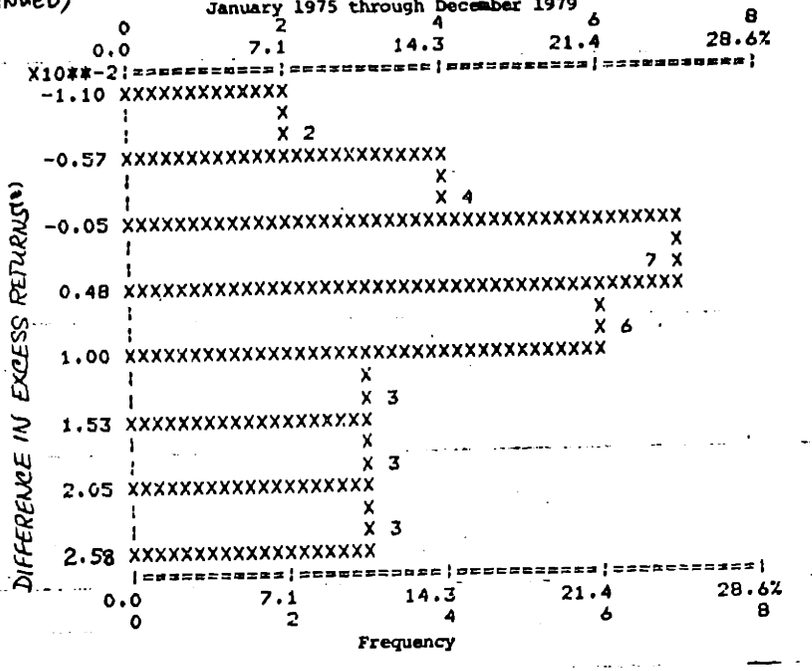


FROM	TO	COUNTS
-0.0128	-0.006371	2.
-0.006371	5.713850E-05	3.
5.713850E-05	0.006486	5.
0.006486	0.012914	7.
0.012914	0.019343	7.
0.019343	0.025771	2.
0.025771	0.0322	2.

$\bar{X}$ = .0093
(0.88)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS

CROSS-SECTIONAL DATA
January 1975 through December 1979

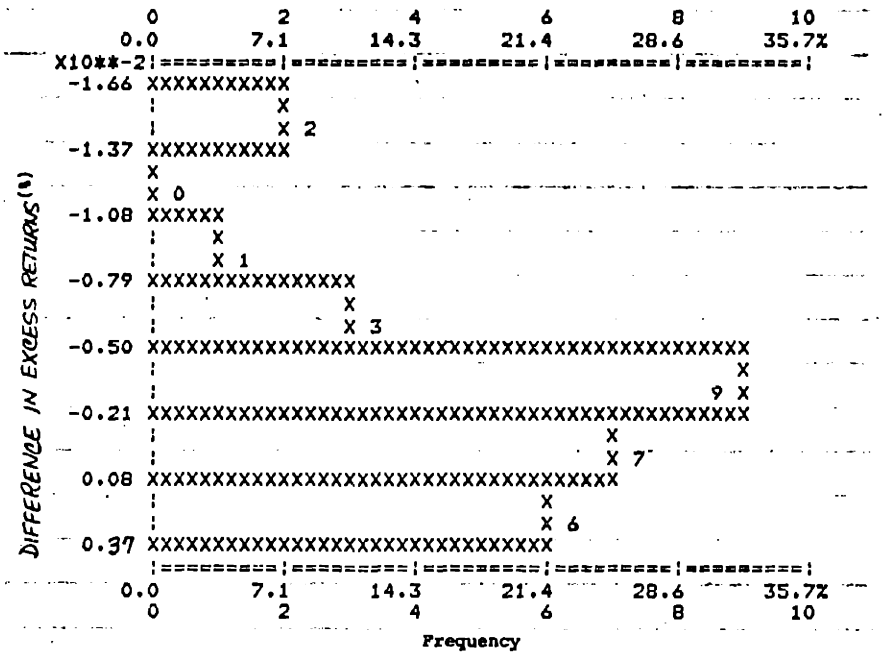


FROM	TO	COUNTS
-0.011	-0.005743	2.
-0.005743	-0.000486	4.
-0.000486	0.004771	7.
0.004771	0.010029	6.
0.010029	0.015286	3.
0.015286	0.020543	3.
0.020543	0.0258	3.

$\bar{X}$ = .0063
(0.67)

HISTOGRAM OF DIFFERENCE IN MONTHLY AVERAGE EXCESS RETURNS
CROSS-SECTIONAL DATA
JANUARY 1968 THROUGH DECEMBER 1979

EXHIBIT XIII-2 (CONTINUED)



FROM	TO	COUNTS
-0.0166	-0.0137	2.
-0.0137	-0.0108	0.
-0.0108	-0.0079	1.
-0.0079	-0.005	3.
-0.005	-0.0021	9.
-0.0021	0.0008	7.
0.0008	0.0037	6.

$\bar{X} = -.0028$
(-0.56)

The results of the test using the Fama-MacBeth Methodology to determine whether unsystematic variance affects average returns are shown in the next exhibit.

The estimates of the coefficient of the unsystematic risk variable, γ_2, were negative in many months (out of the 84 months): in the group of real conglomerates, γ_2 was negative in 36 months, 43 in the group of hypothetical conglomerates, and 36 in the combined group. This means that during the months when γ_2 was negative, there was a negative relationship between unsystematic risk and average return. (The relationship between excess return and unsystematic risk was negative in the first 5 subperiods for the real conglomerates. Scatter diagrams of the relationship between excess return and unsystematic risk are shown in Exhibit XV; the correlation between these variables are indicated as ρ.)

The cross-sectional error term (in the regressions which were randomly-selected from each group) was homoscedastic and uncorrelated with β_{jm} and $\sigma^2(\varepsilon_{jt})$.

The monthly values of γ_2 were randomly positive and negative for all groups and the t-statistics were low. In absolute terms, the values of γ_2 for the hypothetical group were greater than those of the other 2 groups but had the highest standard error. The mean values of γ_2 were 0.60, 1.26, and 0.56 for the real, hypothetical, and combined groups

respectively but these values were not statistically significant. Hence, we cannot reject the hypothesis that β_{jm} is the only relevant measure of risk that affects the pricing of securities.

Although the test of the Fama-MacBeth Methodology excluded the first subperiod, 1/68-12/72 (since the first set of betas and unsystematic variance, used as explanatory variables in the model, had to be estimated from the returns during this period), the results are consistent with those obtained from the test of whether the shares of conglomerate companies yield differential returns, i.e., whether investors are willing to trade off average return for lower unsystematic variance (or other characteristics of conglomerates). In that subperiod, the value-weighted portfolio of real conglomerates had a statistically significant lower excess return than its counterpart despite the fact that its unsystematic variance was systematically higher. Given the evidence that unsystematic variance did not explain the differences in average returns in that subperiod, the consistency in the results of both tests is obtained.

EXHIBIT XIV

RESULTS OF THE CROSS-SECTIONAL REGRESSION - COEFFICIENT OF THE UNSYSTEMATIC RISK VARIABLE
(January 1973 - December 1979)
MONTHLY DATA

Real Conglomerates			Hypothetical Conglomerates			Real & Hypothetical		
γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic
-0.2685	1.1753	-0.23	- 5.9014	9.6491	-0.61	-0.3278	0.8572	-0.38
-0.8193	0.7545	-1.09	1.1847	10.9887	0.11	-0.9353	0.6351	-1.47
0.3572	1.1993	0.30	17.4404	9.6583	1.81	0.4524	0.8781	0.52
-0.9793	1.0734	-0.91	10.6502	11.2867	0.94	-1.2484	0.8311	-1.50
-1.1044	1.0405	-1.06	-23.3067	10.3836	-2.24	-1.058	0.7961	-1.33
0.3566	0.8674	0.41	9.7853	10.7324	0.91	0.0413	0.7381	0.06
-0.0971	1.0937	-0.09	10.6883	11.6696	0.92	0.1325	0.8413	0.16
-0.9481	1.0196	-0.93	-21.9627	13.5685	-1.62	-1.3715	0.8596	-1.60
-0.0763	0.9622	-0.08	12.8453	10.7413	1.20	0.3025	0.7651	0.40
3.1894	1.0612	3.01	- 5.6827	8.0555	-0.71	2.8007	0.7775	3.60
-0.7009	0.7602	-0.92	- 2.4988	9.8797	-0.25	-1.0456	0.6377	-1.64
1.6632	1.7678	0.94	5.8156	14.5034	0.40	0.9504	1.3419	0.71
-0.2512	2.0008	-0.13	19.7023	16.0365	1.23	0.1644	1.4903	0.11
-1.6224	1.1383	-1.43	- 9.9985	9.3063	-1.07	-1.8282	0.8407	-2.17
0.0025	1.3461	0.00	- 0.3458	7.5631	-0.05	0.4911	0.9729	0.50
-0.7145	1.3165	-0.54	1.9835	7.1735	0.28	-0.2543	0.9443	-0.27
-0.5853	0.7749	-0.76	3.2663	11.2725	0.29	-0.5252	0.6776	-0.78
0.5852	1.2211	0.48	1.3109	12.5826	0.10	0.9168	0.9755	0.94
1.3448	1.0739	1.25	7.1708	12.4206	0.58	1.3896	0.8590	1.62
-1.4126	1.1714	-1.21	0.4041	10.4485	0.04	-1.0001	0.9001	-1.11
0.1769	1.0915	0.16	-14.7657	10.9631	-1.35	0.1561	0.8418	0.19
0.2619	1.9760	0.13	-18.3954	19.0298	-0.97	0.0750	1.5164	0.05
-0.4829	1.2141	-0.40	12.0724	8.1656	1.48	-0.5454	0.8687	-0.63
-1.1353	1.3344	-0.85	-32.7229	11.367	-2.88	-1.2974	1.0142	-1.28
4.9928	2.3060	2.17	33.5605	14.4019	2.33	5.7779	1.6004	3.61

EXHIBIT XIV
(CONTINUED)

Real Conglomerates			Hypothetical Conglomerates			Real & Hypothetical		
γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic
-1.1247	1.1395	-0.99	-11.8424	13.2115	-0.90	-1.2701	0.9056	-1.40
0.6779	1.6699	0.41	20.174	8.8389	2.28	1.1342	1.1463	0.99
-0.4637	1.4951	-0.31	19.676	12.484	1.58	-0.8284	1.0946	-0.76
-2.1802	1.1727	-1.86	19.1976	9.7454	1.97	-1.9684	0.8593	-2.29
1.7460	1.3832	1.26	- 7.0865	11.6528	-0.61	2.3158	1.0307	2.25
-0.7931	0.9807	-0.81	- 3.3141	6.3152	-0.52	-0.5211	0.6763	-0.77
-0.3842	0.7875	-0.49	-10.3485	7.4428	-1.39	-0.4748	0.6026	-0.79
-0.7986	0.7142	-1.12	2.6913	7.0965	0.38	-0.4163	0.5514	-0.75
0.1946	1.0382	0.19	1.4069	10.0351	0.14	-0.3971	0.7960	-0.50
0.4932	0.7015	0.70	- 6.9289	12.4181	-0.56	0.2127	0.6831	0.31
0.1265	0.7223	0.18	-12.197	7.5357	-1.62	0.1227	0.5604	0.22
-0.1373	1.3640	-0.10	- 2.1428	10.3367	-0.21	0.9289	1.0372	0.90
0.1647	1.5004	0.11	14.7116	8.2483	1.78	0.6155	1.0356	0.59
-0.6989	1.4961	-0.47	- 1.3730	7.5214	-0.18	-0.1897	1.0145	-0.19
0.1796	0.7806	0.23	- 9.0252	7.6734	-1.18	-0.0028	0.5983	-0.00
-0.2610	0.8090	-0.32	-15.3687	7.6968	-2.00	-0.1586	0.6221	-0.25
-0.6976	0.8306	-0.84	0.9969	7.9342	0.13	-0.6513	0.6289	-1.04
0.0961	0.7996	0.12	8.6636	6.4640	1.34	0.5717	0.6120	0.93
-0.3758	0.6917	-0.54	- 4.8387	7.7074	-0.63	-0.1339	0.5675	-0.24
0.1058	0.9608	0.11	19.4604	8.7450	2.23	0.0999	0.7387	0.14
-0.4950	1.0847	-0.46	- 3.9212	5.0761	-0.77	-0.2548	0.7278	-0.35
0.4910	0.7402	0.66	8.5039	8.1480	1.04	0.4043	0.5894	0.69
0.9410	0.7888	1.19	- 3.1786	5.6359	-0.56	0.9817	0.5613	1.75
-0.1365	0.8694	-0.16	4.9843	7.5719	0.66	0.3709	0.6783	0.55
0.4824	0.8517	0.57	27.0605	9.2365	2.93	0.1401	0.7456	0.19
0.0880	0.7982	0.11	1.1687	6.0467	0.19	0.0609	0.5760	0.11
1.3899	1.0311	1.35	- 3.1683	5.7609	-0.55	1.5351	0.7085	2.17
-0.5952	0.6956	-0.86	- 3.1195	4.7736	-0.65	-0.2988	0.5236	-0.57
0.0489	0.6482	0.08	12.0829	6.9838	1.73	0.7103	0.5861	1.21

EXHIBIT XIV
(CONTINUED)

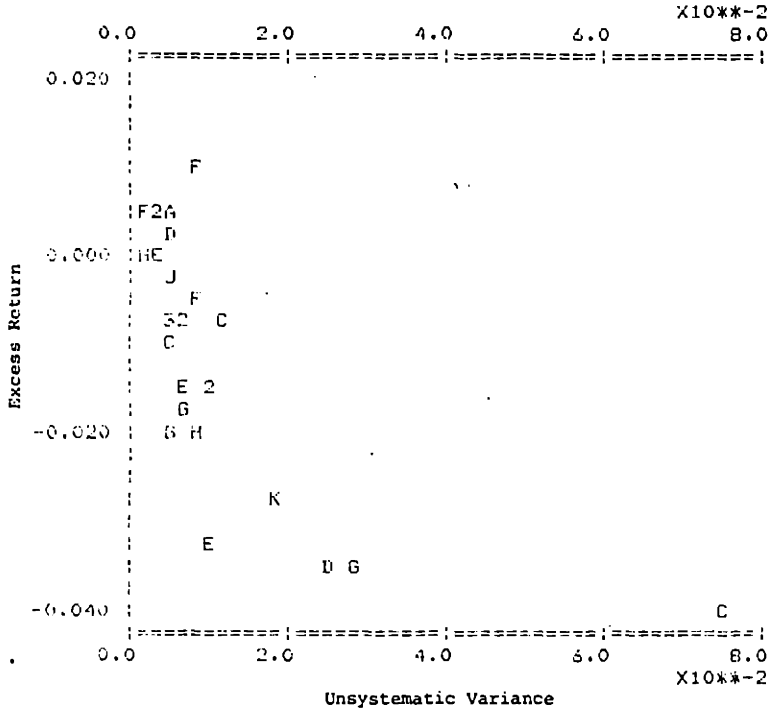
Real Conglomerates			Hypothetical Conglomerates			Real & Hypothetical		
γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic
0.2813	0.9056	0.31	- 4.0947	8.2048	-0.50	-0.0458	0.6911	-0.07
0.0816	0.5758	0.14	- 8.6130	6.7955	-1.27	-0.0365	0.4977	-0.07
-0.4181	0.6775	-0.62	5.8901	4.8208	1.22	-0.3252	0.5144	-0.63
-0.4631	0.9761	-0.47	-12.9162	7.2808	-1.77	-0.4871	0.7099	-0.69
1.6528	0.9731	1.70	- 1.3817	6.3392	-0.22	1.3408	0.6894	1.94
0.6113	0.6080	1.01	- 8.2972	6.3237	-1.31	0.5119	0.4862	1.05
5.1459	1.6742	3.07	2.1466	6.7228	0.32	3.7874	1.2032	3.15
6.4572	2.3576	2.74	- 8.6150	8.6144	-1.00	6.5863	1.6194	4.07
2.8991	2.7459	1.06	21.1489	9.3276	2.27	3.3474	1.8614	1.80
-1.0001	2.4698	-0.40	-14.7319	10.1562	-1.45	0.1864	1.7848	0.10
2.5929	2.2358	1.16	- 9.2790	6.0742	-1.53	1.7421	1.4826	1.18
-2.2209	2.2959	-0.97	-13.2416	7.3273	-1.81	-1.3951	1.547?	-0.90
2.2750	2.4066	0.95	- 6.7412	11.2395	-0.60	0.7297	1.8028	0.40
4.1451	2.3915	1.73	- 2.2472	7.0099	-0.32	3.9993	1.5518	2.58
2.1367	1.9747	1.08	21.8426	8.1989	2.66	1.1413	1.4636	0.78
-8.3588	2.9326	-2.85	-18.3882	7.6056	-2.42	-6.4921	1.9411	-3.34
7.2696	3.3068	2.20	- 2.3549	12.0858	-0.19	4.8549	2.3205	2.09
-2.2241	1.6484	-1.35	- 9.2961	7.2899	-1.28	-1.4678	1.2030	-1.22
1.8266	2.8140	0.65	21.196	9.1058	2.33	3.1598	1.9173	1.65
6.3006	1.4168	4.48	12.5398	6.7814	1.85	3.6795	1.2246	3.00
0.9304	2.5784	0.36	4.3613	9.0793	0.48	2.0089	1.7358	1.16
1.1033	2.1421	0.52	26.5986	10.9693	2.43	0.9181	1.6957	0.54
0.7487	1.3062	0.57	- 4.2658	5.5221	-0.77	1.2669	0.9343	1.36
1.1277	1.8934	0.60	5.6018	10.056	0.56	2.2112	1.4725	1.50
3.7194	2.1913	1.70	-10.4009	6.7204	-1.55	3.9960	1.4772	2.71
0.4742	2.8628	0.17	3.0658	9.9954	0.31	-0.5011	1.9178	-0.26
0.2803	1.6961	0.17	18.6743	9.8035	1.90	-0.4054	1.4007	-0.29
-2.0770	1.7448	-1.19	- 7.9007	13.135	-0.60	-2.4490	1.5742	-1.56

EXHIBIT XIV
(CONTINUED)

Real Conglomerates			Hypothetical Conglomerates			Real & Hypothetical		
γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic	γ_2	Standard Error	T-Statistic
6.6894	2.3043	2.90	- 7.7982	10.7031	-0.73	5.9321	1.6964	3.50
7.9036	2.2491	3.51	38.0615	17.1615	2.22	4.2755	2.3373	1.83
0.6037	$= \bar{x}$		1.2594	$= \bar{x}$		0.5586	$= \bar{x}$	
2.35	$= \sigma$		13.31	$= \sigma$		1.98	$= \sigma$	
0.2574	$= \bar{x}/\sigma$		0.0946	$= \bar{x}/\sigma$		0.2821	$= \bar{x}/\sigma$	
	$= t$			$= t$			$= t$	

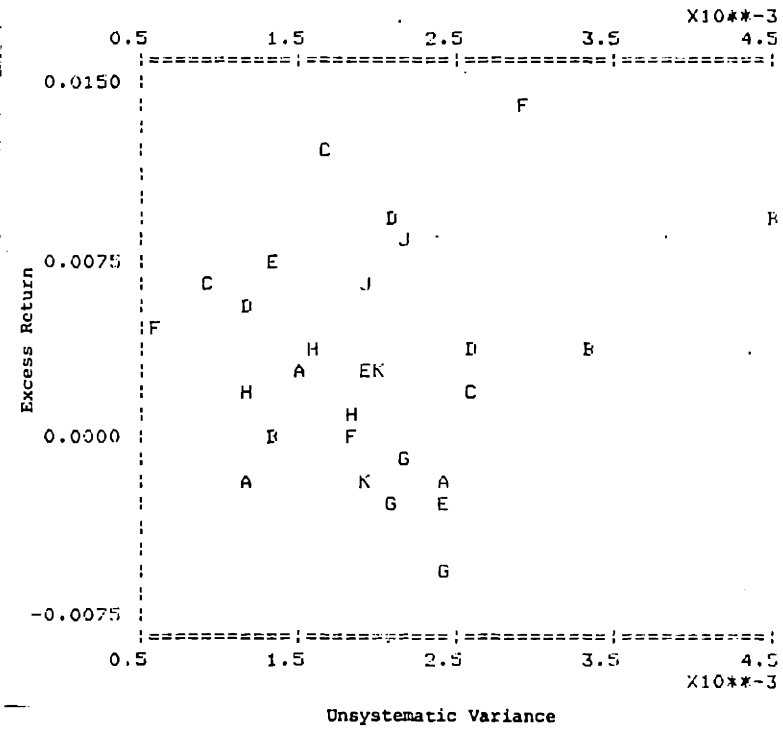
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1972 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV



$\rho = -.673$

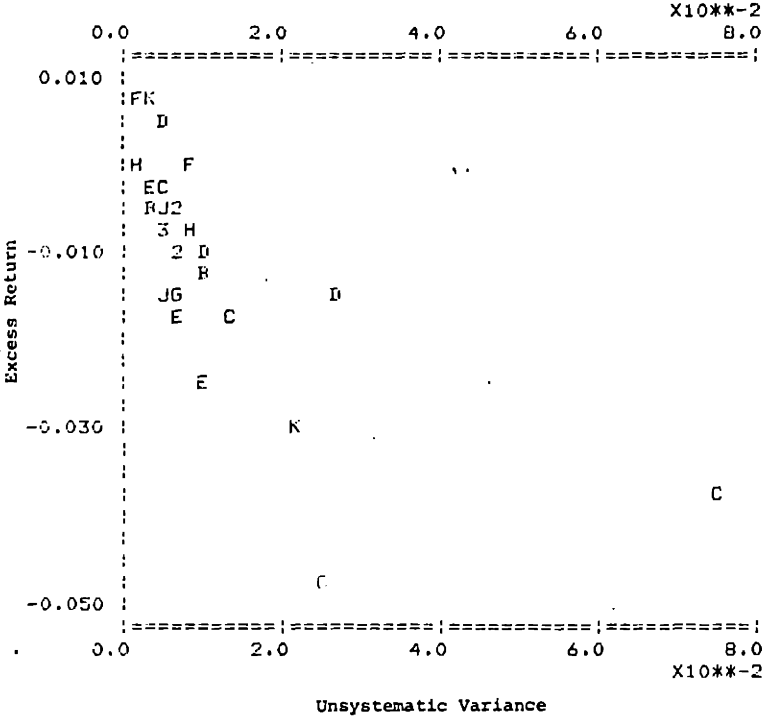
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1972 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .131$

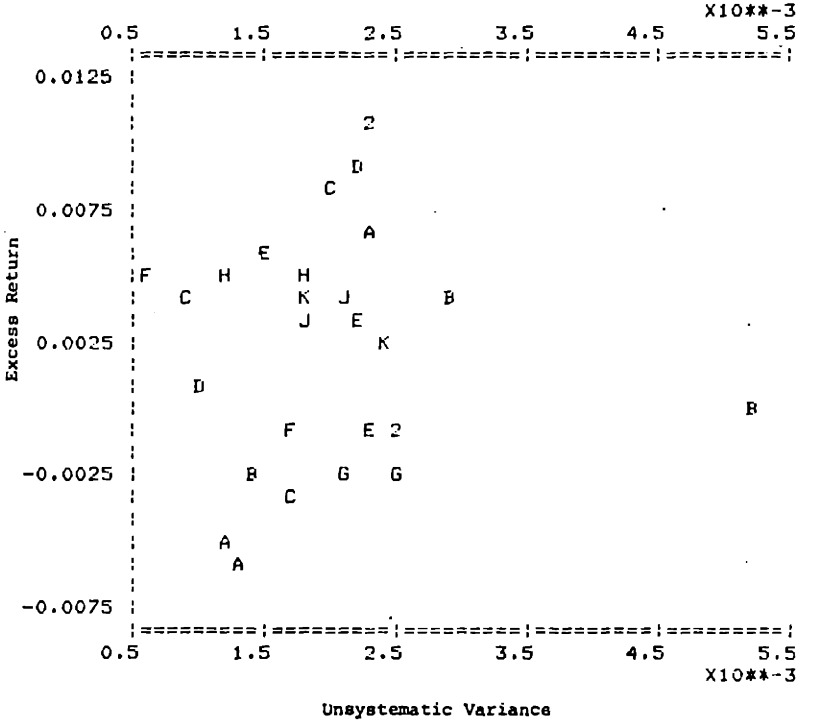
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1973 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = -.668$

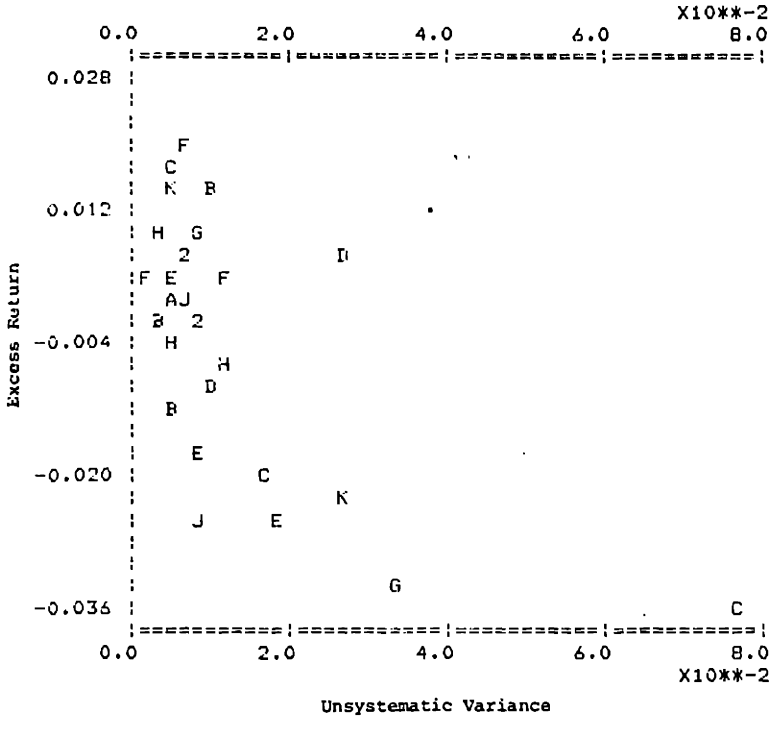
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1973 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .029$

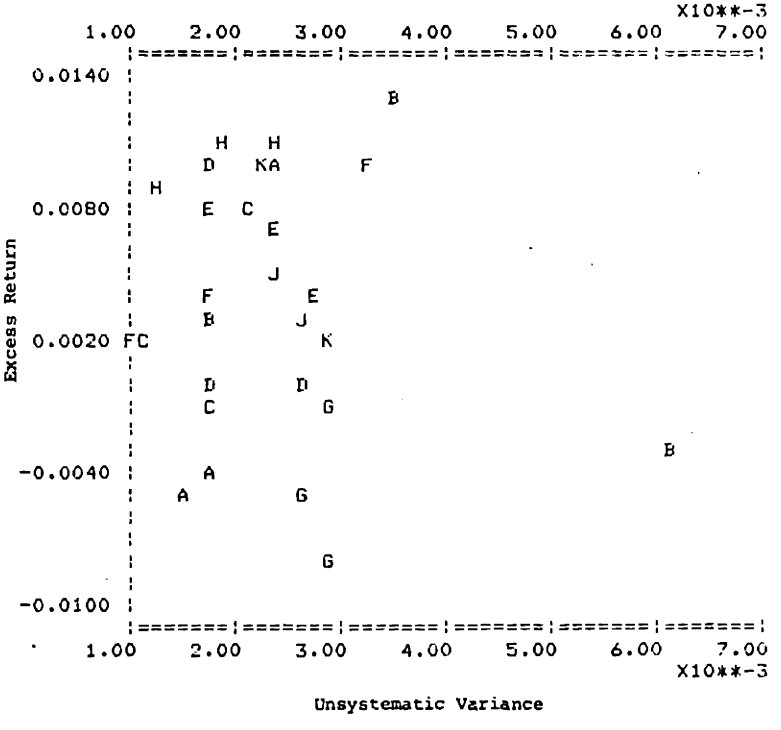
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1974 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = -.624$

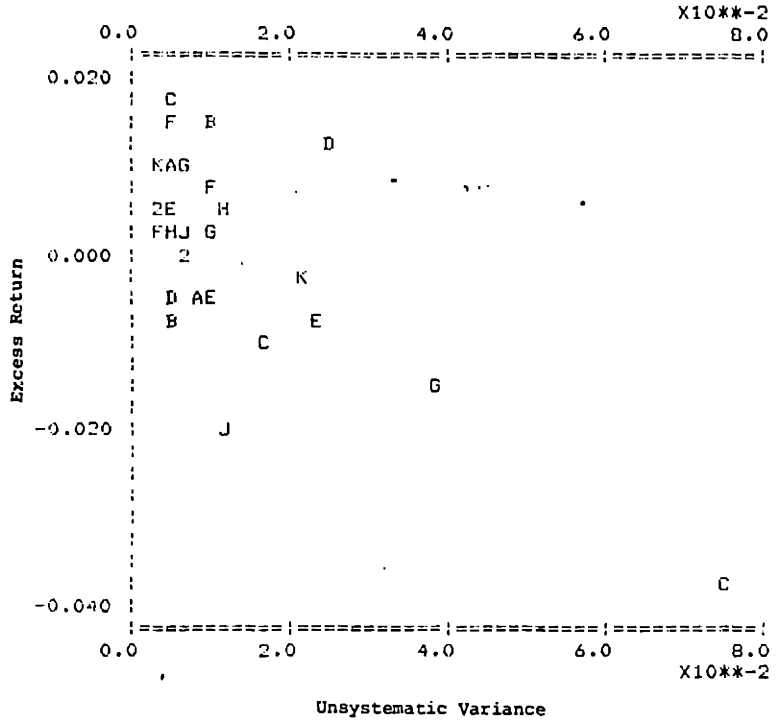
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1974 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = -.102$

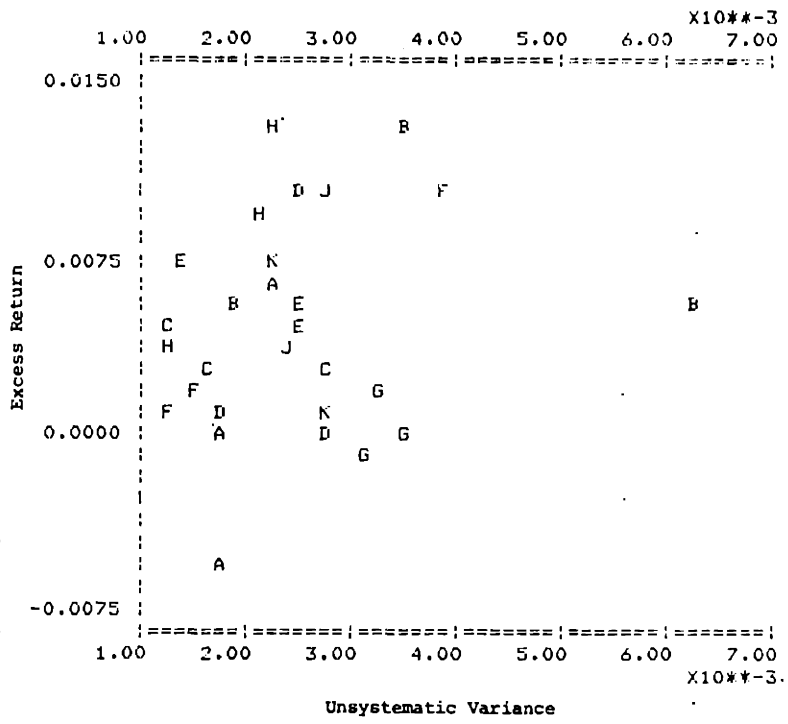
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1975 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = -.711$

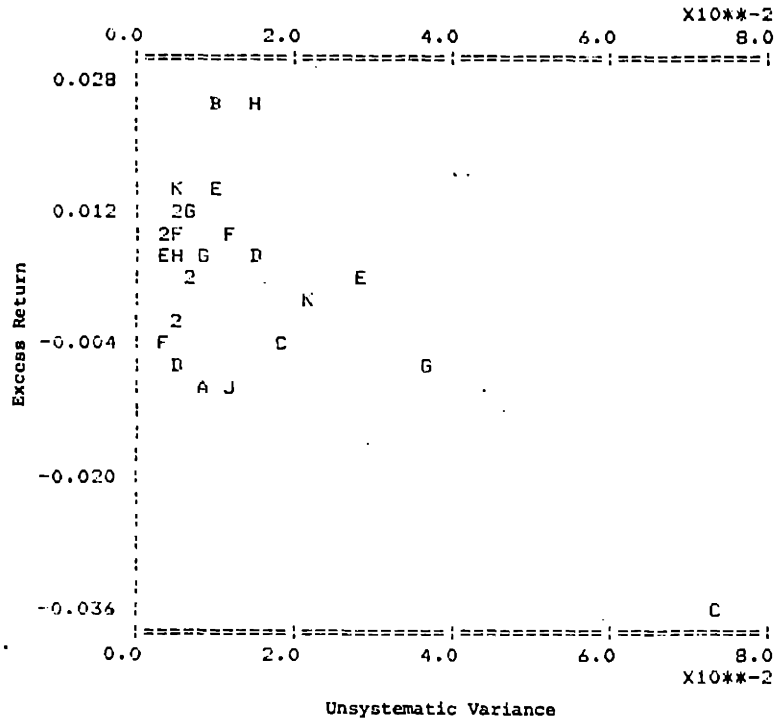
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1975 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .182$

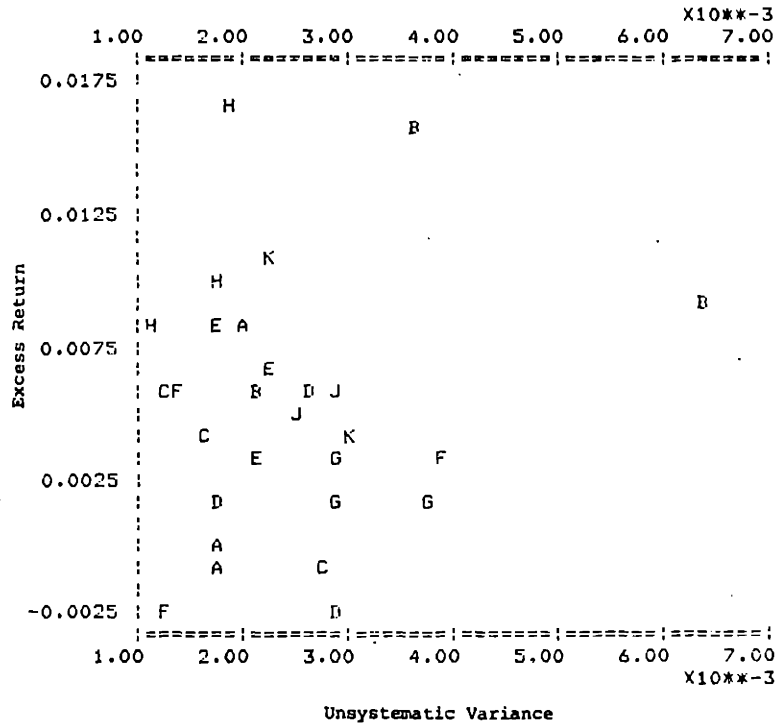
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1976 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = -.635$

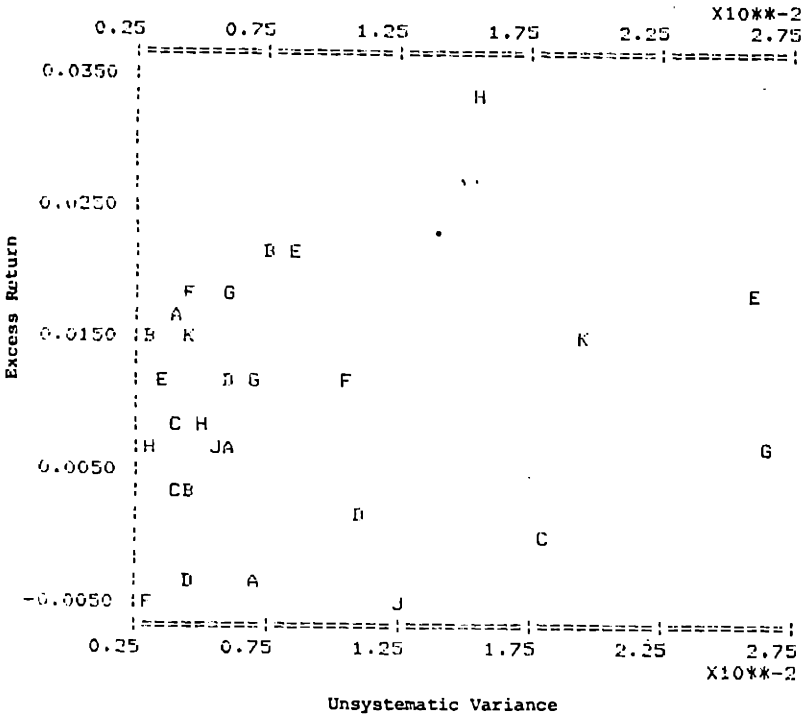
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1976 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .102$

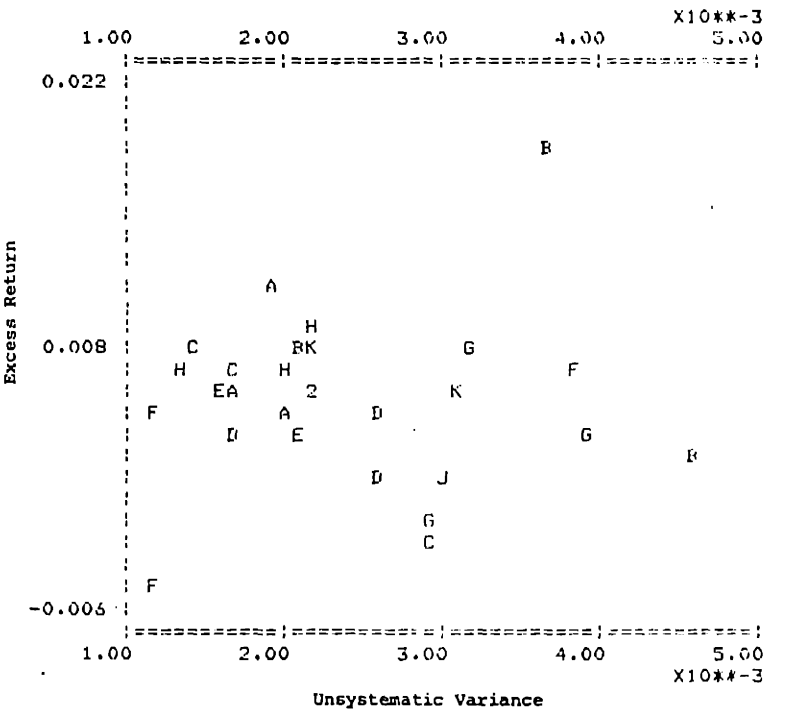
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1977 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = .126$

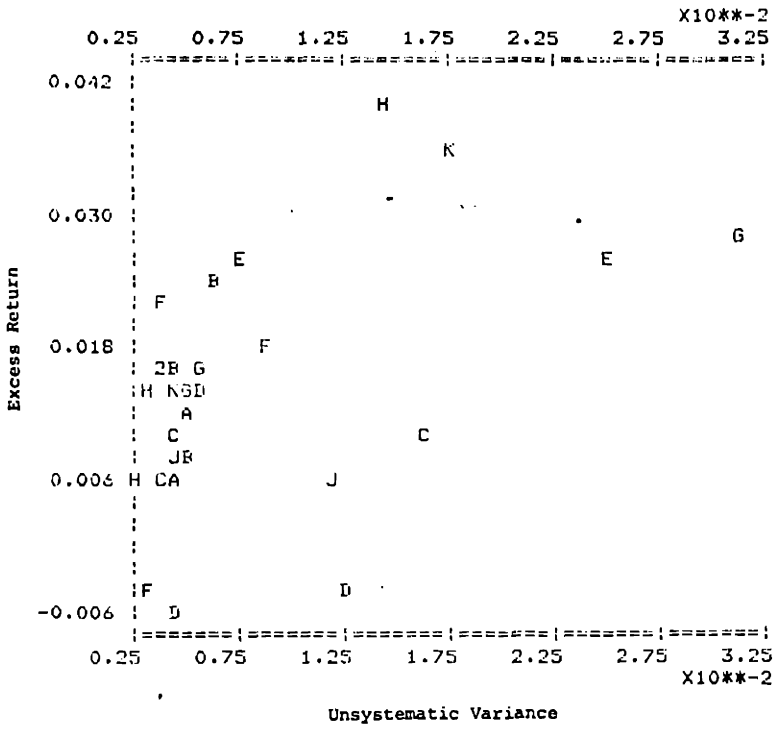
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1977 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .045$

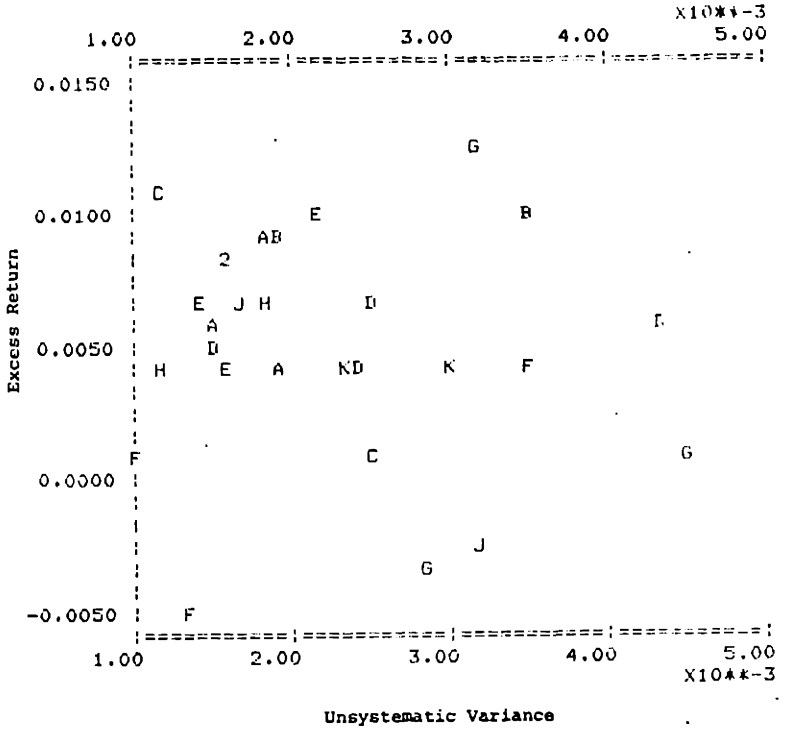
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1978 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = .473$

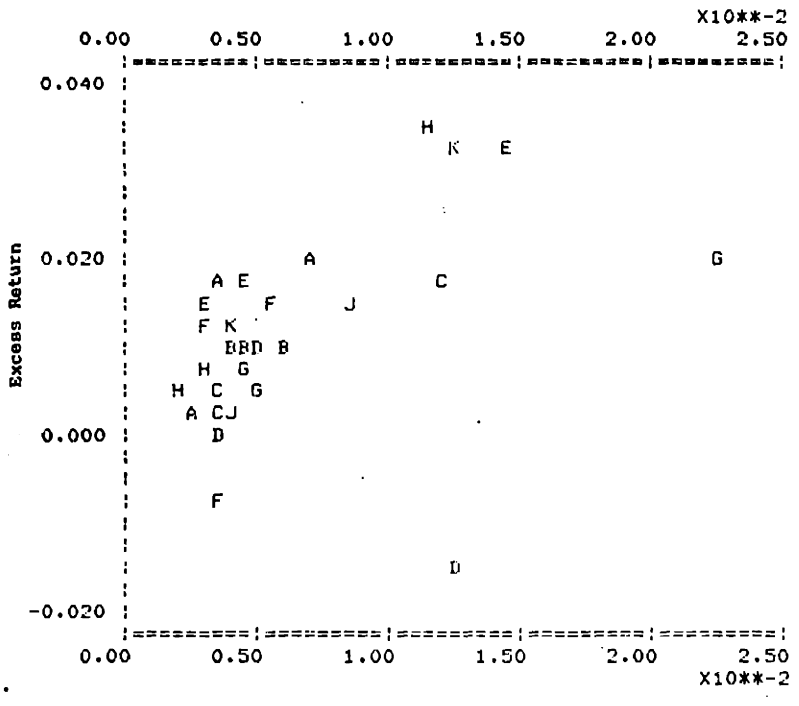
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1978 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = -.104$

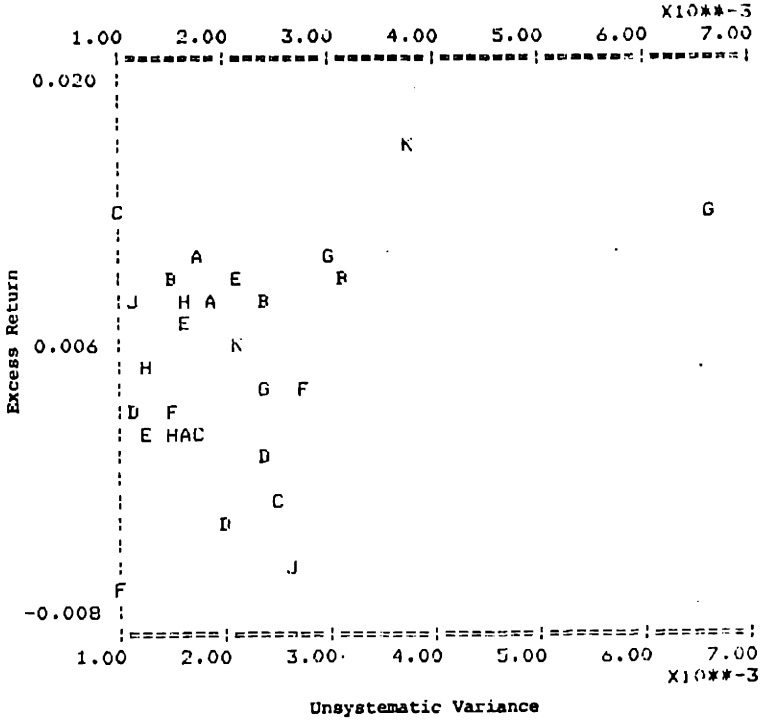
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1979 CROSS SECTIONAL DATA
(REAL CONGLOMERATES)

EXHIBIT XV
(CONTINUED)



$\rho = .440$

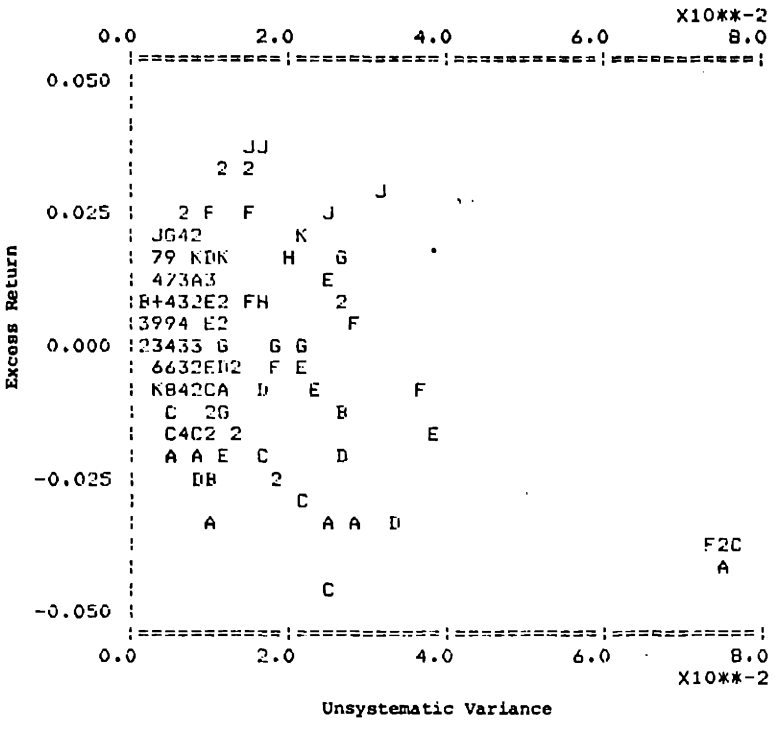
RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - 1979 CROSS SECTIONAL DATA
(HYPOTHETICAL CONGLOMERATES)



$\rho = .343$

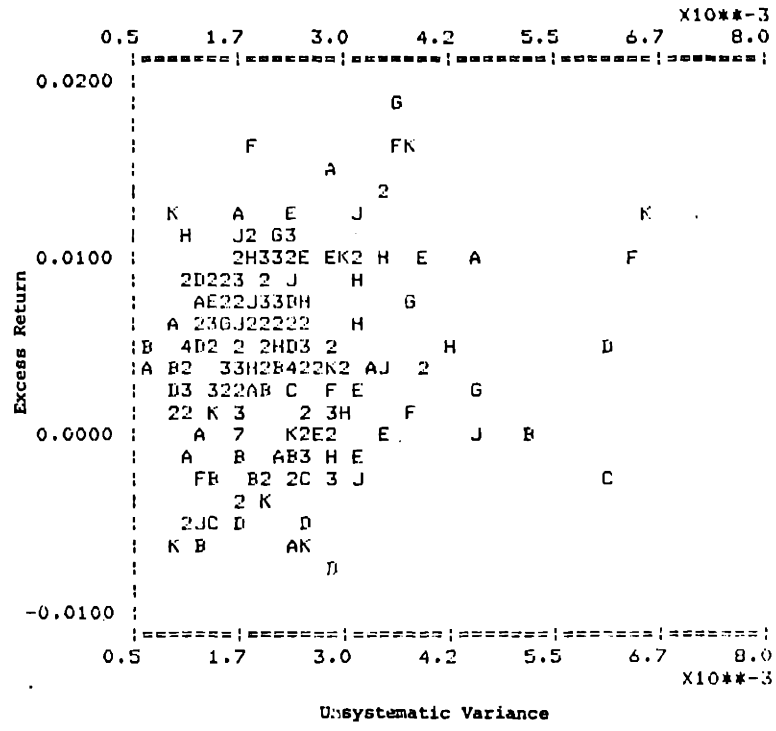
EXHIBIT XV
(CONTINUED)

RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - CROSS SECTIONAL DATA
1972 THROUGH 1979 (REAL CONGLOMERATES)
224 OBSERVATIONS



$\rho = -.438$

RELATIONSHIP BETWEEN EXCESS RETURN
AND UNSYSTEMATIC RISK - CROSS SECTIONAL DATA
1972 THROUGH 1979 (HYPOTHETICAL CONGLOMERATES)
224 OBSERVATIONS



$\rho = .112$

EXHIBIT XVI

RESULTS OF THE CROSS-SECTIONAL REGRESSION
January 1973 - December 1979

$$R_{jt} = \gamma_0 + \gamma_1 \beta_{jm} + \gamma_2 \sigma^2(\varepsilon_{jt}) + \eta_{jt} \qquad j=1,\ldots,28 \quad t=1,\ldots,84$$

(t-statistic in parentheses)

Month	Real Conglomerates			Hypothetical Conglomerates		
	γ_0	γ_1	R^2	γ_0	γ_1	R^2
1	-.051 (-0.88)	-.017 (-0.51)	.014	.034 (0.93)	-.068 (-2.16)	.207
2	.017 (0.45)	-.047 (-2.20)	.219	.013 (0.32)	-.040 (-1.11)	.050
3	-.100 (-1.69)	.059 (1.73)	.118	-.039 (-1.05)	-.016 (-0.52)	.115
4	-.045 (-0.84)	-.014 (-0.44)	.046	-.017 (-0.40)	-.033 (-0.89)	.049
5	.040 (0.77)	-.067 (-2.27)	.225	.054 (1.37)	-.050 (-1.47)	.291
6	-.087 (-2.03)	.025 (1.02)	.053	.045 (1.10)	-.065 (-1.86)	.125
7	.065 (1.21)	.038 (1.21)	.056	.026 (0.57)	.037 (0.97)	.094
8	-.023 (-0.46)	-.018 (-0.63)	.056	-.034 (-0.65)	.047 (1.06)	.106
9	.085 (1.79)	.031 (1.15)	.051	.103 (2.50)	-.024 (-0.70)	.058
10	.039 (0.75)	-.049 (-1.63)	.293	.057 (1.85)	-.024 (-0.93)	.073
11	-.183 (-4.88)	-.011 (-0.50)	.049	-.123 (-3.25)	-.030 (-0.95)	.047
12	-.066 (-0.76)	.020 (0.40)	.046	.104 (1.87)	-.065 (-1.38)	.070
13	-.064 (-0.54)	.119 (1.75)	.111	.078 (1.10)	-.034 (-0.58)	.058
14	-.004 (-0.06)	.021 (0.54)	.078	-.030 (-0.74)	.064 (1.88)	.131
15	.010 (0.12)	.000 (0.00)	.000	.070 (2.10)	-.074 (-2.68)	.246
16	.025 (0.33)	.027 (-0.61)	.032	-.004 (-0.12)	-.043 (-1.62)	.098
17	-.077 (-1.68)	.013 (0.48)	.027	.003 (0.06)	-.051 (-1.24)	.059
18	-.006 (-0.08)	-.012 (-0.29)	.011	.147 (2.66)	-.141 (-3.04)	.290
19	-.064 (-1.01)	.010 (0.27)	.068	.002 (0.04)	-.046 (-1.01)	.042
20	-.046 (-0.67)	-.001 (-0.02)	.057	-.104 (-2.27)	.008 (0.20)	.002
21	-.120 (-1.86)	.013 (0.36)	.007	-.093 (-1.93)	.016 (0.41)	.068
22	.268 (2.30)	-.091 (-1.37)	.070	.123 (1.48)	.046 (0.65)	.041

EXHIBIT XVI
(CONTINUED)

Real & Hypothetical Conglomerates

Month	γ_0	γ_1	R^2
1	-.022 (-0.76)	-.032 (-1.62)	.064
2	.027 (1.26)	-.050 (-3.41)	.269
3	-.081 (-2.75)	.047 (2.30)	.120
4	-.007 (-0.24)	-.029 (-1.50)	.114
5	.029 (1.10)	-.063 (-3.41)	.260
6	-.013 (-0.54)	-.010 (-0.56)	.006
7	.038 (1.35)	.049 (2.50)	.123
8	.000 (0.01)	-.024 (-1.20)	.101
9	.064 (2.49)	.037 (2.06)	.095
10	.074 (2.86)	-.062 (-3.41)	.257
11	-.135 (-6.31)	-.031 (-2.10)	.168
12	.052 (1.15)	-.032 (-1.03)	.022
13	-.045 (-0.78)	.101 (2.58)	.131
14	.004 (0.13)	.020 (0.90)	.082
15	-.021 (-0.58)	.008 (0.31)	.010
16	-.035 (-0.97)	-.003 (-0.11)	.002
17	-.051 (-1.94)	-.002 (-0.14)	.015
18	.016 (0.44)	-.030 (-1.18)	.031
19	-.040 (-1.22)	-.004 (-0.16)	.051
20	-.113 (-3.27)	.028 (1.18)	.035
21	-.115 (-3.56)	.010 (0.47)	.007
22	.223 (3.82)	-.064 (-1.61)	.053

EXHIBIT XVI
(CONTINUED)

Month	Real Conglomerates			Hypothetical Conglomerates		
	γ_0	γ_1	R^2	γ_0	γ_1	R^2
23	-.056 (-0.78)	.007 (0.16)	.007	-.056 (-1.55)	-.006 (-0.20)	.084
24	-.077 (-0.98)	.010 (0.22)	.028	-.017 (-0.34)	.022 (0.53)	.254
25	.085 (0.46)	.123 (0.90)	.186	.071 (0.85)	.045 (0.63)	.201
26	.084 (0.92)	-.021 (-0.31)	.042	.141 (1.85)	-.042 (-0.64)	.052
27	-.105 (-0.79)	.150 (1.51)	.092	.023 (0.44)	-.014 (-0.32)	.172
28	-.070 (-0.58)	.084 (0.95)	.037	-.054 (-0.75)	.054 (0.88)	.127
29	.078 (0.83)	-.013 (-0.18)	.124	.059 (1.05)	-.046 (-0.96)	.150
30	.244 (2.20)	-.118 (-1.44)	.123	.068 (1.01)	.014 (0.25)	.016
31	-.090 (-1.14)	.046 (0.80)	.047	-.117 (-3.22)	.060 (1.93)	.132
32	.083 (1.31)	-.089 (-1.91)	.138	-.017 (-0.40)	.015 (0.42)	.074
33	-.031 (-0.54)	-.002 (-0.04)	.048	-.010 (-0.24)	-.045 (-1.29)	.064
34	.075 (0.90)	-.051 (-0.83)	.028	.102 (1.77)	-.046 (-0.93)	.034
35	.016 (0.29)	-.000 (-0.00)	.019	.018 (0.25)	.026 (0.43)	.017
36	-.013 (-0.23)	.004 (0.09)	.002	-.021 (-0.48)	.033 (0.88)	.110
37	.051 (0.48)	.143 (1.82)	.118	.140 (2.06)	.022 (0.35)	.005
38	-.138 (-1.21)	.182 (2.12)	.157	-.015 (-0.27)	.032 (0.65)	.170
39	-.025 (-0.22)	.061 (0.71)	.025	.002 (0.04)	.015 (0.33)	.004
40	-.007 (-0.12)	-.003 (-0.07)	.002	.026 (0.52)	-.003 (-0.07)	.063
41	.003 (0.05)	.010 (0.22)	.005	-.019 (-0.37)	.052 (1.12)	.143
42	-.063 (-0.99)	.106 (2.23)	.174	.019 (0.36)	.035 (0.73)	.028
43	.078 (1.28)	-.045 (-0.99)	.038	-.057 (-1.33)	.023 (0.60)	.112
44	.086 (1.63)	-.071 (-1.80)	.135	-.042 (-0.84)	.029 (0.62)	.022
45	-.055 (-0.74)	.053 (0.96)	.038	.059 (1.02)	-.076 (-1.44)	.178
46	.007 (0.08)	-.013 (-0.21)	.011	.063 (1.88)	-.063 (-2.08)	.220
47	.096 (1.70)	-.064 (-1.51)	.090	.036 (0.68)	-.027 (-0.55)	.043
48	.098 (1.63)	-.018 (-0.40)	.056	.012 (0.31)	.058 (1.70)	.104
49	.052 (0.83)	-.039 (-0.83)	.030	-.053 (-0.95)	.011 (0.21)	.027
50	-.091 (-1.49)	.050 (1.07)	.064	.041 (0.60)	-.093 (-1.44)	.258

EXHIBIT XVI
(CONTINUED)

Real & Hypothetical Conglomerates

Month	γ_0	γ_1	R^2
23	-.042 (-1.27)	.001 (0.04)	.008
24	-.053 (-1.36)	-.001 (-0.05)	.035
25	.056 (0.61)	.128 (1.70)	.270
26	.108 (2.08)	-.036 (-0.85)	.060
27	-.060 (-0.91)	.105 (1.96)	.101
28	-.020 (-0.31)	.057 (1.11)	.028
29	.077 (1.56)	-.016 (-0.39)	.103
30	.121 (2.06)	-.041 (-0.85)	.089
31	-.122 (-3.14)	.063 (1.99)	.072
32	.035 (1.01)	-.052 (-1.84)	.084
33	-.043 (-1.36)	-.002 (-0.08)	.012
34	.126 (2.76)	-.075 (-2.00)	.085
35	.028 (0.70)	-.002 (-0.07)	.002
36	-.028 (-0.88)	.015 (0.55)	.008
37	.020 (0.32)	.138 (2.69)	.158
38	-.116 (-1.84)	.156 (3.04)	.175
39	-.045 (-0.73)	.063 (1.25)	.029
40	.014 (0.37)	-.015 (-0.49)	.005
41	-.014 (-0.37)	.019 (0.63)	.008
42	-.035 (-0.92)	.085 (2.73)	.125
43	.003 (0.08)	-.001 (-0.04)	.017
44	.024 (0.69)	-.032 (-1.14)	.029
45	-.009 (-0.19)	.020 (0.56)	.007
46	.012 (0.28)	-.023 (-0.65)	.013
47	.081 (2.25)	-.050 (-1.71)	.054
48	.063 (1.84)	.006 (0.23)	.063
49	-.012 (-0.31)	-.004 (-0.12)	.006
50	-.026 (-0.60)	.012 (0.34)	.004

EXHIBIT XVI
(CONTINUED)

Month	Real Conglomerates			Hypothetical Conglomerates		
	γ_0	γ_1	R^2	γ_0	γ_1	R^2
51	.074 (1.28)	-.055 (-1.26)	.060	.038 (0.84)	-.026 (-0.62)	.015
52	.017 (0.23)	-.008 (-0.14)	.068	.041 (0.97)	-.027 (-0.67)	.047
53	.080 (1.59)	-.064 (-1.69)	.143	-.072 (-2.02)	.050 (1.50)	.083
54	-.155 (-3.33)	.181 (5.13)	.521	-.000 (-0.01)	-.004 (-0.08)	.120
55	-.031 (-0.48)	-.011 (-0.23)	.005	-.032 (-0.52)	.014 (0.25)	.010
56	-.005 (-0.11)	-.030 (-0.96)	.036	.116 (2.30)	-.106 (-2.24)	.296
57	-.064 (-1.32)	.048 (1.31)	.070	.112 (3.12)	-.113 (-3.37)	.313
58	-.023 (-0.33)	-.002 (-0.04)	.009	-.064 (-1.19)	.057 (1.12)	.119
59	.026 (0.37)	.017 (0.33)	.116	-.010 (-0.21)	.069 (1.55)	.094
60	-.014 (-0.32)	.014 (0.41)	.051	-.054 (-1.15)	.069 (1.57)	.108
61	-.041 (-0.92)	-.031 (-0.83)	.293	-.052 (-1.19)	.007 (0.18)	.007
62	-.025 (-0.40)	-.004 (-0.08)	.289	-.035 (-0.63)	.029 (0.55)	.041
63	.074 (1.01)	-.007 (-0.12)	.053	.001 (0.02)	.010 (0.17)	.193
64	.032 (0.49)	.058 (1.04)	.043	.163 (2.45)	-.043 (-0.70)	.124
65	-.064 (-1.08)	.069 (1.37)	.216	.041 (1.04)	.021 (0.56)	.086
66	.018 (0.29)	-.005 (-0.09)	.055	.000 (0.00)	.015 (0.33)	.177
67	-.024 (-0.37)	.044 (0.81)	.117	.058 (0.79)	.022 (0.32)	.015
68	.038 (0.60)	.000 (0.00)	.144	.029 (0.63)	.022 (0.51)	.011
69	.004 (0.08)	-.038 (-0.86)	.049	-.060 (-1.12)	-.005 (-0.10)	.235
70	-.014 (-0.19)	-.054 (-0.83)	.387	.051 (1.02)	-.121 (-2.63)	.424
71	.010 (0.11)	-.023 (-0.31)	.190	-.170 (-2.15)	.180 (2.46)	.204
72	.079 (1.80)	-.036 (-0.97)	.188	.068 (1.42)	-.027 (-0.62)	.099
73	.061 (0.87)	.017 (0.27)	.037	.241 (3.72)	-.195 (-3.14)	.329
74	.028 (0.79)	-.110 (-3.33)	.457	-.000 (-0.00)	-.050 (-1.08)	.131
75	-.014 (-0.21)	.105 (1.75)	.179	-.035 (-0.54)	.098 (1.59)	.120
76	.069 (1.29)	-.043 (-0.86)	.029	-.084 (-1.07)	.046 (0.62)	.233
77	.051 (1.57)	-.059 (-1.93)	.138	.022 (0.57)	-.034 (-0.91)	.072
78	-.047 (-1.00)	.086 (1.95)	.233	.086 (1.21)	-.056 (-0.81)	.031

EXHIBIT XVI
(CONTINUED)

Real & Hypothetical Conglomerates

Month	γ_0	γ_1	R^2
51	.064 (1.89)	-.047 (-1.69)	.054
52	.015 (0.36)	-.010 (-0.30)	.083
53	.013 (0.44)	-.023 (-0.90)	.029
54	-.148 (-4.27)	.160 (5.62)	.432
55	-.011 (-0.27)	-.018 (-0.54)	.007
56	.040 (1.35)	-.060 (-2.50)	.116
57	-.015 (-0.48)	.010 (0.40)	.008
58	-.036 (-0.85)	.007 (0.19)	.009
59	.034 (0.84)	.019 (0.56)	.089
60	-.021 (-0.73)	.021 (0.87)	.047
61	-.027 (-0.88)	-.027 (-0.98)	.173
62	-.038 (-0.93)	.002 (0.06)	.328
63	.054 (1.16)	.003 (0.06)	.089
64	.048 (1.08)	.033 (0.81)	.022
65	-.026 (-0.69)	.050 (1.50)	.143
66	-.005 (-0.14)	.001 (0.04)	.022
67	.019 (0.43)	.030 (0.75)	.030
68	.034 (0.88)	.004 (0.11)	.169
69	.009 (0.23)	-.029 (-0.87)	.016
70	-.026 (-0.53)	-.067 (-1.53)	.363
71	-.016 (-0.28)	.020 (0.37)	.136
72	.061 (2.02)	-.032 (-1.18)	.118
73	.102 (2.10)	-.027 (-0.58)	.051
74	.044 (1.41)	-.090 (-3.03)	.183
75	-.026 (-0.59)	.102 (2.43)	.214
76	.042 (0.98)	-.018 (-0.44)	.006
77	.038 (1.61)	-.056 (-2.47)	.103
78	-.021 (-0.57)	.054 (1.52)	.157

EXHIBIT XVI
(CONTINUED)

Month	Real Conglomerates			Hypothetical Conglomerates		
	γ_0	γ_1	R^2	γ_0	γ_1	R^2
79	.072 (1.31)	-.038 (-0.75)	.104	-.040 (-0.83)	.077 (1.68)	.142
80	.113 (1.58)	-.043 (-0.65)	.018	.111 (1.57)	-.029 (-0.43)	.009
81	.087 (2.06)	-.086 (-2.17)	.196	-.009 (-0.13)	-.023 (-0.35)	.128
82	-.070 (-1.61)	-.006 (-0.15)	.084	-.136 (-1.45)	.067 (0.75)	.029
83	.141 (2.45)	-.095 (-1.78)	.254	.030 (0.40)	.038 (0.53)	.025
84	.000 (0.01)	-.016 (-0.31)	.388	-.052 (-0.43)	.041 (0.35)	.190

EXHIBIT XVI
(CONTINUED)

Real & Hypothetical Conglomerates

Month	γ_0	γ_1	R^2
79	.037 (0.98)	-.017 (-0.48)	.140
80	.121 (2.49)	-.037 (-0.81)	.025
81	.076 (2.13)	-.067 (-1.98)	.109
82	-.086 (-2.14)	.009 (0.24)	.052
83	.114 (2.65)	-.068 (-1.66)	.188
84	.027 (0.46)	.011 (0.19)	.091

CHAPTER 5

SUMMARY

This study has investigated whether the shares of conglomerate companies provide diversification services to investors and whether unsystematic risk affects the average return on these securities, before and after controlling for firm size and industry. The data for this study were the monthly common stock returns of 28 conglomerate companies during the 12-year period January 1968 through December 1979.

To determine whether investors are willing to pay for diversification services provided by securities, the conglomerates in the sample were duplicated as follows: 28 portfolios were constructed to match the sample companies, where each portfolio representing a hypothetical conglomerate consisted of shares of undiversified companies whose businesses were in the same economic sectors as the businesses of the real conglomerate. The undiversified companies were matched with the conglomerate as closely as possible by market capitalization, businesses in industries within particular economic sectors, and sales. The portfolio weight of each component in the hypothetical conglomerate was based on the proportion of sales derived by the real conglomerate in 1979 from the respective economic sectors. A test of the Capital Asset Pricing Model was performed to

determine the risk and return characteristics of the conglomerates in both sample groups; the Fama-Macbeth Methodology was applied to test whether unsystematic risk explains differences in average returns.

The hypothesis tested in this study is: if investors are willing to pay for diversification service, then securities that make it easier for investors to diversify, i.e., securities with lower unsystematic variance, should have lower expected returns than similar securities that do not provide the service because, in the presence of transactions costs, investors would be willing to trade off expected return for lower unsystematic variance. If unsystematic variance is a significant determinant of asset pricing, then returns below those predicted by the CAPM can be explained by the diversification services provided by the securities.

The following summarizes the results of the study:

1. In general, the monthly average returns of the real conglomerates were lower than the returns of the hypothetical conglomerates.
2. In general, the real conglomerates were riskier than the hypothetical conglomerates, i.e., had higher systematic risk and unsystematic risk. The portfolios of

conglomerates, representing both sample groups, were generally riskier than the market. Systematic risk differences between the real conglomerates and their counterparts may be due to the following: difference in capital structure, lack of similarity in the business mix during some periods, extent of business exposure in international markets, types of financial assets held, and sampling bias. The higher unsystematic risk of the real conglomerates may be due to the fact that although, in most cases, the various operations of the conglomerates are managed autonomously, there is only one top management responsible for major decisions affecting the entire company.

3. The value-weighted portfolio of real conglomerates and the value-weighted portfolio of hypothetical conglomerates had equal betas in 1979, i.e., 1.12. The difference in the beta estimates in the earlier periods may have been because the matching, on the whole, was not perfect in those periods. In general, the beta estimates were closer in later sub-

periods. In the subperiod ended 12/72, the subperiod in which the first set of estimates was made, 20 real conglomerates had betas greater than 1.5 whereas, only 2 hypothetical conglomerates had betas greater than 1.5. This suggests that, on the average, the conglomerates did not diversify to minimize risk. In 1979, 17 real conglomerates had betas greater than those of their counterparts. It is interesting to note that, in the subperiod 1/70-12/74, the portfolio of hypothetical conglomerates had a beta of 1.0 but its monthly average return was 0.20% versus the market's return of -0.16%. In the same subperiod, the portfolio of real conglomerates had a beta of 1.25 and a monthly average return of -0.45%. In the subperiod 1/75-12/79, in which the betas of the portfolios were equal, the portfolio of real conglomerates had a monthly average return of 1.68%, the portfolio of hypothetical conglomerates 1.62%, and the market portfolio 1.38%.

4. During the 12-year period, 1/68-12/79, none of the real conglomerates had statistically

significant positive excess returns whereas, there were 3 hypothetical conglomerates that were undervalued relative to the CAPM: H_{COT}, H_{GW}, and H_{TDY}. There were no companies in both sample groups that had statistically significant negative excess returns in the entire period.

5. There were 5 conglomerates that had statistically significant lower returns than their counterparts: LTV, LSI, LIT, REP, and USI in at least one subperiod (but none in all subperiods) but these conglomerates had higher unsystematic variance than their counterparts in all subperiods.
6. In each subperiod, the equally-weighted mean difference in monthly average excess returns between companies in both sample groups was not statistically significant.
7. In the entire period, the difference in the monthly average excess return between the value-weighted portfolio of real conglomerates and its counterpart was -0.43%; this difference in excess returns was statistically significant and can be attributed to strongly significant lower returns

in the first 2 subperiods: 1/68-12/72 and 1/69-12/73. This suggests that investors were attracted to conglomerates, i.e., investors were willing to pay a premium for conglomerate shares. Since the conglomerates had higher unsystematic variance, reasons other than diversification service explain why investors were willing to accept lower returns in the earlier periods.

8. The result that unsystematic variance does not contribute to average returns in consistent with the findings of Fama and MacBeth (1973).

In summary, the empirical evidence presented in this study proves that we cannot reject the hypotheses that the shares of conglomerate companies do not provide diversification services to investors and that unsystematic variance does not affect average returns before and after controlling for firm size and industry.

FOOTNOTES

[1]A portfolio is mean-variance efficient when no other portfolio in the same risk category has higher returns.

[2]In subsequent formulas, tildes (~) are used to denote stochastic terms. The notation is eliminated when ex-post realized returns are used.

[3]I obtained the names of the companies mainly from reading various publications. Francis LeCates, securities analyst at Donaldson, Lufkin & Jenrette, was generous in providing me with a wealth of data on diversified companies.

[4]Unless presented otherwise, in subsequent sections of this report, an H preceding the stock symbol of the real conglomerate means that the data pertain to the hypothetical conglomerate.

[5]I arbitrarily set these ranges which include the values of ±30% of the market capitalization in December 1979 of most of the conglomerates.

[6]For the purposes of this study, a company is undiversified if at least 70% of its sales in 1979 were derived from one economic sector.

[7]Of the 84 undiversified companies selected from the group, 4 companies were acquired in the early part of 1980. They were the following (data in parentheses refer to the company that made the acquisition and the date the acquisition was completed): Beech Aircraft (Raytheon, February 1980), Rosario Resources (AMAX Inc., April 1980), Walker (Hiram) (Consumer Gas Co., April 1980), Warner & Swasey (Bendix Corp., March 1980). We can infer from this that if the acquisition plans were announced late in 1979, any unusual activity in the stock of these companies, at that time, may have been due to the proposed acquisition.

[8]Since sales is a determinant of a company's 'market power', this criterion was imposed.

[9] In general, a careful effort was made in duplicating the conglomerates; I would like to point out, however, two sampling errors I overlooked during the matching process. First, in the case of ICX, I classified its consumer products business solely in the consumer nondurables sector. Based on the information in the company's 1979 annual report, the businesses in the consumer products segment included food and food-related products and services (consumer nondurables, 37.5% of sales), automotive replacement parts and recreational vehicles (consumer durables, 7.4%), and soft-drink packaging and distribution (intermediate products, 7.5%). In matching ICX, I overlooked the latter 2 sectors. Second, Warner Communications, which is a component of the hypothetical Gulf & Western (8.7% weight) and the hypothetical Textron (25.8% weight) was classified in the consumer durables sector because of its leisure products, which included records, toys, and films. After further thought, however, it seemed more appropriate to classify the non-publishing business of Warner Communications in the entertainment segment of the consumer services sector. The leisure products segment in the consumer durables sector should consists of boats, aircraft, etc. Records, sports equipment, and other leisure time products should be classified in the entertainment segment of the consumer services sector instead of in the leisure products segment of the consumer durables sector.

[10] Including capital gains and dividends, with adjustments for capital stock changes, i.e., splits and stock dividends.

[11] The index used to represent the market portfolio.

[12] The 12-year period covered in this study is divided into 8 five-year periods; namely, 1/68-12/72, 1/69-12/73, 1/70-12/74, 1/71-12/75, 1/72-12/76, 1/73-12/77, 1/74-12/78, and 1/75-12/79.

[13] The t-statistics cannot be interpreted literally since the same undiversified company may appear in more than one of the hypothetical firms; hence, the returns of the companies are not completely independent.

[14]The Illinois Central Gulf Railroad was formed that year by the merger of two of ICX's railroad subsidiaries.

[15]ICX acquired Midas International in January 1972. The dispute with the FTC was resolved in 1973 when the company signed a consent decree agreeing to establish a new competitor in the friction materials market from which Midas would purchase 75% of its requirements for disc brake pads. As part of the settlement, ICX agreed to divest the automotive flasher operation of one of its subsidiaries.

[16]The request was filed in February but not approved until October, at a reduced rate.

[17]In fact, in the early part of the 1970's, most of the conglomerates started divesting companies which they had acquired.

[18]Examples include (i) Teledyne, which owns 57% of the outstanding shares of Curtiss-Wright, 25% of Litton Industries, 29% of Brockway Glass, 21% of Reichold Chemicals, etc., (ii) Gulf + Western, which owns 11% of General Tire & Rubber, 6% of Cummins Engine, 10% of Brunswick, etc. (As of March 1981, GW had holdings in 142 companies; the investments were worth $773 million.)

APPENDIX I

Time Series Monthly Average Return

TIME SERIES MONTHLY AVERAGE RETURN ($\bar{R}_j$)

Model*: $\bar{R}_j = \sum_{t=1}^{T} R_{jt}/T \qquad j=1,\ldots,28 \qquad t=1,\ldots,T$

Period	AME	H_{AME}	AMA	H_{AMA}	CSL	H_{CSL}
1/68-12/72	.0014	.0056	.0126	.0057	.0007	.0092
1/69-12/73	-.0063	.0070	-.0094	-.0045	-.0072	-.0053
1/70-12/74	-.0026	.0045	-.0039	-.0070	.0026	-.0057
1/71-12/75	.0125	.0092	-.0010	.0035	.0022	-.0022
1/72-12/76	.0157	.0132	-.0054	.0055	.0039	.0046
1/73-12/77	.0182	.0109	-.0010	.0066	.0085	.0061
1/74-12/78	.0227	.0097	.0120	.0117	.0182	.0149
1/75-12/79	.0335	.0243	.0151	.0171	.0359	.0228
1/68-12/79	.0123	.0117	.0088	.0063	.0111	.0092

Period	CRO	H_{CRO}	COT	H_{COT}	EPI	H_{EPI}
1/68-12/72	.0020	.0072	-.0076	.0093	.0102	.0171
1/69-12/73	-.0095	-.0010	-.0127	.0072	-.0038	.0002
1/70-12/74	-.0141	.0008	.0105	.0142	-.0029	-.0053
1/71-12/75	-.0034	.0093	.0191	.0172	.0090	.0082
1/72-12/76	.0043	.0111	.0301	.0209	.0154	.0145
1/73-12/77	.0050	.0093	.0231	.0201	.0147	.0022
1/74-12/78	.0133	.0151	.0299	.0159	.0228	.0114
1/75-12/79	.0264	.0229	.0251	.0233	.0250	.0280
1/68-12/79	.0076	.0099	.0099	.0158	.0118	.0119

*Footnote appears on pages 129-130.

Period	FQA	H_{FQA}	GW	H_{GW}	ICX	H_{ICX}
1/68-12/72	.0015	.0193	.0003	.0134	-.0320	.0088
1/69-12/73	-.0188	.0088	-.0030	.0052	-.0369	-.0028
1/70-12/74	-.0237	.0045	.0127	.0009	-.0383	-.0029
1/71-12/75	-.0065	.0063	.0206	.0081	-.0329	.0056
1/72-12/76	.0009	.0044	.0158	.0108	-.0308	.0087
1/73-12/77	-.0013	-.0017	.0050	.0095	.0091	.0078
1/74-12/78	.0156	.0067	.0146	.0168	.0124	.0145
1/75-12/79	.0400	.0142	.0181	.0273	.0227	.0147
1/68-12/79	.0068	.0086	.0068	.0143	-.0082	.0078

Period	IU	H_{IU}	KDE	H_{KDE}	LTV	H_{LTV}
1/68-12/72	.0111	.0111	-.0059	.0123	-.0239	.0160
1/69-12/73	.0063	-.0012	-.0128	.0022	-.0174	.0106
1/70-12/74	.0029	-.0044	-.0149	-.0007	-.0006	.0076
1/71-12/75	-.0015	.0033	.0029	.0040	.0139	.0132
1/72-12/76	-.0006	.0028	.0081	.0065	.0126	.0111
1/73-12/77	-.0031	.0007	.0101	.0048	.0011	.0061
1/74-12/78	-.0003	.0127	.0200	.0107	.0017	.0094
1/75-12/79	.0143	.0165	.0311	.0178	.0077	.0101
1/68-12/79	.0051	.0066	.0043	.0088	-.0058	.0105

Period	LSI	H_{LSI}	LIT	H_{LIT}	ML	H_{ML}
1/68-12/72	-.0073	.0135	-.0227	.0050	.0074	.0098
1/69-12/73	-.0189	.0070	-.0275	-.0012	-.0028	.0045
1/70-12/74	-.0204	.0065	-.0276	.0000	.0023	.0046
1/71-12/75	-.0025	.0105	-.0042	.0088	.0083	.0079
1/72-12/76	.0190	.0131	.0099	.0085	.0129	.0115
1/73-12/77	.0202	.0064	.0172	.0043	.0130	.0073
1/74-12/78	.0325	.0121	.0324	.0157	.0214	.0096
1/75-12/79	.0415	.0167	.0555	.0273	.0294	.0232
1/68-12/79	.0095	.0095	.0063	.0089	.0143	.0121

Period	MMM	H_{MMM}	NRI	H_{NRI}	NWT	H_{NWT}
1/68-12/72	.0130	.0102	.0176	.0217	.0048	.0069
1/69-12/73	.0094	.0079	.0003	.0115	.0058	.0017
1/70-12/74	.0011	.0021	.0012	.0083	.0149	.0021
1/71-12/75	.0064	.0046	.0094	.0133	.0187	.0057
1/72-12/76	.0020	.0026	.0144	.0085	.0133	.0107
1/73-12/77	-.0042	-.0033	.0110	.0084	.0189	.0058
1/74-12/78	.0023	.0011	.0246	.0099	.0271	.0064
1/75-12/79	.0066	.0082	.0350	.0187	.0295	.0178
1/68-12/79	.0047	.0041	.0139	.0140	.0126	.0095

Period	OG	H_{OG}	REP	H_{REP}	SCM	H_{SCM}
1/68-12/72	-.0086	.0048	-.0253	.0018	-.0121	.0061
1/69-12/73	-.0078	-.0018	-.0476	-.0027	-.0177	-.0002
1/70-12/74	.0047	-.0039	-.0000	-.0073	-.0060	-.0108
1/71-12/75	.0133	.0032	-.0122	.0052	.0055	.0019
1/72-12/76	.0160	.0065	-.0021	.0081	.0126	.0066
1/73-12/77	.0195	.0039	.0058	.0092	.0113	-.0011
1/74-12/78	.0221	.0062	.0338	.0177	.0198	.0028
1/75-12/79	.0238	.0281	.0443	.0243	.0247	.0216
1/68-12/79	.0078	.0117	.0028	.0071	.0032	.0065

Period	TRW	H_{TRW}	TDY	H_{TDY}	TGT	H_{TGT}
1/68-12/72	-.0016	.0102	-.0091	.0084	.0071	.0093
1/69-12/73	-.0080	.0066	-.0106	.0117	.0011	.0060
1/70-12/74	-.0082	.0096	-.0106	.0086	.0079	.0065
1/71-12/75	.0051	.0130	.0085	.0165	.0096	.0078
1/72-12/76	.0124	.0154	.0301	.0214	.0138	.0132
1/73-12/77	.0086	.0084	.0318	.0111	.0088	.0082
1/74-12/78	.0196	.0123	.0451	.0138	.0123	.0094
1/75-12/79	.0235	.0180	.0572	.0227	.0152	.0183
1/68-12/79	.0051	.0110	.0173	.0133	.0093	.0109

Period	TXT	H_{TXT}	USI	H_{USI}	VMC	H_{VMC}
1/68-12/72	-.0002	.0151	.0054	.0148	.0127	.0100
1/69-12/73	-.0056	.0053	-.0157	.0030	.0079	.0053
1/70-12/74	-.0034	.0007	-.0281	.0017	.0127	.0075
1/71-12/75	.0065	.0067	-.0156	.0137	.0133	.0107
1/72-12/76	.0085	.0104	-.0056	.0105	.0200	.0157
1/73-12/77	.0060	.0055	-.0034	.0021	.0163	.0097
1/74-12/78	.0136	.0129	.0122	.0035	.0205	.0098
1/75-12/79	.0211	.0250	.0311	.0120	.0238	.0194
1/68-12/79	.0037	.0121	.0034	.0062	.0155	.0125

Period	WKR	H_{WKR}	P_R	P_H	T-Bill	Market
1/68-12/72	-.0169	.0048	.0003	.0092	.0043	.0066
1/69-12/73	-.0318	.0028	-.0037	.0047	.0046	.0016
1/70-12/74	-.0273	-.0009	-.0045	.0020	.0048	-.0016
1/71-12/75	-.0009	.0044	.0030	.0063	.0047	.0035
1/72-12/76	.0057	.0093	.0043	.0076	.0048	.0049
1/73-12/77	.0138	.0063	.0016	.0025	.0050	.0014
1/74-12/78	.0423	.0096	.0087	.0069	.0051	.0057
1/75-12/79	.0555	.0315	.0168	.0162	.0054	.0138
1/68-12/79	.0072	.0116	.0036	.0078	.0050	.0053

*The rate of return on securities from time t-1 to t, R_{jt}, can be written as

$$R_{jt} = \frac{P_{jt} + D_{jt}}{P_{j(t-1)}} - 1 \qquad j=1,\ldots,N;\ t=1,\ldots,N$$

where

P_{jt} = closing price per share of security j at time t, and

D_{jt} = dividends per share at time t.

Similarly, the rate of return on a value-weighted portfolio, R_{pt}, in a given period, can be expressed as

$$R_{pt} = \frac{\sum_{j=1}^{N} X_{jt}^{p}(N_{jt}P_{jt} - N_{j(t-1)}P_{j(t-1)}) + \sum_{j=1}^{N} X_{jt}^{p} N_{jt} D_{jt}}{\sum_{j=1}^{N} X_{jt}^{p} N_{j(t-1)} P_{j(t-1)}}$$

where

X_{jt}^{p} = weight of security j in the portfolio, $\sum_{j=1}^{N} X_{jt}^{p} = 1$.

For the market portfolio and for the portfolio of real conglomerates, at any point in time,

$$X_{jt}^{p} = \frac{N_{jt} P_{jt}}{\sum_{j=1}^{N} N_{jt} P_{jt}}, \text{ where} \qquad j=1,\ldots,28 \text{ for the conglomerates.}$$

For the portfolio of hypothetical conglomerates, X_{jt}^{p} remained constant throughout the period and was based on the proportion of the real conglomerate's sales in 1979 derived from the sector represented by the jth security.

N_{jt} = number of shares outstanding of security j at time t.

R_{pt} can also be expressed as

$$R_{pt} = \sum_{j=1}^{N} X_{jt}^{p} R_{jt}.$$

The time series average rate of return on a value-weighted portfolio, $\bar{R}_p$, is given by

$$\bar{R}_p = \sum_{t=1}^{T} R_{pt}/T$$

$$= \sum_{t=1}^{T} \sum_{j=1}^{N} X_{jt}^{p} R_{jt}$$

$$= \sum_{j=1}^{N} X_{jt}^{p} \left(\frac{\sum_{t=1}^{T} R_{jt}}{T}\right) = \sum_{j=1}^{N} X_{jt}^{p} \bar{R}_j$$

Note: P_R denotes the value-weighted portfolio of real conglomerates and P_H denotes the value-weighted portfolio of hypothetical conglomerates.

APPENDIX II

Estimates of Systematic Risk

ESTIMATES OF SYSTEMATIC RISK (β_{jm})

MODEL*: $R_{jt} = \alpha_{jm} + \beta_{jm} R_{mt} + \varepsilon_{jt}$ $\quad j=1,\ldots,N;\ t=1,\ldots,T$

Period	AME β	H_{AME} β
1972	1.49	1.38
1973	1.51	1.49
1974	.21	1.60
1975	1.14	1.50
1976	1.05	1.43
1977	1.07	1.40
1978	1.02	1.27
1979	1.32	0.93

	AME β				H_{AME} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2540	5.88	2.37	.37	.1533	9.02	2.09	.58
1973	.2149	7.03	2.47	.46	.1429	10.42	1.85	.65
1974	.1949	6.22	2.32	.40	.1264	12.64	1.80	.73
1975	.1766	6.48	2.60	.42	.1233	12.17	1.55	.72
1976	.1740	6.02	2.55	.38	.1162	12.33	1.65	.72
1977	.1629	6.58	2.68	.43	.1105	12.71	1.54	.74
1978	.1564	6.51	2.49	.42	.1111	11.46	1.86	.69
1979	.1730	7.65	2.17	.50	.1273	7.29	1.69	.48

*Footnote appears on page 162.

Period	AMA β	H_{AMA} β
1972	1.37	1.34
1973	1.56	1.35
1974	1.24	1.07
1975	0.96	1.14
1976	0.88	1.09
1977	0.86	1.09
1978	0.61	0.97
1979	0.75	1.16

	AMA β				H_{AMA} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2376	5.78	2.27	.37	.1103	12.16	2.02	.72
1973	.2420	6.45	2.27	.42	.1020	13.25	2.27	.75
1974	.2406	5.14	2.10	.31	.1008	10.58	2.33	.66
1975	.2368	4.06	2.14	.22	.1085	10.53	2.45	.66
1976	.2258	3.90	2.14	.21	.1062	10.29	2.41	.65
1977	.2152	3.99	1.99	.22	.1058	10.27	2.42	.65
1978	.1664	3.64	1.97	.19	.0982	9.91	2.27	.63
1979	.1574	4.76	1.91	.28	.1201	9.64	2.19	.62

Period	CSL β	H_{CSL} β
1972	1.75	1.00
1973	1.76	1.22
1974	1.35	0.99
1975	1.22	1.03
1976	1.20	1.04
1977	1.06	1.00
1978	0.95	0.90
1979	1.36	1.10

	CSL β				H_{CSL} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2394	7.32	1.93	.48	.1195	8.36	2.01	.55
1973	.2165	8.11	2.16	.53	.1088	11.18	2.63	.68
1974	.2007	6.73	1.91	.44	.1075	9.16	2.45	.59
1975	.1987	6.12	2.19	.39	.1099	9.36	2.36	.60
1976	.1880	6.37	2.18	.41	.1104	9.39	2.28	.60
1977	.1946	5.46	2.06	.34	.1134	8.84	2.14	.57
1978	.1728	5.48	1.86	.34	.1061	8.46	1.86	.55
1979	.2486	5.46	2.14	.34	.1318	8.32	2.18	.54

Period	CRO β	H_{CRO} β
1972	1.86	1.16
1973	1.81	1.17
1974	1.13	1.05
1975	1.12	1.16
1976	1.12	1.05
1977	1.04	1.03
1978	0.91	1.00
1979	1.26	0.99

	CRO β				H_{CRO} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2264	8.20	2.14	.54	.1118	10.37	2.24	.65
1973	.2234	8.11	2.07	.53	.1139	10.29	2.27	.65
1974	.1879	5.99	2.10	.38	.1090	9.64	1.87	.62
1975	.1752	6.38	2.09	.41	.1135	10.20	1.91	.64
1976	.1767	6.37	2.03	.41	.1188	8.86	1.93	.57
1977	.1702	6.10	2.14	.39	.1170	8.81	1.86	.57
1978	.1830	4.95	2.39	.30	.1110	9.04	1.69	.58
1979	.2306	5.48	2.60	.34	.1174	8.41	1.87	.55

Period	COT β	H_{COT} β
1972	1.68	0.65
1973	1.70	0.64
1974	1.37	0.59
1975	1.25	0.81
1976	1.17	0.89
1977	1.03	0.92
1978	0.90	0.92
1979	1.12	1.07

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.3177	5.28	2.39	.32	.1785	3.66	2.65	.19
1973	.2992	5.67	2.42	.36	.1601	3.97	2.54	.21
1974'	.2676	5.13	2.13	.31	.1532	3.83	2.20	.20
1975	.2492	5.01	2.17	.30	.1529	5.27	2.18	.32
1976	.2469	4.73	2.17	.28	.1551	5.74	1.91	.36
1977	.2186	4.72	1.94	.28	.1543	5.94	2.08	.38
1978	.2008	4.48	1.80	.26	.1502	6.11	2.06	.39
1979	.1951	5.76	2.09	.36	.1477	7.27	2.33	.48

Period	EPI β	H_{EPI} β
1972	0.83	1.37
1973	1.00	1.40
1974	1.11	1.11
1975	1.32	1.36
1976	1.41	1.38
1977	1.42	1.32
1978	1.24	1.23
1979	1.14	1.56

	EPI β				H_{EPI} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2008	4.15	2.39	.23	.2096	6.52	2.03	.42
1973	.1860	5.36	2.50	.33	.2156	6.48	2.16	.42
1974	.1587	7.01	2.63	.46	.2019	5.51	2.17	.34
1975	.1494	8.83	2.46	.57	.2037	6.70	2.36	.44
1976	.1340	10.49	2.35	.65	.2058	6.70	2.28	.44
1977	.1410	10.11	2.33	.64	.1725	7.67	2.52	.50
1978	.1626	7.61	2.45	.50	.1651	7.44	2.36	.49
1979	.1992	5.74	2.24	.36	.1690	9.23	2.11	.59

Period	FQA β	H_{FQA} β
1972	1.89	1.23
1973	2.08	1.38
1974	1.40	1.28
1975	1.51	1.32
1976	1.49	1.23
1977	1.53	1.26
1978	1.35	1.17
1979	1.96	1.23

	FQA β				H_{FQA} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.3370	5.61	2.01	.35	.1287	9.59	2.15	.61
1973	.3412	6.10	1.98	.39	.1329	10.38	2.06	.65
1974	.3385	4.13	1.80	.23	.1174	10.92	1.77	.67
1975	.3365	4.50	2.24	.26	.1352	9.73	2.60	.62
1976	.3495	4.25	2.30	.24	.1370	8.96	2.49	.58
1977	.3393	4.50	2.38	.26	.1372	9.18	2.51	.59
1978	.3216	4.20	2.30	.23	.1265	9.24	2.57	.60
1979	.3273	5.98	2.36	.38	.1518	8.09	2.58	.53

Period	GW β	H_{GW} β
1972	2.23	1.01
1973	2.03	1.04
1974	1.37	0.99
1975	1.05	1.01
1976	0.89	1.07
1977	0.88	1.05
1978	0.82	1.01
1979	1.08	1.05

	GW β				H_{GW} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2265	9.85	2.07	.63	.0915	11.09	2.09	.68
1973	.2085	9.76	2.10	.62	.0886	11.78	2.10	.71
1974	.1943	7.06	1.99	.46	.0836	11.82	2.09	.71
1975	.1980	5.29	2.02	.33	.0938	10.74	2.18	.67
1976	.1837	4.85	1.69	.29	.0942	11.30	2.14	.69
1977	.1642	5.39	1.66	.33	.0942	11.19	2.13	.68
1978	.1636	5.00	1.70	.30	.0861	11.68	2.07	.70
1979	.1824	5.92	1.80	.38	.0945	11.15	2.12	.68

Periodd	ICX β	H_{ICX} β
1972	1.48	1.29
1973	1.54	1.30
1974	1.20	1.22
1975	1.14	1.26
1976	1.17	1.18
1977	1.38	1.17
1978	1.23	1.12
1979	1.36	0.97

	ICX β				H_{ICX} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.8535	1.73	1.95	.05	.1585	8.15	1.93	.53
1973	.8238	1.87	1.93	.06	.1218	10.69	1.92	.66
1974	.7124	1.68	1.98	.05	.1073	11.33	1.79	.69
1975	.7066	1.62	1.98	.04	.1047	11.99	1.67	.71
1976	.6961	1.68	1.08	.05	.1039	11.38	2.03	.69
1977	.1651	8.34	2.49	.55	.1043	11.19	2.16	.68
1978	.1586	7.76	2.52	.51	.1004	11.12	2.22	.68
1979	.1792	7.61	2.23	.51	.1248	7.73	1.98	.51

Period	IU β	H_{IU} β
1972	1.45	1.42
1973	1.44	1.54
1974	1.27	1.45
1975	1.25	1.47
1976	1.30	1.39
1977	1.17	1.35
1978	1.00	1.34
1979	0.97	1.31

	IU β				H_{IU} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2320	6.25	2.20	.40	.1589	8.93	1.96	.58
1973	.2196	6.54	2.14	.42	.1507	10.22	1.81	.64
1974	.1977	6.44	2.18	.42	.1324	10.94	1.71	.67
1975	.1893	6.61	2.45	.43	.1357	10.83	1.63	.67
1976	.1826	7.11	2.42	.47	.1374	10.15	1.87	.64
1977	.1744	6.70	2.31	.44	.1302	10.38	2.06	.65
1978	.1627	6.16	2.39	.40	.1258	10.64	2.17	.66
1979	.1784	5.44	1.98	.34	.1490	8.78	2.02	.57

Period	KDE β	H_{KDE} β
1972	2.11	1.21
1973	2.21	1.17
1974	1.78	0.92
1975	1.75	1.03
1976	1.78	1.06
1977	1.83	1.04
1978	1.59	0.96
1979	1.72	1.20

	KDE β				H_{KDE} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.3020	6.98	2.69	.46	.1065	11.38	2.18	.69
1973	.2930	7.54	2.55	.50	.0962	12.16	2.09	.72
1974	.2522	7.07	2.65	.46	.1059	8.66	2.06	.56
1975	.2159	8.09	2.29	.53	.1079	9.54	2.18	.61
1976	.2110	8.45	2.26	.55	.1062	9.98	2.07	.63
1977	.2002	9.13	2.32	.59	.1048	9.97	2.19	.63
1978	.1860	8.54	2.39	.56	.0994	9.66	1.91	.62
1979	.2167	7.94	2.05	.52	.0981	12.28	2.21	.72

Period	LTV β	H_{LTV} β
1972	2.59	0.97
1973	2.51	1.16
1974	1.84	1.09
1975	1.78	1.20
1976	1.41	1.11
1977	1.46	1.06
1978	1.57	0.94
1979	2.01	0.97

	LTV β				H_{LTV} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.4982	5.20	2.51	.32	.1415	6.87	1.55	.45
1973	.4958	5.06	2.39	.31	.1398	8.28	1.52	.54
1974	.4246	4.33	2.44	.24	.1070	10.16	1.58	.64
1975	.4052	4.38	2.35	.25	.1297	9.24	1.97	.60
1976	.3071	4.59	1.95	.27	.1314	8.47	2.02	.55
1977	.2675	5.47	2.00	.34	.1296	8.16	2.10	.53
1978	.2839	5.52	2.17	.34	.1230	7.64	2.07	.50
1979	.3394	5.91	2.26	.38	.1342	7.25	2.15	.48

Period	LSI β	H_{LSI} β
1972	1.85	0.83
1973	1.91	1.03
1974	1.30	1.06
1975	1.40	1.22
1976	1.60	1.22
1977	1.60	1.20
1978	1.53	1.11
1979	2.15	1.17

	LSI β				H_{LSI} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2487	7.46	2.43	.49	.1139	7.33	2.16	.48
1973	.2458	7.75	2.45	.51	.1171	8.81	2.22	.57
1974	.2402	5.39	2.40	.33	.1104	9.61	2.23	.61
1975	.2596	5.38	2.29	.33	.0970	12.57	2.46	.73
1976	.2640	6.07	2.31	.39	.1070	11.42	2.31	.69
1977	.2356	6.79	2.30	.44	.1023	11.69	2.35	.70
1978	.2181	7.01	2.19	.46	.0946	11.76	2.08	.70
1979	.2010	10.69	1.85	.66	.1044	11.18	1.99	.68

Period	LIT β	H_{LIT} β
1972	2.12	1.63
1973	2.03	1.66
1974	1.09	1.42
1975	1.47	1.30
1976	1.44	1.20
1977	1.51	1.21
1978	1.35	1.24
1979	2.02	1.46

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.3195	6.62	1.93	.43	.1535	10.63	2.15	.66
1973	.3050	6.64	1.97	.43	.1437	11.54	2.02	.70
1974	.3519	3.11	2.37	.14	.1351	10.51	2.09	.66
1975	.3945	3.72	2.48	.19	.1290	10.07	1.93	.64
1976	.4320	3.33	2.28	.16	.1167	10.29	2.22	.64
1977	.4091	3.70	2.42	.19	.1167	10.38	2.09	.65
1978	.4005	3.37	2.10	.16	.1175	10.58	1.85	.66
1979	.3644	5.54	1.68	.12	.1386	10.56	1.47	.66

Period	ML β	H_{ML} β
1972	1.78	1.21
1973	1.62	1.22
1974	1.21	1.05
1975	1.11	1.07
1976	0.94	1.07
1977	0.92	1.07
1978	0.89	1.06
1979	1.11	1.29

	ML β				H_{ML} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.1829	9.72	2.44	.62	.1345	8.98	1.97	.58
1973	.1632	9.94	2.59	.63	.1414	8.62	1.99	.56
1974	.1747	6.90	2.19	.45	.1261	8.29	2.03	.54
1975	.1784	6.22	2.07	.40	.1299	8.24	2.18	.54
1976	.1629	5.75	2.08	.36	.1214	8.84	2.17	.57
1977	.1546	5.98	2.03	.38	.1180	9.09	1.92	.59
1978	.1605	5.53	1.93	.35	.1018	10.41	1.84	.65
1979	.1709	6.49	2.16	.42	.1192	10.82	1.82	.67

Period	MMM β	H_{MMM} β
1972	1.09	0.67
1973	0.93	0.68
1974	1.18	0.80
1975	1.16	0.97
1976	1.17	1.03
1977	1.17	1.00
1978	1.22	1.05
1979	0.98	1.08

	MMM β				H_{MMM} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.1223	8.90	2.35	.58	.0738	9.11	1.93	.59
1973	.1059	8.80	2.54	.57	.0714	9.47	1.96	.61
1974	.1065	11.05	2.35	.68	.0824	9.68	1.37	.62
1975	.1394	8.34	2.35	.55	.0885	11.01	1.78	.68
1976	.1501	7.78	2.27	.51	.0915	11.24	1.96	.69
1977	.1444	8.12	2.22	.53	.0887	11.33	1.94	.69
1978	.1483	8.21	2.15	.54	.0915	11.44	1.94	.69
1979	.1720	5.70	2.26	.36	.0962	11.21	2.40	.68

Period	NRI β	H_{NRI} β
1972	1.01	1.31
1973	1.38	1.33
1974	1.04	1.04
1975	1.28	1.10
1976	1.41	1.00
1977	1.47	1.03
1978	1.22	0.97
1979	1.75	1.15

	NRI β				H_{NRI} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2929	3.44	2.40	.17	.1676	7.84	1.93	.51
1973	.2677	5.17	1.99	.32	.1440	9.20	2.02	.59
1974	.2721	3.82	2.21	.20	.1463	7.10	1.99	.46
1975	.2638	4.85	2.43	.29	.1622	6.81	2.39	.44
1976	.2678	5.25	2.31	.32	.1611	6.21	2.33	.40
1977	.2623	5.59	2.28	.35	.1562	6.57	2.42	.43
1978	.2336	5.23	2.28	.32	.1490	6.53	2.33	.42
1979	.2266	7.73	2.08	.51	.1596	7.21	2.33	.47

Period	NWT β	H_{NWT} β
1972	1.95	1.15
1973	1.99	1.21
1974	1.66	1.05
1975	1.62	1.02
1976	1.45	1.03
1977	1.45	1.00
1978	1.31	0.88
1979	1.29	1.13

	NWT β				H_{NWT} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2752	7.09	1.86	.46	.1320	8.70	2.40	.57
1973	.2494	7.99	1.97	.52	.1219	9.93	2.35	.63
1974	.1985	8.35	2.00	.55	.1089	9.61	2.27	.61
1975	.1858	8.73	2.14	.57	.1002	10.22	2.26	.64
1976	.1747	8.31	2.20	.54	.0954	10.84	2.36	.67
1977	.1659	8.73	2.33	.57	.0880	11.35	2.05	.69
1978	.1570	8.33	2.17	.54	.0790	11.10	2.11	.68
1979	.1639	7.85	2.29	.52	.1164	9.70	1.80	.62

Period	OG β	H_{OG} β
1972	2.28	1.30
1973	2.15	1.35
1974	1.65	1.27
1975	1.33	1.28
1976	1.28	1.22
1977	1.21	1.18
1978	1.09	1.13
1979	1.19	1.20

	OG β				H_{OG} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2513	9.05	2.03	.59	.1424	9.12	1.78	.59
1973	.2531	8.49	1.83	.55	.1361	9.95	1.83	.63
1974	.2410	6.83	1.76	.45	.1393	9.10	1.76	.59
1975	.2063	6.43	1.87	.42	.1533	8.34	1.81	.55
1976	.2082	6.17	1.89	.40	.1574	7.72	1.94	.51
1977	.1995	6.06	1.83	.39	.1590	7.42	1.91	.49
1978	.1891	5.78	2.01	.37	.1705	6.64	2.01	.43
1979	.2026	5.89	1.98	.37	.2450	4.88	1.76	.29

Period	REP β	H_{REP} β
1972	1.96	1.45
1973	1.90	1.49
1974	1.03	1.19
1975	1.42	1.16
1976	1.52	1.25
1977	1.65	1.15
1978	1.55	0.93
1979	2.35	1.01

	REP β				H_{REP} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.5221	3.75	2.38	.20	.1536	9.41	2.12	.60
1973	.4700	4.03	2.46	.22	.1510	9.88	2.05	.63
1974	.4716	2.17	2.48	.08	.1315	9.03	1.81	.58
1975	.5095	2.79	2.63	.12	.1462	7.92	2.12	.52
1976	.4943	3.08	2.67	.14	.1392	8.96	2.18	.58
1977	.4130	4.01	2.62	.22	.1441	8.01	2.20	.52
1978	.4459	3.48	2.62	.17	.1425	6.50	2.37	.42
1979	.4508	5.22	2.42	.32	.1654	6.14	2.29	.39

Period	SCM β	H_{SCM} β
1972	1.96	1.14
1973	2.08	1.33
1974	1.66	1.20
1975	1.56	1.42
1976	1.53	1.43
1977	1.52	1.37
1978	1.32	1.26
1979	1.76	1.48

	SCM β				H_{SCM} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2385	8.22	2.71	.54	.1465	7.81	1.65	.51
1973	.2402	8.67	2.74	.56	.1512	8.81	1.89	.57
1974	.2449	6.77	2.60	.44	.1381	8.67	1.91	.56
1975	.2505	6.24	2.55	.40	.1440	9.88	2.34	.63
1976	.2279	6.71	2.30	.44	.1394	10.27	2.32	.65
1977	.2151	7.06	2.26	.46	.1357	10.13	2.37	.64
1978	.1841	7.17	1.78	.47	.1336	9.41	2.40	.60
1979	.2177	8.07	2.03	.53	.1479	10.04	2.01	.63

Period	TRW β	H_{TRW} β
1972	0.95	0.93
1973	1.16	1.04
1974	1.29	0.94
1975	1.48	1.01
1976	1.42	1.03
1977	1.42	1.05
1978	1.24	1.06
1979	1.12	1.33

	TRW β				H_{TRW} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2090	4.53	2.17	.26	.1261	7.40	1.91	.49
1973	.2339	4.97	2.17	.30	.1259	8.23	1.90	.54
1974	.1951	6.60	2.14	.43	.1127	8.34	1.96	.55
1975	.1767	8.36	2.12	.55	.1180	8.57	2.00	.56
1976	.1830	7.76	2.25	.51	.1091	9.43	2.04	.61
1977	.1774	8.01	2.28	.53	.1149	9.11	2.09	.59
1978	.1402	8.88	2.27	.58	.1084	9.80	2.02	.62
1979	.1593	7.03	2.12	.46	.1181	11.25	1.99	.69

Period	TDY β	H_{TDY} β
1972	2.39	1.17
1973	2.30	1.22
1974	1.58	1.19
1975	1.45	1.04
1976	1.60	1.05
1977	1.68	0.99
1978	1.46	1.02
1979	2.06	1.05

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2749	8.68	1.79	.56	.1334	8.73	2.15	.57
1973	.2789	8.25	1.56	.54	.1430	8.53	1.77	.56
1974	.2831	5.58	1.96	.35	.1254	9.51	1.96	.61
1975	.2844	5.11	1.99	.31	.1245	8.39	1.96	.55
1976	.3196	5.00	1.82	.30	.1129	9.28	1.85	.60
1977	.3169	5.29	2.01	.33	.1187	8.38	1.68	.55
1978	.3020	4.85	1.91	.29	.1021	9.99	1.67	.63
1979	.3199	6.43	1.82	.42	.1203	8.72	1.74	.57

Period	TGT β	H_{TGT} β
1972	0.91	1.17
1973	1.10	1.10
1974	1.05	1.11
1975	0.92	0.90
1976	0.88	0.89
1977	0.91	0.90
1978	0.70	0.93
1979	0.64	0.92

	TGT β				H_{TGT} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.1393	6.55	2.42	.43	.1075	10.89	2.31	.67
1973	.1402	7.86	2.42	.52	.1031	10.63	2.04	.66
1974	.1331	7.87	2.15	.52	.0923	11.99	1.91	.71
1975	.1499	6.16	1.92	.40	.0905	9.98	1.92	.63
1976	.1451	6.05	1.86	.39	.0868	10.26	2.04	.64
1977	.1377	6.60	1.81	.43	.0899	10.03	2.09	.63
1978	.1292	5.41	1.84	.34	.0891	10.43	2.10	.65
1979	.1383	4.66	1.71	.27	.1043	8.82	1.97	.57

Period	TXT β	H_{TXT} β
1972	1.42	1.19
1973	1.70	1.21
1974	1.43	1.15
1975	1.56	1.25
1976	1.62	1.34
1977	1.61	1.34
1978	1.38	1.28
1979	1.45	1.33

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2238	6.36	2.44	.43	.1477	8.03	1.73	.52
1973	.2235	7.60	2.46	.50	.1378	8.78	1.62	.57
1974	.1996	7.18	2.45	.47	.1312	8.76	1.65	.57
1975	.2060	7.57	2.42	.50	.1272	9.79	1.67	.62
1976	.2012	8.04	2.32	.53	.1296	10.35	1.78	.65
1977	.1876	8.57	2.34	.56	.1187	11.27	1.75	.69
1978	.1658	8.33	2.32	.54	.1038	12.31	1.81	.72
1979	.1885	7.68	2.49	.50	.1005	13.26	2.33	.75

Period	USI β	H_{USI} β
1972	1.74	1.69
1973	1.62	1.56
1974	1.12	1.29
1975	1.11	1.32
1976	1.19	1.23
1977	1.14	1.16
1978	1.06	1.21
1979	1.26	1.44

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.2200	7.93	2.05	.52	.1353	12.47	2.37	.73
1973	.1954	8.28	2.46	.54	.1273	12.23	2.39	.72
1974	.2228	5.04	2.00	.30	.1265	10.19	2.52	.64
1975	.2701	4.09	2.35	.22	.1380	9.59	2.52	.61
1976	.2837	4.19	2.09	.23	.1371	9.00	2.32	.58
1977	.2851	4.01	2.12	.21	.1386	8.36	2.14	.55
1978	.2725	3.90	2.14	.21	.1433	8.41	2.06	.55
1979	.2781	4.55	2.40	.26	.1543	9.34	1.90	.60

Period	VMC β	H_{VMC} β
1972	0.94	1.17
1973	1.09	1.16
1974	0.91	1.08
1975	0.89	1.02
1976	1.05	0.93
1977	1.02	0.92
1978	0.88	0.92
1979	0.82	0.93

	VMC β				H_{VMC} β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.1854	5.09	2.46	.31	.1407	8.34	2.35	.55
1973	.1821	6.00	2.52	.38	.1263	9.22	2.27	.59
1974	.1682	5.44	2.70	.34	.1225	8.79	2.02	.57
1975	.1584	5.60	2.68	.35	.1216	8.38	1.92	.55
1976	.1698	6.19	2.40	.40	.1196	7.78	2.07	.51
1977	.1752	5.82	2.56	.37	.1198	7.69	1.96	.51
1978	.1696	5.17	2.51	.32	.1220	7.50	2.02	.49
1979	.1889	4.33	2.22	.24	.1391	6.70	2.12	.44

Period	WKR β	H_{WKR} β
1972	2.30	1.19
1973	2.17	1.30
1974	1.66	1.16
1975	1.83	1.21
1976	1.85	1.25
1977	1.84	1.25
1978	1.86	1.22
1979	2.18	1.20

	β				β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.4264	5.38	2.11	.33	.1369	8.69	2.12	.57
1973	.4340	5.00	2.06	.30	.1465	8.85	1.98	.57
1974	.4144	4.00	2.18	.22	.1391	8.35	2.09	.55
1975	.3741	4.88	2.41	.29	.1378	8.80	2.32	.57
1976	.3778	4.89	2.33	.29	.1400	8.92	2.35	.58
1977	.3542	5.18	2.35	.32	.1411	8.89	2.27	.58
1978	.3327	5.60	2.11	.35	.1397	8.68	2.52	.57
1979	.3348	6.52	2.28	.42	.1856	6.46	2.11	.42

Period	$Portfolio_{Real}$ β	$Portfolio_{Hypothetical}$ β
1972	1.42	1.02
1973	1.32	1.03
1974	1.25	1.00
1975	1.18	1.04
1976	1.17	1.05
1977	1.18	1.04
1978	1.15	1.04
1979	1.12	1.12

	$Portfolio_{Real}$ β				$Portfolio_{Hypothetical}$ β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.0740	19.19	1.68	.86	.0383	26.53	1.67	.92
1973	.0632	20.93	1.65	.88	.0397	25.84	1.80	.92
1974	.0548	22.81	1.57	.90	.0386	26.00	1.61	.92
1975	.0553	21.44	1.89	.89	.0412	25.32	1.94	.92
1976	.0584	20.10	1.93	.87	.0432	24.36	2.01	.91
1977	.0543	21.85	1.89	.89	.0430	24.15	1.98	.91
1978	.0543	21.13	1.85	.89	.0422	24.73	1.85	.91
1979	.0600	18.69	1.99	.86	.0471	23.75	2.00	.91

Period	T-Bill β	Market β
1972	-0.0042	1.00
1973	-0.0043	1.00
1974	-0.0090	1.00
1975	-0.0084	1.00
1976	-0.0078	1.00
1977	-0.0055	1.00
1978	-0.0061	1.00
1979	0.0019	1.00

	β			
	Standard Error	T-Statistic	Durbin-Watson Statistic	R^2
1972	.0031	-1.35	0.32	.03
1973	.0036	-1.21	0.29	.02
1974	.0035	-2.55	0.44	.10
1975	.0035	-2.37	0.43	.09
1976	.0033	-2.36	0.48	.09
1977	.0028	-1.97	0.59	.06
1978	.0028	-2.16	0.52	.07
1979	.0049	0.38	0.10	.00

*Estimates of β_{jm} are based on ex-post returns in the preceding 60 months.

The systematic risk of a value-weighted portfolio, β_{pm}, is given by

$$R_{pt} = \alpha_{pm} + \beta_{pm} R_{mt} + \varepsilon_{pt} \qquad t=1,\ldots,T$$

Alternatively, β_{pm} can be derived by taking

$$\beta_{pm} = \frac{\text{cov}(R_p, R_m)}{\sigma^2(R_m)} = \frac{\sum_{t=1}^{T} (R_{pt} - \bar{R}_p)(R_{mt} - \bar{R}_m)}{\sum_{t=1}^{T} (R_{mt} - \bar{R}_m)^2}$$

$$= \sum_{j=1}^{N} X_{jt}^{p} \left[\frac{\text{cov}(R_j, R_m)}{\sigma^2(R_m)}\right]$$

$$= \sum_{j=1}^{N} X_{jt}^{p} \beta_{jm}$$

$$= \frac{\sum_{t=1}^{T} \left(\sum_{j=1}^{N} X_{jt}^{p} R_{jt} - \sum_{j=1}^{N} X_{jt}^{p} \bar{R}_j\right)(R_{mt} - \bar{R}_m)}{\sum_{t=1}^{T} (R_{mt} - \bar{R}_m)^2}$$

APPENDIX III

Monthly Average Excess Return

AVERAGE MONTHLY EXCESS RETURN (α_{jm})

MODEL: $R_{jt} - R_{ft} = \alpha_{jm} + \beta_{jm}(R_{mt} - R_{ft}) + \varepsilon_{jt}$ $\quad j=1,\ldots,N;\ t=1,\ldots,T$

(t-statistic in parentheses)

Period	AME	H_{AME}	AMA	H_{AMA}	CSL	H_{CSL}
1/68-12/72	- .63% (-0.60)	- .19% (-0.30)	.52% (0.52)	- .17% (-0.37)	- .76% (-0.76)	.26% (0.51)
1/69-12/73	- .64 (-0.68)	.69 (1.11)	- .93 (-0.88)	- .51 (-1.14)	- .65 (-0.69)	- .62 (-1.31)
1/70-12/74	.03 (0.03)	.99 (1.53)	- .08 (-0.07)	- .50 (-0.97)	.64 (0.63)	- .42 (-0.77)
1/71-12/75	.92 (1.03)	.64 (1.02)	- .46 (-0.38)	- .02 (0.04)	- .11 (-0.10)	- .56 (-1.02)
1/72-12/76	1.07 (1.22)	.83 (1.40)	-1.03 (-0.90)	- .06 (0.10)	- .11 (-0.11)	- .04 (-0.07)
1/73-12/77	1.71 (2.04)	1.10 (1.94)	- .29 (-0.26)	.55 (1.01)	.74 (0.74)	.48 (0.82)
1/74-12/78	1.70 (2.12)	.39 (0.68)	.65 (0.76)	.61 (1.21)	1.26 (1.42)	.93 (1.70)
1/75-12/79	1.69 (2.23)	1.11 (1.99)	.34 (0.49)	.19 (0.36)	1.91 (1.74)	.81 (1.39)
1/68-12/79	.69 (1.16)	.62 (1.57)	.34 (0.54)	.09 (0.27)	.56 (0.81)	.39 (1.09)

Period	CRO	H_{CRO}	COT	H_{COT}	EPI	H_{EPI}
1/68-12/72	- .65% (-0.69)	.03% (0.05)	-1.58% (-1.19)	.35% (0.47)	.40% (0.48)	.97% (1.10)
1/69-12/73	- .87 (-0.89)	- .21 (-0.42)	-1.21 (-0.93)	.45 (0.65)	- .53 (-0.66)	- .02 (-0.02)
1/70-12/74	-1.17 (-1.22)	.27 (0.48)	1.44 (1.06)	1.32 (1.69)	- .06 (-0.07)	- .29 (-0.29)
1/71-12/75	- .68 (-0.77)	.60 (1.04)	1.59 (1.27)	1.35 (1.75)	.59 (0.78)	.52 (0.51)
1/72-12/76	- .06 (-0.07)	.61 (1.02)	2.52 (2.01)	1.60 (2.03)	1.04 (1.53)	.95 (0.91)
1/73-12/77	.38 (0.43)	.81 (1.34)	2.18 (1.94)	1.85 (2.33)	1.48 (2.05)	.20 (0.22)
1/74-12/78	.76 (0.81)	.94 (1.65)	2.43 (2.36)	1.03 (1.33)	1.69 (2.03)	.55 (0.65)
1/75-12/79	1.03 (1.02)	.91 (1.76)	1.01 (1.18)	.88 (1.36)	.98 (1.12)	.94 (1.27)
1/68-12/79	.22 (0.34)	.46 (1.36)	.45 (0.59)	1.05 (2.21)	.65 (1.19)	.64 (1.16)

Period	FQA	H_{FQA}	GW	H_{GW}	ICX	H_{ICX}
1/68-12/72	- .71% (-0.51)	1.22% (2.26)	- .91% (-0.96)	.68% (1.78)	-3.97% (-1.11)	.16% (0.24)
1/69-12/73	-1.71 (-1.15)	.84 (1.45)	- .15 (-0.16)	.38 (0.97)	-3.70 (-1.03)	- .35 (-0.66)
1/70-12/74	-1.96 (-1.14)	.78 (1.31)	1.66 (1.68)	.24 (0.56)	-3.56 (-0.98)	- .06 (-0.00)
1/71-12/75	- .93 (-0.55)	.32 (0.47)	1.72 (1.72)	.46 (0.97)	-3.63 (-1.02)	.24 (0.45)
1/72-12/76	- .41 (-0.23)	- .06 (-0.08)	1.09 (1.17)	.59 (1.23)	-3.57 (-1.01)	.38 (0.71)
1/73-12/77	- .07 (-0.04)	- .21 (-0.30)	.32 (0.38)	.83 (1.72)	.90 (1.07)	.71 (1.32)
1/74-12/78	.97 (0.59)	.09 (0.13)	.91 (1.08)	1.11 (2.51)	.66 (0.81)	.87 (1.69)
1/75-12/79	1.81 (1.26)	- .17 (-0.25)	.36 (0.45)	1.30 (3.13)	.57 (0.73)	.11 (0.20)
1/68-12/79	.12 (0.13)	.32 (0.82)	.13 (0.21)	.89 (3.30)	-1.36 (-0.89)	.24 (0.62)

Period	IU	H_{IU}	KDE	H_{KDE}	LTV	H_{LTV}
1/68-12/72	.34% (0.35)	.36% (0.54)	-1.50% (-1.19)	.52% (1.17)	-3.42% (-1.64)	.94% (1.60)
1/69-12/73	.61 (0.64)	- .11 (-0.17)	-1.07 (-0.84)	.11 (0.27)	-1.44 (-0.67)	.95 (1.56)
1/70-12/74	.62 (0.62)	.04 (0.01)	- .84 (-0.66)	.04 (0.07)	.63 (0.29)	.98 (1.79)
1/71-12/75	- .47 (-0.50)	.04 (0.06)	.03 (0.02)	.06 (0.10)	1.13 (0.56)	1.00 (1.53)
1/72-12/76	- .55 (-0.60)	- .22 (-0.32)	.31 (0.28)	.16 (0.29)	.76 (0.49)	.61 (0.92)
1/73-12/77	- .39 (-0.43)	.06 (0.08)	1.17 (1.14)	.36 (0.68)	.14 (0.10)	.49 (0.73)
1/74-12/78	- .59 (-0.71)	.69 (1.06)	1.40 (1.47)	.51 (1.00)	- .44 (-0.30)	.38 (0.60)
1/75-12/79	.07 (0.09)	.05 (0.00)	1.11 (1.17)	.22 (0.51)	-1.46 (-0.98)	- .36 (-0.60)
1/68-12/79	- .03 (-0.05)	.11 (0.26)	- .13 (-0.18)	.34 (1.09)	-1.15 (-1.02)	.51 (1.33)

Period	LSI	H_{LSI}	LIT	H_{LIT}	ML	H_{ML}
1/68-12/72	-1.58% (-1.52)	.73% (1.54)	-3.18% (-2.38)	- .30% (-0.47)	- .10% (-0.13)	.27% (0.48)
1/69-12/73	-1.77 (-1.65)	.55 (1.08)	-2.60 (-1.95)	- .07 (-0.12)	- .25 (-0.35)	.36 (0.59)
1/70-12/74	-1.70 (-1.39)	.84 (1.50)	-2.55 (-1.42)	.43 (0.63)	.51 (0.58)	.65 (1.01)
1/71-12/75	- .55 (-0.42)	.73 (1.49)	- .71 (-0.36)	.57 (0.88)	.50 (0.55)	.45 (0.69)
1/72-12/76	1.40 (1.04)	.82 (1.50)	.49 (0.22)	.35 (0.59)	.80 (0.97)	.66 (1.07)
1/73-12/77	2.10 (1.74)	.57 (1.09)	1.77 (0.84)	.37 (0.62)	1.13 (1.43)	.62 (1.02)
1/74-12/78	2.65 (2.36)	.63 (1.30)	2.65 (1.29)	.99 (1.64)	1.58 (1.92)	.39 (0.74)
1/75-12/79	1.79 (2.03)	.14 (0.30)	3.31 (2.06)	.96 (1.57)	1.46 (1.94)	.70 (1.33)
1/68-12/79	.40 (0.59)	.42 (1.32)	.08 (0.07)	.34 (0.82)	.89 (1.74)	.67 (1.87)

Period	MMM	H_{MMM}	NRI	H_{NRI}	NWT	H_{NWT}
1/68-12/72	.62% (1.22)	.43% (1.40)	1.10% (0.90)	1.44% (2.06)	- .40% (-0.34)	- .00% (-0.01)
1/69-12/73	.76 (1.65)	.53 (1.71)	- .00 (-0.00)	1.09 (1.73)	- .44 (-0.40)	- .07 (-0.14)
1/70-12/74	.38 (0.70)	.24 (0.58)	.31 (0.22)	1.01 (1.36)	2.06 (2.03)	.40 (0.72)
1/71-12/75	.31 (0.45)	.11 (0.25)	.63 (0.47)	.99 (1.21)	1.59 (1.70)	.23 (0.45)
1/72-12/76	- .30 (-0.39)	- .23 (-0.50)	.95 (0.70)	.36 (0.44)	.84 (0.94)	.58 (1.19)
1/73-12/77	- .50 (-0.67)	- .47 (-1.02)	1.13 (0.84)	.71 (0.89)	1.91 (2.24)	.44 (0.97)
1/74-12/78	- .35 (-0.45)	- .46 (-0.98)	1.88 (1.57)	.43 (0.56)	2.12 (2.62)	.08 (0.19)
1/75-12/79	- .71 (-0.94)	- .63 (-1.48)	1.47 (1.48)	.36 (0.51)	1.32 (1.83)	.29 (0.59)
1/68-12/79	- .06 (-0.16)	- .12 (-0.48)	.85 (1.07)	.86 (1.85)	.71 (1.12)	.41 (1.20)

Period	OG		H_{OG}		REP		H_{REP}		SCM		H_{SCM}	
1/68-12/72	-1.81%	(-1.73)	- .25%	(-0.41)	-3.41%	(-1.56)	- .58%	(-0.89)	-2.09%	(-2.10)	- .08%	(-0.13)
1/69-12/73	- .59	(-0.53)	- .23	(-0.39)	-4.65	(-2.27)	- .28	(-0.43)	-1.60	(-1.53)	- .08	(-0.12)
1/70-12/74	1.03	(0.84)	- .06	(-0.09)	-3.28	(-1.36)	- .46	(-0.68)	- .03	(-0.02)	- .80	(-1.14)
1/71-12/75	1.02	(0.98)	.01	(0.01)	-1.51	(-0.59)	.19	(0.26)	.27	(0.21)	- .11	(-0.15)
1/72-12/76	1.10	(1.04)	.16	(0.19)	- .71	(-0.28)	.31	(0.44)	.76	(0.65)	.17	(0.23)
1/73-12/77	1.89	(1.84)	.32	(0.39)	.68	(0.31)	.83	(1.13)	1.18	(1.07)	- .11	(-0.15)
1/74-12/78	1.64	(1.68)	.05	(0.06)	2.78	(1.21)	1.21	(1.65)	1.39	(1.47)	- .30	(-0.44)
1/75-12/79	.83	(0.93)	1.28	(1.19)	1.91	(0.96)	1.03	(1.41)	.45	(0.47)	.37	(0.57)
1/68-12/79	.23	(0.33)	.63	(1.12)	- .29	(-0.21)	.17	(0.38)	- .23	(-0.34)	.10	(0.24)

Period	TRW		H_{TRW}		TDY		H_{TDY}		TGT		H_{TGT}	
1/68-12/72	- .81%	(-0.92)	.37%	(0.71)	-1.88%	(-1.63)	.14%	(0.25)	.07%	(0.12)	.23%	(0.52)
1/69-12/73	- .91	(-0.89)	.52	(0.94)	- .83	(-0.68)	1.08	(1.73)	- .01	(-0.02)	.47	(1.04)
1/70-12/74	- .48	(-0.48)	1.08	(1.88)	- .54	(-0.38)	1.14	(1.78)	.98	(1.44)	.87	(1.85)
1/71-12/75	.22	(0.25)	.95	(1.60)	.55	(0.38)	1.30	(2.08)	.61	(0.80)	.42	(0.92)
1/72-12/76	.75	(0.80)	1.04	(1.89)	2.51	(1.55)	1.65	(2.88)	.89	(1.21)	.83	(1.88)
1/73-12/77	.88	(0.97)	.72	(1.22)	3.29	(2.02)	.97	(1.59)	.71	(1.01)	.64	(1.40)
1/74-12/78	1.38	(1.91)	.66	(1.19)	3.91	(2.52)	.81	(1.54)	.68	(1.03)	.38	(0.83)
1/75-12/79	.85	(1.22)	.14	(0.27)	3.43	(2.44)	.85	(1.60)	.44	(0.72)	.52	(1.13)
1/68-12/79	- .03	(-0.05)	.57	(1.62)	1.16	(1.30)	.79	(2.17)	.40	(1.02)	.55	(1.89)

Period	TXT		H_{TXT}		USI		H_{USI}		VMC		H_{VMC}	
1/68-12/72	- .78%	(-0.83)	.81%	(1.32)	- .29%	(-0.32)	.66%	(1.19)	.62%	(0.80)	.30%	(0.52)
1/69-12/73	- .51	(-0.52)	.44	(0.73)	-1.54	(-1.81)	.31	(0.56)	.66	(0.83)	.43	(0.77)
1/70-12/74	.09	(0.09)	.32	(0.48)	-2.57	(-2.27)	.51	(0.79)	1.37	(1.60)	.95	(1.53)
1/71-12/75	.37	(0.35)	.35	(0.55)	-1.90	(-1.40)	1.06	(1.53)	.97	(1.22)	.72	(1.18)
1/72-12/76	.35	(0.34)	.54	(0.83)	-1.06	(-0.73)	.55	(0.80)	1.50	(1.75)	1.08	(1.78)
1/73-12/77	.68	(0.71)	.54	(0.88)	- .43	(-0.29)	.13	(0.18)	1.50	(1.67)	.81	(1.31)
1/74-12/78	.77	(0.91)	.70	(1.32)	.65	(0.46)	- .23	(-0.31)	1.49	(1.70)	.42	(0.66)
1/75-12/79	.33	(0.40)	.84	(1.90)	1.49	(1.22)	- .57	(-0.83)	1.15	(1.38)	.62	(1.02)
1/68-12/79	- .18	(-0.30)	.67	(1.78)	- .21	(-0.28)	.07	(0.17)	1.02	(1.95)	.71	(1.84)

Period	WKR		H_{WKR}		P_R		P_H	
1/68-12/72	-2.65%	(-1.49)	- .23%	(-0.40)	- .73%	(-2.36)	.26%	(1.61)
1/69-12/73	-2.98	(-1.58)	.21	(0.33)	- .43	(-1.56)	.33	(1.88)
1/70-12/74	-2.15	(-1.02)	.17	(0.24)	- .13	(-0.46)	.36	(1.85)
1/71-12/75	- .34	(-0.18)	.12	(0.17)	- .02	(-0.08)	.29	(1.39)
1/72-12/76	.06	(0.03)	.43	(0.61)	- .07	(-0.23)	.27	(1.23)
1/73-12/77	1.55	(0.85)	.59	(0.81)	.09	(0.33)	.13	(0.57)
1/74-12/78	3.60	(2.11)	.38	(0.53)	.30	(1.09)	.12	(0.54)
1/75-12/79	3.16	(2.15)	1.61	(1.97)	.20	(0.74)	.14	(0.68)
1/68-12/79	.15	(0.14)	.62	(1.34)	- .18	(-0.95)	.25	(2.00)

APPENDIX IV

Components of Total Variance

COMPONENTS OF TOTAL VARIANCE

MODEL: $\sigma^2(R_{jt}) = \beta_{jm}^2\sigma^2(R_m) + \sigma^2(\varepsilon_{jt})$ $\quad j=1,\ldots,N;\ t=1,\ldots,T$

Period	Company	Systematic Variance ($\beta_{jm}^2\sigma^2(R_m)$)	+	Unsystematic Variance ($\sigma^2(\varepsilon_{jt})$)	=	Total Variance ($\beta_{jm}^2\sigma^2(R_m) + \sigma^2(\varepsilon_{jt})$)
1/68-12/72	AME	.0040		.0066		.0106
1/69-12/73		.0044		.0051		.0095
1/70-12/74		.0038		.0057		.0095
1/71-12/75		.0034		.0046		.0080
1/72-12/76		.0029		.0046		.0075
1/73-12/77		.0031		.0041		.0072
1/74-12/78		.0028		.0038		.0066
1/75-12/79		.0033		.0033		.0066
1/68-12/72	H_{AME}	.0034		.0024		.0058
1/69-12/73		.0042		.0023		.0065
1/70-12/74		.0066		.0024		.0090
1/71-12/75		.0058		.0023		.0081
1/72-12/76		.0054		.0020		.0074
1/73-12/77		.0053		.0019		.0072
1/74-12/78		.0044		.0019		.0063
1/75-12/79		.0016		.0018		.0034

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
	AMA					
1/68-12/72		.0033		.0058		.0091
1/69-12/73		.0047		.0065		.0112
1/70-12/74		.0040		.0087		.0127
1/71-12/75		.0023		.0084		.0107
1/72-12/76		.0021		.0077		.0098
1/73-12/77		.0019		.0072		.0091
1/74-12/78		.0010		.0043		.0053
1/75-12/79		.0011		.0027		.0038
	H_{AMA}					
1/68-12/72		.0032		.0012		.0044
1/69-12/73		.0035		.0012		.0047
1/70-12/74		.0030		.0015		.0045
1/71-12/75		.0033		.0018		.0051
1/72-12/76		.0031		.0017		.0048
1/73-12/77		.0032		.0017		.0049
1/74-12/78		.0026		.0015		.0041
1/75-12/79		.0025		.0016		.0041

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	CSL	.0054		.0059		.0113
1/69-12/73		.0060		.0052		.0112
1/70-12/74		.0047		.0061		.0108
1/71-12/75		.0038		.0059		.0097
1/72-12/76		.0037		.0054		.0091
1/73-12/77		.0030		.0059		.0089
1/74-12/78		.0024		.0047		.0071
1/75-12/79		.0035		.0068		.0103
1/68-12/72	$^{H}_{CSL}$	.0017		.0015		.0032
1/69-12/73		.0029		.0013		.0042
1/70-12/74		.0026		.0017		.0043
1/71-12/75		.0027		.0018		.0045
1/72-12/76		.0029		.0018		.0047
1/73-12/77		.0027		.0020		.0047
1/74-12/78		.0021		.0018		.0039
1/75-12/79		.0023		.0019		.0042

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	CRO	.0061		.0053		.0114
1/69-12/73		.0063		.0056		.0119
1/70-12/74		.0033		.0053		.0086
1/71-12/75		.0032		.0046		.0078
1/72-12/76		.0033		.0047		.0080
1/73-12/77		.0029		.0045		.0074
1/74-12/78		.0022		.0052		.0074
1/75-12/79		.0031		.0058		.0089
1/68-12/72	H_{CRO}	.0024		.0013		.0037
1/69-12/73		.0027		.0014		.0041
1/70-12/74		.0029		.0018		.0047
1/71-12/75		.0035		.0019		.0054
1/72-12/76		.0029		.0021		.0050
1/73-12/77		.0029		.0021		.0050
1/74-12/78		.0027		.0019		.0046
1/75-12/79		.0019		.0015		.0034

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	COT	.0050		.0103		.0153
1/69-12/73		.0055		.0100		.0155
1/70-12/74		.0049		.0108		.0157
1/71-12/75		.0040		.0093		.0133
1/72-12/76		.0036		.0092		.0128
1/73-12/77		.0028		.0074		.0102
1/74-12/78		.0022		.0063		.0085
1/75-12/79		.0024		.0042		.0066
1/68-12/72	H_{COT}	.0007		.0033		.0040
1/69-12/73		.0007		.0029		.0036
1/70-12/74		.0009		.0035		.0044
1/71-12/75		.0017		.0035		.0052
1/72-12/76		.0021		.0036		.0057
1/73-12/77		.0022		.0037		.0059
1/74-12/78		.0023		.0035		.0058
1/75-12/79		.0022		.0024		.0046

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	EPI	.0013		.0041		.0054
1/69-12/73		.0019		.0039		.0058
1/70-12/74		.0032		.0038		.0070
1/71-12/75		.0045		.0033		.0078
1/72-12/76		.0052		.0027		.0079
1/73-12/77		.0054		.0031		.0085
1/74-12/78		.0041		.0041		.0082
1/75-12/79		.0024		.0044		.0068
1/68-12/72	H_{EPI}	.0033		.0045		.0078
1/69-12/73		.0037		.0052		.0089
1/70-12/74		.0033		.0061		.0094
1/71-12/75		.0048		.0062		.0110
1/72-12/76		.0050		.0064		.0114
1/73-12/77		.0047		.0046		.0093
1/74-12/78		.0040		.0043		.0083
1/75-12/79		.0046		.0031		.0077

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	FQA	.0064		.0116		.0180
1/69-12/73		.0083		.0130		.0213
1/70-12/74		.0050		.0173		.0223
1/71-12/75		.0059		.0169		.0228
1/72-12/76		.0058		.0185		.0243
1/73-12/77		.0062		.0178		.0240
1/74-12/78		.0049		.0161		.0210
1/75-12/79		.0072		.0118		.0190
1/68-12/72	H_{FQA}	.0027		.0017		.0044
1/69-12/73		.0036		.0020		.0056
1/70-12/74		.0042		.0021		.0063
1/71-12/75		.0045		.0027		.0072
1/72-12/76		.0040		.0028		.0068
1/73-12/77		.0042		.0029		.0071
1/74-12/78		.0037		.0025		.0062
1/75-12/79		.0029		.0025		.0054

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	GW	.0088		.0053		.0141
1/69-12/73		.0080		.0048		.0128
1/70-12/74		.0049		.0057		.0106
1/71-12/75		.0029		.0058		.0087
1/72-12/76		.0021		.0051		.0072
1/73-12/77		.0021		.0042		.0063
1/74-12/78		.0018		.0042		.0060
1/75-12/79		.0022		.0037		.0059
1/68-12/72	H_{GW}	.0018		.0009		.0027
1/69-12/73		.0021		.0009		.0030
1/70-12/74		.0025		.0011		.0036
1/71-12/75		.0026		.0013		.0039
1/72-12/76		.0030		.0013		.0043
1/73-12/77		.0029		.0014		.0043
1/74-12/78		.0027		.0012		.0039
1/75-12/79		.0021		.0010		.0031

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{it}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	ICX	.0039		.0747		.0786
1/69-12/73		.0046		.0756		.0802
1/70-12/74		.0037		.0764		.0801
1/71-12/75		.0034		.0744		.0778
1/72-12/76		.0036		.0735		.0771
1/73-12/77		.0051		.0042		.0093
1/74-12/78		.0041		.0039		.0080
1/75-12/79		.0036		.0035		.0071
1/68-12/72	H_{ICX}	.0029		.0026		.0055
1/69-12/73		.0032		.0017		.0049
1/70-12/74		.0039		.0017		.0056
1/71-12/75		.0041		.0016		.0057
1/72-12/76		.0037		.0016		.0053
1/73-12/77		.0036		.0017		.0053
1/74-12/78		.0033		.0016		.0049
1/75-12/79		.0018		.0017		.0035

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	IU	.0037		.0055		.0092
1/69-12/73		.0039		.0054		.0093
1/70-12/74		.0042		.0059		.0101
1/71-12/75		.0041		.0053		.0094
1/72-12/76		.0044		.0051		.0095
1/73-12/77		.0037		.0047		.0084
1/74-12/78		.0027		.0041		.0068
1/75-12/79		.0018		.0035		.0053
1/68-12/72	H_{IU}	.0036		.0026		.0062
1/69-12/73		.0046		.0025		.0071
1/70-12/74		.0055		.0026		.0081
1/71-12/75		.0056		.0027		.0083
1/72-12/76		.0050		.0029		.0079
1/73-12/77		.0049		.0026		.0075
1/74-12/78		.0048		.0025		.0073
1/75-12/79		.0033		.0024		.0057

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
	KDE					
1/68-12/72		.0078		.0094		.0172
1/69-12/73		.0094		.0096		.0190
1/70-12/74		.0082		.0096		.0178
1/71-12/75		.0079		.0069		.0148
1/72-12/76		.0083		.0068		.0151
1/73-12/77		.0089		.0062		.0151
1/74-12/78		.0068		.0054		.0122
1/75-12/79		.0056		.0052		.0108
	H_{KDE}					
1/68-12/72		.0026		.0012		.0038
1/69-12/73		.0027		.0010		.0037
1/70-12/74		.0022		.0017		.0039
1/71-12/75		.0028		.0017		.0045
1/72-12/76		.0029		.0017		.0046
1/73-12/77		.0029		.0017		.0046
1/74-12/78		.0025		.0015		.0040
1/75-12/79		.0027		.0011		.0038

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	LTV	.0118		.0255		.0373
1/69-12/73		.0121		.0274		.0395
1/70-12/74		.0087		.0272		.0359
1/71-12/75		.0081		.0245		.0326
1/72-12/76		.0052		.0143		.0195
1/73-12/77		.0057		.0111		.0168
1/74-12/78		.0066		.0126		.0192
1/75-12/79		.0076		.0127		.0203
1/68-12/72	H_{LTV}	.0016		.0021		.0037
1/69-12/73		.0026		.0022		.0048
1/70-12/74		.0031		.0017		.0048
1/71-12/75		.0037		.0025		.0062
1/72-12/76		.0033		.0026		.0059
1/73-12/77		.0030		.0026		.0056
1/74-12/78		.0023		.0024		.0047
1/75-12/79		.0018		.0020		.0038

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	LSI	.0061		.0063		.0124
1/69-12/73		.0070		.0067		.0137
1/70-12/74		.0043		.0087		.0130
1/71-12/75		.0051		.0100		.0151
1/72-12/76		.0067		.0106		.0173
1/73-12/77		.0068		.0086		.0154
1/74-12/78		.0063		.0074		.0137
1/75-12/79		.0088		.0044		.0132
1/68-12/72	H_{LSI}	.0013		.0013		.0026
1/69-12/73		.0021		.0015		.0036
1/70-12/74		.0030		.0018		.0048
1/71-12/75		.0038		.0014		.0052
1/72-12/76		.0039		.0017		.0056
1/73-12/77		.0038		.0016		.0054
1/74-12/78		.0033		.0014		.0047
1/75-12/79		.0026		.0012		.0038

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	LIT	.0079		.0105		.0184
1/69-12/73		.0079		.0104		.0183
1/70-12/74		.0032		.0186		.0218
1/71-12/75		.0055		.0232		.0287
1/72-12/76		.0054		.0283		.0337
1/73-12/77		.0061		.0259		.0320
1/74-12/78		.0049		.0250		.0299
1/75-12/79		.0077		.0146		.0223
1/68-12/72	H_{LIT}	.0047		.0024		.0071
1/69-12/73		.0053		.0023		.0076
1/70-12/74		.0053		.0027		.0080
1/71-12/75		.0043		.0025		.0068
1/72-12/76		.0037		.0021		.0058
1/73-12/77		.0039		.0021		.0060
1/74-12/78		.0041		.0022		.0063
1/75-12/79		.0041		.0021		.0062

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	ML	.0056		.0034		.0090
1/69-12/73		.0050		.0030		.0080
1/70-12/74		.0038		.0046		.0084
1/71-12/75		.0032		.0047		.0079
1/72-12/76		.0023		.0040		.0063
1/73-12/77		.0023		.0037		.0060
1/74-12/78		.0021		.0040		.0061
1/75-12/79		.0023		.0032		.0055
1/68-12/72	H_{ML}	.0025		.0019		.0044
1/69-12/73		.0029		.0022		.0051
1/70-12/74		.0028		.0024		.0052
1/71-12/75		.0030		.0025		.0055
1/72-12/76		.0030		.0022		.0052
1/73-12/77		.0030		.0022		.0052
1/74-12/78		.0030		.0016		.0046
1/75-12/79		.0031		.0016		.0047

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	MMM	.0021		.0015		.0036
1/69-12/73		.0017		.0012		.0029
1/70-12/74		.0036		.0017		.0053
1/71-12/75		.0035		.0029		.0064
1/72-12/76		.0036		.0034		.0070
1/73-12/77		.0037		.0032		.0069
1/74-12/78		.0040		.0034		.0074
1/75-12/79		.0018		.0033		.0051
1/68-12/72	H_{MMM}	.0008		.0006		.0014
1/69-12/73		.0008		.0006		.0014
1/70-12/74		.0017		.0010		.0027
1/71-12/75		.0024		.0012		.0036
1/72-12/76		.0027		.0013		.0040
1/73-12/77		.0027		.0012		.0039
1/74-12/78		.0030		.0013		.0043
1/75-12/79		.0022		.0010		.0032

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72						
1/69-12/73	NRI	.0018		.0088		.0106
1/70-12/74		.0037		.0080		.0117
1/71-12/75		.0029		.0111		.0140
1/72-12/76		.0042		.0104		.0146
1/73-12/77		.0051		.0109		.0160
1/74-12/78		.0058		.0106		.0164
1/75-12/79		.0040		.0085		.0125
		.0059		.0056		.0115
1/68-12/72	H_{NRI}	.0030		.0029		.0059
1/69-12/73		.0034		.0023		.0057
1/70-12/74		.0028		.0032		.0060
1/71-12/75		.0032		.0039		.0071
1/72-12/76		.0026		.0039		.0065
1/73-12/77		.0028		.0038		.0066
1/74-12/78		.0025		.0035		.0060
1/75-12/79		.0025		.0028		.0053

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	NWT	.0067		.0078		.0145
1/69-12/73		.0077		.0069		.0146
1/70-12/74		.0072		.0059		.0131
1/71-12/75		.0068		.0051		.0119
1/72-12/76		.0055		.0046		.0101
1/73-12/77		.0056		.0043		.0099
1/74-12/78		.0046		.0038		0084
1/75-12/79		.0031		.0030		.0061
1/68-12/72	H_{NWT}	.0023		.0018		.0041
1/69-12/73		.0028		.0017		.0045
1/70-12/74		.0028		.0018		.0046
1/71-12/75		.0027		.0015		.0042
1/72-12/76		.0028		.0014		.0042
1/73-12/77		.0027		.0012		.0039
1/74-12/78		.0020		.0010		.0030
1/75-12/79		.0024		.0015		.0039

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	OG	.0091		.0065		.0156
1/69-12/73		.0089		.0071		.0160
1/70-12/74		.0071		.0087		.0158
1/71-12/75		.0046		.0063		.0109
1/72-12/76		.0043		.0066		.0109
1/73-12/77		.0039		.0062		.0101
1/74-12/78		.0032		.0056		.0088
1/75-12/79		.0027		.0045		.0072
1/68-12/72	H_{OG}	.0030		.0021		.0051
1/69-12/73		.0035		.0021		.0056
1/70-12/74		.0042		.0029		.0071
1/71-12/75		.0042		.0035		.0077
1/72-12/76		.0038		.0038		.0076
1/73-12/77		.0037		.0039		.0076
1/74-12/78		.0035		.0045		.0080
1/75-12/79		.0027		.0066		.0093

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	REP	.0067		.0280		.0347
1/69-12/73		.0069		.0246		.0315
1/70-12/74		.0027		.0335		.0362
1/71-12/75		.0052		.0387		.0439
1/72-12/76		.0060		.0371		.0431
1/73-12/77		.0073		.0264		.0337
1/74-12/78		.0065		.0310		.0375
1/75-12/79		.0105		.0223		.0328
1/68-12/72	H_{REP}	.0037		.0024		.0061
1/69-12/73		.0043		.0025		.0068
1/70-12/74		.0037		.0026		.0063
1/71-12/75		.0034		.0032		.0066
1/72-12/76		.0041		.0029		.0070
1/73-12/77		.0036		.0032		.0068
1/74-12/78		.0023		.0032		.0055
1/75-12/79		.0020		.0030		.0050

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	SCM	.0068		.0058		.0126
1/69-12/73		.0084		.0064		.0148
1/70-12/74		.0072		.0090		.0162
1/71-12/75		.0062		.0094		.0156
1/72-12/76		.0061		.0079		.0140
1/73-12/77		.0061		.0072		.0133
1/74-12/78		.0047		.0053		.0100
1/75-12/79		.0059		.0052		.0111
1/68-12/72	H_{SCM}	.0023		.0022		.0045
1/69-12/73		.0035		.0025		.0060
1/70-12/74		.0037		.0029		.0066
1/71-12/75		.0052		.0031		.0083
1/72-12/76		.0054		.0029		.0083
1/73-12/77		.0050		.0029		.0079
1/74-12/78		.0042		.0028		.0070
1/75-12/79		.0042		.0024		.0066

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	TRW	.0016		.0045		.0061
1/69-12/73		.0026		.0061		.0087
1/70-12/74		.0043		.0057		.0100
1/71-12/75		.0056		.0047		.0103
1/72-12/76		.0052		.0051		.0103
1/73-12/77		.0054		.0049		.0103
1/74-12/78		.0041		.0031		.0072
1/75-12/79		.0024		.0028		.0052
1/68-12/72	H_{TRW}	.0016		.0016		.0032
1/69-12/73		.0020		.0018		.0038
1/70-12/74		.0023		.0019		.0042
1/71-12/75		.0026		.0021		.0047
1/72-12/76		.0028		.0018		.0046
1/73-12/77		.0030		.0020		.0050
1/74-12/78		.0031		.0018		.0049
1/75-12/79		.0034		.0015		.0049

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
	TDY					
1/68-12/72		.0100		.0078		.0178
1/69-12/73		.0101		.0087		.0188
1/70-12/74		.0064		.0121		.0185
1/71-12/75		.0054		.0121		.0175
1/72-12/76		.0067		.0155		.0222
1/73-12/77		.0076		.0155		.0231
1/74-12/78		.0058		.0142		.0200
1/75-12/79		.0080		.0113		.0193
	H_{TDY}					
1/68-12/72		.0024		.0018		.0042
1/69-12/73		.0028		.0023		.0051
1/70-12/74		.0037		.0024		.0061
1/71-12/75		.0028		.0023		.0051
1/72-12/76		.0029		.0019		.0048
1/73-12/77		.0026		.0022		.0048
1/74-12/78		.0028		.0016		.0044
1/75-12/79		.0021		.0016		.0037

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	TGT	.0015		.0020		.0035
1/69-12/73		.0023		.0022		.0045
1/70-12/74		.0028		.0027		.0055
1/71-12/75		.0021		.0034		.0055
1/72-12/76		.0020		.0032		.0052
1/73-12/77		.0022		.0029		.0051
1/74-12/78		.0013		.0026		.0039
1/75-12/79		.0008		.0021		.0029
1/68-12/72	^{H}TGT	.0024		.0012		.0036
1/69-12/73		.0023		.0012		.0035
1/70-12/74		.0032		.0013		.0045
1/71-12/75		.0021		.0012		.0033
1/72-12/76		.0021		.0011		.0032
1/73-12/77		.0021		.0013		.0034
1/74-12/78		.0024		.0012		.0036
1/75-12/79		.0016		.0012		.0028

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\epsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\epsilon_{jt}))$
1/68-12/72	TXT	.0036		.0051		.0087
1/69-12/73		.0055		.0056		.0111
1/70-12/74		.0053		.0060		.0113
1/71-12/75		.0063		.0063		.0126
1/72-12/76		.0069		.0061		.0130
1/73-12/77		.0069		.0054		.0123
1/74-12/78		.0051		.0043		.0094
1/75-12/79		.0040		.0039		.0079
1/68-12/72	H_{TXT}	.0025		.0022		.0047
1/69-12/73		.0028		.0021		.0049
1/70-12/74		.0034		.0026		.0060
1/71-12/75		.0040		.0024		.0064
1/72-12/76		.0048		.0025		.0073
1/73-12/77		.0048		.0022		.0070
1/74-12/78		.0044		.0017		.0061
1/75-12/79		.0034		.0011		.0045

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	USI	.0053		.0050		.0103
1/69-12/73		.0050		.0043		.0093
1/70-12/74		.0033		.0075		.0108
1/71-12/75		.0031		.0109		.0140
1/72-12/76		.0037		.0122		.0159
1/73-12/77		.0035		.0126		.0161
1/74-12/78		.0030		.0116		.0146
1/75-12/79		.0030		.0085		.0115
1/68-12/72	H_{USI}	.0050		.0019		.0069
1/69-12/73		.0047		.0018		.0065
1/70-12/74		.0043		.0024		.0067
1/71-12/75		.0045		.0028		.0073
1/72-12/76		.0039		.0029		.0068
1/73-12/77		.0035		.0030		.0065
1/74-12/78		.0039		.0032		.0071
1/75-12/79		.0040		.0026		.0066

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	VMC	.0016		.0035		.0051
1/69-12/73		.0023		.0037		.0060
1/70-12/74		.0021		.0043		.0064
1/71-12/75		.0021		.0037		.0058
1/72-12/76		.0029		.0044		.0073
1/73-12/77		.0028		.0047		.0075
1/74-12/78		.0021		.0045		.0066
1/75-12/79		.0013		.0039		.0052
1/68-12/72	H_{VMC}	.0025		.0020		.0045
1/69-12/73		.0026		.0018		.0044
1/70-12/74		.0030		.0023		.0053
1/71-12/75		.0027		.0022		.0049
1/72-12/76		.0022		.0022		.0044
1/73-12/77		.0023		.0022		.0045
1/74-12/78		.0023		.0023		.0046
1/75-12/79		.0017		.0021		.0038

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	WKR	.0094		.0186		.0280
1/69-12/73		.0090		.0210		.0300
1/70-12/74		.0071		.0259		.0330
1/71-12/75		.0085		.0209		.0294
1/72-12/76		.0090		.0216		.0306
1/73-12/77		.0090		.0194		.0284
1/74-12/78		.0093		.0173		.0266
1/75-12/79		.0090		.0123		.0213
1/68-12/72	H_{WKR}	.0025		.0019		.0044
1/69-12/73		.0032		.0024		.0056
1/70-12/74		.0035		.0029		.0064
1/71-12/75		.0038		.0028		.0066
1/72-12/76		.0040		.0030		.0070
1/73-12/77		.0042		.0031		.0073
1/74-12/78		.0040		.0030		.0070
1/75-12/79		.0027		.0038		.0065

Period	Company	Systematic Variance $(\beta_{jm}^2 \sigma^2(R_m))$	+	Unsystematic Variance $(\sigma^2(\varepsilon_{jt}))$	=	Total Variance $(\beta_{jm}^2 \sigma^2(R_m) + \sigma^2(\varepsilon_{jt}))$
1/68-12/72	P_R	.0035		.000561		.0041
1/69-12/73		.0034		.000445		.0038
1/70-12/74		.0040		.000453		.0045
1/71-12/75		.0036		.000455		.0041
1/72-12/76		.0036		.000516		.0041
1/73-12/77		.0037		.000456		.0042
1/74-12/78		.0035		.000460		.0040
1/75-12/79		.0024		.000395		.0028
1/68-12/72	P_H	.0018		.000151		.0020
1/69-12/73		.0020		.000176		.0022
1/70-12/74		.0026		.000225		.0028
1/71-12/75		.0027		.000253		.0030
1/72-12/76		.0029		.000283		.0032
1/73-12/77		.0029		.000286		.0032
1/74-12/78		.0029		.000278		.0032
1/75-12/79		.0024		.000244		.0026
1/68-12/72	Market					.0018
1/69-12/73						.0019
1/70-12/74						.0026
1/71-12/75						.0026
1/72-12/76						.0027
1/73-12/77						.0027
1/74-12/78						.0019
1/75-12/79						

APPENDIX V

Business Line of Conglomerate Companies

Ametek, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Process Equipment	$ 79		
CAPITAL GOODS	79	20.1%	
Electronics-Mechanical	126		
ELECTRONIC TECHNOLOGY	126	32.1	
Precision Instruments	106		
INTERMEDIATE PRODUCTS	106	27.0	
Aluminum	82		
NATURAL RESOURCES	82	20.8	
TOTAL	$393		$255.3

Amfac, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Food-Packaged	$ 327		
Food-Agricultural	131		
CONSUMER NONDURABLES	458	27.1%	
Lodging	191		
Retail-Department Stores	258		
CONSUMER SERVICES	449	26.6	
Business Products and Services	782		
INTERMEDIATE PRODUCTS	782	46.3	
TOTAL	$1,689		$316.4

Carlisle Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Stock	Year-End 1979 Market Value of Common Stock ($ Million)
Construction Materials	$ 42		
BUILDING & CONSTRUCTION	42	13.0%	
Aerospace/Electronics	68		
CAPITAL GOODS	68	21.0	
Recreational-Tire	58		
CONSUMER DURABLES	58	17.9	
Automotive Products	65		
Data Communications	52		
General Industry Products	39		
INTERMEDIATE PRODUCTS	156	48.1	
TOTAL	$324		$108.9

Chromalloy American Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 200		
BUILDING AND CONSTRUCTION	200	13.0%	
Machinery-Farm	164		
Machinery-Oil Service	234		
CAPITAL GOODS	398	25.9	
Apparel	112		
Textile	122		
CONSUMER NONDURABLES	224	14.6	
Business Products and Services	140		
INTERMEDIATE PRODUCTS	140	9.1	
Metals-Fabricators	330		
NATURAL RESOURCES	330	21.5	
Shipping	244		
TRANSPORTATION	244	15.9	
TOTAL	$1,536		$286.9

Colt Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 224		
Machinery-Industrial and Specialty	658		
Machinery-Railroad	30		
CAPITAL GOODS	912	42.6%	
Leisure Products	45		
CONSUMER DURABLES	45	2.1	
Auto Parts	329		
INTERMEDIATE PRODUCTS	329	15.4	
Metals-Fabricators	90		
Steel-Specialty	765		
NATURAL RESOURCES	855	39.9	
TOTAL	$2,141		$564.6

Eagle-Picher Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 66		
BUILDING AND CONSTRUCTION	66	11.2%	
Aerospace	24		
Machinery-Construction and Mining	106		
Machinery-Industrial and Specialty	106		
CAPITAL GOODS	236	40.0	
Auto Parts	156		
Chemicals-Specialty	66		
INTERMEDIATE PRODUCTS	222	37.6	
Metals-Miscellaneous	66		
NATURAL RESOURCES	66	11.2	
TOTAL	$590		$195.5

Fuqua Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Home Builders	$ 45		
BUILDING AND CONSTRUCTION	45	2.2%	
Machinery-Farm	40		
CAPITAL GOODS	40	2.0	
Leisure Products	374		
CONSUMER DURABLES	374	18.6	
Food-Dairy	93		
CONSUMER NONDURABLES	93	4.6	
Entertainment	60		
Retail-Specialty	136		
CONSUMER SERVICES	196	9.7	
Business Products and Services	870		
INTERMEDIATE PRODUCTS	870	43.1	
Metals-Fabricators	93		
NATURAL RESOURCES	93	4.6	
Trucking	306		
TRANSPORTATION	306	15.2	
TOTAL	$2,017		$235.2

Gulf + Western Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 284		
BUILDING AND CONSTRUCTION	284	5.4%	
Electronic Controls and Components	153		
Machinery-Industrial and Specialty	669		
CAPITAL GOODS	822	15.5	
Household Durables	358		
Leisure Products	101		
CONSUMER DURABLES	459	8.7	
Apparel	776		
Food-Agricultural	239		
Food-Packaged	43		
Publishing - Books and Specialty	98		
Tobacco	175		
CONSUMER NONDURABLES	1,331	25.2	
Entertainment	869		
CONSUMER SERVICES	869	16.4	

(Continued)

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Auto Parts	$ 710		
Business Products and Services	54		
INTERMEDIATE PRODUCTS	764	14.4%	
Coal and Nuclear	36		
Metals-Miscellaneous	286		
Paper	437		
NATURAL RESOURCES	759	14.4	
TOTAL	$5,288		$825.1

IC Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Consumer Products (This category includes business in Consumer Nondurables, Consumer Durables, and Intermediate Products)	$1,943	52.0%	
Commercial Products	896		
INTERMEDIATE PRODUCTS	896	24.0	
Railroad	896		
TRANSPORTATION	896	24.0	
TOTAL	$3,735		$390.8

IU International Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 60		
BUILDING AND CONSTRUCTION	60	2.9%	
Machinery and Service-Pollution	70		
CAPITAL GOODS	70	3.4	
Food-Agricultural	272		
CONSUMER NONDURABLES	272	13.2	
Business Products and Services	540		
INTERMEDIATE PRODUCTS	540	26.2	
Metals-Fabricators	75		
Metals-Miscellaneous	23		
Steel-Specialty	80		
NATURAL RESOURCES	178	8.6	
Trucking	943		
TRANSPORTATION	943	45.7	
TOTAL	$2,063		$351.7

Kidde Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Other	$ 427		
BUILDING AND CONSTRUCTION	427	18.8%	
Aerospace	100		
Machinery-Construction and Mining	378		
Machinery-Industrial and Specialty	60		
CAPITAL GOODS	538	23.6	
Household Durables	350		
Leisure Products	215		
CONSUMER DURABLES	565	24.8	
Office Equipment	100		
ELECTRONIC TECHNOLOGY	100	4.4	
Auto Parts	169		
Business Products and Services	476		
INTERMEDIATE PRODUCTS	645	28.4	
TOTAL	$2,275		$348.1

The LTV Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 560		
Energy Products and Services	800		
CAPITAL GOODS	1,360	17.0%	
Meat and Food Products	2,319		
CONSUMER NONDURABLES	2,319	29.0	
Steel	3,998		
NATURAL RESOURCES	3,998	50.0	
Ocean Shipping	320		
TRANSPORTATION	320	4.0	
TOTAL	$7,997		$194.0

Lear Siegler, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Other	$ 81		
BUILDING AND CONSTRUCTION	81	6.1%	
Aerospace	248		
Electrical Equipment-Specialty	126		
Machinery-Farm	62		
Machinery-Industrial and Specialty	125		
CAPITAL GOODS	561	42.3	
Office Equipment	40		
ELECTRONIC TECHNOLOGY	40	3.0	
Auto Parts	544		
INTERMEDIATE PRODUCTS	544	41.0	
Metals-Fabricators	101		
NATURAL RESOURCES	101	7.6	
TOTAL	$1,327		$345.2

Litton Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$1,126		
Electronic Controls and Components	476		
Machinery-Industrial and Specialty	464		
CAPITAL GOODS	2,066	50.5%	
Appliances	175		
CONSUMER DURABLES	175	4.3	
Publishing-Books and Specialty	83		
Specialty-Health Care	133		
CONSUMER NONDURABLES	216	5.3	
Office Equipment	866		
ELECTRONIC TECHNOLOGY	866	21.2	
Business Products and Services	207		
INTERMEDIATE PRODUCTS	207	5.1	
Oil Service-Drilling and Construction	305		
Paper	253		
NATURAL RESOURCES	558	13.6	
TOTAL	$4,088		$1,518.3

Martin Marietta Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 375		
BUILDING AND CONSTRUCTION	375	18.2%	
Aerospace	972		
CAPITAL GOODS	972	47.1	
Computer Services	51		
ELECTRONIC TECHNOLOGY	51	2.5	
Chemical-Specialty	243		
INTERMEDIATE PRODUCTS	243	11.8	
Aluminum	420		
NATURAL RESOURCES	420	20.4	
TOTAL	$2,061		$1,161.0

Minnesota Mining and Manufacturing Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Electrical	$ 490		
CAPITAL GOODS	490	9.0%	
Recording Materials	435		
CONSUMER DURABLES	435	8.0	
Consumer Products	326		
Decorative Products	326		
Health Care	435		
CONSUMER NONDURABLES	1,087	20.0	
Business Products	979		
ELECTRONIC TECHNOLOGY	979	18.0	
Abrasives	816		
Photographic	544		
Tape and Allied Products	708		
Traffic	381		
INTERMEDIATE PRODUCTS	2,449	45.0	
TOTAL	$5,440		$5,897.5

Norris Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Other	$224		
BUILDING AND CONSTRUCTION	224	34.0%	
Aerospace	84		
Machinery-Industrial and Specialty	29		
CAPITAL GOODS	113	17.1	
Appliances	86		
CONSUMER DURABLES	86	13.1	
Auto Parts	236		
INTERMEDIATE PRODUCTS	236	35.8	
TOTAL	$659		$229.3

Northwest Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 120		
Electrical Equipment-Specialty and Diversified	159		
CAPITAL GOODS	279	10.8%	
Apparel	492		
Beverage-Distillers	139		
Beverage-Soft Drinks	277		
CONSUMER NONDURABLES	908	35.2	
Auto Parts	396		
Chemicals-Diversified	192		
INTERMEDIATE PRODUCTS	588	22.8	
Steel-Specialty	805		
NATURAL RESOURCES	805	31.2	
TOTAL	$2,580		$1,046.0

Ogden Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Heavy Construction	$ 563		
BUILDING AND CONSTRUCTION	563	25.1%	
Machinery-Industrial and Specialty	30		
Machinery-Railroad	90		
CAPITAL GOODS	120	5.4	
Food-Canned	196		
CONSUMER NONDURABLES	196	8.7	
Business Products and Services	281		
INTERMEDIATE PRODUCTS	281	12.5	
Aluminum	170		
Metals-Fabricators	40		
Steel-Specialty	605		
NATURAL RESOURCES	815	36.4	
Shipping	266		
TRANSPORTATION	266	11.9	
TOTAL	$2,241		$289.6

Republic Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Film and Videotape	$ 57		
Graphics and Printing	69		
CONSUMER NONDURABLES	126	43.9%	
Aviation-Engines and Parts	55		
Fabricated Products	63		
INTERMEDIATE PRODUCTS	118	41.1	
Steel	43		
NATURAL RESOURCES	43	15.0	
TOTAL	$287		$72.5

SCM Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Machinery-Industrial and Specialty	$ 33		
CAPITAL GOODS	33	1.9%	
Household Durables	321		
CONSUMER DURABLES	321	18.3	
Food-Packaged	134		
Food-Agricultural	313		
CONSUMER NONDURABLES	447	25.5	
Office Equipment	60		
ELECTRONIC TECHNOLOGY	60	3.4	
Chemicals-Diversified	200		
Chemicals-Specialty	448		
INTERMEDIATE PRODUCTS	648	36.9	
Paper	245		
NATURAL RESOURCES	245	14.0	
TOTAL	$1,754		$219.8

TRW Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 624		
Electronic Controls and Components	363		
Electrical Equipment-Specialty and Diversified	552		
Machinery-Industrial and Specialty	558		
Machinery-Oil Service	380		
CAPITAL GOODS	2,477	54.3%	
Computer Services	284		
ELECTRONIC TECHNOLOGY	284	6.2	
Auto Parts	1,799		
INTERMEDIATE PRODUCTS	1,799	39.5	
TOTAL	$4,560		$1,127.8

Teledyne, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 643		
Machinery-Industrial and Specialty	468		
Machinery-Oil Service	156		
CAPITAL GOODS	1,267	46.8%	
Household Durables	143		
Leisure Products	143		
CONSUMER DURABLES	286	10.6	
Electronics Instrumentation	156		
ELECTRONIC TECHNOLOGY	156	5.8	
Metals-Miscellaneous	841		
Oil Service-Drilling and Construction	156		
NATURAL RESOURCES	997	36.8	
TOTAL	$2,706		$1,804.0

Tenneco, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Shipbuilding	$ 673		
BUILDING AND CONSTRUCTION	673	6.0%	
Construction and Farm Equipment	2,354		
Pipelines	2,690		
CAPITAL GOODS	5,044	45.0	
Automotive	785		
Chemicals	1,457		
Packaging	560		
INTERMEDIATE PRODUCTS	2,802	25.0	
Integrated Oil	2,690		
NATURAL RESOURCES	2,690	24.0	
TOTAL	$11,209		$3,994.6

Textron, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials	$ 146		
BUILDING AND CONSTRUCTION	146	4.3%	
Aerospace	1,014		
Machinery-Industrial and Specialty	647		
CAPITAL GOODS	1,661	49.0	
Leisure Products	876		
CONSUMER DURABLES	876	25.8	
Apparel	180		
Health Care-Specialty	70		
CONSUMER NONDURABLES	250	7.4	
Auto Parts	320		
Chemicals-Specialty	140		
INTERMEDIATE PRODUCTS	460	13.5	
TOTAL	$3,393		$871.1

U.S. Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$ 223		
Building Materials-Other	67		
Home Builders	66		
BUILDING AND CONSTRUCTION	356	27.9%	
Machinery-Farm	116		
Machinery-Industrial and Specialty	189		
Machinery-Oil Service	111		
CAPITAL GOODS	416	32.7	
Household Durables	146		
Leisure Products	171		
CONSUMER DURABLES	317	24.9	
Apparel	185		
CONSUMER NONDURABLES	185	14.5	
TOTAL	$1,274		$213.5

Vulcan Materials Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials-Structural	$317		
BUILDING AND CONSTRUCTION	317	42.4%	
Chemicals-Diversified	232		
INTERMEDIATE PRODUCTS	232	31.0	
Aluminum	148		
Metals-Miscellaneous	9		
Oil and Gas-Exploration	6		
Steel-Specialty	36		
NATURAL RESOURCES	199	26.6	
TOTAL	$748		$375.1

Whittaker Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace	$ 86		
Machinery-Industrial and Specialty	182		
Machinery-Oil Service	90		
Machinery-Railroad	192		
CAPITAL GOODS	550	51.2%	
Leisure Products	120		
CONSUMER DURABLES	120	11.2	
Specialty Health Care	182		
CONSUMER NONDURABLES	182	16.9	
Auto Parts	10		
Business Products and Services	57		
Chemicals-Specialty	95		
INTERMEDIATE PRODUCTS	162	15.1	
Steel-Specialty	60		
NATURAL RESOURCES	60	5.6	
TOTAL	$1,074		$258.8

APPENDIX VI

Business Line of Undiversified Companies

Acme Cleveland Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Foundry Equipment	$ 217		
Tools, Electrical & Electronic Components	127		
CAPITAL GOODS	344	100%	
TOTAL	$ 344		$ 111.4

Air Products and Chemicals, Inc.

Chemicals	$ 468		
Equipment/Services for Process Industries	135		
Industrial Gases	627		
INTERMEDIATE PRODUCTS	1,230	100%	
TOTAL	$1,230		$1,038.8

AMAX Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Chemicals	$ 57		
INTERMEDIATE PRODUCTS	57	2%	
Base Metals	1,117		
Energy	487		
Iron Ore	115		
Molybdenum, Nickel & Specialty Metals	1,089		
NATURAL RESOURCES	2,808	98	
TOTAL	$2,865		$2,406.8

American Airlines, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Airlines	$ 2,976		
TRANSPORTATION	2,976	92%	
Other-Oil & Gas Exploration, Real Estate	277	8	
TOTAL	$ 3,253		$ 290.5

American Motors Corporation

Automotive Vehicles	$3,023		
CONSUMER DURABLES	3,023	97%	
Plastic Injection Moldings & Parts, Etc.	94		
INTERMEDIATE PRODUCTS	94	3	
TOTAL	$3,117		$ 208.8

Anderson, Clayton and Co.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Coffee	$ 15		
Food	402		
Feeds and Seed	179		
Oilseed Processing	536		
CONSUMER NONDURABLES	1,132	76%	
Insurance	224		
CONSUMER SERVICE	224	15	
Warehousing, Etc.	30		
INTERMEDIATE PRODUCTS	30	2	
Other-Investment Income	104	7	
TOTAL	$1,490		$ 303.8

ASARCO, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Recycling	$ 172		
Smelters and Refineries	52		
INTERMEDIATE PRODUCTS	224	13%	
Asbestos	103		
Coal	52		
Primary Metals (Copper, Lead, Silver, Zinc)	1,345		
NATURAL RESOURCES	1,500	87	
TOTAL	$1,724		$1,127.1

Associated Dry Goods

Apparel and Accessories	$1,355		
Decorative Home Furnishings	357		
CONSUMER SERVICES	1,712	96%	
Other	71	4	
TOTAL	$1,783		$ 283.8

Barnes Group Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Automotive & Marine Replacement Parts	$ 198		
Precision Engineered Components	233		
INTERMEDIATE PRODUCTS	431	100%	
TOTAL	$ 431		$ 123.3

Beech Aircraft Corp.

Aircraft	$ 608		
CONSUMER DURABLES	608	100%	
TOTAL	$ 608		$ 596.0

(On February 8, 1980, Raytheon Co. completed its acquisition of Beech Aircraft Corp. Each share of Beech common stock was exchanged for 0.775 share of Raytheon common stock.)

Briggs & Stratton Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Automotive Locking Devices	$ 35		
Engines and Parts	556		
INTERMEDIATE PRODUCTS	591	100%	
TOTAL	$ 591		$ 376.1

Castle & Cooke, Inc.

Real Estate	$ 96		
BUILDING AND CONSTRUCTION	96	6%	
Food-Processed	589		
Food-Fresh	765		
CONSUMER NONDURABLES	1,354	85	
Farm Machinery-Distribution, Swimming Pool Cleaner and Steel Pipe	143		
INTERMEDIATE PRODUCTS	143	9	
TOTAL	$1,593		$ 353.5

Caterpillar Tractor Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Diesel & Natural Gas Engines	$1,218		
Machinery & Equipment	6,395		
CAPITAL GOODS	7,613	100%	
TOTAL	$7,613		$4,666.4

Central Soya Company

Agricultural and Poultry Products	$2,448		
CONSUMER NONDURABLES	2,448	100%	
TOTAL	$2,448		$ 202.0

Certain-teed Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials	$ 394		
Fiberglass Products	256		
Piping Products	266		
BUILDING AND CONSTRUCTION	916	100%	
TOTAL	$ 916		$ 197.8

Clark Oil & Refining Corporation

Oil Refining	$1,145		
INTERMEDIATE PRODUCTS	1,145	99%	
Other	12	1	
TOTAL	$1,157		$ 200.8

CROUSE-HINDS CO.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Electrical Equipment — Circuit breakers, electrical fittings, lighting systems, plugs, receptables, switches, wiring devices, etc.	$ 372		
CAPITAL GOODS	372	100%	
TOTAL	$ 372		$ 227.7

(The acquisition of Crouse-Hinds Co. by Cooper Industries, Inc. was completed on April 29, 1981. Each publicly-held common share of Crouse-Hinds was exchanged for 0.75 share of Cooper Industries' common stock. (Cooper Industries had acquired approximately 40% of Crouse-Hinds' common stock, on the same terms, through a tender offer in January 1981.)

Curtiss-Wright Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Aerospace Products	$ 55		
Electrical Generating Equipment	35		
Process Equipment	177		
CAPITAL GOODS	267	77%	
Nuclear and Industrial Products	80		
INTERMEDIATE PRODUCTS	80	23	
TOTAL	$ 347		$ 174.5

Dana Corporation

Automotive Components	$2,098		
Other-Business Products	663		
INTERMEDIATE PRODUCTS	2,761	100%	
TOTAL	$2,761		$ 839.7

Dayco Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Consumer Products	$ 103		
CONSUMER DURABLES	103	14%	
Industrial Components	311		
Plastic Products	141		
Original and Automotive Aftermarket Products	185		
INTERMEDIATE PRODUCTS	637	86%	
TOTAL	$ 740		$ 72.2

Deere & Company

Farm Equipment	$4,045		
Construction Machinery	888		
CAPITAL GOODS	4,933	100%	
TOTAL	$4,933		$2,374.4

Dome Mines Limited

Business Lines	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Mining-Gold	$ 111		
NATURAL RESOURCES	111	100%	
TOTAL	$ 111		$ 883.4

Dover Corporation

Elevators	$ 227		
Machinery and Equipment	320		
CAPITAL GOODS	547	82%	
Liquids Handling Equipment and Fabricated Metal Products	120		
INTERMEDIATE PRODUCTS	120	18	
TOTAL	$ 667		$ 566.8

DuPont (E.I.) de Nemours & Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Chemicals	$ 2,137		
Fibers	4,149		
Plastics	2,892		
Specialty Products	3,394		
INTERMEDIATE PRODUCTS	12,572	100%	
TOTAL	$12,572		$5,843.0

Eastern Air Lines, Inc.

Airlines	$ 2,882		
TRANSPORTATION	2,882	100%	
TOTAL	$ 2,882		$ 192.7

Echlin Manufacturing Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Automotive Parts	$ 304		
INTERMEDIATE PRODUCTS	304	100%	
TOTAL	$ 304		$ 247.3

Edison Brothers Stores, Inc.

Apparel	$ 167		
Footwear	444		
CONSUMER NONDURABLES	611	77%	
Other-Hardware	182	23	
TOTAL	$ 793		$ 282.3

EG&G, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Electrical Components & Mechanical Products	$ 480		
CAPITAL GOODS	480	92%	
Environmental & Biomedical Services	32		
INTERMEDIATE PRODUCTS	32	6	
Other	10	2	
TOTAL	$ 522		$ 322.0

Engelhard Minerals & Chemicals Corporation

Fabrication-Precious Metals	$ 1,808		
Marketing	16,091		
Minerals and Chemicals	181		
INTERMEDIATE PRODUCTS	18,080	100%	
TOTAL	$18,080		$4,280.9

Fluor Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Engineering and Construction	$3,012		
BUILDING AND CONSTRUCTION	3,012	85%	
Drilling Services	71		
Oil and Gas Distribution	35		
INTERMEDIATE PRODUCTS	106	3	
Coal	71		
Oil and Gas Exploration	354		
NATURAL RESOURCES	425	12	
TOTAL	$3,543		$1,213.4

Foxboro Company

Electronics Instrumentation	$ 472		
ELECTRONICS TECHNOLOGY	472	100%	
TOTAL	$ 472		$ 311.5

Freeport Minerals Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Minerals--Mining and Processing	$ 439		
Copper, Nickel, Etc.-Production	49		
NATURAL RESOURCES	488	100%	
TOTAL	$ 488		$1,374.2

Fruehauf Corporation

Automotive	$ 784		
Trailers	1,422		
INTERMEDIATE PRODUCTS	2,206	90%	
Other--Maritime and Aerospace (This includes businesses in the building and construction and capital goods sectors.)	245	10	
TOTAL	$2,451		$ 338.6

General Portland, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Cement and Related Products	$ 274		
BUILDING AND CONSTRUCTION	274	99%	
Other-Real Estate	3	1	
TOTAL	$ 277		$ 103.3

General Signal Corporation

Environmental and Fluid Process Controls	$ 376		
Machinery and Controls-Energy Distribution	577		
Transportation Controls	309		
CAPITAL GOODS	1,262	94%	
Consumer Products-Floorcare Appliances, etc.	81		
CONSUMER DURABLES	81	6	
TOTAL	$1,343		$ 895.7

Great Atlantic & Pacific Tea Company, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Food Stores	$6,684		
CONSUMER SERVICES	6,684	100%	
TOTAL	$6,684		$ 214.7

Grumman Corporation

Aircraft & Space Systems	$1,107		
Special Vehicles	192		
CAPITAL GOODS	1,299	88%	
Computer Services	148		
ELECTRONIC TECHNOLOGY	148	10	
Energy	30		
NATURAL RESOURCES	30	2	
TOTAL	$1,477		$ 188.9

Handy & Harman

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Nonprecious Metals	$ 189		
Precious Metals	442		
NATURAL RESOURCES	631	100%	
TOTAL	$ 631		$ 259.7

Hecla Mining

Lead	$ 19		
Silver	43		
Other	2		
NATURAL RESOURCES	64	100%	
TOTAL	$ 64		$ 321.4

Hercules, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Explosives and Aerospace	$ 375		
CAPITAL GOODS	375	16%	
Organic Chemicals	516		
Plastics	657		
Water-Soluble Products	492		
INTERMEDIATE PRODUCTS	1,665	71	
Other-Graphic Systems, Pharmaceuticals, Recording Products, Synthetic Pulp	305	13	
TOTAL	$2,345		$ 874.1

Hilton Hotels Corporation

Lodging and Entertainment	$ 484		
CONSUMER SERVICES	484	100%	
TOTAL	$ 484		$ 822.1

Homestake Mining Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Forest Products	$ 7		
Mining-Gold, Lead, Silver, Uranium, Zinc	213		
NATURAL RESOURCES	220	100%	
TOTAL	$ 220		$ 583.9

Houghton Mifflin

Book Publishing	$ 139		
CONSUMER NONDURABLES	139	88%	
Database Retrieval Systems, etc.	19		
INTERMEDIATE PRODUCTS	19	12	
TOTAL	$ 158		87.5

International Harvester Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Construction Machinery	$1,007		
Farm Equipment	3,357		
Trucks	3,608		
Turbo Machinery	420		
CAPITAL GOODS	8,392	100%	
TOTAL	$8,392		$1,196.8

Kennametal Inc.

Various Products-			
Metallurgical	$ 18		
Metalworking	181		
Mining and Construction	56		
INTERMEDIATE PRODUCTS	255	97%	
Other-Tungsten-based Carbides and Tungsten alloys	8		
NATURAL RESOURCES	8	3	
TOTAL	$ 263		$ 274.9

Libbey-Owens-Ford Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Fluid Power Components	$ 423		
Glass Products	628		
Plastic Products	145		
INTERMEDIATE PRODUCTS	1,196	99%	
Other	12	1	
TOTAL	$1,208		$ 268.8

Lone Star Industries, Inc.

Cement and Related Products	$ 611		
Construction Materials	127		
BUILDING AND CONSTRUCTION	738	93%	
Real Estate and Wholesale Lumber Operations	55		
INTERMEDIATE PRODUCTS	55	7	
TOTAL	$ 793		$ 297.0

The Lubrizol Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Chemical Additives	$ 725		
INTERMEDIATE PRODUCTS	725	100%	
TOTAL	$ 725		$1,091.9

Lukens Steel Company

Plate Steel	$ 256		
Plate Steel Shapes	86		
NATURAL RESOURCES	342	100%	
TOTAL	$ 342		$ 65.8

Masonite Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Products	$ 225		
Lumber	102		
Roofing, Panels, Flooring	46		
BUILDING AND CONSTRUCTION	373	73%	
Commercial/Home Improvement Products	51		
Furniture Components	87		
INTERMEDIATE PRODUCTS	138	27	
TOTAL	$ 511		$ 343.5

Massey-Ferguson, Ltd.

Farm Equipment	$2,408		
CAPITAL GOODS	2,408	81%	
Diesel Engines	565		
INTERMEDIATE PRODUCTS	565	19	
TOTAL	2,973		$ 187.1

The Maytag Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Appliances-Laundry Equipment, Dishwashers, etc.	$ 369		
CONSUMER DURABLES	369	100%	
TOTAL	$ 369		$ 332.1

McDonnell Douglas Corporation

Commercial Aircraft	$1,953		
Military Aircraft	2,323		
Space Systems and Missiles	792		
Other-Space Shuttle, etc.	211		
CAPITAL GOODS	5,279	100%	
TOTAL	$5,279		$1,371.1

McIntyre Mines

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Mining-Coal and Nickel	$ 54		
NATURAL RESOURCES	54	100%	
TOTAL	$ 54		$ 211.0

Motorola, Inc.

Communications Systems	$1,086		
Semiconductors	1,058		
Other-Electronic Instruments/Systems	570		
ELECTRONIC TECHNOLOGY	2,714	100%	
TOTAL	$2,714		$1,591.7

National Gypsum Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Gypsum and Related Products	$ 391		
Wall and Floor Covering	143		
Other	137		
BUILDING AND CONSTRUCTION	671	79%	
Glass and Metal	183		
INTERMEDIATE PRODUCTS	183	21	
(some are used as building materials)			
TOTAL	$ 854		$ 362.6

NCR Corporation

Information Processing Systems	$3,003		
ELECTRONIC TECHNOLOGY	3,003	100%	
TOTAL	$3,003		$1,835.5

NL Industries, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Chemicals	$ 471		
Fabricated Metals	271		
Petroleum Services and Equipment	1,068		
INTERMEDIATE PRODUCTS	1,810	100%	
TOTAL	$1,810		$1,137.6

Northwestern Steel & Wire

Steel Products	$ 426		
NATURAL RESOURCES	426	100%	
TOTAL	$ 426		$ 188.6

Owens-Corning Fiberglas Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Insulation and Construction	$1,706		
BUILDING AND CONSTRUCTION	1,706	76%	
Industrial and Textile Products	382		
INTERMEDIATE PRODUCTS	382	17	
Other	157	3	
TOTAL	$2,245		$ 869.7

Procter & Gamble Company

Food Products	$1,959		
Laundry/Cleaning Products	3,545		
Personal Care Products	3,079		
CONSUMER NONDURABLES	8,583	92%	
Other-Animal Feed Ingredients, Cellulose Pulp, Chemicals	746	8	
INTERMEDIATE PRODUCTS	746		
TOTAL	$9,329		$6,129.6

Quaker State Oil Refining Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Chemicals, Vehicular Lighting, etc.	$ 41		
INTERMEDIATE PRODUCTS	41	6%	
Coal	111		
Petroleum-Refining and Distribution; Crude Oil-Production	540		
NATURAL RESOURCES	651	94	
TOTAL	$ 692		$ 339.4

Ralston Purina Company

Agricultural Products	$2,255		
Grocery Products	1,794		
CONSUMER NONDURABLES	4,049	88%	
Restaurants	460		
Other-Floriculture, Hockey League Club, Ski Resort, etc.	92		
CONSUMER SERVICES	552	12	
TOTAL	$4,601		$1,187.2

Rexnord Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Construction Machinery	$ 76		
Environmental Control Equipment	65		
Power Transmission Components	509		
Process Machinery	304		
Specialty Fasteners	130		
CAPITAL GOODS	1,084	100%	
TOTAL	$1,084		$ 324.8

Robins (A.H.) Company, Inc.

Cosmetics, Fragrances, etc.	$ 116		
Pharmaceuticals	270		
CONSUMER NONDURABLES	386	100%	
TOTAL	$ 386		$ 281.7

Rorer Group

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Drugs-Ethical	$ 201		
Surgical Products	67		
CONSUMER NONDURABLES	268	100%	
TOTAL	$ 268		$ 291.9

Rosario Resources

Mining; Oil & Natural Gas Exploration	$ 84		
NATURAL RESOURCES	84	100%	
TOTAL	$ 84		$317.7

(AMAX Inc. acquired Rosario Resources on April 10, 1980. Each share of Rosario Resources was exchanged for 1.37615 AMAX shares.)

Signode Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Machinery-Wood Fabrication	$ 42		
CAPITAL GOODS	42	6%	
Industrial Fastener Products	132		
Strapping Systems	521		
INTERMEDIATE PRODUCTS	653	94	
TOTAL	$ 695		$ 272.7

Sun Company, Inc.

Oil	$10,666		
NATURAL RESOURCES	10,666	100%	
TOTAL	$10,666		$4,126.2

Sunbeam Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Household Appliances, etc.	$1,139		
CONSUMER DURABLES	1,139	81%	
Commercial/Industrial Products	267		
INTERMEDIATE PRODUCTS	267	19	
TOTAL	1,406		$ 262.2

Tektronix, Inc.

Information Display Products	$ 252		
Test and Measurement Products	719		
ELECTRONIC TECHNOLOGY	971	100%	
TOTAL	$ 971		$1,090.4

Texas Oil & Gas Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Drilling	$ 27		
Gas Gathering	646		
INTERMEDIATE PRODUCTS	673	75%	
Oil and Gas-Production	215		
NATURAL RESOURCES	215	24	
Other	9	1	
TOTAL	$ 897		$1,323.0

The Timken Company

Bearings	$ 923		
INTERMEDIATE PRODUCTS	923	72%	
Steel-Specialty	359		
NATURAL RESOURCES	359	28	
TOTAL	$1,282		$ 571.4

UNC Resources, Inc.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Coal	$ 16		
Fabrication-Nuclear Fuel Core	67		
Uranium	165		
Other-Drilling, Metals, etc.	19		
NATURAL RESOURCES	267	100%	
TOTAL	$ 267		$ 236.1

Uniroyal, Inc.

Fabricated Rubber and Plastic Products	$ 489		
Leisure, Sports and Other Products	258		
Tire and Related Products	1,365		
CONSUMER DURABLES	2,112	82%	
Chemicals, Plastic, Rubber	463		
INTERMEDIATE PRODUCTS	463	18	
TOTAL	2,575		$ 112.9

V.F. Corp.

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Apparel	$ 544		
CONSUMER NONDURABLES	544	100%	
TOTAL	$ 544		$ 199.5

Varian Associates

Industrial and Medical Equipment	$ 133		
CAPITAL GOODS	133	27%	
Analytical Instruments	133		
Computer Systems	15		
Electron Devices	212		
ELECTRONIC TECHNOLOGY	360	73	
TOTAL	$ 493		$ 225.3

Walter (Hiram) Gooderham & Worts

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Distilled Spirits	$1,013		
CONSUMER NONDURABLES	1,013	90%	
Other-Oil Exploration	113		
NATURAL RESOURCES	113	10	
TOTAL	$1,126		$ 816.2

(On April 8, 1980, shareholders of Hiram Walker and Consumer Gas Co. approved the merger of both companies. Each Hiram Walker common share was exchanged for 1.375 common shares of Consumer Gas.)

Warner Communications, Inc.

Filmed Entertainment	$ 610	
Publishing & Related Distribution	75	
Recorded Music & Music Publishing	725	
Toys & Electronic Games	238	
TOTAL	$1,648	$ 887.2

Warner-Lambert Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Drugs-Ethical	$1,062		
Drugs-Proprietary	676		
Food	804		
Other-Blades, Razors, etc.	257		
CONSUMER NONDURABLES	2,799	87%	
Optical Products & Instruments	418		
INTERMEDIATE PRODUCTS	418	13	
TOTAL	$3,217		$1,592.3

Warner & Swasey

Industrial Machinery and Equipment	$ 305		
CAPITAL GOODS	305	100%	
TOTAL	$ 305		$ 259.2

(Bendix Corp. completed its acquisition of Warner & Swasey on March 31, 1980. Two shares of a new Bendix preferred stock, each with a liquidation value of $41.50 and a conversion feature of 0.768 share of Bendix common were exchanged for each Warner & Swasey share not already owned by Bendix--about 45% of the outstanding shares of Warner & Swasey was acquired by Bendix in a cash tender offer of $83 a share in December 1979.)

Weyerhaeuser Company

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Building Materials	$2,710		
BUILDING AND CONSTRUCTION	2,710	61%	
(Some of the products in the Intermediate Products sector can also be categorized in the Building and Construction sector.)			
Container and Packaging	685		
Pulp, Paper, and Paperboard	888		
INTERMEDIATE PRODUCTS	888	36	
Other-Real Estate	140	3	
TOTAL	$4,423		$3,975.8

Xerox Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Copiers/Duplicators	$5,270		
ELECTRONIC TECHNOLOGY	5,279	75%	
Other-Marketing (Computer Systems), Publishing, etc.	1,757	25	
TOTAL	$7,027		$5,226.3

(Xerox Corporation completed its acquisition of WUI, Inc. on November 21, 1979. Each share of WUI, Inc. was exchanged for 0.64864 share of Xerox common stock.)

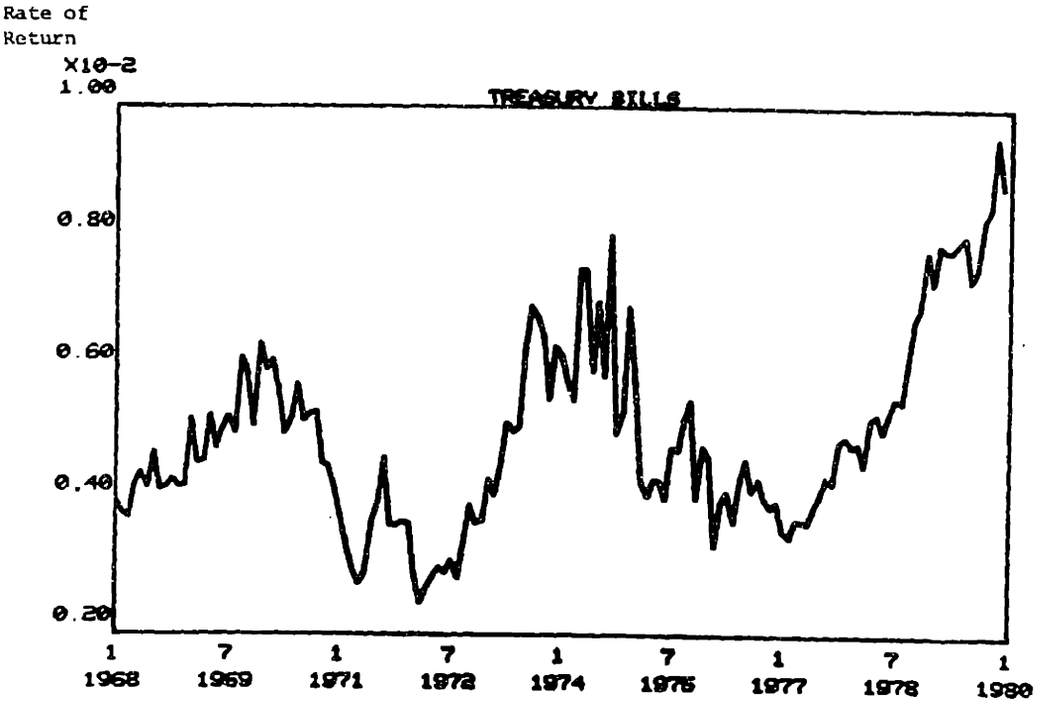
Zenith Radio Corporation

Business Line	Fiscal Year 1979 Sales ($ Million)	% of Total	Year-End 1979 Market Value of Common Stock ($ Million)
Audio and Video Cassette Recorders	$ 118		
Television Sets	871		
Other-Electronic Kits, Microcomputer Products, etc. (for personal and business use)	86		
CONSUMER DURABLES	$1,075	100%	
TOTAL	$1,075		$ 183.7

(Zenith Radio acquired The Heath Co. in October 1979 for $64.5 million in cash, financed by $60.0 million in long-term debt.)

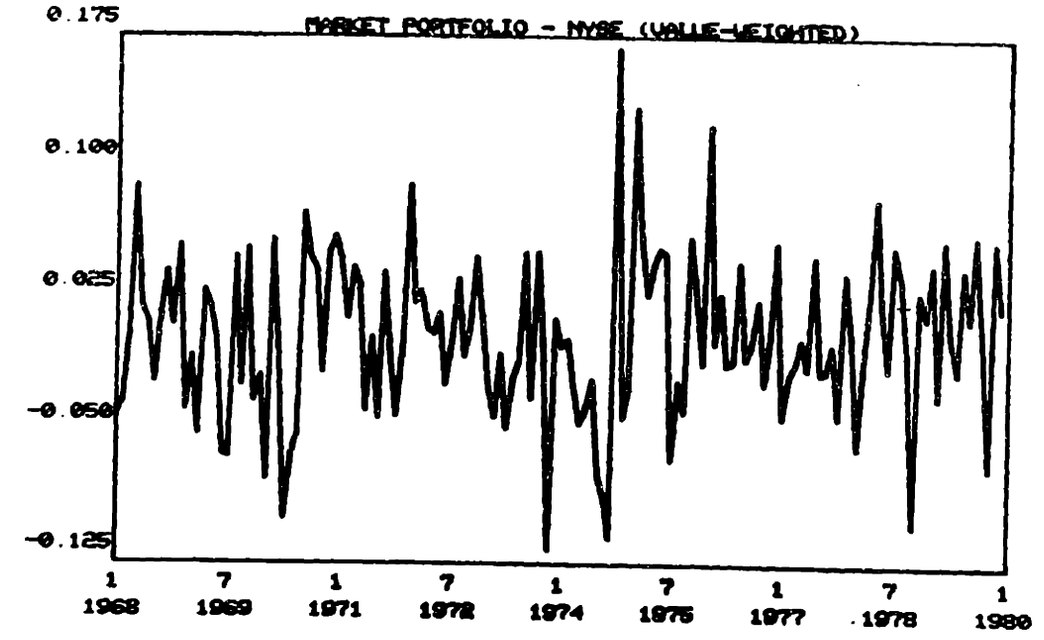
APPENDIX VII

Monthly Rate of Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: TREASURY



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MARKET

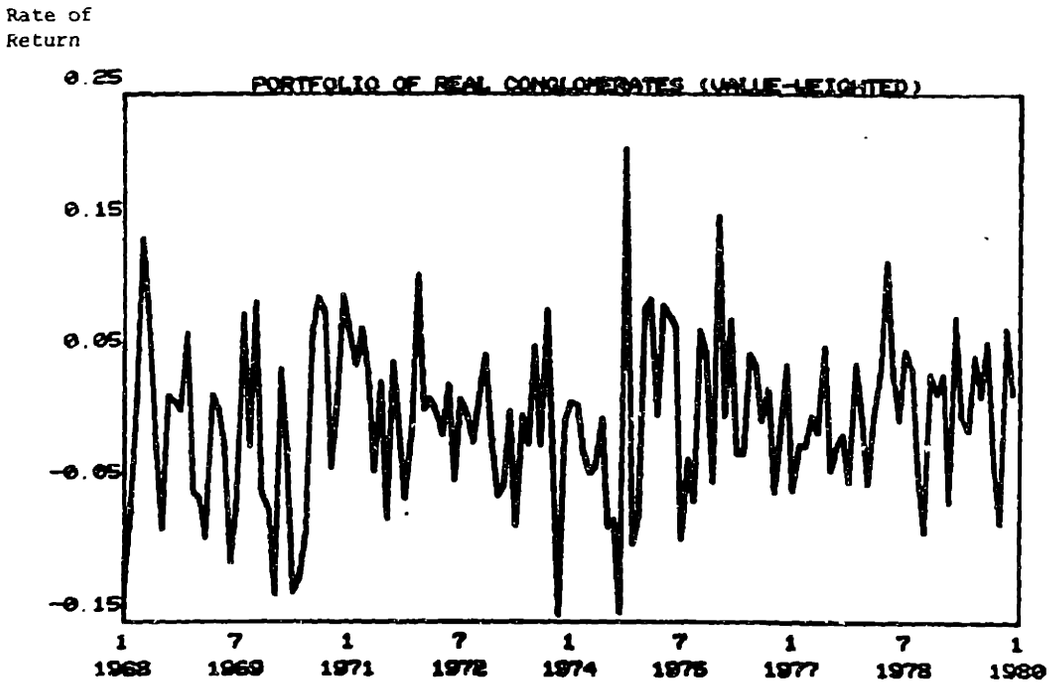
TREASURY [illegible] DATE REVISED: [illegible]
MONTHLY DATA FROM [illegible]

TREASURY BILL RATE

1968	1	0.004042	0.003871	0.003803	0.004292
1968	5	0.00446	0.003751	0.004731	0.004221
1968	9	0.004257	0.004364	0.004245	0.004276
1969	1	0.005257	0.005507	0.004631	0.005331
1969	5	0.004833	0.005118	0.005315	0.005049
1969	9	0.006214	0.005964	0.005156	0.006435
1970	1	0.006044	0.00618	0.005705	0.005043
1970	5	0.005269	0.005311	0.005232	0.005339
1970	9	0.005368	0.0045	0.004554	0.004233
1971	1	0.003823	0.003317	0.002979	0.002759
1971	5	0.003933	0.003735	0.004019	0.004478
1971	9	0.003674	0.003576	0.003724	0.003688
1972	1	0.00283	0.002838	0.002727	0.002879
1972	5	0.003014	0.002745	0.003123	0.002859
1972	9	0.003413	0.003976	0.003799	0.003746
1973	1	0.00437	0.00415	0.004558	0.005211
1973	5	0.005077	0.005144	0.006393	0.006997
1973	9	0.006821	0.006522	0.005577	0.00638
1974	1	0.006264	0.005912	0.005575	0.007543
1974	5	0.007535	0.006024	0.007048	0.005953
1974	9	0.008069	0.005053	0.00539	0.006976
1975	1	0.005824	0.004348	0.004135	0.004377
1975	5	0.004356	0.004089	0.004046	0.004805
1975	9	0.005267	0.005555	0.004098	0.004849
1976	1	0.004681	0.003373	0.004017	0.004194
1976	5	0.003744	0.004348	0.004656	0.004208
1976	9	0.004368	0.004084	0.003963	0.004043
1977	1	0.003594	0.003514	0.003764	0.003755
1977	5	0.003714	0.003986	0.00417	0.004415
1977	9	0.004333	0.004927	0.005001	0.004867
1978	1	0.004894	0.004598	0.005288	0.005357
1978	5	0.005088	0.005369	0.005591	0.00555
1978	9	0.006189	0.006806	0.006999	0.007824
1979	1	0.007355	0.007949	0.007858	0.007863
1979	5	0.00799	0.008082	0.007397	0.007562
1979	9	0.008334	0.008529	0.009569	0.008847

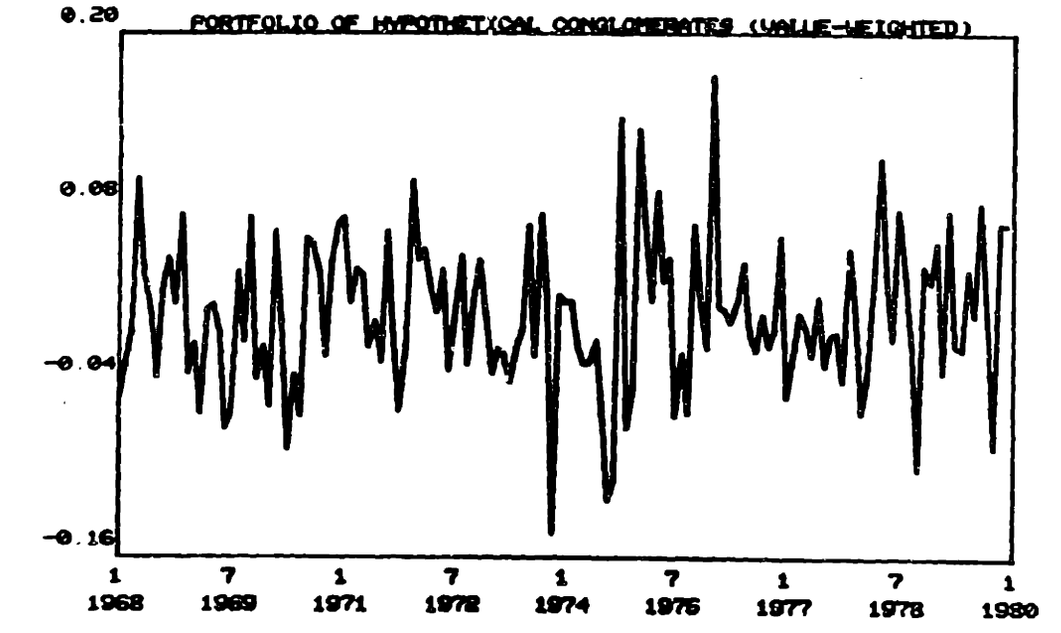
MARKET - DATE REVISED: 5/28/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.038956	-0.031135	0.006859	0.089974
1968	5	0.023223	0.011547	-0.021542	0.016493
1968	9	0.042136	0.010866	0.056694	-0.036904
1969	1	-0.007216	-0.05016	0.031239	0.021367
1969	5	0.002824	-0.062402	-0.063115	0.050353
1969	9	-0.022533	0.054846	-0.031446	-0.017729
1970	1	-0.076349	0.059719	-0.002349	-0.099562
1970	5	-0.061372	-0.049985	0.074478	0.050019
1970	9	0.042856	-0.015302	0.052071	0.061571
1971	1	0.049274	0.014969	0.044168	0.034283
1971	5	-0.036465	0.004347	-0.040519	0.041953
1971	9	-0.005657	-0.039647	0.000195	0.090485
1972	1	0.024116	0.030386	0.009187	0.00668
1972	5	0.017626	-0.022087	-0.001564	0.037948
1972	9	-0.006374	0.010115	0.049664	0.011871
1973	1	-0.025336	-0.039821	-0.005467	-0.046464
1973	5	-0.018372	-0.008322	0.052486	-0.030101
1973	9	0.052434	-0.001347	-0.116666	0.015144
1974	1	-0.091097	0.00336	-0.023947	-0.043224
1974	5	-0.035266	-0.019388	-0.072931	-0.085398
1974	9	-0.110169	0.167601	-0.039951	-0.023212
1975	1	0.134787	0.060822	0.029451	0.046984
1975	5	0.054698	0.051941	-0.063735	-0.020402
1975	9	-0.036615	0.060764	0.03151	-0.010476
1976	1	0.125197	0.001372	0.030001	-0.010806
1976	5	-0.008815	0.047256	-0.007463	0.000203
1976	9	0.025721	-0.021429	0.004708	0.050547
1977	1	-0.03981	-0.016215	-0.010749	0.003876
1977	5	-0.012545	0.050882	-0.015728	-0.014035
1977	9	0.000478	-0.03941	0.04198	0.005256
1978	1	-0.056072	-0.0121	0.031059	0.083369
1978	5	0.018625	-0.012816	0.056424	0.037214
1978	9	-0.006331	-0.101758	0.031305	0.016734
1979	1	0.017006	-0.028472	0.020449	0.006303
1979	5	-0.014301	0.044324	0.014821	0.062926
1979	9	0.020477	-0.005479	0.027672	0.022048



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: RPORT



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

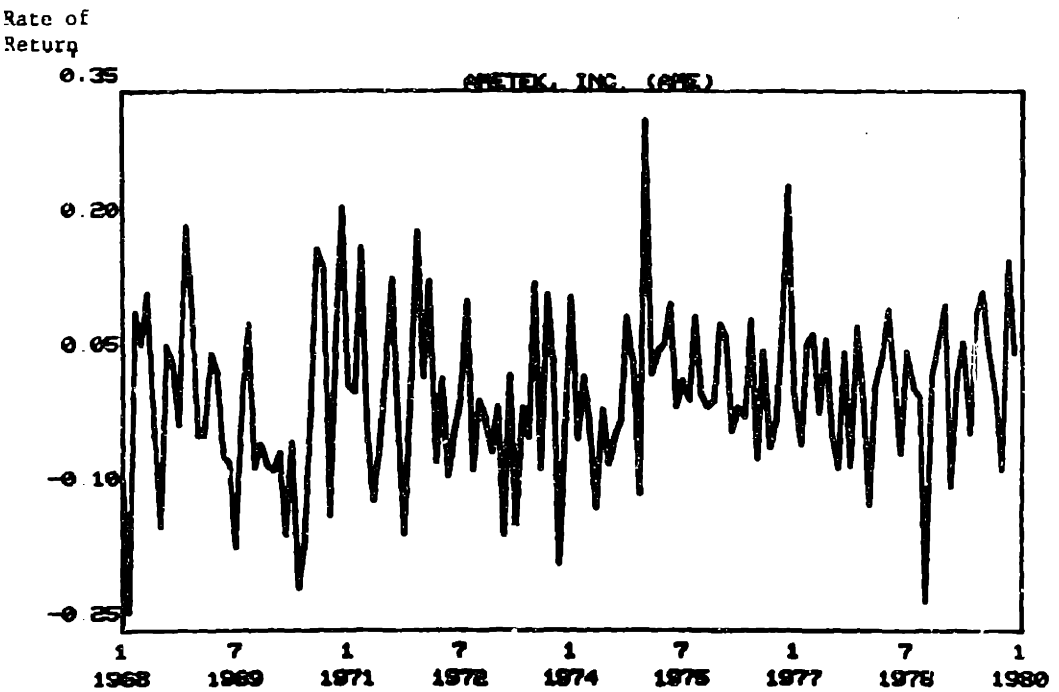
DATA NAMES: RHPORT

RHPORT - DATE REVISED: 6/10/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.137554	-0.0[illegible]4	0.0[illegible]65	0.14[illegible]35
1968	5	0.079712	-0.01[illegible]	-0.080112	0.020338
1968	9	0.01[illegible]61	-0.010854	0.0[illegible]2	-0.05[illegible]2
1969	1	-0.056079	-0.080[illegible]	0.023266	0.01196
1969	5	-0.01[illegible]65	-0.10[illegible]	-0.028588	0.083857
1969	9	-0.016101	0.09[illegible]	-0.05302	-0.064755
1970	1	-0.12[illegible]8	0.04[illegible]11	-0.020361	-0.127123
1970	5	-0.113923	-0.081[illegible]2	0.066959	0.095831
1970	9	0.083564	-0.03[illegible]4	0.016582	0.097411
1971	1	0.071143	0.044356	0.07202	0.038564
1971	5	-0.035172	0.0822	-0.071557	0.046984
1971	9	-0.003458	-0.056621	-0.002765	0.112691
1972	1	0.010727	0.019018	0.007641	-0.008282
1972	5	0.030125	-0.042404	0.018975	0.006709
1972	9	-0.013561	0.023818	0.052739	-0.015499
1973	1	-0.05393	-0.046789	0.010549	-0.076876
1973	5	0.007222	-0.014025	0.059344	-0.015087
1973	9	0.086232	-0.025819	-0.143556	0.002282
1974	1	0.016724	0.015001	-0.020565	-0.036877
1974	5	-0.031554	0.00512	-0.077834	-0.072592
1974	9	-0.142126	0.208713	-0.090644	-0.067187
1975	1	0.087523	0.094597	0.007704	0.08993
1975	5	0.082462	0.074965	-0.086341	-0.026173
1975	9	-0.057606	0.071153	0.05416	-0.043593
1976	1	0.158368	0.007285	0.07951	-0.021539
1976	5	-0.021626	0.053[illegible]9	0.045023	0.00323
1976	9	0.027305	-0.051057	-0.003848	0.046063
1977	1	-0.049747	-0.015041	-0.015201	0.007048
1977	5	-0.005343	0.059516	-0.035391	-0.016571
1977	9	-0.007291	-0.043851	0.046429	0.006099
1978	1	-0.045209	0.007083	0.04292	0.123733
1978	5	0.040032	0.004108	0.056329	0.042139
1978	9	-0.035676	-0.081825	0.039261	0.023949
1979	1	0.037944	-0.058637	0.081144	0.00655
1979	5	-0.004244	0.052606	0.021687	0.062919
1979	9	-0.030842	-0.074533	0.073048	0.024092

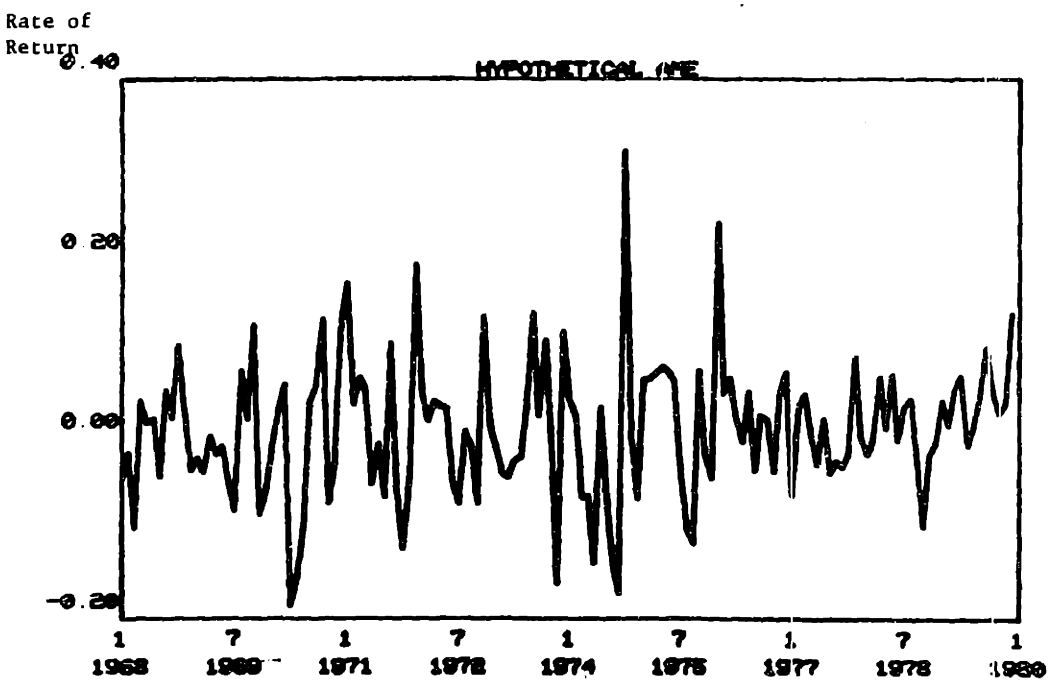
RHPORT - DATE REVISED: 6/10/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.049557	-0.025673	-0.002362	0.100639
1968	5	0.0351	0.01059	-0.036053	0.028933
1968	9	0.046099	0.01561	0.075561	-0.033347
1969	1	-0.012233	-0.060739	0.011619	0.014596
1969	5	-0.003429	-0.070991	-0.059428	0.037252
1969	9	-0.011304	0.073617	-0.036979	-0.014724
1970	1	-0.055902	0.063759	0.002098	-0.084701
1970	5	-0.034474	-0.062364	0.05997	0.055614
1970	9	0.036906	-0.021519	0.043724	0.068137
1971	1	0.073086	0.017052	0.038711	0.035657
1971	5	-0.014242	0.003358	-0.024946	0.064077
1971	9	-0.008058	-0.058463	-0.011739	0.099078
1972	1	0.044966	0.05197	0.024187	0.010251
1972	5	0.038113	-0.030927	0.006278	0.047725
1972	9	-0.026662	0.018087	0.044872	0.006206
1973	1	-0.033965	-0.015678	-0.020876	-0.039055
1973	5	-0.013938	-0.001788	0.068125	-0.020365
1973	9	0.07568	0.018429	-0.142214	0.021798
1974	1	0.017054	0.017393	-0.013819	-0.025775
1974	5	-0.025446	-0.010283	-0.059916	-0.118545
1974	9	-0.105626	0.142422	-0.070057	-0.043631
1975	1	0.13425	0.073666	0.01839	0.091648
1975	5	0.031491	0.046066	-0.062355	-0.01919
1975	9	-0.059775	0.06887	0.021224	-0.01545
1976	1	0.176941	0.0147	0.0114	0.003443
1976	5	0.018608	0.042694	-0.004176	-0.017403
1976	9	0.007773	-0.013595	-0.001141	0.060306
1977	1	-0.049068	-0.018444	0.009557	8.160001E-05
1977	5	-0.020689	0.020247	-0.02543	-0.006067
1977	9	-0.004136	-0.038468	0.052503	0.009255
1978	1	-0.069051	-0.033925	0.03351	0.115197
1978	5	0.032437	-0.009147	0.079196	0.034702
1978	9	0.013119	-0.09[illegible]5	0.041141	0.03049
1979	1	0.057165	-0.031848	0.078034	-0.012761
1979	5	-0.016071	0.038914	0.008367	0.083698
1979	9	0.004106	-0.083462	0.069943	0.042268



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: RR1



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: RR1H

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MONTHLY DATA FROM [illegible]

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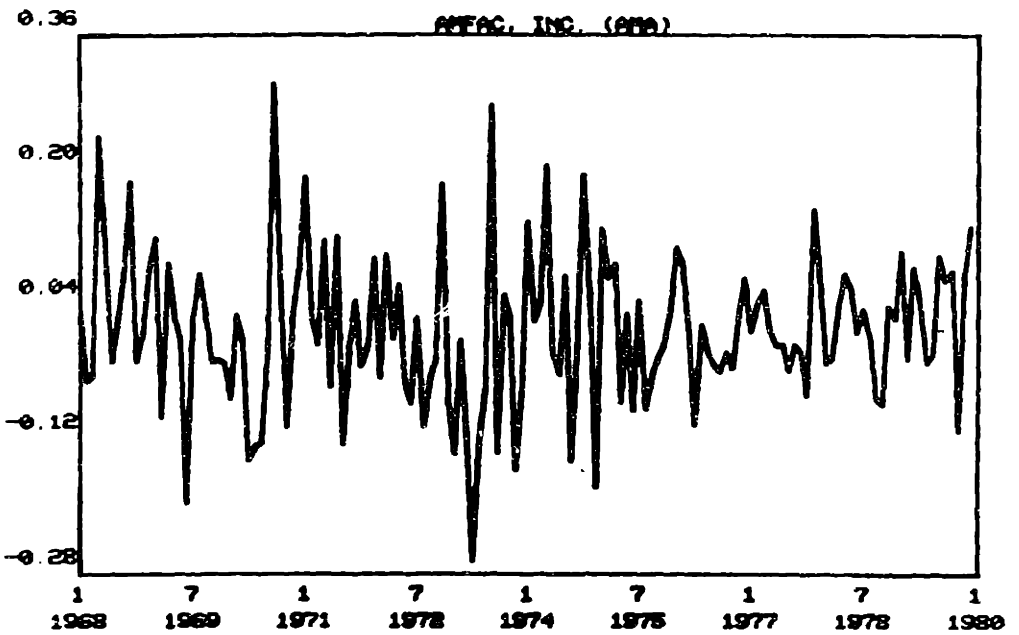
1968	9	0.042654	-0.02139	0.202186	0.109091
1969	1	-0.033058	-0.052851	0.059603	0.032967
1969	5	-0.014492	-0.063348	-0.155963	0.01087
1969	9	0.092473	-0.084362	-0.042553	-0.066667
1970	1	-0.072289	-0.051948	-0.142857	-0.040323
1970	5	-0.201681	-0.140263	0.	0.175
1970	9	0.151064	-0.101475	0.074468	0.222222
1971	1	0.024793	0.016129	0.17619	-0.027211
1971	5	-0.104895	-0.0375	0.04918	0.140625
1971	9	-0.026027	-0.141844	0.035054	0.195122
1972	1	0.034014	0.138158	-0.062418	0.031056
1972	5	-0.078313	-0.031373	0.006803	0.114865
1972	9	-0.071515	0.006579	-0.013072	-0.051656
1973	1	0.	-0.141844	0.034711	-0.129032
1973	5	0.	-0.035185	0.135922	-0.068376
1973	9	0.122936	0.049587	-0.173228	-0.024762
1974	1	0.12	-0.035714	0.033333	-0.027273
1974	5	-0.11215	-0.004211	-0.064516	-0.034483
1974	9	-0.016667	0.098765	0.044944	-0.096774
1975	1	0.317073	0.037037	0.0625	0.068376
1975	5	0.112	0.	0.029197	0.007092
1975	9	0.098592	0.012987	0.	0.00641
1976	1	0.090323	0.076923	-0.027473	0.
1976	5	-0.011429	0.094798	-0.058824	0.0625
1976	9	-0.045989	-0.017045	0.080925	0.24492
1977	1	0.013043	-0.042918	0.070852	0.080508
1977	5	-0.007843	0.074308	-0.033457	-0.069231
1977	9	0.061157	-0.066929	0.088608	0.004651
1978	1	-0.109375	0.026316	0.03641	0.106557
1978	5	0.02963	-0.053237	0.061538	0.021739
1978	9	0.011348	-0.216312	0.036199	0.072489
1979	1	0.11157	-0.089219	0.035102	0.072
1979	5	-0.029851	0.102308	0.127208	0.062696
1979	9	0.010619	-0.070796	0.161905	0.060109

MRIH - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.043936	-0.013947	-0.097283	0.043361
1968	5	0.017072	0.023369	-0.040973	0.055638
1968	9	0.023325	0.105492	0.025498	-0.034332
1969	1	-0.021465	-0.035639	0.004349	-0.016642
1969	5	-0.007321	-0.046533	-0.079155	0.076209
1969	9	0.022105	0.127991	-0.082565	-0.053865
1970	1	-0.00482	0.032268	0.060949	-0.184706
1970	5	-0.148965	-0.096537	0.041926	0.058478
1970	9	0.133785	-0.070279	-0.026561	0.128466
1971	1	0.173015	0.03897	0.069135	0.053386
1971	5	-0.048898	-0.00568	-0.063499	0.106921
1971	9	-0.056145	-0.119511	-0.041411	0.193554
1972	1	0.056676	0.02059	0.042485	0.036955
1972	5	0.034239	-0.045158	-0.07032	0.007996
1972	9	-0.0067	-0.069433	0.136645	0.015758
1973	1	-0.009444	-0.037292	-0.041271	-0.023153
1973	5	-0.018362	0.037908	0.140475	0.026475
1973	9	0.109315	0.00359	-0.158198	0.120352
1974	1	0.046514	0.025669	-0.06293	-0.061729
1974	5	-0.136156	0.035939	-0.064484	-0.133849
1974	9	-0.170039	0.320407	0.002409	-0.064585
1975	1	0.06699	0.067129	0.074884	0.080694
1975	5	0.075668	0.06455	-0.029415	-0.098066
1975	9	-0.113697	0.076777	-0.016073	-0.042783
1976	1	0.240566	0.052263	0.06724	0.025235
1976	5	-0.002286	0.052298	-0.034635	0.02688
1976	9	0.021259	-0.03557	0.05289	0.074176
1977	1	-0.061132	0.037843	0.050295	0.007656
1977	5	-0.027667	0.023608	-0.037179	-0.022802
1977	9	-0.030531	-0.016411	0.092902	0.09323
1978	1	-0.017008	-0.000448	0.07011	0.012216
1978	5	0.022841	-0.000978	0.03739	0.046347
1978	9	-0.0263	-0.095527	-0.016019	-0.001878
1979	1	0.043637	0.016068	0.056031	0.071167
1979	5	-0.096785	0.015768	0.050422	0.102821
1979	9	0.051109	0.02885	0.040698	0.141287

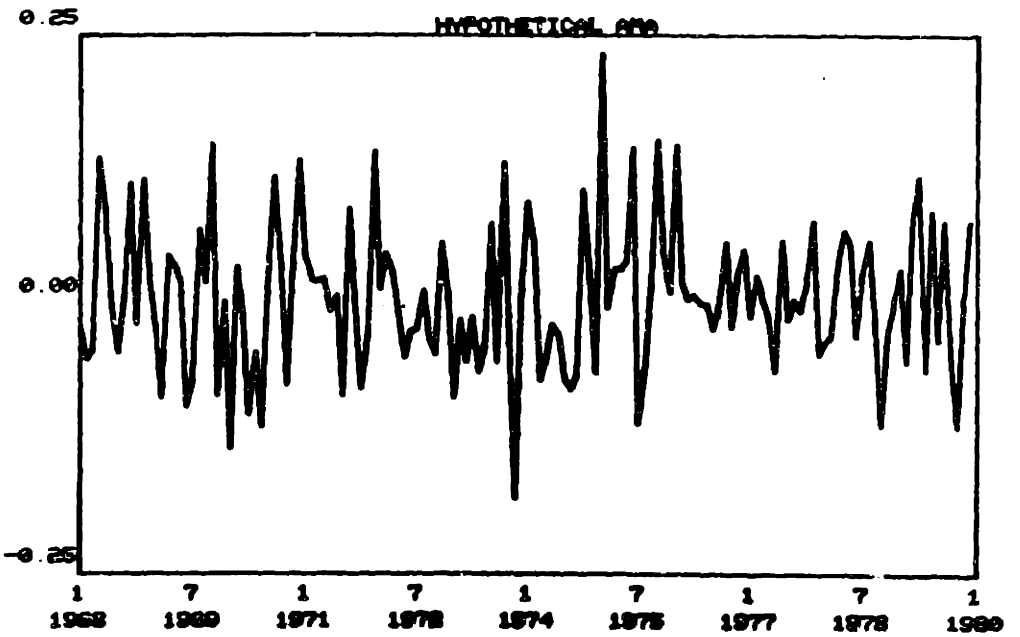
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1978 DECEMBER

DATA NAMES: MR2

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1978 DECEMBER

DATA NAMES: MRBH

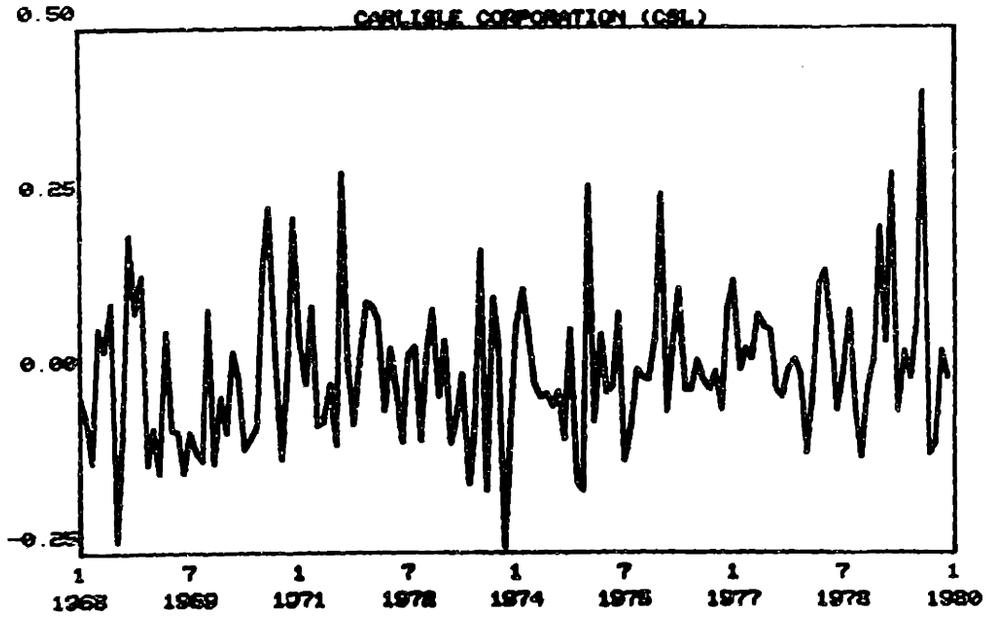
MR2 - DATE REVISED: 5/28/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.031782	-0.05042	0.04451	0.23913
1968	5	0.115288	-0.027008	0.020682	0.077273
1968	9	0.166441	-0.026786	0.009615	0.083312
1969	1	0.113925	-0.053571	0.008795	0.029251
1969	5	-0.005021	-0.196023	0.013373	0.076289
1969	9	0.025884	-0.020037	-0.025	-0.029703
1970	1	-0.021429	0.026571	-0.005376	-0.145946
1970	5	-0.127848	-0.124008	-0.008333	0.30084
1970	9	0.051948	-0.104938	0.026207	0.081081
1971	1	0.190625	0.019948	-0.007752	0.114583
1971	5	-0.056542	0.119403	-0.126667	-0.015267
1971	9	0.043411	-0.033582	-0.007722	0.094163
1972	1	-0.046429	0.098127	0.	0.061644
1972	5	-0.054194	-0.075342	0.022222	-0.104348
1972	9	-0.04878	-0.020641	0.188702	-0.078358
1973	1	-0.137652	-0.00338	-0.113744	-0.262032
1973	5	-0.121159	-0.058333	0.274336	-0.136944
1973	9	0.04878	0.023256	-0.15697	-0.063636
1974	1	0.135922	0.019467	0.042373	0.203252
1974	5	-0.017838	-0.041667	0.072464	-0.146216
1974	9	-0.008	0.193548	0.037838	-0.177632
1975	1	0.128	0.070922	0.087248	-0.074074
1975	5	0.026667	-0.085526	0.043165	-0.082759
1975	9	-0.045802	-0.024	-0.008197	0.033613
1976	1	0.105691	0.088235	0.006849	-0.102041
1976	5	0.015152	-0.015152	-0.030769	-0.039683
1976	9	-0.016807	-0.034188	0.026549	0.070175
1977	1	0.008197	0.04065	0.055556	0.007519
1977	5	-0.007463	-0.007634	-0.038462	-0.008
1977	9	-0.016393	-0.066667	0.151786	0.070866
1978	1	-0.029412	-0.022727	0.03937	0.075758
1978	5	0.056338	0.006757	0.033557	0.
1978	9	-0.072368	-0.078014	0.038462	0.022556
1979	1	0.102941	-0.024	0.083333	0.044872
1979	5	-0.028221	-0.019231	0.098039	0.067857
1979	9	0.079096	-0.109948	0.072941	0.133333

MR2H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.020995	-0.049401	-0.040351	0.136537
1968	5	0.088845	-0.005021	-0.044074	0.007544
1968	9	0.112764	-0.017504	0.116519	0.02307
1969	1	-0.021541	-0.086071	0.045351	0.035274
1969	5	0.021756	-0.094415	-0.068405	0.069777
1969	9	0.020831	0.147988	-0.084084	0.002672
1970	1	-0.133758	0.034874	-0.008699	-0.101741
1970	5	-0.043764	-0.113099	0.023488	0.119001
1970	9	0.036523	-0.073565	0.040204	0.134036
1971	1	0.045121	0.022584	0.020706	0.022736
1971	5	-0.006428	0.006714	-0.083378	0.088714
1971	9	7.300000E-05	-0.076929	-0.02772	0.141277
1972	1	0.01331	0.046522	0.027181	-0.011466
1972	5	-0.048214	-0.024533	-0.022629	0.011714
1972	9	-0.032135	-0.045193	0.056334	0.004323
1973	1	-0.084852	-0.014973	-0.051863	-0.011535
1973	5	-0.060804	-0.036431	0.074789	-0.051557
1973	9	0.131028	-0.03354	-0.17814	0.014068
1974	1	0.095136	0.052551	-0.068941	-0.04919
1974	5	-0.018225	-0.027333	-0.068449	-0.077048
1974	9	-0.063681	0.196465	0.022865	-0.061734
1975	1	0.23265	-0.003447	0.032475	0.032244
1975	5	0.041622	0.144795	-0.110629	-0.0557
1975	9	0.020991	0.150688	0.047681	0.010437
1976	1	0.147439	0.018445	0.004543	0.007759
1976	5	0.000851	-0.0008	-0.021874	-0.001829
1976	9	0.057517	-0.020039	0.029853	0.050628
1977	1	-0.010721	0.025961	0.003971	-0.015632
1977	5	-0.060417	0.05895	-0.013688	0.004644
1977	9	-0.006024	0.017872	0.070397	-0.044802
1978	1	-0.031835	-0.02924	0.040568	0.069003
1978	5	0.054558	-0.028594	0.027903	0.05934
1978	9	-0.014929	-0.112089	-0.028759	0.003557
1979	1	0.033066	-0.051505	0.079757	0.118386
1979	5	-0.06015	0.087022	-0.032407	0.077332
1979	9	-0.052888	-0.113567	0.001991	0.077186

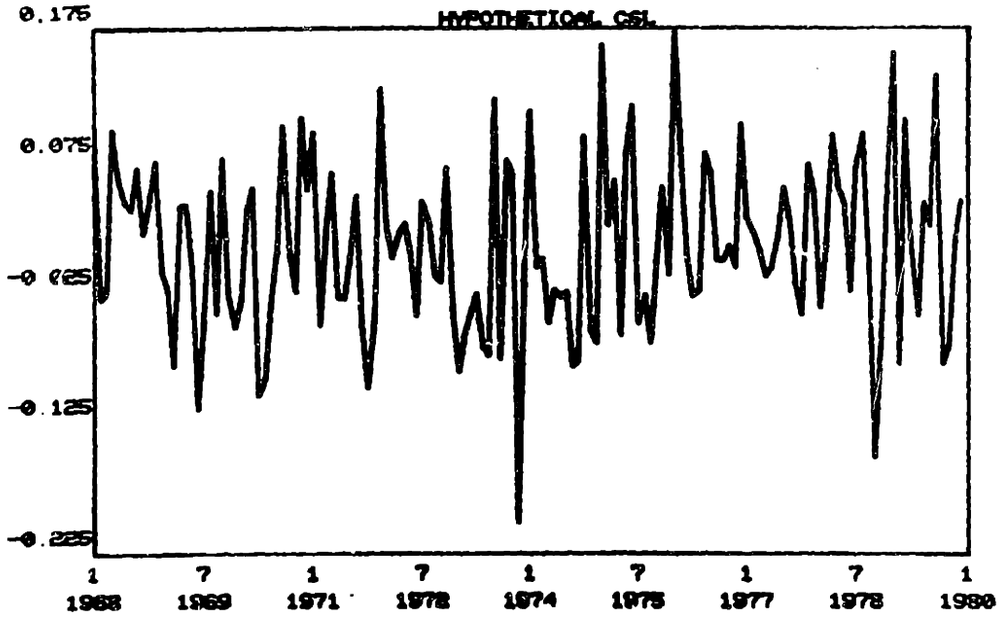
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR3

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR3H

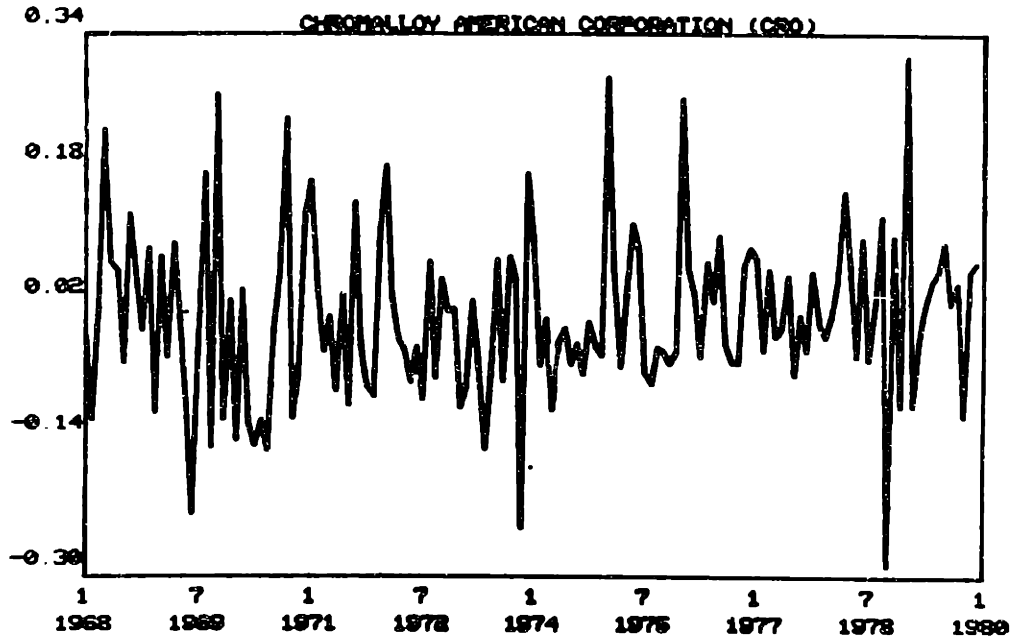
MR3 - DATE REVISED: 5/29/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.022273	-0.[illegible]	-0.110774	0.074703
1968	5	0.04085	0.107375	-0.23169	0.073733
1968	9	0.20858	0.095858	0.147727	-0.122112
1969	1	-0.030677	-0.134145	0.070423	-0.073684
1969	5	-0.07619	-0.133021	-0.07619	-0.103096
1969	9	-0.115942	0.1	-0.120301	-0.025641
1970	1	-0.077193	0.038462	0.	-0.1
1970	5	-0.083333	-0.068182	0.158537	0.244211
1970	9	0.025641	-0.115	0.	0.228571
1971	1	0.065566	-0.007353	0.103704	-0.067114
1971	5	-0.063309	-0.007752	-0.09375	0.294828
1971	9	0.020134	-0.065789	0.03662	0.109589
1972	1	0.104938	0.084916	-0.046632	0.043478
1972	5	-0.014583	-0.090426	0.035088	0.046554
1972	9	-0.038857	0.038714	0.09908	-0.026316
1973	1	0.054054	-0.091077	-0.056818	0.006024
1973	5	-0.148763	-0.06383	0.181818	-0.157949
1973	9	0.115385	0.048276	-0.241053	-0.078947
1974	1	0.07619	0.12708	0.063492	-0.007463
1974	5	-0.027368	-0.023438	-0.04	-0.018667
1974	9	-0.086207	0.070755	-0.147489	-0.157895
1975	1	0.275	-0.061176	0.06383	-0.02
1975	5	-0.012653	0.094737	-0.115385	-0.067826
1975	9	0.011905	0.	-0.002824	0.060241
1976	1	0.261364	-0.047207	0.048077	0.12844
1976	5	-0.018211	-0.016807	0.025641	-0.002
1976	9	-0.016949	0.008621	-0.044786	0.1
1977	1	0.140496	0.012754	0.043478	0.027778
1977	5	0.092973	0.075	0.069767	-0.016304
1977	9	-0.027933	0.011494	0.028409	0.005587
1978	1	-0.105556	-0.024845	0.135484	0.153409
1978	5	0.073892	-0.046296	0.004854	0.099324
1978	9	-0.044444	-0.111628	-0.01801	0.032432
1979	1	0.21466	0.052586	0.294606	-0.048077
1979	5	0.041077	0.	0.084967	0.408434
1979	9	-0.107759	-0.091787	0.041489	0.

MR3H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.102969	-0.02961	-0.023836	0.098819
1968	5	0.061925	0.042285	0.036389	0.069799
1968	9	0.01871	0.040864	0.074539	-0.008943
1969	1	-0.022751	-0.081492	0.040886	0.041284
1969	5	-0.006641	-0.114356	-0.045809	0.051693
1969	9	-0.040722	0.076877	-0.025941	-0.050854
1970	1	-0.030931	0.035436	0.054387	-0.104242
1970	5	-0.090722	-0.02897	0.006802	0.102192
1970	9	0.001716	-0.024024	0.107908	0.052629
1971	1	0.096611	-0.049436	0.019087	0.065802
1971	5	-0.028689	-0.029134	0.003097	0.047244
1971	9	-0.052604	-0.098189	-0.04343	0.129216
1972	1	0.023494	0.001259	0.018562	0.026405
1972	5	0.003485	-0.041921	0.043097	0.026863
1972	9	-0.011394	-0.016067	0.069278	-0.041777
1973	1	-0.085515	-0.056984	-0.04122	-0.026189
1973	5	-0.067108	-0.073393	0.120722	-0.075686
1973	9	0.074437	0.06373	-0.200476	-0.014983
1974	1	0.112304	-0.006583	-9.900006E-05	-0.047853
1974	5	-0.023004	-0.028129	-0.024552	-0.081796
1974	9	-0.077269	0.093632	-0.055156	-0.063037
1975	1	0.161948	0.024869	0.059378	-0.056911
1975	5	0.082531	0.116459	-0.048322	-0.026845
1975	9	-0.063359	-0.000174	0.053948	-0.011067
1976	1	0.172434	0.088135	0.064119	-0.027384
1976	5	-0.023417	0.081056	0.065261	-0.001209
1976	9	-0.001409	0.009444	-0.005785	0.10263
1977	1	0.029776	0.018614	0.045342	-0.012171
1977	5	-0.006481	0.01799	0.054296	0.02871
1977	9	-0.020196	-0.041386	0.022152	0.049987
1978	1	-0.036031	0.009727	0.064937	0.053813
1978	5	0.042676	-0.022787	0.032145	0.095578
1978	9	-0.006742	-0.149066	-0.044948	0.054948
1979	1	0.196592	-0.079573	0.1[illegible]633	0.009194
1979	5	-0.042319	0.042529	0.0 [illegible]682	0.139934
1979	9	-0.079647	0.044557	0.013506	0.043941

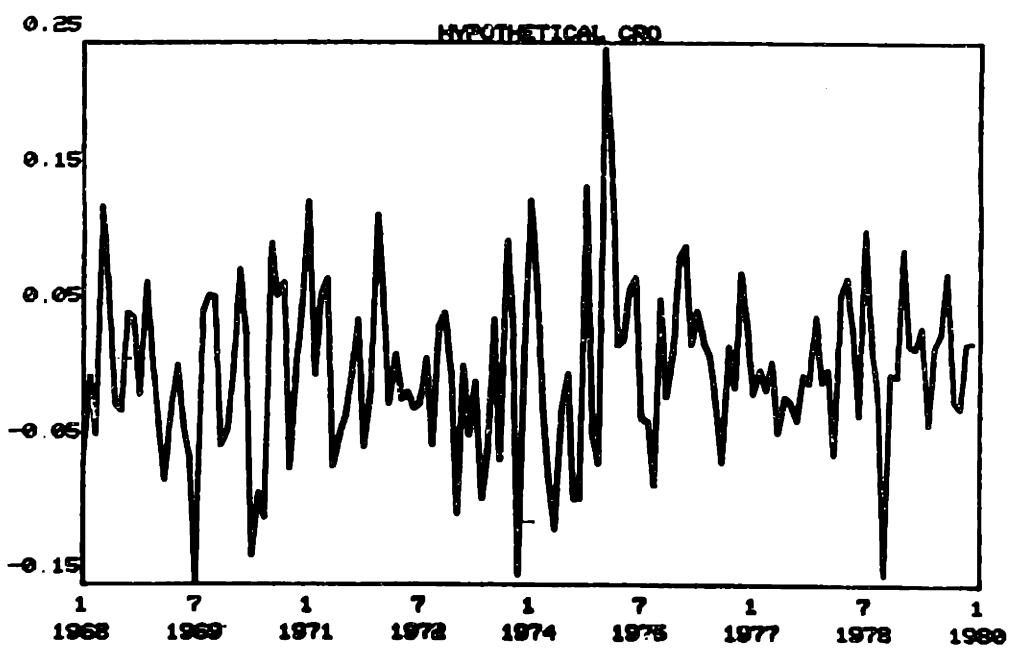
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR4

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR4H

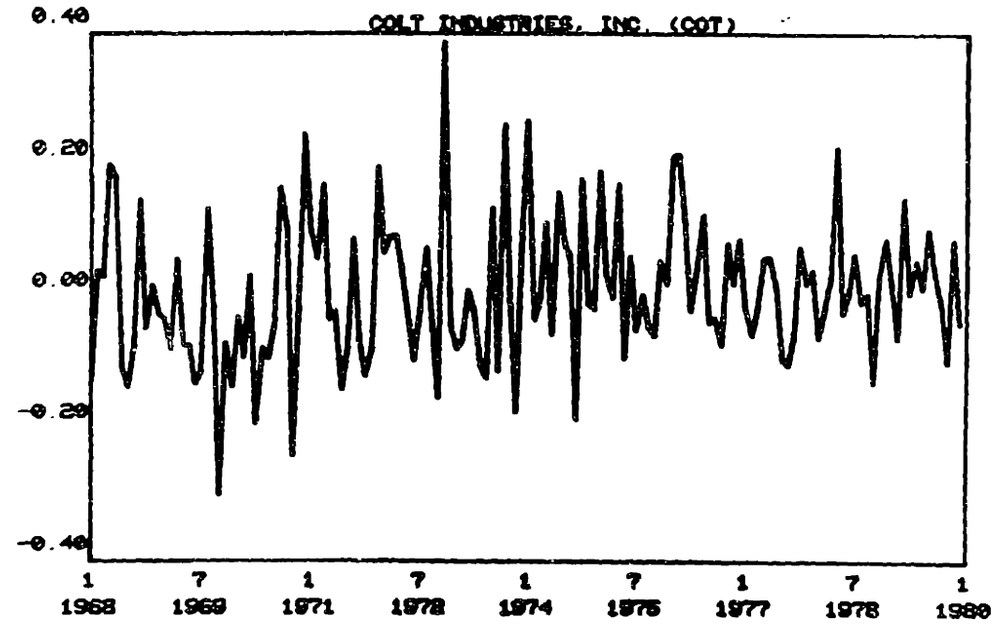
MR4 DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.01279	0.113636	-0.218519	0.225338
1968	5	0.020588	0.08044	-0.046414	0.128065
1968	9	0.055556	-0.003421	0.090909	-0.105431
1969	1	0.032143	-0.03367	0.022436	-0.00038
1969	5	-0.09041	-0.225352	-0.023256	0.17757
1969	9	-0.146825	0.268293	-0.11371	0.024896
1970	1	-0.137652	0.037736	-0.110182	-0.14433
1970	5	-0.115152	-0.153685	-0.008065	0.052377
1970	9	0.24031	-0.1125	-0.056738	0.12782
1971	1	0.166667	0.034483	-0.033333	0.005747
1971	5	-0.00046	0.0325	-0.092561	0.141692
1971	9	-0.028402	-0.07362	-0.086093	0.110145
1972	1	0.184211	0.027778	-0.020541	-0.033333
1972	5	-0.068965	-0.02963	-0.089744	0.070423
1972	9	-0.064474	0.045645	0.013514	0.014667
1973	1	-0.099338	-0.073529	0.02381	-0.044761
1973	5	-0.147541	-0.055769	0.072165	-0.067308
1973	9	0.076289	0.048544	-0.240741	0.17561
1974	1	0.094737	-0.043077	0.00404	-0.102041
1974	5	-0.022727	-0.006977	-0.047619	-0.025
1974	9	-0.058974	0.	-0.027778	-0.037143
1975	1	0.287879	0.058824	-0.051111	0.035714
1975	5	0.114943	0.086598	-0.057692	-0.071429
1975	9	-0.028571	-0.034483	-0.047619	-0.0325
1976	1	0.263158	0.0625	0.033333	-0.038462
1976	5	0.07	0.025047	0.101852	-0.02521
1976	9	-0.045862	-0.045872	0.067308	0.087207
1977	1	0.07563	-0.03125	0.061935	-0.015385
1977	5	-0.007813	0.055118	-0.060606	0.008065
1977	9	-0.032	0.053824	0.	-0.015873
1978	1	0.008065	0.04878	0.155039	0.061224
1978	5	-0.038462	0.1	-0.042945	0.025641
1978	9	0.12625	-0.286517	0.102362	-0.098571
1979	1	0.314516	-0.098159	-0.019048	0.021127
1979	5	0.048276	0.060526	0.09434	0.022989
1979	9	0.046067	-0.108696	0.060976	0.070115

MR4H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.053702	0.004781	-0.037901	0.129658
1968	5	0.072084	-0.016346	-0.021004	0.051352
1968	9	0.047539	-0.003794	0.074042	0.016498
1969	1	-0.031431	-0.072895	-0.015473	0.012337
1969	5	-0.033068	-0.056138	-0.14892	0.051703
1969	9	0.064377	0.062131	-0.046693	-0.03472
1970	1	0.014375	0.082968	0.03399	-0.128285
1970	5	-0.082381	-0.100114	0.102453	0.062915
1970	9	0.072968	-0.064155	0.007603	0.057814
1971	1	0.13327	0.005752	0.064769	0.076231
1971	5	-0.062654	-0.038345	-0.02315	0.008071
1971	9	0.045737	-0.047	-0.003844	0.123344
1972	1	0.062836	-0.015449	0.019892	-0.012334
1972	5	-0.007258	-0.018444	-0.015503	0.016825
1972	9	-0.045814	0.041645	0.050635	0.004777
1973	1	-0.09719	0.011858	-0.03802	0.000437
1973	5	-0.085745	-0.047956	0.046154	-0.056297
1973	9	0.104375	0.047321	-0.141979	0.019962
1974	1	0.133843	0.067735	-0.021778	-0.073148
1974	5	-0.108912	-0.017498	0.00681	-0.085943
1974	9	-0.086023	0.143765	-0.038307	-0.059286
1975	1	0.245692	0.177361	0.026525	0.03107
1975	5	0.068285	0.076966	-0.025889	-0.029378
1975	9	-0.075940	0.061186	-0.010442	0.02205
1976	1	0.092936	0.109194	0.028014	0.062508
1976	5	0.028713	0.019436	-0.016149	-0.059052
1976	9	0.026052	-0.002421	0.080642	0.04103
1977	1	-0.007652	0.009729	-0.004617	0.014966
1977	5	-0.036714	-0.010471	-0.014218	-0.027301
1977	9	0.005765	-0.006712	0.048251	7.200000E 05
1978	1	0.009702	-0.05239	0.065273	0.077016
1978	5	0.035763	0.027707	0.112217	0.026896
1978	9	-0.012044	-0.145081	0.006374	0.004809
1979	1	0.092053	0.024709	0.024892	0.040105
1979	5	-0.010401	0.026518	0.03652	0.080974
1979	9	-0.013486	-0.018704	0.028014	0.029159

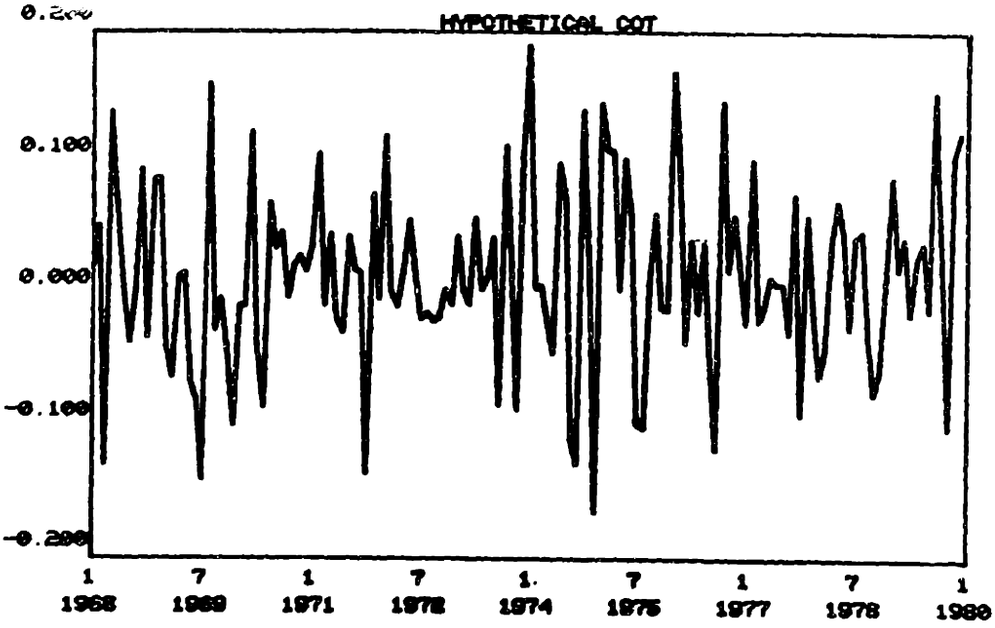
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRS

Rate o
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: FRSH

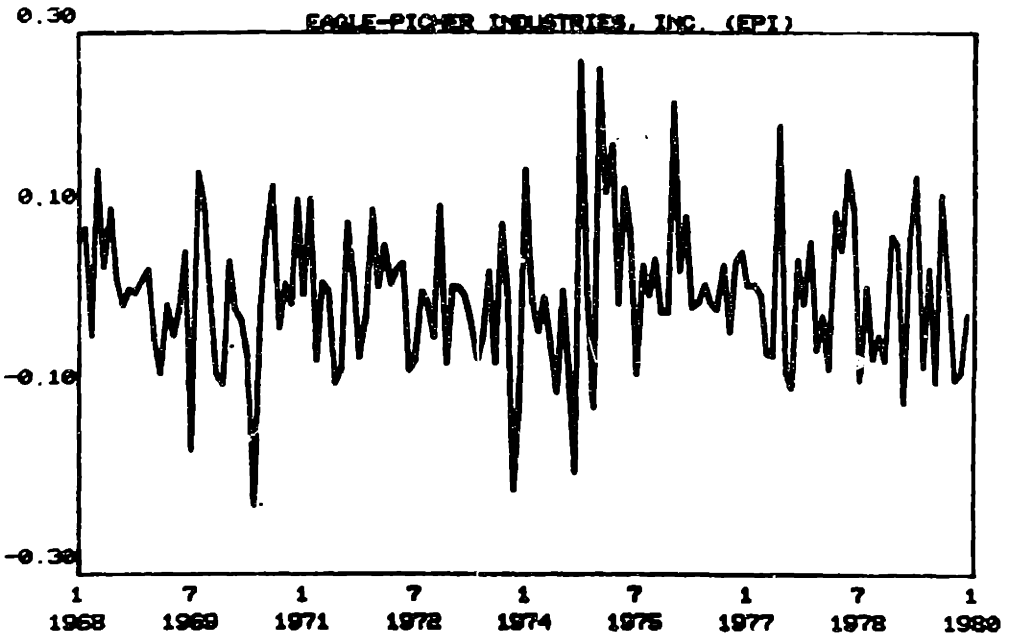
MR5 - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.125368	0.04138	0.03223	0.20171
1968	5	0.180714	-0.10758	-0.133677	-0.070313
1968	9	0.110319	-0.045672	0.017306	-0.025531
1969	1	-0.038074	-0.07347	0.058952	-0.072464
1969	5	-0.071429	-0.12963	0.111111	0.134328
1969	9	-0.019204	-0.29341	-0.068548	-0.134199
1970	1	-0.030303	-0.033582	0.034286	-0.109944
1970	5	-0.075362	-0.089552	-0.041667	0.165217
1970	9	0.104478	-0.238726	-0.009009	0.245455
1971	1	0.103704	0.060403	0.170886	-0.032787
1971	5	-0.022599	-0.138728	-0.07483	0.088235
1971	9	-0.068216	-0.116758	-0.07438	0.198214
1972	1	0.067369	0.091549	0.091613	0.035714
1972	5	-0.028736	-0.093491	-0.019737	0.073825
1972	9	-0.0425	-0.151316	0.387597	-0.043575
1973	1	-0.076471	-0.063694	0.009524	-0.020408
1973	5	-0.104167	-0.12093	0.133929	-0.110236
1973	9	0.260177	-0.007092	-0.171429	0.086207
1974	1	0.266129	-0.031847	0.	0.113333
1974	5	-0.053892	0.158228	0.082873	0.061224
1974	9	-0.182692	0.178571	-0.010101	-0.015306
1975	1	0.190476	0.035556	0.	0.170306
1975	5	-0.089552	0.061475	-0.047059	0.004115
1975	9	-0.045082	-0.056769	0.055556	0.02193
1976	1	0.213974	0.215827	0.115385	-0.010767
1976	5	0.04918	0.125	-0.037383	-0.031553
1976	9	-0.070175	0.081967	0.022727	0.088889
1977	1	-0.013761	-0.055814	-0.012315	0.060606
1977	5	0.061905	0.015695	-0.091518	-0.100737
1977	9	-0.057377	0.076471	0.021858	0.041444
1978	1	-0.059896	-0.019391	0.032486	0.227778
1978	5	-0.024208	0.007059	0.065421	-0.006579
1978	9	0.007285	-0.126667	0.034351	0.089299
1979	1	0.017182	-0.060811	0.151079	0.006349
1979	5	0.056782	0.014925	0.104478	0.040541
1979	9	-0.01039	-0.095745	0.088235	-0.037838

MR5H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.022071	0.053676	-0.127509	0.140485
1968	5	0.069182	0.003269	-0.034305	0.004901
1968	9	0.096241	-0.03111	0.089123	0.09015
1969	1	-0.037926	-0.0608	0.015236	0.017891
1969	5	-0.064232	-0.078475	-0.138947	0.160686
1969	9	-0.02545	-0.002251	-0.039837	-0.097194
1970	1	-0.00611	-0.007116	0.124674	-0.039242
1970	5	-0.083873	0.071032	0.036655	0.048491
1970	9	-0.001194	0.024517	0.03089	0.019609
1971	1	0.038981	0.108273	-0.006782	0.046855
1971	5	-0.016811	-0.026761	0.045444	0.020243
1971	9	0.01792	-0.134491	0.076946	-0.002056
1972	1	0.121452	0.003475	-0.006855	0.020333
1972	5	0.057341	0.018006	-0.016783	-0.012615
1972	9	-0.018682	-0.015897	0.004586	-0.005706
1973	1	0.044735	0.004241	-0.005454	0.05845
1973	5	0.005378	0.014345	0.044682	-0.08131
1973	9	0.114171	0.024743	-0.084621	0.107434
1974	1	0.190113	0.006553	0.00761	-0.018485
1974	5	-0.041747	0.100549	0.073592	-0.107932
1974	9	-0.127249	0.14099	0.011027	-0.163354
1975	1	0.146289	0.112091	0.109467	0.005695
1975	5	0.104307	0.058086	-0.096248	-0.098947
1975	9	0.012299	0.062318	-0.008251	-0.00963
1976	1	0.176121	0.09597	-0.034717	0.042511
1976	5	-0.011679	0.040502	-0.048178	-0.115755
1976	9	0.148108	0.019925	0.060661	0.021582
1977	1	-0.019708	0.103535	-0.019646	-0.006446
1977	5	0.015128	0.009239	0.009311	-0.027666
1977	9	0.076822	-0.088743	0.061142	-0.01118
1978	1	-0.060442	-0.040356	0.042496	0.07199
1978	5	0.047179	-0.024184	0.044981	0.049327
1978	9	-0.026456	-0.077179	-0.055283	0.020914
1979	1	0.090822	0.020758	0.04464	-0.013224
1979	5	0.030952	0.040984	-0.009443	0.15532
1979	9	0.021474	-0.098699	0.106644	0.124416

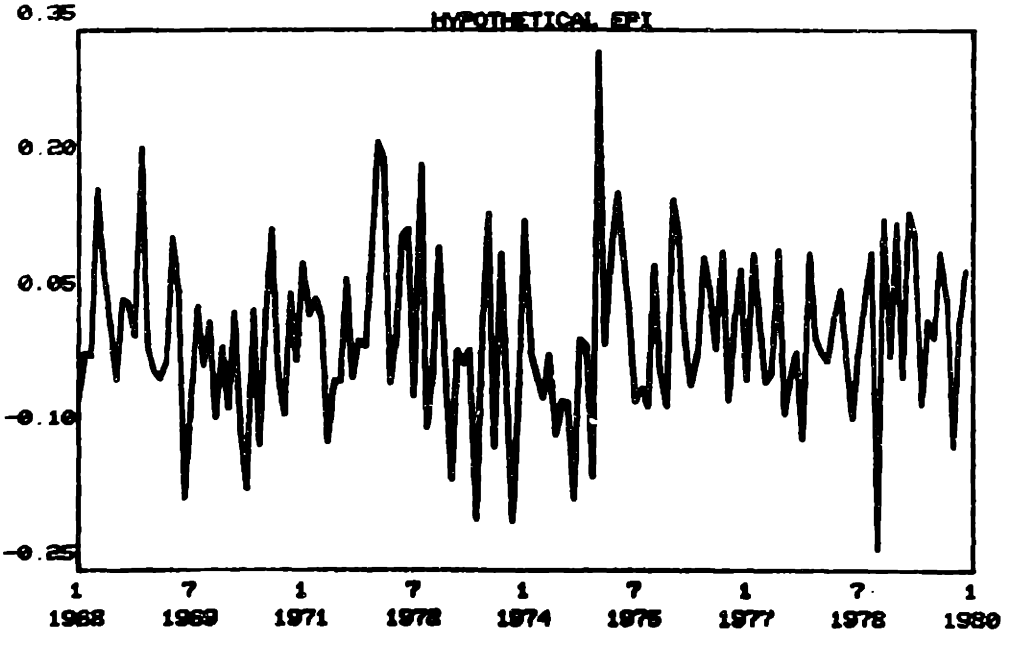
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRS

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

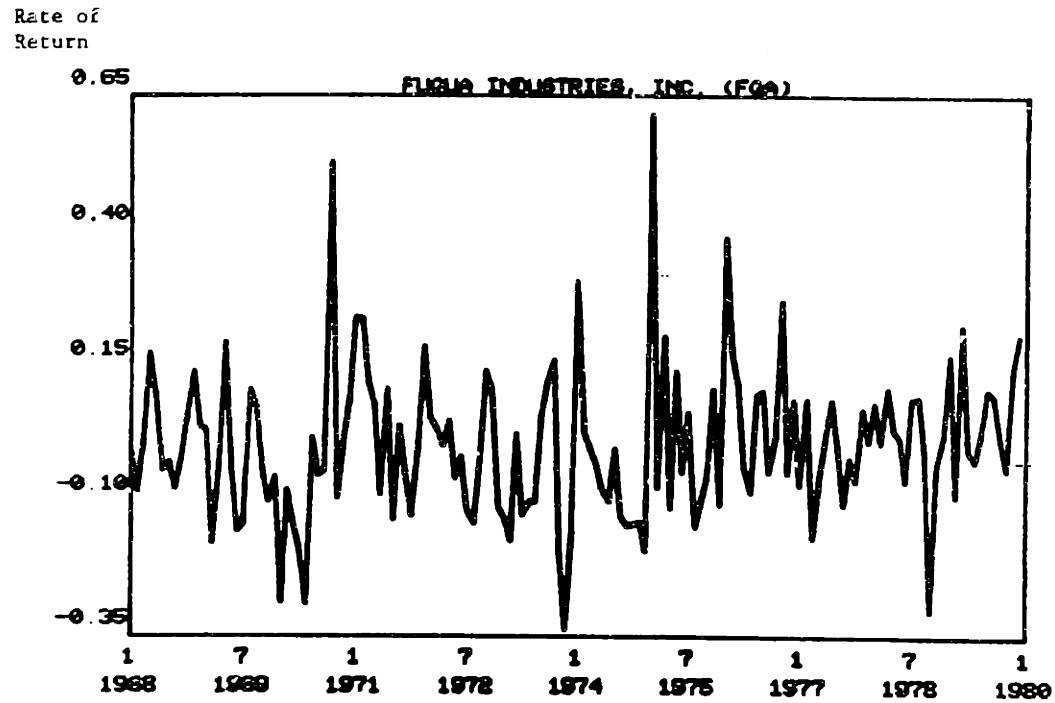
DATA NAMES: MRSH

MR6 - DATE REVISED: 5/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.071207	0.036477	-0.034853	0.15
1968	5	0.041546	0.107477	0.025316	-0.001646
1968	9	0.016598	0.012245	0.026613	0.039526
1969	1	-0.039023	-0.07668	0.	-0.034483
1969	5	-0.00625	0.058824	-0.162304	0.145919
1969	9	0.112108	0.204632	-0.07791	-0.087719
1970	1	0.048077	-0.006422	-0.018605	-0.056872
1970	5	-0.223116	-0.006536	0.078947	0.131707
1970	9	-0.227174	0.022346	-0.001093	0.116022
1971	1	0.209901	0.116667	-0.06194	0.023585
1971	5	0.212903	-0.087156	-0.070352	0.090811
1971	9	0.03	-0.058252	-0.01134	0.105263
1972	1	0.019048	0.064822	0.022124	0.038961
1972	5	0.0453	-0.072289	-0.060606	0.013235
1972	9	0.	-0.036697	0.108914	-0.064935
1973	1	0.018519	0.017927	0.009009	-0.017857
1973	5	-0.059345	-0.034146	0.035354	-0.063688
1973	9	0.039474	0.009662	-0.20601	-0.097561
1974	1	0.148649	0.000471	-0.029762	0.006135
1974	5	-0.042195	-0.096774	0.014286	-0.076901
1974	9	-0.136047	0.266667	0.000602	-0.114504
1975	1	0.258621	0.123836	0.174691	0.
1975	5	0.12763	0.07772	-0.076923	0.042083
1975	9	0.010101	0.05	-0.009143	-0.009709
1976	1	0.220588	0.03743	0.097656	-0.003559
1976	5	0.001143	0.021553	0.	-0.005915
1976	9	0.042857	-0.030822	0.047067	0.057823
1977	1	0.019293	0.021199	0.009346	-0.055556
1977	5	-0.056471	0.195804	-0.076023	-0.092658
1977	9	0.049296	0.	0.06953	-0.050633
1978	1	-0.013333	-0.070811	0.102941	0.06
1978	5	0.147925	0.104972	-0.085	0.019235
1978	9	-0.059459	-0.034483	-0.061905	0.076923
1979	1	0.065476	-0.10838	0.075949	0.141176
1979	5	-0.068247	0.039106	-0.086021	0.122118
1979	9	0.015873	-0.083333	-0.075227	-0.012422

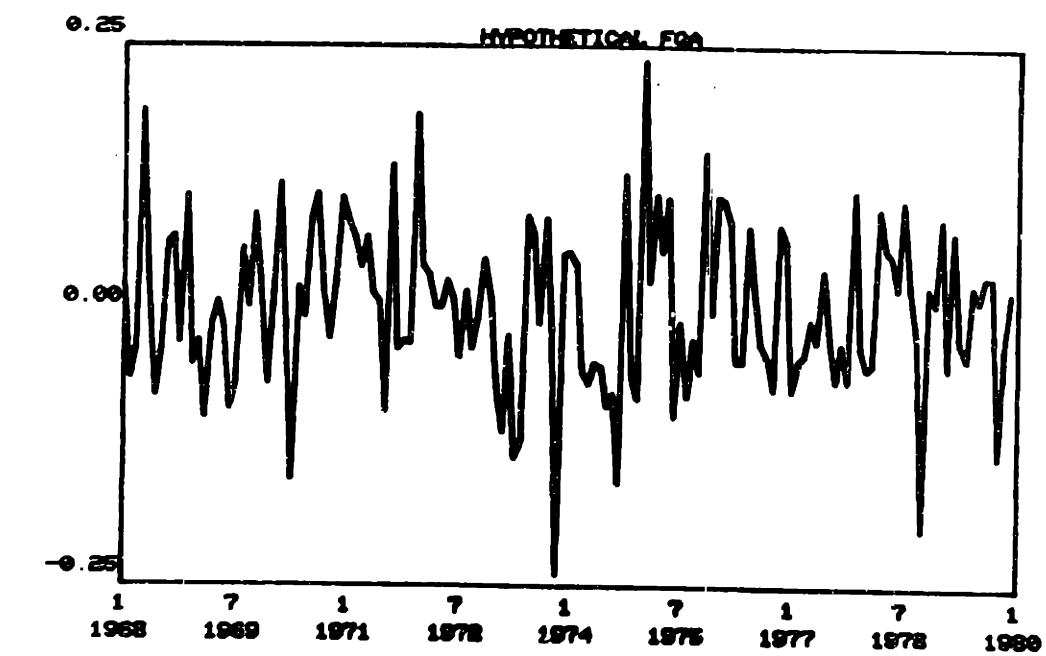
MR6H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.658179	-0.006136	-0.010929	0.174026
1968	5	0.090176	0.022976	-0.036612	0.052845
1968	9	0.048588	0.011681	0.219442	0.002676
1969	1	-0.026669	-0.035521	-0.016988	0.11958
1969	5	0.06132	-0.167215	-0.070857	0.044858
1969	9	-0.020908	0.027899	-0.08059	-0.000952
1970	1	-0.068453	0.037758	-0.093175	-0.157532
1970	5	0.0408	-0.109761	0.03328	0.129449
1970	9	-0.034911	-0.075797	0.05825	-0.014831
1971	1	0.091583	0.03527	0.05231	0.032489
1971	5	-0.105969	-0.037732	-0.038473	0.074775
1971	9	-0.034822	0.005693	0.000987	0.098621
1972	1	0.225443	0.206704	-0.04011	0.011294
1972	5	0.122325	0.129409	-0.055669	0.200147
1972	9	-0.089991	-0.026696	0.10902	-0.029789
1973	1	-0.147627	-0.00347	-0.01919	-0.003579
1973	5	-0.139945	0.019074	0.14599	-0.111151
1973	9	0.102172	-0.04225	-0.194012	-0.060856
1974	1	0.138507	-0.007423	-0.034678	-0.057284
1974	5	-0.009293	-0.098544	-0.061725	-0.063073
1974	9	-0.167555	0.009041	0.000261	-0.143571
1975	1	0.324029	0.002489	0.103681	0.16921
1975	5	0.101442	0.033964	-0.061808	-0.047099
1975	9	-0.066191	0.089732	-0.026159	-0.066467
1976	1	0.16084	0.119278	0.007063	-0.042568
1976	5	-0.037852	0.097147	0.064196	-0.00222
1976	9	0.103467	-0.059437	0.026975	0.085077
1977	1	-0.036612	0.101719	0.025281	-0.039205
1977	5	-0.059178	0.106149	-0.07566	-0.033624
1977	9	-0.076635	-0.102597	0.102783	0.008029
1978	1	-0.07713	-0.015046	-0.036179	0.063591
1978	5	-0.013914	-0.079642	-0.004991	0.057306
1978	9	0.104046	-0.224413	0.140813	-0.011065
1979	1	0.15624	-0.014277	0.140857	0.122615
1979	5	-0.037775	0.030522	0.009677	0.163846
1979	9	0.050248	-0.111622	0.02852	0.085119



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR7



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

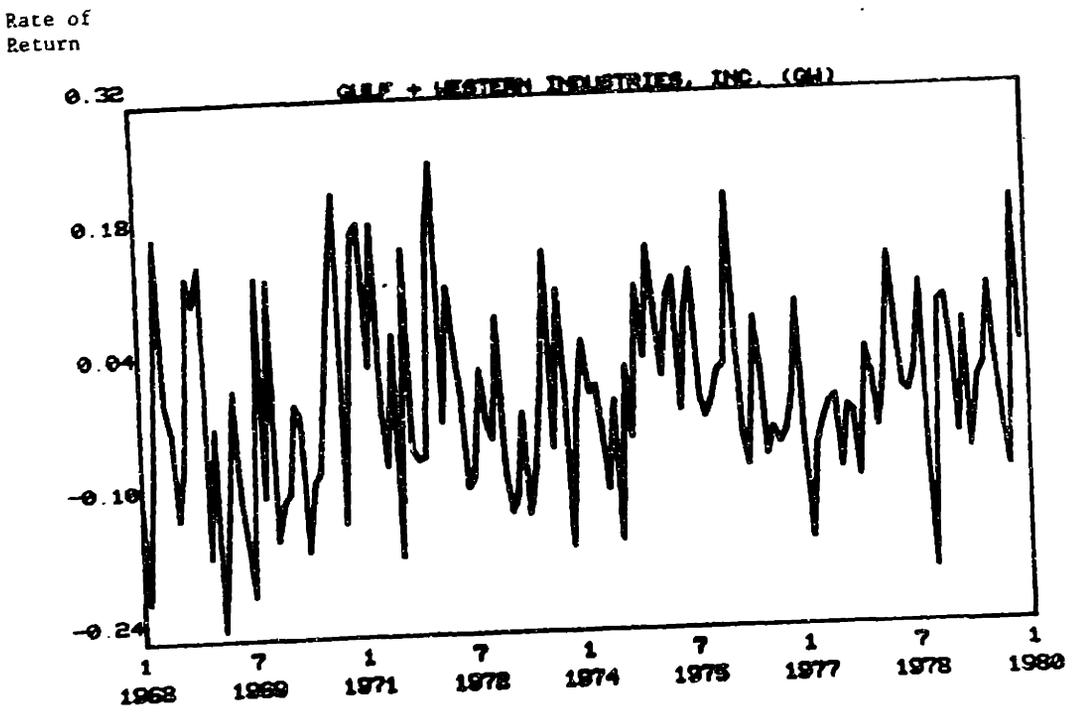
DATA NAMES: MR7H

MR7 - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.00 174	-0.07389[illegible]	0.01501	0.178295
1968	5	0.09[illegible]84	-0.040717	-0.025	-0.073718
1968	9	-0.01[illegible]22	0.060071	0.143333	0.039067
1969	1	0.037708	-0.175913	-0.029605	0.19[illegible]81
1969	5	-0.02[illegible]96	-0.151163	-0.138014	0.108871
1969	9	0.076364	-0.057162	-0.090105	-0.051587
1970	1	-0.284519	-0.076023	-0.137941	-0.183824
1970	5	-0.286288	0.02	-0.050633	-0.04
1970	9	0.527778	-0.090909	0.0098	0.090909
1971	1	0.240741	0.238806	0.120482	0.080645
1971	5	-0.084577	0.108696	-0.13	0.04023
1971	9	-0.044199	-0.121503	0.006711	0.186667
1972	1	0.05618	0.037234	0.005128	0.05102
1972	5	-0.053398	-0.018615	-0.111702	-0.137725
1972	9	-0.020833	0.142979	0.107595	-0.108571
1973	1	-0.128205	-0.169118	0.026549	-0.12069
1973	5	-0.098039	-0.097826	0.060241	0.125
1973	9	0.161616	-0.191304	-0.333333	-0.16129
1974	1	0.307692	0.029412	0.	-0.028571
1974	5	-0.073529	-0.095238	0.	-0.122807
1974	9	-0.14	-0.139535	-0.135135	-0.1875
1975	1	0.615385	-0.071429	0.205128	-0.106383
1975	5	0.142857	-0.041667	0.065217	-0.142857
1975	9	-0.095238	-0.052632	0.111111	-0.1
1976	1	0.388389	0.18	0.118644	-0.030303
1976	5	-0.078125	0.101695	0.107692	-0.041667
1976	9	0.023768	0.271429	-0.044944	0.089882
1977	1	-0.065217	0.093023	-0.162553	-0.064103
1977	5	0.013699	0.090811	0.	-0.1
1977	9	-0.017778	-0.057143	0.072727	0.014286
1978	1	0.084507	0.012987	0.112821	0.034884
1978	5	0.022472	-0.057143	0.094118	0.096774
1978	9	-0.011765	-0.3	-0.028571	0.026471
1979	1	0.173913	-0.08642	0.228108	0.
1979	5	-0.022222	0.032727	0.111111	0.1
1979	9	0.017091	-0.036036	0.149533	0.210406

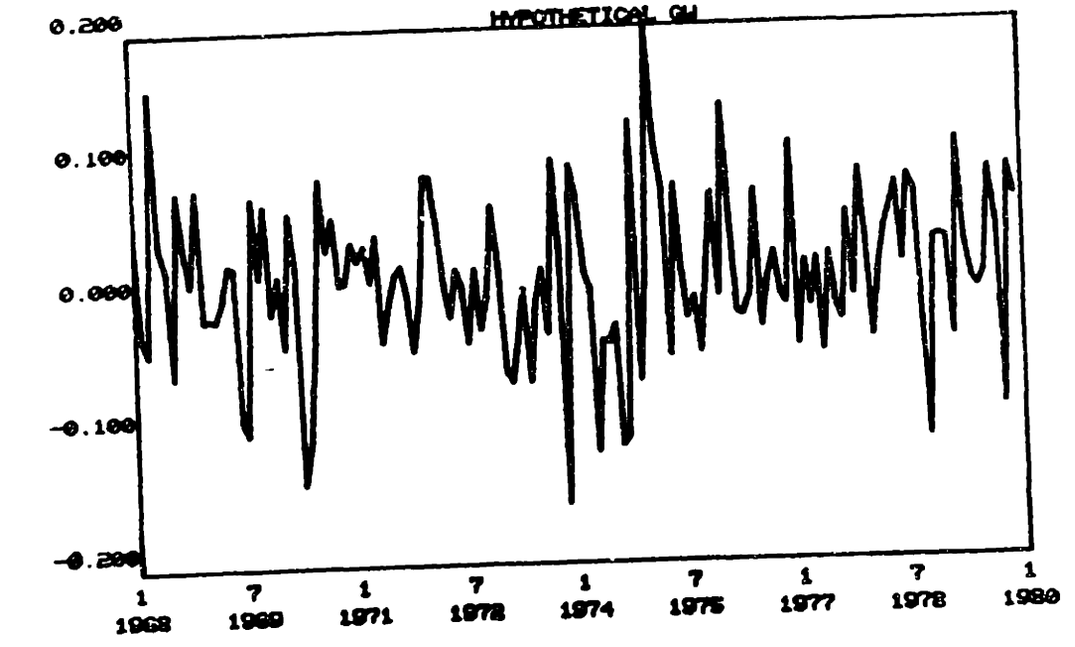
MR7H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.030058	-0.056559	-0.027485	0.190161
1968	5	0.032566	-0.072625	-0.029311	0.068167
1968	9	0.074254	-0.023199	0.112008	-0.043256
1969	1	-0.020861	-0.093263	-0.006278	0.013484
1969	5	-0.010313	-0.084588	-0.058899	0.062372
1969	9	0.009609	0.094179	0.025709	-0.060795
1970	1	0.02575	0.123206	-0.011167	-0.151334
1970	5	0.027427	0.000842	0.090285	0.114007
1970	9	0.020906	-0.018237	0.03305	0.110403
1971	1	0.089582	0.072326	0.045617	0.073316
1971	5	0.021082	0.012494	-0.086262	0.140921
1971	9	-0.029154	-0.021234	-0.023405	0.185945
1972	1	0.045837	0.039498	0.009876	0.009269
1972	5	0.032459	0.016569	-0.035484	0.023409
1972	9	-0.027682	0.003[illegible]76	0.052281	0.016991
1973	1	-0.066164	-0.105734	-0.016125	-0.13068
1973	5	-0.114562	0.092287	0.075268	-0.005288
1973	9	0.090442	-0.011723	-0.237575	0.05685
1974	1	0.059401	0.047453	-0.049714	-0.060047
1974	5	-0.041898	-0.044657	-0.080994	-0.070866
1974	9	-0.153222	0.132192	-0.055173	-0.074315
1975	1	0.236706	0.033021	0.112811	0.060866
1975	5	0.110579	-0.090117	-0.004695	-0.071933
1975	9	-0.019583	-0.049116	0.151731	0.004441
1976	1	0.112037	0.108226	0.08891	-0.039006
1976	5	-0.039348	0.083438	0.021711	-0.023356
1976	9	-0.035331	-0.065259	0.084971	0.070007
1977	1	-0.065443	-0.037916	-0.032327	-0.002261
1977	5	-0.029751	0.043387	-0.014646	-0.057428
1977	9	-0.024355	-0.057427	0.117402	-0.02584
1978	1	-0.045736	-0.041588	0.100436	0.063604
1978	5	0.056935	0.026593	0.108548	0.025337
1978	9	-0.014837	-0.194791	0.027514	0.013741
1979	1	0.091308	-0.045325	0.079158	-0.020084
1979	5	-0.036866	0.029605	0.016545	0.030299
1979	9	0.037409	-0.127893	0.0258	0.023793



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRB



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

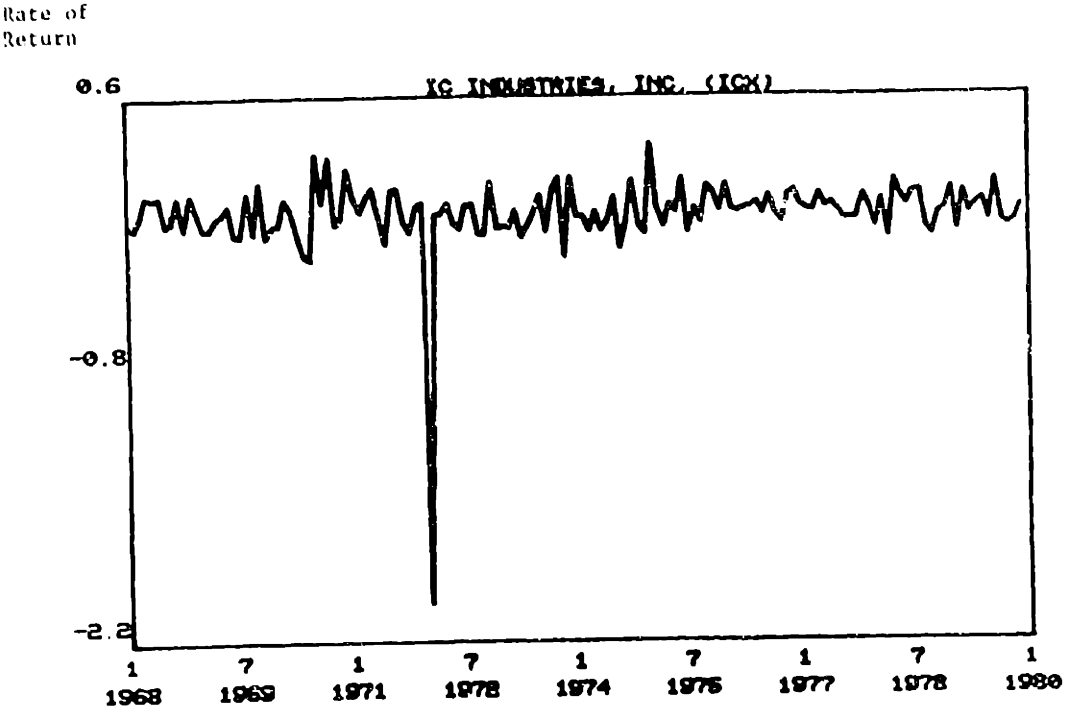
DATA NAMES: MRBH

MR[illegible] DATE REVISED: [illegible]
MONTHLY DATA FROM [illegible] TO [illegible]

1968	1	0.[illegible]	[illegible]	[illegible]	[illegible]
1968	5	0.01[illegible]	-0.0[illegible]	0.11[illegible]	0.0[illegible]
1968	9	0.1[illegible]	0.11[illegible]	0.[illegible]	-0.1[illegible]
1969	1	-0.01[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1969	5	0.[illegible]	0.1[illegible]	-0.1[illegible]	0.1[illegible]
1969	9	0.050909	0.14[illegible]	-0.14[illegible]	0.0[illegible]
1970	1	-0.08[illegible]	0.09[illegible]	-0.09[illegible]	0.14[illegible]
1970	5	0.0[illegible]	-0.0[illegible]	0.040404	0.13[illegible]
1970	9	0.2[illegible]	-0.11[illegible]	0.056	0.10[illegible]
1971	1	0.193648	0.043283	0.192700	0.00[illegible]
1971	5	-0.06087	0.03[illegible]	-0.1[illegible]	0.1[illegible]
1971	9	-0.04[illegible]	0.0[illegible]	-0.[illegible]	0.1[illegible]
1972	1	0.[illegible]	0.01[illegible]	0.12[illegible]	0.07[illegible]
1972	5	0.009063	0.0[illegible]	0.0[illegible]	0.01[illegible]
1972	9	-0.01[illegible]	-0.0[illegible]	0.[illegible]	0.02[illegible]
1973	1	-0.113139	0.05[illegible]	-0.[illegible]	-0.11[illegible]
1973	5	-0.06[illegible]	0.02[illegible]	0.15[illegible]	0.047606
1973	9	0.1[illegible]	0.0101	-0.14[illegible]	0.
1974	1	0.[illegible]	0.009901	0.016064	-0.02[illegible]
1974	5	-0.052	0.	-0.144444	0.03636[illegible]
1974	9	-0.03[illegible]	0.118421	0.645882	-0.15[illegible]
1975	1	0.06[illegible]	0.02[illegible]	0.107143	0.1[illegible]
1975	5	-0.016036	0.09[illegible]	0.133333	0.0[illegible]
1975	9	-0.017751	0.	0.03012[illegible]	0.036257
1976	1	0.2[illegible]	0.06[illegible]	-0.039024	-0.071066
1976	5	0.001967	0.[illegible]	-0.059406	-0.031579
1976	9	-0.04[illegible]	-0.03[illegible]	0.001493	0.027744
1977	1	-0.041096	-0.147714	-0.050847	-0.026706
1977	5	-0.006[illegible]	0.	-0.074766	-0.010101
1977	9	-0.017143	-0.08[illegible]	0.049655	0.0[illegible]
1978	1	-0.032609	0.02[illegible]	0.146374	0.067961
1978	5	0.009091	0.[illegible]	0.027273	0.115044
1978	9	-0.06[illegible]	-0.[illegible]	0.094737	0.1
1979	1	0.044048	-0.042373	0.075221	-0.058333
1979	5	0.017699	0.036439	0.111111	0.030769
1979	9	-0.033582	-0.078125	0.26339	0.052817

MR8H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.041484	-0.037197	-0.038078	0.15919
1968	5	0.042499	0.024432	-0.[illegible]461	0.[illegible]074
1968	9	0.05901	0.013179	0.[illegible]866	-0.014391
1969	1	-0.[illegible]786	-0.014224	0.001915	0.027842
1969	5	0.02518	-0.089851	-0.098693	0.077195
1969	9	0.018388	0.070904	-0.009646	0.018239
1970	1	-0.035351	0.064514	0.022899	-0.137682
1970	5	-0.104367	-0.02757	0.089525	0.037723
1970	9	0.060645	0.011215	0.013434	0.042744
1971	1	0.029249	0.037403	0.013006	0.047045
1971	5	-0.031903	-0.003755	0.017538	0.024154
1971	9	0.003236	-0.039806	-0.001230	0.090231
1972	1	0.089491	0.055762	0.008088	-0.014315
1972	5	0.020812	0.007764	-0.033558	0.020766
1972	9	-0.023809	0.000792	0.067338	0.018091
1973	1	-0.055444	-0.063341	-0.034239	0.005529
1973	5	-0.063246	-0.002464	0.021194	-0.027575
1973	9	0.101056	0.033563	-0.155605	0.096471
1974	1	0.073977	0.016988	0.003618	-0.115735
1974	5	-0.034175	-0.035369	-0.022592	-0.111611
1974	9	-0.103819	0.129283	-0.063804	0.017131
1975	1	0.190125	0.114774	0.076212	-0.045953
1975	5	0.080761	0.018915	-0.017526	-0.007654
1975	9	-0.043923	0.018929	0.073497	-0.00695[illegible]
1976	1	0.140104	0.053042	-0.013708	-0.016137
1976	5	-0.001930	0.075436	-0.025548	0.010253
1976	9	0.030278	-0.001514	-0.0[illegible]262	0.110711
1977	1	-0.039428	0.023939	-0.006419	0.004501
1977	5	-0.044021	0.026701	-0.009987	-0.020661
1977	9	0.05[illegible]72	-0.00[illegible]501	0.05[illegible]089	0.038[illegible]
1978	1	-0.03448	0.01744	0.047477	0.061427
1978	5	0.0789	0.022121	0.004622	0.[illegible]4437
1978	9	-0.05[illegible]46	-0.108947	0.019217	0.040744
1979	1	0.038981	-0.034679	0.111393	0.036706
1979	5	0.007420	0.001[illegible]	0.014427	0.0[illegible]649
1979	9	0.048613	-0.00641	0.090951	0.[illegible]8923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IC INDUSTRIES, INC. (ICX)
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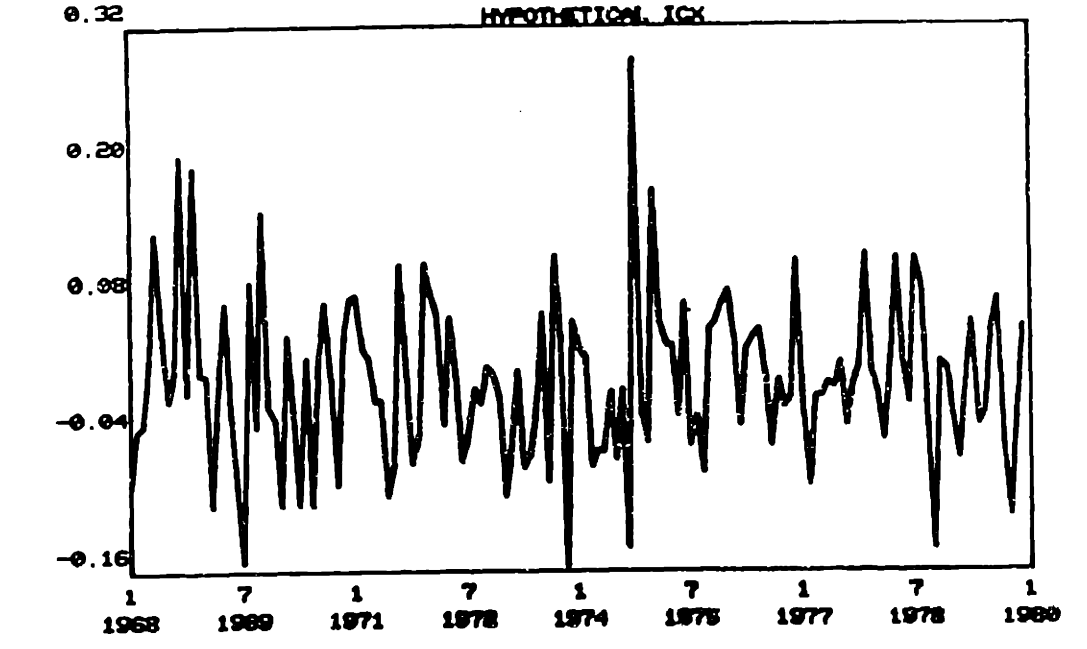
-2.2
1 1968
7 1969
1 1971
7 1972
1 1974
7 1975
1 1977
7 1978
1 1980
TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER
DATA NAMES: MRB


Rate of Return
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HYPOTHETICAL ICX
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-0.16
1 1968
7 1969
1 1971
7 1972
1 1974
7 1975
1 1977
7 1978
1 1980
TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER
DATA NAMES: MRBH

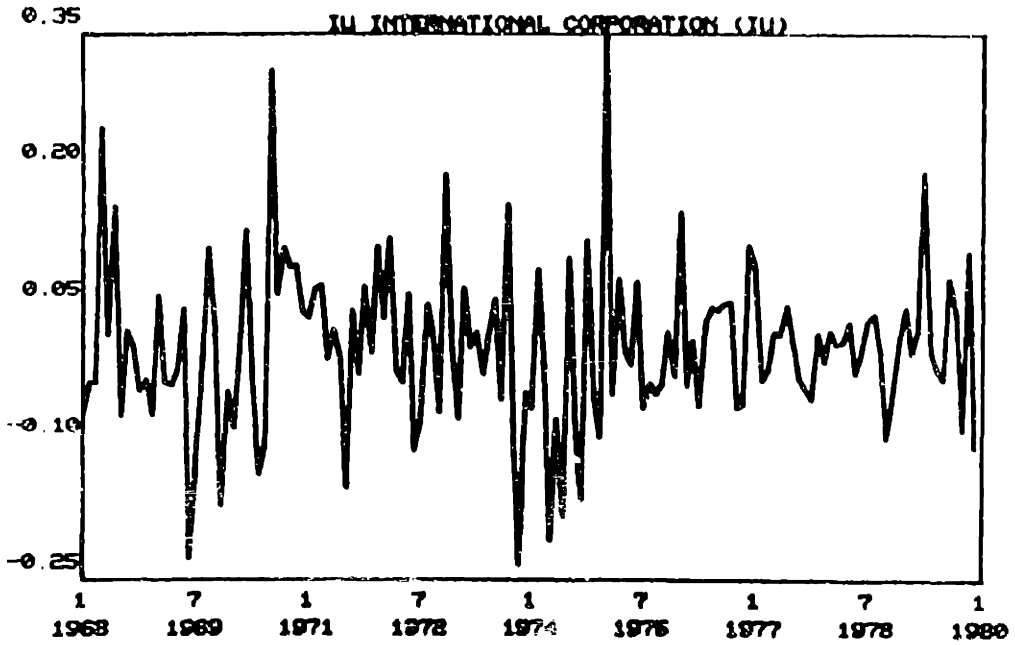
MR9 [illegible]
MONTHLY DATA FROM [illegible]

1968	1	0.0	0.	0.	0.
1968	5	0.	0.	0.	0.
1968	9	0.	0.	0.	0.
1969	1	0.	0.	0.	0.
1969	5	0.	-0.114	-0.	-0.
1969	9	-0.	0.	0.	0.
1970	1	-0.	0.	0.	-0.
1970	5	-0.	-0.	0.	0.
1970	9	0.	-0.	0.	0.
1971	1	0.083333	0.083333	0.083333	0.1
1971	5	-0.018161	-0.162338	0.116278	0.119038
1971	9	-0.05	-0.105263	0.052632	0.052632
1972	1	-2.	-0.315945	0.004531	0.049936
1972	5	-0.056216	-0.086643	0.03	0.09
1972	9	-0.114815	-0.111971	0.1	-0.005777
1973	1	-0.076923	-0.081176	0.005102	0.1
1973	5	-0.085165	0.	0.08053	-0.085652
1973	9	0.118861	0.175	-0.220	0.176552
1974	1	-0.02381	-0.026029	0.09	0.
1974	5	-0.088562	-0.042188	0.0	-0.189147
1974	9	-0.058824	0.15625	-0.081081	-0.111765
1975	1	0.340909	0.016949	-0.07	0.037037
1975	5	0.	0.166071	-0.109	0.014035
1975	9	-0.053097	0.130841	0.099174	0.004511
1976	1	0.137405	0.006711	-0.002667	0.013605
1976	5	0.024161	0.046667	-0.012	0.076129
1976	9	-0.018293	-0.055901	0.084211	0.104938
1977	1	0.027933	0.009783	0.005464	0.086957
1977	5	0.0252	0.039604	0.004762	-0.037725
1977	9	-0.04	-0.036458	0.081297	0.020305
1978	1	-0.029602	0.05427	-0.135417	0.156627
1978	5	0.08	0.029412	0.1	0.105455
1978	9	-0.087302	-0.130435	-0.02	0.006939
1979	1	0.113402	-0.101852	0.099794	-0.014206
1979	5	0.033816	0.054579	-0.04955	0.156398
1979	9	-0.058689	-0.075221	-0.052632	0.010586

MR9H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.086515	-0.035144	-0.030241	0.020992
1968	5	0.139736	0.046015	-0.000786	0.010627
1968	9	0.207717	-0.002603	0.197858	0.014307
1969	1	0.013591	-0.102547	0.013744	0.076858
1969	5	-0.022528	-0.087367	-0.15027	0.094725
1969	9	-0.032726	0.158118	-0.01443	-0.027194
1970	1	-0.100938	0.048171	-0.020215	-0.10071
1970	5	0.028754	-0.101316	0.02494	0.076806
1970	9	0.005115	-0.083732	0.045354	0.08073
1971	1	0.08292	0.035946	0.027939	-0.009757
1971	5	-0.009211	-0.092869	-0.066049	0.110224
1971	9	0.023684	-0.065255	-0.040175	0.111076
1972	1	0.084422	0.066641	-0.030055	0.042828
1972	5	0.0129	-0.063378	-0.04059	0.00137
1972	9	-0.011573	0.020328	0.014257	-0.007947
1973	1	-0.073367	-0.04858	0.016757	-0.060867
1973	5	-0.057154	-0.013993	0.066713	-0.081792
1973	9	0.118102	0.045754	-0.154437	0.060859
1974	1	0.03716	0.02076	-0.068074	-0.054487
1974	5	-0.054096	-0.001305	-0.061394	0.00013
1974	9	-0.130042	0.290513	-0.020413	-0.0459
1975	1	0.175962	0.061548	0.037777	0.038072
1975	5	-0.022087	0.076046	-0.040194	-0.023259
1975	9	-0.073687	0.051924	0.059714	0.076832
1976	1	0.086445	0.045041	-0.030977	0.036024
1976	5	0.046413	0.052733	0.013775	-0.049504
1976	9	0.000431	-0.015393	-0.00796	0.112429
1977	1	-0.099869	-0.083918	-0.096063	-0.096396
1977	5	0.096504	0.002773	0.024079	-0.031403
1977	9	0.000956	0.0191	0.110613	0.015267
1978	1	-0.063772	-0.044179	0.037657	0.115678
1978	5	0.025761	-0.011114	0.116016	0.09154
1978	9	-0.03493	-0.132116	0.027057	0.010432
1979	1	-0.027791	-0.06166	0.009447	0.057949
1979	5	-0.030975	0.017694	0.051011	0.010091
1979	9	-0.052812	-0.111503	-0.021418	0.056283

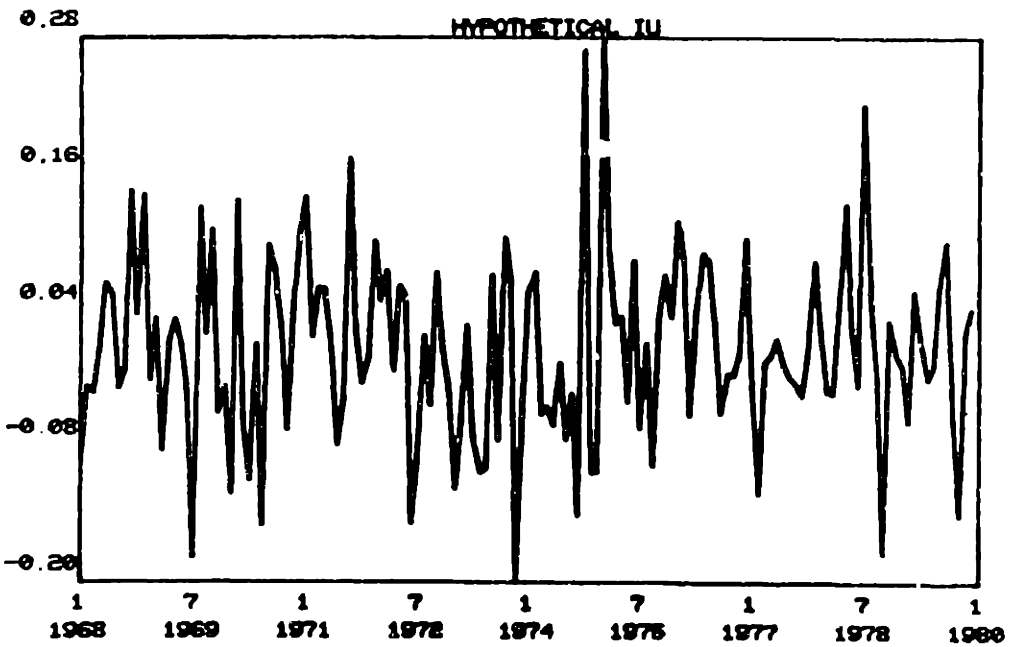
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR10

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR10H

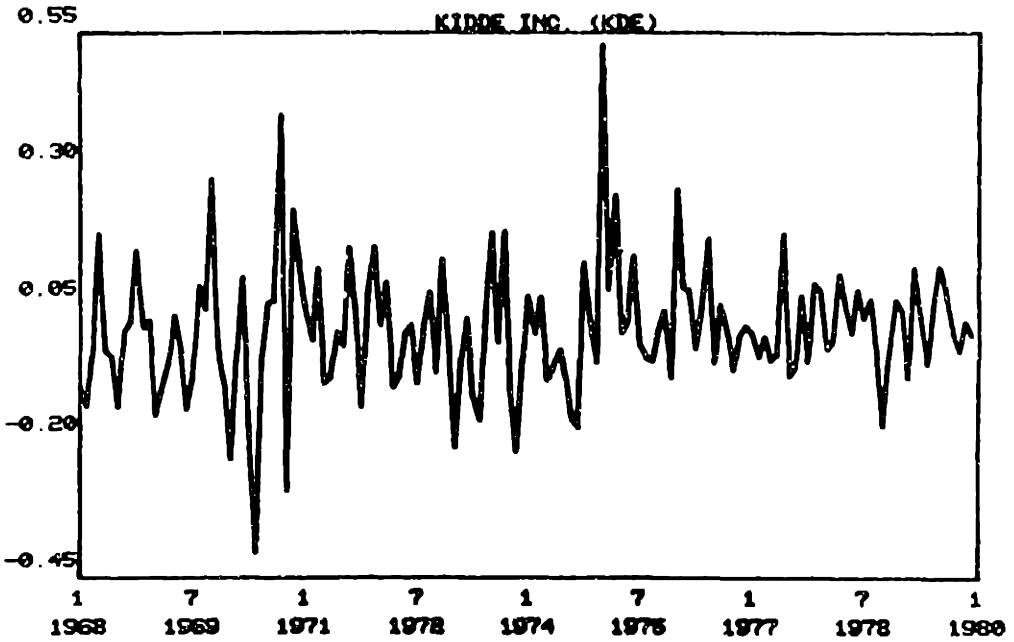
MR10 - [illegible]
MONTHLY DATA FROM [illegible]

1968	1	0.02[illegible]	0.[illegible]	0.02[illegible]	0.[illegible]
1968	5	0.01[illegible]	0.[illegible]	0.02[illegible]	0.02[illegible]
1968	9	0.00[illegible]	0.[illegible]	0.03[illegible]	0.0[illegible]
1969	1	0.03[illegible]	0.[illegible]	0.03[illegible]	0.01[illegible]
1969	5	0.04[illegible]	-0.[illegible]	0.1[illegible]	0.00[illegible]
1969	9	0.11[illegible]	0.[illegible]	0.16[illegible]	0.04[illegible]
1970	1	-0.00[illegible]	0.[illegible]	0.13[illegible]	0.02[illegible]
1970	5	-0.13[illegible]	-0.[illegible]	0.31[illegible]	0.06[illegible]
1970	9	0.11[illegible]	0.[illegible]	0.02[illegible]	0.04[illegible]
1971	1	0.03[illegible]	0.[illegible]	0.02[illegible]	-0.00[illegible]
1971	5	0.03[illegible]	-0.03[illegible]	0.14[illegible]	0.04[illegible]
1971	9	-0.02[illegible]	0.07[illegible]	0.00[illegible]	0.11[illegible]
1972	1	0.03[illegible]	0.1[illegible]	-0.02[illegible]	-0.03[illegible]
1972	5	0.04[illegible]	-0.13[illegible]	-0.07[illegible]	0.05[illegible]
1972	9	0.01[illegible]	-0.06[illegible]	0.19[illegible]	0.
1973	1	-0.07[illegible]	0.09[illegible]	0.00[illegible]	0.02[illegible]
1973	5	-0.023077	0.021164	0.056895	-0.051471
1973	9	0.161458	-0.085204	-0.232844	-0.045161
1974	1	-0.060811	0.089928	-0.026667	-0.205479
1974	5	-0.073276	-0.17[illegible]	0.103448	-0.076042
1974	9	-0.16092	0.123288	-0.052459	-0.092105
1975	1	0.347826	-0.046237	0.08046	0.
1975	5	-0.01303	0.076923	-0.061224	-0.03587
1975	9	-0.045977	-0.036145	0.02125	-0.025
1976	1	0.153846	-0.036667	0.011765	-0.05814
1976	5	0.033333	0.04878	0.046512	0.053333
1976	9	0.053763	-0.041224	-0.056522	0.117647
1977	1	0.094737	-0.030769	-0.020202	0.020619
1977	5	0.018182	0.050505	0.009615	-0.030476
1977	9	-0.04	-0.052003	0.01978	-0.010989
1978	1	0.022222	0.008696	0.010989	0.032609
1978	5	-0.023158	0.	0.032967	0.041489
1978	9	0.	-0.09375	-0.047126	0.012346
1979	1	0.04878	-0.001163	0.02381	0.197674
1979	5	-0.000971	-0.019802	-0.030303	0.082292
1979	9	0.039216	-0.084906	0.112371	-0.104402

MR10H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.090035	-0.026945	-0.032222	0.007619
1968	5	0.064713	0.054667	-0.028467	-0.011757
1968	9	0.145121	0.036958	0.141813	-0.021307
1969	1	0.033618	-0.083385	0.013314	0.032316
1969	5	0.010661	-0.036099	-0.178151	0.130573
1969	9	0.019711	0.111365	-0.050246	-0.027459
1970	1	-0.121336	0.136676	-0.05849	-0.109856
1970	5	0.010437	-0.148897	0.097637	0.078108
1970	9	0.027846	-0.065075	0.041284	0.109573
1971	1	0.138981	0.016824	0.059799	0.058499
1971	5	0.014449	-0.078783	-0.03934	0.172516
1971	9	0.0235	-0.023842	-5.260000E-05	0.100827
1972	1	0.049795	0.075293	-0.013076	0.061103
1972	5	0.053306	-0.14697	-0.086873	0.016424
1972	9	-0.043357	0.073015	0.006472	-0.034987
1973	1	-0.116839	-0.056945	0.025845	-0.073199
1973	5	-0.10256	-0.098331	0.070719	-0.073749
1973	9	0.102743	0.064565	-0.196512	-0.043666
1974	1	0.056769	0.073393	-0.051014	-0.045742
1974	5	-0.060736	-0.006954	-0.07353	-0.034042
1974	9	-0.139693	0.26872	-0.102391	-0.101115
1975	1	0.278373	0.080587	0.028694	0.034374
1975	5	-0.040068	0.083912	-0.063151	0.010376
1975	9	-0.097075	0.032007	0.071146	0.034935
1976	1	0.118153	0.084702	-0.051874	0.032652
1976	5	0.090598	0.083774	0.028516	-0.050669
1976	9	-0.016447	-0.017254	0.003017	0.102887
1977	1	-0.024717	-0.121613	-0.004842	0.00037
1977	5	0.015448	-0.060581	-0.019791	-0.024843
1977	9	-0.035415	0.003471	0.083059	0.020877
1978	1	-0.030739	-0.032875	0.051588	0.133121
1978	5	0.023071	-0.026239	0.22173	0.051113
1978	9	-0.023104	-0.173176	0.031416	0.001667
1979	1	-0.009733	-0.057321	0.057077	0.01517
1979	5	-0.020637	-0.007615	0.066345	0.100792
1979	9	-0.057024	-0.149887	0.021072	0.042184

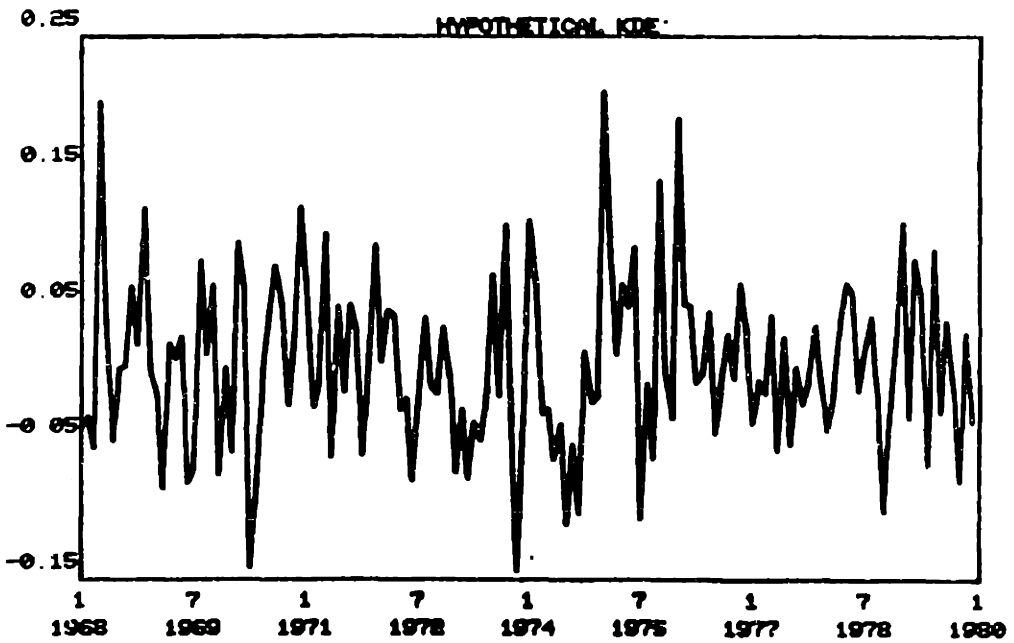
Rate of Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR11

Rate of Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR11H

MR11 DATE REVISED: [illegible]
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.[illegible]	0.[illegible]	-0.[illegible]	0.101435
1968	5	-0.[illegible]	-0.[illegible]	0.[illegible]	0.004404
1968	9	0.020082	0.150785	0.099506	0.03307
1969	1	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.031529
1969	5	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.006667
1969	9	0.012945	0.[illegible]	-0.[illegible]	-0.[illegible]
1970	1	-0.[illegible]	-0.034565	0.101448	0.124342
1970	5	-0.40339	-0.04	0.055556	0.059211
1970	9	0.397516	-0.[illegible]	0.[illegible]	0.124362
1971	1	0.046512	-0.013333	0.11711[illegible]	-0.092742
1971	5	-0.084444	0.	-0.024272	0.154229
1971	9	0.030293	-0.136929	0.076923	0.157701
1972	1	0.01501	0.093385	-0.029644	-0.079051
1972	5	0.	0.012876	-0.09322	0.018692
1972	9	0.073394	-0.07265	0.133641	-0.04065
1973	1	-0.209402	-0.054054	0.024	-0.117977
1973	5	-0.159236	0.039394	0.103824	-0.017391
1973	9	0.184713	-0.107527	-0.216867	-0.06
1974	1	0.066116	0.	0.063566	-0.088235
1974	5	-0.064516	-0.032759	-0.081081	-0.156863
1974	9	-0.173093	0.128571	0.012658	-0.055
1975	1	0.527027	0.079646	0.25082	0.
1975	5	0.019868	0.14026	-0.022989	-0.047059
1975	9	-0.051852	0.006579	0.039216	-0.081761
1976	1	0.263089	0.082418	0.076923	-0.028571
1976	5	0.053922	0.172093	-0.056	0.050847
1976	9	0.	-0.069106	-0.004367	0.010526
1977	1	0.	-0.04386	-0.007339	-0.051402
1977	5	-0.039409	0.181538	-0.078947	-0.061905
1977	9	0.06802	-0.052885	0.091371	0.07814
1978	1	-0.030568	-0.013514	0.108676	0.05
1978	5	0.	0.078571	0.026022	0.061594
1978	9	-0.048464	-0.17029	-0.034934	0.059729
1979	1	0.038961	-0.083333	0.119091	0.032922
1979	5	-0.059761	0.051695	0.122449	0.080727
1979	9	0.	-0.034014	0.021127	-0.004828

MR11H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.038409	-0.029253	-0.052378	0.202195
1968	5	0.039785	-0.047018	0.005911	0.007732
1968	9	0.066081	0.023921	0.123627	0.003132
1969	1	-0.01334	-0.08259	0.024395	0.013535
1969	5	0.029407	-0.078318	-0.068515	0.085102
1969	9	0.016917	0.066848	-0.072042	0.006586
1970	1	-0.055696	0.098835	0.065767	-0.140222
1970	5	-0.075183	0.004439	0.046824	0.081316
1970	9	0.052178	-0.020816	0.023938	0.123664
1971	1	0.069087	-0.022306	-0.001556	0.105246
1971	5	-0.059565	0.050912	-0.011061	0.05266
1971	9	0.032984	-0.05817	0.016687	0.095592
1972	1	0.011011	0.048047	0.044275	-0.024348
1972	5	-0.016897	-0.076144	-0.015177	0.042636
1972	9	-0.00804	-0.012457	0.035295	-0.001032
1973	1	-0.070577	-0.024277	-0.074519	-0.034354
1973	5	-0.046482	-0.00915	0.074401	-0.014286
1973	9	0.111087	-0.03339	-0.142631	-0.034076
1974	1	0.113684	0.065965	-0.026736	-0.024805
1974	5	-0.061116	-0.036228	-0.108366	-0.050863
1974	9	-0.100186	0.017916	-0.018576	-0.01414
1975	1	0.208833	0.101328	0.01678	0.067269
1975	5	0.051515	0.094325	-0.104721	-0.005074
1975	9	-0.060047	0.142536	0.003109	-0.030626
1976	1	0.189044	0.05339	0.051328	-0.003981
1976	5	0.00247	0.046229	-0.042283	-0.00528
1976	9	0.039344	-0.001655	0.047444	0.032293
1977	1	-0.0343	-0.003219	-0.012688	0.044569
1977	5	-0.055103	0.02831	-0.050346	0.006189
1977	9	-0.020329	-0.004754	0.036549	-0.006766
1978	1	-0.040143	-0.012553	0.041347	0.068629
1978	5	0.061116	-0.010426	0.016455	0.043625
1978	9	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1979	1	0.11341	-0.030795	0.006111	0.059538
1979	5	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
1979	9	-0.01034	-0.077347	0.03224	-0.033447

Rate of
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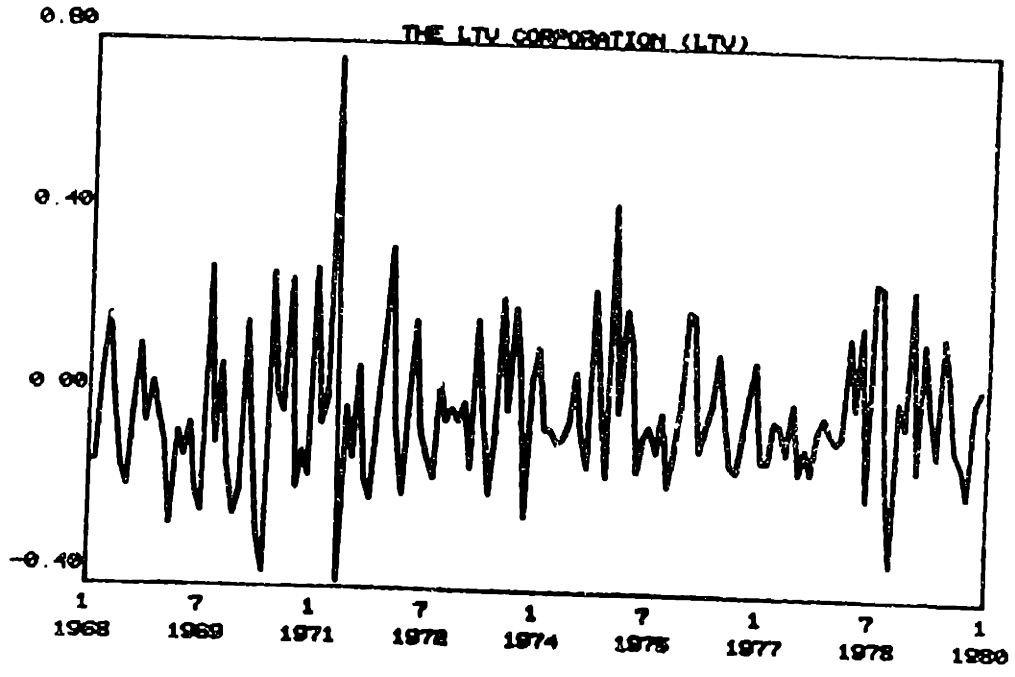

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR12

Rate of
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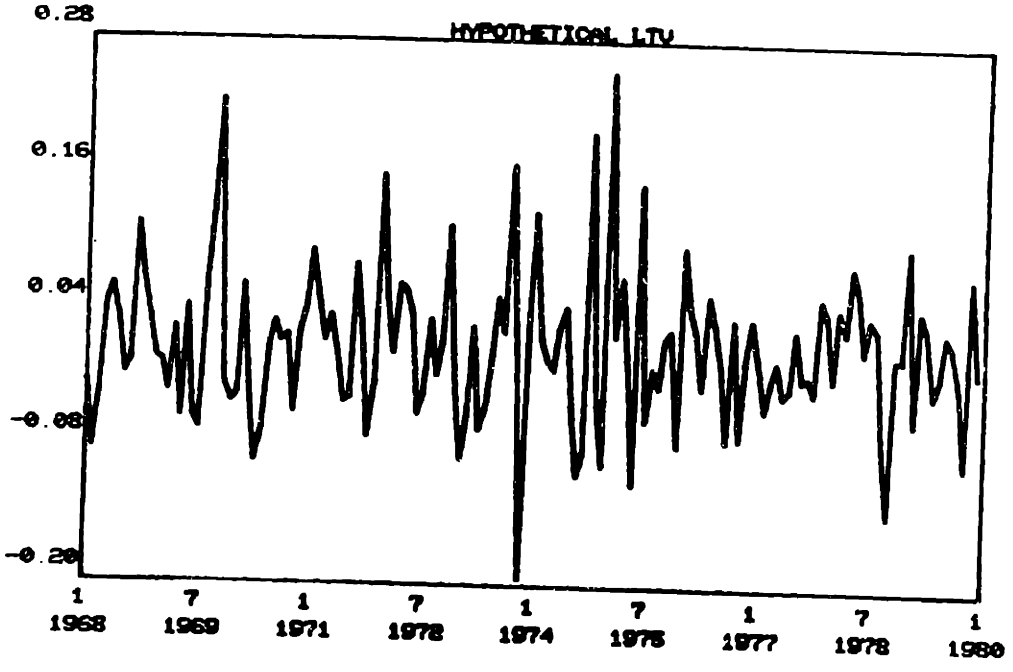

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR12H

MR12 [illegible]
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.13	-0.136332	-0.08114	0.126581
1968	5	0.230834	-0.1417	-0.103962	0.00538
1968	9	0.130329	-0.04	0.049383	-0.023136
1969	1	-0.053421	-0.087051	-0.06[illegible]	-0.114302
1969	5	-0.011467	-0.12598	0.2[illegible]	0.303279
1969	9	-0.080954	0.060278	-0.138091	-0.212537
1970	1	-0.157118	0.18522	-0.072038	-0.289773
1970	5	-0.[illegible]58	0.291139	0.09412	-0.009524
1970	9	0.2[illegible]8046	-0.130451	-0.10021[illegible]	-0.153061
1971	1	0.331205	-0.037037	0.019231	0.764151
1971	5	-0.385027	0.	-0.113043	0.088235
1971	9	-0.1[illegible]162	-0.204301	0.	0.152162
1972	1	0.346837	-0.051724	-0.190909	0.011236
1972	5	0.178089	-0.056075	-0.100911	-0.186556
1972	9	0.052632	-0.025	0.	0.025641
1973	1	0.013158	-0.12987	0.19403	0.
1973	5	-0.1875	-0.046154	0.241935	0.
1973	9	0.220779	0.074468	-0.237624	0.064935
1974	1	0.134146	-0.045011	-0.044944	-0.070588
1974	5	-0.063291	-0.027027	0.083333	-0.064103
1974	9	-0.123288	0.265625	0.024691	-0.144578
1975	1	0.450704	0.	0.223301	0.142857
1975	5	-0.131944	-0.056	-0.033898	-0.087719
1975	9	0.	-0.163462	-0.091954	0.025316
1976	1	0.222222	0.212121	-0.083333	-0.036364
1976	5	0.018868	0.12963	0.016393	-0.112903
1976	9	-0.127273	-0.041667	0.043478	0.114583
1977	1	-0.102804	-0.104167	-0.011628	-0.023529
1977	5	-0.064337	0.026316	-0.128205	-0.023529
1977	9	-0.126984	-0.036364	0.	-0.037736
1978	1	-0.059824	-0.041667	0.173913	0.018519
1978	5	0.2	-0.181818	0.296296	0.285714
1978	9	-0.144444	-0.324675	0.038462	-0.018519
1979	1	0.283019	-0.117647	0.166667	0.028571
1979	5	-0.063333	0.181818	0.076923	-0.071429
1979	9	-0.102564	-0.171429	0.034483	0.066667

MR12H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.021915	-0.081517	-0.030532	0.046682
1968	5	0.063625	0.032228	-0.014724	-0.003459
1968	9	0.116728	0.070661	0.033576	-0.000468
1969	1	-0.003956	-0.030428	0.02565	-0.053172
1969	5	0.0452	-0.052286	-0.063298	0.065596
1969	9	0.135159	0.226807	-0.022978	-0.039119
1970	1	-0.032426	0.063845	-0.032289	-0.091153
1970	5	-0.063404	0.007706	0.032596	0.015059
1970	9	0.020883	-0.047533	0.023589	0.044013
1971	1	0.093689	0.049702	0.015545	0.030047
1971	5	0.005674	-0.038231	-0.035256	0.082703
1971	9	0.023802	-0.068986	-0.020186	0.160066
1972	1	0.053984	0.005109	0.06462	0.059214
1972	5	0.039766	-0.048631	-0.029999	0.033681
1972	9	-0.014184	0.015576	0.116329	-0.029695
1973	1	-0.087957	-0.050467	0.026989	-0.062219
1973	5	-0.04157	0.003792	0.053849	0.025261
1973	9	0.170607	0.014265	-0.192732	0.020474
1974	1	0.128706	0.017716	-0.000652	-0.008369
1974	5	0.028267	0.046086	-0.045058	-0.100944
1974	9	-0.089725	0.199674	-0.037471	-0.091874
1975	1	0.253075	0.021014	0.072151	-0.006543
1975	5	-0.10823	0.154119	-0.0536	-0.006585
1975	9	-0.023151	0.01938	0.026949	-0.073788
1976	1	0.099828	0.046789	0.02595	-0.022729
1976	5	0.058027	0.032177	-0.002519	-0.069908
1976	9	0.036769	-0.067778	0.003764	0.037483
1977	1	0.002763	-0.042538	-0.017102	0.000294
1977	5	-0.02942	-0.023215	0.028686	-0.01501
1977	9	-0.011967	-0.026811	0.056095	0.042576
1978	1	-0.014454	0.047838	0.027507	0.084626
1978	5	0.06408	0.010429	0.040655	0.030339
1978	9	-0.079444	-0.132781	0.005522	0.005097
1979	1	0.101865	-0.051977	0.047297	0.031185
1979	5	0.029115	-0.010367	0.027594	0.01445
1979	9	-0.020345	-0.089292	0.076641	-0.007894

Rate of
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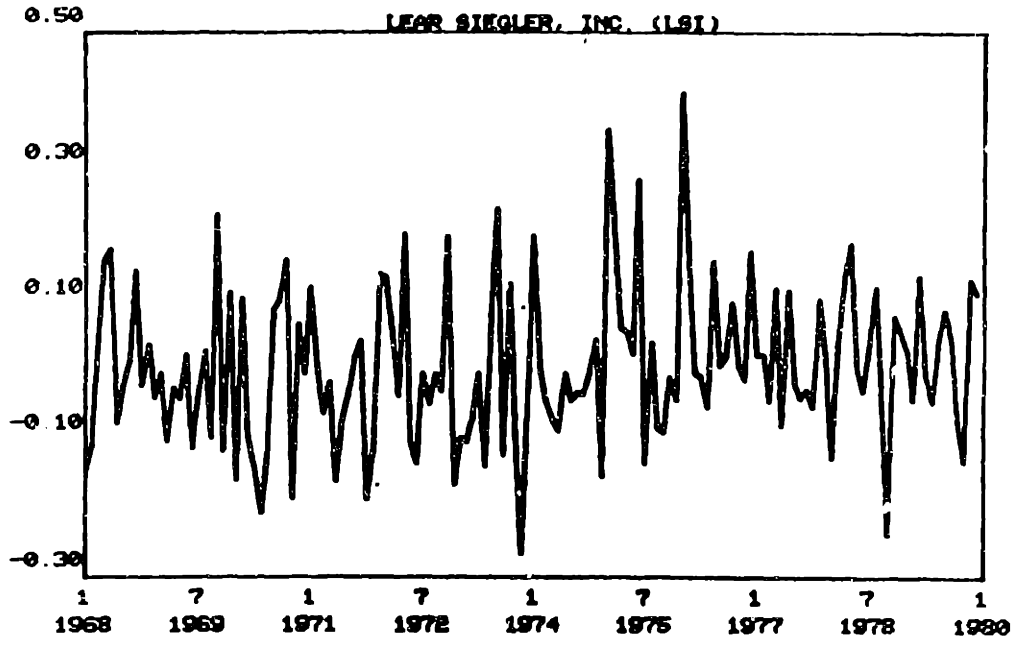

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR13

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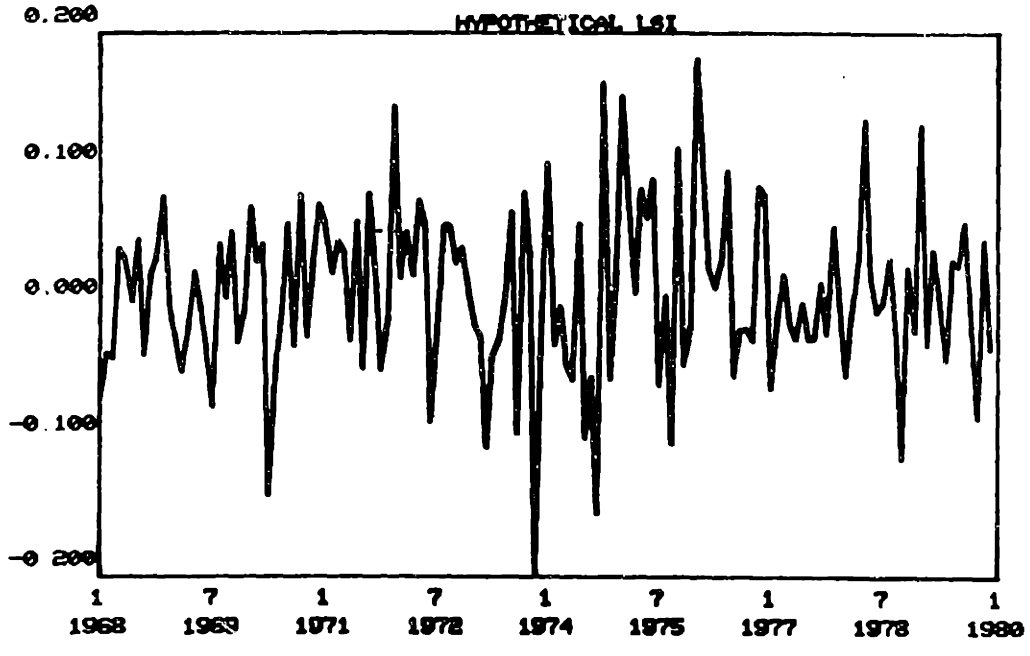


TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

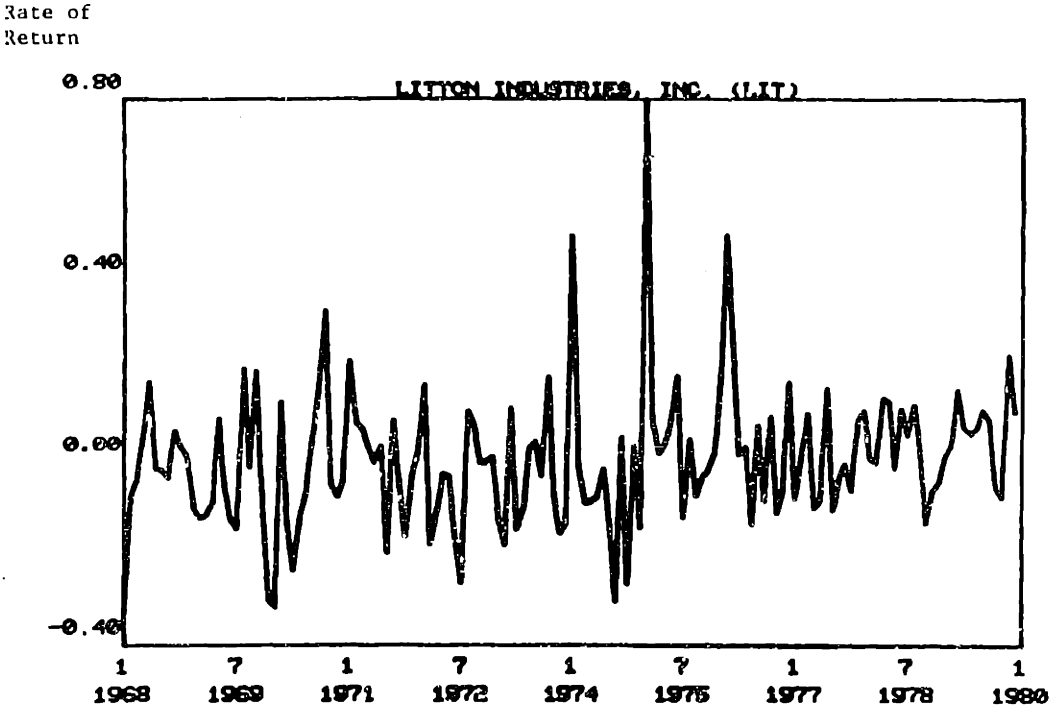
DATA NAMES: MR13H

MR13A - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.142857	0.167091	0.051152	0.164516
1968	5	0.131176	0.025	0.013212	0.021538
1968	9	0.149051	-0.018868	0.042283	0.032032
1969	1	0.	-0.101442	-0.021505	-0.038462
1969	5	0.020	-0.111732	-0.053736	0.032261
1969	9	-0.025541	0.232394	-0.114943	0.116883
1970	1	-0.156977	0.110345	0.1	-0.130889
1970	5	-0.203252	-0.132448	0.093023	0.107527
1970	9	0.165049	-0.183333	0.072165	0.
1971	1	0.125	0.	-0.060345	-0.014679
1971	5	-0.150879	-0.066667	-0.030952	0.024691
1971	9	0.048193	-0.103908	-0.107042	0.142857
1972	1	0.138889	0.065854	-0.034483	0.202381
1972	5	-0.10495	-0.133333	0.	-0.046154
1972	9	0.	-0.027027	0.2	-0.162791
1973	1	-0.097222	-0.101538	-0.060965	0.
1973	5	-0.137778	0.086957	0.24	-0.12
1973	9	0.12963	-0.098361	-0.262545	-0.05
1974	1	0.198947	0.	-0.044444	-0.069767
1974	5	-0.086	0.	-0.04	-0.029412
1974	9	-0.030303	0.	0.04875	-0.151515
1975	1	0.357143	0.225263	0.065217	0.061224
1975	5	0.03	0.283019	-0.132353	0.044746
1975	9	-0.081967	-0.089286	-0.007059	-0.04
1976	1	0.409167	0.179105	0.	-0.004557
1976	5	-0.051282	0.162162	0.011628	0.022909
1976	9	0.102273	0.010309	-0.010204	0.177083
1977	1	0.026549	0.025862	-0.042373	0.123894
1977	5	-0.07874	0.12069	-0.015385	-0.0375
1977	9	-0.02459	-0.05042	0.107965	0.016129
1978	1	-0.125397	0.045872	0.140351	0.189231
1978	5	0.006536	-0.025974	0.04	0.125641
1978	9	-0.045977	-0.23494	0.083465	0.058824
1979	1	0.031944	-0.040816	0.141844	0.
1979	5	-0.042981	0.052632	0.09375	0.051086
1979	9	-0.071429	-0.130177	0.136599	0.115152

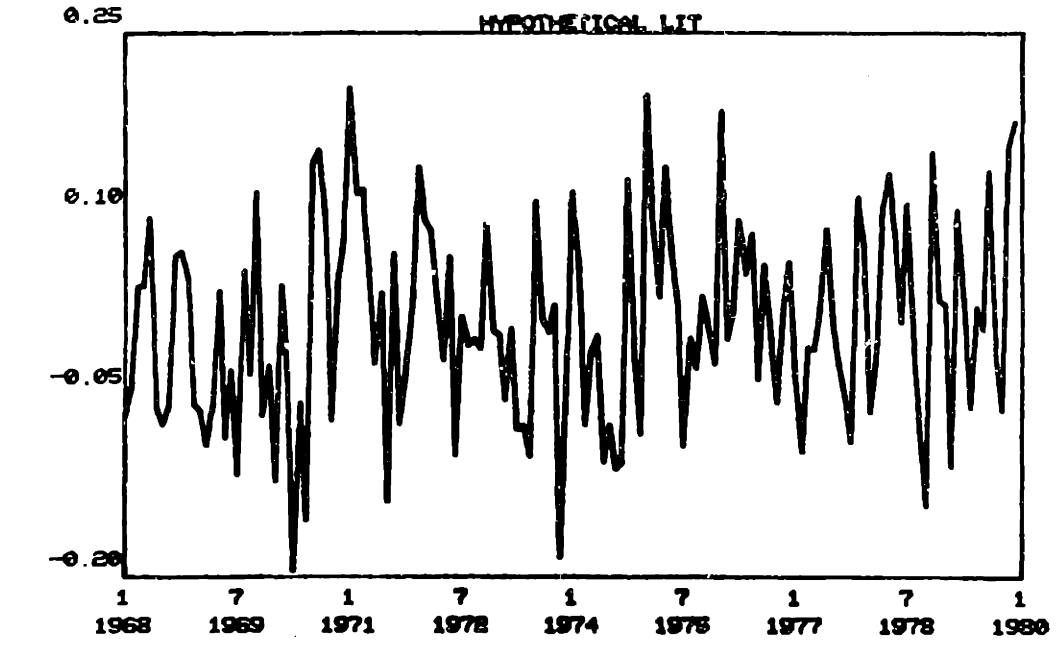
MR13H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.068206	-0.034907	-0.038892	0.042417
1968	5	0.034746	0.00249	0.048891	-0.036963
1968	9	0.022236	0.035302	0.080555	-0.001004
1969	1	-0.026186	-0.049129	-0.014935	0.02496
1969	5	-0.002235	-0.03524	-0.073613	0.0448
1969	9	0.005519	0.054406	-0.027945	-0.00266
1970	1	0.072218	0.03218	0.044857	-0.139339
1970	5	-0.0473	-0.003047	0.060057	-0.029614
1970	9	0.081532	-0.02347	0.02998	0.073737
1971	1	0.059299	0.02373	0.046433	0.038519
1971	5	-0.025919	0.061253	-0.046659	0.082302
1971	9	0.024916	-0.047291	-0.009295	0.145646
1972	1	0.019922	0.05329	0.022385	0.076672
1972	5	0.057321	-0.084261	-0.020972	0.05875
1972	9	0.0581	0.031224	0.042323	0.007874
1973	1	-0.014437	-0.024408	-0.10312	-0.03719
1973	5	-0.024187	0.007672	0.068304	-0.092637
1973	9	0.082945	0.036038	-0.197946	-0.007912
1974	1	0.10458	-0.028891	-0.001928	-0.04424
1974	5	-0.053997	0.059819	-0.095815	-0.053702
1974	9	-0.152209	0.163381	-0.054053	0.024262
1975	1	0.153192	0.081228	0.009605	0.085525
1975	5	0.064689	0.093628	-0.05783	0.006471
1975	9	-0.100622	0.115379	-0.043794	-0.015197
1976	1	0.180535	0.105429	0.026962	0.013146
1976	5	0.032353	0.098795	-0.051879	-0.018376
1976	9	-0.017812	-0.026104	0.087833	0.080905
1977	1	-0.061133	-0.008046	0.022413	-0.013031
1977	5	-0.025438	0.001043	-0.025748	-0.023858
1977	9	0.016547	-0.021104	0.057692	-0.002198
1978	1	-0.052095	-0.005943	0.031092	0.135875
1978	5	0.010212	-0.005248	0.001837	0.034728
1978	9	-0.020189	-0.11201	0.027649	-0.019686
1979	1	0.133281	-0.029408	0.040685	0.004447
1979	5	-0.040302	0.033905	0.029099	0.060739
1979	9	-0.021578	-0.001944	0.047846	-0.032346



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR14



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

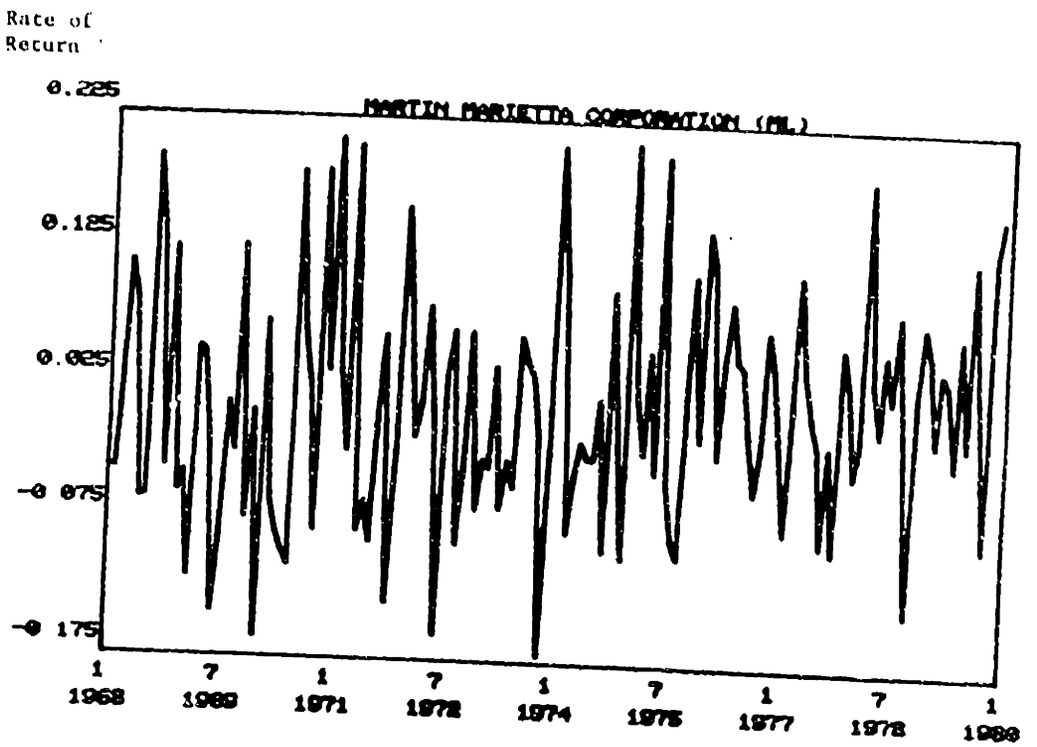
DATA NAMES: MR14H

MR14 DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	11	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1968	51	0.1[illegible]	0.014446	0.01[illegible]	0.[illegible]
1968	91	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1969	11	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1969	51	0.05[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1969	91	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
1970	11	-0.31[illegible]	0.135	-0.[illegible]	-0.[illegible]
1970	51	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1970	91	0.33317	-0.[illegible]	-0.[illegible]	-0.04
1971	11	0.22619	0.[illegible]	0.[illegible]	0.033333
1971	51	0.	0.[illegible]	-0.[illegible]	0.[illegible]
1971	91	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1972	11	0.171429	-0.[illegible]	-0.[illegible]	-0.[illegible]
1972	51	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1972	91	0.[illegible]	0.	0.	0.[illegible]
1973	11	-0.[illegible]	-0.[illegible]	0.12	-0.[illegible]
1973	51	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1973	91	0.190809	-0.[illegible]	-0.[illegible]	-0.[illegible]
1974	11	0.5	-0.[illegible]	0.0875	-0.[illegible]
1974	51	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]
1974	91	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1975	11	0.8	0.[illegible]	0.[illegible]	0.04
1975	51	0.[illegible]	0.[illegible]	-0.[illegible]	0.05
1975	91	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1976	11	0.2	0.5	0.[illegible]	0.[illegible]
1976	51	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1976	91	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1977	11	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1977	51	-0.[illegible]	0.[illegible]	-0.1	-0.[illegible]
1977	91	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1978	11	0.[illegible]	0.	0.[illegible]	0.[illegible]
1978	51	-0.[illegible]	0.12	0.[illegible]	0.[illegible]
1978	91	0.025	-0.[illegible]	-0.[illegible]	-0.[illegible]
1979	11	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1979	51	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1979	91	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]

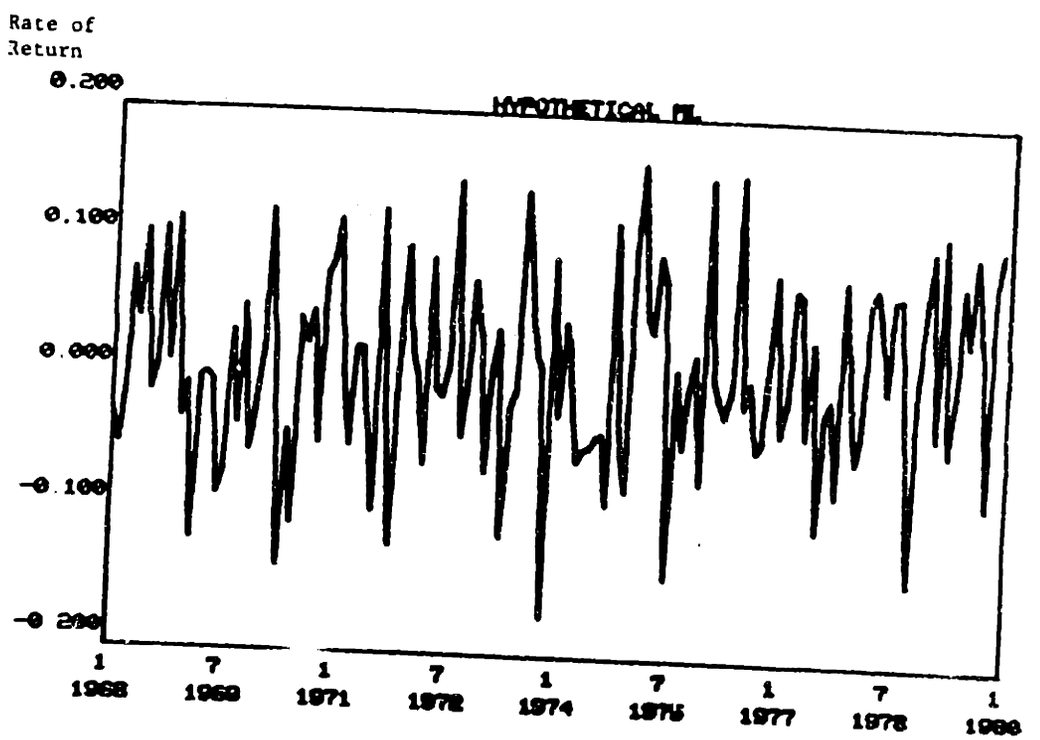
MR14H - DATE REVISED: 6/08/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	11	-0.067928	-0.044294	0.04041	0.041614
1968	51	0.097013	-0.062408	-0.074184	-0.059155
1968	91	0.065562	0.069097	0.047329	-0.058823
1969	11	-0.064105	-0.091434	-0.057543	0.037241
1969	51	-0.084953	-0.030379	-0.113969	0.053697
1969	91	-0.032257	0.118604	-0.067742	-0.026359
1970	11	-0.119448	0.04173	-0.036287	-0.194449
1970	51	-0.057461	-0.151938	0.144236	0.153623
1970	91	0.098647	-0.071019	0.042577	0.080821
1971	11	0.203925	0.116693	0.119736	0.052971
1971	51	-0.023935	0.034793	-0.136253	0.067062
1971	91	-0.073455	-0.03215	0.0314	0.138991
1972	11	0.09499	0.085896	0.022363	-0.020306
1972	51	0.064414	-0.0981	0.015468	-0.009006
1972	91	-0.00377	-0.01103	0.091198	0.003346
1973	11	-0.000425	-0.0535	0.00483	-0.077434
1973	51	-0.076062	-0.098794	0.109851	0.013096
1973	91	0.002523	0.024674	-0.183783	-0.041727
1974	11	0.117455	0.052457	-0.07456	-0.014735
1974	51	-0.000684	-0.103414	-0.075158	-0.10896
1974	91	-0.104126	0.128858	-0.020407	-0.081475
1975	11	0.198115	0.097796	0.032159	0.138812
1975	51	0.06959	0.027527	-0.091494	-0.00232
1975	91	-0.027056	0.032354	0.006028	-0.024416
1976	11	0.185076	-0.002318	0.022079	0.094515
1976	51	0.050969	0.082648	-0.036521	0.058096
1976	91	-0.004035	-0.056216	0.022747	0.059958
1977	11	-0.032762	-0.09593	-0.010686	-0.01226
1977	51	0.025616	0.087651	0.096323	-0.02475
1977	91	-0.053295	-0.088116	0.113755	0.072
1978	11	-0.063788	-0.021445	0.105939	0.134004
1978	51	0.00733	0.011949	0.103205	-0.011945
1978	91	-0.08693	-0.139711	0.151569	0.029213
1979	11	0.024477	-0.107672	0.103463	0.032917
1979	51	-0.066822	0.023324	0.065354	0.136606
1979	91	-0.017656	-0.063625	0.155261	0.177544



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR15



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

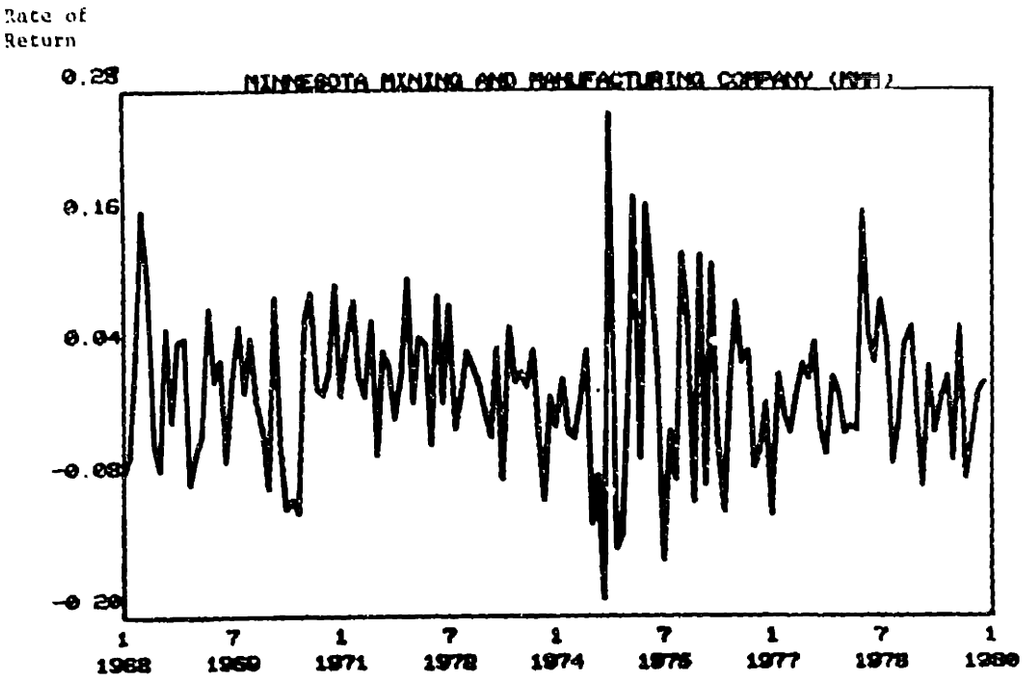
DATA NAMES: MR18H

[illegible]
MONTHLY DATA FROM [illegible]

1968	1:	-0.[illegible]	0.04[illegible]	0.0[illegible]	0.1161[illegible]
1968	5:	0.[illegible]	-0.[illegible]14	-0.[illegible]	0.[illegible]
1968	9:	0.138462	-0.[illegible]	0.[illegible]	0.[illegible]
1969	1:	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1969	5:	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1969	9:	-0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
1970	1:	-0.160494	0.[illegible]	-0.060274	-0.[illegible]
1970	5:	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1970	9:	0.[illegible]	-0.0[illegible]	0.[illegible]	0.[illegible]
1971	1:	0.208633	0.[illegible]	-0.[illegible]	0.[illegible]
1971	5:	-0.079602	-0.[illegible]	-0.[illegible]	0.007643
1971	9:	0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1972	1:	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1972	5:	0.001050	-0.15500	0.[illegible]	0.[illegible]
1972	9:	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1973	1:	-0.026667	-0.[illegible]	0.[illegible]	-0.[illegible]
1973	5:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1973	9:	0.036765	-0.[illegible]	-0.[illegible]	-0.[illegible]
1974	1:	0.205357	0.111111	-0.077333	-0.036765
1974	5:	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1974	9:	-0.090909	0.1	-0.019035	-0.[illegible]
1975	1:	0.[illegible]	0.[illegible]	-0.[illegible]	0.056
1975	5:	-0.033333	0.2	-0.04	-0.[illegible]
1975	9:	-0.[illegible]	0.025641	0.[illegible]	-0.[illegible]
1976	1:	0.146154	0.[illegible]	-0.[illegible]	0.[illegible]
1976	5:	0.[illegible]	0.[illegible]	0.[illegible]	-0.00597
1976	9:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1977	1:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1977	5:	0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]
1977	9:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1978	1:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1978	5:	0.	0.[illegible]	0.[illegible]	0.[illegible]
1978	9:	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1979	1:	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1979	5:	-0.02214	0.[illegible]	-0.[illegible]	0.[illegible]
1979	9:	0.[illegible]	-0.[illegible]	0.[illegible]	0.1625

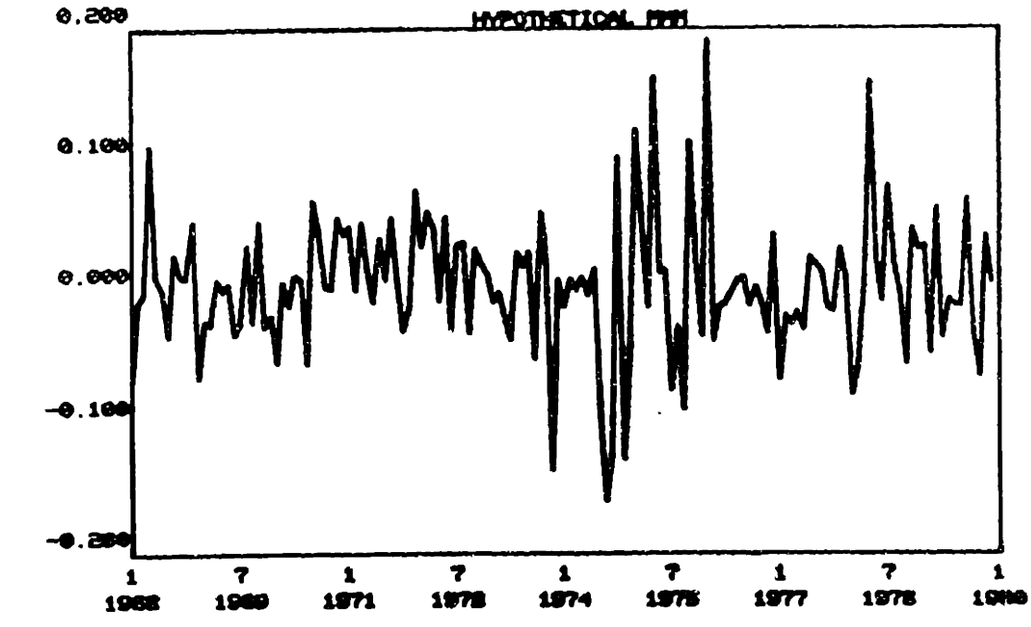
MR15H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1:	-0.024011	-0.049767	-0.012243	0.080034
1968	5:	0.045125	0.108262	-0.00991	0.008436
1968	9:	0.110433	0.012899	0.118447	-0.02842
1969	1:	-0.005211	-0.116937	0.00102	0.003358
1969	5:	-0.003006	-0.084685	-0.06742	0.035324
1969	9:	-0.031932	0.056012	-0.052988	-0.020337
1970	1:	0.022302	0.125274	0.014564	-0.136442
1970	5:	-0.03734	-0.104015	0.047425	0.027989
1970	9:	0.053013	-0.046791	0.078639	0.088033
1971	1:	0.119131	0.002248	-0.047268	0.024336
1971	5:	0.023807	-0.036029	-0.094191	0.127016
1971	9:	-0.025992	-0.118732	0.032745	0.100412
1972	1:	0.022007	0.004766	-0.059229	0.091634
1972	5:	-0.005426	-0.010516	0.011542	0.148727
1972	9:	-0.039167	-0.003796	0.076163	0.036165
1973	1:	-0.064299	0.011511	0.041034	-0.110077
1973	5:	-0.018061	-0.003078	0.143164	0.088058
1973	9:	0.022085	0.012125	-0.169967	0.093563
1974	1:	-0.021222	0.047852	-0.000423	-0.055687
1974	5:	-0.047233	-0.045155	-0.036625	-0.034316
1974	9:	-0.085315	0.120728	-0.048684	-0.074744
1975	1:	0.103119	0.164949	0.056527	0.042514
1975	5:	0.097674	0.078867	-0.139105	0.013269
1975	9:	-0.042944	-0.001746	0.023546	-0.067843
1976	1:	0.155579	0.007755	-0.008723	-0.019349
1976	5:	0.001591	0.159764	-0.012418	0.006644
1976	9:	-0.044571	-0.036331	0.020243	0.086029
1977	1:	-0.030879	-0.006441	0.076195	0.072526
1977	5:	-0.031344	0.038725	-0.100662	-0.016995
1977	9:	-0.00540	-0.074023	0.08397	0.011725
1978	1:	-0.050482	-0.029076	0.068494	0.07936
1978	5:	0.051609	0.00299	0.071214	0.073028
1978	9:	-0.026468	-0.137998	0.011583	0.060058
1979	1:	0.106932	-0.029646	0.118191	-0.042394
1979	5:	0.064213	0.081915	0.040929	0.103812
1979	9:	0.041799	-0.07935	0.082086	0.109702



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR16



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

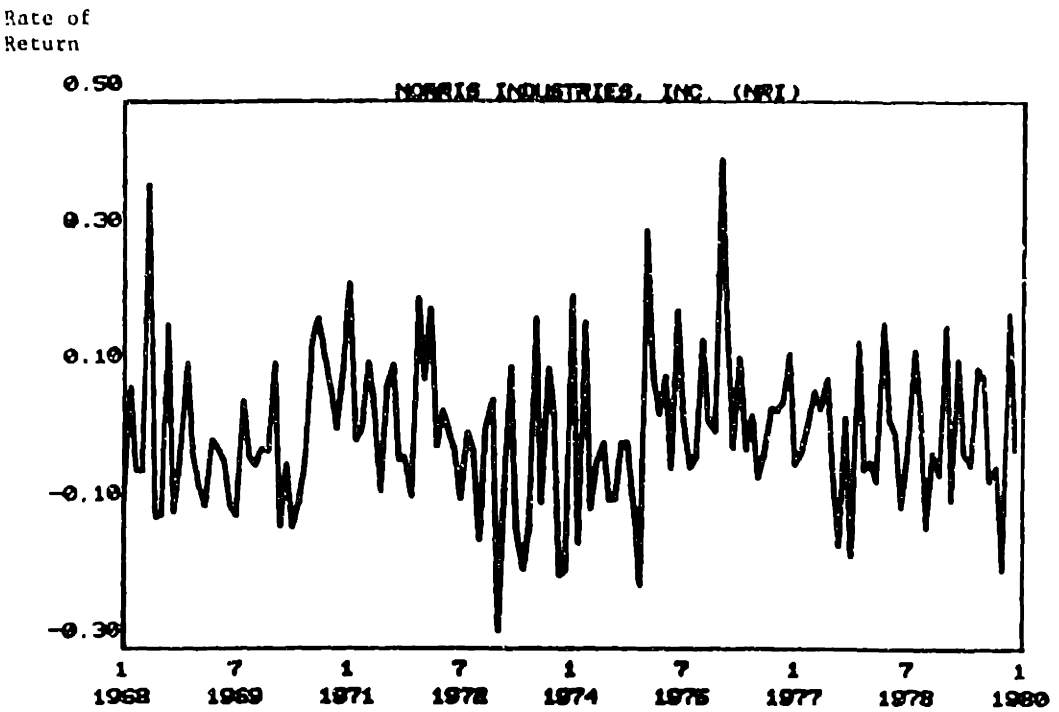
DATA NAMES: MR16H

HR16H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.078763	0.023699	-0.041149	0.170552
1968	5	0.106049	0.013673	0.060674	0.062041
1968	9	0.022485	0.087685	0.052941	0.080022
1969	1	-0.052869	0.030907	0.080693	0.013866
1969	5	0.032614	0.058225	0.009591	0.026745
1969	9	0.004472	0.051903	-0.004167	0.030739
1970	1	-0.0043/9	0.090206	0.041384	0.102071
1970	5	-0.054	-0.136509	0.089566	0.093653
1970	9	0.00569	0.001414	0.03048	0.10154
1971	1	0.	0.052652	0.086742	0.015521
1971	5	-0.000328	0.067902	-0.053388	0.039805
1971	9	0.025131	-0.019408	0.020521	0.106552
1972	1	-0.005556	0.052	0.047969	-0.043257
1972	5	0.091177	-0.005705	0.061962	-0.020903
1972	9	0.	0.038124	0.025488	0.008837
1973	1	-0.016058	-0.035608	0.04321	-0.079444
1973	5	0.0624	0.012085	0.020076	0.009064
1973	9	0.040698	-0.03352	-0.023642	-0.0016
1974	1	-0.025641	0.01398	-0.032573	-0.037037
1974	5	-0.007867	0.040708	-0.115646	-0.072115
1974	9	-0.183333	0.257653	-0.138945	-0.125592
1975	1	-0.00271	0.10125	-0.055556	0.17402
1975	5	0.103758	0.022814	-0.148699	-0.031223
1975	9	-0.07483	0.129902	0.070933	-0.095723
1976	1	0.128378	-0.08004	0.120087	-0.035088
1976	5	-0.105253	0.011364	0.005393	0.030849
1976	9	0.040404	-0.064078	-0.047925	-0.006579
1977	1	-0.108168	0.018317	-0.017157	-0.032419
1977	5	-0.001546	0.028646	0.01519	0.048379
1977	9	-0.028777	-0.051852	0.016667	0.002584
1978	1	-0.033505	-0.026667	-0.030471	0.168571
1978	5	0.05379	0.030445	0.086364	0.046025
1978	9	-0.060484	-0.019313	0.04814	0.063158
1979	1	-0.017822	-0.081048	0.026608	-0.032397
1979	5	-0.000446	0.018059	-0.05765	0.063059
1979	9	-0.073825	-0.033816	0.0045	0.012594

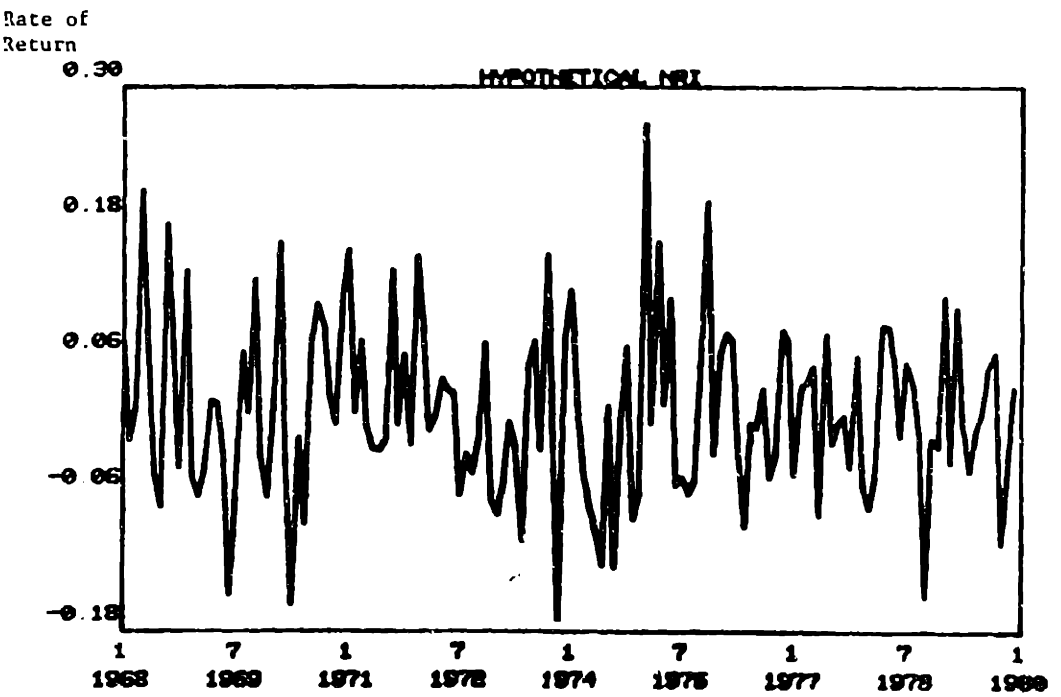
HR16H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.067247	-0.009414	-0.001749	0.110701
1968	5	0.010571	-0.000139	-0.033712	0.028299
1968	9	0.010872	0.009765	0.053651	-0.064795
1969	1	-0.024037	-0.025544	0.008182	-1.600001E-05
1969	5	0.004087	-0.033238	-0.024599	0.034406
1969	9	-0.02411	0.053653	-0.027401	-0.019707
1970	1	-0.053427	0.005416	-0.011771	0.011138
1970	5	0.007702	-0.05394	0.068362	0.044125
1970	9	0.001998	0.001057	0.055607	0.043806
1971	1	0.048658	0.000517	0.05153	0.016856
1971	5	-0.008862	0.039972	0.008601	0.055798
1971	9	0.008055	-0.0296	-0.012442	0.07651
1972	1	0.034495	0.059855	0.046994	-0.008299
1972	5	0.056729	-0.028939	0.035289	0.036802
1972	9	-0.031481	0.032513	0.020952	0.011877
1973	1	-0.008508	-0.002407	-0.020934	-0.036509
1973	5	0.029281	0.010831	0.029152	-0.050592
1973	9	0.059438	0.017437	-0.13633	0.006844
1974	1	-0.012546	0.00808	0.00013	0.008955
1974	5	-0.00353	0.015775	-0.091578	-0.159546
1974	9	-0.123742	0.101125	-0.127728	-0.04042
1975	1	0.121285	0.054892	-0.012652	0.162414
1975	5	0.013025	0.014697	-0.073991	-0.028445
1975	9	-0.088755	0.113094	0.029075	-0.033781
1976	1	0.190826	-0.03779	-0.013563	-0.010195
1976	5	-0.000794	0.007443	0.009847	-0.012118
1976	9	0.001005	-0.011114	-0.032171	0.042598
1977	1	-0.066016	-0.019721	-0.025348	-0.01704
1977	5	-0.029471	0.035561	0.019913	0.014958
1977	9	-0.014091	-0.015669	0.032648	0.0086
1978	1	-0.077676	-0.037051	0.007358	0.159368
1978	5	0.026005	-0.008013	0.000229	0.01935
1978	9	-0.003181	-0.014908	0.047027	0.031306
1979	1	0.03466	-0.044956	0.063501	-0.03532
1979	5	-0.007043	-0.011938	-0.011412	0.069895
1979	9	-0.035545	-0.063942	0.041709	0.005895



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR17



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR17H

MR17 - DATE REVISED: 6/30/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.078372	0.033333	0.040395	-0.040404
1968	5	0.370947	-0.100397	-0.104448	0.173077
1968	9	-0.1	-0.022936	0.115493	-0.016949
1969	1	-0.044655	-0.092166	0.000046	-0.010204
1969	5	-0.025773	-0.022063	-0.105802	0.059211
1969	9	-0.021118	-0.032051	-0.009222	-0.013514
1970	1	0.116438	-0.122699	-0.030269	-0.134008
1970	5	-0.083333	-0.021018	0.150943	0.100328
1970	9	0.122222	0.075	0.02093	0.109195
1971	1	0.233161	0.004202	0.021097	0.115702
1971	5	0.051052	-0.070922	0.083969	0.112676
1971	9	-0.025478	-0.022876	-0.076923	0.211679
1972	1	0.093373	0.195813	-0.00463	0.044186
1972	5	0.015768	-0.013216	-0.080357	0.014757
1972	9	-0.014423	-0.141463	0.022955	0.061453
1973	1	-0.273684	-0.064638	0.109375	-0.126761
1973	5	-0.184839	-0.12	0.181818	-0.085769
1973	9	0.106383	0.030462	-0.193704	-0.106047
1974	1	0.214286	-0.145647	0.174025	-0.095238
1974	5	-0.031316	0.	-0.082759	-0.080902
1974	9	0.	0.	-0.098	-0.207547
1975	1	0.309524	0.102102	0.042017	0.096774
1975	5	-0.035	0.193798	0.032468	-0.03522
1975	9	-0.019868	0.148649	0.031765	0.017341
1976	1	0.414773	0.155823	-0.007018	0.123675
1976	5	-0.010063	0.030462	-0.049383	-0.015584
1976	9	0.05	0.047619	0.061212	0.129683
1977	1	-0.030612	-0.010526	0.02957	0.075715
1977	5	0.048544	0.093458	-0.051282	-0.140649
1977	9	0.037433	-0.164948	0.148140	-0.038043
1978	1	-0.028249	-0.055349	0.175	0.031915
1978	5	0.012784	-0.092784	-0.017045	0.135723
1978	9	0.041237	-0.123762	-0.014237	-0.046517
1979	1	0.170732	-0.084375	0.121387	-0.015464
1979	5	-0.032461	0.10989	0.094059	-0.055204
1979	9	-0.033981	-0.18593	0.190123	-0.010526

MR17H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.077275	-0.011413	0.016978	0.209085
1968	5	0.066542	-0.042915	-0.068909	0.179926
1968	9	0.066373	-0.034884	0.138571	-0.045246
1969	1	-0.05925	-0.037779	0.022999	0.020125
1969	5	-0.024084	-0.146579	-0.061629	0.065547
1969	9	0.0131	0.130372	-0.02675	-0.060234
1970	1	0.019878	0.163571	-0.031864	-0.155178
1970	5	-0.0094	-0.083508	0.075154	0.108223
1970	9	0.08644	0.026073	0.003322	0.112433
1971	1	0.155897	0.013066	0.075691	-0.00199
1971	5	-0.019534	-0.020795	-0.011372	0.130858
1971	9	0.002474	0.062919	-0.014491	0.150003
1972	1	0.083066	-0.002651	0.010806	0.041852
1972	5	0.031863	0.029675	-0.058596	-0.02406
1972	9	-0.039659	-0.010564	0.073503	-0.063987
1973	1	-0.075021	-0.048749	0.004342	-0.017429
1973	5	-0.097687	0.055698	0.074858	-0.019313
1973	9	0.151615	-0.007174	-0.168777	0.083465
1974	1	0.120742	0.018198	-0.039299	-0.060184
1974	5	-0.089658	-0.119829	0.017412	-0.122703
1974	9	-0.00488	0.070887	-0.079155	-0.058081
1975	1	0.266849	0.003855	0.162287	0.020594
1975	5	0.112748	-0.050473	-0.043732	-0.057507
1975	9	-0.045766	0.070317	0.197321	-0.024137
1976	1	0.064162	0.082052	0.076203	-0.016569
1976	5	-0.085823	0.002264	-0.000575	0.031631
1976	9	-0.044506	-0.024208	0.085237	0.074344
1977	1	-0.041292	0.034578	0.039936	0.053611
1977	5	-0.076253	0.08099	-0.014472	0.001899
1977	9	0.009306	-0.034622	0.062625	-0.052137
1978	1	-0.070386	-0.043883	0.08985	0.007578
1978	5	0.058963	-0.007308	0.056979	0.036609
1978	9	-0.004668	-0.148045	-0.010166	-0.017489
1979	1	0.11544	-0.031507	0.105366	0.004825
1979	5	-0.036836	-0.004764	0.012002	0.052315
1979	9	0.066098	-0.101496	-0.04035	0.034606

Rate of
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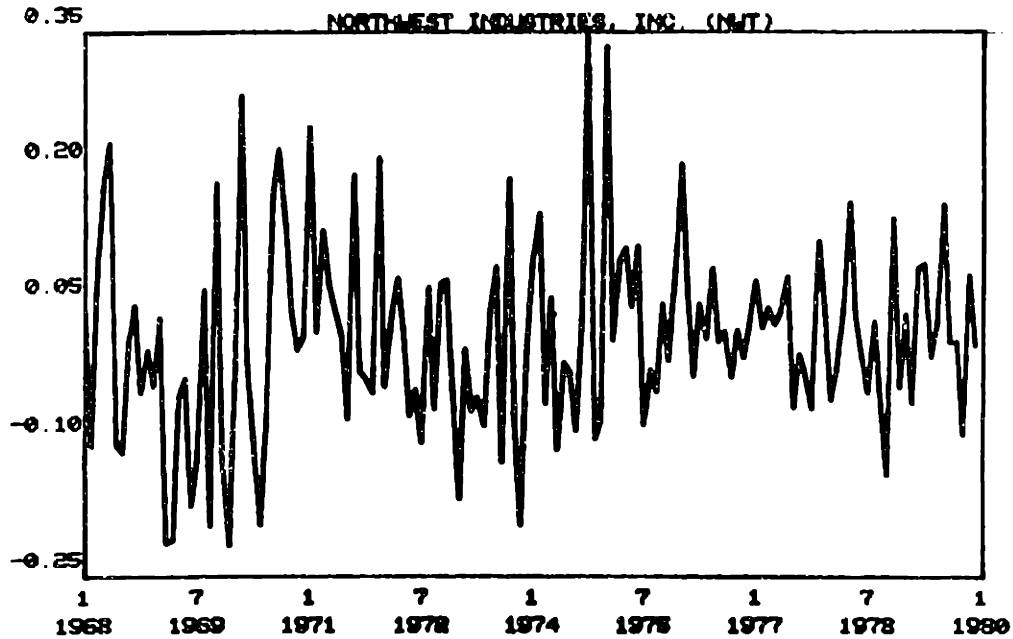

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR18

Rate of
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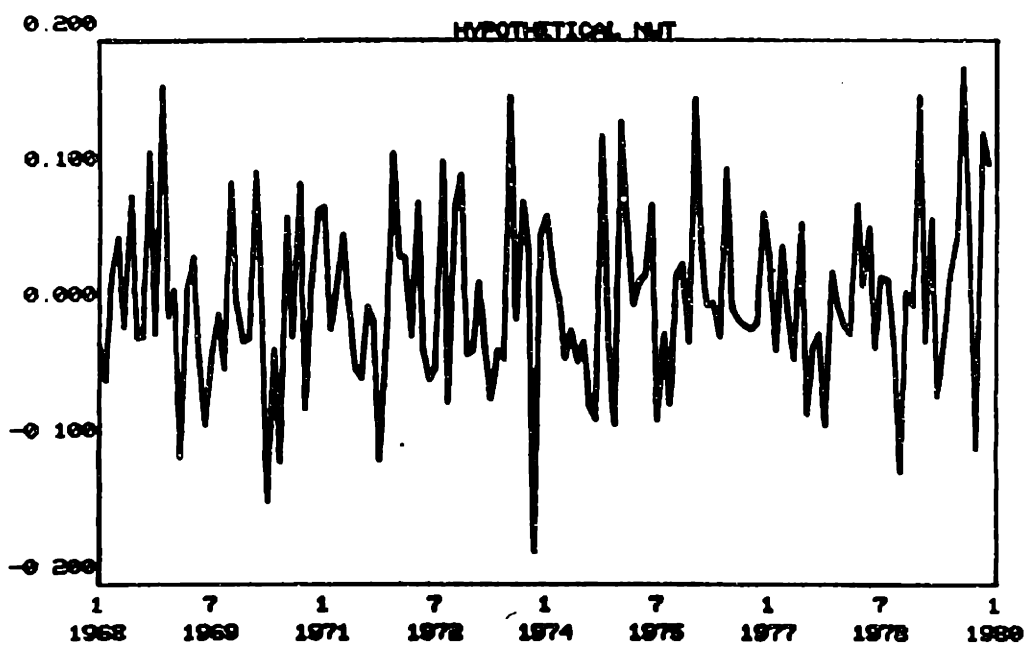


TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR1SH

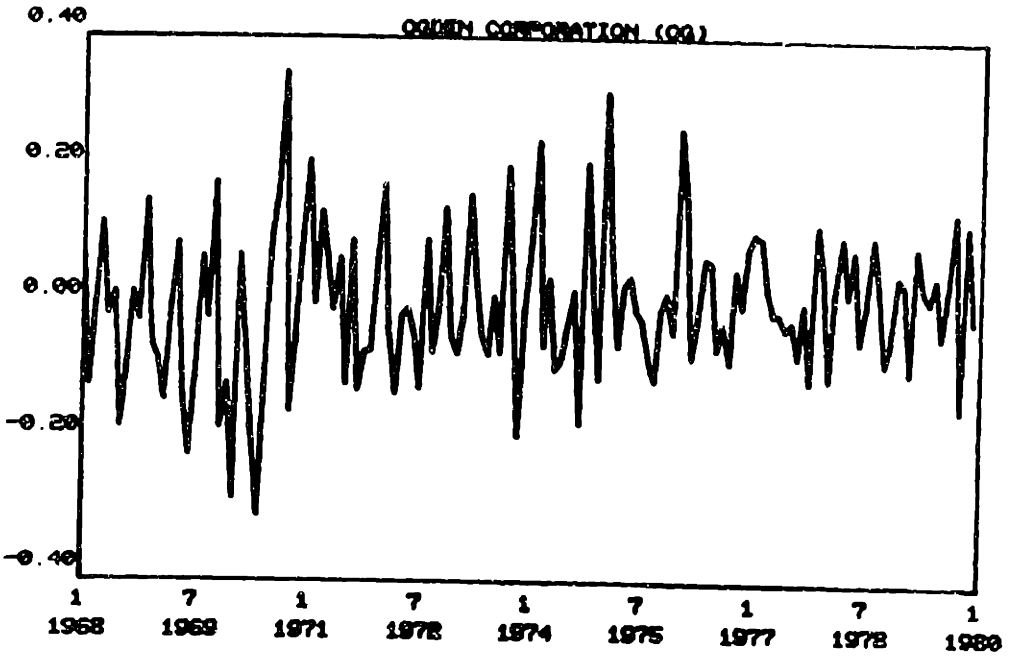
MR1B - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.043735	-0.105633	0.020453	0.118411
1968	5	0.226708	-0.104854	0.11793	0.00749
1968	9	0.017619	-0.042535	-0.001848	-0.040741
1969	1	0.033024	-0.211854	-0.30908	-0.051908
1969	5	-0.032258	-0.171	-0.123689	0.062937
1969	9	-0.172105	0.188333	-0.112676	-0.214706
1970	1	-0.020202	0.278351	-0.016129	-0.090361
1970	5	-0.190909	-0.078652	0.170732	0.21875
1970	9	0.136752	0.04594	0.	0.014493
1971	1	0.242857	0.012241	0.129943	0.07
1971	5	0.042056	0.013453	-0.075221	0.191308
1971	9	-0.024096	-0.032922	-0.046809	0.209021
1972	1	-0.040741	0.027027	0.075188	0.017544
1972	5	-0.072414	-0.04461	-0.101563	0.065217
1972	9	-0.064082	0.070175	0.07377	-0.056107
1973	1	-0.162602	0.	-0.066505	-0.052356
1973	5	-0.082873	0.037952	0.087719	-0.123656
1973	9	0.188344	-0.072917	-0.191011	-0.009028
1974	1	0.092199	0.149351	-0.058192	0.054545
1974	5	-0.109195	-0.014039	-0.02649	-0.008435
1974	9	0.032836	0.345508	-0.098361	-0.076364
1975	1	0.333333	0.01	0.09604	0.109589
1975	5	0.045267	0.112205	-0.082437	-0.023438
1975	9	-0.046	0.046809	-0.012195	0.088477
1976	1	0.203065	0.063694	-0.028443	0.046729
1976	5	0.011905	0.086765	0.008219	0.019022
1976	9	-0.030667	0.019499	-0.008197	0.026171
1977	1	0.07337	0.022785	0.043317	0.026379
1977	5	0.03972	0.077978	-0.063291	-0.006757
1977	9	-0.030159	-0.063981	0.118987	0.04457
1978	1	-0.054825	-0.020882	0.044313	0.163218
1978	5	0.033597	-0.007648	-0.046875	0.028689
1978	9	-0.061753	-0.137931	0.145	-0.041485
1979	1	0.037037	-0.058036	0.087678	0.09292
1979	5	-0.008097	0.02898	0.16129	0.006944
1979	9	0.007241	-0.09375	0.08046	0.003901

MR1BH - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.022515	-0.049566	0.027717	0.054928
1968	5	-0.010687	0.086071	-0.018423	-0.017832
1968	9	0.117776	-0.015206	0.166418	-0.003729
1969	1	0.016327	-0.106416	0.017194	0.039772
1969	5	-0.035583	-0.083181	-0.034702	-0.000782
1969	9	-0.040314	0.09509	0.005805	-0.021411
1970	1	-0.018636	0.102727	0.012811	-0.137875
1970	5	-0.027592	-0.109623	0.069231	-0.018122
1970	9	0.094194	-0.070999	0.022691	0.074878
1971	1	0.077058	-0.012263	0.01652	0.056165
1971	5	0.005434	-0.042341	-0.048303	0.003197
1971	9	-0.008099	-0.108283	-0.017042	0.116037
1972	1	0.040654	0.03865	-0.016951	0.080158
1972	5	-0.028676	-0.0486	-0.039679	0.109886
1972	9	-0.065663	0.076501	0.100002	-0.030648
1973	1	-0.027695	0.020612	-0.025059	-0.063249
1973	5	-0.028228	-0.033446	0.157948	-0.004977
1973	9	0.080241	0.043066	-0.174935	0.057183
1974	1	0.069873	0.02755	0.009748	-0.033468
1974	5	-0.013656	-0.036256	-0.022345	-0.068772
1974	9	-0.078721	0.12859	-0.022406	-0.082079
1975	1	0.139239	0.061514	0.005695	0.021299
1975	5	0.027231	0.078351	-0.078841	-0.016312
1975	9	-0.066804	0.027075	0.034152	-0.021701
1976	1	0.156263	0.043324	0.005011	0.006175
1976	5	-0.018032	0.104673	0.002969	-0.005387
1976	9	-0.010351	-0.012323	-0.008063	0.072125
1977	1	0.038976	-0.027612	0.047318	-0.003192
1977	5	-0.033734	0.064769	-0.074629	-0.025099
1977	9	-0.016015	-0.083208	0.029081	0.003669
1978	1	-0.009737	-0.015193	0.079276	0.019588
1978	5	0.062102	-0.026423	0.025495	0.023608
1978	9	-0.024055	-0.116905	0.015132	0.00512
1979	1	0.158016	-0.021002	0.067547	-0.061592
1979	5	-0.017114	0.030169	0.054022	0.180174
1979	9	0.03408	-0.10059	0.13117	0.100176

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR19

Rate of
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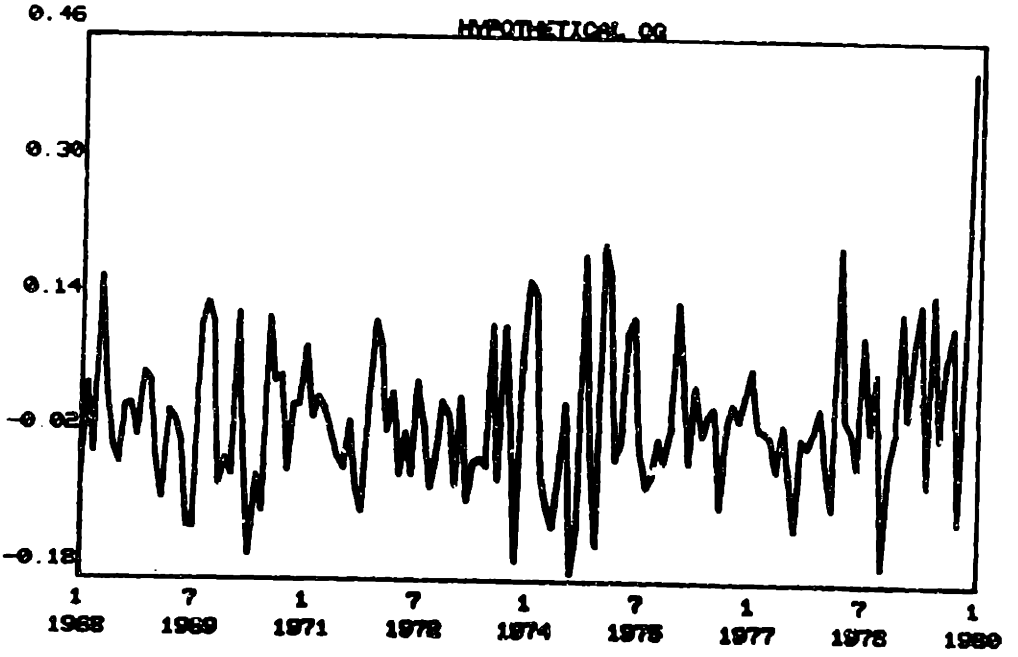

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR19H

MR19 - DATE REVISED: 5/30/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.030119	0.110959	0.00941	0.126154
1968	5	-0.036552	0.020862	0.1	-0.029479
1968	9	0.024911	-0.013089	0.160563	-0.051029
1969	1	-0.073956	-0.133333	0.0	0.086
1969	5	-0.132842	-0.211864	-0.096774	0.075
1969	9	-0.011173	0.186441	-0.173333	-0.110465
1970	1	-0.27451	0.022422	-0.042373	-0.176991
1970	5	-0.301075	-0.107692	0.103448	0.131075
1970	9	0.346667	-0.148515	-0.034884	0.108434
1971	1	0.217391	0.008929	0.141593	0.069767
1971	5	0.	0.072464	-0.108108	0.090485
1971	9	-0.117241	-0.0625	-0.058333	0.072566
1972	1	0.183333	-0.035211	-0.122628	-0.008403
1972	5	0.	-0.032203	-0.115044	0.1
1972	9	-0.061818	0.	0.147059	-0.041026
1973	1	-0.063063	-0.009615	0.16699	0.05042
1973	5	-0.04	-0.065	0.018018	-0.061947
1973	9	0.209434	0.023622	-0.184615	-0.003774
1974	1	0.096154	0.245614	-0.052113	0.045113
1974	5	-0.086331	-0.066142	-0.017094	0.026087
1974	9	-0.164407	0.216495	0.008424	-0.099174
1975	1	0.317757	0.085106	-0.008208	0.034965
1975	5	0.047297	0.	-0.013072	-0.072848
1975	9	-0.1	0.	0.024194	-0.031496
1976	1	0.264463	0.156863	-0.067797	-0.01227
1976	5	0.074534	0.069364	-0.054645	-0.017341
1976	9	-0.074118	0.058065	0.006098	0.093333
1977	1	0.11236	0.106061	0.03379	-0.004464
1977	5	-0.004484	-0.025225	-0.014019	-0.066351
1977	9	0.009137	-0.102041	0.125	0.054545
1978	1	-0.097087	0.032258	0.108333	0.02381
1978	5	0.088372	-0.04359	0.00905	0.107623
1978	9	0.02915	-0.075697	-0.038793	0.052018
1979	1	0.038961	-0.0875	0.094064	0.033898
1979	5	0.016393	0.050806	-0.035019	0.03629
1979	9	0.146887	-0.141379	0.128514	-0.010676

MR19H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.054614	0.047369	-0.030178	0.177543
1968	5	0.05697	-0.02174	-0.042018	0.024416
1968	9	0.027198	-0.011242	0.063203	0.051571
1969	1	-0.041023	-0.082455	0.017838	0.00783
1969	5	-0.018776	-0.115996	-0.117916	0.122719
1969	9	0.146367	0.122702	-0.065478	-0.036515
1970	1	-0.054975	0.134587	-0.036855	-0.14959
1970	5	-0.055721	-0.097136	0.129303	0.052963
1970	9	0.059101	-0.049152	0.025761	0.026991
1971	1	0.095002	0.010538	0.033746	0.021767
1971	5	-0.006926	-0.034702	-0.04767	0.006564
1971	9	-0.068472	-0.096918	0.025248	0.124501
1972	1	0.094414	-0.003534	0.039512	-0.053067
1972	5	-0.007428	-0.05321	0.052866	-0.002575
1972	9	-0.068358	-0.033192	0.030339	0.014941
1973	1	-0.06495	0.035048	-0.083472	-0.041567
1973	5	-0.03506	-0.043877	0.121023	-0.058034
1973	9	0.120333	0.013742	-0.154846	0.086331
1974	1	0.173599	0.15699	-0.054629	-0.090791
1974	5	-0.113832	-0.043305	0.029251	-0.170093
1974	9	-0.109151	0.203288	-0.031511	-0.13547
1975	1	0.216668	0.177398	-0.03553	-0.013404
1975	5	0.11662	0.130686	-0.019855	-0.065397
1975	9	-0.052154	-0.011773	-0.038081	0.004171
1976	1	0.14969	0.061159	-0.037824	0.049322
1976	5	-0.006312	0.017124	0.025291	-0.08851
1976	9	0.009054	0.029811	0.012671	0.030322
1977	1	0.0719	0.001342	-0.000626	-0.008197
1977	5	-0.046504	0.006226	-0.053972	-0.114635
1977	9	-0.009036	-0.018402	0.002835	0.025818
1978	1	-0.046323	-0.08856	0.217256	0.01443
1978	5	-0.000645	-0.041749	0.112457	-0.000391
1978	9	0.06016	-0.159267	-0.042773	2.599999E-05
1979	1	0.140444	0.015223	0.099094	0.151376
1979	5	-0.060786	0.162362	-0.00682	0.080417
1979	9	0.124541	-0.104326	0.098804	0.455555

Rate of
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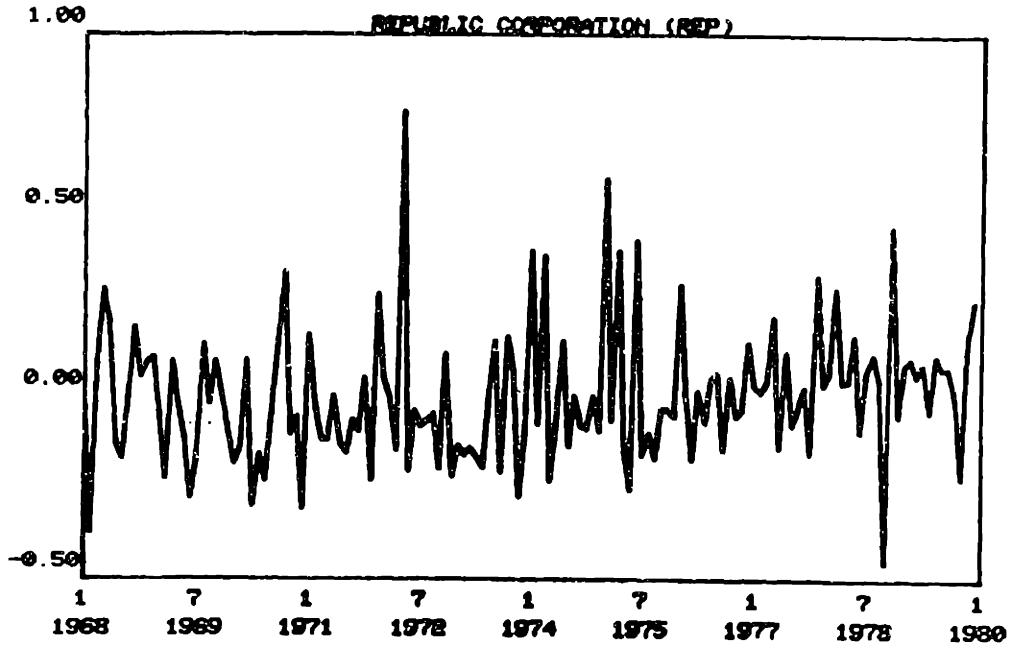

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MREP

Rate of
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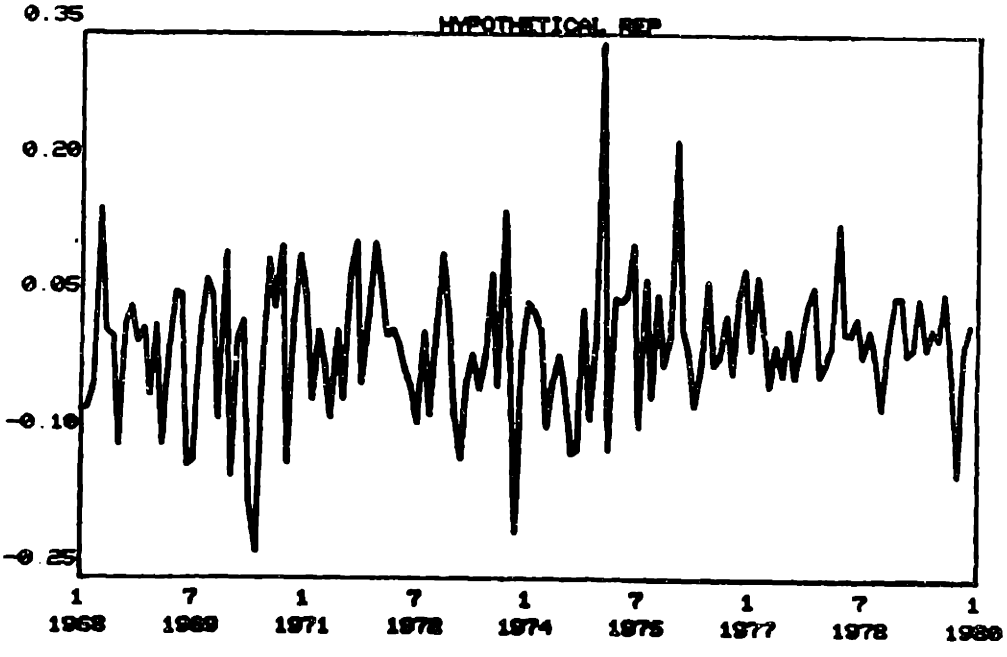

TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MREPH

MR2H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1:	-0.062655	-0.061058	-0.036513	0.157887	
1968	5:	0.022562	0.015568	-0.102698	0.029234	
1968	9:	0.047973	0.010372	0.024941	-0.048164	
1969	1:	0.027295	-0.101757	0.004859	0.064494	
1969	5:	0.060307	-0.125207	-0.119027	0.023277	
1969	9:	0.078097	0.059572	-0.073805	0.10698	
1970	1:	-0.137052	0.015626	0.032908	-0.167041	
1970	5:	-0.220422	-0.017804	0.098871	0.047217	
1970	9:	0.11434	-0.121923	0.035089	0.103866	
1971	1:	0.05937	-0.052976	0.020742	-0.014627	
1971	5:	-0.072528	0.02147	-0.051417	0.081331	
1971	9:	0.118717	-0.034245	0.04146	0.118107	
1972	1:	0.072588	0.017307	0.022032	0.005664	
1972	5:	-0.021925	-0.039714	-0.078269	0.019361	
1972	9:	-0.068798	0.02291	0.104634	0.031612	
1973	1:	-0.072603	-0.117339	-0.031954	-0.003974	
1973	5:	-0.040008	-0.004299	0.083167	-0.03641	
1973	9:	0.154005	-0.010815	-0.198141	0.30337	
1974	1:	0.053395	0.041315	0.023932	-0.081621	
1974	5:	-0.035018	-0.004945	-0.04326	-0.110695	
1974	9:	-0.10653	0.045169	-0.071952	0.017918	
1975	1:	0.338775	-0.106975	0.057643	0.055556	
1975	5:	0.060499	0.116668	-0.081077	0.077671	
1975	9:	-0.048441	0.060751	-0.014235	0.018666	
1976	1:	0.231703	0.025587	-0.002878	-0.058406	
1976	5:	-0.011343	0.076901	-0.01311	-0.004742	
1976	9:	0.039004	-0.022436	0.059436	0.009191	
1977	1:	0.003942	0.021419	0.022064	-0.037229	
1977	5:	0.007575	-0.024607	0.024619	-0.026778	
1977	9:	0.007107	0.049404	0.070968	-0.025274	
1978	1:	-0.011496	0.006888	0.141233	0.020592	
1978	5:	0.02039	0.037638	-0.004024	0.024049	
1978	9:	-0.008016	-0.041226	0.01048	0.061258	
1979	1:	0.061363	-0.061369	0.004787	0.004515	
1979	5:	0.005452	0.027203	0.015617	0.067857	
1979	9:	-0.023979	-0.133488	0.008383	0.031577	

Rate of
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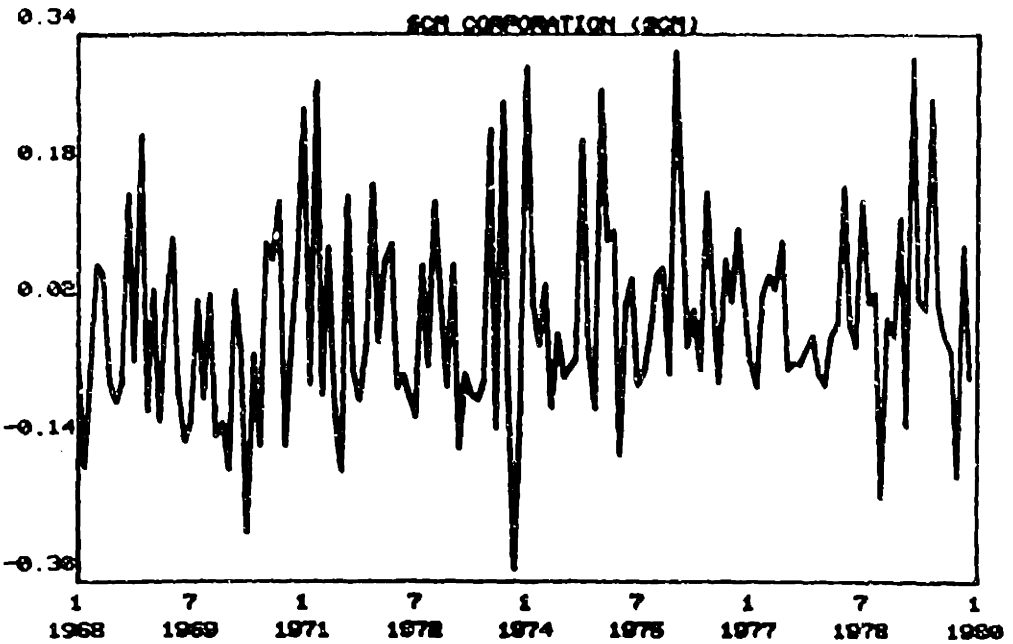
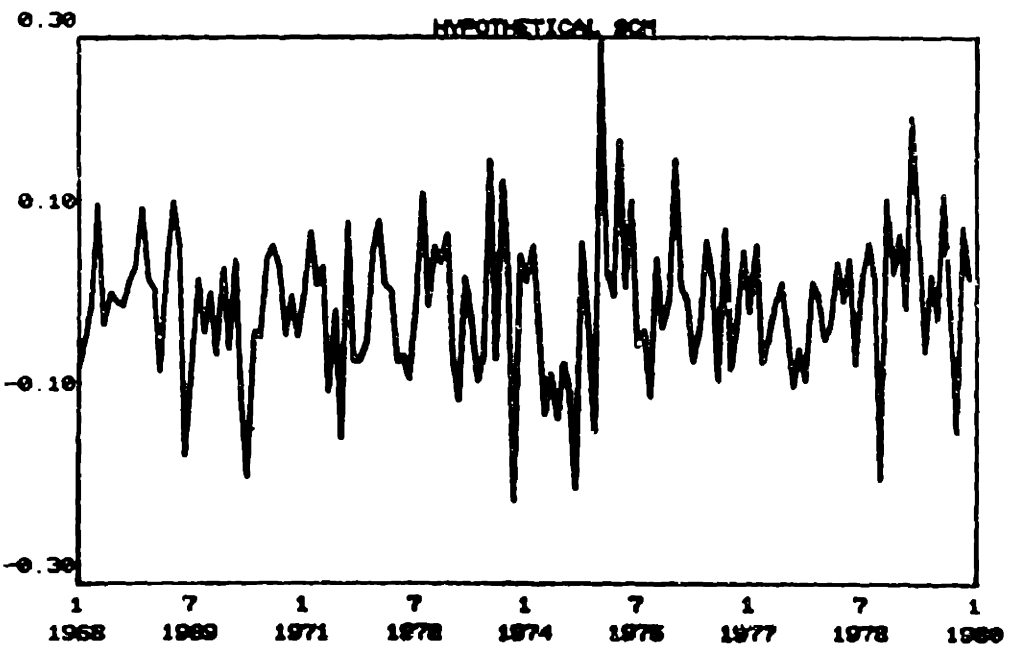


TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRB1

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

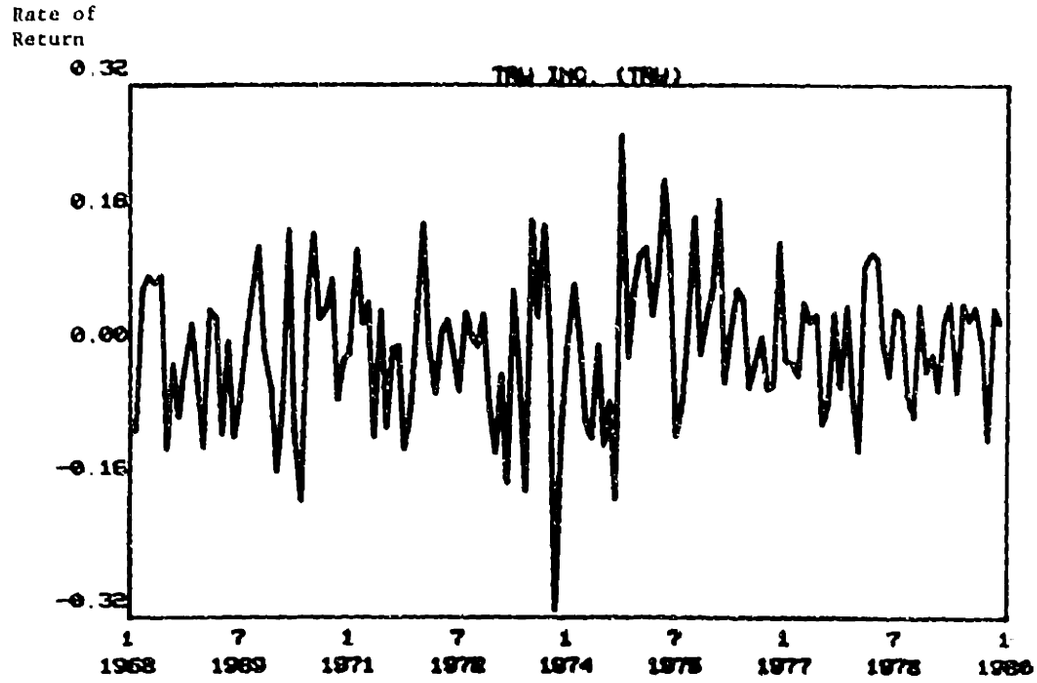
DATA NAMES: MRB1H

MR21 DATE REVISED: [illegible]
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1968	5	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
1968	9	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1969	1	0.[illegible]	-0.111111	0.[illegible]	0.[illegible]
1969	5	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1969	9	-0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1970	1	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1970	5	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1970	9	0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1971	1	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1971	5	0.088608	-0.[illegible]	0.[illegible]	0.149606
1971	9	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]
1972	1	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1972	5	-0.059211	-0.[illegible]	-0.[illegible]	0.[illegible]
1972	9	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1973	1	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]
1973	5	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1973	9	0.261053	-0.[illegible]	-0.[illegible]	-0.[illegible]
1974	1	0.3	0.[illegible]	-0.[illegible]	0.[illegible]
1974	5	-0.095745	-0.[illegible]	-0.[illegible]	-0.[illegible]
1974	9	-0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]
1975	1	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1975	5	0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]
1975	9	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1976	1	0.[illegible]	0.[illegible]	-0.[illegible]	0.[illegible]
1976	5	-0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1976	9	0.[illegible]	0.[illegible]	0.[illegible]	0.[illegible]
1977	1	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]
1977	5	0.[illegible]	0.[illegible]	-0.[illegible]	-0.[illegible]
1977	9	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]
1978	1	-0.[illegible]	-0.[illegible]	0.	0.[illegible]
1978	5	0.	-0.[illegible]	0.[illegible]	0.[illegible]
1978	9	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1979	1	0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]
1979	5	0.[illegible]	0.[illegible]	0.[illegible]	-0.[illegible]
1979	9	-0.[illegible]	-0.[illegible]	0.[illegible]	-0.[illegible]

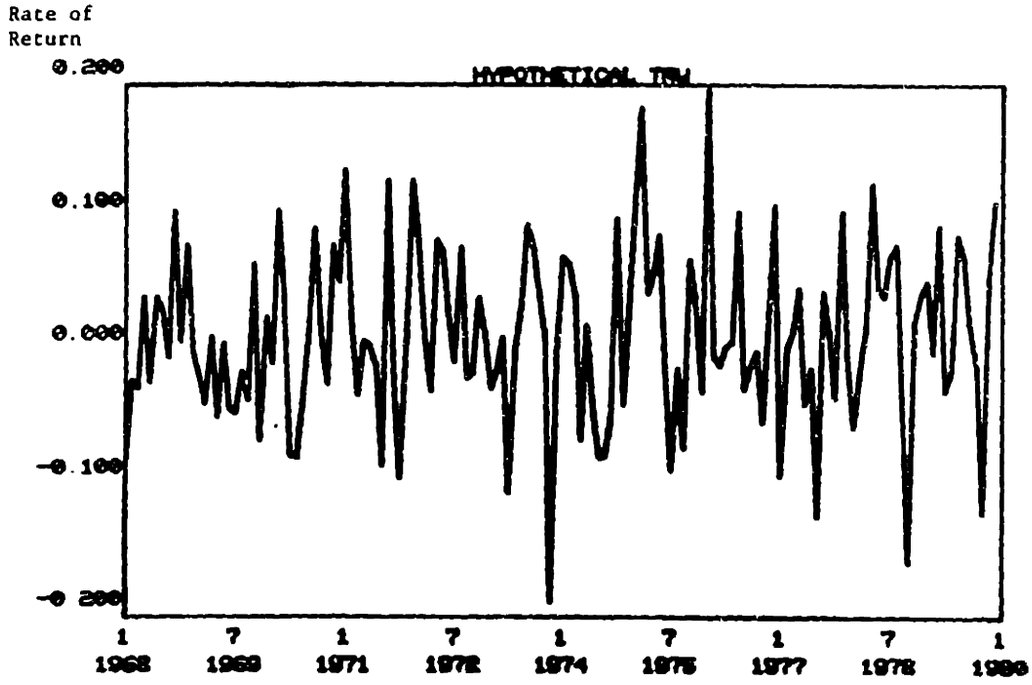
MR21H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.062481	-0.029668	0.006837	0.116508
1968	5	-0.014626	0.019535	0.009169	0.005976
1968	9	0.032103	0.04865	0.111939	0.035332
1969	1	0.023436	-0.064859	0.055648	0.119023
1969	5	0.070557	-0.15778	-0.070937	0.034342
1969	9	-0.022748	0.018591	-0.046952	0.046222
1970	1	-0.041321	0.053862	-0.094858	-0.180565
1970	5	-0.022528	-0.028868	0.055605	0.07024
1970	9	0.045512	-0.026024	0.01563	-0.027294
1971	1	0.013768	0.084432	0.028288	0.047132
1971	5	-0.088294	-0.000517	-0.138116	0.094564
1971	9	-0.053524	-0.054029	-0.036932	0.065525
1972	1	0.097485	0.028899	0.01965	-0.059249
1972	5	-0.049298	-0.074925	-0.000973	0.127275
1972	9	0.006133	0.060235	0.053094	0.082263
1973	1	-0.052548	-0.097045	0.036141	-0.007082
1973	5	-0.075451	-0.046864	0.165113	-0.051981
1973	9	0.14181	0.033908	-0.206047	0.060098
1974	1	0.032294	0.07024	-0.022216	-0.111823
1974	5	-0.069406	-0.116317	-0.057656	-0.089619
1974	9	-0.192937	0.072959	-0.019804	-0.12992
1975	1	0.294361	0.043294	0.016749	0.187152
1975	5	0.025996	0.110696	-0.038626	-0.022473
1975	9	-0.09239	0.056592	-0.017153	0.011946
1976	1	0.165123	0.024596	0.011018	-0.055091
1976	5	-0.016412	0.075734	0.036099	-0.075813
1976	9	0.08806	-0.062518	-0.01015	0.063941
1977	1	-0.000744	0.070823	-0.05623	-0.032676
1977	5	0.003091	0.030117	-0.020497	-0.082578
1977	9	-0.041114	-0.075804	0.030755	0.015392
1978	1	-0.031767	-0.016977	0.052968	0.01099
1978	5	0.05625	-0.0579	0.027715	0.073468
1978	9	0.[illegible]171	-0.10327	0.122012	0.041052
1979	1	0.[illegible]242	0.003362	0.214378	0.097138
1979	5	-0.[illegible]28	0.039011	-0.[illegible]102	0.126457
1979	9	-0.010528	-0.132326	0.091537	0.035887



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRBB



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRBBH

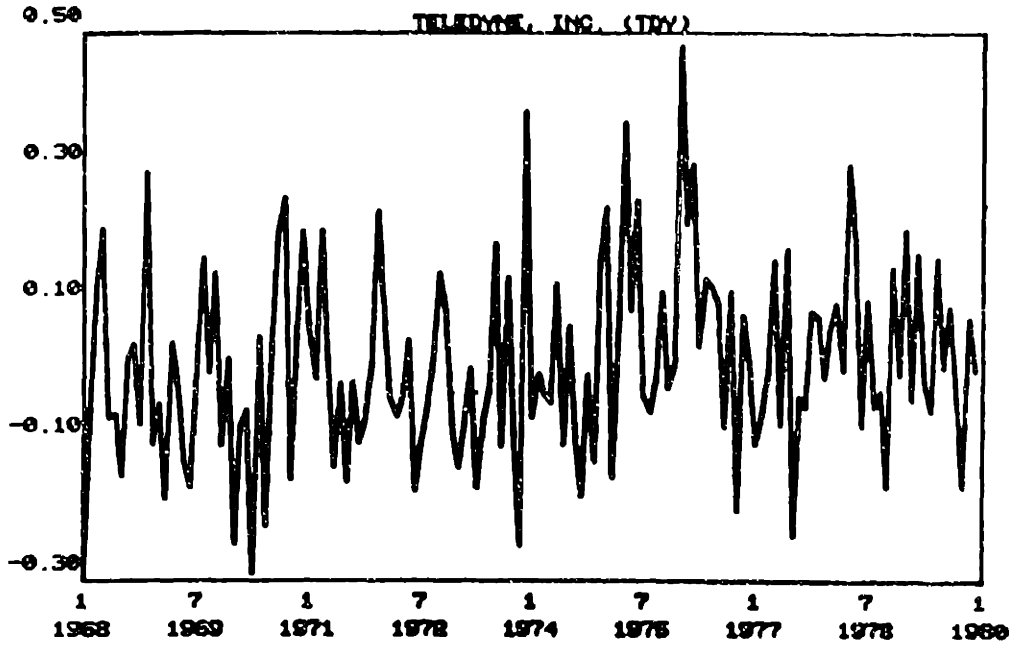
MR2[illegible] - DATE REVISED: [illegible]
MONTHLY DATA FROM 1968 1 TO [illegible] 12

1968	1	-0.092687	0.092127	0.07291	0.07044
1968	5	0.09045	0.085895	-0.11743	-0.014242
1968	9	-0.077694	-0.016304	0.033147	-0.037634
1969	1	-0.114539	0.050423	0.09225	-0.078837
1969	5	0.012503	-0.102764	-0.057143	0.017727
1969	9	0.074627	0.139	0.	-0.044478
1970	1	-0.143057	-0.066065	0.146341	-0.099291
1970	5	-0.177155	0.063802	0.140969	0.059841
1970	9	0.050193	0.083029	-0.05102	-0.01087
1971	1	0.	0.120879	0.031915	0.057325
1971	5	-0.10241	0.047297	-0.090323	0.003546
1971	9	0.007117	-0.116508	-0.064516	0.047414
1972	1	0.152263	0.007143	-0.05	0.032556
1972	5	0.036765	0.	-0.045429	0.044944
1972	9	0.010051	0.002092	0.042545	-0.071429
1973	1	-0.120879	-0.070833	-0.155844	0.071795
1973	5	-0.037835	-0.165829	0.156627	0.042083
1973	9	0.151515	0.017544	-0.30931	-0.094937
1974	1	0.006993	0.070056	0.013072	-0.003871
1974	5	-0.103944	0.008	-0.111111	-0.060357
1974	9	-0.174757	0.258824	-0.007103	0.076923
1975	1	0.116071	0.1232	0.043478	0.097222
1975	5	0.205063	0.106303	-0.100962	-0.056684
1975	9	0.04023	0.160221	-0.002857	0.043478
1976	1	0.074074	0.182759	-0.036765	0.022901
1976	5	0.073881	0.059649	-0.043046	-0.014533
1976	9	0.01773	-0.045296	-0.040078	0.130769
1977	1	-0.010204	-0.014433	-0.020169	0.057971
1977	5	0.034932	0.043478	-0.086538	-0.062456
1977	9	0.045455	-0.043478	0.053708	-0.054545
1978	1	-0.119231	0.10131	0.116466	0.111511
1978	5	0.008414	-0.029221	0.056167	0.043312
1978	9	-0.052469	-0.078176	0.055124	-0.023729
1979	1	-0.003472	-0.04669	0.037037	0.057143
1979	5	-0.047297	0.057554	0.037415	0.052459
1979	9	0.009464	-0.10625	0.052448	0.03367

MR22H - DATE REVISED: 6/09/61
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.080501	-0.022678	-0.027444	0.040602
1968	5	-0.023452	0.040754	0.029818	-0.004653
1968	9	0.106057	0.008239	0.079403	-0.000911
1969	1	-0.019438	-0.039707	0.011064	-0.049728
1969	5	0.005673	-0.043528	-0.046674	-0.015305
1969	9	-0.03654	0.064576	-0.067034	0.025433
1970	1	-0.009039	0.105509	0.035083	-0.078279
1970	5	-0.079311	-0.036431	0.013833	0.092308
1970	9	0.011356	-0.024552	0.078045	0.051541
1971	1	0.135795	0.01795	-0.033137	0.007286
1971	5	0.004141	-0.011623	-0.085375	0.12836
1971	9	-0.0222	-0.094207	0.011023	0.129291
1972	1	0.081578	0.013857	-0.030171	0.082999
1972	5	0.073986	0.027095	-0.008302	0.076552
1972	9	-0.021056	-0.016978	0.038708	0.011163
1973	1	-0.028602	-0.014595	0.009862	-0.105260
1973	5	0.003198	0.033563	0.094173	0.078519
1973	9	0.039175	0.011112	-0.107901	-0.002075
1974	1	0.070385	0.063837	0.040369	-0.066499
1974	5	0.019614	-0.047652	-0.07948	-0.077883
1974	9	-0.050049	0.098506	-0.039686	0.035307
1975	1	0.111897	0.181341	0.042968	0.057659
1975	5	0.086205	-0.016396	-0.088634	-0.013405
1975	9	-0.072073	0.068153	0.0376	-0.03035
1976	1	0.195821	-0.003458	-0.011005	0.002932
1976	5	0.006936	0.104364	-0.028827	-0.01246
1976	9	-0.000457	-0.053707	0.020152	0.107163
1977	1	-0.093686	0.002569	0.014492	0.044558
1977	5	-0.039841	-0.013069	-0.123097	0.04466
1977	9	0.014079	-0.0319	0.104876	-0.010287
1978	1	-0.056934	-0.017086	0.019802	0.126058
1978	5	0.047377	0.040224	0.070202	0.079333
1978	9	-0.049039	-0.150581	0.021691	0.042957
1979	1	0.051416	-0.001434	0.094411	-0.030915
1979	5	-0.013102	0.086873	0.069611	0.010768
1979	9	-0.012034	-0.121042	0.052894	0.112406

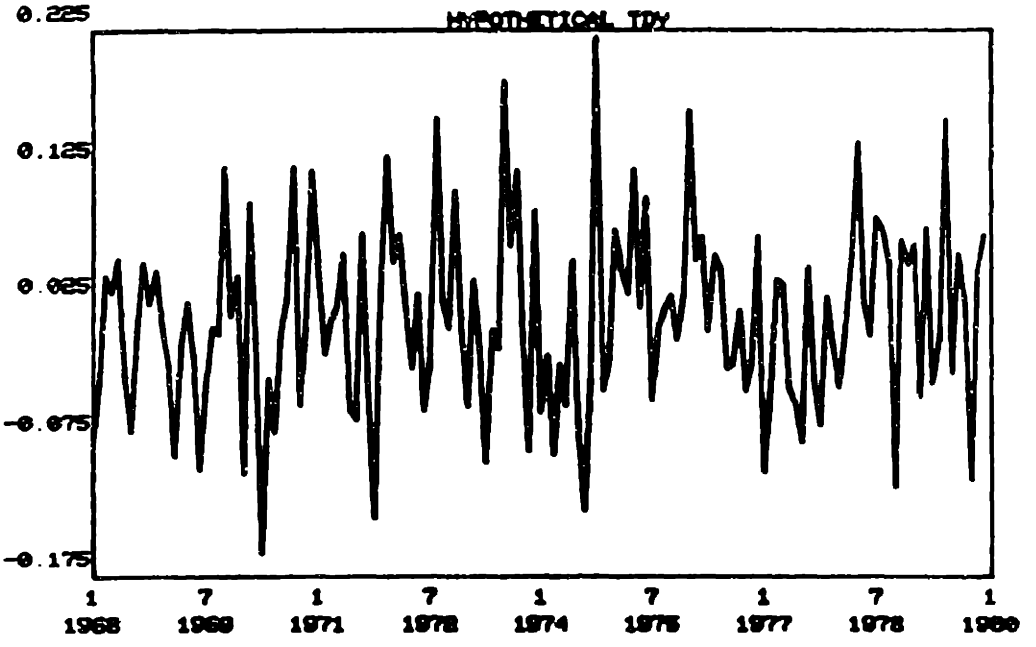
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRE3

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRE3H

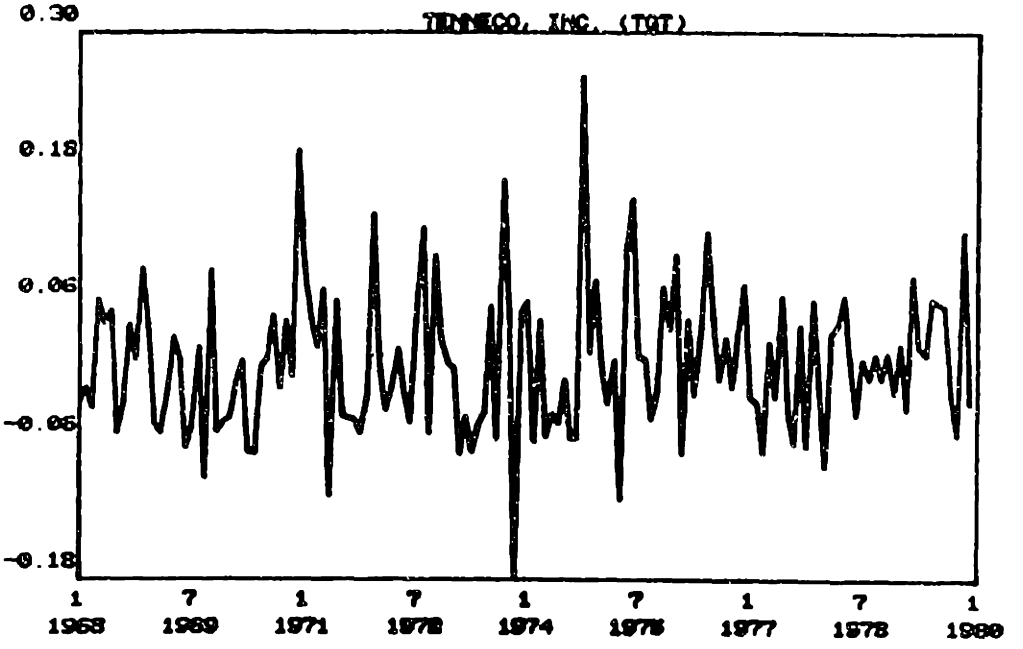
MR23 - DATE REVISED: 6/01/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.238077	0.241251	0.135071	0.214866
1968	5	-0.033241	-0.059653	-0.14174	0.024621
1968	9	0.044872	-0.012253	0.296296	-0.100622
1969	1	-0.013766	-0.142554	0.044642	-0.018806
1969	5	-0.136681	-0.162753	-0.003953	0.170625
1969	9	0.03339	0.148119	-0.102941	0.022951
1970	1	-0.244006	-0.074736	-0.051087	-0.288597
1970	5	0.055944	-0.218713	0.036878	0.204911
1970	9	0.258503	-0.151451	0.0573.35	0.20994
1971	1	0.071795	-0.004535	0.211538	0.019841
1971	5	-0.132296	-0.013453	-0.154545	-0.010753
1971	9	-0.087026	-0.062265	0.019355	0.230608
1972	1	0.094737	-0.033154	-0.059701	-0.031746
1972	5	0.04918	-0.166667	-0.1	-0.041667
1972	9	0.028906	0.147837	0.092025	-0.00575
1973	1	-0.132911	-0.065693	0.007813	-0.162791
1973	5	-0.064815	-0.019802	0.191919	-0.101695
1973	9	0.141509	-0.090909	-0.245455	0.385542
1974	1	-0.06087	0.001389	-0.028571	-0.039216
1974	5	0.132653	-0.099099	0.07	-0.093458
1974	9	-0.175258	0.	-0.125	0.171429
1975	1	0.243902	-0.147059	0.089195	0.369565
1975	5	0.095238	0.253623	-0.028902	-0.053571
1975	9	-0.006289	0.120253	-0.016949	0.017241
1976	1	0.400226	0.221374	0.306813	0.041872
1976	5	0.13948	0.128631	0.104779	-0.074875
1976	9	0.122302	-0.195513	0.087649	0.018315
1977	1	-0.100719	-0.054	0.006047	0.166667
1977	5	-0.072356	0.184	-0.233108	-0.030837
1977	9	-0.045455	0.092857	0.084967	-0.004016
1978	1	0.068548	0.10566	0.006826	0.30678
1978	5	0.19131	-0.075449	0.108808	-0.047897
1978	9	-0.023313	-0.160804	0.158683	0.001292
1979	1	0.212903	-0.03617	0.178411	-0.006098
1979	5	-0.052147	0.1726	0.01196	0.099091
1979	9	-0.032258	-0.160684	0.084521	0.006573

MR23H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.073974	-0.030747	0.045299	0.033092
1968	5	0.057525	-0.029054	-0.068627	0.004903
1968	9	0.054004	0.024756	0.047775	0.007684
1969	1	-0.021657	-0.086399	-0.004436	0.025622
1969	5	-0.014618	-0.096788	-0.037601	0.007539
1969	9	0.092591	0.124261	0.015342	0.04455
1970	1	-0.099612	0.098652	-0.003577	-0.157167
1970	5	-0.029767	-0.068553	0.002954	0.028724
1970	9	0.124948	-0.048954	0.008313	0.121369
1971	1	0.053873	-0.011613	0.012664	0.02256
1971	5	0.05999	-0.053385	-0.059441	0.075674
1971	9	-0.037233	-0.13147	0.043373	0.132118
1972	1	0.054924	0.074304	0.019214	-0.022311
1972	5	0.030382	-0.052788	-0.018661	0.159966
1972	9	0.025323	0.007666	0.106577	0.003568
1973	1	-0.049793	0.040474	-0.009024	-0.091078
1973	5	0.004684	-0.007643	0.186825	0.067098
1973	9	0.121733	0.00058	-0.083317	0.092147
1974	1	-0.053809	-0.013827	-0.065241	-0.020421
1974	5	-0.040595	0.055212	-0.069257	-0.125954
1974	9	-0.031683	0.219696	-0.038422	-0.014496
1975	1	0.077809	0.04951	0.032375	0.122565
1975	5	0.022299	0.10152	-0.045131	0.007799
1975	9	0.020732	0.029574	-0.001388	0.030947
1976	1	0.165529	0.056274	0.073088	0.004563
1976	5	0.05928	0.048838	-0.022686	-0.019483
1976	9	0.018954	-0.038148	-0.016057	0.072932
1977	1	-0.097848	-0.034651	0.042341	0.038616
1977	5	-0.036671	-0.048956	-0.07624	0.05027
1977	9	-0.029865	-0.063129	0.029518	-0.005547
1978	1	-0.035579	0.002656	0.061956	0.143153
1978	5	0.024793	0.001956	0.087653	0.077956
1978	9	0.05314	-0.109545	0.070002	0.053665
1979	1	0.047613	-0.043451	0.060201	-0.033094
1979	5	0.001041	0.160054	-0.025309	0.060071
1979	9	0.020949	-0.104256	0.043335	0.074956

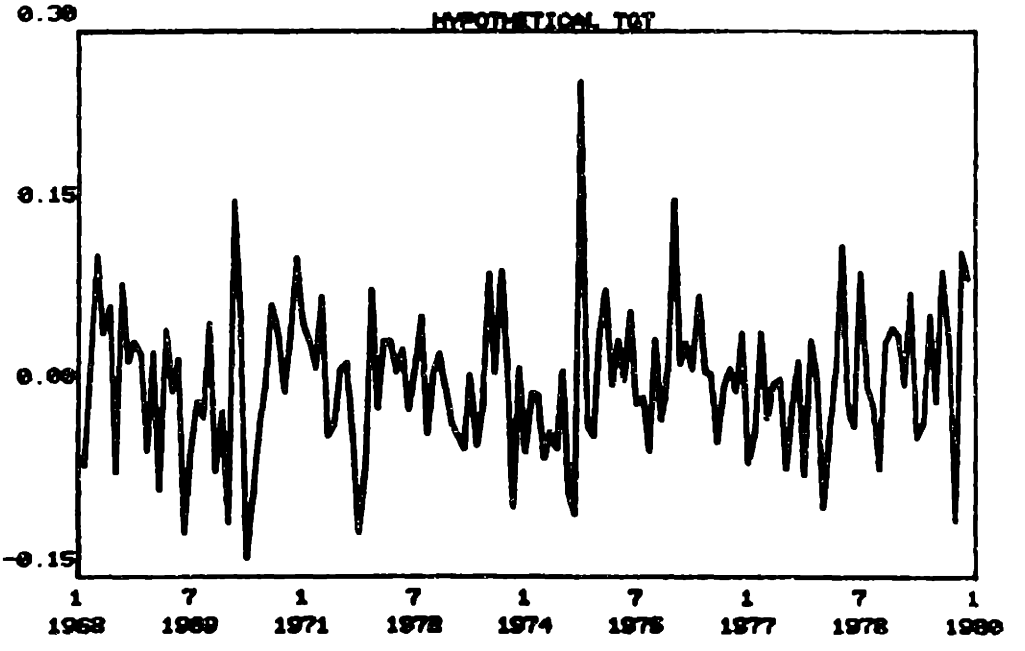
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR24

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR24H

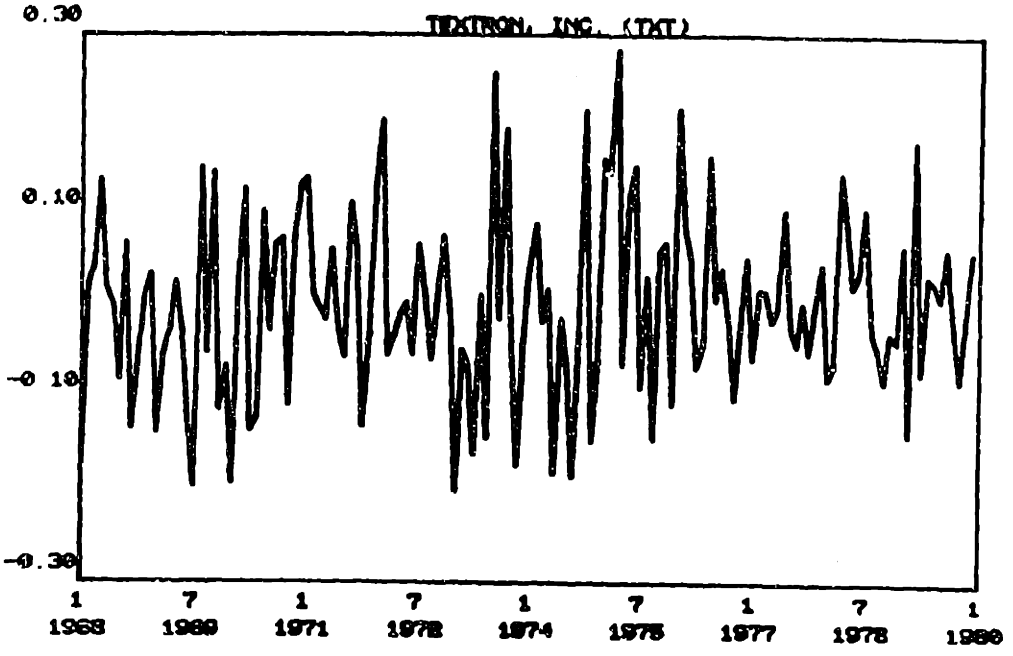
MR24 - DATE REVISED: 5/31/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.022956	0.011456	-0.038146	0.074356
1968	5	0.044465	0.040054	-0.051202	-0.024505
1968	9	0.042056	0.013453	0.070973	0.036805
1969	1	-0.043478	-0.051405	-0.013216	0.0312
1969	5	0.011482	-0.064935	-0.046296	0.022136
1969	9	-0.091516	0.089947	-0.050291	-0.041451
1970	1	-0.037038	-0.00764	0.011494	-0.068182
1970	5	-0.069268	0.066667	0.013245	0.049935
1970	9	-0.012658	0.044872	-0.002209	0.19375
1971	1	0.094241	0.043124	0.023148	0.072398
1971	5	-0.107004	0.062701	-0.036036	-0.039065
1971	9	-0.039409	-0.051282	-0.018182	0.139665
1972	1	0.009804	-0.030874	-0.010152	0.020513
1972	5	-0.016884	-0.041451	0.040649	0.12701
1972	9	-0.050926	0.102439	0.029735	0.008696
1973	1	0.00431	-0.069071	-0.037383	-0.067961
1973	5	-0.043125	-0.033149	0.057143	-0.055568
1973	9	0.168605	0.049751	-0.175924	0.052632
1974	1	0.061111	-0.05822	0.045198	-0.054054
1974	5	-0.034971	-0.042169	-0.006289	-0.055696
1974	9	-0.054795	0.26087	0.018391	0.08046
1975	1	0.005319	-0.025397	0.01105	-0.10929
1975	5	0.105522	0.152542	0.014706	0.012174
1975	9	-0.038835	-0.015152	0.074462	0.038835
1976	1	0.102804	-0.069831	0.046296	-0.017699
1976	5	0.038378	0.123348	0.047059	-0.004644
1976	9	0.030534	-0.011111	0.036554	0.076923
1977	1	-0.020408	-0.025139	-0.068592	0.027132
1977	5	-0.019774	0.066406	-0.032967	-0.060606
1977	9	0.040984	-0.062992	0.063025	-0.012048
1978	1	-0.081301	0.035398	0.043478	0.066667
1978	5	0.007813	-0.035433	0.012245	-0.004032
1978	9	0.016461	-0.004049	0.017886	-0.01626
1979	1	0.024793	-0.030645	0.084746	0.023438
1979	5	0.016794	0.064885	0.060932	0.058784
1979	9	-0.019417	-0.052805	0.124739	-0.025157

MR24H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.052474	-0.056903	0.025607	0.115399
1968	5	0.049976	0.073271	-0.062368	0.091688
1968	9	0.02693	0.043255	0.032228	-0.04445
1969	1	0.034388	-0.077461	0.053534	0.002287
1969	5	0.028299	-0.112724	-0.047973	-0.004175
1969	9	-0.018191	0.057979	-0.061939	-0.013812
1970	1	-0.104291	0.158897	0.063149	-0.134032
1970	5	-0.077968	-0.02515	0.009274	0.07354
1970	9	0.047974	0.002168	0.049961	0.1128
1971	1	0.059274	0.042953	0.022103	0.08084
1971	5	-0.032626	-0.022445	0.020821	0.025406
1971	9	-0.033651	-0.111698	-0.054752	0.086367
1972	1	-0.010468	0.042738	0.043214	0.018039
1972	5	0.035892	-0.011244	0.01704	0.063385
1972	9	-0.030948	0.016071	0.032954	0.001955
1973	1	-0.023893	-0.033924	-0.04266	0.015266
1973	5	-0.040855	-0.008264	0.099406	0.018676
1973	9	0.101554	0.025912	-0.09067	0.02069
1974	1	-0.045848	0.000118	-0.000926	-0.050861
1974	5	-0.030398	-0.042786	0.018087	-0.079638
1974	9	-0.09635	0.257461	-0.026292	-0.033071
1975	1	0.048895	0.085334	0.00785	0.043702
1975	5	0.012572	0.067601	-0.007631	-0.002967
1975	9	-0.044803	0.044512	-0.020325	0.020585
1976	1	0.140068	0.025342	0.042359	0.021208
1976	5	0.080785	0.018319	0.015061	-0.037671
1976	9	0.006009	0.021166	0.002986	0.049963
1977	1	-0.054955	-0.029745	0.050619	-0.018352
1977	5	0.00828	0.01231	-0.058043	-0.010453
1977	9	0.026705	-0.064123	0.044615	0.011548
1978	1	-0.091609	-0.03369	0.023344	0.12275
1978	5	-0.013541	-0.024950	0.101965	0.00605
1978	9	-0.010043	-0.049262	0.042218	0.055292
1979	1	0.049245	0.008322	0.004269	-0.034416
1979	5	-0.021494	0.066101	-0.005861	0.102595
1979	9	0.041322	-0.14285	0.117739	0.096006

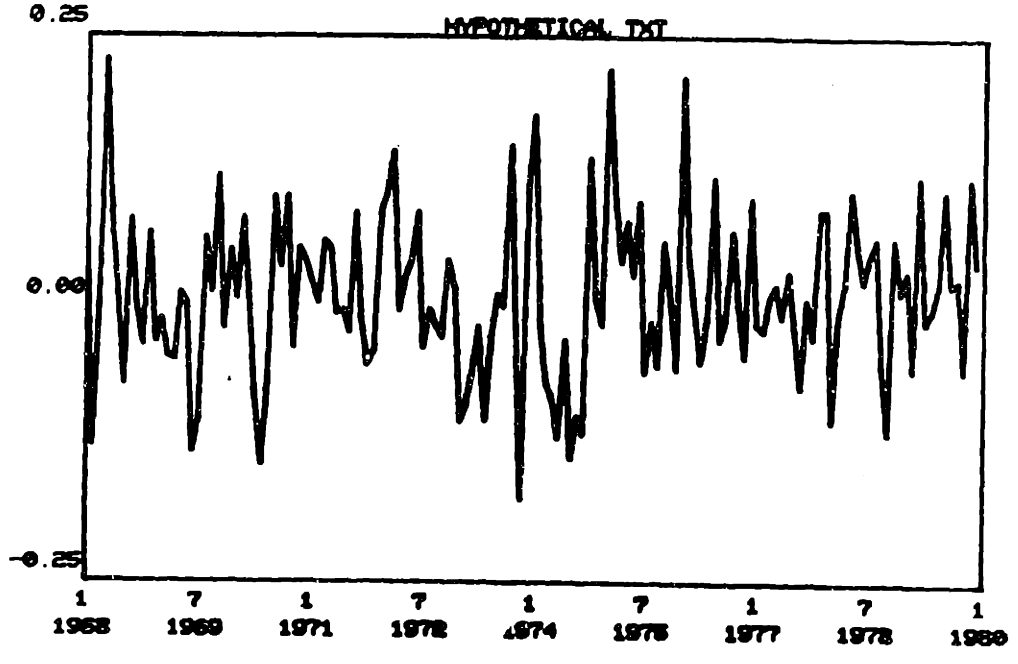
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: RRES

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: RRESH

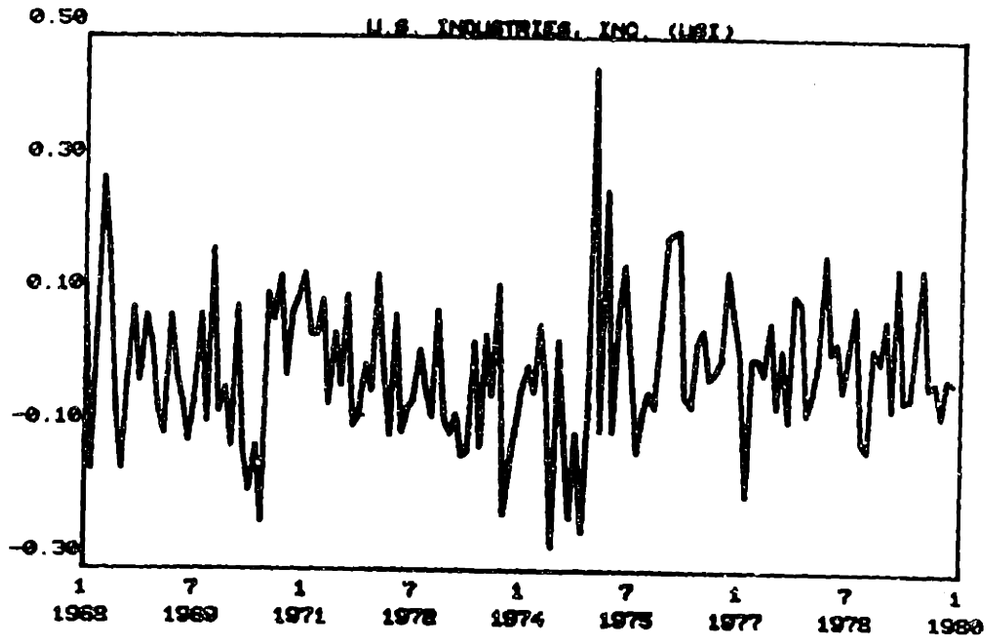
MR25 - DATE REVISED: 5/31/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.171084	0.033356	0.046054	0.111489
1968	5	0.02148	0.004271	-0.077103	0.020006
1968	9	-0.130969	-0.052477	0.014493	0.036
1969	1	-0.135734	-0.051582	-0.021622	0.027270
1969	5	-0.037022	-0.122717	-0.195219	0.153465
1969	9	-0.040069	0.15	-0.110672	-0.063111
1970	1	-0.191380	0.029506	0.131034	-0.133333
1970	5	-0.118343	0.10604	-0.02454	0.069182
1970	9	0.075294	-0.104972	0.080247	0.136
1971	1	0.142132	0.013333	-0.000077	-0.013274
1971	5	0.06278	-0.02616	-0.052402	0.115207
1971	9	0.061157	-0.129412	-0.027027	0.137963
1972	1	0.204910	-0.05102	-0.029391	-0.007435
1972	5	0.003745	-0.049254	0.067191	0.011111
1972	9	-0.055238	0.007813	0.077519	-0.007402
1973	1	-0.20073	-0.045662	-0.062584	-0.159794
1973	5	0.01227	-0.139879	0.257143	-0.011364
1973	9	0.195402	-0.038835	-0.17171	-0.036508
1974	1	0.044872	0.092025	-0.01573	0.017341
1974	5	-0.181818	-0.0125	-0.064286	-0.183206
1974	9	-0.026168	0.215606	-0.145161	-0.054717
1975	1	0.163265	0.149123	0.283969	-0.060241
1975	5	0.121795	0.155429	-0.085	0.032787
1975	9	-0.141799	0.0625	0.070588	-0.103297
1976	1	0.217391	0.091837	0.052335	-0.06270
1976	5	-0.038278	0.166169	0.008621	0.042735
1976	9	-0.014754	-0.096639	-0.018605	0.054028
1977	1	-0.054545	0.019231	0.017925	-0.014085
1977	5	0.	0.108571	-0.021739	-0.04
1977	9	0.003704	-0.046729	0.004902	0.047805
1978	1	-0.075472	-0.061224	0.147826	0.091346
1978	5	0.022026	0.035345	0.109705	-0.026616
1978	9	-0.046094	-0.078838	-0.027027	-0.036111
1979	1	0.060293	-0.136986	0.183069	-0.068182
1979	5	0.034146	0.026415	0.009346	0.064815
1979	9	-0.023478	-0.076923	-0.009804	0.062376

MR25H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	0.063746	-0.124891	0.002919	0.228951
1968	5	0.084099	0.004697	-0.067246	0.082383
1968	9	0.002006	-0.032744	0.06974	-0.030525
1969	1	-0.010111	-0.04319	-0.045854	0.013437
1969	5	0.003258	-0.131107	-0.101178	0.064964
1969	9	0.014839	0.120614	-0.018444	0.053584
1970	1	0.009083	0.082815	0.00755	-0.079626
1970	5	-0.142489	-0.063204	0.102293	0.038548
1970	9	0.102912	-0.035319	0.055721	0.043357
1971	1	0.024993	0.005584	0.062071	0.056581
1971	5	-0.005672	-0.002299	-0.02215	0.087555
1971	9	-0.011043	-0.050728	-0.038047	0.088783
1972	1	0.106834	0.14335	-0.002015	0.03019
1972	5	0.043274	0.087495	-0.03512	-0.00232
1972	9	-0.016906	-0.026349	0.043848	0.015172
1973	1	-0.101638	-0.085181	-0.056445	-0.017387
1973	5	-0.101068	-0.025911	0.012254	0.001499
1973	9	0.147834	-0.018595	-0.173926	0.112936
1974	1	0.176711	-0.020298	-0.068103	-0.082164
1974	5	-0.116542	-0.02854	-0.136066	-0.096884
1974	9	-0.113505	0.136816	0.005915	-0.015013
1975	1	0.219496	0.107519	0.043086	0.080395
1975	5	0.030875	0.097959	-0.056039	-0.012977
1975	9	-0.051037	0.061478	0.01636	-0.053304
1976	1	0.212430	0.045324	-0.003102	-0.047625
1976	5	-0.00497	0.119515	-0.028177	-0.009801
1976	9	0.071253	0.002487	-0.042624	0.101324
1977	1	-0.014674	-0.020322	0.009925	0.021204
1977	5	-0.007171	0.033672	-0.020903	-0.049591
1977	9	0.000402	-0.026336	0.090819	0.09034
1978	1	-0.100471	-0.009709	0.02371	0.107354
1978	5	0.041341	0.025552	0.046664	0.044991
1978	9	-0.051444	-0.112545	0.064423	0.014086
1979	1	0.034749	-0.053355	0.120291	-0.012699
1979	5	-0.000902	0.020483	0.107066	0.022515
1979	9	0.027343	-0.054129	0.112932	0.041331

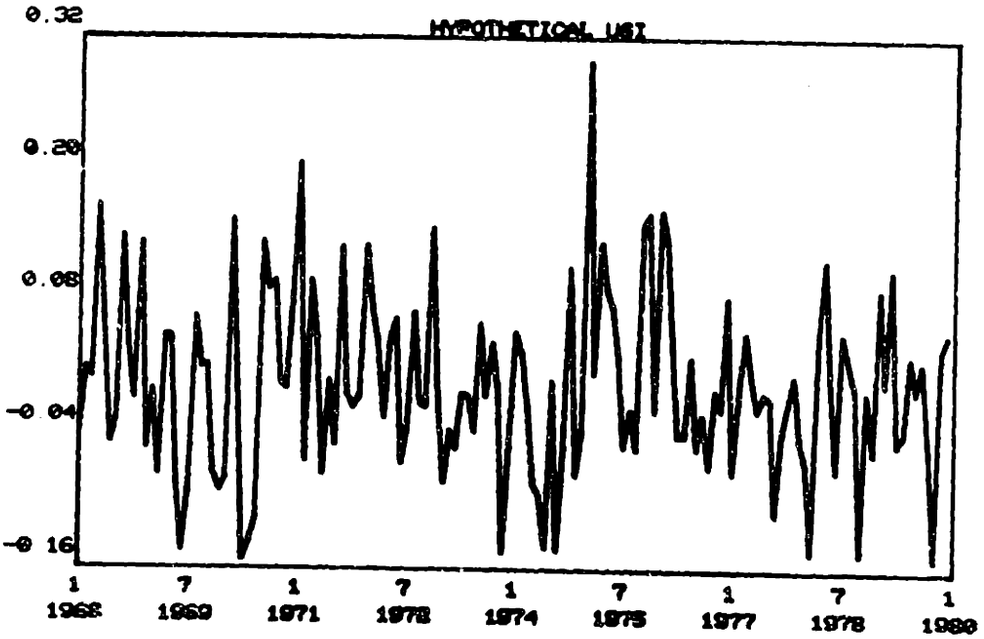
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MR28

Rate of
Return



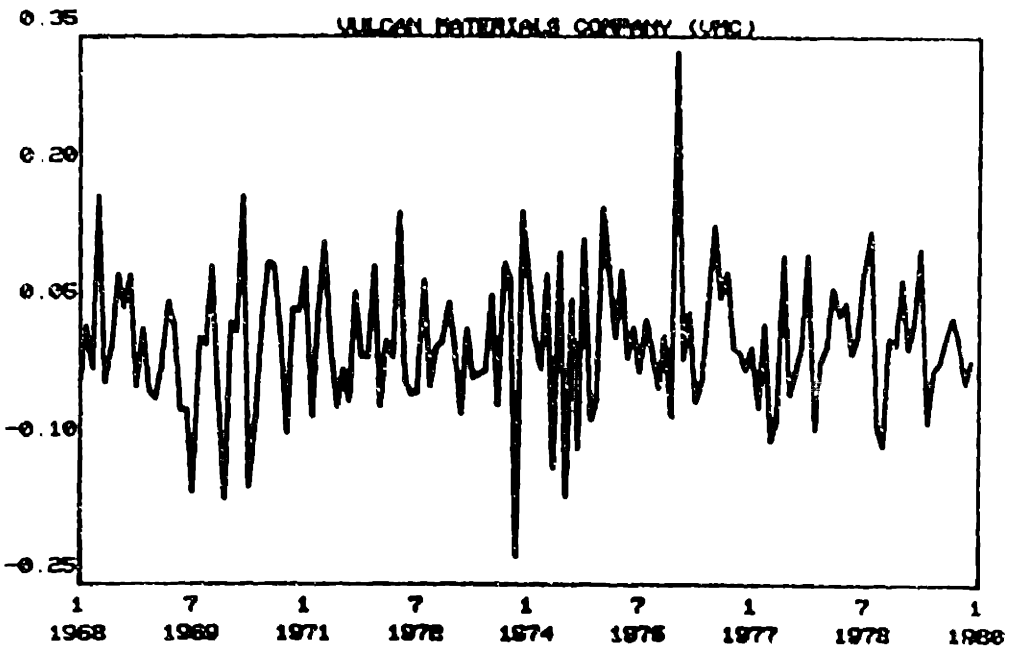
TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRBSH

MR26H - DATE REVISED: 6/09/01
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.036723	0.070912	0.011986	0.167849
1968	5	0.065086	-0.046931	-0.025173	0.140544
1968	9	0.041213	-0.00582	0.134025	-0.051028
1969	1	0.001087	-0.074656	0.05033	0.04793
1969	5	-0.086087	-0.144152	-0.039248	0.066679
1969	9	0.021328	0.023773	-0.073279	-0.08725
1970	1	-0.077643	0.155293	0.003973	-0.151829
1970	5	-0.135555	-0.115084	0.13493	0.092009
1970	9	0.098603	0.007421	0.003136	0.086687
1971	1	0.206247	-0.062437	0.09961	0.046137
1971	5	-0.073965	0.099107	-0.047553	0.129454
1971	9	-0.001915	-0.014517	-0.003086	0.130741
1972	1	0.076641	0.044026	-0.023485	0.046459
1972	5	0.065277	-0.064235	-0.03237	0.071385
1972	9	-0.010642	-0.012021	0.146797	-0.010702
1973	1	-0.001491	-0.035141	-0.050703	-0.001749
1973	5	-0.002754	-0.034588	0.060206	-0.003501
1973	9	0.043341	0.003514	-0.143863	-0.046065
1974	1	0.053135	0.031826	-0.016115	-0.081986
1974	5	-0.092449	-0.139782	0.009686	-0.140913
1974	9	-0.050886	0.111605	-0.074036	-0.033665
1975	1	0.270334	0.016734	0.133996	0.091015
1975	5	0.075991	0.03033	-0.048465	-0.016179
1975	9	-0.05135	0.151103	0.160526	-0.016913
1976	1	0.163604	0.115652	0.017273	-0.039507
1976	5	-0.030908	0.031073	-0.050879	-0.020451
1976	9	-0.066446	0.09212	-0.01404	0.005246
1977	1	-0.071378	0.065575	0.053371	0.015447
1977	5	-0.01553	-0.066402	-0.005314	-0.109103
1977	9	-0.040682	-0.0113	0.014978	-0.04331
1978	1	-0.064393	-0.142861	0.053553	0.119206
1978	5	0.011421	-0.049987	0.052149	0.025206
1978	9	0.004113	-0.144224	0.000958	-0.053747
1979	1	0.093179	0.050294	0.111782	-0.045709
1979	5	-0.035768	0.013294	0.091019	0.02806
1979	9	-0.05115	-0.148271	0.038242	0.053529

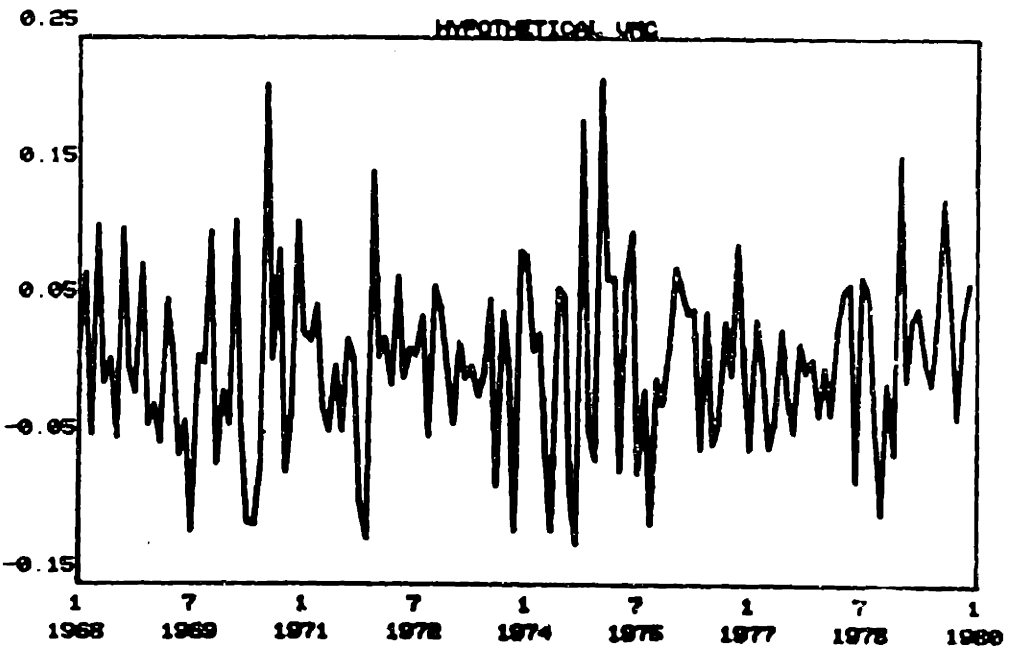
Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRE7

Rate of
Return



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

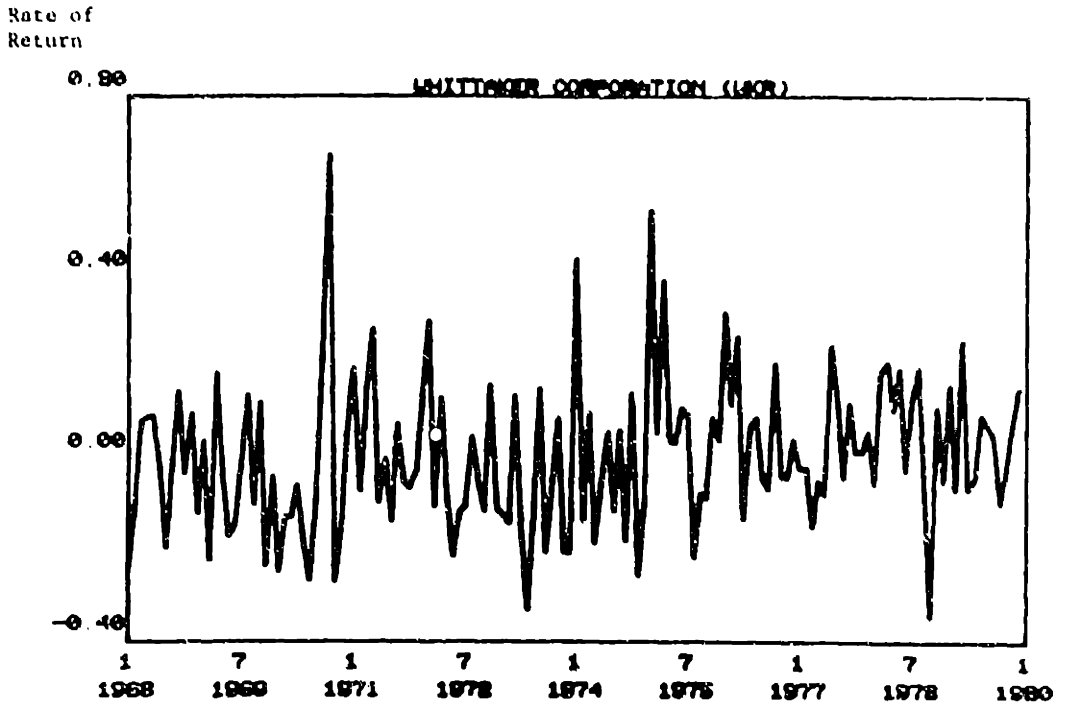
DATA NAMES: MRE7H

MR27 DATE REVISED: 6/09/81
MONTHLY DATA FROM 1960 1 TO 1979 12

1968	1	0.02647	[illegible]	0.013333	0.175676
1968	5	0.020736	[illegible]	[illegible]	[illegible]
1968	9	0.080042	[illegible]	[illegible]	[illegible]
1969	1	-0.045455	[illegible]	[illegible]	[illegible]
1969	5	-0.059406	[illegible]	[illegible]	[illegible]
1969	9	0.013158	[illegible]	[illegible]	[illegible]
1970	1	0.036765	[illegible]	[illegible]	[illegible]
1970	5	-0.0625	[illegible]	[illegible]	[illegible]
1970	9	0.010182	[illegible]	[illegible]	[illegible]
1971	1	0.095238	[illegible]	[illegible]	[illegible]
1971	5	0.015	[illegible]	[illegible]	[illegible]
1971	9	0.068182	[illegible]	[illegible]	[illegible]
1972	1	-0.053922	[illegible]	[illegible]	[illegible]
1972	5	-0.026429	[illegible]	[illegible]	[illegible]
1972	9	-0.032864	[illegible]	[illegible]	[illegible]
1973	1	0.00905	[illegible]	[illegible]	[illegible]
1973	5	-0.018462	[illegible]	[illegible]	[illegible]
1973	9	0.10101	[illegible]	[illegible]	[illegible]
1974	1	0.090476	[illegible]	[illegible]	[illegible]
1974	5	-0.120648	[illegible]	[illegible]	[illegible]
1974	9	-0.099526	[illegible]	[illegible]	[illegible]
1975	1	0.160428	[illegible]	[illegible]	[illegible]
1975	5	-0.001533	[illegible]	[illegible]	[illegible]
1975	9	0.003745	[illegible]	[illegible]	[illegible]
1976	1	0.331967	[illegible]	[illegible]	[illegible]
1976	5	-0.023548	[illegible]	[illegible]	[illegible]
1976	9	0.091837	[illegible]	[illegible]	[illegible]
1977	1	0.009434	[illegible]	[illegible]	[illegible]
1977	5	-0.068085	[illegible]	[illegible]	[illegible]
1977	9	0.011173	[illegible]	[illegible]	[illegible]
1978	1	0.010989	[illegible]	[illegible]	[illegible]
1978	5	0.002778	[illegible]	[illegible]	[illegible]
1978	9	-0.078067	[illegible]	[illegible]	[illegible]
1979	1	0.082969	[illegible]	[illegible]	[illegible]
1979	5	-0.072727	[illegible]	[illegible]	[illegible]
1979	9	0.042636	[illegible]	[illegible]	[illegible]

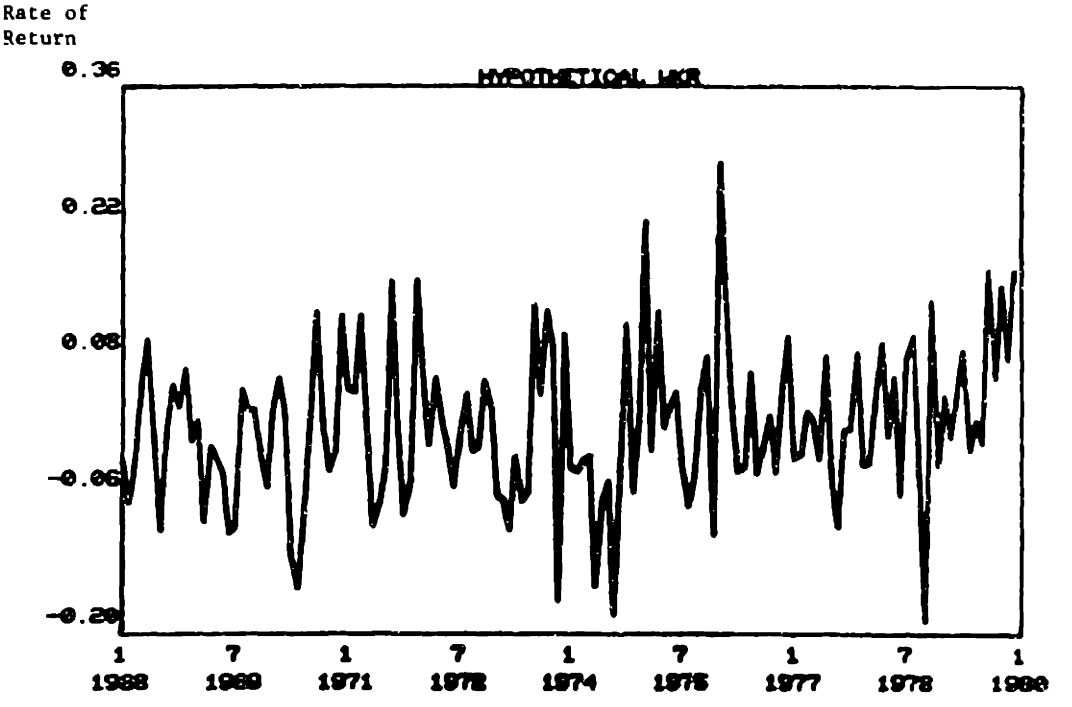
MR27H - DATE REVISED: 6/09/81
MONTHLY DATA FROM 1960 1 TO 1979 12

1968	1	0.0274	0.077178	-0.040841	0.110795
1968	5	-0.002442	0.015745	-0.043094	0.109859
1968	9	0.008136	-0.009807	0.083105	-0.033582
1969	1	-0.019179	-0.046710	0.058258	0.015955
1969	5	-0.055512	-0.031467	-0.11044	0.017522
1969	9	0.01192	0.107023	-0.06153	-0.009549
1970	1	-0.032846	0.115065	-0.041784	-0.104297
1970	5	-0.105562	-0.064039	0.214736	0.014819
1970	9	0.093842	-0.068178	-0.022440	0.114716
1971	1	0.03378	0.028308	0.053214	-0.020639
1971	5	-0.03727	0.009184	-0.037824	0.029203
1971	9	0.014097	-0.00967	-0.11537	0.155169
1972	1	0.017353	0.030068	-0.003136	0.073651
1972	5	0.00128	0.022293	0.018632	0.045295
1972	9	-0.041603	0.066787	0.050553	0.005953
1973	1	-0.032329	0.026942	0.001501	0.009503
1973	5	-0.011724	0.004078	0.057424	-0.076638
1973	9	0.049092	0.011389	-0.109656	0.092679
1974	1	0.08887	0.021575	0.033315	-0.051536
1974	5	-0.10869	0.065571	0.060157	-0.079344
1974	9	-0.118429	0.188	-0.036971	-0.056015
1975	1	0.218281	0.072682	0.072859	-0.066028
1975	5	0.07412	0.107225	-0.067552	-0.007717
1975	9	-0.104512	5.40000E-05	-0.01776	0.027047
1976	1	0.001035	0.043846	0.048446	0.050328
1976	5	-0.050148	0.040768	-0.046622	-0.033031
1976	9	0.042361	0.004501	0.098209	0.011931
1977	1	-0.050314	0.043606	0.009477	-0.049453
1977	5	-0.03097	0.036422	-0.014299	-0.038034
1977	9	0.026659	0.005634	0.015469	-0.024179
1978	1	0.00916	-0.025202	0.038732	0.064835
1978	5	0.069737	-0.074114	0.074299	0.027138
1978	9	-0.036129	-0.077151	-0.002848	-0.054315
1979	1	0.143807	0.000017	0.111145	0.021717
1979	5	0.012908	-0.003734	0.046013	0.133036
1979	9	0.051256	[illegible]	0.049564	0.027401



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRZB



TIME BOUNDS: 1968 JANUARY TO 1979 DECEMBER

DATA NAMES: MRBBH

MR2H - DATE REVISED: 6/10/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.[illegible]	[illegible]	[illegible]	[illegible]
1968	5	[illegible]	[illegible]	[illegible]	[illegible]
1968	9	[illegible]	[illegible]	[illegible]	[illegible]
1969	1	[illegible]	[illegible]	[illegible]	[illegible]
1969	5	[illegible]	[illegible]	[illegible]	[illegible]
1969	9	[illegible]	[illegible]	[illegible]	[illegible]
1970	1	[illegible]	[illegible]	[illegible]	[illegible]
1970	5	[illegible]	[illegible]	[illegible]	[illegible]
1970	9	[illegible]	[illegible]	[illegible]	[illegible]
1971	1	[illegible]	[illegible]	[illegible]	[illegible]
1971	5	[illegible]	[illegible]	[illegible]	[illegible]
1971	9	[illegible]	[illegible]	[illegible]	[illegible]
1972	1	[illegible]	[illegible]	[illegible]	[illegible]
1972	5	[illegible]	[illegible]	[illegible]	[illegible]
1972	9	[illegible]	[illegible]	[illegible]	[illegible]
1973	1	[illegible]	[illegible]	[illegible]	[illegible]
1973	5	[illegible]	[illegible]	[illegible]	[illegible]
1973	9	[illegible]	[illegible]	[illegible]	[illegible]
1974	1	[illegible]	[illegible]	[illegible]	[illegible]
1974	5	[illegible]	[illegible]	[illegible]	[illegible]
1974	9	[illegible]	[illegible]	[illegible]	[illegible]
1975	1	[illegible]	[illegible]	[illegible]	[illegible]
1975	5	[illegible]	[illegible]	[illegible]	[illegible]
1975	9	[illegible]	[illegible]	[illegible]	[illegible]
1976	1	[illegible]	[illegible]	[illegible]	[illegible]
1976	5	[illegible]	[illegible]	[illegible]	[illegible]
1976	9	[illegible]	[illegible]	[illegible]	[illegible]
1977	1	[illegible]	[illegible]	[illegible]	[illegible]
1977	5	[illegible]	[illegible]	[illegible]	[illegible]
1977	9	[illegible]	[illegible]	[illegible]	[illegible]
1978	1	[illegible]	[illegible]	[illegible]	[illegible]
1978	5	[illegible]	[illegible]	[illegible]	[illegible]
1978	9	[illegible]	[illegible]	[illegible]	[illegible]
1979	1	[illegible]	[illegible]	[illegible]	[illegible]
1979	5	[illegible]	[illegible]	[illegible]	[illegible]
1979	9	[illegible]	[illegible]	[illegible]	[illegible]

MR28H - DATE REVISED: 6/10/81
MONTHLY DATA FROM 1968 1 TO 1979 12

1968	1	-0.021974	-0.066277	-0.024146	0.054855
1968	5	0.130815	-0.005321	-0.093724	0.005798
1968	9	0.054551	0.03327	0.070771	-0.003329
1969	1	0.017645	-0.084699	-0.008844	-0.021131
1969	5	-0.035849	-0.096971	-0.090361	0.049631
1969	9	0.02979	0.029167	-0.012687	-0.050401
1970	1	0.034166	0.061374	0.020995	-0.1195
1970	5	-0.15192	-0.07291	0.024489	0.128161
1970	9	0.007945	-0.033463	-0.013594	0.124015
1971	1	0.050347	0.047472	0.124517	0.01326
1971	5	-0.088933	-0.067139	-0.031268	0.159191
1971	9	0.008678	-0.077144	-0.04254	0.160236
1972	1	0.064985	-0.006012	0.061534	0.018905
1972	5	-0.011017	-0.040705	-0.001514	0.044457
1972	9	-0.013668	-0.009005	0.058176	0.029829
1973	1	-0.059037	-0.062792	-0.09209	-0.02018
1973	5	-0.063564	-0.05411	0.134905	0.045362
1973	9	0.120318	0.091711	-0.164043	0.104497
1974	1	-0.029268	-0.034518	-0.023394	-0.0191
1974	5	-0.149777	-0.063211	-0.045129	-0.178321
1974	9	-0.030827	0.114102	-0.053714	0.01747
1975	1	0.221609	-0.013292	0.126764	0.012117
1975	5	0.032651	0.046835	-0.027653	-0.069482
1975	9	-0.037025	0.050095	0.083008	-0.097035
1976	1	0.201055	0.140482	0.031975	-0.034115
1976	5	-0.02925	0.066759	-0.035948	-0.011173
1976	9	0.022514	-0.035381	0.040609	0.102708
1977	1	-0.021299	-0.017091	0.027694	0.019511
1977	5	-0.020812	0.083022	-0.048098	-0.090738
1977	9	0.000527	0.009956	0.084478	-0.02766
1978	1	-0.026464	0.038345	0.096743	0.001865
1978	5	0.062644	-0.057189	0.08189	0.163031
1978	9	-0.01984	-0.[illegible]	0.139903	-0.[illegible]
1979	1	0.0432	0.[illegible]	0.046245	0.087130
1979	5	-0.[illegible]	0.[illegible]	-0.[illegible]	0.171498
1979	9	0.041074	0.154306	0.080304	0.172164

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