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Stocks, Bonds, Bills, and Inflation: Year-by-Year Historical Returns (1926–1974)†

I. INTRODUCTION

In 1964, Lawrence Fisher and James H. Lorie published in this *Journal* their classic study, "Rates of Return on Investments in Common Stocks."[1] In 1968, they extended their study to include all yearly holding period returns from 1926 to 1965.[2] These two articles prompted a widespread interest in the long-run behavior of stock market returns. Motivated by their example, we present in this paper year-by-year *historical* rates of return for five major classes of assets in the United States. In a companion paper forthcoming in this *Journal*,[3] we show how to use the historical data in simulating *future* return distributions for the same five asset classes.

The five asset classes included in this study are (1) common stocks, (2) long-term U.S. government bonds, (3) long-term corporate bonds, (4) U.S. Treasury bills, and (5) consumer goods (inflation). For each asset we present total rates of return which reflect dividend or interest income as well as capital gains or losses.

In addition to the five basic series listed above, we present seven derived series. These derived series represent the component parts of asset returns. They include real (inflation-adjusted) returns for the first four basic series. They also include a series measuring the net return from investing in common stocks rather than bills, the net return from investing in long-term government bonds rather than bills, and the net return from investing in long-term corporate bonds rather than long-term government bonds.

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1. L. Fisher and J. H. Lorie, "Rates of Return on Investments in Common Stock," *Journal of Business* 37, no. 1 (January 1964): 1–21.

2. Lawrence Fisher and James H. Lorie, "Rates of Return on Investments in Common Stock: The Year-by-Year Record, 1926–65," *Journal of Business* 41, no. 3 (July 1968): 291–316.

3. Roger G. Ibbotson and Rex A. Sinquefield, "Stocks, Bonds, Bills and Inflation: Simulations of the Future (1976–2000)," *Journal of Business*, forthcoming.

In Part II, we describe the data and computations used for the five basic series. In Part III, we present the rates of return for all yearly holding periods from 1926 to 1974 followed by an index of cumulative wealth relatives for each of the five basic series. In Part IV, we describe the computation of the derived series, again presenting annual rates of return and an index of cumulative wealth relatives for each of these series. In Part V, we give a convenient summary table as well as some highlights of the results.

II. BASIC HISTORICAL SERIES

We initially construct the five basic return series covering common stocks, long-term government and corporate bonds, Treasury bills, and inflation. Annual returns for each asset are formed by compounding monthly returns. In all cases, returns are formed assuming no taxes or transactions costs.

A. Common Stocks

Our common stock total return index is based upon the Standard and Poor's (S & P) Composite Index.[4] We use this index because it is a readily available, carefully constructed, market value weighted benchmark of common stock performance. By market value weighted, we mean that the weight of each stock in the index equals its price times the number of shares outstanding. Currently the S & P Composite includes 500 of the largest stocks (in terms of stock market value) in the United States; prior to March 1957 it consisted of 90 of the largest stocks. To the extent that the stocks included in the S & P Composite Index represent the market value of stocks in the United States, the weighting scheme allows the returns of the index to correspond to the aggregate stock market returns in the U.S. economy.

Although Standard and Poor's reports its Composite Index exclusive of dividends, it also reports a quarterly dividend series. Except for the most recent years (since 1968) the dividend series is available only in the form of four-quarter moving totals. However, given four separate dividends for any one year, it is possible to unravel the moving totals into separate quarterly dividends for all the years prior to 1968.[5] Monthly dividends are then formed

4. See Standard and Poor's *Trade and Security Statistics, Security Price Index Record* (Orange, Conn.: Standard & Poor's Corp., 1974).

5. Standard and Poor's Corporation constructs four-quarter dividend moving totals $\bar{D}_{m,t}$ for time t according to

$$\bar{D}_{m,t} = \sum_{j=t-3}^{t} D_{m,j} .$$

Given $\bar{D}_{m,t}$ for all t and four successive quarterly dividends, any $D_{m,t}$ can be solved recursively according to

$$D_{m,t} = D_{m,t+4} + \bar{D}_{m,t+3} - \bar{D}_{m,t+4} .$$

When the explicit quarterly dividends were derived two apparently incorrect estimates were observed in the first quarter, 1959 and second quarter, 1949. In each of these years the quarterly distribution of the annual dividend is noticeably different from both the distribution of the immediate subsequent year and from a sampling of firms for the year of the error. Since the errors would become entangled in the subsequent recursive

by proportioning the quarterly dividends into the three months of the quarter according to recently observed proportions.[6]

Designating common stocks as m, we form monthly returns by

$$R_{m,t} = (P_{m,t} + D_{m,t})/P_{m,t-1} - 1 , \qquad (1)$$

where $R_{m,t}$ is the common stock total return during month t; $P_{m,t}$ is the value of the S & P Composite Index at the end of month t; and $D_{m,t}$ is the estimated dividends received during month t and reinvested at the end of month t.

Since there will inevitably be comparisons between our results and those of the Fisher and Lorie studies,[7] some differences in methodology should be noted. Their studies measured annual returns (calculated like ours from monthly returns) of an *equally* weighted portfolio of all New York Stock Exchange (NYSE) common stocks. Thus, their weighting scheme measures the performance of an investor who chose stocks through simple random selection. Ours measures the return to an investor who "bought the market" in the sense that the stocks included in the S & P Composite Index represent most of the value of the U.S. publicly traded stocks.

Another difference between our results and the results of Fisher and Lorie is that they measure returns from a buy and hold strategy, while our portfolio weighting scheme is continuously updated. This allows them to measure the returns on 40 separate portfolios, one starting each year from 1926 to 1965. For example, their 1926–65 period return (compounded annually) is the return on a portfolio equally weighted as of January 1926 and held (not reweighted except by market movements and dividend reinvestments) throughout the entire period. In comparison, our 1926–65 period return (compounded annually) is the return on a portfolio that is market weighted each month throughout the entire period. Our procedure only approximates a buy and hold strategy since our weighting scheme takes into account increases and decreases in the amount of a company's stock outstanding as well as any changes in the stocks included in the S & P Composite Index. An advantage of their buy and hold procedure is that they can present return series for various tax rates with and without commissions. An

process, we were forced to make corrections. The corrections were made by redistributing the annual dividends quarterly to conform to the subsequent year's quarterly distribution.

6. The proportion of quarterly dividends allocated to each month corresponds to the 1974 monthly income of the American National Bank and Trust Company of Chicago's Multiple Equity Fund, which is an index fund that virtually duplicates the monthly behavior of the S & P Composite Index. During 1974, the average monthly distribution of quarterly dividends was 18 percent, 64 percent, and 18 percent, respectively, for each quarter. These proportions were used throughout the entire study.

7. In addition to the previous Fisher and Lorie works, other common stock indices are currently being constructed at the Center for Research in Security Prices, Graduate School of Business, University of Chicago. Lawrence Fisher has a set of equally weighted indices of NYSE common stocks, again reflecting buy and hold strategies. Myron Scholes has another equally weighted and a market weighted index of NYSE common stocks, both of which are reweighted each month. These indices also cover the period 1926–74. Some comparisons between the preliminary results of their indices and the common stock index presented in this paper are shown in table A1.

advantage of our procedure is that our returns can easily be interpreted since they always reflect a market weighted portfolio.

B. Long-Term U.S. Government Bonds

To measure the total returns of long-term U.S. government bonds, we construct a bond portfolio using the bond data obtained from the U.S. Government Bond File at the Center for Research in Security Prices (CRSP).[8] Our objective is to maintain a 20-year-term bond portfolio whose returns do not reflect potential tax benefits, impaired negotiability, or special redemption or call privileges. We follow with a brief description of the types of bonds included and excluded from the portfolio.[9]

Prior to March 1941, the income from almost all U.S. government bonds was exempt from "normal" income taxes. However, some of the bonds were subject to the surtax. Since surtax rates were far higher than normal tax rates for large investors, the returns (yields) of the bonds subject to the surtax are not lowered to reflect substantial tax advantages. Therefore, we choose to include in our index only those bonds subject to the surtax during the period 1926–March 1941. Our bond returns are somewhat analogous to our stock returns during most of this period since cash dividends were also exempt from normal income taxes until 1936. The income on all bonds issued subsequent to March 1941 is subject to federal income taxation.

The large size and large number of investors associated with government issues usually ensures high marketability. As direct obligations of the U.S. government, default risk is virtually nonexistent. Consequently, government bonds usually are ideal collateral. However, some $2\frac{1}{4}$ and $2\frac{1}{2}$ percent bonds issued during the 1940s were restricted until 1953 from bank portfolios, substantially reducing their collateral value. Since returns from bank ineligible bonds are inflated to compensate for their impaired negotiability, these bonds are excluded from the index.

Many government bonds (commonly known as "flower" bonds) have a redemption feature which allows the investor to redeem his bonds at *par* (plus accrued interest) in payment of federal estate taxes. Some bonds must be owned by the decedent for a 6-month period prior to his death, while other bonds need be owned only at the time of death. Since part of the return on these bonds is the capital gain from early redemption, the return exclusive of the redemption is lower in general than the return on other bonds not possessing the redemption feature. We therefore seek to avoid using flower bonds in the index. During the many periods when we must use flower bonds, we indirectly avoid their effects on returns. In general, the users of the redemption feature have short time horizons so that they are more

8. The U.S. Government Bond File was compiled by Lawrence Fisher and consists of month-end price data on virtually all negotiable direct obligations of the U.S. Treasury for the period 1926–73. We also include 1974 data which is obtained from selected issues of the *Wall Street Journal* (New York: Dow Jones Co.).

9. More detailed descriptions of the U.S. government bond characteristics are available in various *Moody's Municipal and Government Manuals* (New York: Moody's Investor Service).

interested in low bond prices (relative to par) than high bond yields. By including only those flower bonds with high yields and prices relative to other existing flower bonds, we effectively restrict the index to bonds whose redemption features are seldom exercised while they are in the index.

Finally, our index must take into account that most long-term government bonds were callable by the U.S. Treasury after a designated first call date. For callable bonds, it is unclear whether the life of the bond should be measured by the first call or the maturity date. We attempt to reduce the problem by avoiding bonds with early first call dates relative to their maturity dates. We then attempt to hold a 20-year-life portfolio with the life arbitrarily measured as the simple average of the maturity and first call dates minus the holding period date.[10]

The above-mentioned constraints severely limit the bonds eligible for inclusion in our index. The problem is that the U.S. government bonds available at any one time usually have somewhat homogeneous characteristics. We can either build a multibond index (say by linearly combining bond lives to satisfy our 20-year term objective), or select the one bond which best fits our criteria. We choose to form a one-bond portfolio since there are some periods when only one bond reasonably fits our criteria. However, the lack of diversification in a one-bond portfolio is not a serious defect. Since we assume no default risk, one fairly priced bond adequately reflects the return of other bonds with similar characteristics (maturity date, first call date, coupon, tax, etc.).

Table A2 lists the actual bonds held in the portfolio. Over the sample period, the average term to maturity is 23.2 years while the average term to first call is 18.2 years, giving an average life of 20.7 years. While, on average, we come close to maintaining a 20-year life, the maturities range from 18.2 to 30.7 years and the first call ranges from 9.4 to 25.7 years.

Monthly returns on government bonds are formed according to

$$R_{g,t} = (P_{g,t} + D_{g,t})/P_{g,t-1} - 1 , \qquad (2)$$

where $R_{g,t}$ is the long-term government bond total return during month t; $P_{g,t}$ is the average between the bid and ask flat price (includes accrued interest) of the bond at the end of month t; and $D_{g,t}$ is the coupon payment received during month t and invested at the end of month t.

C. Long-Term Corporate Bonds

Since most large corporate bond transactions take place over the counter, the natural source of data is a major dealer. Salomon Brothers has already

10. Apart from the issue of whether the bond life is best measured by the maturity or first call date, a more meaningful measure of a bond's life is its "duration," which takes a bond's coupon into account. A higher coupon effectively refunds a bond issue faster than a lower coupon given the same maturity date or call date. Duration is defined by Frederick R. Macaulay, *Some Theoretical Problems Suggested by the Movements of Interest Rates, Bond Yields, and Stock Prices since 1856* (New York: National Bureau of Economic Research, 1938). Since we can at best only partially achieve the objective of maintaining a stable bond life, the advantages of using the duration measure is small relative to the complexities involved.

constructed the High Grade Long-Term Corporate Bond Index.[11] We use this monthly index from its beginning in 1969 through 1974. For the period 1946–68 we backdate the Salomon Brothers' Index using Salomon Brothers' monthly data and similar methodology. For the period 1926–45 we use the Standard and Poor's monthly High-Grade Corporate Composite Bond Index,[12] assuming a 4 percent coupon and a 20-year maturity.

The purpose of the Salomon Brothers' Index is to approximate the total returns that would be earned by holding the entire high-grade long-term corporate bond market. The relevant market is defined as all industrial and utility issues which were originally publicly offered with a maturity of 1985 or longer, a Moody rating of Aaa or Aa, and an outstanding par amount of at least $25 million.

The Salomon Brothers' Index is constructed by computing a weighted average of the returns from 17 representative bonds. The yields of these bonds are identical with 17 Salomon Brothers' corporate bond monthly yield series listed as industrial or utility by coupon range.[13] Each of the 17 representative bonds is assigned a maturity, a coupon, and a weight by determining the market weighted average maturity and coupon in each coupon range and the weight of each coupon range in the market. Monthly prices and total returns are then computed for each bond given its yield, coupon, and maturity date. The index is formed as a cumulative wealth relative of the weighted average of the 17 bond returns. At the beginning of 1969, the Salomon Brothers' Index had an average maturity of approximately 25 years.

Although the Salomon Brothers' Index is available only from 1969, eight of their 17 corporate bond yield series were initiated prior to 1969 while one series was initiated as early as 1946. We backdate the index by assuming the mean coupon in the coupon range defined for each of the yield series and a 20-year maturity date. Bond prices are then computed, given the yield, coupon, and maturity date.

Returns for each of the eight yield series are calculated as

$$R_{c,t} = (P_{c,t,19\text{-}11} + D_{c,t})/P_{c,t\text{-}1,20} - 1 , \qquad (3)$$

11. A description of the index is given by Martin L. Leibowitz and Richard I. Johannesen, Jr., "Introducing the Salomon Brothers' Total Performance Index for the High-Grade Long-Term Corporate Bond Market," Memorandum to Portfolio Managers (New York: Salomon Bros., November 1973).

12. From 1926 to 1928, this index is based upon the mean of the monthly high-low yields of 45 high-grade bonds. From January 1929 through March 1937, this index is based upon a varying group of AAA bonds priced by their yields as of the first of the month. We lag this series 1 month in order to treat the first of the month prices as end of the previous month prices. Beginning April 1937, through 1945 the monthly index is the arithmetic average of the four or five weekly AAA Industrial, Rail, and Utility Indices. In order not to lose the March 1937 quote, we again lag this series 1 month. Since the index is a weekly average of prices during the month, our lagging it 1 month causes our monthly return estimate to lead actual returns by about ½ month.

13. *An Analytical Record of Yields and Yield Spreads* (New York: Salomon Bros., May 1975).

where $R_{c,t}$ is the monthly bond return for a particular series during month t; $P_{c,t-1,20}$ is the purchase price at the end of month $t-1$ for the yield series bond given a 20-year maturity; $P_{c,t,19-11}$ is the sale price of the yield series bond at the end of month t given at this time 19 years, 11 months to maturity; and $D_{c,t}$ is the coupon received which is one-twelfth the annual coupon given for the bond series.[14] The overall long-term corporate bond return is then calculated as the weighted average of the eight individual bond returns. The weights are shown in table A3.

Since the Salomon Brothers' data starts in 1946, it is necessary to link another index for the period 1926–45. We use the monthly yield series represented in Standard and Poor's High-Grade Composite Bond Index, assuming a 4 percent coupon, a 20-year maturity, and calculate bond prices accordingly.[15] Monthly total returns are again formed according to equation (3).

D. United States Treasury Bills

For the U.S. Treasury Bill Index, we again use the data in the CRSP U.S. Government Bond File. Our objective is to construct an index that includes the shortest-term bills not less than 1 month in maturity. We also want our index to reflect achievable returns. Therefore, rather than compute yields, we measure 1-month holding period returns for a one-bill portfolio.

Although U.S. Treasury bills were initiated as early as 1929, the U.S. Government Bond File does not include any bills until 1931. Prior to that time, we use short-term coupon bonds. The bills are quoted on a discount basis without coupon, and their returns were exempt from all income taxes until March 1941. Thereafter, their returns were subject to normal income taxes as well as any surtaxes.

Beginning in the early 1940s, the yields (returns) on Treasury bills were pegged by the government at low rates. Coupons on new government bond issues were also pegged, but the effect on returns was not as great since a sliding coupon scale was used increasing with maturity. The government pegging ended with the U.S. Treasury–Federal Reserve Accord in March 1951.

The U.S. Government Bond File includes only month-end prices. Although these prices are quoted for same-day delivery during the period 1926–41, they are quoted with deliveries ranging from 2 to 5 days during the period 1942–73. In 1974, the bond quotes are obtained from the *Wall Street*

14. The bond returns are upward biased since we assume no defaults or changes in ratings. Although defaults are virtually nonexistent for Aa and Aaa bonds, downward rating changes below Aa cause bonds to be removed from the yield series. Downward rating changes mean higher yields and lower prices and returns. Since lower returns are removed, the remaining returns are overstated.

15. The same bias described in n. 14 applies here. Except for the fact that we use monthly instead of annual data, our methods are similar to the "naive" strategies used by Lawrence Fisher and Roman L. Weil, "Coping with the Risk of Interest-Rate Fluctuations: Returns to Bondholders from Naïve and Optimal Strategies," *Journal of Business* 44, no. 4 (October 1971): 408–31.

Journal, once again quoted for same-day delivery. Since we wish to follow an achievable investment strategy, we must take these delivery dates into consideration.

We choose to include in the one-bill portfolio the bill having the shortest term without maturing in less than 1 month, after allowing for delivery dates. For example, assume that the bills at the end of calendar month t are quoted for delivery on the second day of calendar month $t + 1$. Then the bill purchased at the end of calendar month $t - 1$ is the shortest-term bill maturing on or after the second day of calendar month $t + 1$. The bill is subsequently sold at the end of calendar month t and delivered 2 days later. Since a new bill is purchased at the end of month t (and delivered 2 days later), this procedure allows us to be continually invested. In the case where the delivery date and the maturity date would be the same, the bond is matured. The yearly average of the days to maturity on monthly purchase dates is shown in table A4.

The monthly total U.S. Treasury bill return during month t, $R_{f,t}$, can be computed directly from the end of the calendar month t discount bill prices, $P_{f,t}$ according to

$$R_{f,t} = P_{f,t}/P_{f,t-1} - 1 . \tag{4}$$

Again, the prices used are the average of bid and ask.

E. Inflation

We utilize the Consumer Price Index (CPI)[16] to measure inflation, which is the rate of change of consumer goods prices. Monthly rates of change are formed by

$$R_{I,t} = V_{I,t}/V_{I,t-1} - 1 , \tag{5}$$

where $V_{I,t}$ is the value of the CPI (not seasonally adjusted) measured during month t.

Although we consider the CPI as the best measure of inflation available at the consumer level, there are numerous problems in applying it as a cost-of-living measure. Its official name is the *Consumer Price Index for Urban Wage Earners and Clerical Workers*, and it purports to measure the average "market basket" for this select consumer group rather than for all the consumers in the U.S. economy. Its construction is subject to statistical problems related to the sampling and processing of data. It is also subject to conceptual problems, the most prominent being the handling of commodity quality changes, the changing of peoples' buying preferences (sometimes

16. The CPI is constructed by the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. We use the January 1975 release of index values (1967 base = 100.0). The last backdate of a few index values was November 1974. A complete description of the index is found in Bureau of Labor Statistics, *Handbook of Methods for Surveys and Studies*, BLS Bulletin 1711, rev. (Washington, D.C.: Government Printing Office, 1972). Recent updating procedures are described in Julius Shiskin, "Updating the Consumer Price Index—an Overview," Bureau of Labor Statistics, *Monthly Labor Review* (July 1974).

caused by the price changes themselves), and the pricing of services rendered by capital goods. In addition, the index is not continuous since it was substantially revised in the years 1940, 1953, and 1964. Numerous minor revisions have also been made from time to time.

Even though we treat $R_{I,t}$ as a measure of the rate of inflation during month t, the way that the Bureau of Labor Statistics measures $V_{I,t}$ causes $R_{I,t}$ to lag behind actual inflation rates. The CPI currently includes about 400 items priced in 56 urban regions weighted by their populations. Thus, the CPI reflects a weighted average of many component indices. While most of the components of the CPI are priced monthly, some are priced quarterly, a few are priced semiannually or annually, and some reflect contractual rent agreements rather than current prices. Even the monthly pricing is not priced as of the end of the calendar month but rather extends throughout the month.

III. HOLDING PERIOD RETURN MATRICES FOR BASIC SERIES

At the end of each month n, we form a cumulative wealth relative index V_n for each of the monthly return series R_t ($t = 1/26, 2/26, \ldots, 12/74$). This index is initialized at $V_{12/25} = 1.0$ and is formed by

$$V_n = \prod_{t=1/26}^{n} (1 + R_t) . \tag{6}$$

Annual calendar returns, R_T, are formed by compounding monthly returns or, equivalently, by using year-end index values, V_N, according to

$$R_T = \frac{V_N}{V_{N-1}} - 1 . \tag{7}$$

We also compute geometric mean annual returns (the rate of return per annum compounded annually), $R_G^*(T_1, T_2)$, for any calendar holding period beginning with year T_1 and ending with year T_2 according to

$$R_G^*(T_1, T_2) = \left[\prod_{T=T_1}^{T_2} (1 + R_T) \right]^{1/(T_2 - T_1 + 1)} - 1 . \tag{8}$$

The geometric mean annual return formed by equation (8) should not be confused with the arithmetic mean annual return $R_A^*(T_1, T_2)$ formed by

$$R_A^*(T_1, T_2) = \sum_{T=T_1}^{T_2} R_T/(T_2 - T_1 + 1) . \tag{9}$$

In general,

$$R_G^*(T_1, T_2) \leq R_A^*(T_1, T_2) , \tag{10}$$

with the equality only holding for constant returns with the difference between the two estimates being positively related to the variance of returns.

Tables 1–5 give the geometric mean annual returns for all calendar

TABLE 1A

COMMON STOCKS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
1926	11.6																
1927	23.9	37.5															
1928	30.1	40.5	43.6														
1929	19.2	21.8	14.7	-8.4													
1930	8.7	7.9	-0.4	-17.1	-24.9												
1931	-2.5	-5.1	-13.5	-27.0	-34.8	-43.3											
1932	-3.3	-5.6	-12.5	-22.4	-26.9	-27.9	-8.2										
1933	2.4	1.2	-3.8	-11.2	-11.9	-7.1	18.9	54.0									
1934	2.0	0.9	-3.5	-9.7	-9.9	-5.7	11.7	23.2	-1.4								
1935	5.9	5.2	1.8	-3.1	-2.2	3.1	19.8	30.9	20.6	47.7							
1936	8.1	7.8	4.9	0.9	2.3	7.7	22.5	31.6	24.9	40.6	33.9						
1937	3.6	3.0	0.0	-3.9	-3.3	0.2	10.2	14.3	5.1	8.7	-6.7	-35.0					
1938	5.5	5.0	2.5	-0.9	-0.0	3.6	13.0	16.9	10.7	13.9	4.5	-7.7	31.1				
1939	5.1	4.6	2.3	-0.8	-0.1	3.2	11.2	14.3	8.7	10.9	3.2	-5.3	14.3	-0.4			
1940	4.0	3.5	1.3	-1.6	-1.0	1.8	8.6	11.0	5.9	7.2	0.5	-6.5	5.6	-5.2	-9.8		
1941	3.0	2.4	0.3	-2.4	-1.9	0.5	6.4	8.2	3.9	4.3	-1.6	-7.5	1.0	-7.4	-10.7	-11.6	
1942	3.9	3.5	1.5	-1.0	-0.4	2.0	7.5	9.4	5.3	6.1	1.2	-3.4	4.5	-1.1	-1.4	3.1	20.3
1943	5.0	4.7	2.9	0.6	1.3	3.7	9.0	10.8	7.2	8.2	4.0	0.4	7.9	3.8	4.9	10.2	23.1
1944	5.8	5.5	3.8	1.7	2.5	4.8	9.8	11.5	8.3	9.3	5.7	2.6	9.5	6.3	7.7	12.5	22.0
1945	7.1	6.9	5.4	3.5	4.3	6.6	11.5	13.2	10.4	11.5	8.4	5.9	12.5	10.1	12.0	17.0	25.4
1946	6.3	6.1	4.7	2.8	3.5	5.6	10.1	11.6	8.8	9.7	6.8	4.4	10.1	7.7	8.9	12.4	17.9
1947	6.3	6.1	4.7	3.0	3.7	5.6	9.8	11.2	8.5	9.4	6.7	4.5	9.5	7.5	8.5	11.4	15.8
1948	6.3	6.1	4.7	3.1	3.8	5.6	9.6	10.8	8.4	9.1	6.6	4.6	9.2	7.3	8.2	10.6	14.2
1949	6.8	6.6	5.3	3.8	4.5	6.3	10.1	11.3	9.0	9.7	7.4	5.6	10.0	8.3	9.2	11.5	14.8
1950	7.7	7.5	6.4	4.9	5.6	7.4	11.1	12.3	10.2	11.0	8.9	7.3	11.5	10.1	11.1	13.6	16.6
1951	8.3	8.1	7.1	5.7	6.4	8.2	11.7	12.9	11.0	11.7	9.8	8.4	12.4	11.1	12.1	14.3	17.3
1952	8.6	8.5	7.5	6.2	6.9	8.6	12.0	13.2	11.3	12.1	10.3	9.0	12.8	11.6	12.6	14.6	17.4
1953	8.3	8.1	7.2	5.9	6.5	8.2	11.6	12.8	10.7	11.4	9.6	8.3	11.9	10.7	11.5	13.4	15.7
1954	9.5	9.5	8.6	7.4	8.1	9.7	12.9	14.0	12.4	13.1	11.6	10.4	13.9	12.9	13.9	15.8	18.2
1955	10.2	10.2	9.3	8.2	8.9	10.5	13.7	14.7	13.2	13.9	12.5	11.5	14.8	13.9	14.9	16.8	19.1
1956	10.1	10.1	9.2	8.2	8.8	10.4	13.4	14.2	12.9	13.6	12.2	11.2	14.4	13.5	14.4	16.1	18.2
1957	9.4	9.3	8.5	7.4	8.1	9.5	12.3	13.2	11.8	12.4	11.0	10.0	13.0	12.1	12.8	14.3	16.2
1958	10.3	10.2	9.5	8.5	9.1	10.6	13.3	14.3	12.9	13.6	12.3	11.4	14.3	13.5	14.3	15.8	17.6
1959	10.3	10.2	9.5	8.6	9.2	10.6	13.3	14.2	12.9	13.5	12.3	11.4	14.2	13.4	14.1	15.6	17.3
1960	10.0	10.0	9.3	8.3	8.9	10.3	12.8	13.7	12.4	13.0	11.8	10.9	13.5	12.8	13.5	14.8	16.4
1961	10.3	10.4	9.7	8.8	9.4	10.8	13.3	14.1	12.9	13.4	12.3	11.5	14.1	13.4	14.0	15.3	16.9
1962	9.9	9.9	9.2	8.3	8.8	10.1	12.5	13.3	12.1	12.6	11.4	10.7	13.0	12.3	12.9	14.1	15.5
1963	10.2	10.2	9.5	8.7	9.2	10.5	12.8	13.5	12.4	12.9	11.8	11.1	13.4	12.7	13.3	14.5	15.8
1964	10.4	10.4	9.7	8.9	9.4	10.6	12.9	13.6	12.5	13.0	12.0	11.3	13.5	12.9	13.5	14.5	15.8
1965	10.4	10.4	9.7	9.0	9.5	10.7	12.9	13.6	12.5	13.0	12.0	11.3	13.5	12.9	13.4	14.4	15.7
1966	9.9	9.8	9.2	8.4	8.9	10.1	12.2	12.8	11.8	12.2	11.2	10.5	12.6	12.0	12.4	13.4	14.5
1967	10.2	10.2	9.6	8.8	9.3	10.4	12.5	13.1	12.1	12.5	11.6	10.9	12.9	12.4	12.8	13.6	14.9
1968	10.2	10.2	9.6	8.9	9.3	10.4	12.4	13.1	12.1	12.5	11.6	10.9	12.9	12.3	12.8	13.7	14.7
1969	9.8	9.7	9.1	8.4	8.9	9.9	11.8	12.4	11.5	11.8	10.9	10.3	12.1	11.6	12.0	12.8	13.8
1970	9.6	9.6	9.0	8.3	8.7	9.7	11.6	12.2	11.2	11.6	10.7	10.1	11.9	11.3	11.7	12.5	13.5
1971	9.7	9.7	9.1	8.4	8.9	9.9	11.7	12.3	11.3	11.7	10.8	10.2	12.0	11.4	11.8	12.6	13.5
1972	9.9	9.9	9.3	8.7	9.1	10.1	11.9	12.4	11.5	11.9	11.0	10.5	12.1	11.6	12.0	12.8	13.7
1973	9.3	9.3	8.7	8.1	8.5	9.4	11.1	11.7	10.8	11.1	10.3	9.7	11.3	10.8	11.1	11.8	12.7
1974	8.5	8.4	7.8	7.2	7.5	8.4	10.1	10.6	9.7	10.0	9.1	8.5	10.1	9.5	9.8	10.5	11.2

TABLE 1B

COMMON STOCKS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1943	25.9															
1944	22.8	19.7														
1945	27.2	27.8	36.4													
1946	17.3	14.5	12.0	-8.1												
1947	14.9	12.3	9.9	-1.4	5.8											
1948	13.2	10.9	8.8	0.9	5.6	5.5										
1949	14.0	12.2	10.7	5.1	9.9	12.0	18.8									
1950	16.1	14.8	13.9	9.9	15.0	18.2	25.1	31.7								
1951	17.0	15.9	15.3	12.2	16.7	19.6	24.7	27.8	24.0							
1952	17.1	16.2	15.7	13.0	17.0	19.4	23.1	24.6	21.1	18.3						
1953	16.3	14.3	13.7	11.2	14.2	15.7	17.9	17.6	13.3	8.3	-1.0					
1954	18.0	17.4	17.1	15.2	18.4	20.4	23.0	23.9	22.0	21.4	22.9	52.6				
1955	19.0	18.5	18.4	16.7	19.8	21.7	24.2	25.2	23.9	23.8	25.7	41.7	31.5			
1956	18.1	17.5	17.3	15.7	18.4	19.9	21.9	22.3	20.8	20.2	20.6	28.8	18.4	6.6		
1957	15.9	15.2	14.9	13.3	15.4	16.4	17.7	17.6	15.7	14.4	13.6	17.5	7.7	-2.5	-10.8	
1958	17.5	16.9	16.7	15.3	17.5	18.7	20.1	20.2	18.8	18.1	18.1	22.3	15.7	10.9	13.1	43.4
1959	17.1	16.6	16.4	15.1	17.1	18.1	19.3	19.4	18.0	17.3	17.2	20.5	15.0	11.1	12.7	26.7
1960	16.1	15.6	15.3	14.0	15.8	16.6	17.6	17.5	16.2	15.3	14.9	17.4	12.4	8.9	9.5	17.3
1961	16.7	16.2	15.9	14.8	16.5	17.3	18.3	18.3	17.1	16.4	16.2	18.6	14.4	11.7	12.8	19.6
1962	15.3	14.7	14.4	13.3	14.8	15.4	16.1	15.9	14.7	13.9	13.4	15.2	11.2	8.5	8.9	13.3
1963	15.6	15.1	14.9	13.8	15.2	15.8	16.6	16.4	15.3	14.6	14.3	15.9	12.4	10.2	10.8	14.8
1964	15.6	15.2	15.0	13.9	15.3	15.9	16.6	16.4	15.4	14.7	14.4	16.0	12.8	10.9	11.5	15.1
1965	15.5	15.0	14.8	13.8	15.1	15.7	16.3	16.2	15.2	14.6	14.3	15.7	12.8	11.1	11.6	14.7
1966	14.3	13.8	13.6	12.6	13.7	14.2	14.7	14.4	13.4	12.7	12.4	13.4	10.7	9.0	9.2	11.7
1967	14.7	14.2	14.0	13.1	14.2	14.6	15.1	14.9	14.0	13.4	13.1	14.2	11.6	10.1	10.5	12.9
1968	14.5	14.1	13.9	13.0	14.0	14.5	14.9	14.7	13.8	13.3	13.0	14.0	11.6	10.2	10.5	12.7
1969	13.6	13.1	12.9	12.0	13.0	13.3	13.7	13.4	12.5	11.9	11.6	12.4	10.1	8.8	8.9	10.8
1970	13.2	12.8	12.5	11.7	12.6	12.9	13.2	13.0	12.1	11.5	11.1	11.9	9.7	8.4	8.6	10.2
1971	13.3	12.8	12.6	11.8	12.6	12.9	13.3	13.0	12.2	11.9	11.5	12.0	10.0	8.8	8.9	10.5
1972	13.5	13.0	12.8	12.0	12.9	13.2	13.5	13.3	12.5	12.0	11.7	12.4	10.5	9.4	9.5	11.1
1973	12.4	12.0	11.7	10.9	11.7	12.0	12.2	12.0	11.2	10.6	10.3	10.8	9.0	7.9	7.9	9.2
1974	10.9	10.5	10.2	9.4	10.1	10.2	10.4	10.1	9.3	8.7	8.2	8.7	6.9	5.7	5.7	6.7

TABLE 1C

COMMON STOCKS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1959	12.0															
1960	6.1	0.5														
1961	12.6	12.9	26.9													
1962	6.8	5.2	7.6	-8.7												
1963	9.8	9.3	12.4	5.9	22.8											
1964	10.9	10.7	13.4	9.3	19.6	16.5										
1965	11.1	11.0	13.2	10.1	17.2	14.5	12.4									
1966	8.2	7.7	9.0	5.7	9.7	5.6	0.6	-10.0								
1967	9.9	9.6	11.0	8.6	12.4	9.9	7.8	5.6	24.0							
1968	10.0	9.8	11.0	8.9	12.2	10.2	8.6	7.4	17.4	11.1						
1969	8.2	7.8	8.7	6.6	9.0	6.8	5.0	3.2	8.0	0.9	-8.4					
1970	7.8	7.5	8.2	6.3	8.3	6.4	4.8	3.4	7.0	1.9	-2.4	3.9				
1971	8.3	8.0	8.7	7.1	9.0	7.4	6.1	5.1	8.4	4.9	2.9	9.0	14.3			
1972	9.0	8.8	9.5	8.1	9.9	8.6	7.7	7.0	10.1	7.5	6.7	12.2	16.6	19.0		
1973	7.3	6.9	7.5	6.0	7.4	6.0	4.9	4.0	6.2	3.5	2.0	4.8	5.1	0.8	-14.7	
1974	4.8	4.3	4.6	3.0	4.1	2.5	1.2	0.1	1.4	-1.5	-3.4	-2.4	-3.9	-9.3	-20.8	-26.4

TABLE 2A

LONG-TERM UNITED STATES GOVERNMENT BONDS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
1926	7.8																
1927	8.4	8.9															
1928	5.5	4.4	0.1														
1929	5.0	4.1	1.7	3.4													
1930	4.9	4.2	2.7	4.0	4.6												
1931	3.9	3.1	1.7	2.3	1.8	-1.1											
1932	5.7	5.3	4.6	5.8	6.6	7.5	16.8										
1933	4.9	4.5	3.8	4.6	4.9	4.9	8.1	-0.1									
1934	5.5	5.2	4.7	5.5	5.9	6.2	8.7	4.9	10.0								
1935	5.4	5.2	4.7	5.4	5.7	5.9	7.8	4.9	7.5	5.0							
1936	5.6	5.4	5.0	5.7	6.0	6.2	7.7	5.6	7.5	6.3	7.5						
1937	5.2	4.9	4.5	5.0	5.2	5.3	6.4	4.5	5.5	4.2	3.8	0.2					
1938	5.2	5.0	4.6	5.1	5.3	5.4	6.3	4.6	5.6	4.5	4.4	2.8	5.5				
1939	5.2	5.0	4.7	5.2	5.3	5.4	6.3	4.8	5.7	4.8	4.8	3.9	5.7	5.9			
1940	5.3	5.1	4.8	5.2	5.4	5.5	6.2	5.0	5.7	5.0	5.0	4.4	5.8	6.0	6.1		
1941	5.0	4.8	4.6	4.9	5.0	5.1	5.7	4.5	5.1	4.4	4.3	3.7	4.5	4.3	3.5	0.9	
1942	4.9	4.7	4.5	4.8	4.9	4.9	5.5	4.4	4.9	4.3	4.2	3.6	4.3	4.0	3.4	2.1	3.2
1943	4.8	4.6	4.3	4.6	4.7	4.7	5.2	4.2	4.6	4.0	3.9	3.4	4.0	3.6	3.1	2.1	2.7
1944	4.7	4.5	4.2	4.5	4.6	4.6	5.0	4.1	4.5	3.9	3.8	3.3	3.8	3.5	3.0	2.3	2.7
1945	4.7	4.5	4.6	4.8	4.9	5.0	5.4	4.6	5.0	4.5	4.5	4.1	4.5	4.3	3.9	3.4	4.7
1946	4.7	4.6	4.3	4.6	4.6	4.6	5.0	4.2	4.6	4.1	4.0	3.7	4.1	3.9	3.6	3.2	3.7
1947	4.4	4.2	4.0	4.2	4.2	4.2	4.5	3.8	4.0	3.6	3.5	3.1	3.4	3.2	2.8	2.4	2.6
1948	4.4	4.2	3.9	4.1	4.2	4.2	4.4	3.7	4.0	3.6	3.5	3.1	3.4	3.2	2.9	2.5	2.7
1949	4.4	4.3	4.1	4.2	4.3	4.3	4.6	3.9	4.1	3.8	3.7	3.4	3.7	3.5	3.2	2.9	3.2
1950	4.2	4.1	3.9	4.1	4.1	4.1	4.3	3.7	3.9	3.5	3.4	3.1	3.4	3.2	3.0	2.6	2.8
1951	3.9	3.8	3.5	3.7	3.7	3.7	3.9	3.3	3.4	3.1	3.0	2.7	2.8	2.6	2.4	2.0	2.1
1952	3.8	3.6	3.4	3.6	3.6	3.5	3.8	3.2	3.3	3.0	2.8	2.6	2.7	2.5	2.3	2.0	2.0
1953	3.8	3.6	3.4	3.6	3.6	3.5	3.8	3.2	3.3	3.0	2.9	2.6	2.8	2.6	2.4	2.1	2.2
1954	3.9	3.8	3.6	3.7	3.7	3.7	3.9	3.4	3.5	3.2	3.1	2.9	3.0	2.9	2.7	2.4	2.6
1955	3.7	3.6	3.4	3.5	3.5	3.5	3.7	3.1	3.3	3.0	2.9	2.7	2.8	2.6	2.4	2.2	2.3
1956	3.4	3.3	3.1	3.2	3.2	3.1	3.3	2.8	2.9	2.6	2.5	2.2	2.3	2.2	1.9	1.7	1.7
1957	3.3	3.4	3.2	3.3	3.3	3.3	3.5	3.0	3.1	2.8	2.7	2.5	2.6	2.4	2.2	2.0	2.1
1958	3.2	3.1	2.9	3.0	3.0	2.9	3.1	2.6	2.7	2.4	2.3	2.1	2.1	2.0	1.8	1.5	1.5
1959	3.1	2.9	2.7	2.8	2.8	2.8	2.9	2.4	2.5	2.2	2.1	1.9	1.9	1.8	1.6	1.3	1.4
1960	3.4	3.2	3.1	3.2	3.2	3.1	3.2	2.8	2.9	2.6	2.5	2.3	2.4	2.3	2.1	1.9	2.0
1961	3.3	3.2	3.0	3.1	3.1	3.0	3.2	2.7	2.8	2.6	2.5	2.3	2.4	2.2	2.1	1.9	1.9
1962	3.4	3.3	3.1	3.2	3.2	3.1	3.3	2.9	3.0	2.7	2.6	2.5	2.5	2.4	2.3	2.1	2.2
1963	3.3	3.2	3.1	3.1	3.1	3.1	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.2	2.1	2.2
1964	3.3	3.2	3.1	3.2	3.1	3.1	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.3	2.1	2.2
1965	3.3	3.2	3.0	3.1	3.1	3.0	3.2	2.8	2.9	2.6	2.6	2.4	2.5	2.4	2.2	2.1	2.1
1966	3.3	3.2	3.0	3.1	3.1	3.1	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.3	2.1	2.2
1967	3.0	2.8	2.7	2.8	2.7	2.7	2.8	2.4	2.5	2.3	2.2	2.0	2.1	2.0	1.8	1.7	1.7
1968	2.9	2.8	2.6	2.7	2.7	2.6	2.7	2.4	2.4	2.2	2.1	2.0	2.0	1.9	1.8	1.6	1.6
1969	2.7	2.6	2.4	2.5	2.5	2.4	2.5	2.1	2.2	2.0	1.9	1.7	1.8	1.7	1.5	1.4	1.4
1970	2.9	2.8	2.6	2.7	2.7	2.6	2.7	2.4	2.5	2.3	2.2	2.0	2.1	2.0	1.9	1.7	1.7
1971	3.1	3.0	2.9	2.9	2.9	2.9	3.0	2.7	2.7	2.5	2.5	2.3	2.4	2.3	2.2	2.1	2.1
1972	3.2	3.1	2.9	3.0	3.0	3.0	3.1	2.7	2.8	2.6	2.6	2.4	2.5	2.4	2.3	2.2	2.2
1973	3.2	3.1	3.0	3.1	3.1	3.0	3.1	2.8	2.9	2.7	2.7	2.6	2.5	2.6	2.5	2.4	2.3
1974	3.2	3.1	3.0	3.1	3.1	3.0	3.1	2.8	2.9	2.7	2.7	2.6	2.6	2.5	2.4	2.3	2.4

TABLE 2B

LONG-TERM UNITED STATES GOVERNMENT BONDS
Rates of Return for All Yearly Holding Periods from 1926 to 1974
(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1943	2.1															
1944	2.5	2.8														
1945	5.1	6.7	10.7													
1946	3.8	4.4	5.2	-0.1												
1947	2.5	2.6	2.5	-1.4	-2.6											
1948	2.0	2.8	2.7	0.2	0.3	3.4										
1949	3.2	3.4	3.5	1.7	2.3	4.9	6.5									
1950	2.8	2.9	2.9	1.4	1.8	3.3	3.2	0.0								
1951	2.0	2.0	1.9	0.5	0.6	1.4	0.8	-2.0	-3.9							
1952	1.9	1.9	1.8	0.6	0.7	1.4	0.9	-0.9	-1.4	1.2						
1953	2.1	2.1	2.0	1.0	1.1	1.7	1.4	0.2	0.2	2.4	3.6					
1954	2.5	2.5	2.5	1.6	1.8	2.5	2.3	1.5	1.9	4.0	5.4	7.2				
1955	2.2	2.2	2.2	1.3	1.5	2.0	1.8	1.1	1.3	2.6	3.1	2.9	-1.3			
1956	1.5	1.6	1.5	0.7	0.8	1.1	0.9	0.1	0.1	0.9	0.9	-0.0	-3.5	-5.6		
1957	2.0	2.0	1.9	1.2	1.4	1.8	1.6	1.0	1.1	2.0	2.1	1.8	0.1	0.7	7.5	
1958	1.5	1.4	1.3	0.6	0.7	1.0	0.8	0.2	0.2	0.8	0.7	0.2	-1.5	-1.6	0.5	-6.1
1959	1.3	1.2	1.1	0.4	0.5	0.7	0.5	-0.1	-0.1	0.4	0.3	-0.2	-1.7	-1.8	-0.5	-4.2
1960	1.9	1.9	1.8	1.3	1.4	1.7	1.5	1.1	1.2	1.8	1.9	1.6	0.8	1.2	2.9	1.5
1961	1.9	1.8	1.8	1.3	1.3	1.6	1.5	1.1	1.2	1.7	1.8	1.6	0.8	1.1	2.5	1.3
1962	2.1	2.1	2.1	1.6	1.7	2.0	1.9	1.5	1.7	2.2	2.3	2.1	1.5	1.9	3.2	2.4
1963	2.1	2.1	2.0	1.6	1.7	1.9	1.8	1.5	1.6	2.1	2.2	2.0	1.5	1.8	2.9	2.2
1964	2.1	2.1	2.1	1.7	1.8	2.0	1.9	1.6	1.8	2.2	2.3	2.2	1.7	2.0	3.0	2.4
1965	2.1	2.1	2.0	1.6	1.7	1.9	1.9	1.6	1.7	2.1	2.2	2.1	1.5	1.9	2.8	2.2
1966	2.1	2.1	2.1	1.7	1.8	2.0	2.0	1.7	1.8	2.2	2.3	2.2	1.8	2.1	2.9	2.4
1967	1.7	1.6	1.6	1.2	1.2	1.4	1.3	1.1	1.1	1.5	1.5	1.3	0.9	1.1	1.7	1.1
1968	1.6	1.6	1.5	1.1	1.2	1.4	1.3	1.0	1.0	1.3	1.4	1.2	0.8	1.0	1.5	1.0
1969	1.3	1.3	1.2	0.9	0.9	1.1	1.0	0.7	0.7	1.0	1.0	0.8	0.4	0.5	1.0	0.5
1970	1.7	1.7	1.6	1.3	1.3	1.5	1.4	1.2	1.3	1.5	1.6	1.4	1.1	1.3	1.8	1.3
1971	2.1	2.1	2.0	1.7	1.8	2.0	1.9	1.7	1.8	2.1	2.1	2.1	1.8	2.0	2.5	2.1
1972	2.2	2.2	2.2	1.9	1.9	2.1	2.1	1.9	2.0	2.3	2.3	2.3	2.0	2.2	2.7	2.4
1973	2.3	2.3	2.3	2.0	2.1	2.3	2.2	2.0	2.1	2.4	2.5	2.4	2.2	2.4	2.8	2.6
1974	2.4	2.4	2.4	2.1	2.2	2.3	2.3	2.1	2.2	2.5	2.6	2.5	2.3	2.5	2.9	2.7

TABLE 2C

LONG-TERM UNITED STATES GOVERNMENT BONDS
Rates of Return for All Yearly Holding Periods from 1926 to 1974
(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1959	-2.3															
1960	5.5	13.8														
1961	3.9	7.2	1.0													
1962	4.7	7.1	3.9	6.8												
1963	4.0	5.6	3.0	4.0	1.2											
1964	3.9	5.2	3.1	3.8	2.4	3.5										
1965	3.4	4.4	2.6	3.0	1.8	2.1	0.7									
1966	3.5	4.3	2.8	3.2	2.3	2.6	2.2	3.7								
1967	2.0	2.5	1.0	1.0	-0.1	-0.5	-1.8	-3.0	-9.2							
1968	1.7	2.2	0.8	0.8	-0.2	-0.4	-1.4	-2.1	-4.8	-0.3						
1969	1.1	1.4	0.2	0.1	-0.9	-1.2	-2.1	-2.8	-4.9	-2.7	-5.0					
1970	2.0	2.4	1.3	1.3	0.7	0.6	0.1	-0.0	-0.9	2.0	3.2	12.1				
1971	2.8	3.2	2.3	2.5	2.0	2.1	1.9	2.1	1.8	4.7	6.4	12.6	13.2			
1972	3.0	3.4	2.6	2.8	2.4	2.5	2.3	2.6	2.4	4.9	6.2	10.3	9.4	5.7		
1973	3.2	3.6	2.8	3.0	2.6	2.8	2.7	2.9	2.8	5.0	6.1	9.1	8.1	5.6	5.5	
1974	3.2	3.6	2.9	3.1	2.8	2.9	2.9	3.1	3.0	4.9	5.8	8.1	7.2	5.2	5.0	4.4

TABLE 3A

LONG-TERM CORPORATE BONDS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
1926	7.4																
1927	7.4	7.4															
1928	5.9	5.1	2.8														
1929	5.2	4.5	3.1	3.3													
1930	5.8	5.4	4.7	5.6	8.0												
1931	4.4	3.9	3.0	3.1	2.9	-1.8											
1932	5.3	5.0	4.5	4.9	5.5	4.3	10.8										
1933	6.0	5.8	5.5	6.0	6.7	6.3	10.6	10.4									
1934	6.8	6.7	6.6	7.3	8.1	8.1	11.7	12.1	13.8								
1935	7.1	7.0	7.0	7.6	8.3	8.4	11.2	11.3	11.7	9.6							
1936	7.0	7.0	7.0	7.5	8.1	8.1	10.3	10.1	10.0	8.2	6.7						
1937	6.7	6.6	6.5	7.0	7.4	7.4	9.0	8.6	8.2	6.3	4.7	2.7					
1938	6.6	6.6	6.5	6.9	7.3	7.2	8.5	8.2	7.8	6.3	5.2	4.4	6.1				
1939	6.4	6.4	6.3	6.8	6.9	6.8	8.0	7.6	7.1	5.8	4.9	4.3	5.0	4.0			
1940	6.2	6.2	6.1	6.3	6.5	6.5	7.5	7.0	6.6	5.4	4.6	4.1	4.5	3.7	3.4		
1941	6.0	5.9	5.8	6.1	6.3	6.1	7.0	6.6	6.1	5.0	4.3	3.8	4.0	3.4	3.1	2.7	
1942	5.8	5.7	5.6	5.8	6.0	5.8	6.6	6.2	5.7	4.7	4.0	3.6	3.8	3.2	2.9	2.7	2.6
1943	5.6	5.5	5.4	5.6	5.8	5.6	6.2	5.8	5.4	4.5	3.9	3.5	3.6	3.1	2.9	2.7	2.7
1944	5.6	5.5	5.4	5.5	5.7	5.5	6.1	5.8	5.3	4.5	4.0	3.6	3.8	3.4	3.3	3.2	3.4
1945	5.5	5.4	5.3	5.5	5.6	5.4	6.0	5.6	5.2	4.5	4.0	3.7	3.8	3.5	3.4	3.4	3.6
1946	5.3	5.2	5.1	5.2	5.4	5.2	5.7	5.3	5.0	4.3	3.8	3.5	3.6	3.3	3.1	3.1	3.2
1947	5.0	4.9	4.7	4.8	4.9	4.7	5.2	4.8	4.4	3.7	3.3	2.9	3.0	2.6	2.4	2.3	2.2
1948	4.9	4.8	4.7	4.8	4.9	4.7	5.1	4.8	4.4	3.8	3.3	3.0	3.1	2.8	2.6	2.5	2.5
1949	4.9	4.8	4.6	4.7	4.8	4.6	5.0	4.7	4.3	3.7	3.3	3.1	3.1	2.8	2.7	2.6	2.6
1950	4.8	4.6	4.5	4.6	4.7	4.5	4.9	4.5	4.2	3.6	3.2	3.0	3.0	2.8	2.6	2.5	2.5
1951	4.5	4.3	4.2	4.3	4.3	4.2	4.5	4.1	3.8	3.2	2.9	2.6	2.6	2.3	2.2	2.1	2.0
1952	4.4	4.3	4.2	4.2	4.3	4.1	4.4	4.1	3.8	3.3	2.9	2.7	2.7	2.4	2.3	2.2	2.2
1953	4.4	4.3	4.2	4.2	4.3	4.1	4.4	4.1	3.8	3.3	2.9	2.7	2.7	2.5	2.4	2.3	2.3
1954	4.4	4.3	4.2	4.3	4.3	4.1	4.4	4.1	3.8	3.4	3.1	2.9	2.9	2.7	2.6	2.5	2.5
1955	4.3	4.2	4.1	4.1	4.2	4.0	4.2	4.0	3.7	3.2	2.9	2.7	2.7	2.5	2.4	2.4	2.3
1956	3.9	3.8	3.7	3.7	3.7	3.6	3.8	3.5	3.2	2.8	2.4	2.2	2.2	2.0	1.9	1.8	1.7
1957	4.1	3.9	3.8	3.9	3.9	3.7	4.0	3.7	3.4	3.0	2.7	2.5	2.5	2.3	2.2	2.2	2.1
1958	3.9	3.8	3.7	3.7	3.7	3.5	3.7	3.5	3.2	2.8	2.5	2.3	2.3	2.1	2.0	1.9	1.9
1959	3.7	3.6	3.5	3.5	3.5	3.4	3.6	3.3	3.0	2.6	2.3	2.2	2.1	1.9	1.8	1.8	1.7
1960	3.9	3.8	3.7	3.7	3.7	3.6	3.7	3.5	3.3	2.9	2.6	2.4	2.4	2.3	2.2	2.1	2.1
1961	3.9	3.8	3.7	3.7	3.7	3.6	3.8	3.5	3.3	2.9	2.7	2.5	2.5	2.4	2.3	2.2	2.2
1962	4.0	3.9	3.8	3.8	3.9	3.7	3.9	3.7	3.5	3.1	2.9	2.7	2.7	2.6	2.5	2.4	2.5
1963	3.9	3.9	3.8	3.8	3.8	3.7	3.9	3.6	3.4	3.1	2.9	2.7	2.7	2.6	2.5	2.5	2.5
1964	4.0	3.9	3.8	3.8	3.8	3.7	3.9	3.7	3.5	3.1	2.9	2.8	2.8	2.7	2.6	2.6	2.6
1965	3.9	3.8	3.7	3.7	3.7	3.6	3.8	3.5	3.3	3.0	2.8	2.7	2.7	2.5	2.5	2.5	2.6
1966	3.8	3.7	3.6	3.6	3.6	3.5	3.6	3.4	3.2	2.9	2.7	2.6	2.6	2.5	2.4	2.4	2.3
1967	3.5	3.5	3.4	3.4	3.4	3.3	3.4	3.2	3.0	2.7	2.5	2.3	2.3	2.2	2.1	2.1	2.1
1968	3.5	3.4	3.3	3.4	3.4	3.2	3.4	3.2	3.0	2.7	2.5	2.3	2.3	2.2	2.1	2.1	2.1
1969	3.2	3.2	3.1	3.1	3.1	2.9	3.1	2.9	2.7	2.4	2.1	2.0	2.0	1.9	1.8	1.7	1.7
1970	3.6	3.5	3.4	3.4	3.4	3.3	3.4	3.2	3.1	2.8	2.6	2.5	2.4	2.3	2.3	2.2	2.2
1971	3.7	3.6	3.5	3.6	3.6	3.5	3.6	3.4	3.3	3.0	2.8	2.7	2.7	2.6	2.5	2.5	2.5
1972	3.8	3.7	3.6	3.7	3.7	3.6	3.7	3.5	3.4	3.1	2.9	2.8	2.8	2.7	2.7	2.7	2.7
1973	3.7	3.7	3.6	3.6	3.6	3.5	3.6	3.5	3.3	3.0	2.9	2.8	2.8	2.7	2.6	2.6	2.6
1974	3.6	3.5	3.4	3.4	3.4	3.3	3.5	3.3	3.1	2.9	2.7	2.6	2.6	2.5	2.5	2.4	2.4

TABLE 3B

LONG-TERM CORPORATE BONDS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1943	2.8															
1944	3.8	4.7														
1945	3.9	4.4	4.1													
1946	3.3	3.5	2.9	1.7												
1947	2.2	2.0	1.1	-0.3	-2.3											
1948	2.5	2.4	1.9	1.1	0.8	4.1										
1949	2.6	2.6	2.1	1.7	1.7	3.7	3.3									
1950	2.5	2.5	2.1	1.8	1.8	3.2	2.7	2.1								
1951	2.0	1.8	1.4	1.0	0.9	1.7	0.9	-0.3	-2.7							
1952	2.1	2.0	1.7	1.4	1.3	2.0	1.5	0.9	0.4	3.5						
1953	2.2	2.2	1.9	1.6	1.6	2.3	1.9	1.6	1.4	3.5	3.4					
1954	2.5	2.5	2.2	2.0	2.1	2.7	2.5	2.3	2.4	4.1	4.4	5.4				
1955	2.3	2.3	2.1	1.9	1.9	2.4	2.2	2.0	2.0	3.2	3.1	2.9	0.5			
1956	1.6	1.6	1.3	1.0	1.0	1.4	1.0	0.7	0.5	1.1	0.5	-0.4	-3.2	-6.8		
1957	2.1	2.0	1.8	1.7	1.7	2.1	1.8	1.7	1.6	2.3	2.1	1.7	0.6	0.6	8.6	
1958	1.8	1.8	1.5	1.4	1.3	1.7	1.4	1.2	1.1	1.7	1.3	0.9	-0.1	-0.3	3.1	-2.2
1959	1.7	1.6	1.4	1.2	1.1	1.4	1.2	1.0	0.9	1.3	1.0	0.6	-0.3	-0.5	1.7	-1.6
1960	2.1	2.0	1.8	1.7	1.7	2.0	1.8	1.7	1.7	2.2	2.0	1.8	1.2	1.3	3.5	1.8
1961	2.2	2.2	2.0	1.9	1.9	2.2	2.1	2.0	1.9	2.4	2.3	2.2	1.7	1.9	3.8	2.6
1962	2.5	2.5	2.3	2.2	2.3	2.6	2.5	2.4	2.4	2.9	2.8	2.8	2.5	2.8	4.4	3.6
1963	2.5	2.4	2.3	2.2	2.3	2.6	2.5	2.4	2.4	2.8	2.8	2.7	2.4	2.7	4.1	3.4
1964	2.6	2.6	2.4	2.4	2.4	2.7	2.6	2.5	2.6	3.0	3.0	2.9	2.7	2.9	4.2	3.6
1965	2.4	2.4	2.3	2.2	2.2	2.5	2.4	2.4	2.4	2.7	2.7	2.6	2.4	2.6	3.7	3.1
1966	2.3	2.3	2.2	2.1	2.1	2.4	2.3	2.2	2.2	2.6	2.5	2.4	2.2	2.4	3.3	2.7
1967	2.0	2.0	1.9	1.8	1.8	2.0	1.9	1.8	1.8	2.1	2.0	1.9	1.8	1.7	2.5	1.9
1968	2.1	2.0	1.9	1.8	1.8	2.0	1.9	1.9	1.8	2.1	2.0	1.9	1.7	1.8	2.5	2.0
1969	1.7	1.6	1.5	1.4	1.4	1.5	1.4	1.3	1.3	1.5	1.4	1.3	1.0	1.0	1.7	1.1
1970	2.2	2.2	2.1	2.0	2.0	2.2	2.1	2.1	2.1	2.3	2.3	2.2	2.0	2.1	2.8	2.4
1971	2.5	2.5	2.4	2.4	2.4	2.6	2.5	2.5	2.5	2.8	2.7	2.7	2.5	2.7	3.3	2.9
1972	2.7	2.7	2.6	2.5	2.6	2.8	2.7	2.7	2.7	3.0	2.9	2.9	2.8	2.9	3.6	3.2
1973	2.6	2.6	2.5	2.5	2.5	2.7	2.6	2.6	2.6	2.9	2.9	2.8	2.7	2.8	3.4	3.1
1974	2.4	2.4	2.3	2.3	2.3	2.5	2.4	2.4	2.4	2.6	2.6	2.5	2.4	2.5	3.0	2.7

TABLE 3C

LONG-TERM CORPORATE BONDS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1959	-1.0															
1960	3.9	9.1														
1961	4.2	6.9	4.8													
1962	5.1	7.3	6.4	7.9												
1963	4.5	6.0	5.0	5.0	2.2											
1964	4.6	5.7	4.9	4.9	3.5	4.8										
1965	3.8	4.7	3.8	3.6	2.1	2.1	-0.5									
1966	3.4	4.0	3.2	2.9	1.7	1.5	-0.1	0.2								
1967	2.4	2.9	2.0	1.5	0.3	-0.2	-1.8	-2.4	-4.9							
1968	2.4	2.8	2.1	1.7	0.7	0.4	-0.7	-0.8	-1.3	2.6						
1969	1.4	1.7	0.9	0.4	-0.6	-1.1	-2.2	-2.7	-3.6	-2.9	-8.1					
1970	2.7	3.1	2.5	2.3	1.6	1.5	0.9	1.2	1.5	3.7	4.3	18.4				
1971	3.4	3.7	3.3	3.1	2.6	2.6	2.3	2.8	3.3	5.5	6.5	14.6	11.0			
1972	3.6	4.0	3.6	3.5	3.0	3.1	2.9	3.4	4.0	5.8	6.7	12.1	9.1	7.3		
1973	3.5	3.8	3.4	3.3	2.9	2.9	2.7	3.1	3.6	5.0	5.6	9.3	6.4	4.2	1.1	
1974	3.0	3.3	2.9	2.8	2.4	2.4	2.1	2.4	2.7	3.9	4.1	6.7	3.9	1.7	-1.0	-3.1

TABLE 4A

UNITED STATES TREASURY BILLS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
1926	3.2																
1927	3.1	3.1															
1928	3.4	3.5	3.9														
1929	3.8	4.0	4.5	5.0													
1930	3.5	3.6	3.7	3.6	2.3												
1931	3.0	3.0	2.9	2.6	1.5	0.6											
1932	2.7	2.6	2.6	2.2	1.3	0.8	1.0										
1933	2.4	2.3	2.2	1.8	1.1	0.7	0.7	0.3									
1934	2.2	2.0	1.9	1.6	0.9	0.5	0.5	0.2	0.2								
1935	2.0	1.8	1.7	1.3	0.8	0.5	0.4	0.2	0.2	0.1							
1936	1.8	1.7	1.5	1.2	0.7	0.4	0.4	0.2	0.2	0.2	0.2						
1937	1.7	1.5	1.4	1.1	0.6	0.4	0.4	0.2	0.2	0.2	0.2	0.3					
1938	1.5	1.4	1.3	1.0	0.6	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.0				
1939	1.4	1.3	1.1	0.9	0.5	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0			
1940	1.3	1.2	1.1	0.8	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-0.0	-0.0	-0.0		
1941	1.3	1.1	1.0	0.8	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-0.0	-0.0	-0.0	0.0	
1942	1.2	1.1	0.9	0.7	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
1943	1.1	1.0	0.9	0.7	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
1944	1.1	1.0	0.9	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3
1945	1.1	1.0	0.8	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
1946	1.0	0.9	0.8	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
1947	1.0	0.9	0.8	0.6	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4
1948	1.0	0.9	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
1949	1.0	0.9	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5
1950	1.0	0.9	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5
1951	1.0	0.9	0.8	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
1952	1.0	1.0	0.9	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7
1953	1.1	1.0	0.9	0.8	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.8
1954	1.1	1.0	0.9	0.8	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8
1955	1.1	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.9
1956	1.1	1.0	1.0	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0
1957	1.2	1.1	1.0	1.0	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1
1958	1.2	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.1
1959	1.2	1.2	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2
1960	1.3	1.2	1.2	1.1	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.3
1961	1.3	1.3	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3
1962	1.3	1.3	1.2	1.2	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4
1963	1.4	1.3	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5
1964	1.4	1.4	1.4	1.3	1.2	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6
1965	1.5	1.5	1.4	1.4	1.3	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.7
1966	1.6	1.5	1.5	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.7	1.7	1.8
1967	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.9
1968	1.7	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.9	1.9	2.0
1969	1.8	1.8	1.8	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.2
1970	1.9	1.9	1.9	1.8	1.8	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.3
1971	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.3	2.4
1972	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.4
1973	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.5	2.6
1974	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.6	2.7

TABLE 4B

UNITED STATES TREASURY BILLS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1943	0.4															
1944	0.3	0.3														
1945	0.3	0.3	0.3													
1946	0.3	0.3	0.3	0.4												
1947	0.4	0.4	0.4	0.4	0.5											
1948	0.5	0.5	0.5	0.6	0.7	0.8										
1949	0.5	0.5	0.5	0.6	0.7	0.8	0.7									
1950	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.2								
1951	0.7	0.7	0.8	0.8	0.9	1.0	1.1	1.3	1.5							
1952	0.8	0.8	0.9	1.0	1.0	1.2	1.2	1.4	1.5	1.6						
1953	0.9	0.9	1.0	1.0	1.1	1.3	1.3	1.5	1.6	1.7	1.7					
1954	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.4	1.4	1.3	0.8				
1955	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.4	1.4	1.2	1.6			
1956	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.7	1.6	2.0	2.4		
1957	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.8	1.8	1.9	2.0	2.0	2.4	2.8	3.1	
1958	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.2	2.4	2.3	1.5
1959	1.3	1.3	1.4	1.5	1.6	1.7	1.7	1.9	1.9	2.0	2.0	2.1	2.3	2.5	2.5	2.3
1960	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.1	2.2	2.4	2.5	2.6	2.4
1961	1.4	1.5	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.5	2.5	2.3
1962	1.5	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.2	2.4	2.5	2.5	2.4
1963	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.5	2.6	2.6	2.5
1964	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.4	2.6	2.7	2.7	2.7
1965	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.7	2.8	2.9	2.8
1966	1.9	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.9	3.0	3.0	3.0
1967	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.7	2.8	3.0	3.1	3.1	3.1
1968	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.3
1969	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.6
1970	2.4	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.7	3.8	3.8
1971	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.3	3.4	3.6	3.7	3.8	3.9
1972	2.5	2.6	2.7	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
1973	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.5	3.6	3.8	3.9	4.0	4.0
1974	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.6	3.7	3.8	4.0	4.1	4.2	4.3

TABLE 4C

UNITED STATES TREASURY BILLS

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1959	3.0															
1960	2.8	2.6														
1961	2.6	2.4	2.1													
1962	2.6	2.5	2.4	2.7												
1963	2.7	2.6	2.7	2.9	3.1											
1964	2.8	2.8	2.9	3.1	3.3	3.5										
1965	3.0	3.0	3.1	3.3	3.5	3.7	3.9									
1966	3.2	3.3	3.4	3.6	3.8	4.1	4.3	4.8								
1967	3.3	3.4	3.5	3.7	3.9	4.1	4.3	4.5	4.2							
1968	3.5	3.6	3.7	3.9	4.1	4.3	4.5	4.7	4.7	5.2						
1969	3.8	3.9	4.0	4.2	4.5	4.7	4.9	5.2	5.3	5.9	6.6					
1970	4.0	4.1	4.3	4.5	4.7	4.9	5.2	5.4	5.6	6.1	6.5	6.5				
1971	4.0	4.1	4.3	4.5	4.7	4.9	5.1	5.2	5.3	5.6	5.8	5.4	4.3			
1972	4.0	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.1	5.3	5.3	4.9	4.1	3.9		
1973	4.2	4.3	4.4	4.6	4.8	5.0	5.1	5.3	5.4	5.6	5.6	5.4	5.0	5.4	7.0	
1974	4.4	4.5	4.7	4.9	5.1	5.2	5.4	5.6	5.7	5.9	6.0	5.9	5.8	6.3	7.5	8.0

TABLE 5A

CONSUMER PRICE INDEX

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
1926	-1.5																
1927	-1.8	-2.1															
1928	-1.5	-1.5	-1.0														
1929	-1.1	-0.9	-0.4	0.2													
1930	-2.1	-2.2	-2.3	-3.0	-6.0												
1931	-3.4	-3.7	-4.2	-5.2	-7.8	-9.5											
1932	-4.4	-4.9	-5.4	-6.2	-8.0	-9.4	-10.3										
1933	-3.8	-4.1	-4.4	-5.1	-6.4	-6.6	-5.0	0.5									
1934	-3.2	-3.4	-3.5	-4.0	-4.8	-4.5	-2.7	1.3	2.0								
1935	-2.6	-2.7	-2.8	-3.0	-3.5	-3.0	-1.3	1.8	2.5	3.0							
1936	-2.2	-2.3	-2.3	-2.5	-2.9	-2.3	-0.8	1.7	2.1	2.1	1.2						
1937	-1.8	-1.8	-1.8	-1.9	-2.1	-1.6	-0.2	2.0	2.3	2.4	2.2	3.1					
1938	-1.9	-1.9	-1.9	-2.0	-2.2	-1.7	-0.6	1.2	1.3	1.1	0.5	0.1	-2.8				
1939	-1.8	-1.8	-1.8	-1.8	-2.0	-1.6	-0.5	0.9	1.0	0.8	0.2	-0.1	-1.6	-0.5			
1940	-1.6	-1.6	-1.6	-1.6	-1.8	-1.3	-0.4	0.9	1.0	0.8	0.4	0.2	-0.8	0.2	1.0		
1941	-1.4	-1.4	-1.4	-1.4	-1.6	-0.9	-0.4	0.6	1.9	2.0	2.0	1.9	2.0	1.7	3.3	5.2	9.7
1942	-0.3	-0.3	-0.2	-0.1	-0.1	0.4	1.3	2.6	2.8	2.9	2.9	3.2	3.2	4.8	6.6	9.5	9.3
1943	-0.2	-0.1	0.1	0.1	0.1	0.6	1.5	2.6	2.9	2.9	2.9	3.2	3.2	4.4	5.7	7.3	6.2
1944	0.0	0.0	0.2	0.2	0.2	0.7	1.5	2.6	2.8	2.9	2.8	3.1	3.0	4.0	5.0	6.0	4.8
1945	0.1	0.2	0.3	0.4	0.4	0.8	1.6	2.6	2.7	2.8	2.8	3.0	2.9	3.8	4.5	5.2	4.2
1946	0.9	1.0	1.2	1.3	1.3	1.8	2.6	3.6	3.9	4.0	4.1	4.4	4.5	5.5	6.4	7.3	6.8
1947	1.2	1.4	1.5	1.7	1.7	2.2	3.0	4.0	4.2	4.4	4.5	4.8	5.0	5.9	6.7	7.5	7.2
1948	1.3	1.4	1.6	1.7	1.8	2.3	3.0	3.9	4.1	4.3	4.4	4.6	4.8	5.5	6.2	6.9	6.5
1949	1.2	1.3	1.4	1.5	1.6	2.0	2.7	3.5	3.7	3.8	3.9	4.1	4.2	4.9	5.4	5.9	5.5
1950	1.3	1.4	1.6	1.7	1.8	2.2	2.9	3.7	3.8	4.0	4.0	4.2	4.3	4.9	5.4	5.9	5.5
1951	1.5	1.6	1.8	1.9	2.0	2.4	3.0	3.8	4.0	4.1	4.1	4.3	4.4	5.0	5.5	5.9	5.5
1952	1.5	1.6	1.8	1.9	1.9	2.3	2.9	3.6	3.8	3.9	3.9	4.1	4.2	4.7	5.1	5.5	5.1
1953	1.5	1.6	1.7	1.8	1.9	2.2	2.8	3.5	3.6	3.7	3.8	3.9	4.0	4.4	4.8	5.1	4.7
1954	1.4	1.5	1.6	1.7	1.8	2.1	2.7	3.3	3.4	3.5	3.5	3.7	3.7	4.1	4.4	4.7	4.3
1955	1.4	1.5	1.6	1.7	1.7	2.1	2.6	3.2	3.3	3.4	3.4	3.5	3.5	3.9	4.2	4.4	4.0
1956	1.4	1.5	1.6	1.7	1.8	2.1	2.6	3.2	3.3	3.3	3.3	3.5	3.5	3.8	4.1	4.3	3.9
1957	1.5	1.5	1.7	1.8	1.8	2.1	2.6	3.2	3.3	3.3	3.4	3.5	3.5	3.8	4.0	4.2	3.9
1958	1.5	1.6	1.7	1.8	1.8	2.1	2.6	3.1	3.2	3.3	3.3	3.4	3.4	3.7	3.9	4.1	3.8
1959	1.5	1.6	1.7	1.8	1.8	2.1	2.5	3.0	3.1	3.2	3.2	3.3	3.3	3.6	3.8	3.9	3.6
1960	1.5	1.6	1.7	1.8	1.8	2.1	2.5	3.0	3.1	3.1	3.2	3.2	3.2	3.5	3.7	3.8	3.5
1961	1.4	1.5	1.6	1.7	1.8	2.0	2.4	2.9	3.0	3.0	3.0	3.1	3.1	3.4	3.5	3.7	3.4
1962	1.4	1.5	1.6	1.7	1.7	2.0	2.4	2.8	2.9	3.0	3.0	3.0	3.0	3.3	3.4	3.6	3.3
1963	1.4	1.5	1.6	1.7	1.7	2.0	2.4	2.8	2.9	2.9	2.9	3.0	3.0	3.2	3.4	3.5	3.2
1964	1.4	1.5	1.6	1.7	1.7	2.0	2.3	2.8	2.8	2.9	2.9	2.9	2.9	3.1	3.3	3.4	3.1
1965	1.4	1.5	1.6	1.7	1.7	2.0	2.3	2.7	2.8	2.8	2.8	2.9	2.9	3.1	3.2	3.3	3.1
1966	1.5	1.6	1.7	1.7	1.8	2.0	2.4	2.8	2.8	2.8	2.8	2.9	2.9	3.1	3.2	3.3	3.1
1967	1.5	1.6	1.7	1.8	1.8	2.0	2.4	2.8	2.8	2.9	2.8	2.9	2.9	3.1	3.2	3.3	3.1
1968	1.6	1.7	1.8	1.8	1.9	2.1	2.4	2.8	2.9	2.9	2.9	3.0	3.0	3.1	3.3	3.4	3.1
1969	1.7	1.8	1.9	1.9	2.0	2.2	2.5	2.9	3.0	3.0	3.0	3.0	3.0	3.2	3.4	3.5	3.2
1970	1.8	1.9	2.0	2.0	2.1	2.3	2.6	3.0	3.0	3.1	3.1	3.1	3.1	3.3	3.4	3.5	3.3
1971	1.8	1.9	2.0	2.1	2.1	2.3	2.6	3.0	3.0	3.1	3.1	3.1	3.1	3.3	3.4	3.5	3.3
1972	1.9	1.9	2.0	2.1	2.1	2.3	2.6	3.0	3.1	3.1	3.1	3.1	3.1	3.3	3.4	3.5	3.3
1973	2.0	2.1	2.2	2.2	2.3	2.5	2.8	3.1	3.2	3.2	3.2	3.3	3.3	3.5	3.6	3.7	3.5
1974	2.2	2.3	2.4	2.4	2.5	2.7	3.0	3.3	3.4	3.4	3.4	3.5	3.5	3.7	3.8	3.9	3.7

TABLE 5B

CONSUMER PRICE INDEX

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1943	3.2															
1944	2.6	2.1														
1945	2.5	2.2	2.2													
1946	6.2	7.3	9.9	18.2												
1947	6.8	7.7	9.6	13.5	9.0											
1948	6.1	6.7	7.8	9.8	5.8	2.7										
1949	4.9	5.2	5.8	6.8	3.2	0.4	-1.8									
1950	5.0	5.3	5.8	6.6	3.8	2.2	1.9	5.8								
1951	5.1	5.4	5.8	6.4	4.2	3.1	3.2	5.8	5.9							
1952	4.7	4.9	5.2	5.6	3.7	2.6	2.6	4.2	3.4	0.9						
1953	4.3	4.4	4.7	5.0	3.2	2.3	2.2	3.3	2.4	0.7	0.6					
1954	3.9	4.0	4.2	4.4	2.8	1.9	1.8	2.5	1.7	0.3	0.1	-0.5				
1955	3.6	3.7	3.8	4.0	2.5	1.7	1.6	2.1	1.4	0.3	0.2	-0.0	0.4			
1956	3.6	3.6	3.7	3.9	2.5	1.8	1.7	2.2	1.7	0.8	0.8	0.9	1.6	2.9		
1957	3.5	3.6	3.7	3.8	2.6	2.0	1.9	2.3	1.9	1.2	1.3	1.4	2.1	2.9	3.0	
1958	3.4	3.4	3.5	3.6	2.5	1.9	1.9	2.3	1.8	1.3	1.3	1.5	2.0	2.5	2.4	1.8
1959	3.3	3.3	3.4	3.5	2.4	1.9	1.8	2.2	1.8	1.3	1.4	1.5	1.9	2.3	2.1	1.6
1960	3.2	3.2	3.3	3.3	2.4	1.9	1.8	2.1	1.8	1.3	1.4	1.5	1.8	2.1	1.9	1.6
1961	3.1	3.1	3.1	3.2	2.2	1.8	1.7	2.0	1.7	1.3	1.3	1.4	1.7	1.9	1.7	1.4
1962	3.0	3.0	3.0	3.1	2.2	1.7	1.7	1.9	1.6	1.3	1.3	1.4	1.6	1.8	1.6	1.3
1963	2.9	2.9	2.9	3.0	2.2	1.7	1.7	1.9	1.6	1.3	1.3	1.4	1.6	1.8	1.6	1.4
1964	2.8	2.8	2.9	2.9	2.1	1.7	1.6	1.9	1.6	1.3	1.3	1.4	1.6	1.7	1.6	1.4
1965	2.8	2.8	2.8	2.8	2.1	1.7	1.7	1.9	1.6	1.3	1.4	1.4	1.6	1.7	1.6	1.4
1966	2.8	2.8	2.8	2.9	2.2	1.8	1.8	2.0	1.7	1.5	1.5	1.6	1.8	1.9	1.8	1.6
1967	2.8	2.8	2.8	2.9	2.2	1.9	1.8	2.0	1.8	1.6	1.6	1.7	1.9	2.0	1.9	1.8
1968	2.9	2.9	2.9	3.0	2.3	2.0	2.0	2.2	2.0	1.8	1.8	1.9	2.1	2.2	2.1	2.0
1969	3.0	3.0	3.0	3.1	2.5	2.2	2.2	2.4	2.2	2.0	2.1	2.1	2.3	2.5	2.4	2.4
1970	3.1	3.1	3.1	3.2	2.6	2.3	2.3	2.5	2.3	2.2	2.2	2.3	2.5	2.7	2.6	2.6
1971	3.1	3.1	3.1	3.2	2.6	2.4	2.4	2.5	2.4	2.2	2.3	2.4	2.6	2.7	2.7	2.7
1972	3.1	3.1	3.2	3.2	2.7	2.4	2.4	2.6	2.4	2.3	2.4	2.4	2.6	2.7	2.7	2.7
1973	3.3	3.3	3.3	3.4	2.9	2.6	2.6	2.8	2.7	2.6	2.6	2.8	2.9	3.1	3.1	3.1
1974	3.5	3.6	3.6	3.7	3.2	3.0	3.0	3.2	3.1	2.9	3.0	3.2	3.3	3.5	3.5	3.6

TABLE 5C

CONSUMER PRICE INDEX

Rates of Return for All Yearly Holding Periods from 1926 to 1974

(Percent Per Annum Compounded Annually)

TO THE END OF	FROM THE BEGINNING OF 1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1959	1.5															
1960	1.5	1.5														
1961	1.2	1.1	0.7													
1962	1.2	1.1	0.9	1.2												
1963	1.3	1.3	1.2	1.4	1.7											
1964	1.3	1.3	1.2	1.4	1.4	1.2										
1965	1.4	1.4	1.3	1.5	1.6	1.6	1.9									
1966	1.6	1.7	1.7	1.9	2.0	2.2	2.6	3.4								
1967	1.8	1.8	1.9	2.1	2.2	2.4	2.8	3.2	3.0							
1968	2.1	2.1	2.2	2.4	2.7	2.9	3.3	3.7	3.9	4.7						
1969	2.4	2.5	2.6	2.9	3.1	3.4	3.8	4.3	4.6	5.4	6.1					
1970	2.7	2.8	2.9	3.2	3.4	3.7	4.1	4.5	4.8	5.4	5.8	5.5				
1971	2.7	2.8	3.0	3.2	3.4	3.6	4.0	4.3	4.5	4.9	5.0	4.4	3.4			
1972	2.8	2.9	3.0	3.2	3.4	3.6	3.9	4.2	4.3	4.6	4.6	4.1	3.4	3.4		
1973	3.2	3.3	3.4	3.7	3.9	4.1	4.4	4.8	5.0	5.3	5.4	5.2	5.2	6.1	8.8	
1974	3.7	3.8	4.0	4.3	4.5	4.8	5.1	5.5	5.8	6.2	6.4	6.5	6.7	7.9	10.1	11.5

yearly holding periods for each of the five basic series. For example, in table 1A the geometric mean annual return for common stocks for the period 1926–74 is 8.5 percent and is found in the matrix in column 1926 and in row 1974.

The year-by-year annual returns, R_T, for each of the five basic series are shown along the diagonals of the matrices in tables 1–5. The year-end index values of cumulative wealth relatives, V_N, are shown in table 6 for each of the five basic series.

IV. DERIVED SERIES

Seven monthly return series are derived from the five basic series. The first three series include the net return from investing in common stocks rather than bills, the net return from investing in long-term government bonds rather than bills, and the net return from investing in long-term corporate bonds rather than long-term government bonds, We refer to these three series, respectively, as "risk premia," "maturity premia," and "default premia."[17] In addition, we estimate real (inflation-adjusted) return series for common stocks, long-term government and corporate bonds, and Treasury bills. Year-by-year returns, R_T, for each of the derived series are formed by equation (7) and are listed in table 7. The year-end index of cumulative wealth relatives, V_N, are formed by equation (6) and listed in table 8. A description of each series follows.

A. Risk Premia

It is generally accepted in financial theory that capital markets are dominated by risk-averse investors who expect compensation for investing in common stocks rather than risk-free assets such as U.S. Treasury bills.[18] The monthly risk premia, $R_{p,t}$, are given by

$$R_{p,t} = \frac{1 + R_{m,t}}{1 + R_{f,t}} - 1 = \frac{R_{m,t} - R_{f,t}}{1 + R_{f,t}}. \tag{11}$$

Equation (11) is presented as the ratio of price relatives. It estimates net returns from investing in common stock, $R_{m,t}$, relative to the returns on bills, $R_{f,t}$. Frequently, risk premia are measured by the simple difference,

$$R'_{p,t} = R_{m,t} - R_{f,t}. \tag{12}$$

17. The risk premium, the maturity premium, and the default premium are frequently defined in economic and financial literature as a one-period expected excess rate of return. In hypothesis testing, the various premia are often measured by the arithmetic mean of historical excess rates of return. Since we present historical net returns, our use of the word "premia" refers to period-by-period returns rather than either the historical mean or the expected return.

18. The positive trade-off between risk and return is based upon the capital asset pricing model of William F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk," *Journal of Finance* 19 (September 1964): 425–42; John Lintner, "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets," *Review of Economics and Statistics* 47 (February 1965): 13–37; and Jack L. Treynor, "Toward a Theory of Market Value of Risk Assets" (unpublished manuscript, 1961).

TABLE 6

INDEX OF YEAR END CUMULATIVE WEALTH RELATIVES
FROM 1925 THROUGH 1974

Year	Common Stocks	Long-term Government Bonds	Long-term Corporate Bonds	U.S. Treasury Bills	Consumer Price Index
1925	1.000	1.000	1.000	1.000	1.000
1926	1.116	1.078	1.074	1.032	0.985
1927	1.534	1.174	1.154	1.064	0.965
1928	2.203	1.175	1.186	1.106	0.956
1929	2.018	1.215	1.225	1.161	0.958
1930	1.516	1.272	1.323	1.187	0.900
1931	0.859	1.258	1.298	1.195	0.814
1932	0.788	1.470	1.439	1.207	0.731
1933	1.214	1.469	1.588	1.211	0.734
1934	1.196	1.617	1.808	1.213	0.749
1935	1.766	1.698	1.982	1.215	0.772
1936	2.365	1.825	2.116	1.217	0.781
1937	1.537	1.829	2.174	1.220	0.805
1938	2.015	1.930	2.307	1.220	0.783
1939	1.401	2.045	2.398	1.220	0.779
1940	1.811	2.170	2.480	1.220	0.787
1941	1.601	2.190	2.547	1.220	0.863
1942	1.927	2.261	2.614	1.224	0.943
1943	2.426	2.308	2.688	1.228	0.973
1944	2.904	2.374	2.815	1.232	0.993
1945	3.962	2.628	2.930	1.236	1.016
1946	4.377	2.626	2.980	1.241	1.200
1947	3.852	2.557	2.910	1.247	1.308
1948	4.064	2.644	3.031	1.257	1.343
1949	4.828	2.815	3.131	1.266	1.319
1950	6.360	2.816	3.197	1.281	1.395
1951	7.887	2.705	3.111	1.300	1.477
1952	9.335	2.737	3.221	1.321	1.490
1953	9.243	2.836	3.330	1.344	1.499
1954	14.107	3.039	3.510	1.355	1.492
1955	18.557	3.000	3.527	1.377	1.498
1956	19.773	2.832	3.286	1.411	1.541
1957	17.639	3.044	3.569	1.455	1.587
1958	25.289	2.859	3.490	1.477	1.615
1959	28.318	2.794	3.456	1.521	1.639
1960	28.449	3.179	3.770	1.561	1.663
1961	36.098	3.210	3.951	1.594	1.675
1962	32.947	3.430	4.265	1.638	1.695
1963	40.451	3.471	4.359	1.689	1.723
1964	47.128	3.594	4.567	1.749	1.745
1965	52.996	3.619	4.546	1.817	1.778
1966	47.671	3.752	4.555	1.904	1.838
1967	59.105	3.408	4.329	1.983	1.894
1968	65.654	3.398	4.441	2.086	1.984
1969	60.119	3.227	4.081	2.223	2.105
1970	62.492	3.616	4.831	2.367	2.220
1971	71.439	4.094	5.363	2.470	2.295
1972	84.992	4.328	5.752	2.565	2.373
1973	72.526	4.566	5.818	2.744	2.581
1974	53.340	4.767	5.640	2.965	2.879

TABLE 7

CALENDAR YEAR-BY-YEAR TOTAL RATES OF RETURN FOR DERIVED SERIES FROM THE BEGINNING OF 1926 THROUGH 1974
(RETURNS IN PERCENT PER YEAR)

Year	Risk Premia on Common Stocks	Maturity Premia on Long-Term Govt. Bonds	Default Premia on Long-Term Corp. Bonds	Common Stocks--Inflation Adjusted	Long-Term Govt. Bonds--Inflation Adjusted	Long-Term Corp. Bonds--Inflation Adjusted	U.S. Treasury Bills--Inflation Adjusted
1926	8.2	4.5	-0.4	13.3	9.4	9.0	4.7
1927	33.3	5.6	-1.4	40.4	11.2	9.7	5.3
1928	36.1	-3.7	2.8	45.0	1.1	3.8	5.0
1929	-12.7	-1.5	-0.1	-8.6	3.2	3.1	4.7
1930	-26.6	2.3	3.2	-20.1	11.4	14.9	8.8
1931	-43.7	-1.7	-0.8	-37.4	9.4	8.5	11.3
1932	-9.1	15.7	-5.2	2.3	30.2	23.5	12.6
1933	53.5	-0.4	10.5	53.2	-0.6	9.8	-0.2
1934	-1.6	9.8	3.5	-3.4	7.8	11.6	-1.8
1935	47.5	4.9	4.4	43.4	2.0	6.4	-2.8
1936	33.7	7.3	-0.7	32.3	6.2	5.5	-1.0
1937	-35.2	-0.1	2.5	-37.0	-2.8	-0.3	-2.7
1938	31.1	5.5	0.6	34.9	8.5	9.2	2.9
1939	-30.5	6.0	-1.9	-30.1	6.5	4.5	0.5
1940	99.3	6.1	-2.5	88.0	5.1	2.4	-1.0
1941	-11.6	0.9	1.8	-19.4	-8.0	-6.3	-8.8
1942	20.0	3.0	-0.6	10.1	-5.5	-6.1	-8.3
1943	25.5	1.7	0.7	22.0	-1.1	-0.3	-2.7
1944	19.3	2.5	1.8	17.3	0.7	2.6	-1.7
1945	36.0	10.4	-6.0	33.4	8.3	1.8	-1.9
1946	10.1	-0.5	1.8	-6.5	-15.5	-13.9	-15.1
1947	-12.4	-3.1	0.3	-19.3	-10.7	-10.4	-7.8
1948	4.7	2.6	0.7	2.7	0.7	1.4	-1.8
1949	17.9	5.7	-3.0	21.0	8.4	5.2	2.6
1950	30.2	-1.1	2.1	24.6	-5.4	-3.5	-4.4
1951	22.8	-5.3	1.3	17.1	-9.3	-8.1	-4.2
1952	16.5	-0.4	2.3	17.3	0.3	2.6	0.7
1953	-2.7	1.8	-0.2	-1.6	3.0	2.8	1.2
1954	51.3	6.3	-1.7	53.3	7.7	5.9	1.3
1955	29.5	-2.9	1.8	31.0	-1.7	0.1	1.2
1956	4.0	-7.8	-1.3	3.6	-8.2	-9.4	-0.4
1957	-13.5	4.2	1.1	-13.4	4.3	5.4	0.1
1958	41.2	-7.5	4.1	40.9	-7.7	-3.9	-0.2
1959	8.8	-5.1	1.3	10.3	-3.7	-2.4	1.5
1960	-2.1	10.9	-4.1	-1.0	12.1	7.5	1.1
1961	24.3	-1.1	3.8	26.0	0.3	4.1	1.4
1962	-11.2	4.0	1.0	-9.8	5.6	6.6	1.5
1963	19.1	-1.9	1.0	20.8	-0.5	0.5	1.4
1964	12.5	-0.0	1.2	15.1	2.3	3.5	2.3
1965	8.2	-3.1	-1.2	10.3	-1.2	-2.4	2.0
1966	-11.1	-1.0	-3.4	-13.0	0.3	-3.1	1.4
1967	19.0	-12.8	4.7	20.3	-11.9	-7.8	1.1
1968	5.6	-5.2	2.9	6.1	-4.8	-2.1	0.4
1969	-14.1	-10.9	-3.2	-13.7	-10.5	-13.4	0.5
1970	-2.4	5.3	5.6	-1.5	6.2	12.2	0.9
1971	9.6	8.5	-1.9	10.6	9.5	7.4	1.0
1972	14.6	1.8	1.5	15.0	2.2	3.7	0.4
1973	-20.2	-1.4	-4.2	-21.6	-3.0	-7.0	-1.7
1974	-31.9	-3.4	-7.2	-34.1	-6.4	-13.1	-3.1

Equation (12) estimates net returns from investing in stocks rather than bills relative to beginning of the period dollars. For the small $R_{f,t}$ observed in monthly data, the differences between equation (11) estimates and equation (12) estimates are very small.[19]

B. Maturity Premia

Since U.S. government bonds and bills are not considered subject to default, the net return from investing in bonds rather than bills stems primarily from their differences in maturity. The net returns are often called "liquidity premia," and it has frequently been hypothesized that these returns are

19. Using a binomial expansion, we can express eq. (11) as: $R_{p,t} = (R_{m,t} - R_{f,t}) - (R_{m,t} - R_{f,t})(R_{f,t}) + (R_{m,t} - R_{f,t})(R_{f,t})^2 - \ldots$. For small $R_{f,t}$, only the first term is important. However, in index construction even small discrepancies matter. Our use of eq. (11) gives us the 1974 year-end cumulative wealth relative index value of 17.991 versus 17.964 calculated from eq. (12).

positive on average.[20] Since "liquidity" implies marketability rather than the more important bond life characteristic, we relabel this net return "maturity premia" and generate it historically according to

$$R_{L,t} = \frac{1 + R_{g,t}}{1 + R_{f,t}} - 1 . \tag{13}$$

From the bond portfolio manager's point of view, $R_{L,t}$ can be thought of as the gains or losses resulting from the decision to hold long-term bonds rather than short-term bonds.

C. *Default Premia*

We define the default premia as the net returns from investing in long-term corporate bonds rather than long-term government bonds of equal ma-

TABLE 8

INDEX OF YEAR END CUMULATIVE WEALTH RELATIVES FOR DERIVED SERIES FROM 1925 THROUGH 1974

Year	Risk Premia on Common Stocks	Maturity Premia on Long-Term Govt. Bonds	Default Premia on Long-Term Corp. Bonds	Common Stocks--Inflation Adjusted	Long-Term Govt. Bonds--Inflation Adjusted	Long-term Corp. Bonds--Inflation Adjusted	U.S. Treasury Bills--Inflation Adjusted
1925	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1926	1.082	1.049	0.996	1.133	1.094	1.090	1.047
1927	1.442	1.104	0.983	1.520	1.217	1.196	1.103
1928	1.992	1.063	1.010	2.306	1.230	1.242	1.157
1929	1.739	1.047	1.008	2.107	1.269	1.279	1.212
1930	1.277	1.071	1.040	1.684	1.413	1.470	1.319
1931	0.719	1.053	1.032	1.054	1.545	1.595	1.467
1932	0.693	1.218	0.970	1.079	2.013	1.780	1.658
1933	1.002	1.214	1.081	1.653	2.001	2.163	1.649
1934	0.986	1.333	1.118	1.596	2.159	2.433	1.619
1935	1.454	1.398	1.168	2.289	2.200	2.568	1.574
1936	1.944	1.500	1.159	3.028	2.336	2.708	1.558
1937	1.260	1.499	1.188	1.909	2.272	2.699	1.515
1938	1.692	1.582	1.195	2.574	2.466	2.847	1.559
1939	1.148	1.676	1.173	1.798	2.625	3.078	1.566
1940	1.484	1.779	1.143	2.302	2.758	3.153	1.551
1941	1.312	1.775	1.163	1.895	2.539	2.953	1.415
1942	1.575	1.848	1.156	2.044	2.398	2.772	1.298
1943	1.975	1.880	1.164	2.464	2.373	2.763	1.262
1944	2.357	1.927	1.186	2.984	2.390	2.834	1.242
1945	3.005	2.126	1.115	3.901	2.588	2.884	1.217
1946	3.526	2.117	1.135	3.647	2.188	2.483	1.034
1947	3.089	2.051	1.135	2.944	1.955	2.295	0.953
1948	3.233	2.103	1.146	3.025	1.968	2.296	0.936
1949	3.812	2.223	1.112	3.660	2.134	2.373	0.960
1950	4.964	2.198	1.135	4.558	2.018	2.291	0.918
1951	6.067	2.081	1.150	5.330	1.831	2.106	0.880
1952	7.068	2.072	1.177	6.263	1.836	2.161	0.886
1953	6.878	2.110	1.174	6.166	1.891	2.221	0.896
1954	10.409	2.242	1.155	9.455	2.037	2.352	0.908
1955	13.476	2.179	1.176	12.389	2.003	2.355	0.919
1956	14.016	2.008	1.160	12.894	1.838	2.133	0.916
1957	12.184	2.090	1.173	11.115	1.918	2.240	0.917
1958	17.117	1.935	1.221	15.660	1.770	2.161	0.915
1959	18.614	1.837	1.237	17.277	1.705	2.109	0.888
1960	18.928	2.07	1.186	17.404	1.911	2.266	0.938
1961	22.645	2.014	1.231	21.556	1.917	2.359	0.952
1962	20.119	2.094	1.243	19.436	2.023	2.516	0.966
1963	23.982	2.055	1.256	23.473	2.014	2.589	0.980
1964	26.951	2.055	1.271	27.014	2.060	2.618	1.002
1965	24.164	1.992	1.256	29.801	2.035	2.556	1.022
1966	25.042	1.971	1.214	25.933	2.041	2.478	1.036
1967	29.806	1.718	1.270	31.805	1.799	2.286	1.047
1968	31.476	1.629	1.307	33.095	1.713	2.238	1.051
1969	27.038	1.451	1.265	28.965	1.533	1.989	1.056
1970	26.398	1.528	1.336	28.149	1.629	2.176	1.066
1971	28.922	1.657	1.316	31.134	1.784	2.337	1.076
1972	33.128	1.687	1.329	35.916	1.824	2.484	1.091
1973	26.430	1.664	1.274	28.097	1.769	2.254	1.063
1974	17.991	1.608	1.183	18.527	1.656	1.959	1.030

20. For example, see John R. Hicks, *Value and Capital* (Oxford: Clarendon Press, 1946).

turities. We estimate monthly default premia, $R_{d,t}$, according to

$$R_{d,t} = \frac{1 + R_{c,t}}{1 + R_{g,t}} - 1 . \tag{14}$$

Since the long-term U.S. government bond series and the long-term corporate bond series have approximately equal maturities, the net rate of return between the two series is primarily related to differences in the probability of coupon or principal default. From the bond portfolio manager's point of view, $R_{d,t}$ is a measure of the gains or losses associated with holding high-quality corporate bonds rather than government bonds.

D. Inflation-adjusted Returns of the Basic Series

The monthly inflation-adjusted returns for the $R_{m,t}$, $R_{g,t}$, $R_{c,t}$, and $R_{f,t}$ series are estimated as

$$R_{mr,t} = \frac{1 + R_{m,t}}{1 + R_{I,t}} - 1 , \tag{15}$$

$$R_{gr,t} = \frac{1 + R_{g,t}}{1 + R_{I,t}} - 1 , \tag{16}$$

$$R_{cr,t} = \frac{1 + R_{c,t}}{1 + R_{I,t}} - 1 , \tag{17}$$

$$R_{fr,t} = \frac{1 + R_{f,t}}{1 + R_{I,t}} - 1 , \tag{18}$$

where the additional subscript r on each of the returns on the left side of equations (15)–(18) refer to the fact that each series is real (inflation-adjusted).

V. HISTORICAL HIGHLIGHTS

A summary of the annual historical returns for each of the five basic series and the seven derived series is presented in table 9.[21] Some of the highlights follow.

A. Common Stocks

Some highlights of common stock annual returns are:

1. Over the period 1926–74, stocks returned 8.5 percent per year compounded annually. Excluding dividends, stocks returned 3.5 percent per year. Over the same period, both risk premia and inflation-adjusted stock returns were 6.1 percent per year.

2. Comparing our stock returns with those measured by Fisher and Lorie over the period 1926–65, we find a return of 10.4 percent from holding a market weighted portfolio with weights updated continually, while they find

21. The monthly returns, R_t, and month-end index of cumulative wealth relatives, V_n, for each of the 12 series described here can be obtained from the Center for Research in Security Prices, Graduate School of Business, University of Chicago, Chicago, Illinois 60637.

TABLE 9

BASIC AND DERIVED SERIES: HISTORICAL HIGHLIGHTS (1926-1974)

Series	Annual Geometric Mean Rate of Return	Arithmetic Mean of Annual Returns	Standard Deviation of Annual Returns	Number of Years Returns are Positive	Number of Years Returns are Negative	Highest Annual Return (and year)	Lowest Annual Return (and year)
Common Stocks	8.5%[a]	10.9%	22.5%	32	17	54.0% (1933)	-43.3 (1931)
Long-Term Government Bonds	3.2	3.4	5.4	37	12	16.8 (1932)	-9.2 (1967)
Long-Term Corporate Bonds	3.6	3.7	5.1	39	10	18.4 (1970)	-8.1 (1969)
U.S. Treasury Bills	2.2	2.3	2.1	48	1	8.0 (1974)	-0.0 (1940)
Consumer Price Index	2.2	2.3	4.8	39	10	18.2 (1946)	-10.3 (1932)
Risk Premia on Common Stocks	6.1	8.8	23.5	31	18	53.5 (1933)	-43.7 (1931)
Maturity Premia on Long-Term Govt. Bonds	1.0	1.1	5.6	25	24	15.7 (1932)	-12.8 (1967)
Default Premia on Long-Term Corp. Bonds	.3	.4	3.2	28	21	10.5 (1933)	-7.2 (1974)
Common Stocks-Inflation Adjusted	6.1	8.8	23.5	31	18	53.3 (1954)	-37.4 (1931)
Long-Term Government Bonds-Inflation Adjusted	1.0	1.3	8.0	29	20	30.2 (1932)	-15.5 (1946)
Long-Term Corporate Bonds-Inflation Adjusted	1.4	1.7	7.7	31	18	23.5 (1932)	-13.9 (1946)
U.S. Treasury Bills-Inflation Adjusted	0.1	0.2	4.6	29	20	12.6 (1932)	-15.1 (1946)

[a]The annual geometric mean rate of return for capital appreciation exclusive of dividends was 3.5 percent over the entire period.

a return of 9.3 percent from holding a portfolio that is equally weighted as of January 1926.[22]

3. Over the entire period of study, the arithmetic mean of the annual returns was 10.9 percent for stocks and 8.8 percent for risk premia and inflation-adjusted stock returns. Although stocks outperformed the other assets in the study, their returns were also far more volatile. The standard deviation of common stock annual returns was 22.5 percent, while the returns ranged from 54.0 to −43.3 percent.

4. Stock returns were positive almost two-thirds of the years (32 out of 49 years). The longest period over which a year-end investor in our common stock index would have earned a negative return was the 14-year period 1929–42.

5. The 1974 common stock return was −26.4 percent, the third worst yearly return throughout the period and the worst since 1937. The investor who held our common stock index through year-end 1974 would have lost value if he had purchased the index as of any year-end from 1967 on. On the other hand, the purchaser of the index as of any year-end prior to 1967 would be ahead in (nominal) value as of year-end 1974.

6. Five-year annual calendar holding period returns ranged from a

22. See table A1 for a more detailed comparison of the series.

high of 23.9 percent during the period 1950–54 to a low of −12.5 percent during the period 1928–32. The highest 10-year annual return was 20.1 percent earned from 1949 to 1958, while the lowest 10-year annual return was −0.9 percent earned from 1929 to 1938. For 20-year calendar holding periods, the highest annual return was 16.9 percent earned in the period 1942–61, while the lowest annual return was 3.1 percent earned in the period 1929–48.

B. Long-Term U.S. Government Bonds

Some highlights of long-term U.S. government annual returns are:

1. Long-term U.S. government bonds returned 3.2 percent per year compounded annually over the period 1926–74. The entire period annual returns for both maturity premia and inflation-adjusted long-term government bonds were 1.0 percent.

2. The arithmetic means of the annual nominal returns, maturity premia, and real returns from long-term government bonds are 3.4 percent, 1.1 percent, and 1.3 percent, respectively. These annual return series are far less volatile than the common stock series. However, the maturity premia and the real return series are quite volatile relative to their own historical means.

3. Long-term government bond returns were positive 37 out of the 49 years. Their annual returns ranged from 16.8 percent to −9.2 percent.

4. Five-year annual calendar holding period returns for long-term government bonds ranged from a high of 8.1 percent during the period 1970–74 to a low of −2.1 percent during the period 1965–69. The highest 10-year annual return was 5.7 percent earned during 1932–41, while the lowest 10-year annual return was −0.1 percent earned during 1950–59. For 20-year calendar holding periods, the highest annual return was 4.9 percent earned during the period 1926–45, while the lowest annual return was 0.7 percent earned during the period 1950–69.

C. Long-Term Corporate Bonds

Some highlights of long-term corporate bond annual returns are:

1. Long-term corporate bonds returned 3.6 percent per year compounded annually over the period 1926–74. Default premia returned 0.3 percent, while the inflation-adjusted corporate bond annual return was 1.4 percent.

2. The arithmetic means of the annual nominal returns, default premia, and real returns resulting from long-term corporate bonds are 3.7 percent, 0.4 percent, and 1.7 percent, respectively. The volatility of long-term corporate bonds is similar to that of long-term government bonds. Again, the default premia and the real return series are quite volatile relative to their historical means.

3. Long-term corporate bonds had positive returns in 39 out of the 49 years. Their returns ranged from 18.4 percent to −8.1 percent.

4. Five-year annual calendar holding period returns for long-term corporate bonds ranged from a high of 10.3 percent during the period 1932–36 to a low of −2.2 percent during the period 1965–69. The highest 10-year annual return was 7.1 percent earned during 1926–35, while the lowest 10-year annual return was 1.0 percent earned during 1947–56. For 20-year calendar holding periods, the highest annual return was 5.5 percent earned during the period 1926–45, while the lowest annual return was 1.3 percent earned during the period 1950–69.

D. U.S. Treasury Bills and Inflation

Some highlights of U.S. Treasury bill annual returns and annual inflation rates are:

1. During the entire period, U.S. Treasury bills returned 2.2 percent compounded annually, a rate which was approximately equal to the rate of inflation.

2. The entire period inflation-adjusted bill return was 0.1 percent. The inflation-adjusted bill return is a measure of the "real rate of interest." Our result of 0.1 percent is substantially different from the 3–4 percent often suggested by the Federal Reserve Bank of St. Louis.[23] Note that we compute the net returns between monthly *total returns* and inflation rates. The St. Louis Federal Reserve Bank measures the difference between observed high-grade long-term corporate bond *yields* and lagged inflation rates. Yields measure promised returns rather than realized returns. The promise extends over the entire *future* life of the bond so that it should not be compared with either current or lagged inflation rates. Another problem with their methodology is that a long-term corporate bond yield incorporates both promised future maturity premia and default premia as well as promised future real interest rates.

3. We can break the 1926–74 period U.S. Treasury bill returns and the inflation rates into five somewhat natural subperiods. During the deflationary period 1926–32, the annual rate of inflation was −4.4 percent while bills returned 2.7 percent annually. During the low inflationary period 1933–41, the annual rate of inflation was 0.9 percent while the annual bill return was a very low 0.1 percent. During the period 1941–51, Treasury bill rates were pegged to return only 0.6 percent while the annual rate of inflation was a high 5.9 percent. Both rates were low during the period 1952–65, with the annual inflation rate being 1.3 percent and the annual bill return being 2.4 percent. Inflation rates and bill returns were generally rising during the last subperiod (1966–74), with the annual inflation rate being 11.5 percent in 1974 and 5.5 percent over the subperiod, while the 1974 bill return was 8.0

23. The Federal Reserve Bank of St. Louis began publishing a monthly series of expected "real" rates on corporate bonds with the study "Strong Total Demand, Rising Interest Rates, and Continued Availability of Credit," *Review* 48 (August 1966): 3, 4. Subsequent graphs and articles have frequently appeared, including William P. Yohe and Denis Karnosky, "Interest Rates and Price Level Changes, 1952–69," *Review* 51 (December 1969): 34–36.

percent with a subperiod annual return of 5.4 percent. Thus, even though bill returns and inflation rates were often very related, the entire period real rate of interest of 0.1 percent varied substantially over the subperiods.

4. Five-year annual calendar period returns from holding 1-month bills ranged from a high of 5.9 percent during the period 1970–74 to a low of 0.1 percent during the period 1937–41. The highest 10-year annual return was 5.4 percent earned during 1965–74, while the lowest 10-year annual return was 0.1 percent earned during 1933–42. For 20-year calendar holding periods, the highest annual return was 4.0 percent earned during the period 1955–74, while the lowest annual return was 0.4 percent earned during the period 1931–50.

5. Five-year annual calendar period inflation rates ranged from a high of 6.8 percent during the period 1942–46 to a low of −5.4 percent during the period 1928–32. The highest 10-year annual rate was 5.9 percent during 1941–50, while the lowest 10-year annual rate was −2.6 percent during 1926–35. For 20-year calendar periods, the highest annual rate was 3.8 percent during the period 1941–60, while the lowest annual rate was 0.1 percent during the period 1926–45.

APPENDIX

TABLE A1

COMPARISON OF IBBOTSON-SINQUEFIELD COMMON STOCK AND LONG-TERM CORPORATE BOND ANNUAL RETURNS WITH OTHER STUDIES

	Annual Geometric Mean Rate of Return	Annual Arithmetic Mean Rate of Return	Standard Deviation of Annual Returns	Correlation with Ibbotson-Sinquefield Annual Returns
Common stock return studies compared to Ibbotson-Sinquefield returns, R_m (R_m results over comparable period are in parentheses):				
1. Fisher-Lorie[a] 1926-1965	9.4% (10.4%)	14.0% (13.0%)	32.1% (23.2%)	.924
2. Fisher-NYSE[b] equal weighted 1926-1974 (preliminary)	9.4 (8.5)	13.9 (10.9)	31.7 (22.5)	.922
3. Scholes-NYSE[c] market weighted 1926-1974 (preliminary)	8.1 (8.5)	10.4 (10.9)	22.2 (22.5)	.994
4. Scholes-NYSE[c] equal weighted 1926-1974 (preliminary)	10.3 (8.5)	15.0 (10.9)	33.6 (22.5)	.896
Long-term corporate bond return study compared to Ibbotson-Sinquefield returns, R_c (R_c results over comparable period are in parentheses):				
5. Fisher-Weil[d] 1926-1945	5.5 (5.5)	5.5 (5.6)	3.6 (3.7)	.882
6. Fisher-Weil[d] 1926-1969	3.3 (3.2)	3.4 (3.3)	4.1 (4.6)	.884

[a]The Fisher and Lorie annual returns summarized here are listed in the diagonal of their matrix listed in Table 1B, in Fisher and Lorie, 1968, op. cit., pp. 296-297. Note that the 9.4% annual geometric mean rate of return listed here is not their 1926-1965 holding period return of 9.3% which is the entire period return from holding an equally weighted portfolio as of January 1926.

[b]The Fisher annual returns summarized here are from Lawrence Fisher's preliminary results of equal weighted (reweighted annually) returns presented at the Seminar on the Analysis of Security Prices, CRSP, May 1975.

[c]The Scholes annual returns summarized here are from preliminary results presented by Myron Scholes at the Seminar on the Analysis of Security Prices, CRSP, May 1975.

[d]The Fisher-Weil results summarized here are listed in the diagonal of Table A1 in Fisher and Weil, op. cit., p. 425.

TABLE A2

HOLDING PERIODS AND CHARACTERISTICS OF GOVERNMENT BONDS COMPRISING LONG-TERM GOVERNMENT BOND INDEX

Coupon (%)	Call-Maturity Date	Income[1] Tax Status	Estate[2] Tax Status	Period Bond Is Held in Index
4.25	10/15/47-52	b	c	1926-1931
3.00	9/15/51-55	b	a	1932-1935
2.875	3/15/55-60	b	a	1936-1941
2.50	9/15/67-72	a	a	1942-1953
3.25	6/15/78-83	a	b	1954-1958
4.00	2/15/80	a	b	1959-1960
4.25	5/15/75-85	a	b	1961-1965
4.25	8/15/87-92	a	b	1966-1972
6.75	2/15/93	a	a	1973-1974

1. "a" indicates fully taxable; "b" indicates exempt from normal income tax but subject to small surtax.

2. "a" indicates no estate tax feature; "b" acceptable at par in payment of estate taxes if owned by decedent at time of death; "c" acceptable at par if owned by decedent for six-month period immediately preceding death.

TABLE A3

MARKET WEIGHTS ASSIGNED TO EIGHT SALOMON BROTHERS YIELD SERIES USED IN THE CONSTRUCTION OF THE LONG-TERM CORPORATE BOND INDEX FOR THE YEARS 1946-1968

Calendar Year	Salomon Brothers Yield Series as Defined by Coupon Ranges								Sum of Weights
	2 3/4-2 7/8	3 1/8-3 3/8	3 5/8-3 7/8	4 1/8-4 3/8	4 5/8-4 7/8	5-5 1/8	5 1/4-5 3/4	5 7/8-6 1/2	
1968	.04	.06	.05	.17	.26	.08	.12	.22	1.00
1967	.05	.08	.05	.19	.30	.09	.14	.10	1.00
1966	.06	.10	.06	.26	.39	.13			1.00
1965	.08	.11	.07	.30	.36	.08			1.00
1964	.09	.12	.08	.33	.29	.09			1.00
1963	.10	.13	.09	.28	.30	.10			1.00
1962	.11	.15	.10	.22	.31	.11			1.00
1961	.13	.17	.11	.15	.32	.12			1.00
1960	.15	.22	.12	.17	.21	.13			1.00
1959	.19	.30	.14	.22	.12	.03			1.00
1958	.21	.34	.16	.20	.09				1.00
1957	.29	.47	.12	.12					1.00
1956	.39	.61							1.00
1955	.42	.58							1.00
1954	.48	.52							1.00
1953	.60	.40							1.00
1952	.71	.29							1.00
1951	.86	.14							1.00
1950	1.00								1.00
1949	1.00								1.00
1948	1.00								1.00
1947	1.00								1.00
1946	1.00								1.00

Each of the eight coupon ranges corresponds to a corporate yield series presented in An Analytical Record of Yields and Yield Spreads, Salomon Brothers, New York (May 1975). Eight bond price series are then computed assuming the mean coupon of each range, and a 20-year maturity. A total return index is then computed for each series assuming no defaults or rating changes. The above table gives the weights applied to the eight total return series in constructing the Long-Term Corporate Bond Index from 1946 through 1968.

The weights in the table are estimated by starting with Salomon Brothers' 1969 market weights and backdating by adjusting for new issues and maturities each calendar year.

TABLE A4

U. S. TREASURY BILL INDEX: YEARLY AVERAGE OF DAYS TO MATURITY ON MONTHLY DATES OF PURCHASE[a]

Calendar Year	Average Days to Maturity	Calendar Year	Average Days to Maturity
1926	90	1951	34
1927	75	1952	33
1928	75	1953	33
1929	75	1954	33
1930	83	1955	33
1931	59	1956	34
1932	46	1957	33
1933	40	1958	32
1934	38	1959	32
1935	50	1960	32
1936	75	1961	32
1937	44	1962	33
1938	34	1963	32
1939	34	1964	33
1940	36	1965	33
1941	34	1966	33
1942	35	1967	33
1943	32	1968	34
1944	33	1969	33
1945	35	1970	32
1946	34	1971	33
1947	34	1972	34
1948	33	1973	35
1949	33	1974	34
1950	33		

[a]The average of days to maturity is measured from delivery date of purchase to date of maturity. Prior to 1931, the index includes short-term U.S. government obligations instead of treasury bills. Since these securities had longer maturities, the average days to maturity is substantially longer than 30 days. Prior to 1938, treasury bills were issued less frequently than in later periods, again resulting in longer average days to maturity.